Integrated Natural Resources Management Plan
Naval Air Station Joint Reserve Base
New Orleans, Louisiana

2022
Update

FINAL

Naval Air Station Joint Reserve Base
New Orleans, Louisiana
Integrated Natural Resources Management Plan

2022 Update

Final

NAVAL AIR STATION JOINT RESERVE BASE
NEW ORLEANS, LOUISIANA
INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

2022 Update

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NAVAL AIR STATION JOINT RESERVE BASE NEW ORLEANS
NEW ORLEANS, LOUISIANA

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
2022 OPERATIONS AND EFFECT CONCURRENCE

This Integrated Natural Resource Management Plan (INRMP) provides for natural resources management at Naval Air Station Joint Reserve Base (NAS JRB) New Orleans in New Orleans, Louisiana. The Sikes Act and Department of Defense instruction require that annual and 5-year operation and effect reviews of INRMPs occur with the U.S. Fish and Wildlife Service (USFWS) and the state fish and wildlife agency. Representatives of the Navy, USFWS, and the Louisiana Department of Wildlife and Fisheries (LDWF) participate annually in the NAS JRB New Orleans INRMP and Natural Resources Metric review. By signing below, the USFWS and LDWF concur that the management actions prescribed in the INRMP will contribute to the conservation and rehabilitation of installations natural resources.

CAPT USN — 4/22/2022

Commanding Officer
Naval Air Station Joint Reserve Base New Orleans — **Date**

4/4/22

U.S. Navy Regional Environmental Coordinator — **Date**

George Kenny — 3/29/2022

Natural Resources Manager
Commander Navy Region Southeast — **Date**

4/7/2022

Natural Resources Manager
Naval Air Station Joint Reserve Base New Orleans — **Date**

BRIGETTE FIRMIN — Digitally signed by BRIGETTE FIRMIN Date: 2022.04.05 08:29:57 -05'00' — 5 April 2022

U.S. Fish and Wildlife Service — **Date**

4/7/22

Louisiana Department of Wildlife and Fisheries — **Date**

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EXECUTIVE SUMMARY

ES.1 Type of Document

This is an Integrated Natural Resources Management Plan (INRMP).

ES.2 Purpose of Document

The purpose of this document is to meet statutory requirements under the Sikes Act Improvement Amendment (SAIA), Public Law 105-85, Div. B. Title XXIX, Nov. 18, 1997, 111 Stat 2017-2019, 2020-2022. In November 1997, the Sikes Act, 16 United States Code (U.S.C.) § 670a *et seq*., was amended to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military Installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement INRMPs for each military Installation in the United States (U.S.) unless the absence of significant natural resources on a particular Installation makes preparation of a plan for the Installation inappropriate. The U.S. Department of the Navy (Navy) has prepared this INRMP for Naval Air Station Joint Reserve Base, New Orleans, Louisiana (NAS JRB NOLA).

The INRMP is a long-term planning document to guide the Installation commander in the management of natural resources to support the Installation mission, while protecting and enhancing Installation resources for multiple use, sustainable yield, and biological integrity. The primary purpose of the INRMP is to ensure that natural resources conservation measures and military operations on the Installation are integrated and consistent with stewardship and legal requirements. This INRMP covers a 10-year period, but is reviewed annually and has the flexibility to accommodate changes in natural resources and ecosystem management and military mission.

ES.3 Goals and Objectives of the INRMP

The goal of the INRMP is to implement an ecosystem-based conservation program that provides for conservation and rehabilitation of natural resources in a manner consistent with the military mission, integrates and coordinates all natural resources, provides for sustainable multipurpose uses of natural resources, and provides public access for use of natural resources subject to safety and military security considerations. The INRMP

includes adaptive natural resource management objectives and practices to be utilized on this property.

Installation-wide ecosystem management goals and objectives are identified for NAS JRB NOLA by program element as follows:

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Issue: Land and water management decisions will become increasingly important at NAS JRB NOLA as development and training activities increase. Land and water use during military training directly affect ecosystem sustainability.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Objective 1.2: Achieve no net loss of wetlands.

Objective 1.3: Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.5: Reduce and control nuisance wildlife.

Objective 1.6: Implement a forest management plan that integrates ecosystem management and silviculture.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural communities.

Objective 1.8: Use GIS to improve management of natural resources.

Issue: Human activities on NAS JRB NOLA and in the surrounding community have removed native vegetative communities and altered natural habitats. Environmental resources on the Installation provide vital habitat for birds, fish, and wildlife, especially in view of the considerable development and economic growth surrounding the Installation.

Objective 1.9: Conduct bird surveys and document the presence of migratory bird species.

Objective 1.10: Reduce aircraft collisions with wildlife through implementation of the Bird Aircraft Strike Hazard (BASH) program.

Objective 1.11: Preserve and protect threatened and endangered species and species of special concern to ensure no reduction in species numbers or population sizes.

Objective 1.12: Monitor for the presence of threatened and endangered species and neo-tropical migratory birds.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources, while improving quality of life for military and the public.

Issue: The SAIA, as amended, requires that military Installations evaluate the potential to provide outdoor recreational resources to the general public. The Commanding Officer (CO) authorizes access for educational and outdoor natural resources recreational activities consistent with the military mission and appropriate security levels.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA, and NAS JRB NOLA's capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Issue: Plans and programs for maintaining and managing natural resources on NAS JRB NOLA need to fully consider the interrelationships among resources on the Installation and assure no net loss of the military mission. The input and cooperation of regulatory agencies and other experts will best facilitate the success of these plans and programs.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.2: Incorporate the concept of ecosystem management into all planning and management processes.

Objective 3.3: Maintain interagency cooperation with U.S. Fish and Wildlife Service (USFWS) and Louisiana Department of Wildlife and Fisheries (LDWF).

Objective 3.4: Develop relationships with Louisiana Department of Environmental Quality (LDEQ), U.S. Department of Agriculture (USDA), U.S. Geological Survey (USGS), local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

ES.4 Physical Environment and Ecosystems

NAS JRB NOLA encompasses 3,345 acres (1,354 hectares [ha]) in southeastern Louisiana. The Installation is approximately 16 miles (26 kilometers [km]) southeast of the central business district of New Orleans, near the town of Belle Chasse in Plaquemines Parish. The Gulf Intracoastal Waterway (GIWW) is west of the Installation, and the Mississippi River is east of the Installation. Elevations of the Installation range from approximately 3 feet (ft) (0.9 meter [m]) below mean sea level (msl) to approximately 2 ft (0.6 m) above msl.

Approximately 1,695 acres (686 ha), comprising 51 percent of NAS JRB NOLA, are developed or improved. Most of this development is in support of the current military mission; however, the original runways, which are now abandoned, cover a large area within otherwise undeveloped land. Within the developed areas, natural resources management activities primarily are reduction of BASH, reduction of conflicts between humans and nuisance wildlife, reduction of nonpoint source pollution, and landscape enhancements.

Approximately 1,650 acres (668 ha), comprising 49 percent of NAS JRB NOLA, are undeveloped. These areas are heavily forested and include wetlands ranging in size from under 1.0 acre (0.4 ha) to approximately 90 acres (36 ha). The forests and wetlands provide diverse habitats for a variety of vertebrates and invertebrates. Drainage canals provide habitat for fish, amphibians, and semi-aquatic reptiles in

addition to their primary function of draining surface and groundwater from NAS JRB NOLA. Management activities within these areas include reducing BASH, wildlife management, erosion control, wetlands protection, custodial forest management, and outdoor recreation.

ES.5 Projects of the INRMP

Projects are discrete actions for fulfilling objectives. Projects may be required in order for NAS JRB NOLA to fulfill regulatory requirements regarding natural resources management and to enhance existing measures to ensure compliance. Projects currently planned are shown in Tables ES-1 and ES-2.

Funding for implementation of the INRMP will come from the Installation Commander, Naval Installations Command (CNIC) or Naval Facilities Engineering Command (NAVFAC) natural resources funding sources. The natural resources programs and projects described in this INRMP are divided into compliance and stewardship categories to reflect implementation priorities. Funding will be acquired to implement Department of Defense (DoD) compliance projects in the most timely manner possible. Stewardship projects will be funded through the Installation operations, management budget, and other funding sources identified in partnerships with federal and state resources agencies, forestry revenues, agriculture outlease, fish and wildlife Legacy Funds, and other funding sources.

ES.6 Mission Sustainability

NAS JRB NOLA exists primarily to support training for Naval reservists preparing to mobilize and to provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft crews. Non-Navy tenant users of the Installation include the Louisiana Air National Guard, Air Force Reserve, U.S. Customs and Border Protection, U.S. Marine Force Reserve, and the U.S. Coast Guard. Training and services provided at NAS JRB NOLA are best supported by functional and resilient ecosystems, which are better able to support day-to-day military readiness and the military mission. Preserving and enhancing that functionality and resiliency is the primary purpose of this INRMP and all natural resources management actions on NAS JRB NOLA. Particular emphasis is placed on using existing ecosystems to reduce the

potential for wildlife-aircraft collisions and on practicing responsible stewardship of natural resources.

Table ES-1. Projects to be Implemented During Fiscal Years 2017 through 2026 in Support of the INRMP

Fiscal Year(s)	Project	EPR Project #	Natural Resources Management Activities	Project	Regulatory Driver [a]
2030	Project 1	00206NR008	Land Management	Update Invasive, Exotic and Noxious Plant Inventory and Management Plan	1, 2, 3, 7
Annually	Project 2	00206NR009	Land Management	Invasive Plant Control	1, 2, 3, 7
2022, 2023, 2026	Project 3	00206BL002	Fish and Wildlife Management	Biological Inventory	2, 3, 5, 6, 9
Annually	Project 4	00206SP001	Fish and Wildlife Management	Species Protection and Habitat Development	2, 3, 4, 6, 8
2026, 2031	Project 5	00206BL001	Integrated Ecosystems Management and Partnering	Annual INRMP Review and Update	2, 3, 6
2024, 2027, 2030	Project 6	00206NT001	Fish and Wildlife Management	Listed and Species-at-Risk Monitoring	2, 3, 6
Annually	Project 7	00206NR030	Fish and Wildlife Management	Pollinator Conservation	2, 3, 6, 7

[a] **Primary Legal Driver**

U.S. Federal Code	Title of Act		
(1) 7 U.S.C. 2814	Management of Undesirable Plants on Federal lands	(6) 16 U.S.C. 2901	Fish and Wildlife Conservation Act
(2) 16 U.S.C. 670a-f	Sikes Act Improvement Amendment	(7) EO 13112	Invasive Species
(3) 16 U.S.C. 1531 & 1536	Endangered Species Act	(8) EO 11990	Protection of Wetlands
(4) 33 U.S.C. 1251	Clean Water Act	(9) EO 13186	Responsibilities of Federal Agencies to Protect Migratory Birds
(5) 6 U.S.C. 703	Migratory Bird Treaty Act (MBTA)		

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Table ES-2. Project Implementation for Fiscal Years 2017 through 2021

Project No.	Project Description	EPR Project #	Navy Assessment Level [a]	Funding Priority [b]	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
1	Update Invasive, Exotic, and Noxious Plant Inventory and Management Plan	00206NR008	1	C				X	X					
2	Invasive Plant Control	00206NR009	1	C	X	X	X	X	X	X	X	X	X	X
3	Biological Inventory	00206BL002	1	S	X	X			X			X		
4	Species Protection and Habitat Development	00206SP001	1	C	X	X	X	X	X	X	X	X	X	X
5	Annual INRMP Review and Update	00206BL001	1	C					X					X
6	Listed and Species-at-Risk Monitoring	00206NT001	1	C			**X**			X			X	
7	Pollinator Conservation	00206NR030	1	C			**X**	X	X	X	X	X	X	X

[a]**Navy Assessment Level**
From Environmental Program Requirements (EPR) “Guidebook” (Cookbook), 1 = Legal Requirement

[b]**Funding Priority**
From DoDINST 4715.3, C= Compliance; S= Stewardship

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Table ES-3. Cross-Reference of Office of Secretary of Defense (OSD) Format to Format Used in this INRMP

OSD recommended INRMP format	Cross-reference to required information in this NAS JRB NOLA INRMP
Cover Page	Cover Page
Signature Page	Signature Page
Executive Summary	Executive Summary
Table of Contents	Table of Contents
Chapter 1 - Overview	Chapter 1.0 – Introduction
1.a – Purpose	1.1 – Purpose and Organization
1.b – Scope	1.2 – Scope
1.c – Goals and Objectives Summary	1.3 – Goals and Objectives
1.d – Responsibilities of stakeholders	1.4 – Responsibilities
1.e – Commitment of Regulatory Agencies	1.10 – Commitment of Regulatory Agencies
1.f – Authority	1.5 – Authority
1.g – Stewardship of Compliance Statement	1.7 – Stewardship and Compliance
1.h – Review and Revision Process	1.9 – Review and Revision Process
1.i – Management Strategies	1.8 – Implementation of the INRMP
1.j – Integration with other plans	2.5 – Integration with Other Plans
Chapter 2 – Current Conditions and Use	Chapter 2.0 – History and Organization
2.0 – Installation Information	2.1 – Installation Information
2.a.1 – Location Statement (concise)	2.1 – Installation Information
2.a.2 – Regional Land Use	2.3 – Regional Land Uses
2.a.3 – History and Pre-Military Land Use (abbreviated)	2.2 – Abbreviated History and Pre-Military Land Use
2.a.4 – Military Mission (concise)	1.6 – Military Mission
2.a.5 – Operations and Activities	1.6 – Military Mission
2.a.6 – Constraints Map	2.4 – Management Constraints
2.a.7 – Opportunities Map	4.1.3 Natural Resources Management Oppurtunities
2.b – General Physical Environment and Ecosystems	3.0 – Existing Environment
2.c – General Biotic Environment	3.5 – Vegetation and Wildlife
2.c.1 – Threatened and Endangered Species and Species of Concern	3.5.5 – Rare, Threatened, and Endangered Species
2.c.2 – Wetlands and Deep Water Habitats	3.5.3 – Wetlands
2.c.3 – Fauna	3.5.6 – Fish and Wildlife
2.c.4 - Flora	3.5.1 – Vegetation
Chapter 3 – Environmental Management Strategy and Mission Sustainability	Chapter 5.0 – Environmental Planning and Mission Suitability
3.a – Supporting Sustainability of the Military Mission and the Natural Environment	5.1.2 – Supporting Sustainability of the Military Mission and the Natural Environment
3.a.1 – Integrate Military Mission and Sustainability Land Use	5.1.3 – Military and Mission and Sustainable Land Use
3.a.2 – Define Impact on the Military Mission	5.1.4 – Defining Impact on the Military Mission
3.a.3 – Describe Relationship to Range Complex Management Plan or other operational area plans	Not Applicable
3.b – Natural Resources Consultation Requirements (Section 7, EFH)	5.2 – Natural Resource Consultation Requirements
3.c – National Environmental Policy Act (NEPA) Compliance	5.3 – NEPA Compliance
3.d – Opportunities for Beneficial Partnerships and Collaborative Resource Planning	5.4 - Beneficial Partnerships and Collaborative Resource Planning
3.e – Public Access and Outreach	5.5 – Public Access and Outreach
3.e.1 – Public Access and Outdoor Recreation	5.5.1 – Public Access and Outreach
3.e.2 – Public Outreach	5.5.2 – Public Outreach
3.e.3 – Encroachment Partnering	5.6 – Encroachment Partnering
3.e.4 – State Comprehensive Wildlife Plans (SCWP) Integration	4.2.2 – Fish and Wildlife Management

Table ES-3, continued

OSD recommended INRMP format	Cross-reference to required information in this NAS JRB NOLA INRMP
Chapter 4 – Program Elements	Chapter 4.0 – Natural Resources Management
4.a – Threatened and Endangered Species and Species Benefit, Critical Habitat, Species of Concern Management	4.2.2 – Fish and Wildlife Management
4.b – Wetlands and Deep Water Habitats	4.2.1.1 – Wetlands
4.c – Law Enforcement	4.2.2.7 – Fish and Wildlife Law Enforcement
4.d – Fish and Wildlife	4.2.2 – Fish and Wildlife Management
4.e – Forestry	4.2.1.7 – Forestry
4.f – Vegetation	4.2.1.4 – Landscaping and Grounds Maintenance
4.g – Migratory Birds	4.2.2.2 – Migratory Birds
4.h – Invasive Species	4.2.1.6 – Exotic and Invasive Species Removal
4.i – Pest Management	4.2.1.5 – Integrated Pest Management
4.j – Land Management	4.2.1 – Land Management
4.k – Agricultural Outleasing	Not Applicable
4.l – GIS Management, Data Integration, Access, and Reporting	4.2.4 – Integrated Ecosystem Management and Partnering
4.m – Outdoor Recreation	4.2.3– Outdoor Recreation
4.n – Bird Aircraft Strike Hazard	4.2.2.1 – Bird Aircraft Strike Hazard
4.o – Wildland Fire	Not Applicable
4.p – Training of Natural Resource Personnel	4.2.4 – Integrated Ecosystem Management and Partnering
4.q – Coastal/Marine	Not Applicable
4.r – Floodplains	Not Applicable
4.s – Other Leases	Not Applicable
Chapter 5 - Implementation	Chapter 6.0 – Implementation
5.a – Summary of Project Prescription Development Process	6.2 – Plan Implementation and Review and 6.6 – Detailed Description of NAS JRB NOLA INRMP Projects
5.b – Achieving No Net Loss	6.3 – Planning and Mission Sustainability
5.c – Use of Cooperative Agreements	6.4 – Partnerships
5.d – Funding Process	6.6 – Funding
Appendix 1. Acronyms	Acronyms/Abbreviations
Appendix 2. Detailed Natural Resources Prescriptions	Appendices A through E – Copies of Pertinent Plans and Instructions
Appendix 3. List of Projects	Table 6-1 and Table 6-2
Appendix 4. Surveys: Results of Planning Level Surveys	Not Applicable
Appendix 5. Research Requirements	Not Applicable
Appendix 6. Migratory Bird Management	Not Applicable
Appendix 7. Benefits for Endangered Species	Not Applicable
Appendix 8. Critical Habitat	Not Applicable

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
ADA	Americans with Disabilities Act
AICUZ	Air Installation Compatible Use Zone
APHIS	Animal and Plant Health Inspection Service
BASH	Bird/Wildlife Aircraft Air Strike Hazard
bgs	below ground surface
BHWG	bird hazard working group
BMP	Best Management Practice
CFR	Code of Federal Regulations
cm	Centimeter
CNIC	Commander, Navy Installations Command
CNO	Chief of Naval Operations
CNRSE	Commander, Navy Region Southeast
CO	Commanding Officer
CWA	Clean Water Act
CWPPRA	Coastal Wetlands Planning, Protection and Restoration Act
DBH	Diameter at breast height
DoD	Department of Defense
DoI	U.S. Department of Interior
DoDINST	Department of Defense Instruction
DOTD	Louisiana Department of Transportation and Development
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
EPR	Environmental Program Requirements
EPRWeb	Environmental Program Requirements Web
ESA	Endangered Species Act
ERAP	Emergency Response Action Plan
FEMA	Federal Emergency Management Agency
ft	Foot
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FONSI	Finding Of No Significant Impact
FY	Fiscal Year
GIS	Geographic Information System
GIWW	Gulf Intracoastal Waterway
GPS	Global Positioning System
ha	Hectare
INRMP	Integrated Natural Resource Management Plan
IPM	Integrated Pest Management
JAG	Judge Advocate General
km	Kilometer
LA	Louisiana
LA ANG	Louisiana Air National Guard
LDAF	Louisiana Department of Agriculture and Fisheries
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources

LDWF	Louisiana Department of Wildlife and Fisheries
m	Meter
MBTA	Migratory Bird Treaty Act
MFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MPRSA	Marine Protection, Research, and Sanctuaries Act
msl	Mean sea level
MWR	Morale, Welfare and Recreation
NAS JRB NOLA	Naval Air Station Joint Reserve Base, New Orleans, Louisiana
Navy	U.S. Department of the Navy
NAVFAC	Naval Facilities Engineering Command
NAVFAC SE	Naval Facilities Engineering Command Southeast
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOSC	Naval Operational Support Center
NPDES	National Pollutant Discharge Elimination System
NPS	National Parks Service
NRCS	Natural Resources Conservation Service
NRDA	Natural Resources Damage Assessment
OGC	Office of General Counsel
OHS	Oil and hazardous substances
O&MN(R)	Operations and Maintenance Navy (Reserve)
OPNAVINST	Chief of Naval Operations Instruction
OSD	Office of Secretary of Defense
PPDD	Plaquemines Parish Drainage District
RHA	Rivers and Harbors Act
SAIA	Sikes Act Improvement Amendment
SECNAV	Secretary of the Navy
SWCC	Soil and Water Conservation Commission
SWPPP	Stormwater Pollution Prevention Plan
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDOI	U.S. Department of the Interior
U.S.C.	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VR-54	Fleet Logistic Support Squadron 54
WHA	Wildlife Habitat Analysis

1.0 INTRODUCTION

1.1 PURPOSE AND ORGANIZATION

The purpose of this document is to meet statutory requirements under the SAIA, Public Law 105-85, Div. B. Title XXIX, Nov. 18, 1997, 111 Stat 2017-2019, 2020-2022 and ensure that the natural resources conservation measures and military operations on NAS JRB NOLA (Figure 1-1) are integrated and consistent with stewardship and legal requirements. The SAIA requires the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military Installations. To facilitate this program, the SAIA requires the preparation and implementation of INRMPs for each military installation in the U.S. unless the absence of significant natural resources on a particular installation makes preparation of a plan for the installation inappropriate. These plans are reviewed every year by the military installations in cooperation with the USFWS and state wildlife agency and modified as necessary. This INRMP is a long-term planning document for NAS JRB NOLA to guide the Installation Commander in the management of natural resources to support the Installation mission, while protecting and enhancing Installation resources for multiple use, sustainable yield, and biological integrity.

INRMPs utilize an ecosystem management approach while taking into account mission requirements and other land use activities affecting the Installation. INRMPs must be presented to the local community for public comment and are prepared in cooperation with the USFWS and state wildlife agency to reflect mutual agreement on the fish and wildlife management aspects of the plan.

The first three sections of this INRMP establish the existing conditions at NAS JRB NOLA. Section 1 provides a general overview of the scope, goals, and objectives of the INRMP, responsibilities of parties involved in the preparation and implementation of the INRMP, the implementation of the INRMP's environmental management strategy, and the processes for review and revision of the INRMP. Section 2 describes the history and organization of NAS JRB NOLA. Section 3 describes the current conditions and uses, including the general physical and biotic environment.

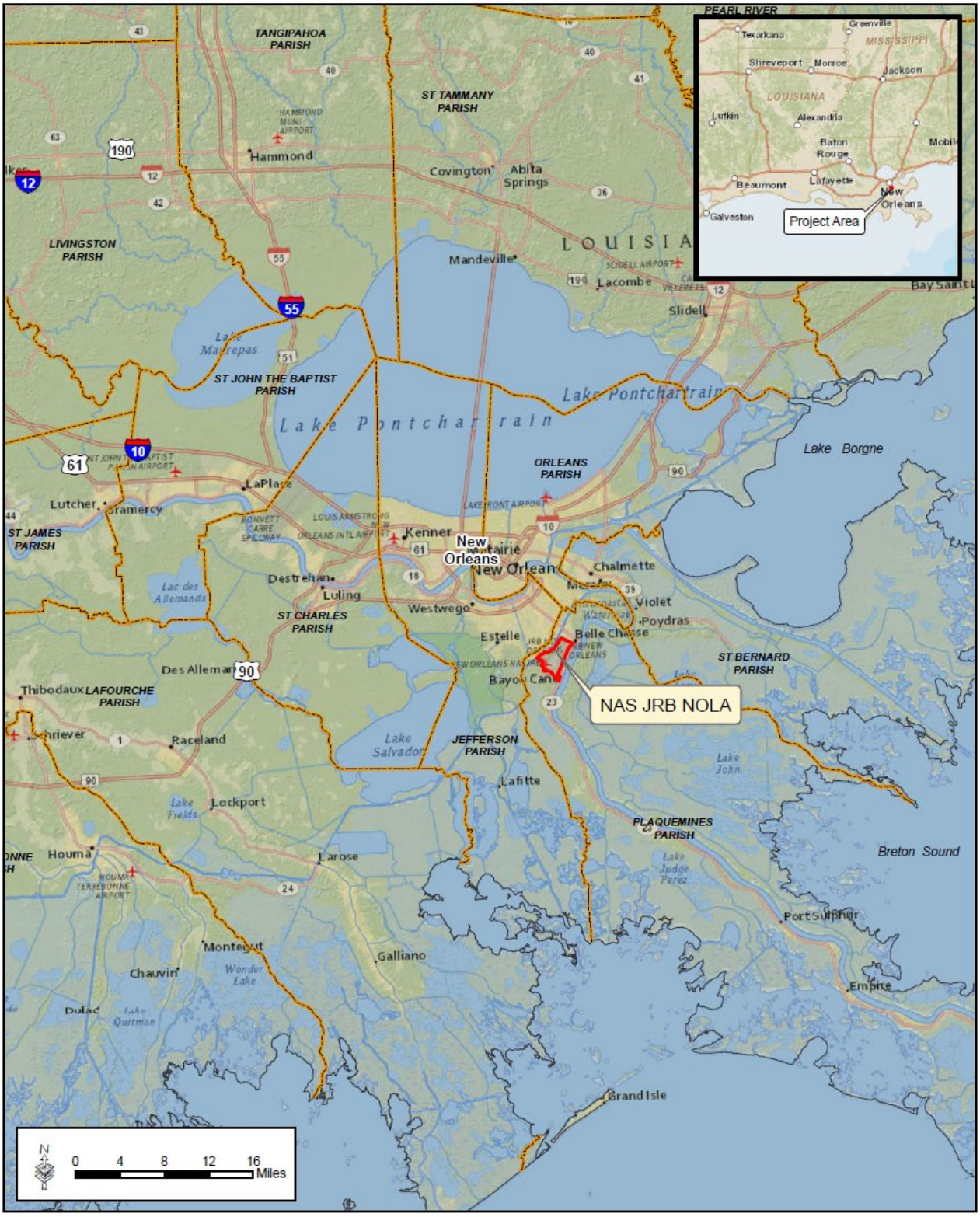

Figure 1-1: Vicinity Map

GSRC

February 2011

Sections 4 and 5 of this INRMP identify issues pertaining to the long-term management of the Installation ecosystem and land management programs and practices for achieving desired goals.

Section 6 describes INRMP implementation and provides a detailed description of active projects on the Installation. Section 7 provides a list of references used in the preparation of this INRMP.

1.2 SCOPE

This INRMP provides for integrated fish and wildlife management, land and forest management, wetland enhancement and protection, public access and sustainable use of natural resources, enforcement of natural resource laws and regulations, and successful implementation of the mission. This INRMP is appropriate for a 10-year period, but has the flexibility to accommodate changes in the ecosystem and military mission. Annual reviews will ensure that this INRMP includes the latest scientific knowledge, innovation, and discovery to meet the future requirements of the Installation's military mission and natural resources protection and conservation.

1.3 GOALS AND OBJECTIVES

To provide direction, recognize target management actions, and construct the framework for measuring success of this INRMP, three goals and 21 management objectives have been established (Table 1-1). From these goals and management objectives, projects specific to natural resources management needs of NAS JRB NOLA were developed. Management objectives are components of goals and represent targets to be used to measure success of this INRMP. Ecosystems are dynamic and may exhibit responses to management actions different than those expected. Adaptive management will compare responses exhibited by natural resources to management projects against the desired response for that management project. Modification of management objectives and projects may be needed to reach a desired goal. An adaptive management approach allows for changes in short-term and long-term objectives from possible large-scale changes in conditions of natural resources and is used throughout this INRMP.

Table 1-1. Goals of and Management Objectives for Natural Resources Management on NAS JRB NOLA

Goal	Management Objectives	
1. Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.	1.1	Conserve wetlands, floodplains, stream networks, and soils.
	1.2	Achieve no net loss of wetlands.
	1.3	Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.
	1.4	Reduce and control invasive and exotic flora and fauna.
	1.5	Reduce and control nuisance wildlife.
	1.6	Implement a forest management plan that integrates ecosystem management and silviculture.
	1.7	Use a broad range of tools including pesticides and fire to manage natural communities.
	1.8	Use a Geographic Information System (GIS) to improve management of natural resources.
	1.9	Conduct bird surveys and monitor migratory bird species.
	1.10	Reduce aircraft collisions with wildlife through implementation of the Bird Aircraft Strike Hazard (BASH) program.
	1.11	Preserve and protect threatened and endangered species and species of special concern to ensure no reduction in species numbers or population sizes.
	1.12	Monitor for the presence of rare, threatened and endangered species.
	1.13	Maintain, and rehabilitate where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.
2. Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.	2.1	Continue to address the long-term recreational needs of NAS JRB NOLA, and NAS JRB NOLA's capability to provide recreational and educational opportunities to approved personnel.
	2.2	Integrate outdoor recreation and ecosystem management with the military mission.
	2.3	Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.
3. Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.	3.1	Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.
	3.2	Incorporate the concept of ecosystem management into all planning and management processes.
	3.3	Maintain interagency cooperation with USFWS and Louisiana Department of Wildlife and Fisheries (LDWF).
	3.4	Develop relationships with other agencies and private groups as appropriate.
	3.5	Coordinate natural resources activities with local community and conservation organizations.

1.4 RESPONSIBILITIES

The Commander, Navy Region Southeast (CNRSE) is responsible for ensuring that the NAS JRB NOLA INRMP complies with Department of Defense (DoD), Navy, and Chief of Naval Operations (CNO) policy and associated National Environmental Policy Act

(NEPA) document preparation, revision, and implementation. The CNRSE also ensures that the NAS JRB NOLA INRMP undergoes annual review and that project and objectives are updated to meet goals to provide integrated adaptive conservation management. The programming of resources will be necessary to maintain and implement the NAS JRB NOLA INRMP and to develop and revise the NAS JRB NOLA INRMP.

The NAS JRB NOLA Commanding Officer (CO) is responsible for the preparation, completion, and implementation of this INRMP and associated NEPA documents for NAS JRB NOLA, as well as systematically applying the conservation practices set forth in this INRMP. The CO's role is to act as the steward of natural resources under their jurisdiction and integrate natural resources management requirements into the daily decision-making process to ensure that natural resources management and this INRMP comply with all natural resource-related legislation, Executive Orders (EO) and Executive Memorandums, and DoD, Secretary of the Navy (SECNAV), Navy, and CNO directives, instructions and policies. The CO will also involve appropriate tenant, operational, training, or research and development commands in the INRMP review process to ensure no net loss of military mission; designate a Natural Resources Manager that is responsible for the management efforts related to the preparation, revision, implementation, and funding for INRMPs, as well as coordination with Installation trainers, subordinate commands, and Installations. Furthermore, the CO must involve appropriate Navy Judge Advocate General (JAG) or Office of the General Counsel (OGC) legal counsel to provide advice and counsel with respect to legal matters related to natural resources management and this INRMP; and, endorse this INRMP via signature.

1.5 AUTHORITY

This INRMP is written to meet the requirements of the SAIA of 1997 (16 United States Code [U.S.C.] Sec. 670a *et seq.*) and the requirements of the DoD Environmental Conservation Program (Department of Defense Instruction [DoDINST] 4715.3). It also incorporates the Navy's updated INRMP guidance (U.S. Navy 2006) and guidance given in Chief of Naval Operations Instruction (OPNAVINST) 5090.1C, the Navy

Environmental Protection and Natural Resources Manual, and the Naval Facilities Engineering Command (NAVFAC) Real Estate Procedural Manual (NAVFAC P-73).

1.6 MILITARY MISSION

The primary mission of NAS JRB NOLA is to train Naval reservists for mobilization and to provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft crews. NAS JRB NOLA conducts air operations in support of fixed-wing and rotary-wing aircraft for Navy Reserve, Marine Reserve, the Coast Guard, the Louisiana National Guard, and transient aircraft crews for several joint services tenants. These tenants include:

- Fleet Logistic Support Squadron 54 (VR-54), which provides tactical/heavy lift transport capability in support of fleet requirements
- Naval Operational Support Center (NOSC), whose mission is to prepare Naval Reservists to support Fleet Commanders around the globe
- Louisiana Air National Guard (LA ANG) (159th Fighter Wing, whose mission is to provide mission-ready deployable forces, provide immediate emergency support to civil authorities, and to deter, prevent, and defeat threats to the homeland
- U.S. Coast Guard Air Station, whose mission includes homeland security, search and rescue, law enforcement, and marine environmental protection
- Airborne Early Warning Squadron 77
- 3rd Battalion 23rd Marine Expeditionary Force, whose mission is to provide trained combat and combat support personnel to augment and reinforce the active component in times of war or National emergency
- strike fighter squadron 204
- Fleet Readiness Center Mid-Atlantic Site New Orleans
- 214th Civil Engineers

Training and services provided at NAS JRN NOLA are best supported by functional and resilient ecosystems, which are better able to support day-to-day military readiness and the military mission. Preserving and enhancing that functionality and resiliency is the primary purpose of this INRMP and all natural resources management actions on NAS JRB NOLA. Particular emphasis is placed on using existing ecosystems to reduce the potential for wildlife-aircraft collisions and on practicing responsible stewardship of natural resources.

Because the mission and land use of NAS JRB NOLA are subject to change over time as the military needs of the U.S. change, this INRMP must be flexible to accommodate these mission changes while providing for the requirements of the SAIA and Navy environmental regulations. Annual reviews of activities described in this INRMP provide the mechanisms needed to positively respond to changes in the military mission while complying with environmental laws and regulations.

To carry out its mission, NAS JRB NOLA must build and maintain facilities that:

- Provide support, including housing, messing, training, medical, and dental services to permanently and temporarily assigned Navy personnel.
- Provide air operations support to Navy and tenant commands.
- Provide administrative and logistic support for training and housing and provide supervisory authority over military justice matters, management programs, and religious programs.
- Provide for the morale, welfare, and recreation (MWR) of Navy personnel and their dependents assigned to the commands of NAS JRB NOLA.
- Provide support for, and conduct activities related to, building and grounds maintenance and provide the natural resource management necessary to support the military mission of the Installation.

1.7 STEWARDSHIP AND COMPLIANCE

The projects and responsibilities of the natural resources management program at NAS JRB NOLA, as provided by the Navy, can be classified as either stewardship or compliance. Stewardship projects are based on the land management responsibility of the Navy and are not required to be implemented to meet regulatory needs. Compliance projects are mandatory and are required to be implemented to meet laws and regulations that apply to the operations of NAS JRB NOLA.

1.8 IMPLEMENTATION OF THE INRMP

Implementation of this INRMP is intended to be a dynamic, multidisciplinary process. Implementation of the INRMP will follow an annual strategy that includes annual review meetings.

1.8.1 Legal Requirements

Legal requirements are laws, EOs, regulations, directives, and memoranda regarding the protection and management of natural resources. The INRMP will be updated as legal requirements change. Relevant legal requirements for natural resources management are presented throughout Section 4.

1.8.2 Funding

Funding for implementation of the INRMP will come from the Installation, CNIC, or NAVFAC natural resources fund sources. The natural resources programs and projects described in this INRMP are divided into compliance and stewardship categories to reflect implementation priorities. Every effort will be made to acquire operation and maintenance, Navy Reserve, Navy Environmental, or other funding to implement DoD compliance projects, in the timeliest manner possible. Stewardship-type projects will be funded through forestry, agricultural outlease, fish and wildlife, Legacy, and other funding sources as funding and personnel resources become available.

1.8.3 Implementation Responsibilities

The NAS JRB NOLA CO is responsible for managing all aspects of the Installation's natural resources. The CO has delegated to an Environmental Director within the Public Works Department the authority to implement natural resources management activities through the Installation's Natural Resources Manager. Other Installation personnel, such as Security, Grounds Maintenance, MWR, Housing, and Safety have functions overlapping the natural resources program, but report to the Environmental Director on natural resources-related issues. The SAIA requires a qualified professional to implement environmental management programs.

1.8.4 Technical Assistance

Technical assistance to NAS JRB NOLA may be provided from within the Navy or by outside agencies or contractors. Assistance from outside agencies is normally provided through individual agency requests and formal cooperative agreements, while assistance from within Navy is normally less formal. During the 10-year management period of this INRMP, additional cooperative agreements may be implemented.

Technical assistance from organizations outside the Navy may include:

- The USFWS, LDWF, Louisiana Department of Environmental Quality (LDEQ), and U.S. Geological Survey (USGS), under a Cooperative Agreement among the Navy, U.S. Department of the Interior (USDOI), and the State of Louisiana.
- Other government agencies, such as the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), Animal and Plant Health Inspection Service (APHIS), U.S. Forest Service (USFS), USDOI National Parks Service (NPS), and the Louisiana Forestry Commission.
- Private contractors.

Technical assistance from within Navy will be provided by:

- The NAS JRB NOLA's Natural Resources and Environmental Department managers;
- Foresters, fish and wildlife biologists, and ecologists from the Land Management Department of NAVFAC; and
- Additional staff, as needed and subject to funding, to be hired by NAS JRB NOLA Command in order to complete the continuous work for successful implementation of the INRMP.

1.8.5 Labor Resources

Options for supplemental labor resources from outside the Navy for implementation of the INRMP include volunteers from local organizations and groups such as:

- Scout troops;
- Elementary, middle, or high school students;
- College students;
- Ecology clubs and conservation programs/groups (e.g., the Student Conservation Association);
- Businesses/Homeowners' associations; and
- Retired/senior citizens.

Options for supplemental labor resources from within the Installation include the Natural Resources Manager, Environmental Department, volunteer civilians, and military personnel and their dependents.

1.9 REVIEW AND REVISION PROCESS

NAS JRB NOLA must complete an annual evaluation of the effectiveness of this INRMP. The evaluation can be readily completed by using the web-based Metrics Builder on the Natural Resources Data Call Station website (https://clients.emainc.com/dcs/navfac). The Metrics Builder evaluates performance in the following areas:

- INRMP Implementation
- Partnership/Cooperation and Effectiveness
- Team Adequacy
- INRMP Impact on the Installation Mission
- Status of Federally Listed Species and Critical Habitat
- Ecosystem Integrity
- Fish and Wildlife Management and Public Use

Annual review of the NAS JRB NOLA INRMP will include revisions as appropriate.

1.10 COMMITMENT OF REGULATORY AGENCIES

Agency Coordination

Section 2904 of the SAIA states that the INRMP shall reflect the mutual agreement of the USFWS and the state wildlife agency (LDWF) concerning conservation, protection, and management of fish and wildlife resources. Mutual agreement between the agencies is ideal; however, the SAIA is not intended to expand the management authority of the USFWS or LDWF in relation to military lands. Section 2904 of the SAIA states that the law does not enlarge or diminish the responsibility and authority of any state for the protection and management of fish and resident wildlife. Mutual agreement is required only with respect to those elements of the plan subject to the otherwise applicable legal authority (i.e., authority derived from a source other than SAIA, such as the Endangered Species Act) of the USFWS and LDWF to conserve, protect, and manage fish and wildlife resources.

The USFWS and LDWF are integral partners in the development, review, and revision process for this INRMP. The USFWS and LDWF cooperate in the development of the

INRMP and participate in the annual reviews and revisions. NAS JRB NOLA will coordinate with the USFWS and LDWF as partners in regards to INRMP content.

Public Coordination

The original draft INRMP for NAS JRB NOLA was placed on file and made available for public review at the Belle Chasse Public Library during June 2001, as required by Section 2905(d)(1) of SAIA. Notice of the previous draft INRMP's availability was advertised in the *New Orleans Times-Picayune* on July 1, 2, and 3, 2001, indicating that written comments would be accepted on the draft through August 1, 2001. No comments were received from the public on the previous draft INRMP. No public coordination is anticipated for this updated INRMP for NAS JRB NOLA because no substantial changes have been made to the document since the public review of the previous draft in 2001.

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2.0 HISTORY AND ORGANIZATION

2.1 INSTALLATION INFORMATION

NAS JRB NOLA includes 3,345 acres (1,354 hectares [ha]) in southeastern Louisiana. The Installation is located near the city of Belle Chasse in Plaquemines Parish (Figure 2-1). The Gulf Intracoastal Waterway (GIWW) is immediately west of the Installation, and the Mississippi River is immediately east. Elevations of the Installation range from approximately 3.0 feet (ft) (0.9 meter [m]) below msl to approximately 2.0 ft (0.6 m) above msl.

Approximately 51 percent (1,695 acres [686 ha]) of NAS JRB NOLA is developed or improved. Tenants and other organizations utilize approximately 101 acres (41 ha) of NAS JRB NOLA. Most of this development is in support of the current military mission; however, the original runways, which are now abandoned, cover a large area within otherwise undeveloped land. Within the developed areas, natural resources management activities primarily are the reduction of BASH, the reduction of nonpoint source pollution, and the reduction of conflicts between humans and nuisance wildlife, as well as landscaping.

Undeveloped areas of NAS JRB NOLA cover approximately 1,650 acres (668 ha). These areas are heavily forested and include numerous wetlands ranging in size from under 1.0 acre (0.4 ha) to approximately 90 acres (36 ha). The forests and wetlands provide diverse habitats for a variety of birds, terrestrial animals, and aquatic species. Drainage canals provide habitat for fish, amphibians, and semi-aquatic reptiles in addition to their primary function of draining surface and groundwater from NAS JRB NOLA. Management activities within these areas include reducing BASH, wildlife management, erosion control, wetlands protection, custodial forestry management, and outdoor recreation.

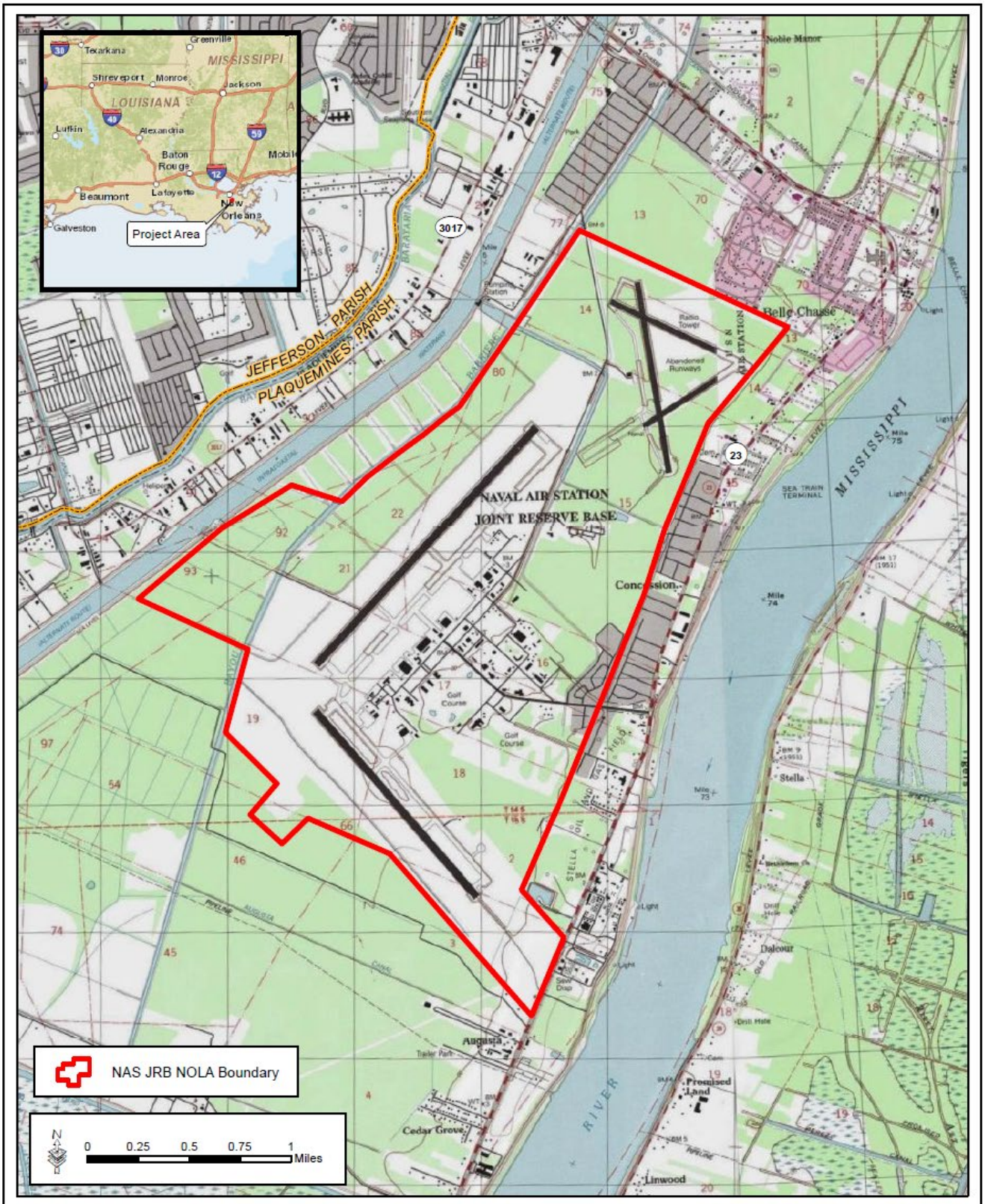

Figure 2-1: Project Area

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2.2 ABBREVIATED HISTORY AND PRE-MILITARY LAND USE

2.2.1 History of NAS JRB NOLA

Naval aviation came to New Orleans in July 1941, when the Naval Reserve Air Base, located on the shores of Lake Pontchartrain, was commissioned. Due to the Navy's need for naval aviators in the early part of World War II, the Installation was re-designated a naval air base in November 1942 and assumed the role of a primary training base for student aviators. During the summer of 1948, the plans were developed for the present Joint Reserve Air Training Center facility located near Belle Chasse, Louisiana. Construction of this joint air reserve training center, the first facility of its type in the U.S., began in 1954. NAS JRB NOLA was commissioned on December 13, 1957. The first aircraft was flown by Naval Air Reserve squadrons from NAS JRB NOLA runways on January 6, 1958. The Installation was dedicated in April 1958 to Alvin Andrew Callender, a native of New Orleans who lost his life in World War I while flying with the Royal Flying Corps. There have been many changes in squadrons, types of aircraft, and tactical missions since its initiation, but the basic mission of NAS JRB NOLA, supporting reserve aviation units, has remained unchanged.

2.2.2 Pre-Military Land Use

The site of NAS JRB NOLA consisted of a small airstrip in the 1920s and was maintained as such until the base was moved to the present location in 1957. Prior to that, it is assumed to have been agriculture fields due to the archaeological records of a historic pumping station that used steam power to drain the area. The site was probably farmed from approximately the middle of the 19th century up to the beginning of the 20th century (Sewell 2007).

2.3 REGIONAL LAND USES

Plaquemines Parish is a peninsula, and nearly two-thirds of the lands in the parish are wetlands. The settlement of Plaquemines Parish began early in the 18th century. Geologists believe the land in Plaquemines Parish is only about 700 years old. It was created when the natural levee at what is now known as English Turn eroded, and the Mississippi River changed to its current course (Lincoln 2009). The culture in Plaquemines Parish is primarily an eco-related or maritime culture, with much of its

population in the lower part of the parish involved in either the maritime activities or eco-related businesses (Lincoln 2009).

Nearby Orleans Parish includes New Orleans, Louisiana's largest city. Orleans Parish is comprised mostly of urban infrastructure, and its suburbs extend into Belle Chasse and adjacent Jefferson Parish. It is located along the historic high ground of the Mississippi River, as well as the in-filled historic backswamp between the river and Lake Pontchartrain. The culture of Orleans Parish is that of large-scale commerce and support infrastructure, as well as port commerce and tourism.

2.4 MANAGEMENT CONSTRAINTS

Planned and proposed development on adjacent parcels to the north and south of the Installation are constraints to management activities such as prescribed burns, which may affect areas of the Installation.

2.4.1 Management Opportunities

Recreational opportunities are the primary focus of wildlife management at NAS JRB NOLA. Managing wildlife provides MWR opportunities, maintains ecosystem integrity, and helps control BASH risks.

2.4.2 Cooperative Management

Cooperative management refers to management strategies between government agencies for responsible resource stewardship. In cooperative management, representatives of government agencies share information, resources, and responsibility. At NAS JRB NOLA, the USFWS, LDWF, and Navy will cooperatively manage the natural resources and strive to meet the military mission by conserving and enhancing the natural resources of the base.

2.4.3 Adaptive Management

Adaptive management is a systematic approach for continually improving management practices by implementing new knowledge obtained from the outcome of projects, programs, and other experiences. Adaptive management involves evaluating applied strategies and incorporating new knowledge into management approaches that are based on scientific findings and the needs of society. Results are used to modify and

improve management goals, objectives, and projects. The Metrics Builder provides the means to evaluate natural resource management during INRMP reviews. The Metrics Builder can be applied to completed and ongoing projects, natural resource management practices, and new project proposals.

2.4.4 Ecosystem Management

This INRMP and the implementation of its management objectives and projects provide for ecosystem management at NAS JRB NOLA. An ecosystem is a dynamic and natural complex of living organisms interacting with each other and with their associated non-living environment. Ecosystem management is a goal-driven approach to managing natural resources. It supports present and future mission requirements and preserves ecosystem integrity at a scale compatible with natural processes. Ecosystem management is cognizant of nature's time frames, recognizes social and economic viability within functioning ecosystems, is adaptable to complex and changing requirements, and is realized through effective partnerships among private, local, state, tribal, and federal interests. Ecosystem management is a process that considers the environment as a complex system functioning as a whole, not as a collection of parts, and recognizes that the whole includes people and their social and economic needs.

2.5 INTEGRATION WITH OTHER PLANS

The NAS JRB NOLA BASH Plan, the Encroachment Action Plan, and the Tree Preservation Instruction are included as appendices to this INRMP. The INRMP derives information from other plans proposed for NAS JRB NOLA. Changes in these plans, and additional future development of these plans and other plans, such as a Forest Management Plan, will also be integrated into the INRMP.

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3.0 EXISTING ENVIRONMENT

3.1 CLIMATE

New Orleans is located in a temperate region characterized by mild winters and hot, humid summers. The temperature typically varies from 47°F (8.3°C) to 92°F (33.3°C) and is rarely below 35°F (1.7°C) or above 97°F (36.1°C; www.usclimatedata.com). The average annual rainfall in New Orleans since 1991 is 63.4 inches (161.0 centimeters [cm]), with the winter months generally producing more rain (www.currentresults.com). NAS JRB NOLA has a subtropical climate, with tropical air masses dominating the weather during the spring and summer, and cold continental frontal passages causing substantial temperature drops during the fall and winter.

NAS JRB NOLA is subject to tropical storm events between June and November. Tropical storm events typically produce the highest wind speeds and greatest rainfall events along the Gulf Coast. Category 5 hurricanes, such as Hurricanes Camille and Katrina in 1969 and 2005, respectively, generate the highest sustained wind speeds in the region (greater than 155 miles per hour). High winds are typically accompanied by massive storm surge, and in the case of Category 5 storms, storm surge can exceed 18 ft (5.5 m) in height (National Hurricane Center 2007). Twelve hurricanes and 19 tropical storms have struck the New Orleans area between 1980 and 2021 (www.coast.noaa.gov/hurricanes). Hurricane Katrina, the most destructive of these storms, made landfall east of New Orleans on August 29, 2005 and caused extensive flooding in the city. The loss of life and property damage was worsened by breaks in the levees that separate New Orleans from surrounding lakes. At least 80 percent of New Orleans was under flood water after Katrina, largely as a result of levee failures at Lake Pontchartrain. The high winds and flooding associated with Hurricane Katrina damaged infrastructure at NAS JRB NOLA.

3.2 GEOLOGY

NAS JRB NOLA lies within the Mississippi Alluvial Plain within the Gulf Coast Plains. The Mississippi Alluvial Plain is a valley that formed during the Pleistocene glaciation about 100,000 years ago. As the glacial period ended, sea levels rose and influenced the river to meander throughout the valley, filling it with sand, silt, and clay deposits. The weight of these deposits probably caused subsidence of coastal areas and resulted in an uplift of land to the north. Subsidence is evident by drowning of depressions in the area such as Lakes Borgne, Maurepas, and Pontchartrain. Soils in the area consist of alluvial deposits, with surface deposits of predominantly black to brown clay having a high water content (U.S. Navy 1989a).

The near-surface geology of the area surrounding NAS JRB NOLA is the result of a subsiding Mississippi River delta lobe that has been drained, diked, and filled with various dredge from nearby water bodies (e.g., Mississippi River and adjacent drainage canals). The deepest formations investigated in the area are Pleistocene deposits, consisting of hardened fluvial sands, silts and mud at a depth of 40 to 60 ft (12 to 18 m) below ground surface (bgs) to depths around 180 ft (55 m) bgs. These sediments were exposed and weathered during low sea level periods as a result of Pleistocene glaciations, resulting in relatively higher cohesive strengths than would normally be expected. Above the Pleistocene strata are Holocene deposits, which resulted from the gradual deposition of organic peat, fluvial silt, and mud from the Mississippi River (Kolb et al. 1975).

3.2.1 Physiographic Setting

Seismicity is generally not a factor in the New Orleans area. There are numerous small normal growth faults located beneath the City of New Orleans, but sudden failure of these faults is not likely (Independent Levee Investigative Team 2006). Instead, a gradual slippage has been documented, resulting in general land subsidence on the down side (seaward side) of the faults.

3.2.2 Mineral and Natural Gas Resources

Oil and gas extraction is an important component of the regional economy in south Louisiana. On-shore and off-shore oil wells are ubiquitous in the area, and oil and gas

are the only substantial mineral resources in the area. However, no mineral resources are found within the NAS JRB NOLA boundaries.

3.2.3 Soil Series and Associations

Much of the area surrounding NAS JRB NOLA was formerly wetlands (e.g., cypress swamps and marshes). As the New Orleans metropolitan area grew and the constructed levees were built higher, water was drained from swamps and marshes by canals and pumps. Dredged peat and mud was used to elevate the area for habitation. Resulting surface soils are classified as dredged material or muck (NRCS 1999). Land inside the levees is continually subsiding due to dewatering of peat deposits, resulting in surface elevations below sea level. Water content in the soils is generally high, and increases with depth. The near-surface groundwater table is connected to the water level in Barataria Bay, and numerous drainage canals and pumps are needed to remove constant inflow.

Due to high water content and plasticity in the clays and silts of surface soils and deeper Holocene sediments, soil cohesive strengths are much lower in near-surface Holocene and dredge deposits than in deeper, more consolidated and weathered Pleistocene formations (Kolb et al. 1975). Thus, compressive activities, such as pile driving in these materials, would translate into lateral compression and displacement of adjacent material.

Soils in the area consist of alluvial deposits, with surface deposits of predominantly black to brown clay with high water content (U.S. Navy 1989a). The NRCS maps four soil series at NAS JRB NOLA (Figure 3-1): Cancienne silt loam (Cm), Rita mucky clay (Ra), Schriever clay (Sk), and Westwego clay (Ww) (NRCS 1999). These soils are characteristic of poorly drained areas, having high shrink-swell potentials and wetness. A drainage system removes excess surface water from these soils (U.S. Navy 1989a). Under normal conditions, the water table is maintained at a depth of 2 to 3 ft (0.6 to 0.9 m) below the surface. After high intensity rains of long duration; however, the water table is within 1 ft (0.3 m) of the ground surface for short periods.

Figure 3-1: Soil Map - NAS JRB NOLA

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3.2.4 Topography

The New Orleans area is flat, varying in elevation by only 25 ft (8 m), ranging from approximately 20 ft (6 m) above msl to 5 ft (1.5 m) below msl. The terrain at NAS JRB NOLA is even flatter, with elevation ranging from approximately 3.0 ft (0.9 m) above msl to 2.0 ft (0.6 m) below msl (U.S. Navy 1989a) and is drained by canals, levees, and pumping stations.

3.3 HYDROLOGY

The hydrologic system of the region is complex and includes the Mississippi River, Barataria Bay, Lakes Pontchartrain, Borgne, Maurepas, Salvador, and Cataouatche, and thousands of acres of coastal marshes and wetlands. NAS JRB NOLA is located between the Mississippi River and the GIWW. Most of the land on and surrounding NAS JRB NOLA is below sea level and is protected from flooding by an extensive system of levees and pumps maintained by Plaquemines Parish. Due to the elevation of the area surrounding the Installation, pumps are required to discharge surface water runoff into canals.

The risk of flooding at NAS JRB NOLA is reduced by levees along the GIWW and Mississippi River. Drainage on the Installation is accomplished by a series of open ditches and canals. Concord Canal drains the eastern portion of the Installation, including the existing housing areas. The canals on the Installation drain into Bayou Barriere, a receiving canal running parallel with the GIWW, which forms much of the northwestern boundary of the Installation. The canal is owned and maintained by the Plaquemines Parish Drainage District (PPDD). Pumping stations maintain a water level in the canal of 7 to 10 ft (2 to 3 m) below msl. From there, the river carries the discharge to Barataria Bay. The PPDD maintains the major drainage canals located on the Installation (Figure 3-2) under a utilities maintenance contract. The cost of the contracted service is approximately $100,000 per year, with funding from the maintenance, repair, and utility budget. Parish engineers indicate that the Installation is adequately protected from flooding (U.S. Navy 1989a).

Figure 3-2: Plaquemines Parish Drainage District Easements - NAS JRB NOLA

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3.3.1 Floodplains

The Federal Emergency Management Agency (FEMA) 100-year floodplain for the Mississippi River Delta affects a large portion of the NAS JRB NOLA and surrounding areas (Figure 3-3). According to the U.S. Army Corps of Engineers (USACE), the 25-year floodplain elevation at NAS JRB NOLA is 1.75 ft (0.53 m) below msl, while the 50-year floodplain elevation is 1.6 ft (0.48 m) below msl (U.S. Navy 2006). Floodplains within a levee system are evaluated for flood potential based on the integrity of the levee system.

Two pump stations, maintained off the Installation by Plaquemines Parish, and a drainage canal system provide stormwater flood protection for up to 6 inches (15 cm) of rainfall over a 24-hour period (U.S. Navy 2006). Flooding along roadways, airfield surfaces, and other paved or hardpan areas often occurs on the Installation due to precipitation in excess of the drainage system capacity and a lack of surface absorption.

While the levee system surrounding NAS JRB NOLA provides flood risk reduction, recent tropical weather events compromised other levee systems in several areas in the region. Storm surge from Hurricane Katrina in 2005 breached some levees and resulted in levee failure in several locations of New Orleans, resulting in extensive flooding. However, the breaching and failures of these levees did not directly impact NAS JRB NOLA (U.S. Navy 2006). The USACE is currently improving levees, floodwalls, and floodgates in the New Orleans area to provide 100-year level of risk reduction.

3.3.2 Surface Waters/Surface Water Quality

The Mississippi River and the GIWW are the major waterways in the vicinity of the Installation. A system of levees up to 18.0 ft (5.5 m) high maintained by Plaquemines Parish contain these waterways in the vicinity of the Installation. Surface water on the Installation consists of a small pond known as Lake Baney, freshwater wetlands, and numerous open ditches that are maintained at 8.2 to 9.4 ft (2.5 to 2.9 m) below msl by the NAS JRB NOLA (U.S. Navy 1989a). The Mississippi River (Segment 070101) fully supports primary and secondary contact recreation, fish and wildlife propagation, drinking water supply, and natural resources (LDEQ 1998). The Installation is permitted to discharge into the GIWW via Bayou Barriere in accordance with effluent limitations,

Figure 3-3: 100-Year Floodplains at NAS JRB NOLA

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monitoring requirements, and other conditions set forth in LDEQ Office of Environmental Services Water Discharge Permit No. LA 0051187 (LDEQ 1999).

3.3.3 Groundwater/Groundwater Quality

A shallow aquifer exists in this area, but it is not a source of potable water (U.S. Navy 2000a). It is called the coastal lowlands aquifer system, and it consists of a heterogeneous, unconsolidated-to-poorly-consolidated wedge of discontinuous beds of sand, silt, and clay that thicken as they approach the Gulf and range in age from Oligocene to Holocene. The thickness of the coastal lowlands aquifer system is greatest in southern Louisiana and adjoining offshore areas where the aquifer system is more than 14,000 ft (4,267 m) thick. General groundwater flow is toward the south; however, more than 90 years of increasing water withdrawals from the coastal lowlands aquifer system in southern Louisiana have greatly affected the horizontal and vertical components of groundwater flow. Near some pumping centers, the direction of groundwater flow is opposite to the natural direction. Large withdrawals also have induced greater infiltration of precipitation at aquifer outcrop areas and greater streambed leakage (USGS 2000).

3.4 LAND USE

NAS JRB NOLA occupies 3,345 acres with 30 percent of land use directly related to aircraft operations. Additional land use on NAS JRB NOLA includes residential and recreational uses. Land use classifications may change as the military mission and needs change. Within NAS JRB NOLA, grounds are classified as follows and are described below: 1) developed, 2) semi-developed, 3) undeveloped, and 4) other grounds (Figure 3-4).

Approximately 311 acres of the base are classified as developed (Figure 3-4). This includes the area kept mowed along the perimeter fence, as well as yards around housing and administrative buildings. Developed grounds are those areas in which development and maintenance mainly are conducted for aesthetics and include all manicured lawns, recreational fields, picnic areas, and areas kept mowed for reasons of security (Photograph 3-1).

Figure 3-4: Land Use - NAS JRB NOLA

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Approximately 753 acres of land are classified as semi-developed (Figure 3-4), which include the areas surrounding the active runways and open areas adjacent to the drainage canals and smaller parcels within NAS JRB NOLA (Photograph 3-2. Semi-developed grounds are those areas on which development and maintenance are intended to provide erosion resistant vegetative cover, control weeds, and reduce fire hazards by removing excess dead vegetation.

Photograph 3-1. Developed area maintained around buildings at NAS JRB NOLA

Approximately 1,279 acres of land on the base are classified as undeveloped (Figure 3-4) and include all forested areas, brushlands, and wetlands (Photograph 3-3). Undeveloped grounds are areas that do not receive intensive maintenance or development activities. These areas usually retain native vegetation and may be used for wildlife management or forestry activities that are not considered to be grounds maintenance. Forest management activities are not routinely conducted on the Installation at this time. Undeveloped lands, however, could be used for hunting and management of game animals.

Photograph 3-2. Semi-developed area maintained near a runway at NAS JRB NOLA

Approximately 929 acres of the Installation are classified as other grounds (Figure 3-4) and include buildings, parking areas, roads, runways, and other hard surfaces that prevent the growth of vegetation.

Photograph 3-3. Undeveloped forested area at NAS JRB NOLA

Grounds maintenance contractors or Navy personnel conduct the grounds maintenance activities on the developed, semi-developed, and other grounds. Landscape plans for new buildings and renovations around existing buildings are designed and reviewed periodically to provide optimum aesthetic appeal and minimum maintenance costs. Mature trees in new construction areas are retained as part of the landscaping when possible. Native trees and shrubs are used in landscaping as much as possible, but grasses can best withstand the climate with minimal maintenance, and provide the best security for on-base residents and employees. Forest management activities on the undeveloped lands are not currently conducted, but would be conducted by private contractor or the Navy. Management activities that do occur on undeveloped lands include the regulation of wildlife populations, reduction of BASH and nuisance wildlife-aircraft collision risks, and removal of dead trees at risk of falling in areas used for outdoor recreation.

3.5 VEGETATION AND WILDLIFE

3.5.1 Vegetation

Vegetative communities found at NAS JRB NOLA include Bottomland Hardwoods, Cypress Vegetation, Upland Forests and Native Brush Habitats. Local drainage has a large effect on what vegetation is found in any specific location on NAS JRB NOLA. Woody and herbaceous plants typical of southeastern Louisiana are prominent (Table 3-1). A complete biological inventory of the Installation is required to verify the presence of specific woody and herbaceous plants that occur at NAS JRB NOLA. The list of species in Table 3-1 has not been verified by surveys at NAS JRB NOLA and should be considered only as general guidance. Forest stands have been categorized for the purpose of timber management and are shown in Figure 3-5.

Table 3-1. Woody and Herbaceous Plants That Occur or Have the Potential to Occur on NAS JRB NOLA

Trees and Shrubs	
Common Name	**Scientific Name**
American elm	*Ulmus americana*
Bag-pod rattle bush	*Sesbania vesicaria*
Bald cypress	*Taxodium dictichum*
Black cherry	*Prunus serotina*
Black gum	*Nyssa sylvatica*
Black willow	*Salix nigra*
Boxelder	*Acer negundo*
Buttonbush	*Cephalanthus occidentalis*
Cedar elm	*Ulmus crassifolia*
Cherrybark oak	*Quercus pagoda*
Chinese privet*	*Ligustrum sinense*
Chinese tallow*	*Triadica sebifera*
Deciduous holly	*Ilex decidua*
Drummond red maple	*Acer rubrum* var. *drummondii*
Eastern hop-hornbeam	*Ostrya virginiana*
Eastern cottonwood	*Populus deltoides*
Elderberry	*Sambucus canadensis*
French mulberry	*Callicarpa americana*
Green ash	*Fraxinus pennsylvanica*
Green hawthorn	*Crataegus viridis*
Honey locust	*Gleditsia triacanthos*
Laurel oak	*Quercus laurifolia*
Live oak	*Quercus virginiana*
Nuttall oak	*Quercus nuttallii*
Overcup oak	*Quercus lyrata*
Pale-flower red maple	*Acer rubrum* var. *pallidiflorum*
Sweet pecan	*Carya illinoensis*
Red mulberry	*Morus rubra*
Rough-leaf dogwood	*Cornus drummondii*
Southern catalpa	*Catalpa bignonoides*
Southern red oak	*Quercus falcata* var. *triloba*
Sugarberry or sugar hackberry	*Celtis laevigata*
Swamp privet	*Foresteria acuminata*
Sweetgum	*Liquidambar styraciflua*
Trident red maple	*Acer rubrum* var. *tridens*
Water oak	*Quercus nigra*
Wax myrtle	*Morella cerifera*
Willow oak	*Quercus phellos*
Yaupon	*Ilex vomitoria*
Vines and Herbaceous Plants	
Common Name	**Scientific Name**
Alligator weed*	*Alteranthera philoxeroides*
Balloonvine	*Cardiospermum halicacabum*
Basket grass	*Oplismenus hirtellus*
Beakrushes	*Rhynchospora* spp.
Bermuda grass*	*Cynodon dactylon*
Bitterweed	*Helenium amarum*
Brazilian verbane*	*Verbena brasiliensis*
Brown-seed paspalum	*Paspalum plicatulum*
Bushy bluestem	*Andropogon glomeratus*
Canada goldenrod	*Solidago canadensis*
Carolina geranium	*Geranium carolinianum*

Table 3-1, continued

Vines and Herbaceous Plants	
Common Name	**Scientific Name**
Climbing hempweed	*Mikania scandens*
Creeping spotflower	*Spilanthes americana*
Crossvine	*Bignonia capreolata*
Curly dock	*Rumex crispus*
Cypress witchgrass	*Dichanthelium dichotomum*
Dayflower	*Commelina* spp.
Dog fennel	*Anthemis cotula*
Frogfruit	*Phyla nodiflora*
Greenbriars	*Smilax* spp.
Green flatsedge	*Cyperus virens*
Groundcherry	*Solanum* spp.
Irises	*Iris* spp.
Ironweed	*Vernonia altissima*
Japanese honeysuckle*	*Lonicera japonica*
Ladies' teardrops	*Brunnichia cirrhosa*
Ladies' tresses	*Spiranthes* spp.
Lizard's tail	*Saururus cernuus*
Longtom	*Paspalum lividum*
Louisiana dewberry	*Rubus louisianus*
Marsh elder	*Iva frutescens*
Marshpepper smartweed	*Polygonum hydropiperoides*
Marsh seedbox	*Ludwigia palustris*
Mexican seedbox	*Ludwigia octovalvis*
Mistflower	*Conoclinium coelestinum*
Muscadine grape	*Vitis rotundifolia*
Passionvine	*Passiflora edulis*
Pennsylvania smartweed	*Polygonum pennsylvanicum*
Pennywort	*Hydrocotyl* spp.
Pepper-vine	*Ampelopsis arborea*
Pickerel weed	*Pontederia cordata*
Poison ivy	*Toxicodendron radicans*
Poorland flatsedge	*Cyperus compressus*
Rattan vine	*Berchemia scandens*
Snoutbean	*Rhynchosia minima*
Softrush	*Juncus effusus*
Southern carpet grass	*Axonopus affinis*
Southern dewberry	*Rubus trivialis*
Swamp lily	*Crinum americanum*
Thin-fruit sedge	*Carex flaccosperma*
Trumpet creeper	*Campsis radicans*
Virginia creeper	*Parthenoscissus quinquefolia*
White water lily	*Nymphaea odorata*

* Non-native species. Source: U.S. Navy 2000a and Department of the Air Force 1992

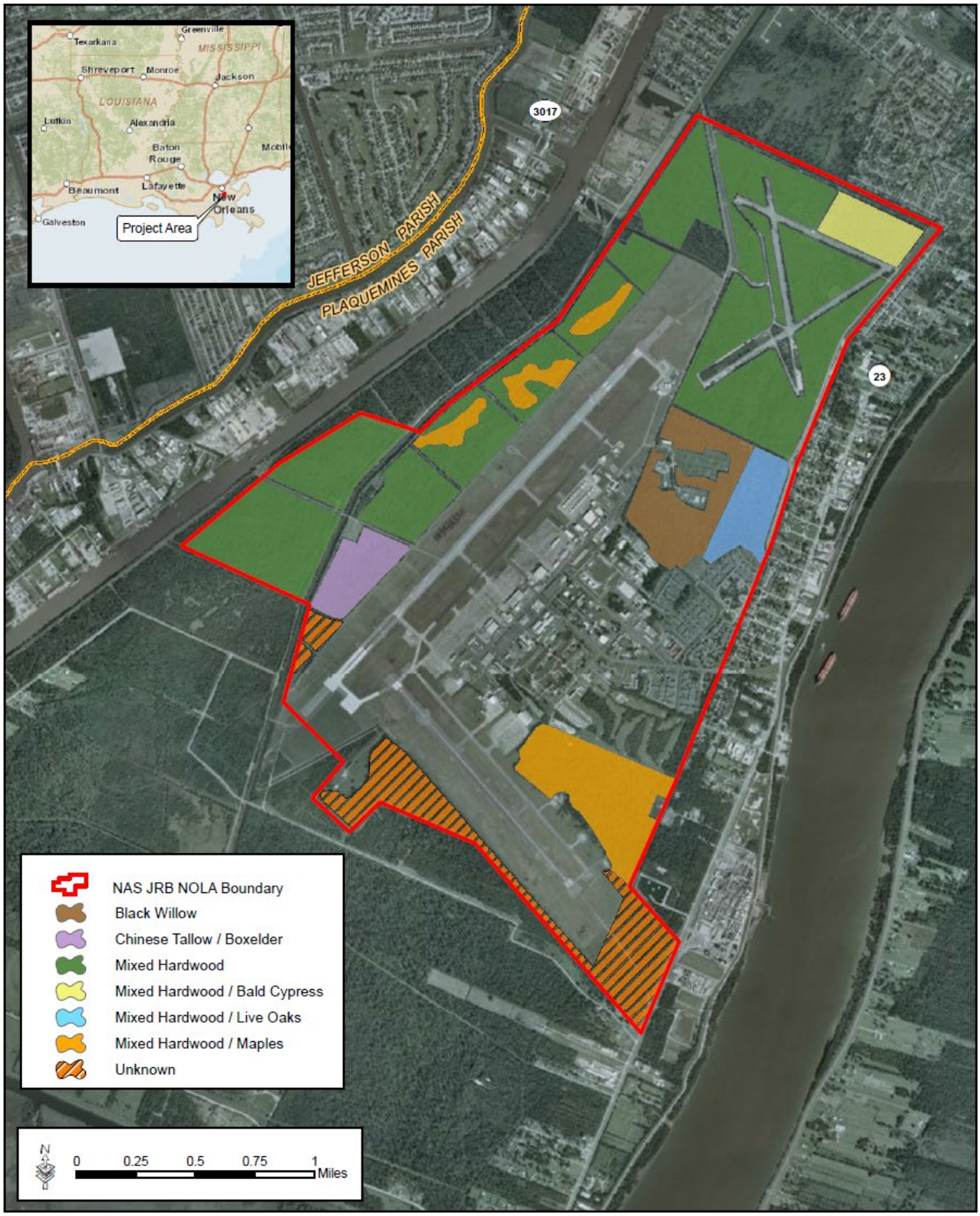

Figure 3-5: Forest Stands - NAS JRB NOLA

GSRC

February 2011

Bottomland Hardwoods forests on NAS JRB NOLA grow in fairly well-drained alluvial and floodplain soils, and are dominated by trees and shrubs tolerant of occasional or seasonal inundation. Hardwood trees commonly found in these forests include eastern cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), sweetgum (*Liquidambar styraciflua*), black willow, sugarberry (*Celtis laevigata*), honey locust (*Gleditsia triancanthos*), water locust (*Gleditsia aquatica*), green ash (*Fraxinus pennsylvanica*), and swamp privet (*Forestiera acuminata*). Herbaceous plants are common where sunlight reaches the forest floor. Goldenrods (*Solidago* spp.), butterweed (*Senecio glabellus*), ironweed (*Vernonia altissima*), bitterweed (*Helenium amarum*), and dog fennel (*Anthemis cotula*) are common herbaceous plants found in the understory of Bottomland Hardwoods forests.

Vegetation found in any specific location at NAS JRB NOLA is determined to a large degree by the local drainage. In poorly drained areas, wetlands, and along canals, forest stands are dominated by trees tolerant of saturated soils and inundation, such as bald cypress, black willow, and two varieties of red maple (*Acer rubrum* var. *trilobum*, and *A. rubrum* var. *drummondii*). In somewhat poorly drained areas, hardwood trees include boxelder (*Acer negundo*), green ash, sugarberry, persimmon (*Diospyros virginiana*), sweet pecan (*Carya illinoensis*), water oak (*Quercus nigra*), and cherrybark oak (*Quercus pagoda*). The non-native, invasive Chinese tallow can be found in conditions ranging from shallowly inundated to well-drained soils. Herbaceous vegetation growing is limited within saturated and inundated areas due to the dense canopy typical there. Where an understory is present, plants such as lizard's tail, seedbox, and smartweed are common (U.S. Navy 2006).

Trees such as live oak (*Quercus virginiana*), Chinese tallow, persimmon, water oak, and sweetgum are the dominant species in moderately drained to well-drained areas. Where the tree canopy allows sufficient sunlight to pass, shrubs such as yaupon (*Ilex vomitoria*), French mulberry (*Callicarpa americana*), woody vines, and herbaceous plants may grow in the understory. Saplings and small trees of Chinese tallow, persimmon, sweetgum, elms, and boxelder dominate the forested area surrounding the abandoned runways. Other plants include yaupon, southern dewberry (*Rubus trivialis*), and poison ivy (*Toxicodendron radicans*).

Within the developed portions of NAS JRB NOLA, the vegetation consists of mostly ornamental grasses, woody shrubs, and trees. Bermuda grass is found in the landscaped areas around buildings and along the runways. Ornamental shrubs of several varieties are found around the housing facilities and office facilities. Desirable landscape tree species such as live oak and various species of pine are also found throughout the developed portions of the Installation.

3.5.2 Non-native and Invasive species

There are approximately 1,520 acres of non-native and invasive species on NAS JRB NOLA. These species were documented primarily in the forested areas of the Installation during a wetland delineation (U.S. Navy 2001). Drainage canals and Lake Baney were not included in the delineation; therefore, no documentation of plants present in the open water bodies is available. A comprehensive inventory of all native, non-native, and invasive species was completed in 2004. Seventy-one, or approximately 26%, of the 272 vascular plant species encountered were not native to North America (Burt-Utley and Utley 2004).

The nutria (*Myocastor coypus*) is the only known animal on the Installation that is listed as an invasive species (*https://www.invasivespeciesinfo.gov/aquatic*). The non-native feral pig (*Sus scrofa)*, although not officially classified as an invasive species, is also subject to control due to the damage it can cause to native flora and fauna at NAS JRB NOLA.

Seventy-one species of non-native plants have been documented on the Installation, and six have been prioritized for control (U.S. Navy 2000b; Burt-Utley and Utley 2004). These six invasive plants include: Chinese tallow (Photographs 3-4 and 3-5), Chinese privet (*Ligustrum sinense*; Photographs 3-6 and 3-7), Japanese honeysuckle (*Lonicera japonica*; Photograph 3-8), alligator weed (*Alternanthera philoxeroides*; Photograph 3-9), Bermuda grass (*Cynodon dactylon*; Photograph 3-10), and Brazilian verbane (*Verbena brasiliensis*; Photograph 3-11). One of these species, alligator weed, is on the Federal Noxious Weed List, (*https://www.invasivespeciesinfo.gov/aquatic*). Louisiana does not have a State Noxious Weed List.

Photograph 3-4. Chinese Tallow Trees

Photograph 3-5. Close-up of Chinese Tallow Leaves

Photograph 3-6. Chinese Privet Trees

Photograph 3-7. Close-up of Chinese Privet Leaves

Photograph 3-8. Japanese Honeysuckle

Photograph 3-9. Alligator Weed

Photograph 3-10. Bermuda Grass

Photograph 3-11. Brazilian Verbane

3.5.3 Wetlands

Wetlands on NAS JRB NOLA consist of large tracts of palustrine forested wetlands, smaller isolated palustrine forested wetlands, and emergent wetlands. The large tracts of forested wetlands are found along the west side of the Installation near the GIWW, surrounding the magazine area, and south of the former golf course. Smaller wetlands are found around and between the abandoned runways in swales and depressions that are poorly drained. Water-tolerant trees, such as black willow (*Salix nigra*), swamp red maple (*Acer rubrum* var. *drummondii*), and bald cypress (*Taxodium distichum*) dominate the forested wetlands. Chinese tallow (*Triadica sebifera*) has invaded these wetlands and is even more prevalent following the damage from Hurricane Katrina, but has not become the dominant overstory species due to active invasive species control. Herbaceous vegetation, such as smartweed (*Polygonum spp*.), seedbox (*Ludwigia spp*.), and lizard's tail (*Saururus cernuus*), is often found in areas where sufficient sunlight to support these plants reaches the forest floor.

NAS JRB NOLA has extensive wetland areas that are located within developed portions of the New Orleans metropolitan area. These wetlands have managed hydrology and are separated from tidal influence by levees. The forested wetlands and bottomland hardwoods provide moderate quality habitat for a variety of common migratory birds, waterfowl, mammals, amphibians, and reptiles.

A wetland delineation (U.S. Navy 2001), which included wetland boundary surveys (completed in August 2000 and revised during the April 2001 USACE verification), identified a total of 89 jurisdictional wetlands covering 273.97 acres (110.87 ha) (Figure 3-6). The USACE provided a verification letter dated 16 May 2001, which is now outdated. A copy of the letter is included in Appendix D. This delineation is out-of-date, but provides an estimation for pre-planning project purposes. A new delineation would be required for any new actions that might impact wetlands in the installation.

3.5.4 Rare, Threatened, and Endangered Species

The Endangered Species Act (ESA) was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the habitats upon which these species depend for their survival. All federal agencies are required to implement management programs for species listed under the ESA and use

their authorities to further the purposes of the ESA. The USFWS has identified species that are listed as threatened or endangered, as well as candidates for listing as a result of identified threats to their continued existence. Although not protected by the ESA, candidate species may be protected under other federal or state laws.

Six federally endangered and seven federally threatened wildlife species potentially inhabit Plaquemines Parish, Louisiana, and the saltmarsh topminnow (*Fundulus jenkinsi*) is petitioned for federal listing (Table 3-2). However, no threatened or endangered species are known to inhabit NAS JRB NOLA (U.S. Navy 1997; USFWS 2000). There is designated critical habitat for one federally listed species, the piping plover (*Charadrius melodus*), in coastal Plaquemines Parish, Louisiana, but no critical habitat within NAS JRB NOLA.

Table 3-2. Federally Listed Wildlife Species for Plaquemines Parish, Louisiana

Common Name	Scientific Name	Federal Status
Eastern black rail	*Laterallus jamaicensis jamaicensis*	Threatened
Gulf sturgeon	*Acipenser oxyrhinchus desoti*	Threatened
Green sea turtle	*Chelonia mydas*	Threatened
Hawksbill sea turtle	*Eretmochelys imbricata*	Endangered
Kemp's Ridley sea turtle	*Lepidochelys kempii*	Endangered
Leatherback sea turtle	*Dermochelys coriacea*	Endangered
Loggerhead sea turtle	*Caretta caretta*	Threatened
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Piping plover	*Charadrius melodus*	Threatened, Critical Habitat
Red knot	*Calidris canutus rufa*	Threatened
Saltmarsh topminnow	*Fundulus jenkinsi*	Petitioned
Smalltooth sawfish	*Pristis pectinata*	Endangered
West Indian manatee	*Trichechus manatus*	Threatened

USFWS 2020

Three federally-endangered and one federally-threatened plant species are protected in the state of Louisiana (Table 3-3). Of these four plant species, none are known to occur within NAS JRB NOLA or in Plaquemines Parish, Louisiana.

Table 3-3. Federally Listed Plant Species for Louisiana

Common Name	Scientific Name	Federal Status
American chaffseed	*Schwalbea americana*	Endangered
Earthfruit	*Geocarpon minimum*	Threatened
Louisiana quillwort	*Isoetes louisianensis*	Endangered
Pondberry	*Lindera melissifolia*	Endangered

USFWS 2009

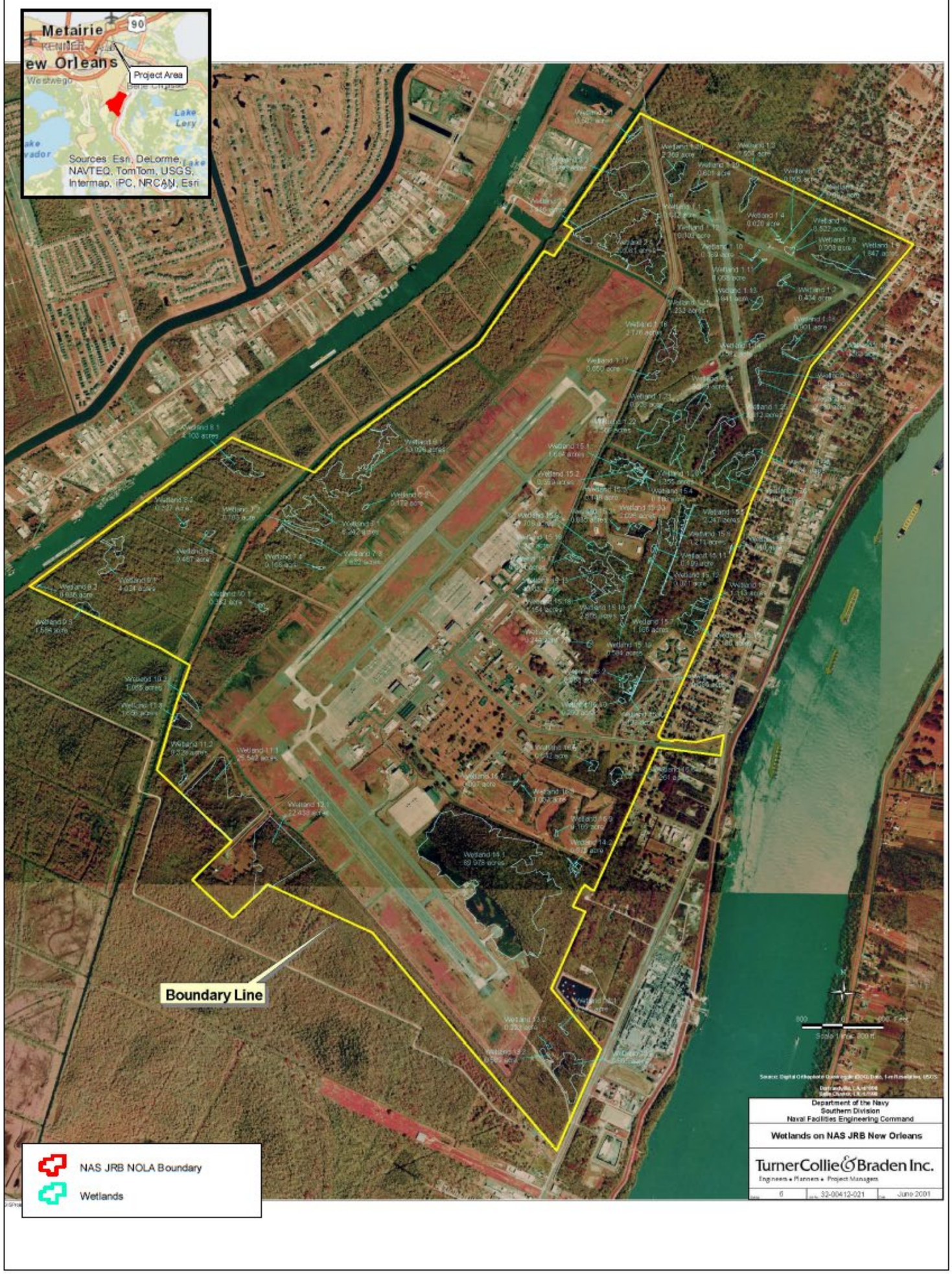

Figure 3-6: Unverified Wetlands - NAS JRB NOLA

GSRC

June 2012

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The LDWF maintains the State list of threatened species in Louisiana, which are assigned a ranking based upon their degree of imperilment. All of the federally-listed species listed in Table 3-2 are also state-listed, but there are also 14 species known to occur in Plaquemines Parish that have only state-ranked status (Table 3-4), two of which, the bald eagle (*Haliaeetus leucocephalus*) and osprey (*Pandion haliaetus*), have been confirmed on NAS JRB NOLA.

Table 3-4. State-Ranked Wildlife in Plaquemines Parish, Louisiana

Common Name	Scientific Name	State Rank
American oystercatcher	*Haematopus palliatus*	S1
Bald eagle	*Haliaeetus leucocephalus*	S3
Blue sucker	*Cycleptus elongatus*	S3
Bluntface shiner	*Cyprinella camura*	S2
Brown pelican	*Pelecanus occidentalis*	S3
Osprey	*Pandion haliaetus*	S3
Pallid sturgeon	*Scaphirhynchus albus*	S1
Peregrine falcon	*Falco peregrinus*	S3N
Reddish egret	*Egretta rufescens*	S1
Roseate spoonbill	*Platalea ajaja*	S3
Salt marsh snake	*Nerodia clarkii*	S3,S4
Short-eared owl	*Asio flammeus*	S3N
Snowy plover	*Charadrius nivosus*	S1B,S2N
Sooty tern	*Onychoprion fuscatus*	S1B

LDWF 2021
S1 = critically imperiled, S2 = imperiled, S3 = vulnerable, S4 = apparently secure
S#B = breeding. S#N = non-breeding
S#,S# indicates uncertainty about the exact status of the taxon

Informal consultation with federal and state wildlife agencies was initiated for an Environmental Assessment (EA) for construction of a radar air traffic control facility and air traffic control tower at NAS JRB NOLA in 2009 (U.S. Navy 2009). The USFWS concurred that no threatened or endangered species, candidate species, or critical habitat are likely to exist on the Installation. A survey for rare, threatened, and endangered species was conducted at NAS JRB NOLA in 2014; the only listed species observed was the state-endangered bald eagle and osprey (GSRC 2015).

3.5.5 Fish and Wildlife

A diverse assemblage of wildlife occurs in southeastern Louisiana. Animal species and their abundances are determined by the availability and quality of suitable habitat. Some

species are habitat generalists and may be found in several habitat types, while some species are habitat specialists and are found only in one habitat type. Other species are limited to areas that have been altered by human activity and are not found in areas having native habitat. A survey for reptiles, amphibians, and birds was conducted at NAS JRB NOLA in 2014 (GSRC 2015). Another survey for birds was conducted in 2019 (LG2ES 2020). Lists of fish, reptiles, amphibians, mammals, and birds typically found in southeastern Louisiana, and that are known or expected to inhabit NAS JRB NOLA, are presented in Tables 3-5 through 3-8.

Fish

Fish are restricted to drainage canals on the Installation. Game fish inhabit deeper waters of canals, while smaller forage fish are found in shallower areas. Table 3-5 lists common game and forage fish likely to be found on the Installation. Lake Baney, a 1-acre (0.40 ha) pond, has been stocked with fish on occasion without long-term success. The lake is not well-suited to supporting a viable population of fish because water level fluctuates widely and frequently, and the pond is often choked with vegetation (U.S. Navy 1997).

Table 3-5. A List of Fish That Occur or Have the Potential to Occur on NAS JRB NOLA and Surrounding Areas

Common Name	Scientific Name
Largemouth bass	*Micropterus salmoides*
Bluegill	*Lepomis macrochirus*
Channel catfish	*Ictalurus punctatus*
Flathead catfish	*Pylodictus olivarus*
Carp	*Cyprinus carpio*
Mosquitofish	*Gambusia affinis*
Topminnow	*Fundulus* spp.
Least killifish	*Heterandria formosa*
Sailfin molly	*Poecilia latipinna*

Source: Department of the Air Force 1992

Reptiles and Amphibians

Reptiles and amphibians are common in the undeveloped areas of the Installation. Frogs, toads, salamanders, turtles, alligators, and snakes are found in association with wetlands and drainage canals. Upland areas provide habitat for lizards, toads, and snakes such as the Western ribbon snake (*Thamnophis proximus*) and canebrake

rattlesnake (*Crotalus horridus atricaudatus*). Table 3-6 lists common species of reptiles and amphibians that may be found on the Installation.

Alligator Snapping Turtle

The USFWS, in 2021, proposed to list the alligator snapping turtle (*Macrochelys temminckii*) as a threatened species under the ESA (86 FR 62434). Alligator snapping turtles are highly aquatic, residing in slow moving, deep water of rivers, sloughs, oxbows, canals, impoundments, as well as in shallow creeks that are tributary to occupied rivers. They have been confirmed on the Installation. They rarely bask and will usually only emerge from the water to lay eggs, which occurs during spring. The species generally prefers to inhabit areas with mud substrate, aquatic vegetation, and natural debris. Nests are usually dug within 50 feet of a river or lake bank. This INRMP protects habitat for alligator snapping turtles through active management of factors such as wetlands (Section 4.2.1.1), soil conservation and erosion control (Section 4.2.1.2), stormwater quality (Section 4.2.1.3), and fish and wildlife management (4.2.2). INRMP Projects that benefit alligator snapping turtles and their habitat include Biological Inventory, Species Protection and Habitat Development, Listed and Species-at-Risk Monitoring, and INRMP Review and Update.

Table 3-6. A List of Reptiles and Amphibians That Occur or Have the Potential to Occur on NAS JRB NOLA

Common Name	*Scientific Name*	Presence
Alligator Snapping Turtle	*Macrochelys temminckii*	Confirmed[1]
American Alligator	*Alligator mississippiensis*	Confirmed [2]
American Bullfrog	*Lithobates catesbeianus*	Confirmed [2]
Black-masked Racer	*Coluber constrictor latrunculus*	Confirmed [2]
Blanchard's Cricket Frog	*Acris blanchardi*	Potential
Broad-banded Watersnake	*Nerodia fasciata confluens*	Confirmed [2]
Broad-headed Skink	*Eumeces (Plestiodon) laticeps*	Confirmed [2]
Bronze Frog	*Lithobates clamitans*	Confirmed [2]
Brown Anole	*Anolis sagrei*	Confirmed [2]
Cajun Chorus Frog	*Pseudacris fouquettei*	Confirmed [2]
Canebrake Rattlesnake	*Crotalus horridus atricaudatus*	Confirmed [1]
Central Newt	*Notophthalmus viridescens louisianensis*	Confirmed [2]
Chicken Turtle	*Deirochelys reticularia*	Confirmed [2]
Coastal Plains Toad	*Incilius nebulifer*	Confirmed [2]

Table 3-6, continued

Common Name	*Scientific Name*	Presence
Common Five-lined Skink	*Eumeces (Plestiodon) fasciatus*	Confirmed [2]
Common Snapping Turtle	*Chelydra serpentina*	Confirmed [2]
Cope's Gray Treefrog	*Hyla chrysoscelis*	Confirmed [2]
Delta Crayfish Snake	*Regina rigida deltae*	Potential
Dwarf Salamander	*Eurycea quadridigitata*	Potential
Eastern Gartersnake	*Thamnophis sirtalis sirtalis*	Confirmed [2]
Eastern Glass Lizard	*Ophisaurus ventralis*	Potential
Eastern Hog-nosed Snake	*Heterodon platirhinos*	Potential
Eastern Musk Turtle	*Sternotherus odoratus*	Confirmed [2]
Eastern Narrow-mouthed Toad	*Gastrophryne carolinensis*	Confirmed [2]
Eastern River Cooter	*Pseudemys concinna concinna*	Confirmed [2]
Eastern Slender Galss Lizard	*Ophisaurus attenuatus longicaudus*	Potential
Fowler's Toad	*Anaxyrus fowleri*	Confirmed [1]
Graham's Crayfish Snake	*Regina grahamii*	Potential
Gray Ratsnake	*Elaphe (Pantherophis) spiloides*	Confirmed [1]
Green Frog	*Lithobates clamitans*	Potential
Green Treefrog	*Hyla cinerea*	Confirmed [2]
Green Watersnake	*Nerodia cyclopion*	Confirmed [2]
Greenhouse Frog	*Eleutherodactylus planirostris*	Confirmed [2]
Ground Skink	*Scincella lateralis*	Confirmed [2]
Gulf Coast Box Turtle	*Terrapene carolina major*	Confirmed [2]
Gulf Coast Ribbonsnake	*Thamnophis proximus orarius*	Confirmed [2]
Gulf Coast Spiny Softshell	*Apalone spinifera aspera*	Confirmed [2]
Gulf Coast Toad	*Incilius nebulifer*	Confirmed [1]
Gulf Saltmarsh Watersnake	*Nerodia clarkii clarkii*	Potential
Little Brown Skink	*Scincella lateralis*	Potential
Louisiana Milksnake	*Lampropeltis triangulum amaura*	Potential
Marsh Brownsnake	*Storeria dekayi limnetes*	Confirmed [2]
Mediterranean gecko	*Hemidactylus turcicus*	Confirmed [2]
Mississippi Diamond-backed Terrapin	*Malaclemys terrapin pileata*	Potential
Mississippi Map Turtle	*Graptemys pseudogeographica kohnii*	Confirmed [2]
Mississippi Mud Turtle	*Kinosternon subrubrum hippocrepis*	Confirmed [2]
Mississippi Ring-necked Snake	*Diadophis punctatus stictogenys*	Confirmed [2]
Northern Cricket Frog	*Acris crepitans*	Confirmed [2]
Northern Diamond-backed Watersnake	*Nerodia rhombifer rhombifer*	Confirmed [2]
Northern Green Anole	*Anolis carolinensis carolinensis*	Confirmed [2]
Northern Rough Greensnake	*Opheodrys aestivus aestivus*	Potential
Ouachita Map Turtle	*Graptemys ouachitensis ouachitensis*	Potential
Pig Frog	*Lithobates grylio*	Confirmed [2]
Plain-bellied Watersnake	*Nerodia erythrogaster*	Potential

Table 3-6, continued

Common Name	*Scientific Name*	Presence
Red-eared Slider	*Trachemys scripta elegans*	Confirmed [2]
Small-mouthed Salamander	*Ambystoma texanum*	Potential
Southern Copperhead	*Agkistrodon contortrix contortrix*	Confirmed [2]
Southern Dusky Salamander	*Desmognathus auriculatus*	Confirmed [1]
Southern Leopard Frog	*Lithobates sphenocephalus utricularius*	Confirmed [2]
Southern Painted Turtle	*Chrysemys dorsalis*	Confirmed [2]
Speckled Kingsnake	*Lampropeltis holbrooki*	Confirmed [2]
Spring Peeper	*Pseudacris crucifer*	Confirmed [2]
Squirrel Treefrog	*Hyla squirella*	Confirmed [2]
Texas Ratsnake	*Elaphe (Pantherophis) obsoletus*	Confirmed [2]
Three-toed Amphiuma	*Amphiuma tridactylum*	Potential
Timber Rattlesnake	*Crotalus horridus*	Confirmed [2]
Western Bird-voiced Treefrog	*Hyla avivoca avivoca*	Potential
Western Cottonmouth	*Agkistrodon piscivorus leucostoma*	Confirmed [2]
Western Lesser Siren	*Siren intermedia nettingi*	Potential
Western Mudsnake	*Farancia abacura reinwardtii*	Potential
Western Pygmy Rattlesnake	*Sistrurus miliarius streckeri*	Potential
Yellowbelly Watersnake	*Nerodia erythrogaster flavigaster*	Confirmed [2]

1 – Confirmed in 2013 by personal observation of the Natural Resources Manager.

2 – Confirmed in 2014 by artificial cover sampling stations, drift fence pitfall-funnel trap arrays, aquatic funnel traps, and turtle traps (GSRC 2015).

Mammals

NAS JRB NOLA is large enough to support populations of large mammals, such as white-tailed deer (*Odocoileus virginianus*) and feral pigs (*Sus scrofa*). Management of game and non-game animals to balance recreational uses of wildlife resources with the military mission has been guided by a wildlife management plan in the past (U.S. Navy 1997). White-tailed deer are hunted during Louisiana's open season under supervision of the Natural Resources Manager. Harvest records from the 1998 to 1999 and 1999 to 2000 hunting seasons reported 27 deer harvested from the Installation in each season. The relatively large and constant number of harvested deer indicates that this population is in good condition and well-managed. The Eastern cottontail rabbit (*Sylvilagus floridanus*) and gray squirrel (*Sciurus carolinensis*) also are managed, but hunter demand is low. These species are relatively abundant across the Installation where suitable habitat exists and are subject to fluctuations in numbers that are related to changes in amounts of food and other resources.

In addition to the game species listed, many non-game mammal species, including some species considered to be a nuisance, are likely to be found on the Installation. For this INRMP, a non-game species is defined as one that is not hunted or managed for hunting on the Installation, even though it may be considered a game species elsewhere. Table 3-7 lists species of mammals that may be found on the Installation.

Table 3-7. Mammals That Occur or Have the Potential to Occur on NAS JRB NOLA

Common Name	Scientific Name
Beaver	*Castor canadensis*
Bobcat	*Lynx rufus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Cotton mouse	*Peromyscus gossypinus*
Coyote	*Canis latrans*
Eastern cottontail rabbit	*Sylvilagus floridanus*
Eastern pipistrelle	*Pipistrellus subflavus*
Eastern wood rat	*Neotoma floridana*
Evening bat	*Nycticeius humeralis*
Feral pig	*Sus scrofa*
Fox squirrel	*Sciurus niger*
Fulvous harvest mouse	*Reithrodontomys fulvescens*
Gray squirrel	*Sciurus carolinensis*
Grey fox	*Urocyon cinereoargenteus*
Hispid cotton rat	*Sigmodon hispidus*
Marsh rice rat	*Oryzomys palustris*
Mice	*Mus* spp.
Mink	*Mustela vison*
Muskrat	*Ondontra zibethicus*
Nine-banded armadillo	*Dasypus novemcinctus*
Northern yellow bat	*Lasiurus intermedius*
Nutria	*Myocastor coypus*
Raccoon	*Procyon lotor*
Rafinesque's big-eared bat	*Plecotis rafinesquii*
Rats	*Rattus* spp.
Red bat	*Lasiurus borealis*
River otter	*Lutra Canadensis*
Seminole bat	*Lasiurus seminolus*
Southeastern myotis	*Myotis austroriparius*
Southern flying squirrel	*Glaucomys volans*
Striped skunk	*Mephitis mephitis*
Swamp rabbit	*Sylvilagus aquaticus*
Virginia opossum	*Didelphis virginiana*
White-footed mouse	*Peromyscus leucopus*
White-tailed deer	*Odocoileus virginianus*

Source: Department of the Air Force 1992

Birds

Birds found on the Installation are a variety of resident and migratory species, including songbirds, hawks, owls, egrets, herons, grackles, pigeons, sparrows, and crows (Table 3-8). A breeding bird survey conducted on June 20 and 21, 1998, documented 20 species of birds, including cuckoos, woodpeckers, hawks, and numerous songbirds (U.S. Navy 1998). A seasonal migratory bird survey conducted throughout 2014 documented 96 species of birds, and a seasonal survey conducted throughout 2019 documented 97 species. Combined, these latter two surveys documented 122 different bird species on the installation (Table 3-8) (GSRC 2015; LG2ES 2020). NAS JRB NOLA lacks suitable habitat for shorebirds; however, egrets, herons, and ducks make use of canals for feeding and cover. The clear zones around the runways are managed by the BASH Program Manager to make them as unattractive to wildlife as possible in order to reduce the risk of collisions between aircraft and wildlife. During certain months of the year, migratory birds become more abundant as they congregate on the runways to rest, while pigeons, grackles, and sparrows often congregate inside the aircraft hangars. The BASH Program Manager, in cooperation with the Natural Resources Manager, takes into account all migratory bird patterns when developing and implementing BASH programs at NAS JRB NOLA.

Table 3-8. Birds Observed in 2014 and 2019 Seasonal Surveys on NAS JRB NOLA

Common Name	Scientific Name	Winter	Spring	Summer	Autumn
American coot [A]	Fulica americana		X		
American crow	Corvus brachyrhynchos	X	X	X	X
American goldfinch [B]	Spinus tristis	X	X		
American kestrel [B]	Falco sparverius	X	X		X
American pipit [B]	Anthus rubescens	X			
American redstart [B]	Stephaga ruticilla				X
American robin	Turdus migratorius	X	X	X	
Anhinga	Anhinga anhinga	X	X	X	X
Bald eagle	Haliaeetus leucocephalus	X	X		X
Barn swallow	Hirundo rustica		X	X	X
Barred owl	Strix varia	X	X	X	X
Belted kingfisher	Megaceryle alcyon	X	X	X	X
Black throated green warbler [B]	Setophaga virens				X

Table 3-8, continued.

Common Name	Scientific Name	Winter	Spring	Summer	Autumn
Black vulture	Coragyps artratus		X	X	X
Black-and-white warbler	Mniotilta varia			X	X
Black-bellied whistling duck [A]	Dendrocygna autumnalis		X	X	
Black-crowned night heron [A]	Nycticorax nycticorax		X	X	
Blue grosbeak [B]	Passerina caerulea				X
Blue jay	Cyanocitta cristata	X	X	X	X
Blue-gray gnatcatcher	Polioptila caerulea	X			X
Blue-headed vireo [B]	Vireo solitarius	X			
Blue-winged teal [A]	Anas discors			X	
Brewer's blackbird [A]	Euphagus cyanocephalus		X		
Broad-winged hawk [A]	Buteo platypterus			X	
Brown creeper [A]	Certhia americana		X		
Brown thrasher	Toxostoma rufum		X	X	X
Brown-headed cowbird	Molothrus ater	X	X	X	
Carolina chickadee	Poecile carolinensis	X	X	X	X
Carolina wren	Thryothorus ludovicianus	X	X	X	X
Cattle egret	Bubulcus ibis		X	X	X
Cedar waxwing	Bombycilla cedrorum	X			
Chimney swift	Chaetura pelagica		X	X	X
Chipping sparrow [B]	Spizella passerina	X	X		X
Common grackle	Quiscalus quiscula	X		X	X
Common ground-dove	Columbia passerine			X	X
Common yellowthroat	Geothlypis trichas	X	X	X	X
Cooper's hawk [A]	Accipiter cooperii			X	
Double-crested cormorant	Phalacrocorax auritus	X	X	X	X
Downy woodpecker	Picoides pubescens	X	X	X	X
Eastern bluebird	Sialia sialis		X	X	X
Eastern kingbird	Tyrannus tyrannus		X	X	
Eastern meadowlark	Sturnella magna	X	X	X	X
Eastern phoebe	Sayornis phoebe	X	X		X
Eastern towhee	Pipilo erythrophthalmus		X	X	X
Eastern wood pewee	Contopus virens		X		X
European starling	Sturnus vulgaris	X	X	X	X
Field sparrow	Spizella pusilla				X
Fish crow	Corvus ossifragus	X	X	X	X

Table 3-8, continued.

Common Name	Scientific Name	Winter	Spring	Summer	Autumn
Glossy ibis [B]	Plegadis falcinellus		X		
Gray catbird	Dumetella carolinensis	X	X		X
Great black-backed gull	Larus marinus				
Great blue heron	Ardea herodias	X	X	X	X
Great crested flycatcher	Myiarchus crinitus		X	X	
Great egret	Ardea alba	X	X	X	X
Green heron	Butorides virescens		X	X	X
Hairy woodpecker [A]	Picoides villosus		X	X	X
Hooded warbler [B]	Setophaga citrina		X		
House sparrow [A]	Passer domesticus			X	
House wren [B]	Troglodytes aedon	X			X
Indigo bunting	Passerina cyanea		X		X
Killdeer	Charadrius vociferus	X	X	X	X
Laughing gull	Leucophaeus atricilla	X	X	X	X
Little blue heron	Egretta caerulea		X	X	X
Loggerhead shrike	Lanius ludovicianus			X	X
Magnolia warbler [B]	Setophaga magnolia				X
Mallard [A]	Anas platyrhynchos				X
Marsh wren	Cistothorus palustris	X	X	X	X
Merlin [B]	Falco columbarius	X			X
Mississippi kite	Ictinia mississippiensis		X	X	
Mourning dove	Zenaida macroura	X	X	X	X
Northern cardinal	Cardinalis cardinalis	X	X	X	X
Northern flicker	Colaptes auratus	X	X		X
Northern harrier	Circus cyaneus	X			X
Northern mockingbird	Mimus polyglottos	X	X	X	X
Northern parula	Setophaga americana		X		X
Northern rough-winged swallow	Stelgidopteryx serripennis		X	X	
Orange-crowned warbler	Oreothlypis celata	X	X		
Osprey	Pandion haliaetus		X	X	X
Ovenbird	Seiurus aurocapilla				X
Painted bunting	Passerina ciris		X	X	X
Palm warbler	Setophaga palmarum	X		X	X
Pileated woodpecker	Dryocopus pileatus	X	X	X	X
Pine warbler [A]	Setophaga pinus				X

Table 3-8, continued.

Common Name	Scientific Name	Winter	Spring	Summer	Autumn
Prairie warbler [A]	Setophaga discolor		X	X	
Prothonotary warbler	Protonotaria citrea		X	X	
Purple martin [B]	Progne subis		X		
Red-bellied woodpecker	Melanerpes carolinus	X	X	X	X
Red-eyed vireo	Vireo olivaceus		X		
Red-shouldered hawk	Buteo lineatus	X	X	X	X
Red-tailed hawk	Buteo jamaicensis	X		X	X
Red-winged blackbird	Agelaius phoeniceus	X	X	X	X
Ring billed gull [B]	Larus delawarensis				X
Rose breasted grosbeak [B]	Pheucticus ludovicianus				X
Ruby throated hummingbird	Archilochus colubris		X		X
Ruby-crowned kinglet [A]	Regalus calendula	X			
Rufous-crowned sparrow [A]	Aimophila ruficeps		X		
Savannah sparrow	Passerculus sandwichensis	X	X	X	X
Sedge wren [A]	Cistothorus platensis		X		X
Sharp-shinned hawk [A]	Accipiter striatus	X			X
Snowy egret	Egretta thula	X	X	X	X
Solitary sandpiper [B]	Tringa solitaria		X		
Song sparrow [B]	Melospiza melodia	X			
Summer Tanager [B]	Piranga rubra			X	
Swallow-tailed kite	Elanoides forficatus		X		
Swamp sparrow [B]	Melospiza georgiana	X			X
Tree swallow [B]	Tachycineta bicolor	X			X
Tri-colored heron	Egretta tricolor	X	X	X	X
Tufted titmouse	Baeolophus bicolor	X	X	X	X
Turkey vulture	Cathartes aura	X	X	X	X
Vesper sparrow [B]	Pooecetes gramineus	X			
White ibis	Eudocimus albus	X	X	X	X
White winged dove [B]	Zenaida asiatica				X
White-eyed vireo	Vireo griseus	X	X	X	X
Wilson's snipe [A]	Gallinago delicata				X
Wood duck	Aix sponsa		X	X	X
Wood Stork [B]	Mycteria americana			X	
Yellow warbler [A]	Setophaga petechial			X	
Yellow-bellied sapsucker [B]	Sphyrapicus varius	X			

Table 3-8, continued.

Common Name	Scientific Name	Winter	Spring	Summer	Autumn
Yellow-billed cuckoo [A]	Coccyzus americanus			X	
Yellow-breasted chat [A]	Icteria virens			X	
Yellow-crowned night heron	Nyctanassa violacea		X	X	
Yellow-rumped warbler	Setophaga coronata	X	X		X

Source: Avian point-count sampling in 2014 (GSRC 2015)

Invertebrates

The American bumble bee (*Bombus pensylvanicus*) was petitioned for listing under the ESA in 2021 and its status is currently under review by the USFWS (86 FR 53937). Additionally, the monarch butterfly (*Danaus plexippus*) is a candidate for listing under the ESA (85 FR 81813). Both species are pollinators and are most often sighted in open farmlands and fields. They feed upon flowering plants, and the monarch butterfly is particularly dependent upon milkweed in its larval stage. The American bumble bee requires nectar, pollen resources, and suitable nesting sites during spring, summer, and autumn, as well as overwintering nest sites in undisturbed sites an inch or two under loose soil, leaf litter, and other debris. The monarch butterfly overwinters in Mexico and migrates north into the United States when temperatures warm. Threats to these species include habitat loss, overuse of pesticides and herbicides, disease, climate change, competition with honey bees, and loss of genetic diversity. The monarch butterfly is also threatened by the loss of milkweeds and migratory stopover areas. Management actions in this INRMP that conserve and benefit the American bumble bee, monarch butterfly, and their habitats include wetlands management (Section 4.2.1.1), landscaping and grounds maintenance (Section 4.2.1.4), Integrated Pest Management (Section 4.2.1.5), and exotic and invasive plant removal (Section 4.2.1.6). Projects in this INRMP that can directly benefit the two species include Invasive Plant Control, Biological Inventory, Species Protection and Habitat Development, Listed and Species-at-Risk Monitoring, and beneficial wildflower plantings, such as those prescribed in the Pollinator Conservation project (see Section 6.7).

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4.0 NATURAL RESOURCES MANAGEMENT

4.1 GOALS, OBJECTIVES, AND STRATEGIES

This section presents natural resources management activities at NAS JRB NOLA, including the goals, objectives, and strategies for natural resources.

4.1.1 Definitions

- **Goals.** Goals are general expressions that represent the long-term aim of management. Goals are compatible with the military mission of NAS JRB NOLA and provide conservation and ecosystem management targets and direction.
- **Issues.** Issues that must be addressed are identified to help establish objectives for achieving the INRMP goals at NAS JRB NOLA. Issues may include the presence of a particular natural resource feature, resource-based human function, or other attribute on the Installation. Issues may also include the effectiveness of existing or past practices regarding resources management on the Installation, and the requirements for regulatory compliance regarding the management and use of natural resources.
- **Objectives.** Objectives are defensible targets or specific components of a goal, the achievement of which represents measurable progress toward that goal. Objectives help to focus management activities and provide a measurement tool against which to evaluate and communicate results. More than one objective may be identified for successfully achieving a particular goal. Objectives are comprised of strategies and defined actions or projects.
- **Strategies.** Strategies establish the approach and expected end result for the actions that are necessary to accomplish stated objectives. More than one strategy may be identified for accomplishing a particular objective. Strategies involve certain actions to be taken by the Navy, such as the completion of specific projects and/or the implementation of other management initiatives at NAS JRB NOLA. Strategies usually specify time frames for completion of various actions.
- **Projects.** Projects are discrete actions for fulfilling a particular strategy. Projects may be required to fulfill obligations by NAS JRB NOLA in meeting regulatory requirements regarding natural resources management or may enhance existing measures for ensuring compliance. Other projects are not compliance-driven, but may allow for more effective and efficient management of natural resources and provide for sound natural resources stewardship. Projects require labor resources and funding in addition to the day-to-day requirements of the Installation.

4.1.2 Goals, Issues, and Objectives Specific to NAS JRB NOLA

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Issue: Land and water management decisions will become increasingly important at NAS JRB NOLA as development and training activities increase. Land and water use during military training directly affect ecosystem sustainability.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Objective 1.2: Achieve no net loss of wetlands.

Objective 1.3: Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.5: Reduce and control nuisance wildlife.

Objective 1.6: Implement a forest management plan that integrates ecosystem management and silviculture.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural communities.

Objective 1.8: Use GIS to improve management of natural resources.

Issue: Human activities on NAS JRB NOLA and in the surrounding community have removed native vegetative communities and altered natural habitats. Environmental resources on the Installation provide vital habitat for birds, fish, and wildlife, especially in view of the considerable developmental and economic growth surrounding the Installation.

Objective 1.9: Conduct bird surveys and monitor bird species.

Objective 1.10: Reduce aircraft collisions with wildlife through implementation of the BASH program.

Objective 1.11: Preserve and protect threatened and endangered species and species of special concern to ensure no reduction in species numbers or population sizes.

Objective 1.12: Monitor for the presence of rare, threatened, and endangered species.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.

Issue: The SAIA, as amended, requires that military Installations evaluate the potential to provide outdoor recreational resources to the public. The CO authorizes access for educational and outdoor natural resources recreational activities consistent with the military mission and appropriate security levels.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA and it's capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Issue: Plans and programs for maintaining and managing natural resources on NAS JRB NOLA need to fully consider the interrelationships among resources on the Installation and assure no net loss of the military mission. The input and cooperation of regulatory agencies and other experts will best facilitate the success of these plans and programs.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.2: Incorporate the concept of ecosystem management into all planning and management processes.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

4.2 NATURAL RESOURCES MANAGEMENT ACTIVITIES

This section discusses the natural resources management activities at NAS JRB NOLA. They are divided into four components: 1) Land Management; 2) Fish and Wildlife Management; 3) Outdoor Recreation; and 4) Integrated Ecosystems Management and Partnering. The natural resources actions described in this INRMP are for the benefit of the plants, animals, and ecosystems occurring on NAS JRB NOLA. Special attention is given to conservation of wetlands and floodplains; exotic and invasive plant species management and suppression, particularly Chinese tallow and Chinese privet; forest management; tree preservation; nuisance wildlife control, with focus on feral hog trapping and deer removal; BASH program implementation, with focus placed on nuisance wildlife-aircraft collisions, particularly those involving large mammals; enhancement of outdoor recreation opportunities; and the development and implementation of integrated ecosystems management and partnering.

Each activity is associated with goals, issues, objectives, strategies, and projects to help maintain a balance between NAS JRB NOLA's natural resources management and military operations.

4.2.1 Land Management

This section addresses the development and implementation of techniques and programs for managing lands. The land management activities of this INRMP include:

- Wetlands
- Soil Conservation and Erosion Control
- Stormwater Quality
- Landscaping and Grounds Maintenance
- Integrated Pest Management
- Exotic and Invasive Plant Species Removal
- Forestry

4.2.1.1 Wetland Management

Wetlands are transitional zones between the terrestrial and aquatic environment, and are characterized by physical, chemical, and biological features that indicate hydrological conditions.

Issue

Much of NAS JRB NOLA consists of drained and filled swamps. The Installation contains 273.97 acres (110.87 ha) of freshwater wetlands of varying quality. Of this, 241.77 acres (97.84 ha) are forested wetlands, 20.16 acres (8.16 ha) are scrub/shrub wetlands, and 12.04 acres (4.87 ha) are emergent wetlands (U.S. Navy 2001). Each wetland offers valuable wildlife habitat and water quality protection. The Installation is required to balance wetland protection with support of the military mission.

Goals and Objectives

Wetlands are protected by the Federal Water Pollution Control Act (Clean Water Act [CWA]), EO 11990, and other federal laws and Navy regulations. EO 11990 dictates a policy of 'no net loss' of wetlands on federal lands. The SAIA, as amended, calls for improving wetlands for the benefit of plants and animals when it is consistent with the military mission and readiness.

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Objective 1.2: Achieve no net loss of wetlands.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- Identify wetland areas that have been or are currently impacted from activities related to the military mission, and document the type and extent of potential or expected impacts.
- Incorporate the latest plans for Installation improvements and data layers related to natural resources management, select wetland mitigation sites and water quality improvement projects that comply with EO 11990, and improve quality of wetlands on NAS JRB NOLA as fish and wildlife habitat.
- Establish dialogue with stakeholders that have an interest in wetlands management to increase natural resource impact awareness and demonstrate the Navy's commitment to protect its natural resources.
- Draft a guidance checklist for distribution to tenant commands that identifies and addresses water resource regulatory issues.
- Make recommendations for the management of specific wetlands on the Installation based upon an integrated assessment of each wetland's function and value by wetland type, landscape position, surrounding land uses, vegetation quality, surface water quality, wildlife habitat, and cultural values.
- Determine which conservation activities are possible within each wetland to improve functions.
- Complete jurisdictional delineation and achieve USACE verification, coordinate with wetlands and wildlife biologists to document wetlands that are valuable as wildlife habitat, and identify wetlands that could be enhanced to improve water quality and stormwater management.
- Make recommendations to improve and enhance specified wetlands for wildlife habitat.
- Determine funding requirements (including staff and materials) in addition to the feasibility of each recommendation. This includes the possibility of a coordinated volunteer effort.

Long-term Management

Proper management of wetlands, understanding their functions and values, and meeting regulatory requirements when conducting activities within wetlands requires knowledge of their extent and distribution. The USACE regulates and protects wetland resources in the United States. Delineating jurisdictional wetlands is accomplished using the *1987 Corps of Engineers Wetland Delineation Manual* and the *2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*. Areas that meet the regulatory definition of a wetland are protected by *Section 404* of the CWA, and any activity that may deposit fill into a wetland requires a permit from the USACE.

Wetland management generally is conducted within and around natural and man-made wetlands to protect, restore, and improve degraded wetlands. Issues associated with wetland management on the Installation include: 1) protecting natural wetlands from loss or degradation by actions not related to the military mission, 2) meeting regulatory requirements for activities that unavoidably impact wetlands, 3) creating, enhancing, and restoring wetlands for unavoidable impacts and to meet requirements of the SAIA, as amended, and 4) wetland creation for water quality improvement.

NAS JRB NOLA adheres to 'no net loss' of wetlands on federal lands, as mandated by EO 11990. This order protects and restores wetland function by buffering wetlands from direct human pressures and maintaining important external natural processes that act upon wetlands. Physical buffers minimize the effects of the abrupt transition between two different habitats (edge effects) on the numbers and kinds of organisms, reduce the amount of marginal habitat for species, and mitigate water quality impacts. A buffer typically consists of a suitably wide (i.e., 50-foot) band of vegetation along the perimeter of a wetland or water body. An effective buffer must consider wetland functional value (e.g., level of degradation and sensitivity to disturbance), intensity of adjacent land use, buffer characteristics (i.e., vegetation density, structural complexity, and soil condition), and specific buffer functions required as described in Castelle et al. 1994:

- sediment removal and erosion control
- nutrient transformation and removal
- reduce metals and other pollutants
- stormwater runoff reduction through infiltration
- reduce water temperature
- reduce human impacts by limiting easy access and minimizing edge effects from noise, light, temperature, and other changes
- protect interior wetland species

Natural wetlands are not to be used for water quality treatment of point or nonpoint pollution sources (Fields 1993). Untreated point source discharges to wetlands have been eliminated through the National Pollutant Discharge Elimination System (NPDES) program in Section 402 of the CWA. Remaining point source discharges are of secondarily treated effluent, which is typified by greater biochemical oxygen demand,

amounts of suspended solids, and nutrient levels as compared to natural inputs. Proper management dictates that wetlands and surface waters be protected from such inputs using water quality standards promulgated by each state. Although significant nonpoint source loading to wetlands is undesirable, this issue will take time to address, and management measures will likely result in reduced, but not eliminated, loadings to wetlands.

It is important to develop and implement strategies for the long-term protection of wetlands on the Installation. Incorporating wetland management and protection would involve classifying the Installation's wetland resources according to their relative function and value, and identifying specific management tasks based upon those findings. Issues pertaining to wetland protection and management include:

- Gathering biological baseline data to assess function and value of wetland resources. Decisions regarding how to manage natural wetlands, enhance degraded wetlands, and analyze potential impacts can be made from this baseline data.
- Addressing erosion problems that exist along many of the drainage canals and sparsely vegetated areas, and that contribute to habitat loss and degradation of water quality.
- Regularly reviewing grounds maintenance, pest management, and construction Best Management Practices (BMPs) to ensure that wetland water quality is not impacted by runoff.
- Implementing forestry management practices that improve forest stands and enhance function and value of forested wetlands. Invasive species such as Chinese tallow and rapid colonizing species such as boxelder have become established in many wetlands on-base, degrading the value of these areas as wildlife habitat.
- Balancing wetland protection and enhancement with BASH precautions.
- Reducing nonpoint source pollution from erosion, vehicles, dumping, pest management, grounds maintenance, and weed control. Nonpoint source pollution from runoff can degrade wetland quality and function.
- Developing recreational and aesthetic opportunities within and adjacent to wetlands, such as nature trails and wildlife observation areas to increase awareness of wetland importance.

A detailed delineation of the Installation's wetlands has been completed and upon verification by the USACE New Orleans District will be disseminated to various users for planning purposes.

Integration with Other Natural Resources Management Activities

The following natural resources management activities are directly or indirectly related to the management of wetland areas and those relationships would be considered during wetland management:

- Soil Conservation and Erosion, Section 4.2.1.2 – sedimentation into wetlands.
- Stormwater Quality, Section 4.2.1.3 – stormwater runoff into wetlands.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – maintain wetland buffer.
- Integrated Pest Management, Section 4.2.1.5 – potential pesticide contamination of wetlands.
- Exotic and Invasive Plant Species Removal, Section 4.2.1.6 – maintain natural wetland buffer.
- Forestry, Section 4.2.1.7 – harvest trees using BMPs to protect wetlands.
- BASH, Section 4.2.2.1 – BASH risks associated with wetlands.
- Migratory Birds, Section 4.2.2.2 – use of wetlands by migratory birds.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – wetlands as fish and wildlife habitat.
- Outdoor Recreation, Section 4.2.3 – outdoor recreation acitivies within wetlands.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – strategies that enhance management of wetlands.

Ecosystem Management

Wetlands management is an essential component of ecosystem management because such a large number of plants and animals utilize wetlands. Additionally, healthy, protected wetlands store and purify water, provide open space and aesthetic value, and provide habitats for migratory birds, fish, and other wildlife.

Climate Change

According to the EPA, ocean levels in parts of coastal Louisiana are rising as quickly as one inch every two years, a condition that is exasperated by sinking land in the southern portion of the state. This has resulted in areas of chronic saltwater intrusion into coastal wetlands, triggering a cascade of ecological change, most easily identified by the browning and death of surrounding trees. Wetlands naturally increase their elevation by converting sediment and decomposing marsh plants into soil, but this adaptation may be

outpaced by the current rate of sea level rise and erosion caused by tropical storm flood events. Management actions that may buffer wetlands against saltwater intrusion include protecting and enhancing salt marsh vegetation to mitigate the impact of tropical storm wave action, the removal of aggressive salt-tolerant invasive plants such as common reed (*Phragmites australis*), and the maintenance of natural conservation corridors to allow salt-intolerant animals, such as amphibians, to access wetlands at higher elevations.

Laws, EOs, Regulations, Directives, and Memoranda Relevant to Wetland Areas

- Federal Water Pollution Control Act, as amended by CWA of 1977, 33 U.S.C. 1251 prohibits the discharge of dredged or filled materials into waters of the United States, including wetlands, without first obtaining a permit from the USACE (Section 404 of the CWA).
- EO 11990 24 May 1977, as amended, requires government agencies, in carrying out agency actions and programs affecting land use, to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.
- CWA: Section 401 Water Quality Certification, 1986, 33 U.S.C. 1341 requires that states certify compliance with federal permits or licenses and with state water quality requirements and other applicable state laws. Under Section 401, states have the authority to review any federal permit or license that may result in a discharge to wetlands or other waters under the state's jurisdiction to ensure that the actions would be consistent with the state's water quality requirements.
- EO 13112 3 February 1999, requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems.
- OPNAVINST 5090.1E, 12-3.8(b), discusses natural resources management relating to wetland management.
- Louisiana Act 6 of 1989, charged the state with conserving, restoring, creating and enhancing vegetated wetlands in coastal Louisiana, created the Governor's Office of Coastal Activities and the State Wetlands Authority to provide direction and coordination in this endeavor, and extended the state's commitment to coastal restoration by creating the Coastal Wetlands Conservation and Restoration Fund.
- 16 U.S.C. 3951-3956 Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), enacted to identify, prepare, and fund construction of Louisiana coastal wetlands restoration projects.
- Louisiana Coastal Wetlands Program, establishes a federal task force comprised of the Secretary of the Army, as the Chair; the Administrator of the U.S. Environmental Protection Agency (USEPA); the Governor of Louisiana; and the Secretaries of the Interior, Agriculture and Commerce to develop a comprehensive approach to restore and prevent the loss of coastal Louisiana wetlands.

- Coast 2050, represents a joint planning initiative between the Louisiana Wetland Conservation and Restoration Authority, the Breaux Act Task Force, and the Louisiana Department of Natural Resources Coastal Zone Management Authority and currently serves as a blueprint for restoring coastal Louisiana.
- Coastal Impact Assistance Program of Section 384 of the Energy Policy Act of 2005, assists coastal producing states and their political subdivisions (parishes, counties, and boroughs) in mitigating the impacts from Outer Continental Shelf oil and gas production.
- CWA Section 404, establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands.
- Rivers and Harbors Act, requires authorization from the USACE for the construction of any structure in or over any navigable waters of the United States and the excavation/dredging or deposition of material in these waters or any obstruction or alteration in a navigable water.

Additional Sources of Information

- Wetlands and Waters of the United States, Regulatory Division, New Orleans District
  https://www.mvn.usace.army.mil/Missions/Regulatory/
- USEPA Wetlands, Oceans and Watersheds
  https://www.epa.gov/aboutepa/about-office-water
- USFWS – National Wetlands Inventory
  https://www.fws.gov/wetlands/
- Society of Wetland Scientists
  https://www.sws.org/
- Society for Ecological Restoration
  https://www.ser.org/default.aspx
- Coalition to Restore Coastal Louisiana
  https://www.crcl.org/
- Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)
  https://www.lacoast.gov/new/About/Default.aspx#leg
- Louisiana Governor's Office of Coastal Activities
  https://gov.louisiana.gov/page/governors-office-of-coastal-activities
- Louisiana Department of Natural Resources (LDNR), Office of Coastal Restoration and Management
  http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5

4.2.1.2 Soil Conservation and Erosion Control

Soil conservation involves the identification (e.g., type, location, and amount) and appropriate use of soils. Use should be in accordance with the limits of a particular soils' physical characteristics and also protect it from uncontrolled stormwater runoff to prevent

and control soil erosion. This information will be used to plan the use and management of soils for construction, forestry practices, recreation facilities, and wildlife habitat. Soil types with greater erosion potential require modifications to the timing, intensity, and frequency of forestry and wildlife management practices. Knowing where soil types are located on a particular tract and understanding the advantages and limitations of the soils are prerequisites to selecting the most appropriate wildlife habitat and forestry improvement practices.

Erosion is the detachment and movement of soil, usually by water, which results in sedimentation and physical damage. Water quality is diminished by increased sedimentation, which is a form of water pollution. Sedimentation is particularly detrimental to benthic organisms and many fish species; it can eliminate habitat by covering food sources and spawning sites, smother bottom-dwelling organisms, and increase turbidity to the point that photosynthesis is hindered or prevented. Reductions in photosynthesis decrease dissolved oxygen levels to the detriment of fish and benthic invertebrates. Soil erosion also undermines roadways, shoreline facilities, and other military structures, and increases maintenance costs associated with stormwater facilities.

Issue

The primary cause of soil erosion at NAS JRB NOLA is stormwater runoff on unvegetated slopes along canals, ditches, and natural drainageways. For example, the drainage system at NAS JRB NOLA has erosion problems around the headwalls. Actions contributing to the susceptibility of soil to erosion include:

- Stormwater runoff on unvegetated slopes along canals, ditches, and natural drainageways.
- Pedestrian traffic on grassy areas of low sustainability due to poor soil conditions.
- Human alterations to the natural vegetative cover and topography, including the channeling of water flow which increases the quantity and rate of flow, the exposure of soils and increased soil slopes, and the creation of impervious surfaces.
- Forestry practices that expose soils to rainfall and stormwater runoff.
- Development in poor soil quality areas.
- Improper mowing and maintenance of grass areas.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- For program development, enlist the services of foresters, fish and wildlife biologists, and ecologists.
- Offer hands-on training and individual participation in activities to better demonstrate the concept, application, and importance of soil erosion control. Integrate other resource management activities such as landscaping (Section 4.2.1.4), wetland enhancement (Section 4.2.1.1), forestry (Section 4.2.1.7), and outdoor recreation (4.2.4).
- The Natural Resources Manager will monitor stormwater discharge to address water quality protection. Ensure that:
    - Stormwater runoff is subjected to BMPs prior to discharging into water bodies. BMPs shall prevent or reduce the amount of pollution in water to a level compatible with accepted Surface Water Quality Standards.
    - No site activities on NAS JRB NOLA result in violation of state water quality standards associated with the siltation of wetlands or reduction in the natural retention or filtering capability of wetlands. See Section 4.2.1.1 for further information on the use of buffers to minimize the siltation of wetlands from nonpoint sources.
    - Adequate soil erosion measures are implemented.
- NAS JRB NOLA will continue to manage point and nonpoint source stormwater in industrial areas consistent with BMPs described in the Stormwater Pollution Prevention Plan (SWPPP), and will ensure that its SWPPP includes stormwater management practices for non-industrial areas. The SWPPP will ultimately address the maintenance of stormwater structural control, stormwater treatment projects, roadway maintenance activities, flood and soil control projects, pesticide, herbicide and fertilizer application, external connections and discharges, and construction activities.
- NAS JRB NOLA will manage stormwater runoff from new development to achieve no net increase in stormwater discharge from the Installation, unless it is impossible to do so and satisfy the military mission.

- Map soil units and areas where soil type presents a threat of erosion.
- Train and educate all contract and department personnel on actions that may directly or indirectly contribute to soil erosion problems and measures that can be employed to avoid or lessen these conditions.
- Continue to operate the existing soil conservation and erosion control program through BMPs described in the SWPPP.

Long-term Management

The long-term management concept for soil conservation is to identify and understand the suitability and sustainability of a soil unit for a proposed action. The USDA NRCS soil surveys would be reviewed to determine constraints on soil management units and may also be used to determine appropriate management practices. The USDA NRCS soil survey for Plaquemines Parish, Louisiana, also provides information about potential erosion hazards, groundwater contamination, productivity of cultivated crops, trees, and grass, and the protection of water quality, wetlands, and wildlife habitat.

All necessary actions are taken to prevent, control, and abate environmental pollution at NAS JRB NOLA, in accordance with EO 12088. Areas along the airfield taxiways that have drainage problems have been regraded to reduce erosion. NAS JRB NOLA would continue to operate its soil conservation and erosion control program using the BMPs described in the SWPPP and the six principles for soil conservation and erosion management presented in Smoot and Smith (1999):

1. Minimize areas of disturbance by leaving intact stream buffers, forest conservation areas, wetlands, highly erodible soils, steep slopes, environmental features, and stormwater filtration areas.
2. Stabilize and protect disturbed areas from raindrop and runoff energies as soon as practicable.
3. Minimize runoff velocities.
4. Protect waterways and stabilize drainage ways that may be particularly susceptible to sedimentation.
5. Retain sediment within construction sites.
6. Reduce exposure time.

NAS JRB NOLA will continue to update its SWPPP as necessary, to include control measures for forest and floodplain areas. It would also evaluate and map erosion

control problem areas on the Installation and provide training to all land managers on fundamental soil control measures and advanced soil erosion design measures. Measures to control potential erosion problems include:

- vegetative and structural protective covers (e.g., permanent seeding, groundcover)
- sediment barriers (e.g., straw bales, silt fence, brush)
- sediment detention ponds and basins (e.g., sediment traps and basins)
- stream and bank protection (e.g., riprap)
- constructing pervious surface walkways in areas of high pedestrian traffic
- water conveyances (e.g., slope drains, check dam inlet and outlet protection)

Integration with Other Natural Resources Management Activities

The following natural resources management activities are directly or indirectly related to soil conservation and erosion control, and those relationships would be considered during management decisions to conserve soil and control erosion:

- Wetlands, Section 4.2.1.1 – sedimentation into wetlands.
- Stormwater Quality, Section 4.2.1.3 – stormwater and sedimentation.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – maintain vegetative cover to minimize erosion.
- Integrated Pest Management, Section 4.2.1.5 – pesticide runoff with sediment.
- Exotic and Invasive Plant Species Removal, Section 4.2.1.6 – control erosion during plant extraction.
- Forestry, Section 4.2.1.7 – erosion control during forest management practices.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – sedimentation is detrimental to aquatic organisms.
- Outdoor Recreation, Section 4.2.3 – ensure that recreation does not facilitate erosion.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – partner to develop strategies that conserve soil and control erosion.

Ecosystem Management

Soil conservation is an essential component of the ecosystem management concept. Soils are particularly susceptible to erosion from uncontrolled stormwater runoff, and may discharge into water bodies from point and nonpoint sources. Sediments in stormwater runoff have the capacity to obstruct drainage infrastructure and to reduce the

volume capacity of wetlands, potentially resulting in damaging flood conditions. Turbidity pollution derived from soil erosion also may affect fishery resources and other aquatic communities on the Installation, in the Mississippi River, in the GIWW, and in adjacent wetlands.

Climate Change

The rate and severity of soil erosion is affected by precipitation, temperature, runoff, and vegetative cover, all of which are susceptible to climate change. Increased and prolonged drought can result in the loss of vegetation that would otherwise stabilize embankments. Increased precipitation may exacerbate these conditions by removing topsoil through runoff and thereby inhibiting vegetative re-establishment. In addition, tropical storm events can bring coastal flooding that dramatically erode dune systems and landscapes. Often, small-scale instances of soil erosion due to even minor changes in vegetation cover or surface runoff can persist and grow, so awareness combined with rapid recognition and response are important to mitigate the impacts of soil degradation.

Laws, EOs, Regulations, Directives, and Memoranda Relevant to Soil Conservation and Erosion Control

- Soil Conservation Act, 16 U.S.C. 590a et seq., provides for soil conservation practices on federal lands.
- Federal Water Pollution Control Act, as amended by the CWA of 1977, 33 U.S.C. 1251, regulates the dredging and filling of wetlands and establishes procedures for identifying and regulating nonpoint sources of polluted discharge, including turbidity, into waterways.
- CWA: Section 402 NPDES Program, 2002, 33 U.S.C. 1251, controls direct discharges into navigable waters. NPDES permits, issued by either USEPA or an authorized state/tribe, contain industry-specific, technology-based and/or water-quality-based limits and establish pollutant monitoring and reporting requirements.
- EOs 11989 and 12608 closes areas to off-road vehicles where soil, wildlife, or other natural resources may be adversely affected.
- EO 13112, 3 February 1999 requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems. Vegetative buffers and landscaping to control soil erosion must comply with this EO.
- OPNAVINST 5090.1E, 12-3.8(d), discusses natural resources management relating to soil conservation management.
- Louisiana State Soil and Water Conservation Commission (SWCC) of 1938 under Act 370 developed the Louisiana conservation district program and

continues to establish operational policy and provide general regulatory oversight of state policy in soil and water conservation.

- CWA Section 401 requires that an applicant for a federal license or permit provide a certification that any discharges from the facility will comply with the act, including water quality standard requirements.
- CWA Section 404 establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands.
- Rivers and Harbors Act requires authorization from the USACE for the construction of any structure in or over any navigable waters of the United States and the excavation/dredging or deposition of material in these waters or any obstruction or alteration in a navigable water.

Additional Sources of Information

- Natural Resources Conservation Service (NRCS)
  https://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/
- NPDES Stormwater Pollution Prevention Plans
  https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp
- Louisiana Department of Agriculture and Forestry (LDAF) Soil and Water Conservation
  https://www.ldaf.state.la.us/conservation/state-soil-and-water-conservation-commission/

4.2.1.3 Stormwater Quality

Stormwater runoff is precipitation that falls onto surfaces, such as roofs, streets, the ground, etc., and is not absorbed or retained by that surface, but flows off, collecting volume and energy. Stormwater runoff management takes measures to reduce flow energy and pollutants in stormwater, and control discharge from point and nonpoint sources. Nonpoint source pollution is pollution of surface-water and groundwater resources by diffuse sources. Point source pollution is pollution identified by a single, identifiable point source.

4.2.1.3.1 Drainage and Erosion Control

EO 12088 requires Executive Agency heads to ensure that all necessary actions are taken to prevent, control, and abate environmental pollution with respect to federal facilities and activities under control of the Agency. Sedimentation resulting from soil erosion is a form of water pollution and must be controlled under this EO. The primary cause of soil erosion at NAS JRB NOLA is stormwater runoff on unvegetated slopes along natural drainageways, numerous drainage canals, and ditches. The drainage

system at NAS JRB NOLA has erosion problems around the headwalls. Likewise, some sections of the airfield taxiways have had drainage problems that were addressed when areas bordering the runways were regraded to improve drainage. Detailed erosion control measures and BMPs for construction, forestry, wetland degradation, roads and bank stabilization are available at *http://www.dnr.louisiana.gov/index.cfm/page/109*.

The CWA of 1994 legislates protection of surface water and groundwater quality and requires states to develop programs to identify and reduce nonpoint sources of pollution to surface water and ground water. Federal agencies, including the Department of the Navy, are required to comply with CWA Section 319, which concerns nonpoint source water pollution management programs. NAS JRB NOLA holds a Water Discharge Permit (No. LA0051187) from the Office of Environmental Services in the LDEQ. Permit requirements include representative monitoring, inspections, and reporting sample results. The State of Louisiana has an approved set of BMPs to reduce nonpoint source discharge.

BMPs minimize potential sedimentation sources by minimizing the extent and duration of land disturbance and protecting unvegetated surfaces. BMPs also control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows. Sediment that is suspended in runoff from the project site must be retained using sediment-capturing devices. Successful erosion and sedimentation control involves a combination of structural and vegetative practices.

4.2.1.3.2 Water Quality in Wetlands

Naval facilities are required to manage lands, with the goal of 'no net loss' of wetlands, under EO 11990 and OPNAVINST 5090.1E. All federal agencies are required by EO 11990 to use reasonable efforts to preserve and enhance the natural and beneficial values of wetlands under their stewardship. Proper management of wetlands, understanding their functions and values, and meeting regulatory requirements for conducting activities within wetlands requires knowledge of their extent and distribution. The USACE is the federal agency charged with regulating and protecting wetland resources in the United States. Delineating jurisdictional wetlands is accomplished using the *1987 Corps of Engineers Wetland Delineation Manual* and the *2008 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic*

and Gulf Coastal Plain Region. Areas that meet the regulatory definition of a wetland are protected by Section 404 of the CWA, and any activities that may deposit fill into a wetland require a permit from the USACE.

While wetlands play a role in reducing pollutant levels of inflowing water, they also require protection as water resources. Wetlands effectively filter point and nonpoint source discharges. However, the USEPA states that the use of natural wetlands for water quality treatment for point and nonpoint pollution sources is inappropriate (Fields 1993). Untreated point source discharges to wetlands have largely been eliminated through the NPDES program in Section 402 of the CWA. Remaining point source discharges are of secondarily treated effluent, which still typically contains more biochemical oxygen demand, suspended solids, and nutrients relative to natural inputs. Nonpoint sources have not been commensurately improved. Natural wetlands receive largely untreated runoff from most developed urban and agricultural areas. However, proper management dictates that wetlands and surface waters be protected from such inputs using water quality standards promulgated by each state. Water quality standards specifically for wetlands are gradually being adopted by states. Progress is slow in this area, but nonpoint source pollution control is gaining momentum. Although significant nonpoint source loading to wetlands is undesirable, it will take time to address, and management measures will likely result in reduced, but not eliminated, loadings to wetlands.

Issue

The quality and quantity of stormwater runoff generally depends upon the land use type and impervious surface area. In developed urban areas, there is significant impervious area that causes runoff to have increased pollutant concentrations. Industrial, commercial, and residential activities bring pollutants into contact with stormwater runoff, carrying them into receiving streams, rivers, lakes, and bays. Areas of the Installation with substantial pavement and structure generate considerable runoff and pollutants. The condition and maintenance of drainage systems plays an important role in stormwater management. Undeveloped land and low-density residential areas on the Installation have little impervious area, so impacts on stormwater quality in these areas are expected to be minimal.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 1. Update Invasive, Exotic and Noxious Plant Inventory and Management Plan

Project 2. Invasive Plant Control

Project 4. Species Protection and Habitat Development

Project 5. INRMP Update

Project 7. Pollinator Conservation

Management Strategies

- Maintain routine monitoring in accordance with specifications outlined in the existing NPDES Stormwater Permit.
- Eliminate curbs that function as channels for stormwater to transport sediment and other pollution. Eliminating curbs would allow runoff to spread over large vegetated areas where runoff velocities can be reduced and pollutants can settle out and be taken up by plants or soils.
- Minimize the impacts of fertilizers and pesticides on water quality using management practices that balance the desire to have aesthetically pleasing grounds while protecting water quality.
- Maintain proper function of stormwater control and conveyance structures by frequently removing debris. Litter and yard wastes can clog inlets, catch basins and outlets, lead to overflows, erosion, and unintended flooding, and make these devices ineffective for stormwater pollutant removal.
- Minimize impacts of construction activities at NAS JRB NOLA. The timing of land-disturbing activities and implementation of erosion and sedimentation control measures should be coordinated to minimize water quality impacts.

Long-term Management

Management measures should stress pollution prevention; however, mitigation for impacted water quality can also be accomplished. Vegetative practices can be used to reduce velocity of stormwater, which helps stormwater infiltrate soil, settle particulates, and prevent erosion. Street cleaning is usually performed to improve the appearance of streets and access roads, and can reduce pollutants in runoff if it is performed regularly.

Another benefit of street cleaning is that pipes and outlets in detention structures and ponds are less likely to become clogged. Constructed wetlands and wet or dry detention basins can minimize point source and nonpoint source pollution into streams, natural wetlands, and other receiving waters.

Integration with Other Natural Resources Management Activities

The following natural resources management activities are directly or indirectly related to stormwater quality and those relationships would be considered during management decisions to improve stormwater quality:

- Wetlands, Section 4.2.1.1 – stormwater runoff and sedimentation into wetlands.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – maintain vegetative cover to minimize stormwater runoff and erosion.
- Integrated Pest Management, Section 4.2.1.5 – pesticide runoff with stormwater.
- Exotic and Invasive Plant Species Removal, Section 4.2.1.6 – control stormwater runoff and erosion during plant extraction.
- Forestry, Section 4.2.1.7 – stormwater runoff and erosion control during forest management practices.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – stormwater runoff and sedimentation that may be detrimental to aquatic organisms.
- Outdoor Recreation, Section 4.2.3 – ensure that recreation activities do not facilitate stormwater runoff or erosion.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – partner to develop strategies that improve stormwater quality.

Ecosystem Management

Similar to soil conservation and erosion control, effective management of stormwater and associated pollutant loading is essential to realizing the ecosystem management concept. Implementation of BMPs in developed, semi-developed, and undeveloped areas will help protect water quality and habitat for aquatic species. BMPs address the reduction of sedimentation, nutrient loading, bacterial and parasitic pests, and harmful chemicals in stormwater. Construction of any new stormwater ponds in accordance with future stormwater and water quality management strategies would potentially increase wildlife habitat and reduce the potential for additional discharge.

Climate Change

Water resources in the United States are affected by a number of climate stressors, including increasing temperatures, changing precipitation patterns, and extreme events. Elevated water temperatures and increased sediment runoff are two of the most obvious impacts to water quality that result from climate change. Measures that can help to maintain good water quality and stormwater management in the face of a warming climate include:

- Planting trees to shade the ground and keep it cool, and reduce erosion;
- Controlling stream bank erosion to keep channels from getting wider and shallower, which would warm them more easily, and to reduce heat-trapping particles in water;
- Creating deep pools and artificial logjams to provide shade or deep water that limits direct heating from sunlight and creates biotic refugia and habitat;
- Removing unneeded channelization to restore natural groundwater exchange and connection to floodplains which promotes floodwater infiltration into aquifers;
- Constructing narrow streets for less heat-holding asphalt and to yield less runoff;
- Permeable paving to keep runoff from moving over heated roadways and promote infiltration during rain events;
- Building swales and rain gardens to get water underground and control runoff;
- Using rain barrels and cisterns to keep stormwater on a lot; and
- Installing green roofs to lower temperatures compared to conventional roofs, reduce energy use and waste heat, and trap stormwater on site.

Laws, EOs, Regulations, Directives, and Memoranda Relevant to Stormwater Quality

- EO 12088, ensures that all necessary actions are taken to prevent, control, and abate environmental pollution with respect to federal facilities and activities under control of the Agency.
- Federal Water Pollution Control Act, as amended by the CWA of 1977, 33 U.S.C. 1251, regulates the dredging and filling of wetlands and establishes procedures for identifying and regulating nonpoint sources of polluted discharge, including turbidity, into waterways.
- CWA: Section 402 NPDES Program, 2002, 33 U.S.C. 1251, controls direct discharges into navigable waters. NPDES permits, issued by either USEPA or an authorized state/tribe, contain industry-specific, technology-based and water-quality-based limits and establish pollutant monitoring and reporting requirements.

- Louisiana State SWCC of 1938 under Act 370, developed the Louisiana conservation district program and continues to establish operational policy and provide general regulatory oversight of state policy in soil and water conservation.
- CWA Section 401, requires that an applicant for a federal license or permit provide a certification that any discharges from the facility will comply with the act, including water quality standard requirements.
- CWA Section 404, establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands.
- OPNAVINST 5090.1E, 12-3.8(f), discusses natural resources management relating to nonpoint source pollution.

Additional Sources of Information

- International Erosion Control Association
  https://www.ieca.org/
- NPDES Stormwater Pollution Prevention Plans
  https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp
- LDAF Soil and Water Conservation
  https://www.ldaf.state.la.us/conservation/state-soil-and-water-conservation-commission/

4.2.1.4 Landscaping and Grounds Maintenance

Landscaping and grounds maintenance is defined as landscaping design, construction practices, and pest management intended to enhance wildlife habitat, control soil erosion, and generate long-term cost savings.

Issue

Minimize capital costs by:

- preserving existing vegetation during construction in order to reduce the need for new plant materials;
- using native groundcover and shrubs instead of turf wherever possible to reduce maintenance and irrigation requirements;
- using plant materials to reduce solar loading and glare on buildings, to block winter winds, and to channel winds to enhance summer breezes;
- using plant material instead of expensive man-made controls for controlling erosion; and
- using plant barriers and screens instead of architectural screens.

Maintain an ecological balance within the region by:

- reserving environmentally sensitive areas with important flora and fauna;
- preserving existing plant materials unless clearing is necessary to allow construction;
- revegetating disturbed areas with indigenous plant materials that promote wildlife habitat;
- where possible, establish and maintain wildflowers beneficial to the successful recovery and well-being of pollinator species in the region; and
- incorporating physical site constraints, such as soils, topography, drainage, and vegetation, into design decisions so as to disturb as little of the ecological balance as possible.

Minimize engineering solutions by:

- using wide, shallow drainage channels planted with native grasses instead of closed systems;
- combining water features with natural drainage systems to provide retention, aesthetic interest, and climatological control;
- breaking up parking lots with planted medians to reduce solar heat buildup and glare;
- replanting disturbed areas immediately to minimize erosion and runoff; and
- hydroseeding dikes with indigenous wildflowers and grasses to stop erosion and slumping of banks.

Enhance the living environment and the aesthetic qualities of the site by:

- creating an identity and sense of place that is indigenous to the environment, and by reducing negative impacts to the greatest degree possible;
- reducing monotonous and repetitive views by creating softer, more natural, cleared woods edges;
- creating and reinforcing outdoor spaces that give a distinctive identity and setting to each area and function;
- establishing wildflower plots that may be utilized by pollinator insects and other animals;
- enhancing and controlling the site microclimate (e.g., wind, humidity, and temperature);
- humanizing and minimizing large paved areas to prevent extensive heat buildup and visual monotony;
- providing seasonal color for interest, variety, and focal points; and
- using native materials and local building practices to achieve design continuity and harmony.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Objective 1.3: Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural resources.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of native species in NAS JRB NOLA's areas of natural habitat.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 1. Update Invasive, Exotic, and Noxious Plant Inventory and Management Plan

Project 2. Invasive Plant Control

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- Increased use of locally native species
    - Selection of appropriate plant species requires extensive research of site characteristics, plant shape and design, and maintenance requirements. Site characteristics include consideration of the space available, growth characteristics, climate, and the way the plant will interact with its surroundings. Plant shape and design will be evaluated by considering size, shape, maturity, deciduous or evergreen, growth rate, hardiness, adaptability to soil and weather conditions, habits, and density of shade. Maintenance requirements include the types and extent to appropriately maintain the plant species.
- Increased coordination of mowing requirements with seasonal wildlife requirements
    - Mowing activities on semi-developed lands at NAS JRB NOLA would be coordinated with seasonal wildlife habitat requirements.
- Increased use of green waste as mulch

    - Current landscaping operations (i.e., weeding, mowing, and pruning) at NAS JRB NOLA create moderate amounts of green waste, and green waste would be used as mulch for plantings on the Installation.
    - Mulch would provide soil conservation by protecting the soil from wind, reducing the need to weed, and controlling soil temperature.
    - Mulching with materials such as pine bark and pine needles can improve appearances.
- Increased native wildflower plantings
    - Native wildflower planting would be completed in several areas across NAS JRB NOLA where grass is considered too costly to maintain. Wildflowers would be planted in areas to conserve pollinators, reduce mowing efforts and expenses, reduce erosion, increase wildlife potential, and improve the aesthetic qualities of the Installation. Preferred wildflower species include:
    - Black-Eyed Susan
    - Butterfly Weed
    - Cutleaf Daisy
    - Indian Blanket
    - Lanceleaf Coreopsis
    - Partridge Pea
    - Plains Coreopsis
    - Purple Coneflower
- Increased landscape activities around Installation water bodies
    - Trees and shrubs selected for planting will produce food for wildlife, whenever practical, and should be in accordance with the recommended native species for the Installation.

Long-term Management

The potential exists for disturbances to wildlife habitat and nonpoint pollution during landscaping and grounds maintenance. This potential can be reduced by designing landscaping and grounds maintenance management strategies that help to minimize capital costs, maintain an ecological balance within the region, minimize engineering, and enhance the living environment and the aesthetic qualities of NAS JRB NOLA. In accordance with the 2014 Presidential Memorandum on Pollinators, as possible, adhere to the *Federal Strategy to Protect the Health of Honey Bees and other Pollinators*.

Integration with Other Natural Resources Management Activities

The following natural resources management activities are related to landscaping and grounds maintenance and those relationships would be considered during management decisions:

- Wetlands, Section 4.2.1.1 – landscaping to provide buffers around wetlands.

- Integrated Pest Management, Section 4.2.1.5 – alternative methods to pesticide use.
- Exotic and Invasive Plant Species Removal, Section 4.2.1.6 – removal of exotic and invasive plant species and plantings of native plant species.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – grounds maintenance and native plantings will enhance terrestrial and aquatic habitat for wildlife and endangered and threatened species.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – the grounds maintenance crew will be educated and trained in the identification and protection of endangered and threatened plant species.

Ecosystem Management

Proper landscaping and grounds maintenance is consistent with an ecosystem management approach since it reduces the need for irrigation, pesticides, and fertilizers, and relies on the functions and characteristics of native plant species. The use of native species also is recommended for the reduction and control of invasive species, and utilizing native wildflowers that are beneficial to pollinators is preferable. Reducing the demand for irrigation, fertilizers, and pesticides reduces the costs associated with grounds maintenance and reduces pollutant loading into stormwater runoff and surrounding surface waters and aquatic communities.

Climate Change

Hotter, drier summers would necessitate the use of drought-tolerant plants to maintain an aesthetic landscape. Increased shade tree plantings help cool the ground and allow understory landscaping foliage to survive with minimal water. Planting trees and tall shrubs where they can shade windows also helps to mitigate the cost of air conditioning. Permeable surfacing in parking lots improve natural drainage, benefit the water table, and prevent flooding risks in maintained areas, especially when supplemented by “tree islands” placed throughout the lot. Additionally, permeable surfaces absorb less heat than traditional pavements. Tall grass provides shade on lawns to reduce evaporation from topsoil, so mowing grass to a taller height can help to maintain its health when the weather is dry and hot. Generous mulching also helps to reduce evaporation in garden beds and other vegetated plots.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Landscaping and Grounds Maintenance

- The President's April 16, 1994, Memorandum on Environmentally Beneficial Landscaping, requires implementing landscaping practices that are intended to benefit the environment and generate long-term cost savings.
- EO 13112, 3 February 1999, requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems.
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), 7 U.S.C. 136, governs the use and application of pesticides in natural resources management programs.
- Federal Water Pollution Control Act as amended by the CWA of 1977, 33 U.S.C. 1251, prohibits the discharge of dredged or filled materials into waters of the United States, including wetlands, without first obtaining a permit from USACE (Section 404 of the CWA).
- DoDINST 7310.5, administers the reimbursement of costs related to managing forest resources for timber production. Under this regulation, only expenses related to the maintenance of timber for commercial sale are reimbursed.
- OPNAVINST 5090.1E, 12-3.8(e), discusses natural resources management relating to environmentally and economically beneficial landscaping.
- Presidential Memorandum on Pollinators was issued in June 2014 to galvanize responses to declines in native bee survival, threats to monarch butterfly migration, and risks to other pollinator species such as moths, birds, bats.

Additional Sources of Information

- Society for Ecological Restoration
  https://www.ser.org/default.aspx
- Fire Effects on Plants and Wildlife Information System
  https://www.feis-crs.org/feis/
- USDA Invasive and Noxious Weeds
  https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/sa_weeds/sa_noxious_weeds_program
- Louisiana Growers
  https://lanativeplants.com/

4.2.1.5 Integrated Pest Management

Integrated Pest Management (IPM) is an accepted, environmentally responsible, and economically practical method of controlling pest animal populations. IPM incorporates a variety of cultural, biological, and chemical methods to efficiently manage pest populations while lowering dependence upon chemical controls. A number of animal pests and exotic species occur on the Installation, and the control of these pests and

exotics is an integral part of ecosystem management practices at NAS JRB NOLA. Pests in this INRMP include insects and other invertebrates that pose a risk to human health, or that can damage and destroy property, including landscaping and buildings. Household pests infest homes and other buildings and pose a potential risk to human health and comfort. Lawn and landscape pests damage landscaped areas, increase maintenance costs, and decrease the quality of life by their presence.

Photograph 4-1. Fire Ant Mound

Issue

The primary household pests and exotic species at NAS JRB NOLA include mosquitoes, biting flies, and cockroaches. Structural pests on NAS JRB NOLA are primarily termites. The main lawn and landscape pests are fire ants (Photograph 4-1). The control of these pests and exotics is an integral part of ecosystem management practices on the Installation.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural communities.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- Monitor and forecast pest populations to determine whether insect infestations are present, and if so, the type of pests, degree of infestation (small, medium, or large), and the size of the area or number of plants under attack.
- Emphasize prevention via cultural and other controls instead of treatments (discussion below).
- Maintain records and documentation of pest management actions.
- Utilize least toxic and least environmentally disruptive practices.
- Practice resistance management.
- Use BMPs for soil conservation, water use and protection, and nutrient management (Section 4.2.1.2).
- Use BMPs for pesticide management, such as:
    - complying with all legal requirements for pesticide use;
    - using appropriate tools for spraying;
    - calibrating sprayers;
    - obtaining required Pesticide Application Training;
    - ensuring proper pesticide handling and storage;
    - adhering to worker protection standards;
    - practicing drift reduction techniques;
    - considering special circumstances, off-site impacts, proximity to urban areas, and endangered species; and
    - ensuring ongoing education of implementers of IPM.

Long-term Management

- Integrate pest management practices into a total management system:
    - Chemical Controls: the use of chemical pesticides often forms part of an IPM strategy. The key is to use the pesticides to complement, rather than

replace, other strategy elements and to limit negative environmental effects. It is also important to understand the life cycle of a pest so that the pesticide can be applied at the most vulnerable life stage, and to achieve maximum effect at minimum levels of pesticide. Chemical controls include the following:

- conventional - include carbamates, chlorinated hydrocarbons, some botanicals and analogs, and new compounds
- biorational - include pheromones, antifeedants, heat/cold, minerals, oils, some botanicals, and microbials.

- Cultural Controls: these control measures include ways of modifying the pests' environment to hamper breeding, feeding, and shelter habitats. Cultural control methods include properly selecting and rotating crops, sanitizing and solarizing the soil, choosing the best planting and harvesting times, using resistant varieties and certified plants, taking advantage of allelopathy, and intercropping. These control measures are often referred to as the older forms of pest control.
- Biological Controls: biological insect control is a strategy of management that maintains pests at levels that do not cause great economic or aesthetic losses. The principle behind biological pest control is that a given pest can be killed by predators, parasites, or pathogens. By introducing or encouraging such adversaries, the population of pest organisms should decline. There are three general approaches to biological pest control: importation, augmentation, and conservation.
  - Importation: importation involves importing a specific organism to control another; however, there are dangers with this approach. This method requires extensive research before a control organism is released in order to determine whether it will attack species other than the pest species.
  - Augmentation: augmentation consists of manipulating existing natural enemies to increase their effectiveness. This can be achieved by mass production and periodic release of natural enemies of the pest, and by genetic enhancement of the enemies to increase their effectiveness at control.
  - Conservation: conservation involves identifying and modifying factors that may limit the effectiveness of the pest's predator. In some situations, this may include reducing the application of pesticides, as pesticides may kill predators as well as killing pests. Sometimes part of a crop area is left untreated so that natural enemies of pests will survive and recolonize the treated areas.
- Genetic Controls: genetic controls include the transfer of resistance genes into a plant, or the engineering of a disadvantageous trait in the pest, then releasing modified individuals into the pest control area. Another method is the introduction of sterile members of the pest species.
- Physical and Mechanical Controls: physical and mechanical controls include controls that alter environmental factors in a way that reduces pest populations. These controls may be performed by the individual groundskeeper; examples include crop rotation and pruning. Another

physical control method, sometimes called “mating disruption,” involves the use of sex pheromones produced by females to attract males for mating. Many of these pheromones are reproduced synthetically in the laboratory and are available commercially. Quantities of the pheromone placed around an orchard can disrupt mating by confusing male insects, which are then less likely to find a mate.

Integration with Other Natural Resources Management Activities

The following management issues, programs, and actions are related to IPM, and would be consulted for additional management information or provided as additional training and education:

- Wetlands, Section 4.2.1.1 – preventing contamination of water by pesticides.
- Stormwater Quality, Section 4.2.1.3 – reduction in the use of pesticides will enhance stormwater quality.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – proper IPM will reduce overall grounds maintenance costs.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – IPM will reduce competition for vital resources.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – grounds managers will be provided with continual training and education on the most recent IPM techniques and issues.

Ecosystem Management

The management of exotic and invasive fauna is a fundamental component of the ecosystem management concept. Because invasive species, by definition, typically out-compete native species, the eradication of invasive fauna is essential for the protection and enhancement of biodiversity at NAS JRB NOLA and in the region. IPM practices discourage pesticide resistance and reduce chemical costs, human exposure to pesticides, and overall environmental impacts associated with pest management.

Climate Change

Plants and insects depend on climatic factors such as temperature, sunlight, precipitation, relative humidity and carbon dioxide for their development. Insect growth occurs only above a minimum temperature threshold and their rate of growth increases with warming temperatures up to a maximum threshold, which is species-specific. Climate change may therefore be expected to increase the growth rate and proliferation

of various insect pests, and may even facilitate the introduction of pests that were intolerant of previously-existing temperature and precipitation regimes.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Integrated Pest Management

- EO 11988, Floodplain Management, May 24, 1977, requires federal service agencies to avoid construction or management practices that will adversely affect floodplains, unless it is found that: 1) there is no practical alternative, and 2) the proposed action has been designed to minimize harm to or within the floodplain.
- FIFRA, 7 U.S.C. 136, states that a pesticide that is federally registered by the USEPA is not legal for use until it is also registered by the individual state.
- OPNAVINST 5090.1E, 24-3.8, discusses integrated pest management and pesticide use reduction.

Additional Sources of Information

- National Integrated Pest Management Network
  https://nifa.usda.gov/program/integrated-pest-management-program-ipm
- Biological Control Virtual Information Center
  https://entomology.ces.ncsu.edu/biological-control-information-center/
- Consortium for International Crop Protection
  https://uia.org/s/or/en/1100037302
- Ecological Agriculture Projects
  http://eap.mcgill.ca/
- Bio-Integral Resource Center
  http://www.birc.org/
- USDA National Agricultural Statistics Service
  https://www.nass.usda.gov/
- IPM Collaborative Research Support Program Bibliography Service
  https://ento.psu.edu/

4.2.1.6 Exotic and Invasive Plant Removal

An exotic plant is defined as a non-native species that was either purposefully or accidentally introduced into an area outside its natural range. Invasive plants are alien species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health. The definition of invasive species is expanded for natural areas to include aggressive plants that produce a significant change in terms of species composition, community structure, or ecosystem function.

Issue

Several species of exotic plants are found on the Installation, particularly Chinese tallow, Chinese privet, Japanese honeysuckle, and Brazilian verbane. Some of these species can form expansive monocultures when left uncontrolled and, in extreme cases, will lead to complete loss of native plant communities and reduction in regional biodiversity. There are no known noxious weeds on the Installation, as defined by the Federal Noxious Weed Act (7 U.S.C. 2801 et seq.); however, more baseline floristic data are needed to rule out the presence of such species on the Installation.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural communities.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 1. Update Invasive, Noxious, and Exotic Plant Inventory and Management Plan

Project 2. Invasive Plant Control

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- Manage invasive species on the Installation, particularly Chinese tallow and Chinese privet by mowing, chemical control, and grubbing (removal by mechanical or manual means), or a combination of control methods used to control exotic and invasive species, followed by replanting to establish desired vegetation.
- Control and eradicate non-native species of plants and replace them with native trees and shrubs to restore wildlife habitat and restore ground cover.
- The Natural Resources Manager will screen all lists of landscaping plants proposed for NAS JRB NOLA to ensure that invasive and exotic species are not used.
- Prior to the use of an herbicide regulated by the FIFRA at NAS JRB NOLA, the Installation's Natural Resources Manager will contact the applied biology division of Naval Facilities Engineering Command Southeast (NAVFAC SE) and the LDAF for information regarding approved herbicides, including the location of use, amount, and concentrations, as well as treatment methods (e.g., basal-bark, cut-stump, cut-surface, foliar). Special use herbicides may require licenses issued by LDAF. Other considerations will be the applicability of burning and hand clearing in combination with pesticides, as well as non-herbicide removal methods alone.
- The use of herbicides to remove invasive and exotic plants will be conducted in accordance with federal and state laws regulating the use of pesticides. Under the FIFRA, 7 U.S.C. 136, herbicides are registered at the federal level and by individual states. Therefore, a particular herbicide product that is federally registered by the USEPA is not legal for use until it is also registered by the individual state. FIFRA allows individual state registrations to be more restrictive than federal registrations, but not less so.
- To ensure that the application of herbicides does not contaminate surface waters and inadvertently affect flora or fauna, they will be applied by skilled, certified workers and according to label instructions. Careful prescription of the type and amount of chemical to be applied, and the use of buffer areas around surface waters will also help prevent misdirected application or deposition.
- NAS JRB NOLA will lower herbicide toxicity and apply them at rates below those specified on the label when it is believed that such modifications can adequately address the problem. The effectiveness of the lower rates and toxicity will be evaluated, and herbicides will be applied in accordance with label instructions if the lower rate applications do not adequately control the problem.
- The applicability of non-herbicide removal methods will also be considered and could be implemented.

Long-term Management

NAS JRB NOLA will utilize effective exotic and invasive species management plans that are designed to meet the goals of specific projects. In cases where resources such as

time, money, and staff are limited, management planning will ensure that NAS JRB NOLA uses resources wisely to manage exotic and invasive plants for the long term.

The Natural Resource Manager at NAS JRB NOLA will use an adaptive approach to manage exotic and invasive plants and will explore alternative ways to meet management objectives, predict the outcomes of each alternative based on the current state of knowledge, implement one or more of these alternatives, monitor to learn which alternative best meets the management objectives, and use these results to increase knowledge and adjust management actions.

Integration with Other Natural Resources Management Activities

The following management issues, programs, and actions are directly or indirectly related to exotic and invasive plant removal, and would be consulted for additional management information or provided as additional training and education:

- Wetlands, Section 4.2.1.1 – prevent contamination of water by herbicides.
- Stormwater Quality, Section 4.2.1.3 – reduce herbicide runoff.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – do not landscape with exotic plants.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – maintain and restore native habitats for fish and wildlife.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – natural resource managers will contact the appropriate agencies and obtain the licenses that may be required for special-use herbicide application.

Ecosystem Management

Exotic and invasive plant management is fundamental to the ecosystem management concept. Because invasive species, by definition, typically out-compete native species, the eradication of invasive plants is essential for the protection and enhancement of biodiversity at NAS JRB NOLA and in the region. Control and eradication of Chinese tallow and Chinese privet on the Installation and replacement with native trees and shrubs will help to restore wildlife habitat and restore ground cover at NAS JRB NOLA and limit the spread of these invasive species to areas in the region.

Climate Change

Climate change will likely bring about more rapid introduction and proliferation of exotics species. Effective tools, such as prescribed fire, are difficult to implement at NAS JRB NOLA, but would help give native plant species a competitive advantage over exotic species. Coordinated regional fire management efforts emphasizing frequent, low intensity fire regimes in wetland systems would maximize habitat quality and resilience to change while preventing fuel load build up that could lead to unplanned fires.

Regional cooperation among land management entities will become more essential since invasive seeds can be easily broadcast across installation boundaries. Coordinated regional invasive exotic species prevention and control efforts also facilitate early detection and rapid response to nascent invasions.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Exotic and Invasive Plant Species Removal

- The Federal Noxious Weed Act [7 U.S.C. 2801 et seq.], Public Law 90-583, EO 11987, prohibits the introduction of exotic species into a natural ecosystem and requires control or eradication of exotic species and noxious weeds on federal lands.
- FIFRA, 7 U.S.C. 136, states that an herbicide that is federally registered by the USEPA is not legal for use until it is also registered by the individual state.
- OPNAVINST 5090.1E, 12-3.9, discusses natural resources management relating to the control of noxious weeds and invasive species.

Additional Sources of Information

- USDA Invasive and Noxious Weeds
  https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/sa_weeds/sa_noxious_weeds_program
- Federal Noxious Weed Act
  https://www.fws.gov/laws/lawsdigest/fednox.html
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
  https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act
- USDA State-Specific Threats
  https://www.invasivespeciesinfo.gov/us/louisiana
- Center for Plant Conservation
  http://www.centerforplantconservation.org/invasives/links.html

4.2.1.7 Forestry

A new forest management plan that considers multiple-use forest management, as well as an ecosystem management concept, is needed to comply with SAIA, as amended, and Navy regulations. The forest management program will manage forest resources, protect other natural resources, and enhance regional biodiversity. Wildlife management, exotic and invasive species removal, recreation, and other management activities are integrated with good forest stand management and planning. These activities will be addressed here as they apply to forest management activities. This plan includes 671 forested acres (272 forested ha) and an additional 287 acres (116 ha) around the abandoned airfield that have been identified as forest land since the 1989 Forest Management Plan (Appendix A), for a total of 958 acres (388 ha).

The Navy began its forestry program at NAS JRB NOLA in 1964. Initial work consisted of mapping, inventory of existing stands, and planning. A new inventory was made of all stands in 1987. The forest use areas have been for timber management and silvicultural activities since the 1989 Forest Management Plan (Appendix A) was prepared because no market existed for timber products in this area. There has been no timber harvesting or regeneration activities other than natural regeneration on unmanaged areas, and this, along with natural disasters such as Hurricane Katrina, has allowed a high volume of undesirable trees to become established. Trees in the wetland areas exhibit extensive decay and may be declining in value. Species composition, as a result of natural regeneration in abandoned areas without a timber stand improvement program, now includes Chinese tallow, so that there is a moderate to high component of exotic species in the stands. Younger stands regenerated predominantly into low-value, light-seeded species such as boxelder and red maple with a high component of Chinese tallow. Older stands contain a high percentage of sugarberry, red maple, black willow, and boxelder with a scattering of bald cypress, live oak, water oak, and pecan. All the older stands have a lower presence of Chinese tallow. The understory of almost every regenerating stand is composed of a high percentage of boxelder, red mulberry (*Morus rubra)*, Chinese privet, and Chinese tallow, which will make conversion to preferred species more difficult and expensive.

Stand 4 (Appendix A) underwent mechanical site preparation for planting in 1982, but was never planted. This stand subsequently regenerated to Chinese tallow and boxelder. In 1985, some of the area around the abandoned airfield was planted with

softwood species, which failed because the area was not treated with herbicide to control the undesirable hardwood species, grasses, and brush. These stands subsequently regenerated to undesirable mixed hardwoods.

Undeveloped lands on the Installation are predominantly managed as forest stands and contain both upland and wetland forest types. Forest stands are defined as areas that are at least 16.7 percent stocked with forest trees of any size and species, or that formerly had such tree cover and are not currently developed for non-forest use (U.S. Navy 1989c). Forest stands on NAS JRB NOLA are found near the perimeter of the Installation and around the ordnance storage bunkers and abandoned runways. Since the last forest inventory conducted in 1987, these stands have grown from the seedling sapling stage into the pole timber stage and now contain products that are of merchantable size. This area is not being considered for development and will be included in future forest inventories.

The last forest inventory documented 19 forest stands covering 671 acres (272 ha) and containing 1,814,928 cubic ft (51,399 cubic m) of hardwood timber (U.S. Navy 1989c). Softwood trees are present on NAS JRB NOLA, but not as forest stands. Tree species on the Installation have moderate to high value as timber if in good condition, but trees in all stands on the Installation were considered to be low quality during the 1987 inventory.

Issue

Hurricane Katrina caused extensive damage to forest stands throughout the region in 2005, including NAS JRB NOLA. Much of the mature vegetation received damage from the storm, and Chinese tallow has regenerated in many of the areas with substantial amounts of downed timber. NAS JRB NOLA has implemented Chinese tallow removal and control measures including aerial application of herbicides; however, further integration of forest management needs and invasive species control are required to eliminate Chinese tallow.

Forest management generally involves actions for the commercial production and sale of forest products, including practices such as timber management, timber sales, reforestation, timber stand improvement, and other directly related functions. Because of the limited amount of forest resources on the Installation, the major management emphasis of NAS JRB NOLA would be a new forest management plan that considers

multiple-use forest management, as well as an ecosystem management concept. This plan is needed at NAS JRB NOLA in order to comply with the SAIA, as amended.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.3: Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.

Objective 1.6: Implement a forest management plan that integrates ecosystem management and silviculture.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.2: Incorporate the concept of ecosystem management into all planning and management processes.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 1. Update Invasive, Exotic, and Noxious Plant Inventory and Management Plan

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Management Strategies

- Periodic timber stand maintenance.
    - Neglecting timber stand maintenance represents a threat to the military mission and to the sustainability of forest and wildlife resources. The diversity in forest stands on the Installation requires different management practices to achieve the desired outcomes.
- Implement Tree Preservation Instruction.
    - The Tree Preservation Instruction of October 2009 was intended to retain and protect existing trees that are at least 14 inches in diameter at breast height (DBH) and all live oak (Photograph 4-2), southern magnolia (Photograph 4-3), and bald cypress (Photograph 4-4) trees on NAS JRB NOLA (Appendix E).

Photograph 4-2. Live Oak Tree

Photograph 4-3. Southern Magnolia Tree

Photograph 4-4. Bald Cypress Trees

- Select a professional services provider (outside contractor, partner, or in-house) to develop a detailed forest management plan with specific actions to improve forest production, wildlife habitat, and outdoor recreation.
- Conduct a detailed assessment of all stands on the Installation incorporating GIS mapping to determine the condition of each stand with respect to forest products, wildlife habitat, and outdoor recreation potential.
- Consider timber market conditions, wildlife, and recreations needs when planning timber sales.
- Integrate forest products sales in the local market with wildlife management and outdoor recreation by accessing the condition of the forest products market in the

region, the marketability of forest products on NAS JRB NOLA, wildlife management needs (species in need of management, habitats in need of management, etc.), which forest stands can support outdoor recreation, and the recreational activities possible in each stand.

- Determine what will be the primary issue of concern (forestry, wildlife management, or recreation) within each stand and form integrated management actions to meet goals and objectives in those stands.

Long-term Management

Plaquemines Parish does not have a notable forest products market. The northern portion of the parish has gum-oak-cypress forests that are typical along the Mississippi River and tributaries in Louisiana (LDAF 1993), and the remaining land area is coastal wetland and developed lands. The USFS survey of 1991 did not identify any commercial forests in Plaquemines Parish (Vissage et al. 1992). No commercial mills are found in close proximity to the Installation. Forest products harvested from NAS JRB NOLA would need to be transported long distances to reach a commercial mill. Transporting logs great distances is profitable only if they are from high-demand species or if there is a sufficiently large quantity of product to offset the transport costs.

Most hardwood stands on NAS JRB NOLA originated after 1935 (U.S. Navy 1989c). These stands have small, poor-quality trees as compared to stands that originated before 1935 (LDAF 1996). NAS JRB NOLA has a small amount of forestland (958 acres [388 ha]) with medium-to low-quality timber, but current stand qualities are unimproved due to a lack of active management and silviculture and the establishment of undesirable tree species.

Observations of timber harvesting operations in the vicinity of NAS JRB NOLA and conversations with timber company representatives and logging operators in this area indicate the possibility of an emerging market for timber products, including hardwood saw timber and pulpwood, enhanced by the depressed market for softwood products. A continued demand for hardwood pulpwood and high-quality hardwood saw timber and veneer logs is expected.

A recent inspection of the forest stands suggested that an intensive forest management program should be initiated to improve the quality of the resources. This will require harvesting some of the older stands. These stands should be regenerated to preferred species that will have a higher timber and wildlife value, and low-value invasive species

also need to be harvested and regenerated to preferred species. Select trees and groups of trees in each stand that will be left for wildlife habitat, recreational value, and aesthetic reasons. An aggressive exotic and invasive species control program should be instituted in conjunction with timber harvesting and regeneration to improve timber resources and wildlife habitat.

Integration with Other Natural Resources Management Activities

The following management issues, programs, and actions are directly or indirectly related to forestry management, and would be consulted for additional management information or provided as additional training and education:

- Wetlands, Section 4.2.1.1 – protection of water quality in wetland stands.
- Soil Conservation and Erosion Control, Section 4.2.1.2 – potential increases in erosion and land disturbance during forest management activities.
- Stormwater Quality, Section 4.2.1.3 – potential increases in sedimentation during forest management activities.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – reducing overall costs of grounds maintenance and preserving native trees.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – reducing competition for vital resources.
- Outdoor Recreation, Section 4.2.3 – further development of forest trails for educational purposes.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – coordinate forest management activities with local community and conservation organizations.

Ecosystem Management

Proper forest stand management improves stand conditions while improving wildlife habitat and outdoor recreation opportunities. Navy natural resources regulations require installations with forests or lands with potential forest production to provide for optimum sustainable yield of forest products and improvement of forest resources consistent with the military mission and the Installation's INRMP (OPNAVINST 5090.1E). INRMPs are required by Navy regulation to use ecosystem management principles to protect and enhance natural resources. Therefore, forests on NAS JRB NOLA cannot be managed solely for, or to the exclusion of, forest products.

A detailed forest management program should begin with an inventory and assessment of current forest stand conditions, including forest products and their condition. The information gathered must be sufficiently detailed to facilitate development of a forest management prescription for each stand that will maximize forest production in relation to current and projected market conditions. The forest prescriptions must be designed to benefit wildlife, such as improving conditions for neotropical migratory birds and white-tailed deer, and include development of outdoor recreational opportunities to the maximum practicable extent. Navy foresters, Navy wildlife biologists, and the NAS JRB NOLA Natural Resources Manager will complete the plan.

The forest resources are presently used for outdoor recreation. The Natural Resources Manager has used volunteer groups to blend the forest resources with wildlife programs to maintain habitat. Walking and running trails through and adjacent to forest stands are used extensively by residents and have a high recreational value at NAS JRB NOLA. These trails could be developed further for educational purposes with the placement of interpretive signs to identify plants and animals in the area, although no specific project is currently planned for these purposes.

Climate Change

As sea level rises, waves and seawater will push farther inland, flooding more land, eroding shorelines, and salinizing freshwater wetlands and aquifers. Salt intolerant tree species would decline along coastal areas. Drier summers stress young and mature trees and increase the risk of wildfires and insect infestations; however, greater autumn rains may help to establish fall tree plantings and help mature trees prepare for the winter dormant season.

Managed forests require decades to reach maturity, so preparing for climate change now will save time and money in the long term, improve forest health, and reduce the risk of future losses. Timber stand improvement actions that can help mitigate the impacts of climate change include:

- Manage for a healthy density. Keep trees vigorous to better resist pests and survive in the face of disturbances. Thinning for timber stand improvement reduces stress and keeps forests at reasonable densities, species composition, and age class structure.
- Diversify species. When planting, consider species likely to be successful even if the range of species is expected to change over time with climate change.

- Design for wind. Reduce risk of wind-thrown trees by having gradual transitions from short to tall vegetation at the edges of woodland stands.
- Consider storm surges and sea level rise. Plan for species with higher flooding and salt tolerances in flood-prone tidal areas.
- Choose drought-resistant species if it becomes clear that southern Louisiana will be more prone to drought. Techniques like using root gels or watering newly-planted seedlings during a dry summer can help improve survival.
- Diversify stand ages and structure. Stands of different ages and species will not all be susceptible to the same damage. Thinning, harvesting, and planting all provide opportunities to create diversity.
- Build connectivity. Connected woodland parcels allow tree species and wildlife to migrate more easily, which encourages greater diversity.
- Learn how to control invasive species. The species, season, and desired control method can all help to avoid wasting time and money.
- Monitor for disease and insects. A small problem is easier and less expensive to control.
- Control invasive vines. Vines can completely overgrow trees, shading out their canopy and increasing risk of damage from wind.
- Manage deer. Too many deer usually results in too few young trees and the loss of the understory in the woods.
- Plan fuel breaks. Fuel breaks such as well-maintained roads or a thinned area can make it more difficult for wildland fires to spread.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Forest Management

- Soil Conservation Act, 16 U.S.C. 590a et seq., provides for soil conservation practices on federal lands.
- Federal Water Pollution Control Act, as amended by the CWA of 1977, 33 U.S.C. 1251, regulates the dredging and filling of wetlands and establishes procedures for identifying and regulating nonpoint sources of polluted discharge, including turbidity, into waterways.
- CWA: Section 402 NPDES Program, 2002, 33 U.S.C. 1251, controls direct discharges into navigable waters. NPDES permits, issued by either USEPA or an authorized state/tribe, contain industry-specific, technology-based and/or water-quality-based limits and establish pollutant monitoring and reporting requirements.
- Resources Planning Act passed by Congress in 1974, this federal law requires a complete national assessment or inventory of all forest, rangeland resources, and public needs every ten years, along with a plan to meet those needs.
- ESA protects threatened or endangered species and their habitats until they are out of danger of extinction.

- EOs 11989 and 12608 closes areas to off-road vehicles where soil, wildlife, or other natural resources may be adversely affected.
- EO 13112, 3 February 1999 requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems. Vegetative buffers and landscaping to control soil erosion must comply with this EO.
- OPNAVINST 5090.1E, 12-3.8(j), discusses laws that govern natural resources management relating to the protection and management of forest resources.
- Louisiana State SWCC of 1938 under Act 370 developed the Louisiana conservation district program and continues to establish operational policy and provide general regulatory oversight of state policy in soil and water conservation.

Additional Sources of Information

- USFS Southern Research Station:
  https://www.srs.fs.usda.gov/
- Electronic Data Information Source at the University of Florida Institute of Food and Agricultural Sciences Extension
  https://extadmin.ifas.ufl.edu/communications/edis/
- Louisiana NRCS
  https://www.nrcs.usda.gov/wps/portal/nrcs/site/la/home/
- Louisiana Department of Agriculture and Forestry (LDAF)
  https://www.ldaf.state.la.us/

4.2.2 Fish and Wildlife Management

Fish and wildlife management actions are designed to conserve, enhance, and regulate habitat for game and non-game indigenous wildlife species and the taking of game species. This section addresses the development and implementation of techniques and programs for managing fish and wildlife. The fish and wildlife management activities of this INRMP include:

- BASH
- Migratory Birds
- Fish and Wildlife Biological Inventories
- Non-Game Species Management
- Game Species Management
- Fisheries Management
- Fish and Wildlife Law Enforcement
- Natural Resources Damage Assessment (NRDA)

Fish and wildlife management activities are to be integrated with the Louisiana Wildlife Action Plan. The Wildlife Action Plan is part of the State's comprehensive wildlife conservation strategy and has the goal of preventing wildlife from becoming endangered.

4.2.2.1 BASH

The Installation BASH Plan was approved in August 2004 (Appendix B). This plan follows the Navy BASH Guidance Package (U.S. Navy 1989b), but needs updates to more effectively manage BASH risks on the Installation. The guidance package recommends that a list of responsibilities and procedures for bird control be written to ensure continuity during turnover of personnel. The guidance package also recommends that the plan inform new personnel of hazard locations, cite local conditions that attract birds to the airfield, implement measures to reduce the attractiveness of these areas, and seek assistance from the Aviation Safety Officer and the Installation's bird hazard working group (BHWG). The Installation's BHWG is chaired by the Aviation Safety Officer, and its members consist of the Public Works Officer, the Environmental Director, the Air Operations Officer, and a representative of each tenant command. Specific hazard locations and local conditions are not documented in the BASH plan. This deficiency creates potential problems in transferring information to new personnel that rotate into duty on the Installation and decreases efficiency with which BASH hazards are addressed. Also, maps should be included in the BASH Plan for NAS JRB NOLA showing habitats and land uses. These maps will help identify the areas that contribute to BASH hazards. The recommended maps will be created using GIS and attached to the BASH Plan.

The 2004 BASH Plan includes a land management procedure for maintaining vegetation and topography around active runways, providing proper drainage and other necessary actions to discourage birds and wildlife from the airfield. These guidelines are well-established proven ways to minimize BASH risks. Documented hazard locations and conditions that create hazards can be assessed using the maintenance guidelines.

Issue

Bird and other wildlife strikes to aircraft cause substantial damage to U.S. civil and military aviation. Furthermore, BASH strikes put the lives of aircraft crew members and passengers at risk. BASH surveys and Wildlife Habitat Analysis (WHA) are important safety measures to protect aircraft from animal strikes by evaluating animal activity. Daily and seasonal animal movements create hazardous conditions and should be evaluated routinely to review BASH plan effectiveness.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.9: Migratory Bird Surveys

Objective 1.10: Reduce aircraft collisions with wildlife through implementation of the BASH plan

Objective 1.12: Neo-tropical Migratory Bird Monitoring

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

- Increase the intensity of monitoring grass height around the airfield.

- Schedule mowing when grass height approaches 14 inches (36 cm) and mow grass to 7 inches (18 cm).
- Monitor and apply herbicides to remove broadleaf weeds that provide refuge to animals around the airfield in conjunction with mowing program.
- Integrate the mowing schedule into the grounds maintenance contract.
- Map habitat types around the airfield using a global positioning system (GPS) unit and enter information into the GIS database.
- Establish procedures for the BASH contact person to inform the Navy personnel responsible for the Installation's database of incidents.
- Conduct initial BASH training workshop for staff members with refresher training as needed.
- Procure and maintain BASH response equipment (i.e., propane cans, electronic scare devices, calls).

Long-term Management

Land management projects such as those that manage vegetation, surface water, and other natural features will aid in the long-term reduction of BASH risks. Likewise, BASH risks will decline over time by effectively managing wildlife and obtaining, storing, and utilizing information on the distribution and abundance of animals in order to form effective wildlife management actions.

Climate Change

As climate change causes shifts in the distribution and abundance of bird species, together with changes in habitats, there may be instances where bird hazards can pose increased risks to runways and military flight operations. For example, migratory bird community composition could shift if certain species prolong their seasonal residency due to extended periods of mild winter temperatures or even forego seasonal migrations in favor of year-round residency. The spatial ranges of some bird species may also expand or contract based upon climate-related impacts on essential foliage. The BASH program should anticipate and account for these potential changes.

Integration with Other Natural Resources Management Activities

- Landscaping and Grounds Maintenance, Section 4.2.1.4 – scheduled mowing, monitoring, and application of herbicides to remove broadleaf weeds around the airfield, as well as integration of the mowing schedule into the grounds maintenance contract.
- Migratory Bird Surveys, Section 4.2.2.2 – conduct appropriate bird surveys.

- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – managing wildlife browse near the airfield.
- Outdoor Recreation, Section 4.2.3 – ensure hunting programs are designed to help reduce BASH risks.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – map habitat types around the airfield using a GPS unit and enter information into the GIS database and conduct training workshop for staff members.

Ecosystem Management

The risk of a wildlife-aircraft strike will be reduced by managing wildlife on undeveloped, semi-developed, and developed areas of the Installation and habitats around the airfield. By tracking incidents using a georeferenced data set, including information on habitat types at and near each incident's location, a more complete understanding of risks and potential causes of strikes can be developed, leading to more effective management actions.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to BASH

- Environmental Conservation Program DoDINST 4715.3, implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD control.
- SAIA, U.S.C. 670a-f, promotes effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation in military reservations.
- OPNAVINST 5090.1E 12-3.12(b), discusses the responsibilities of Navy natural resources managers with regard to BASH.

Additional Sources of Information

- DoD/Partners in Flight BASH Planning
  https://www.denix.osd.mil/dodpif/groups/bash1/bashwg/index.html
- Air Force Safety Center
  https://www.safety.af.mil/Divisions/Aviation-Safety-Division/BASH/

4.2.2.2 Migratory Birds

Issue

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711), which decreed that all migratory birds and their parts (e.g., eggs, nests, and feathers) are fully protected by law. Migratory birds face serious challenges, including habitat loss, collisions with man-made structures, and environmental

contaminants, resulting in species decline. Because migratory birds cross political boundaries, watersheds, and ecosystems, protecting them requires a coordinated effort involving multiple jurisdictions and interests. Pursuant to the 2003 National Defense Authorization Act, the Armed Forces are exempted from the incidental taking of migratory birds during military readiness activities. Military readiness activities include all training and operations of the Armed Forces that relate to combat and the adequate testing of military equipment, vehicles, weapons and sensors for proper operation and suitability for combat use. However, the Act also requires that the Secretaries of Defense and Interior identify ways to minimize, mitigate, and monitor the take of migratory birds during military readiness activities. The MBTA does not expressly address the issuance of permits for incidental take, so the Navy must exercise due diligence for activities requiring NEPA analysis and must develop appropriate and reasonable conservation measures to avoid, minimize, and mitigate identified significant adverse effects to migratory birds and their nests resulting from such activities.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.9: Conduct bird surveys and document the presence of migratory bird species.

Objective 1.10: Reduce aircraft collisions with wildlife through implementation of the BASH program.

Objective 1.11: Preserve and protect threatened and endangered species and species of special concern to ensure no reduction in species numbers or population sizes.

Objective 1.12: Monitor for the presence of threatened and endangered species and neo-tropical migratory birds.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 1. Update Invasive, Noxious, and Exotic Plant Inventory and Management Plan

Project 2. Invasive Plant Control

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 6. Listed and Species-at-Risk Monitoring

Project 7. Pollinator Conservation

Management Strategies

Implementation of the following management measures will minimize, mitigate, and monitor the take of migratory birds from military readiness activities at NAS JRB NOLA.

- Conduct bird surveys to monitor the bird populations at NAS JRB NOLA.
- Implement habitat enhancement for migratory bird species consistent with the military mission and BASH Management Plan.
- Where possible, NAS JRB NOLA will enter into conservation partnerships with federal, state, and local agencies and non-governmental organizations to improve habitat and allow for bird research at NAS JRB NOLA.
- Utilize the IPM Plan to reduce pesticide use on NAS JRB NOLA.
- Where possible, locate military readiness activities in ways to avoid and minimize impacts on migratory birds. If NAS JRB NOLA notes clear evidence of bird take as a result of military readiness activities, NAS JRB NOLA will document the take, evaluate these activities and where practicable, reduce and eliminate the take of migratory birds. If the take cannot be eliminated, the amount of take will be documented and, where practicable, mitigated for by other management.
- Compliance with the MBTA is mandatory for non-military readiness activities.

Long-term Management

Migratory birds at NAS JRB NOLA are protected under the MBTA against take for normal and routine operations such as Installation support functions. Under the MBTA, take could include mortality, pesticide application, nest and egg removal, and

occasionally, tree removal. Forestry activities associated with timber sales would not constitute take and neither would nest removal outside nesting season. Before routine Installation support action is initiated that may affect any migratory bird species at NAS JRB NOLA, the Natural Resources Manager would be informed. The Natural Resources Manager and BASH Program Manager would determine if the possible impacts associated with the routine action would impact migratory bird species and, if necessary, would initiate discussions or negotiate a permit with the USFWS.

Avoiding and minimizing impacts to migratory birds begins with an up-to-date working knowledge of species presence, seasonality, nesting habits, and habitat condition on the installation. Therefore, migratory bird surveys should be completed regularly on NAS JRB NOLA. These surveys shall follow the guidance and recommendations in the DOD Coordinated Bird Monitoring Plan for survey design and data management. Additional guidance and information is available on the DOD Partners in Flight Monitoring Working Group website (www.dodpif.org). The NRM and Regional Natural Resources support staff will use collected data to avoid, minimize, and mitigate impacts to migratory birds resulting from activities on NAS JRB NOLA. Because most migratory birds cross installation and state boundaries, data sharing is a vital component to their management. Data collected at the installation shall be shared with federal and state agencies through participation in programs such as the Breeding Bird Research and Monitoring Database (BBIRD), eBird, and Monitoring Avian Productivity and Survivorship (MAPS).

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – manage wetland areas used as bird habitat.
- IPM, 4.2.1.5 – utilize IPM to reduce pesticide use on NAS JRB NOLA to benefit migratory birds.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – use bird surveys to monitor the bird populations at NAS JRB NOLA.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – create conservation partnerships with federal, state, and local agencies and non-governmental organizations to improve habitat and allow for bird research.

Ecosystem Management

Bird surveys would be conducted to monitor the bird populations and to minimize, mitigate, and monitor the take of migratory birds at NAS JRB NOLA. Natural resources management would look into opportunities to enter into conservation partnerships with federal, state, and local agencies and non-governmental organizations to improve habitat and allow for bird research at NAS JRB NOLA. Additionally, where possible, military readiness activities would be sited in ways to avoid and minimize impacts on migratory birds. If clear evidence of bird take is noted, such as the sight of numerous dead or injured birds, NAS JRB NOLA would consider modifying its activities, as practicable, to reduce take of migratory birds.

Migratory birds, especially night-migrating species, would be protected from the harmful effects of communication towers (i.e., radio, television, cellular, and microwave). Consideration would be given to monitoring beneath, and retrofitting if needed, the existing radio tower to eliminate the potential harm to migrating bird species. Future siting and construction of towers at NAS JRB NOLA would be in accordance with the USFWS *Guidance on the Siting, Construction, Operation and Decommissioning of Communication Towers.*

Climate Change

Migratory bird community composition is annually dependent upon seasonal migrations driven by seasonal shifts in climate. Individual species occurrences and overall community composition could change if certain species prolong their seasonal residency due to extended periods of mild winter temperatures or even forego seasonal migrations all together in favor of year-round residency. The spatial ranges of some bird species may also expand or contract based upon climate-related impacts on essential foliage. Depending on the observed impacts to a given species' population numbers and geographic distribution, future petitions for federal listing under the ESA are possible.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Migratory Birds

- MBTA, 6 U.S.C. 703, protects migratory birds against "takings" for normal and routine operations such as Installation support functions.
- Responsibilities of Federal Agencies to Protect Migratory Birds, EO 13186, imposes substantive obligations on the United States for the conservation of migratory birds and their habitats.

- Bald and Golden Eagle Protection Act,16 U.S.C. 668-668d, prohibits anyone without a permit issued by the Secretary of the Interior from "taking" bald eagles, including their parts, nests, or eggs.
- Endangered Species Act of 1973, 16 U.S.C. 1531-1544, provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found.
- Fish and Wildlife Coordination Act, 16 U.S.C. 661-666c, authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with Federal and State agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife.
- 2003 National Defense Authorization Act, exempts the Armed Forces from the incidental taking of migratory birds during military readiness activities.
- OPNAVINST 5090.1E, 12-3.5(b)(1), discusses natural resources management relating to migratory birds.
- OPNAVINST 5090.1E, 12-3.5(b)(2), discusses natural resources management relating bald and golden eagles.

Additional Sources of Information

- Smithsonian National Zoological Park
  http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/
- USFWS Division of Migratory Bird Management
  http://www.fws.gov/migratorybirds/
- Birds of Conservation Concern
  http://www.fws.gov/migratorybirds/reports/BCC2002.pdf.
- East Gulf Coastal Plain Priority Bird Populations and Habitats
  http://www.blm.gov/wildlife/pl_04sum.htm
- MBTA
  http://www.fws.gov/permits/mbpermits/regulations/mbta.hml
- The Nature Conservancy
  Migratory Bird Program
  http://www.nature.org/initiatives/programs/birds/

4.2.2.3 Fish and Wildlife Biological Inventories

Issue

The SAIA, as amended, requires that, to the extent appropriate and applicable, military Installations must provide for fish and wildlife management, fish and wildlife habitat enhancements and modifications, and wetland protection, enhancement, and restoration where necessary to support fish, wildlife, and plants. These actions are to be planned and conducted in cooperation with federal and state wildlife agencies.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.9: Conduct bird surveys and document the presence of migratory bird species.

Objective 1.11: Preserve and protect threatened and endangered species and species of special concern to ensure no reduction in species numbers or population sizes.

Objective 1.12: Monitor for the presence of threatened and endangered species and neo-tropical migratory birds.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 6. Listed and Species-at-Risk Monitoring

Project 7. Pollinator Conservation

Management Strategies

- Perform baseline resource surveys to appropriately inventory all plants, wildlife, and birds that inhabit the Installation.
- Implement and update biological inventories.
- Enter into conservation partnerships.
- The Cooperative Plan-Agreement for Conservation and Development of Fish and Wildlife Resources on NAS JRB NOLA was formalized between the Navy,

USFWS, and LDWF in 1975. This agreement facilitated protection, development, and management of fish and wildlife resources on the Installation. Article II of the Plan-Agreement specified that "a general inventory shall be conducted at the earliest practical date of fish and wildlife resources on the Installation"; however, an inventory has not been conducted.

- Collect baseline floral and faunal data for restricted and public use areas in accordance with guidelines from the 1975 Plan-Agreement including:
  - the location of principal land and water areas suitable for fish and wildlife;
  - principal wildlife species;
  - conditions of a species' range and population numbers;
  - a description of aquatic locations, their type and acreage, principal fish species, and general observation of habitat quality; and
  - identification of indicator species (species that are sensitive to change in a particular habitat) to monitor in future surveys.

Long-term Management

The SAIA, as amended, directs military Installations to provide for sustainable use of natural resources, including wildlife, consistent with the military mission of the Installation. These uses can be consumptive (e.g., hunting, fishing) or non-consumptive (e.g., wildlife viewing, nature education), as long as such uses do not conflict with military readiness or adversely affect natural resources under stewardship of the DoD.

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – protect wetland areas used as fish and wildlife habitat.
- Integrated Pest Management, Section 4.2.1.5 – utilize IPM to reduce pesticide use on NAS JRB NOLA to benefit fish and wildlife species.
- Forestry, Section 4.2.1.7 – develop recommendations on NAS JRB NOLA for the improvement of fish and wildlife habitat.
- Migratory Birds, Section 4.2.2.2 – conduct biological inventories, share bird habitat data, and monitor bird populations at NAS JRB NOLA.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – enter into conservation partnerships with federal, state, and local agencies and non-governmental organizations to conduct fish and wildlife surveys, improve habitat, and allow for fish and wildlife research.

Ecosystem Management

Baseline biological data will help develop efficient management and research programs for fish and wildlife resources. Such programs should include information about

development and improvement of habitat for optimum conditions, need, and means to restore desired species abundances, fish and wildlife control as necessary, and protection of fish and wildlife resources.

Climate Change

Changing climatic conditions, such as long periods of excess precipitation or drought, may make habitats unsuitable for some species of fish and wildlife and may also allow for the arrival of new species on an installation, both native and non-native. The appearance of new - and increase in existing - wildlife diseases and parasites is an issue of concern as well. Adaptation will require active management of species populations and their priority habitats. The installation's longstanding emphasis on ecosystem-based management should help in this endeavor through its focus on restoration and enhancement of ecosystem functions and services. Adaptation may require changes in the management and conservation strategies that are currently used to sustain populations of desirable species and control populations of invasive species, and installation managers should be prepared to work with conservation partners to identify when and how to initiate such changes.

Laws, EOs, Regulation, Directives, and Memoranda Relevant to Fish and Wildlife Biological Inventories

- MBTA, 6 U.S.C. 703, protects migratory birds against "takings" for normal and routine operations such as Installation support functions.
- Responsibilities of Federal Agencies to Protect Migratory Birds, EO 13186, imposes substantive obligations on the United States for the conservation of migratory birds and their habitats.
- Bald and Golden Eagle Protection Act,16 U.S.C. 668-668d, prohibits anyone without a permit issued by the Secretary of the Interior from "taking" eagles, including their parts, nests, or eggs.
- ESA of 1973, 16 U.S.C. 1531-1544, provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found.
- Fish and Wildlife Coordination Act, 16 U.S.C. 661-666c, authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife.
- OPVANINST 5090.1D, 12-3.5, discusses the protection and management of fish and wildlife resources on Navy installations.

Additional Sources of Information

- USFWS Endangered Species Program
  http://www.fws.gov/endangered/
- Smithsonian National Zoological Park
  http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/
- USFWS Division of Migratory Bird Management
  http://www.fws.gov/migratorybirds/
- Birds of Conservation Concern
  http://www.fws.gov/migratorybirds/reports/BCC2002.pdf.
- East Gulf Coastal Plain Priority Bird Populations and Habitats
  http://www.blm.gov/wildlife/pl_04sum.htm
- MBTA
  http://www.fws.gov/permits/mbpermits/regulations/mbta.hml
- The Nature Conservancy
  Migratory Bird Program
  http://www.nature.org/initiatives/programs/birds/
- LDWF
  http://www.wlf.louisiana.gov/

4.2.2.4 Non-game Species and Nuisance Wildlife Management

Issue

Non-game wildlife that are native to the region and not considered to be nuisance species benefit from the overall ecosystem-level management approach of natural resources on NAS JRB NOLA.

Nuisance wildlife are those that cause increased BASH hazards and inconvenience to humans, threatens health and safety of human populations, and has the potential to cause property damage. Effects can be relatively minor, such as reducing aesthetic qualities of an area, or major, such as damage to buildings, landscaped areas, and personal injury. Nuisance wildlife also may act as vectors for human disease. The major nuisance wildlife species present at NAS JRB NOLA are described below.

Feral pigs

Feral pigs (Photograph 4-5) inhabit dense brush, marsh vegetation, and mast-producing forests, but can be found in a variety of habitats. They can severely damage native vegetation and landscaped areas, digging up large areas of soil while foraging for roots, tubers, and other underground food sources, increasing erosion.

Photograph 4-5. Feral pigs

Feral pigs that approach active runways are a potential serious risk to arriving and departing aircraft. The most effective means of controlling feral pigs are trapping and shooting. Controlled shoots by authorized personnel have removed problem animals in the past and are effective in controlling small populations of feral pigs.

Nutria

Nutria (Photograph 4-6) are introduced rodents that inhabit freshwater marshes, swamps, rivers, ponds, drainage canals, and other permanent natural and man-made water bodies. High nutria densities contribute to increased soil erosion, wetland loss, and maintenance costs (LeBlanc 1994). Nutria are also vectors of diseases and parasites, such as nematodes, blood and liver flukes, tape worms, and giardiasis. They are attracted to areas with tall vegetation because these areas provide an abundance of food and cover. Keeping vegetation cut short along canals and other drainage structures will discourage nutria from using these areas, and is easily accomplished as part of the grounds maintenance program.

Photograph 4-6. Nutria

Raccoons

Raccoons (Photograph 4-7) can cause problems for grounds maintenance, human health, and wildlife management. They overturn garbage bins and scatter garbage when searching for food in or near human habitations, and roll up newly laid sod in

search of earthworms and grubs, increases grounds maintenance costs (Boggess 1994).

Photograph 4-7. Raccoon

Exclusion is the best way to prevent raccoons from coming into conflict with humans. Proper storage and disposal of garbage is important to prevent raccoons from coming into conflict with humans. Not leaving pet food outside for extended periods also keeps human habitations unattractive to raccoons. Raccoons are known to carry rabies, and can spread this virus to pets or people if they come in direct contact. They can hinder wildlife management activities through predation on bird eggs.

Skunks

Skunks (Photograph 4-8) create conflicts with humans mostly because of their foul odor. Skunks are bold and readily defend themselves when threatened or provoked using foul-smelling secretions from anal glands. They can also carry rabies.

Photograph 4-8. Skunk

The most effective way to repel skunks from human habitations is to make the environment as unattractive to skunks as possible. Skunks are omnivorous and will scavenge on improperly stored garbage. They may create dens under buildings or in proximity to other habitations, and in this way create the largest nuisance. Skunks also damage lawns and golf courses while digging in search of grubs and other subterranean insects. Properly sealing foundations will prevent skunks from digging dens under buildings. Removing debris piles and other stacked materials eliminates the potential for den sites. Proper storage and disposal of garbage will prevent skunks from rummaging through garbage and hunting mice and other small rodents attracted to garbage.

Opossums

Opossums (Photograph 4-9) are found in a variety of habitats, ranging from arid fields to moist forests. They den in burrows made by other animals, cavities in trees, brush piles, and any cover dense enough for them to hide from potential predators. They will occasionally create nests in buildings if they have access to attics or garages (Jackson 1994). Opossums are known to prey on bird eggs. They may also carry rabies.

Photograph 4-9. Opossum

In most cases, opossums and humans come into conflict when opossums forage in compost piles or raid garbage bins, pet food bowls, and bird feeders. The best management in these cases is to practice proper sanitation and prevent access to bird feeders. Ensuring that no buildings have openings large enough to permit opossums to enter also is important to reducing potential for opossum-human conflicts. Nuisance opossums are most effectively controlled by trapping.

Rats and Mice

Rats and mice are highly commensal with humans and are a major cause of structural damage and contamination of foodstuffs in homes and storage facilities. They also are a significant risk to human health as vectors of salmonella, rickettsial pox, lymphocytic choriomeningitis, murine typhus, leptospirosis, and trichinosis (Marsh 1994; Timm 1994a; Timm 1994b).

Using mousetraps in large numbers is effective in quickly reducing mouse infestations, and provides the benefit of making disposal of carcasses easier than using toxicants. Sanitation is also more effective in managing mice and rats, as they are less likely to enter and explore an area that does not have foodstuffs available (Marsh 1994; Timm 1994b). Removal of tall vegetation, including shrubbery, from around foundations of buildings can also prevent infestation (Marsh 1994; Timm 1994b).

Pigeons

Pigeons are highly commensal with humans, inhabiting the ledges of buildings and bridges, aircraft hangars, and where food (e.g., garbage, grains) is concentrated. Pigeon droppings damage buildings and create unsightly and unhealthy conditions, and increase maintenance costs. Pigeons also carry diseases that can be transmitted to people, including ornithosis, encephalitis, toxoplasmosis, salmonella, and histoplasmosis (Williams and Corrigan 1994). Pigeons can create an elevated BASH risk if they congregate within a flight path or near a runway (Williams and Corrigan 1994).

Elimination of long-term feeding, watering, roosting, and nesting sites is an effective and safe method to control and prevent damage. Other effective methods are mechanical exclusion devices and repellents installed where pigeons roost or nest (Williams and Corrigan 1994). Pigeons will abandon an area in which they cannot roost.

American Alligators

American alligators inhabit wetlands that have adjacent, elevated areas for nests, and occur in canals, lagoons, ponds, impoundments, and urban streams (Woodward and David 1994). Alligators quickly become conditioned to the presence of humans, which can create dangerous situations if people do not use caution. Alligators are also known to attack household pets, which causes emotional distress and reduces the quality of life for residents at the Installation (Woodward and David 1994).

Alligators may damage dikes and levees by burrowing into them to escape inclement weather (Woodward and David 1994). Prevention of such damage is possible using fences and bulkheads. Both methods can be expensive, and usually are not cost-effective if done solely for excluding alligators. Alligators have been known to climb fences, requiring any fences used for exclusion to be at least 5.0 ft (1.5 m) high and angled outward at the top (Woodward and David 1994). Within canals and other bodies of water, eliminating emergent vegetation to remove cover can make those habitats less desirable to alligators.

Venomous Snakes

The largest potential for conflict between humans and venomous snakes on NAS JRB NOLA is with southern copperheads (*Agkistrodon contortrix*) (Photograph 4-10), western

cottonmouths (*Agkistrodon piscivorus*) (Photograph 4-11), and various species of rattlesnakes (*Crotalus* and *Sistrurus* sps.) (Photograph 4-12). Rattlesnakes are found in wetlands and uplands and will enter buildings while searching for food. Copperheads and cottonmouths are typically confined to wetlands but will enter developed areas adjacent to canals and ditches on occasion.

Photograph 4-10. Copperhead Snake

Photograph 4-11. Cottonmouth Snake

Photograph 4-12. Canebrake Rattlesnake

The largest impact snakes have on the Installation is a decrease in quality of life related to many people's innate fear of snakes. Snakes tend to avoid direct conflict, and the chance that a snake will bite a person is small if the snake is not provoked. Bites are rarely fatal if medical care is obtained.

The most effective ways to prevent snake encounters is through exclusion and being aware of their presence while walking in areas that may harbor snakes. Excluding snakes from inhabited areas and modifying the environment to make it less attractive to snakes are the most effective ways to prevent conflict with human interests. Fencing can be used in relatively small areas, such as around homes and playgrounds and in areas where snakes are abundant (Howard 1994). Removing cover, such as debris

piles and tall vegetation, will decrease the attractiveness of an area to snakes and rodents that snakes prey upon.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.5: Reduce and control nuisance wildlife.

Objective 1.8: Use GIS to improve management of natural resources.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources, while improving quality of life for military and the public.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Management Strategies

- Maintain hunting program for feral hogs.
- Distributions of each species and their habitat will be geographically mapped so that information can be incorporated into GIS data layers of the Installation's database. Information in these data layers would include plants, animals, invasives, exotics, nuisance species, and pests, as well as their locations and densities of indicator species.
- As additional surveys are completed, data can be updated and compared to data from previous surveys to identify changes that have occurred over time.
- Species distribution surveys will be completed on a 5-year schedule to keep data current.
- Assessment of the quality of habitat for wildlife would be assessed using the WHA Method.
    - This method evaluates biological habitat components such as site potential, vegetation species diversity, and structural diversity components to provide information about the quality of habitats on the Installation. This would allow biologists and forestry managers to focus their time and money on those areas that will maximize both biological and recreational benefits for the Installation.

Long-term Management

Once the baseline faunal survey is complete, nuisance species will be identified for use in future monitoring of ecosystem health and management effectiveness. Monitoring selected species will be more cost- and time-efficient. Regular faunal surveys can provide information about the effectiveness of management activities and increase the probability of detecting a nuisance species that may have been absent during past surveys.

Integration with Other Natural Resources Management Activities

- Integrated Pest Management, Section 4.2.1.5 – utilize IPM plan to reduce nuisance wildlife.
- Forestry, Section 4.2.1.7 – develop recommendations on NAS JRB NOLA to improve forest stands as wildlife habitat.
- BASH, Section 4.2.2.1 – properly manage all wildlife and birds that pose a BASH risk.
- Migratory Birds, Section 4.2.2.2 – some migratory bird species are susceptible to predation by nuisance wildlife.
- Fish and Biological Inventories, Section 4.2.2.3 – complete inventories and account for nuisance wildlife.

- Integrated Ecosystem Management and Partnering, Section 4.2.4 – map the distributions of each species and their habitat using GIS so that information can be incorporated into GIS data layers of the Installation's database and coordinate with federal, state, and local agencies, where appropriate.

Ecosystem Management

An integrated ecosystem approach compliant with SAIA, as amended, will be developed to manage habitats for wildlife. Safety, health, and BASH issues must be considered when developing management plans to control nuisance species.

Climate Change

Rising sea levels, drought, and depleted water resources reduce the native resources available to non-game species and nuisance wildlife, potentially resulting in increased interactions with developed landscapes, buildings, and personnel on the installation. Extensive periods of drought can result in decreased ground cover through vegetative die-off, which facilitates more severe ground damage via rooting and digging. Similarly, gully-washes during severe rainfall events can exasperate or facilitate wildlife-induced erosion. Planting suitable drought-tolerant vegetation in sensitive areas and either vegetative or man-made fortification of potential wash-out zones could help mitigate these impacts. Reduced forage during periods of drought could also force some animals to look for food in urbanized areas of the installation which could damage property and pose risks to residents. Securing trash cans and otherwise removing potential anthropogenic food sources would help discourage such behavior.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Nongame Species and Nuisance Wildlife Removal

- ESA, 16 U.S.C. 1531-1543 , Title 50 Code of Federal Regulations (CFR) Part 17, provides for the identification and protection of threatened and endangered species of fish, wildlife, and plants and their critical habitats. Requires federal agencies to ensure that no agency action is likely to jeopardize the continued existence of a threatened or endangered species.
- MBTA, as amended 16 U.S.C. 703-712, prohibits the taking or harming of a migratory bird, its eggs, nests, or young without the appropriate permit.
- SAIA, as amended 16 U.S.C. 670 a-o, requires each military department to manage fish and wildlife resources in accordance with a tripartite cooperative plan agreed to by the USFWS and state wildlife agency, to provide its personnel with professional training in fish and wildlife management.

- Fish and Wildlife Conservation Act, 16 U.S.C. 2901, encourages all federal departments and agencies to utilize their statutory and administrative authority, to the maximum extent practicable and consistent with each agency's statutory responsibilities, to conserve and promote conservation of nongame fish and wildlife and their habitats.
- EO 13112, 3 February 1999, requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems.
- OPVANIST 5090.1D, 12-3.5, discusses the protection and management of fish and wildlife resources on Navy installations.
- OPVANIST 5090.1D, 12-3.10(b), discusses Navy policy regarding the control of feral cats and dogs.

Additional Sources of Information

- USDA APHIS
  http://www.aphis.usda.gov/
- LDWF Nuisance Wildlife
  http://www.wlf.louisiana.gov/wildlife/nuisance-wildlife
- LDWF Coping with Feral Hogs
  http://www.wlf.louisiana.gov/sites/default/files/pdf/publication/32954-feral-hogs/feral_hogs.pdf
- National Council for Science and Environment
  http://www.biogeog.ucsb.edu/SWAP/Docs/States/LA_summary.pdf

4.2.2.5 Game Species Management

Approximately 1,760 acres (712 ha) on NAS JRB NOLA are potentially available for wildlife management (Figure 4-1). These areas consist of a combination of forested areas, brush, drainage canals, and wetlands. Habitat management is integrated with Wildlife Management in this INRMP, since the concept of habitat is species-related, and is not discussed in a separate section.

Issue

NAS JRB NOLA would utilize effective management and monitoring techniques to sustain essential habitat and populations of game species (e.g., white-tailed deer, gray squirrels, and cottontail rabbits) in areas consistent with the military mission.

White-tailed Deer

White-tailed deer are the most well-documented and managed game species found on NAS JRB NOLA (Photograph 4-13). In the past, harvest data provided the basis for managing white-tailed deer populations on the Installation. However, continued surveys are necessary to obtain accurate information on white-tailed deer population, distribution, and habitat. Well-managed deer habitats have large amounts of "edge" habitat, which are areas where two or more vegetation types meet. The increased diversity of plants at edge habitats provide more food and resources than a single habitat type could provide.

Photograph 4-13. White-tailed Deer

Gray Squirrel

The gray squirrel (Photograph 4-14) is the most abundant squirrel species on NAS JRB NOLA, but they are an insignificant BASH risk because they are unlikely to cross the mowed fields surrounding the runways. This species utilizes masts of trees in hardwood timber areas during most of the year.

Photograph 4-14. Gray Squirrel

During nesting months, gray squirrels move into dens and natural cavities that have formed when mature trees shed dead limbs and the exposed wood rots and forms a hollow. Gray squirrels are very common on the Installation, but the actual distribution of mast and nesting cavities is unknown. Strategies to manage this species will be developed once a biological survey is completed.

Figure 4-1: Wildlife Management Areas - NAS JRB NOLA

GSRC
February 2011

Cottontail Rabbit

The cottontail rabbit (Photograph 4-15) is also an important game species on NAS JRB NOLA. Cottontail rabbits can have as many as six litters a year. In order to maintain the population of rabbits below the carrying capacity of the area, the rabbits must either be harvested or the carrying capacity of the land must be increased. Harvesting rabbits can easily be incorporated into the outdoor recreation plan for the Installation. Management strategies will be developed once a biological survey is completed. If the rabbit population is too low or there is insufficient habitat, management strategies would be developed to encourage population growth. In either case, the management plan for these animals must account for BASH risks and incorporate strategies to reduce the presence of rabbits on or near the active runways.

Photograph 4-15. Cottontail Rabbit

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.6: Implement a forest management plan that integrates ecosystem management and silviculture.

Objective 1.7: Use a broad range of tools including pesticides and fire to manage natural communities.

Objective 1.8: Use GIS to improve management of natural resources.

Objective 1.10: Reduce aircraft collisions with wildlife through implementation of the BASH program.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA and its capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Management Strategies

The primary management tool on the Installation is to create areas of preferred habitat to draw deer away from active runways since they are a BASH risk. Other games species management strategies at NAS JRB NOLA include:

- Development of strategies to manage squirrel and rabbit populations, once biological surveys are complete.
- Incorporation of strategies to reduce the presence of rabbits on or near the active runways and reduce BASH risks.

Long-term Management

In order to manage game species in the Installation in the long term, game species will be sampled for age, size, sex, and condition by the BASH Program Manager and all

data reviewed by the Natural Resources Manager. Similarly, spatial and temporal distribution data collected by the BASH Program Manager will also be made available to the Natural Resources Manager.

Integration with Other Natural Resources Management Activities

- BASH, Section 4.2.2.1 – reduce white-tailed deer and rabbit BASH risks.
- Migratory Birds, Section 4.2.2.2 – ensure that migratory birds and small mammals receive direct benefits from the techniques traditionally considered game management.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – conduct a baseline faunal survey to obtain accurate information on white-tailed deer, squirrel, and rabbit populations, distribution, and habitats.
- Non-Game Species Management, Section 4.2.2.4 – ensure that management of non-game species would increase habitat and browse availability to game species.
- NRDA, Section 4.2.2.8 – restore, rehabilitate, and replace natural resources.

Ecosystem Management

Well-managed deer habitats have large amounts of edge habitat, and the increased diversity of plants at edge habitats provide more food and resources than a single habitat type could provide. The management of undeveloped lands can increase the availability of escape and concealment cover, year-round food supply, and nesting sites for rabbits.

Climate Change

Rising sea levels, drought, depleted water resources, wildfires, invasive plants, forest disease, and increased pests all affect the habitats that white-tailed deer and other game species require. The resulting landscape may even lose the basic habitat requirements required to roost, nest or bed, reproduce, and even forage.

Milder winters would likely affect the timing of avian migration and the winter distribution of waterfowl. Precipitation models suggest higher annual precipitation in Louisiana, but these may be interspersed by relatively prolonged periods of drought. Prolonged drought would be a significant game management concern. Diminished wetland habitat would deter migratory stop-overs and rising sea level could result in higher-salinity wetlands that would negatively impact habitat suitability for game. The increased threat of disease

would be a principal concern for whitetail deer. Diseases such as epizootic hemorrhagic disease and bluetongue virus are transmitted by biting midges and are transmitted between deer when they congregate, so severe drought can enhance conditions for outbreaks by concentrating deer at fewer water sources.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Game Species Management

- Forest Pest Suppression Memorandum of Agreement between the USDA and DoD, 11 December 1990 is the planning, coordination, and execution of field operations to prevent and suppress damaging forest insects and disease outbreaks.
- OPNAVINST 5090.1E, 12-3.10, discusses outdoor recreation on Navy installations, including recreational hunting and collection of fees.
- Louisiana State Hunting Regulations provide all relevant Louisiana hunting regulations that must be followed.

Additional Sources of Information

- Wildlife damage and disease information provided by the University of Nebraska Cooperative Extension Service, Great Plains Agricultural Council, and the USDA http://www.ces.ncsu.edu/nreos/wild/wildlife/wdc/index.html
- USDA APHIS
  http://www.aphis.usda.gov/ws
- LDWF
  http://www.wlf.louisiana.gov/hunting/deer

4.2.2.6 Fisheries Management

Fisheries resources should be managed in order to maintain harvestable populations of native fish to ensure perpetual enjoyment of the resource. NAS JRB NOLA does not possess any coastal marine waters or waters used for spawning by anadromous fish; therefore, essential fish habitat (EFH) and coral reef issues do not apply and no coordination with National Marine Fisheries Service (NMFS) is necessary.

Issue

Numerous drainage canals on NAS JRB NOLA are considered aquatic habitat and have the potential to support fisheries resources. Because of natural processes and increased development on the Installation, they have experienced fluctuating water levels and significant sedimentation and stormwater runoff, requiring management to ensure the future quality of these ponds as recreational fishery resources.

The drainage canals on the Installation average 25 ft (7.5 m) wide and 12 ft (3.7 m) deep. Side slopes are covered with erosion-controlling grasses that are mowed regularly. These canals were identified as an under-utilized fisheries resource in the 1997 INRMP. Recommendations included creating fishing access structures such as canoe launches and fishing piers to the canals. A biological survey will need to be completed to determine the status of fish resources in canals.

Aquatic plants provide food, shelter, and oxygen to aquatic systems. An aquatic weed control program is required to identify and implement actions to reduce the presence of undesired plants in the drainage canals while maintaining a balance between drainage needs, fish habitat, and recreational fishing. Currently, aquatic weed control in the drainage canals is supervised by the PPDD.

An aquatic weed control program should be based upon environmentally sound, cost-effective management actions as part of the Installation's IPM Plan. Surface water drawdowns can also be used to control aquatic weeds, but are not feasible on the Installation because the canals contain a large volume of water and are continually recharged by groundwater seepage. Effective mechanical control methods include skimming floating vegetation and uprooting emergent and submerged plants by machine and hand tools.

Triploid grass carp are an option for biologically controlling aquatic nuisance plants. They are voracious herbivores that can completely consume an aquatic plant community. Triploid grass carp are sterile, which makes their abundance easy to control. LDNR requires permits for the use of triploid grass carp to control vegetation.

Erosion control methods reduce sedimentation, improve habitat for fish and wildlife, and stabilize shorelines for recreation such as fishing and canoeing. Specifications for stream bank and bank protection along the canals should be based upon the NRCS Standard which considers the maintenance and improvement of habitat for fish and wildlife. Planning, design, and construction of recreational areas should incorporate desirable landscape features such as the nature trail, greenways, and forested buffer.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.1: Conserve wetlands, floodplains, stream networks, and soils.

Objective 1.2: Achieve no net loss of wetlands.

Objective 1.3: Implement environmentally beneficial landscaping, grounds maintenance, and urban forestry practices.

Objective 1.4: Reduce and control invasive and exotic flora and fauna.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA and its capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups

Projects and Management Strategies

<u>Projects (detailed in Section 6)</u>

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Management Strategies

An important management strategy is to keep invasive plants from dominating aquatic habitats. A management plan for the canals can be developed after baseline data are collected.

Problem species at NAS JRB NOLA include:

- algae
- duckweed (*Lemna minor*)
- water hyacinth (*Eichhornia crassipes*)
- pond weed (*Potamogeton* spp.)
- smartweed
- alligator weed
- cattail (*Typha* spp.)

Several options are available for controlling aquatic nuisance plants depending upon the severity of the problem, physical constraints, and mission needs. These options include:

- surface water drawdowns
- preventative fertilization
- skimming floating vegetation
- uprooting emergent and submerged plants by machine or hand tools
- using triploid grass carp

Erosion control methods can be used to improve habitat for fish and wildlife and improve stream and stream bank corridors for recreation.

Long-term Management

Specific long-term management considerations for fisheries include Installation-specific physical characteristics, eventual stocking and fish harvest, continued water quality management, and continued aquatic vegetation management. If a preventative fertilization program is started, it should continue in order to not harm fish populations. However, extended fertilization programs are expensive and, depending upon the size of the area being treated, may not be practical for large-scale projects. Approximately 10

herbicides are available for aquatic weed control. Correct plant identification is essential to the proper selection and use of chemical controls.

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – protection of water quality and habitat for fish.
- Soil Conservation and Erosion Control, Section 4.2.1.2 – erosion control methods to improve habitat for fish and wildlife and improve stream and stream bank corridors.
- Stormwater Quality, Section 4.2.1.3 – sedimentation and stormwater runoff management to ensure the future water quality of drainage canals as fishery resources.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – control aquatic nuisance to improve fish habitat.
- Exotic and Invasive Plant Species Removal, Section 4.2.16 – aquatic weed control program will benefit fish.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – conduct a biological survey to collect baseline data and develop a management plan for the drainage canals.
- Fish and Wildlife Law Enforcement, Section 4.2.2.7 – oversee recreational fisheries on NAS JRB NOLA.
- NRDA, Section 4.2.2.8 – restore, rehabilitate, and replace natural resources.
- Outdoor Recreation, Section 4.2.3 – improve stream and stream bank corridors for recreation.

Ecosystem Management

The fish populations and water quality of drainage canals may be affected during actions such as grading, shaping slopes, or increasing depth to enhance the fisheries habitat on NAS JRB NOLA. Various wildlife species will benefit from the habitat provided by the proper management of drainage canals. Proper management of aquatic areas will also provide additional recreational resources and educational and interpretive opportunities.

Climate Change

Continued increases in air temperatures and changing precipitation regimes associated with climate change can have profound impacts on freshwater biota and water quality. Terrestrial regions have warmed faster than the oceans thus far, with associated temperature increases in upland waterways. Freshwater systems are also subject to a series of non-climate stressors such as eutrophication, habitat degradation, and invasive

species, which can be exacerbated by extreme weather events. As air temperatures increase, so do evaporation rates, which lowers water levels. Maintaining and restoring shoreline plant communities, both in the water and on the banks, encourages natural processes to mitigate some impacts of climate change. Vegetation emerging from the substrate stabilizes shorelines against erosion and protects water quality by intercepting human-derived nutrients and pollutants. When shoreline vegetation is degraded, embankments are more vulnerable to erosion and water quality degradation.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Fisheries Management

- Federal Water Pollution Control Act, as amended by the CWA of 1977, 33 U.S.C. 1251, prohibits the discharge of dredged or filled materials into waters of the United States, including wetlands, without first obtaining a permit from USACE (Section 404 of the CWA).
- Fish and Wildlife Coordination Act as amended; Public Law 85-624, 16 U.S.C. 661 et seq., was enacted to ensure that fish and wildlife conservation receives consideration equal to, and coordinated with, other features of water resources programs. Section 10 of the Act directs federal agencies to consult the USFWS, NMFS, and the appropriate state agencies before authorizing alteration to water bodies.
- EO 11990, 24 May 1977, as amended, requires government agencies, in carrying out agency actions and programs affecting land use, to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.
- CWA: Section 401 Water Quality Certification, 1986, 33 U.S.C. 1341, requires that states certify compliance with federal permits or licenses and with state water quality requirements and other applicable state laws. Under Section 401, states have the authority to review any federal permit or license that may result in a discharge to wetlands or other waters under the state's jurisdiction to ensure that the actions would be consistent with the state's water quality requirements.
- EO 13112, 3 February 1999, requires executive agencies to restrict the introduction of exotic organisms into natural ecosystems.
- OPVANIST 5090.1D, 12-3.5, discusses the protection and management of fish and wildlife resources on Navy installations.
- OPNAVINST 5090.1E, 12-3.10, discusses outdoor recreation on Navy installations, including recreational fishing.
- Louisiana State Fishing Regulations all relevant Louisiana fishing regulations must be followed.

Additional Sources of Information

- LDWF
  http://www.wlf.louisiana.gov/fishing/freshwater

4.2.2.7 Fish and Wildlife Law Enforcement

Security guards patrol the entire Installation; however, their primary responsibility is protection of the Installation facilities and military mission. Their training does not include enforcement of fish and wildlife laws, although they do enforce firearms laws on the Installation. Currently, there are no game wardens on the Installation.

Issue

The overarching purpose of fish and wildlife law enforcement on NAS JRB NOLA is to enforce federal, state, and local laws and regulations. This enforcement is needed for viable populations of fish and wildlife and will be integrated with the management of all other natural resources on the Installation.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.13: Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA and its capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 6. Listed and Species-at-Risk Monitoring

Management Strategies

- Contact local universities to determine if researchers can be employed to conduct biological surveys.
- Coordinate with Navy biologists to complete biological surveys.
- Select appropriate sampling methods for each biological survey, coordinate staff and volunteers necessary to accomplish surveys and inventories, and obtain additional funding, as needed.
- Map geographic distributions of species with a GPS unit during field visits.
- Conduct an inventory of terrestrial plants throughout the Installation.
- Conduct an inventory of aquatic plants and animals found in Lake Baney and the drainage canals.
- Conduct a wildlife inventory in undeveloped, semi-developed, and developed areas of the Installation.
- Digitize field data, identify or create data layers in the database for all resource information, and manage these data layers.
- Compile a report that summarizes the existing distribution and abundance of all species documented during the biological surveys.

- For each category of wildlife (e.g., fish, mammals, birds, plants) present on the Installation, identify indicator species and develop a plan to monitor populations of indicator species during regularly scheduled inventories.
- Determine if desired outcomes of management actions (as shown by changes in indicator species) have occurred or are occurring.
- Evaluate the feasibility of organizing a volunteer effort to undertake clearing activities versus employing a contractor to complete the project.
- If a volunteer effort to remove vegetation is feasible, select Navy personnel to head organizational and planning committees for the clearing event.
- Determine or select nest box designs appropriate for the desired bird species, the number of nest boxes to build and erect, and materials and resources needed to construct nest boxes.
- Coordinate placement of nest boxes with activities to reduce BASH risks.
- Contact the National Military Fish and Wildlife Association and inquire about instructor certification classes and have the Natural Resources Manager attend an instructor certification class.

Long-term Management

In the future, certifying a designated organization at NAS JRB NOLA to instruct specific training, as well as coordinating with the National Military Fish and Wildlife Association and the LDWF Enforcement Division, will enhance the long-term management of fish and wildlife resources at NAS JRB NOLA.

Integration with Other Natural Resources Management Activities

- Migratory Birds, Section 4.2.2.2 – enforce federal, state, and local laws and regulations in order to improve habitat and population management of fish and wildlife.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – collect baseline biological information, such as the abundance and distribution of species.
- Game Species Management, Section 4.2.2.5 – enforce federal, state, and local laws and regulations in order to rehabilitate habitat and population management of fish and wildlife.
- Fisheries Management, Section 4.2.2.6 – enforce federal, state, and local laws and regulations in order to improve habitat and population management of fish and wildlife.
- Outdoor Recreation, Section 4.2.3 – create a new fish and wildlife recreation management plan.
- Integrated Ecosystem Management and Partnering, Section 4.2.4 – enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public.

Ecosystem Management

Enforcement of fish and wildlife laws and regulations is a necessary ecosystem management practice that enhances environmental stewardship and educates the general public about environmental conservation issues, problems, and solutions. By enforcing fish and wildlife laws and regulations on the Installation, NAS JRB NOLA would help promote public awareness of vital environmental resource issues.

Climate Change

Enforcement of natural resources policy on NAS JRB NOLA is increasingly important as climate-related stressors to habitats and species become more evident.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Fish and Wildlife Law Enforcement

- SAIA of 1997, 16 U.S.C. 670a(b)(1)(G), requires public access to a military Installation for the necessary, appropriate, and sustainable use of natural resources by the public to the extent that the use is not inconsistent with the needs of the fish and wildlife resources or with safety and military security.
- Outdoor Recreation – Federal/State Program Act, 16 U.S.C. 460 P-3, defines a program for managing lands for outdoor recreation.
- OPNAVINST 5090.1E, 12-3.13(e), discusses conservation law enforcement on Navy installations.

Additional Sources of Information

- National Military Fish and Wildlife Association
  http://www.nmfwa.org/
- LDWF Enforcement Division
  http://www.wlf.louisiana.gov/enforcement

4.2.2.8 Natural Resources Damage Assessment (NRDA)

Issue

It is Navy policy to restore, rehabilitate, or replace natural resources within its management or control that are injured by Oil and Hazardous Substances (OHS) releases to the environment, whether those releases originate on or off the Installation. The Emergency Response Action Plan (ERAP) provides protection of sensitive areas, wildlife, and other natural resources.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

> **Objective 1.13:** Maintain and rehabilitate, where practicable, native ecosystems and viable populations of all native species in NAS JRB NOLA's areas of natural habitat.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

> **Objective 3.1:** Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 7. Pollinator Conservation

Management Strategies

Regular floral and faunal surveys and periodic revisions to the ERAP are needed to adequately plan and implement a response to OHS releases on NAS JRB NOLA.

Long-term Management

Regularly surveying floral and faunal species and periodically revising the ERAP will aid in the long-term management of fish and wildlife species and their habitats.

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – the ERAP provides protection to sensitive areas, wildlife, and other natural resources.
- Stormwater Quality, Section 4.2.1.3 – the ERAP provides protection to sensitive areas, wildlife, and other natural resources.

- Forestry, Section 4.2.1.7 – the ERAP provides protection to sensitive areas, wildlife, and other natural resources.
- Migratory Birds, Section 4.2.2.2 – conduct survey of migratory bird species to enhance the ERAP.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – collect baseline biological information, such as the abundance and distribution of fish and wildlife species, to enhance the ERAP.

Ecosystem Management

Various fish and wildlife species will benefit from the habitat provided by the restoration, rehabilitation, or replacement of natural resources in the event of an OHS release to the environment on or near NAS JRB NOLA.

Climate Change

Plans to restore, rehabilitate, and replace of natural resources should account for climate-related changes to habitats. Reference to recent habitat and species surveys will help inform such actions to the natural changes observed on the installation in order to plan for more robust rehabilitation efforts.

Laws, Executive Orders, Regulations, Directives, and Memoranda Relevant to NRDA

- Fish and Wildlife Coordination Act as amended; Public Law 85-624, 16 U.S.C. 661 et seq., was enacted to ensure that fish and wildlife conservation receives consideration equal to, and coordinated with, other features of water resources programs. Section 10 of the Act directs federal agencies to consult the USFWS, NMFS, and the appropriate state agencies before authorizing alteration to water bodies.
- Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601, et seq., authorizes Natural Resource Trustees to recover damages for injury to, destruction of, or loss of natural resources resulting from the release of a hazardous substance.
- Federal Water Pollution Control Act of 1972 as amended by the CWA of 1977. The FWPCA, 33 U.S.C. 1251, et seq., authorizes the President, in the case of an OHS release, to take any action necessary to mitigate damage to the public health and welfare, including, but not limited to, fish, shellfish, wildlife, public and private property, shorelines and beaches.
- National Environmental Policy Act. NEPA, 42 U.S.C. 4321 et seq., requires federal agencies to disclose the environmental impact of each major federal action that may significantly affect the quality of the human environment.

- Oil Pollution Act of 1990. 33 U.S.C. 2701, et seq., provides for the prevention of, liability for, removal of, and compensation for the discharge, or substantial threat of discharge, of oil into or upon the navigable waters, adjoining shorelines, or the EEZ of the United States.
- OPVANIST 5090.1D, Chapter 12, discusses natural resources conservation on Navy installations.

Additional Sources of Information

- Natural Resources Damage Research Guide http://digitalcommons.pace.edu/cgi/viewcontent.cgi?article=1170&context=envlaw
- NOAA's Damage Assessment, Remediation, and Restoration Program http://www.darrp.noaa.gov/
- Louisiana Oil Spill Coordinator's Office http://www.losco.state.la.us/ps_rrpprogram.htm

4.2.3 Outdoor Recreation

This section addresses the development and implementation of techniques and programs for managing outdoor recreation. The outdoor recreation management activities of this INRMP include:

- Fishing
- Trapping of Nuisance Wildlife
- Other Outdoor Recreation, Education, and Outreach Activities

The SAIA, as amended, provides for access to natural resources on military installations for the general public, as long as such access does not interfere with military readiness or security of the Installation. Supervised access is acceptable under well-defined circumstances at NAS JRB NOLA since supervision would reduce interference with military readiness. To comply with the intent of the SAIA, as amended, NAS JRB NOLA will develop a program of public events that allows public use of natural resources in a manner that does not compromise military readiness or Installation security.

Outdoor recreational opportunities improve the quality of life for Navy personnel and their dependents, and benefit natural resources management and public relations by instilling a sense of stewardship. There is great potential for outdoor recreation activities on NAS JRB NOLA. A deer hunting program will be established at the discretion of the

CO that allows authorized personnel to hunt during Louisiana's annual hunting season. A canoe launch and nature trail exist to provide outdoor recreational opportunities such as fishing, birdwatching, and nature study. Currently, however, no formal fishing program or organized outdoor recreational activities are in place, and access to the canals for these activities is limited. The amount and distribution of undeveloped land on the Installation provides many opportunities for additional outdoor recreation. Some recreational activities that could occur on the Installation would require minor modifications to natural resources and periodic maintenance, such as clearing understory vegetation to create a shaded picnic area, while others would require development of a formal program.

Authorized members of the public can participate in outdoor recreational activities and volunteer time toward habitat management activities and educational events for the general public. Opportunities that are compatible with military readiness and Installation security will be implemented, and current opportunities open to the general public and Navy personnel are described below.

Specific hunting areas will be established by the CO at NAS JRB NOLA. NAS JRB NOLA recognizes and participates in all state-designated hunting seasons. Hunters must comply with all applicable State of Louisiana and federal regulations and Installation rules. In the future, all hunting will be regulated and administered by a department appointed by the CO at NAS JRB NOLA. Military and DoD personnel, their dependents and guests, and civilians with permission of the CO may be allowed to hunt on NAS JRB NOLA. Prior to obtaining an Installation permit, it is recommended that hunters complete a state-approved hunter education class and attend a safety briefing designed to familiarize participants with local hunting regulations and requirements.

The soils, vegetation, and military mission of NAS JRB NOLA do not support use of off-road vehicles for recreational purposes. EOs 11989, 11644 and Navy regulation (Chapter 5 of the NAVFAC Natural Resources Management Procedure Manual, P-73, Vol. II) restrict the use of off-road vehicles to areas specified by each Installation. This does not include the use of off-road vehicles by base personnel in emergency, law enforcement, combat support, and other specialized cases (e.g., during open deer hunting season).

Fishing is a limited recreational activity at NAS JRB NOLA. Currently, fishing is permitted in the drainage canals throughout the Installation to military and DoD personnel with a Louisiana freshwater fishing license and an Installation permit.

Water recreation such as swimming is not possible on the Installation due to unsuitable water quality and the potential for encounters with alligators and venomous snakes. There is presently a nature trail on NAS JRB NOLA that begins near the Enlisted Housing Area, extends northward along an old levee to Lake Baney, and turns east to the perimeter fence. The trail then follows the perimeter fence back to the housing area. This trail passes through a forested area and runs between two wetland areas that formed on either side of the levee directly behind the ordnance bunkers. The diversity of habitat types provides good potential for wildlife watching and outdoor education but this potential can be increased by extending the nature trail into forested areas adjacent to the abandoned runways.

Nature trails provide excellent opportunities for outdoor education. Unique features of the environment, basic natural history information, and the importance of natural resources and their management can be explained using a series of trailside signs. Interpretive guides keyed to the nature trail system could enhance the educational experience. Possible topics for interpretive guides at NAS JRB NOLA would be tree, wildflower, and bird identification, descriptions of ecosystem function, and basic information on forestry and wildlife management.

Issues

Hunting activities on the Installation may be developed in the future to primarily focus on white-tailed deer, squirrel, rabbit, and feral pigs. As long as hunting does not conflict with the military mission or readiness, continued management of these species can facilitate the hunting program well into the future. Currently, the potential for fishing is present only in the drainage canals. There is potential to develop fishing programs for personnel and dependents of the Installation if habitat improvements through aquatic weed control and fish management occur.

Goals and Objectives

Goal 2: Provide outdoor recreational and educational uses of natural resources that will result in positive effects on those natural resources while improving quality of life for military and the public.

Objective 2.1: Continue to address the long-term recreational needs of NAS JRB NOLA, and NAS JRB NOLA's capability to provide recreational and educational opportunities to approved personnel.

Objective 2.2: Integrate outdoor recreation and ecosystem management with the military mission.

Objective 2.3: Provide for outdoor sporting opportunities while enforcing fishing and hunting regulations.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public, and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.2: Incorporate the concept of ecosystem management into all planning and management processes.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 3. Biological Inventory

Project 4. Species Protection and Habitat Development

Project 6. Listed and Species-at-Risk Monitoring

Project 7. Pollinator Conservation

Management Strategies

General outdoor recreation management strategies at NAS JRB NOLA include the development of additional outdoor recreational activities for Navy personnel, their dependents, and the public that do not adversely affect military mission and readiness or Installation security. Unsupervised access to NAS JRB NOLA by the general public is not possible because of the risk to security and potential for interference with military readiness. NAS JRB NOLA may also determine that game species, such as white-tailed deer, cottontail rabbit, and gray squirrel, are abundant enough to support hunting programs on the Installation. Management plans for all game species will incorporate strategies to reduce BASH risks.

The Installation's Natural Resources Manager can work with aquatic education staff from LDWF and science teachers from local schools to organize activities to introduce youth and novice adult anglers to the aquatic environment. Clinics and workshops could be held on the Installation to include topics such as water safety, fish identification, fishing skills, sporting ethics, and aquatic biology. Fishing derbies would also present an excellent opportunity to involve military personnel and their dependents in the management of the natural aquatic resources on NAS JRB NOLA. By increasing access to the drainage canals via fishing piers and trails, the recreational fishing program could be integrated with other outdoor recreation activities.

Specific outdoor recreation management strategies include:

- Survey the area south of the abandoned runways to determine a path that provides good educational opportunities and exposure to a diversity of biological communities.
- Map the current nature trail and each biological community selected for inclusion in the expansion of the nature trail using the Installation's database.
- Select a route for the nature trail expansion that has the fewest impediments to access and use.
- Regrade the existing nature trail to a width sufficient for use by wheelchairs while also protecting tree root systems; create Americans with Disabilities Act (ADA) compliant access points along the trail.
- Cover the trail with wood mulch and chips to control erosion and reduce damage to the trail surface. Select locations along the nature trail with unique geological, biological, and natural resources management features, and compose brief explanatory text for selected features, and the importance of proper management of that feature.

- Create signs and self-guided tour brochures.
- Arrange for volunteer labor from within and outside of NAS JRB NOLA, provide equipment and materials, and schedule projects.
- Identify target audiences for interpretive guides and create guides about the natural resources, management activities, and role the Installation plays in conserving regional plants, animals, and biodiversity.
- Publish and distribute interpretive guides about natural resources on the Installation.

Long-term Management

The military mission of the Installation restricts the use of this Installation as a recreation provider to the general public. Presently, NAS JRB NOLA provides a limited variety of outdoor recreational activities. Long-term management of outdoor recreation on the Installation would therefore concentrate on providing public access facilities for education and stewardship purposes. NAS JRB NOLA could provide hunting, fishing, interpretive, and educational opportunities to school groups, conservation groups, civilians, and other interested personnel, as well as concentrated and dispersed recreational activities for DoD retired and military personnel. If possible, additional access to the hunting areas may be provided to assist disabled hunters.

In the future, the hunting program should follow regulations set forth by the LDWF. Such regulations include a hunter education course, standard licenses and fees, bag limits, and seasons. Coordination with LDWF biologists may facilitate hunter education courses and wildlife education workshops on the Installation.

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – maintain protection of water quality and habitat in wetland areas while facilitating recreational activities.
- Soil Conservation and Erosion Control, Section 4.2.1.2 – erosion control methods to improve aquatic recreational habitats and shorelines.
- Stormwater Quality, Section 4.2.1.3 – sedimentation and stormwater runoff management to ensure the future quality of drainage canals as recreational resources.
- Landscaping and Grounds Maintenance, Section 4.2.1.4 – controlling aquatic nuisance plants and nature trails.
- Exotic and Invasive Plant Species Removal, Section 4.2.16 -- aquatic weed control program.

- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – conduct a biological survey to collect baseline data and develop a management plan.
- Fish and Wildlife Law Enforcement, Section 4.2.2.7 – oversee recreational hunting, trapping, and fishing on NAS JRB NOLA.
- NRDA, Section 4.2.2.8 – restore, rehabilitate, and replace natural resources.

Ecosystem Management

Ecosystem management practices are enhanced by environmental stewardship and by educating the general public about environmental conservation issues, problems, and solutions. By providing natural recreational and educational opportunities on the Installation, NAS JRB NOLA would help promote public awareness of vital environmental resource issues. In addition, using volunteer groups and Installation personnel for the physical construction of recreational and educational facilities would provide opportunities to teach the values and characteristics of a healthy environment and responsible use of the environment.

Climate Change

Outdoor recreational activities can be highly sensitive to weather, and accordingly, changing climatic conditions can affect the type, extent, and seasonality of recreation usage. For example, with increasing temperatures, certain recreational activities may decline during the hottest months but increase in the cooler months. However, hotter temperatures may also eliminate some recreational opportunities. Climate-related increases in insect-borne diseases can also affect the extent of outdoor recreational usage. Increasingly severe storms and downpours can pose safety risks to hikers, anglers, and others.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Hunting

- SAIA of 1997, 16 U.S.C. 670a(b)(1)(G), requires public access to a military Installation for the necessary, appropriate, and sustainable use of natural resources by the public to the extent that the use is not inconsistent with the needs of the fish and wildlife resources or with safety and military security.
- Outdoor Recreation – Federal/State Program Act, 16 U.S.C. 460 P-3, defines a program for managing lands for outdoor recreation.
- OPNAVINST 5090.1E, 12-3.10, discusses outdoor recreation on Navy installations.

- Louisiana State Hunting and Fishing Regulations list all relevant Louisiana hunting and fishing regulations that must be followed.

Additional Sources of Information

- LDWF hunting information
  http://www.wlf.louisiana.gov/hunting
- LDWF fishing information
  http://www.wlf.louisiana.gov/fishing

4.2.4 Integrated Ecosystem Management and Partnering

This section addresses the development and implementation of integrated ecosystems management and partnering. The integrated ecosystems management and partnering activities of this INRMP include:

- Natural Resources Training
- Partnering with Federal and State Agencies, Universities, and Non-Governmental Organizations

Navy regulations require that every person in a natural resources program receive comprehensive natural resources training specific to their job assignment and maintain continued professional training needed for the work (OPNAVINST 5090.1E). Furthermore, the SAIA, as amended, requires that a sufficient number of professionally trained natural resources managers are available to implement this INRMP for NAS JRB NOLA. Natural resources personnel on NAS JRB NOLA should receive training in all areas of environmental management. Forestry, wildlife management, soil erosion, stormwater runoff, water quality, landscaping, wetlands management, silviculture, hazardous waste, prescribed fire management, GIS, and recreational management are all interrelated. Specific training needs for natural resources personnel at NAS JRB NOLA include:

- Pesticide Applicator Certification
- Professional Natural Resources Training
- National Military Fish and Wildlife Training
- Wetlands Delineation
- Natural Resources Compliance

- GIS Training
- Global Positioning Systems Training
- Invasive Species Training
- Hazardous Waste Operations Emergency Response Training

Cooperating federal and state agencies, universities, and non-governmental organizations can provide a beneficial exchange of technical information, services, and field assistance to accomplish natural resources objectives at NAS JRB NOLA. The benefit of outside expertise is magnified since the Installation only has one full-time natural resources position. Issues related to habitat management, soil conservation issues, and control and suppression of wildfire, for example, would benefit from input by the LDWF, LDEQ, local Soil and Water Conservation Districts, and the Louisiana Forestry Commission. Technical assistance may be provided by the NRCS, USFS, the NPS, USGS, National Interagency Prescribed Fire Training Center, and USFWS. Future collaboration would occur with non-governmental organizations, such as the Nature Conservancy, other non-profit entities, and universities, to further protect and conserve natural resources, maintain environmental compliance, and enhance the Navy's ability to meet its mission-critical objectives.

Issue

Presently, natural resources management personnel consists of one full-time employee who coordinates with volunteers to aid natural resources management on the Installation. Limited GIS management, data integration, and reporting are performed by the natural resources program personnel. However, as more personnel are hired, GIS management, data integration, and reporting will be completed more frequently by natural resources management at NAS JRB NOLA.

Successful ecosystem management at NAS JRB NOLA requires a coordinated effort among all programs, tenant command personnel, outside partners, and regulators to protect the interdependent components that define an ecosystem. The coordinated effort would address the consequences of actions on interrelated resources, and would resolve conflicts between competing programs and plans for use of the Installation’s natural resources.

Goals and Objectives

Goal 1: Protect, maintain, and restore the natural resources at NAS JRB NOLA in support of the military mission.

Objective 1.8: Use GIS to improve management of natural resources.

Goal 3: Protect, conserve, and enhance the ecological value and diversity of natural resources by building productive relationships with regulatory agencies and the public and successfully practicing integrated ecosystem management in support of the military mission.

Objective 3.1: Provide adequate staffing, equipment, technology, and training to the Natural Resources department to ensure proper implementation of this INRMP.

Objective 3.2: Incorporate the concept of ecosystem management into all planning and management processes.

Objective 3.3: Maintain interagency cooperation with USFWS and LDWF.

Objective 3.4: Develop relationships with LDEQ, USDA, USGS, local Soil and Water Conservation Districts, and private groups.

Objective 3.5: Coordinate natural resources activities with local community and conservation organizations.

Projects and Management Strategies

Projects (detailed in Section 6)

Project 5. Annual INRMP Review and Update

Management Strategies

Specific management strategies would include enlisting the services of:

- Installation foresters
- Installation fish and wildlife biologists
- soil conservationists from the Land Management Department of NAVFAC SE
- federal, state, and county wildlife biologists, foresters, and land managers
- universities
- non-profit conservation groups

NAS JRB NOLA also participates in and coordinates with regional multi-agency efforts to maintain a GIS database to identify wetland types, soils, geologic characteristics, landscape positions, and functional assessment field scores for the Installation.

Long-term Management

NAS JRB NOLA would continue to ensure that cooperative agreements, memoranda, and other agreements between the Installation and federal and state agencies that oversee and regulate natural resources protection are current, and that such agreements are established with all necessary agencies. The Natural Resources Manager (NRM) would be responsible for ensuring that NAS JRB NOLA has up-to-date agreements. The NRM would also consult with foresters and fish and wildlife biologists from NAVFAC SE, as well as with federal, state, and county wildlife biologists, foresters, and land managers for assistance. The NRM would also consult with Installation commands and departments, such as MWR.

Integration with Other Natural Resources Management Activities

- Wetlands, Section 4.2.1.1 – appropriate coordination for the protection of water quality and habitat in wetland areas.
- Soil Conservation and Erosion Control, Section 4.2.1.2 – appropriate coordination to conserve soil and control erosion and implementation of BMPs.
- Stormwater Quality, Section 4.2.1.3 – appropriate coordination for effective sedimentation and stormwater runoff management.
- Migratory Birds, Section 4.2.2.2 – conduct migratory bird surveys and coordinate with appropriate agencies.
- Fish and Wildlife Biological Inventories, Section 4.2.2.3 – conduct a biological survey and coordinate with appropriate agencies.
- Fish and Wildlife Law Enforcement, Section 4.2.2.7 – coordinate with appropriate agencies.
- NRDA, Section 4.2.2.8 – coordinate with appropriate agencies to restore, rehabilitate, and replace natural resources.

Ecosystem Management

Ecosystem management is a holistic, adaptive-management concept that transcends man-made boundaries. Management for a sustainable ecosystem requires awareness, education, training, and responsible participation of individuals potentially affecting the

ecosystem, as well as adjustments in management principles and practices to respond to new knowledge and dynamic conditions.

Plans and programs for maintaining and managing natural resources on NAS JRB NOLA need to fully consider the interrelationships among resources on the Installation and assure no net loss of the military mission. The input and cooperation of regulatory agencies and other experts will best facilitate the success of these plans and programs.

Climate Change

Over the coming decades, NAS JRB NOLA will experience significant risks from climate-related changes in the environment, which could compromise its capacity to support the military mission. Adaptability is key and encompasses all efforts to prepare for, manage, and reduce the impacts and risks resulting from a changing climate. Continued training and education are crucial for effective adaptation and are provided by several resources, including the *Commander's Guide to Climate Adaptation for DoD Natural Resource Managers* (available through DENIX) and continually-updated materials provided by the National Military Fish and Wildlife Association's Climate Change Working Group.

Laws, Executive Order, Regulations, Directives, and Memoranda Relevant to Natural Resources Training

- SAIA of 1997, 16 U.S.C. 670a(b)(1)(G), requires that a sufficient number of professionally trained natural resources management and law enforcement personnel are assigned to implement this INRMP.
- OPNAVINST 5090.1E, 12-3.15, discussed training requirements for Navy natural resources conservation personnel.

Additional Sources of Information

- Louisiana NRCS
  http://www.la.nrcs.usda.gov/
- USACE
  http://www.usace.army.mil/Pages/default.aspx
- USACE New Orleans District
  http://www.mvn.usace.army.mil/
- USFWS
  http://www.fws.gov/
- LDWF
  http://www.wlf.louisiana.gov/

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5.0 ENVIRONMENTAL PLANNING AND MISSION SUITABILITY

5.1 OPERATIONS AND ACTIVITIES

The primary operations and activities at NAS JRB NOLA that affect the natural environment are related to air operations (i.e., jet flight training, helicopter operations, air rescue training) and support (i.e., aircraft maintenance, general grounds maintenance, forest and wildlife management).

5.1.1 Achieving No Net Loss to the Military Mission

Project implementation, as described in Section 6, and future revisions and updates of this INRMP will reflect emerging natural resources planning needs, and assist NAS JRB NOLA in achieving no net loss to the military mission. These projects focus on maintaining fish and wildlife habitats, assessing the impacts of military readiness activities on fish and wildlife populations, controlling erosion and sedimentation, implementing the BASH program for mission safety, managing the Installation's forests and wetlands, and providing recreational opportunities.

Management strategies and prescriptions are utilized at NAS JRB NOLA to minimize accidents, meet safety requirements, and complete the mission. Clearing forested areas near the runways and under the approach clear zones helps satisfy these objectives. The BASH Reduction Plan, which is further described in Section 4 and Appendix B, addresses actions necessary to identify and reduce animal hazards to aviation at NAS JRB NOLA. The plan also helps reduce BASH incidents by establishing bird watch conditions, establishing airfield operating procedures to avoid high hazard situations, decreasing airfield attractiveness to animals, and providing guidelines for non-lethal disbursement of birds and other animals from the airfield. Some examples of BASH management at NAS JRB NOLA include:

- maintaining grass heights around the runways between 7 and 14 inches to discourage flocks of birds from landing;
- keeping water levels in all drainages adjacent to the runway as low as possible to discourage landing and nesting attempts by waterfowl and wading birds;

- removing vacant barn swallow nests; and
- trapping and removing pigeons in and around the hangars.

Managing federally listed threatened and endangered species is important to achieving no net loss to the military mission. However, since there are no occurrences of resident threatened or endangered species on NAS JRB NOLA, their management is not practiced. These conditions could change in the future, and continued natural resources management and monitoring for threatened and endangered species at NAS JRB NOLA are required.

New Air Installation Compatibility Use Zones (AICUZ) guidance addresses airfield planning inside and outside of the base boundaries and seeks to prevent development in noise and accident potential zones.

5.1.2 Supporting Sustainability of the Military Mission and the Natural Environment

Effective natural resources management supports sustainability of the military mission. It should provide for the needs of a mission without damaging the ability to conduct future missions. A sustainable mission can be carried out time and again without substantial negative environmental impacts, increased operational costs, or decreased mission readiness and training.

The lack of effective natural resources management could result in a scenario such as inappropriate herbicide application (e.g., excessive use or application of inappropriate pesticides), which negatively affects habitat and water quality, prompting reactions by regulatory agencies that could threaten the military mission. Nuisance wildlife and outbreak of disease on the Installation could also hinder the military mission by limiting access to areas where control is needed.

Outdoor recreational use by the public can affect the security and safety of the military mission. Outdoor recreational opportunities must be planned, developed, and used consistently within the constraints of the military mission.

Monitoring and inventories are fundamental to adaptive natural resources management and mission sustainability. NAS JRB NOLA will follow legal mandates and requirements to ensure that management, monitoring plans, controls, and training are effective. The use of BMPs and established monitoring protocols will further enable natural resource managers to identify their progress toward achieving goals and objectives.

5.1.3 Military Mission and Sustainable Land Use

To carry out its mission, NAS JRB NOLA must build and maintain facilities that support Navy operations. The facilities and drainage structures needed to meet mission needs have removed and altered portions of native ecosystems on NAS JRB NOLA; however, NAS JRB NOLA retains large open areas that support native vegetation, wetlands, and sustainable wildlife populations. Even though the construction of buildings, runways, support areas, roads, parking areas, and recreational areas has necessarily cleared large amounts of native vegetation and affected soil, water, and air resources, impacts on the environment can be reduced in developed areas. When properly planned and executed, the implementation of actions that control erosion, reduce sources of nonpoint source pollution, use native plants in landscaping, and use biological resources to improve the quality of surface water runoff from developed areas do not interfere with the mission of the Installation and can enhance the mission.

5.1.4 Defining Impact on the Military Mission

The primary military mission of NAS JRB NOLA is to train Naval reservists for mobilization and to provide flight, operational, logistical, and fiscal support for joint services tenant commands. NAS JRB NOLA will comply with environmental regulations and conserve natural resources while conducting effective military training. Through the coordination of the various environmental programs (i.e., Forest Management, Fish and Wildlife Management), NAS JRB NOLA ensures the availability of quality training opportunities and the protection of the natural resources on NAS JRB NOLA. During the planning phase of natural resources projects and training missions at NAS JRB NOLA, the Natural Resources Manager ensures compatibility between the military mission and natural resources management. During this planning process, resolutions are established to ensure that environmental regulations (e.g., ESA, CWA, etc.) are satisfied while improving land and water resources and meeting the military mission.

5.2 NATURAL RESOURCE CONSULTATION REQUIREMENTS

All federal agencies are required to implement programs to protect listed species and to use their authorities to further the purposes of the ESA. Furthermore, if a federal action of any kind is found to potentially impact a species protected by the ESA, the responsible federal agency must enter into Section 7 consultation with the USFWS or NMFS. The USFWS is the primary agency responsible for implementing the ESA at NAS JRB NOLA.

Migratory birds are specifically protected under the MBTA of 1918, as amended, and EO 13186 of January 10, 2001, Responsibilities of Federal Agencies to Protect Migratory Birds. Military preparedness and readiness activities such as small craft operations training are exempt from the MBTA. Although exempt per 50 CFR 21, the Navy is responsible for monitoring the potential impacts on migratory birds from military readiness activities. This monitoring will be carried out in conjunction with monitoring and management conducted under EO 13186 as specified in the Memorandum of Understanding between DoD and USFWS to Promote the Conservation of Migratory Birds dated July 31, 2006, and in DoD Guidance to implement said memorandum dated April 3, 2007.

5.3 NEPA COMPLIANCE

NEPA requires an environmental analysis of major federal actions, including actions that occur with federal funding or on federal lands. It requires the evaluation of the environmental effects of proposed land use, development, and military training activities. Some Navy actions fall under existing categorical exclusion and require no further analysis. For those actions not covered by an existing categorical exclusion, the initial environmental document, the EA, determines the potential for significant project impacts and the feasibility of proposed actions. The NEPA process requires coordination with appropriate federal and state agencies and the general public. The public review process identifies significant issues and develops and evaluates alternatives. The preparation of an Environmental Impact Statement (EIS) occurs if significant impacts are identified. If the EA finds “no significant impacts,” the Navy would complete a formal Finding of No Significant Impact (FONSI) and make it available for public review.

5.4 BENEFICIAL PARTNERSHIPS AND COLLABORATIVE RESOURCE PLANNING

There is only one full-time natural resource employee at NAS JRB NOLA, so the Installation also utilizes outside expertise and develops cooperative projects with federal and state agencies, universities, contractors, other Installations, local residents, conservation organizations, and the Navy command. These partners can provide a beneficial exchange of technical information, natural resources services, and field assistance. Federal and state agencies include NRCS, USFS, the NPS, USGS, National Interagency Prescribed Fire Training Center, USFWS, LDWF, LDEQ, local Soil and Water Conservation Districts, and the Louisiana Forestry Commission.

5.5 PUBLIC ACCESS AND OUTREACH

5.5.1 Public Access and Outdoor Recreation

In the future, hunting opportunities for white-tailed deer and feral hogs will be available at NAS JRB NOLA at the discretion of the CO, and the Installation will follow a hunting and fishing instruction authorized by the CO. Active duty, selected reserve DoD personnel assigned to the New Orleans area, and retired military personnel, their dependents, DoD civilians, and accompanied guests may participate in all available recreational hunting activities at NAS JRB NOLA.

Fishing is allowed at NAS JRB NOLA on the canal crossing the back gate, in the canal beside the jogging trail path, and at Lake Baney. All persons fishing on the Installation must possess a current Louisiana freshwater fishing license. Canoes and boats with electric motors are allowed on canals unless otherwise posted. No commercial trapping or fishing is permitted on NAS JRB NOLA.

5.5.2 Public Outreach

NAS JRB NOLA currently does not participate in public outreach programs related to natural resources due to staff limitations and the nature of the military mission at the Installation. The potential exists for education and outreach to occur outside the Installation and in association with festivals and other events.

5.6 ENCROACHMENT PARTNERING

NAS JRB NOLA has prepared an Encroachment Action Plan (Appendix C) that includes actions for planning and zoning as well as outreach to the community. This plan addresses encroachment issues along the perimeter of the Installation. Also, there is a joint land use study under development in cooperation with Jefferson and Plaquemines Parishes and Department of Transportation and Development (DOTD).

The biggest encroachment threat NAS JRB NOLA faces is urban development in Plaquemines Parish. The Peters Road extension project will eventually construct a bridge across the GIWW and a road south of the Installation.

There are several parcels of land that have been evaluated and prioritized for purchase based upon encroachment issues. One parcel located north of the Installation has been purchased using a combination of Navy and Parish funding, and has been turned over to Plaquemines Parish with a development restriction easement. It will likely be used for recreational purposes. The other priority parcels are located between the Installation and the GIWW and south of the Installation.

5.7 GIS MANAGEMENT, DATA INTEGRATION, ACCESS, AND REPORTING

Very little GIS management, data integration, access, and reporting is carried out by the natural resources program at NAS JRB NOLA. With appropriate GIS training, GIS management, data integration, access, and reporting may be used more frequently for natural resources management on NAS JRB NOLA as staffing levels change and coordination/collaboration with internal and external stakeholders progresses.

5.8 TRAINING OF NATURAL RESOURCE PERSONNEL

Navy regulations require that every person in a natural resources program receive comprehensive natural resources training specific to their job assignment and maintain continued professional training needed for the work (OPNAVINST 5090.1E). Furthermore, SAIA requires that a sufficient number of professionally trained personnel are assigned to implement this INRMP at NAS JRB NOLA. Natural resources personnel

at NAS JRB NOLA should receive training in all areas of environmental management. Forestry, wildlife management, soil erosion, stormwater runoff, water quality, landscaping, wetlands management, silviculture, hazardous waste, prescribed fire management, GIS, and recreational management are all interrelated. Specific training needs for natural resources personnel at NAS JRB NOLA include:

- Pesticide Applicator Certification
- Professional Natural Resources Training
- National Military Fish and Wildlife Training
- Wetlands Delineation
- Natural Resources Compliance
- GIS Training
- Global Positioning Systems Training
- Invasive Species Training
- Hazardous Waste Operations Emergency Response Training

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6.0 IMPLEMENTATION

6.1 INTRODUCTION

This section describes the proposed projects to be implemented by NAS JRB NOLA. Projects were identified by the Natural Resources Manager, in consultation with foresters, fish and wildlife biologists, soil conservationists, and federal and state wildlife biologists, foresters, and land managers. The purposes, locations, descriptions, costs, and relevance to the goals and objectives listed in Table 1-1 are described for each project. It is the intent of NAS JRB NOLA to implement the projects, as described, to the greatest extent possible. However, the implementation of projects is largely dependent upon availability of funds and adequate staffing levels. All actions contemplated in this INRMP are subject to the availability of funds properly authorized and appropriated under federal law. Nothing in this INRMP is intended to be or must be construed to be a violation of the Anti-Deficiency Act (31 U.S.C. 1341 *et seq.*).

This section provides a brief discussion of how the INRMP will be implemented with a focus on the proposed projects. Table 6-1 summarizes the projects. Table 6-2 provides the estimated costs for project implementation by fiscal year for NAS JRB NOLA. One of the objectives of the INRMP is to plan for no net loss of the military mission. Cooperative agreements, proper funding, and compliance with NEPA requirements will ensure that NAS JRB NOLA will achieve its military mission.

Functional and resilient ecosystems are better able to support day-to-day military readiness and the military mission in the long term. Preserving and enhancing those ecosystems that are important to training personnel and day-to-day operations of the Installation is the primary mission of this INRMP and all natural resources management actions on NAS JRB NOLA.

6.2 PLAN IMPLEMENTATION AND REVIEW

NAS JRB NOLA will implement projects in the INRMP when funding is available. The INRMP will be reviewed annually and updated every 10 years.

6.3 PLANNING AND MISSION SUSTAINABILITY

The primary mission of NAS JRB NOLA is to train Naval reservists for mobilization and to provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft crews. The absence of federally protected species at NAS JRB NOLA reduces the need to manage resources for the protection of threatened or endangered species habitat.

The required modifications to Installation habitats support flight missions. Flight safety requires maintaining airfield safety clearances and removing obstructions to air navigation. Trees should be removed in advance of requirements. When trees are removed in the cleared areas, the mission is supported and safety inspectors need not order reductions in flight training hours until deficiencies are corrected. Cleared areas include a) areas within the primary surface, which encompasses 750 ft on either side of runway centerlines, b) a 7:1 transition slope on either side of the primary surface, c) an approach-departure clearance surface with a 50:1 slope at the ends of runways, d) the area between the control tower and the runways to maintain aircraft visibility to air traffic controllers, e) areas surrounding the navigational beacons, transmitter and receiver antennae sites, f) lines of sight between the main radar and reflectors at the outboard ends of each runway, g) the area between the precision approach radar and reflectors at the inboard ends of the runways, and h) line of sight between the transmitter and receiver antenna.

Properly scheduled and executed airfield grounds maintenance support BASH needs. Regular mowing to control vegetation height for visibility also reduces the potential of aircraft-wildlife strikes. By maintaining grass heights between 7 and 14 inches, areas around airfields remain unattractive to birds.

Table 6-1. Summary of Projects to be Implemented During Fiscal Years 2022 through 2031 in Support of the INRMP

Fiscal Year(s)	Project	EPR Project (Project #)	Natural Resources Management Activities	Project	Regulatory Driver [a]
2030	Project 1	00206NR008	Land Management	Update Invasive, Exotic and Noxious Plant Inventory and Management Plan	1, 2, 3, 7
Annually	Project 2	00206NR009	Land Management	Invasive Plant Control	1, 2, 3, 7
2022, 2023, 2026	Project 3	00206BL002	Fish and Wildlife Management	Biological Inventory	2, 3, 5, 6, 9
Annually	Project 4	00206SP001	Fish and Wildlife Management	Species Protection and Habitat Development	2, 3, 4, 6, 8
2026, 2031	Project 5	00206BL001	Integrated Ecosystems Management and Partnering	Annual INRMP Review and Update	2, 3, 6
2024, 2027, 2030	Project 6	00206NT001	Fish and Wildlife Management	Listed and Species-at-Risk Monitoring	2, 3, 6
Annually	Project 7	00206NR030	Fish and Wildlife Management	Pollinator Conservation	2, 3, 6, 7

[a] **Primary Legal Driver**

U.S. Federal Code	Title of Act		
(1) 7 U.S.C. 2814	Management of Undesirable Plants on Federal lands	(6) 16 U.S.C. 2901	Fish and Wildlife Conservation Act
(2) 16 U.S.C. 670a-f	Sikes Act Improvement Amendment	(7) EO 13112	Invasive Species
(3) 16 U.S.C. 1531 & 1536	Endangered Species Act	(8) EO 11990	Protection of Wetlands
(4) 33 U.S.C. 1251	Clean Water Act	(9) EO 13186	Responsibilities of Federal Agencies to Protect Migratory Birds
(5) 6 U.S.C. 703	Migratory Bird Treaty Act (MBTA)		

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Table 6-2. Project Implementation for Fiscal Years 2022 through 2031

Project No.	Project Description	EPR Project (Project #)	Navy Assessment Level [a]	Funding Priority [b]	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
1	Update Invasive, Exotic, and Noxious Plant Inventory and Management Plan	00206NR008	1	C				X	X					
2	Invasive Plant Control	00206NR009	1	C	X	X	X	X	X	X	X	X	X	X
3	Biological Inventory	00206BL002	1	S	X	X			X			X		
4	Species Protection and Habitat Development	00206SP001	1	C	X	X	X	X	X	X	X	X	X	X
5	Annual INRMP Review and Update	00206BL001	1	C					X					X
6	Listed and Species-at-Risk Monitoring	00206NT001	1	C			**X**			X			X	
7	Pollinator Conservation	00206NR030	1	C			**X**	X	X	X	X	X	X	X

[a] **Navy Assessment Level**
From EPR "Guidebook" (Cookbook), 1 = Legal Requirement

[b] **Funding Priority**
From DoDINST 4715.3, C= Compliance; S= Stewardship

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6.4 PARTNERSHIPS

NAS JRB NOLA will look for opportunities to enter into partnerships and agreements with federal and state resource agencies, universities, and non-profit organizations to assist in achieving the management goals described by this INRMP. Partnerships can provide a cost-effective method for completing stewardship projects and provide educational opportunities for Navy personnel and others.

6.5 NEPA COMPLIANCE

An EA was prepared and a FONSI completed in 1999 for the implementation of this INRMP. The goals of the INRMP have not substantially modified with this update, and the management objectives have only been changed to better meet the initially stated goals. Consequently, this update does not require new NEPA documentation.

6.6 FUNDING

Funding for implementation of the INRMP will come from the Installation, the Commander Naval Reserve Forces, or NAVFAC natural resources fund sources. The natural resources programs and projects described in this INRMP are divided into compliance and stewardship categories to reflect implementation priorities. Every effort will be made to acquire Operations and Maintenance Navy (Reserve) [O&MN(R)] Environmental or other funding to implement DoD compliance projects, in the most timely manner possible. Stewardship-type projects will be funded through forestry, agricultural outlease, fish and wildlife, Legacy, or other fund sources as funding and personnel resources become available. Funding for implementation of the INRMP will come from the forestry, agricultural outlease, CNRSE, or NAVFAC natural resources fund.

Forestry funding is provided through NAVFAC SE from the sale of timber products. Funding for special projects in natural resources is available from NAVFAC SE through surplus agricultural outleasing or forestry reserve accounts. Non-compliance funding may come from the Legacy Act. Funding for compliance with environmental legislation and regulations is available through the Navy Environmental Program Requirements

Web (EPRWeb). Compliance projects falling under the EPRWeb include species surveys, assessments, management, protection, INRMPs, wetlands delineation and protection, conservation mapping, nonpoint source pollution, watershed management, cultural resource surveys, protection and plans, archaeological curation, conservation of soil and water or fish and wildlife, forest management, outdoor recreation (wildlife), and BASH. Funding for these projects is requested through the Environmental Program Requirements (EPR) system.

6.7 DETAILED DESCRIPTION OF NAS JRB NOLA INRMP PROJECTS

The following pages of this section provide a detailed description of active projects on the Installation.

Project 1	**Update Invasive, Exotic, and Noxious Plant Inventory and Management Plan**
Purpose:	Reduce invasive, exotic, and noxious plant species that out-compete native species.
Goals and Objectives:	Goals 1 and 2 Objectives 1.1, 1.3, 1.7, 2.4, and 2.5
Location:	NAS JRB NOLA
Description:	Perform detailed survey of facility and identify invasive, noxious, and exotic plants and their distribution. Develop management plans to control identified species and prevent their spread.
Baseline:	Previous invasive, exotic, and noxious plant inventories.
Monitoring:	Monitoring of success of removal and spread of invasive, exotic, and noxious plant species would be required.
Hours:	124 every 5 years
Program/Budget:	Station O&MN(R)
Type:	Compliance
Legal Driver(s):	7 U.S.C. 2814-Management of Undesirable Plants on Federal Lands EO 13112 Invasive Species
Related Legal:	None
Mission support:	Compliance with federal laws and regulations. Prevention of personnel exposure to harmful noxious plants.
Accomplishments:	An installation-wide survey on invasive and exotic plant species was completed in 2003-04. This project mapped the occurrence and density of invasive species, recommended methods for control of invasive species, and prioritized areas for treatment[1].

[1] Burt-Utley, K. and J.F. Utley. 2004. Native, exotic, and invasive flora of the Naval Air Station-Joint Reserve Base in New Orleans, Louisiana. Prepared for the U.S. Navy. Prepared by Department of Biological Sciences, University of New Orleans, New Orleans, Louisiana. 114 pp.

Project 2	**Invasive Plant Control**
Purpose:	Reduce invasive, exotic, and noxious plant species that out-compete native species.
Goals and Objectives:	Goals 1 and 2 Objectives 1.1, 1.3, 1.7, 2.4, and 2.5
Location:	NAS JRB NOLA
Description:	Provide funding to implement invasive species control plan as per INRMP. Invasive species result in damages including erosion control needs. Control measures are necessary on a recurring basis to control populations of several invasive species occurring on the Installation.
Baseline:	Previous invasive, exotic, and noxious plant inventories.
Monitoring:	Monitoring of success of removal and spread of invasive, exotic and noxious plant species would be required.
Hours:	240
Program/Budget:	Station O&MN(R)
Type:	Compliance
Legal Driver(s):	7 U.S.C. 2814-Management of Undesirable Plants on Federal Lands EO 13112 Invasive Species
Related Legal:	None
Mission support:	Compliance with federal laws and regulations.
Accomplishments:	Invasive plants were treated with herbicide in approximately 50 acres of undeveloped hardwood forests in November 2020[2]. Another project to treat up to 98 acres was awarded in 2021.

[2] Gulf South Research Corporation (GSRC). 2021. Invasive plant control on JRB Naval Air Station New Orleans, Louisiana. Prepared for NAVFAC Southeast. Prepared by GSRC, Baton Rouge, Louisiana.

Project 3	**Biological Inventory**
Purpose:	To document changes in the habitats, and plants and wildlife present at NAS JRB NOLA.
Goals and Objectives:	Keep an updated inventory of habitats and wildlife use at NAS JRB NOLA.
Location:	NAS JRB NOLA
Description:	Goals 1, 2, and 3 Management Objectives 1.1, 1.7, 1.8, 2.3, 2.5, 2.6, 2.7, 3.1, and 3.2
Baseline:	2014 survey of RTE species, birds, and herpetofauna.
Monitoring:	No monitoring is required.
Hours:	160 every 5 years
Program/Budget:	Station O&MN(R)
Type:	Stewardship
Legal Driver(s)	6 U.S.C. 703-MBTA
Related Legal	None
Mission support	Compliance with the MBTA and monitoring for migratory bird use and indicators of ecosystem function provides support for a sustainable mixed use of the Installation.
Accomplishments:	Surveys of neotropical migratory birds and reptiles and amphibians were conducted across the installation in 2013-14[3]. Another avian survey was completed in 2019[4].

[3] GSRC. 2015. Inventory of rare, threatened, and endangered species, Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana. Prepared for NAVFAC Southeast. Prepared by GSRC, Baton Rouge, Louisiana. 56 pp.
[4] LG2 Environmental Solutions (LG2ES). 2020. Installation Migratory Bird Species and Vegetation Survey. Prepared for NAVFAC Southeast. Prepared by LG2ES, Jacksonville, Florida. 33 pp.

Project 4	**Species Protection and Habitat Development**
Purpose:	Determine areas where habitat improvements could occur to increase the diversity of wildlife habitats.
Goals and Objectives:	Goals 1, 2, and 3 Management Objectives 1.1, 1.7, 1.8, 2.3, 2.5, 2.6, 2.7, 3.1, and 3.2
Location:	NAS JRB NOLA
Description:	The outcome of the study would be specific projects and locations where improvements would increase wildlife habitat functions.
Baseline:	Previous wildlife surveys.
Monitoring:	Annually
Hours:	160
Program/Budget:	Station O&MN(R)
Type:	Stewardship
Legal Driver(s)	16 U.S.C. 670a-f-Sikes Act Improvement Amendment 6 U.S.C. 703-MBTA EO 13186-Responsibilities of Federal Agencies to Protect Migratory Birds
Related Legal	None
Mission support	Adjusts natural resource planning to the changing mission requirements.

Project 5	**Annual INRMP Review and Update**
Purpose:	All goals and objectives
Goals and Objectives:	Encompasses all goals and objectives
Location:	NAS JRB NOLA
Description:	NAS JRB NOLA reviews the INRMP on an annual basis. Revisions, if any, are incorporated into the INRMP.
Baseline:	Current INRMP
Monitoring:	No monitoring is required
Hours:	80 annually
Program/Budget:	Station O&MN(R)
Type:	Compliance
Legal Driver(s):	16 U.S.C. 670a-f-Sikes Act Improvement Amendment
Related Legal:	None
Mission support:	Maintain communication with regulating agencies to adjust natural resource planning to meet the changing mission requirements.
Accomplishments:	The INRMP is reviewed annually with Federal and State partners and is updated as needed to account for new species listings and the latest project data. The INRMP was last reviewed for operations and effect in 2022.

Project 6	**Listed and Species-at-Risk Monitoring**
Purpose:	Ensure there are no adverse impacts to rare and listed species at NAS JRB NOLA.
Goals and Objectives:	Goals 1, 2, and 3 Management Objectives 1.1, 1.7, 1.8, 2.3, 2.5, 2.6, 2.7, 3.1, and 3.2
Location:	NAS JRB NOLA
Description:	Surveys for listed species and species-at-risk will be performed at NAS JRB NOLA approximately every five years. The five-year frequency will ensure that newly-listed species are accounted for and allow for a status check for previously-identified species on the installation.
Baseline:	2014 survey of RTE species, birds, and herpetofauna.
Monitoring:	Every five years
Hours:	160
Program/Budget:	Station O&MN(R)
Type:	Compliance
Legal Driver(s):	16 U.S.C. 670a-f-Sikes Act Improvement Amendment 16 U.S.C. 1531 & 1536 Endangered Species Act
Related Legal:	None
Mission support:	Ensure that military activities and rare species protection do not conflict.
Accomplishments:	Surveys of rare, threatened, and endangered species were conducted across the installation in 2013-14[5].

[5] GSRC. 2015. Inventory of rare, threatened, and endangered species, Naval Air Station Joint Reserve Base New Orleans, Belle Chasse, Louisiana. Prepared for NAVFAC Southeast. Prepared by GSRC, Baton Rouge, Louisiana. 56 pp.

Project 7	**Pollinator Conservation**
Purpose:	Ensure there are no adverse impacts to rare and listed species at NAS JRB NOLA.
Goals and Objectives:	Goals 1, 2, and 3 Management Objectives 1.1, 1.7, 1.8, 2.3, 2.5, 2.6, 2.7, 3.1, and 3.2
Location:	NAS JRB NOLA
Description:	Establish and maintain areas on NAS JRB NOLA that provide viable sources of pollinator forage and reproductive success. Such areas shall be located in places that will not result in conflict with military mission activities and will minimize pollinator mortality.
Baseline:	USFWS recommendations.
Monitoring:	Annually.
Hours:	40
Program/Budget:	Station O&MN(R)
Type:	Compliance
Legal Driver(s):	16 U.S.C. 670a-f-Sikes Act Improvement Amendment 16 U.S.C. 1531 & 1536 Endangered Species Act
Related Legal:	Presidential Memorandum on Pollinators (20 June 2014) 7 U.S.C. 2814-Management of Undesirable Plants on Federal Lands
Mission support:	Ensure that military activities and rare species protection do not conflict, and promote ecosystem health.
Accomplishments:	This is an emergent project, as of 2022.

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APPENDIX A
FOREST MANAGEMENT PLAN

Need the Forest Management Plan for inclusion as Appendix A.

APPENDIX B
BASH PLAN

DEPARTMENT OF THE NAVY
NAVAL AIR STATION
JOINT RESERVE BASE
400 RUSSELL AVE
NEW ORLEANS LA 70143-5012

IN REPLY REFER TO:
NASJRBNOLAINST 3750.2C
N3
27 Apr 12

NAS JRB NEW ORLEANS INSTRUCTION 3750.2C

From: Commanding Officer, Naval Air Station, Joint Reserve Base, New Orleans

Subj: BIRD/ANIMAL STRIKE HAZARD (BASH) REDUCTION PLAN

Ref: (a) NAVFAC P-73
(b) OPNAVINST 3750.6R
(c) CNICNOTICE 3700

Encl: (1) BASH Program Installation Maintenance Guide
(2) Animal/Bird Strike Report Form

1. Purpose. The bird/animal strike hazard (BASH) plan is designed to minimize aircraft risks to potentially hazardous wildlife strikes at Naval Air Station (NAS), Joint Reserve Base (JRB), New Orleans. The BASH program establishes methods to decrease the attractiveness of the airfield/nearby areas to birds and animals, and provides guidelines for dispersing birds and animals when they compromise the safety operations on the airfield.

2. Cancellation. NASJRBNOLAINST 3750.2B

3. Discussion

a. The BASH program is inclusive of all birds, mammals, and reptiles. Where different treatments or management techniques apply to birds and other animals, the instruction and enclosures will reference various elements of the BASH programs. The hazard posed by birds and other wildlife (especially deer, pigs, and coyotes) to safe flight operations at an airfield is an ever-present problem. Total elimination of the hazard is impossible due to its very nature; however, an active program can be implemented to greatly reduce aircraft exposure to wildlife activity on and around the airfield environment. This instruction is designed to reduce the wildlife/aircraft strike potential. By increasing awareness of avoidance procedures,

monitoring bird and other wildlife activity and actively controlling wildlife populations and habitat, we can then influence wildlife behavior through exclusion, harassment/repellents, habitat manipulation, lethal control, and proper land use planning.

b. The station is low and flat alluvial floodplain drained by canals. There are several wetland areas on the station attracting a myriad of waterfowl, shore birds, and wading birds. These natural undeveloped areas of the station are wooded with a variety of trees and brush that provide food and cover for a variety of passerines (songbirds) and other wildlife species. An abundance of small game attracts a large number and variety of predators (i.e. raptors). Animal carcasses attract black and turkey vultures as well as coyotes. A variety of medium and large wildlife is found on the installation including alligators, bobcats, coyotes, white-tailed deer, feral pigs, and gray and red foxes. All have the potential to encroach on the runways.

c. There are numerous marshes, bayous, and canals around the air station. These areas provide habitat for large numbers of waterfowl from fall to early spring. Migration routes through the Mississippi River drainage end here, creating hazards to aviation. There are several golf courses in the area, which also are frequented by migratory and resident waterfowl and other game and non-game migratory species. Another feature with the location of the installation is that it also experiences neo-tropical bird migrants during the spring and summer months.

4. Action

a. The Operations Officer shall:

(1) Act as the installation BASH Program Manager and be responsible for the execution and oversight of the installation BASH plan.

(2) Establish a Web Enabled Safety System (WESS) account for the mandatory reporting of all BASH incidents on the installation.

(3) Ensure that tenant commands with aircraft are reporting all BASH incidents via WESS or service equivalent.

(4) Conduct quarterly BASH Working Group (BWG) meetings in which every effort should be made to have the following members attend: Operations Officer, Air Field Manager (AFM), U.S. Department of Agriculture (USDA) Wildlife Biologist (WB), Transient line (T-line) Division Officer, Air Traffic Control (ATC) Facilities Officer (ATCFO), Public Works Officer (PWO), Environmental Department Director (ENV), Natural Resource Manager (NRM), Public Affairs Officer (PAO), Community Plans and Liaison Officer (CPLO), and an Aviation Safety Officer (ASO) of each tenant command, or the designated representative of any of the above to improve and implement the BASH program.

(5) Ensure ATC and T-line personnel are trained to carry out the intent of this instruction. Communication with tenants regarding half-hourly safety checks for any possible air safety threats are being reported to the Tower.

(6) Establish with PWO/ENV/NRM and USDA WB, appropriate times to mow the grass around the airfield in order to reduce the likelihood of BASH incidents.

(7) Provide liaison with all aviation activities at NAS JRB New Orleans to develop and maintain awareness of this instruction. Develop briefing procedures for all visiting or transient air crews and flight commands.

(8) Provide local oversight of the USDA Wildlife Biologist and ensure regular coordination of efforts between PWO/ENV/and NRM.

b. The Airfield Manager shall:

(1) Provide local oversight of the USDA Wildlife Biologist and ensure regular coordination of efforts with PWO/ENV/and NRM.

(2) Establish a WESS account to assist the mandatory reporting of all BASH incidents on the installation.

(3) Co-Chair the quarterly BASH Working Group (BWG) meetings and provide minutes as required.

(4) Coordinate with T-line and ATC to ensure compliance with this instruction.

(5) Coordinate with PWO/ENV/NRM and USDA WB, to ensure the grass around the airfield is mowed to an appropriate height in order to reduce the BASH attraction.

c. USDA Wildlife Biologist shall:

(1) Control nuisance animals and birds in the vicinity of the runways.

(2) Monitor deer numbers and behavior, and ensure deer population control and depredate when Wildlife Biologist deems necessary to protect air operations safety.

(3) Obtain and maintain U.S. Fish and Wildlife Service and Louisiana Department of Wildlife and Fisheries depredation permits.

(4) Identify and store bird remains, or submit for identification as necessary.

(5) Identify high-risk areas such as landfills, waste transfer stations, and wildlife refuges.

(6) Control animal hazards to aircraft through trapping, scaring, depredating shooting, and habitat control.

(7) Conduct routine bird and mammal surveys of the airfield, or when directed.

(8) Remove and dispose of the remains of depredated animals and carcasses.

(9) Develop and maintain a training plan for Bird Detection and Dispersal Team (BDDT) members on active harassment techniques and use of static repellents and deterrents. Provide oversight and biannual training to ensure that wildlife harassment techniques are appropriate.

(10) Use enclosure (1) to meet the requirements of this instruction.

d. The Public Works Officer shall:

(1) Maintain the installation in a manner that reduces bird and animal strike hazards as specified in enclosure (1).

(2) Interact with the community to eliminate off installation bird hazards.

e. The Environmental Department Director shall:

(1) Through review of the Wildlife Habitat Area (WHA) and Wildlife Hazard Management Plan (WHMP) and participation in the BWG, ensure BASH programs are in compliance with all applicable state and federal environmental laws and regulations including, but not limited to, the National Environmental Policy Act and the Clean Water Act.

(2) Ensure BASH programs are in compliance with all applicable Department of Defense (DoD), Department of the Navy (DoN), and U.S. Navy environmental policies, directives, and instructions including, but not limited to, DoD Instruction 4715.03 Natural Resources Conservation and Chief of Naval Operations Instruction 5090.8 series.

(3) Participate in local BWG and on-site technical reviews of installation BASH programs during periodic Naval Safety Center surveys.

(4) Provide training to BWG members on pertinent rules, guidance, policy, and laws governing natural resource management on the installation and the current programs and management focus areas.

f. The Natural Resource Manager shall:

(1) Ensure BASH programs and plans are in compliance with the Integrated Natural Resources Management Plan (INRMP) and all applicable state and federal natural resource laws and regulations including, but not limited to, the Endangered Species Act, Migratory Bird Treaty Act, and Sikes Act.

(2) Coordinate INRMP revisions and updates with air operations.

(3) Coordinate and manage all applicable natural resources consultations and permits necessary to support the BASH program including, but not limited to, Army Corps of Engineer Section 404 permits and Endangered Species Act Section 7 consultations. NRM may be requested to apply for required wildlife permits when USDA WB is unavailable, usually only in extreme circumstances.

(4) Ensure BASH program elements consider sustainable land management practices, adaptive management and scientifically sound monitoring techniques.

(5) Support the WHA and WHMP and ensure data collected is able to be reproduced for annual monitoring and reporting requirements.

(6) Participate in the local BWG and on-site technical reviews of installation BASH programs during periodic Naval Safety Center surveys.

(7) Coordinate with the air operations funded USDA Wildlife Biologist.

(8) Assist USDA Wildlife Biologist with strike identifications when NRM is available to do so.

g. ATC personnel shall:

(1) Provide real-time information to the aircrews concerning the amount and location of birds, and other animals in the area of the runway.

(2) Call away Bird Detection and Dispersal Team (BDDT) when necessary.

h. T-line personnel shall:

(1) Conduct daily "sweeps", noting any significant wildlife activity or changes in airfield or changes in airfield environment or habitat which attract wildlife.

(2) Document and deliver all animal/bird remains found on or near the airfield after reported strikes or during airfield sweeps and maintenance activities to the USDA Wildlife Biologist. Photograph and document the time, location, and any other information when removing all remains of animals hit or found dead on the runways. Do not throw them into the grass or weeds alongside a runway, as they may attract scavengers and create another safety hazard.

(3) Perform wildlife dispersal procedures in accordance with enclosure (1).

(4) Maintain wildlife dispersal equipment.

(5) Provide bird scaring and other animal control devices to base operations.

i. Tenant commands shall:

(1) Report BASH incidents (including near misses for animals and birds) via WESS or directly to the BASH manager at 504-678-3286/3578, jason.j.bender1@navy.mil or morgen.d.ingerson@aphis.usda.gov.

(2) Include the following as information addressees on all BASH messages:

NAS Safety	NAS JRB NEW ORLEANS LA//JJJ//
VFA 204 Safety	STRIKFITRON TWO ZERO FOUR//50//
VR 54	FLELOGSUPPRON FIVE FOUR//20//
MAG 42	MAG FOUR TWO DET CHARLIE//DOSS//
Coast Guard	COGARD AIRISTA NEW ORLEANS LA//SAFETY//
LA ANG	ONE FIVE NINE FW//SE//
AFRES	NINE TWO SIX FW//SE//

(3) Monitor activity spaces and flight line areas, for BASH hazards.

(4) Report all BASH incidents using the applicable Navy or Air Force web site.

(5) Bird Remains Identification. The USDA Wildlife Biologist as well as the Smithsonian Institute can use small remains, such as snarge (i.e. feather flecks and remains, blood, wings, beaks, legs, and downy feathers) for positive identification. All commands must retain all bird remains taken from an aircraft and off the airfield following a bird strike for identification. If whole or partial birds are found, collect them and turn them over to the USDA Wildlife Biologist for identification. All strikes should be photographed and documented using the BASH kits issued to the tenant Safety Officers.

j. Aircrews will:

(1) When airborne, report hazardous conditions to ATC.

(2) Report all BASH incidents to their respective safety department for incident follow-up.

J. H. HILL, III

Distribution: (NASJRBNOLAINST 5216.1D)
List A-1, B-1 (A, B, and C only)

MAINTENANCE GUIDE

1. Grass Height Management. Mower operations shall maintain a uniform grass height between 7 and 11 inches. Frequent mowing is required to maintain height requirements, and will be coordinated with base operations. Grass must be cut before it goes to seed to discourage seed-eating birds from utilizing the airfield for food and cover. Medium height grass discourages a variety of species from utilizing the airfields because reduced perching surfaces, nesting habitat, food sources, reduced visibility disrupts inter-flock communication, flock integrity, and also prevents predator detection. Grass should normally not exceed 14 inches. Obtain assistance in herbicide application, selective fertilization, and erosion control vegetation from the environmental department and USDA Wildlife Biologist.

2. Broad-leafed Weed Control. Keep broad-leafed weeds to a minimum on the airfield. Apply herbicides, as necessary, to achieve this. Broad-leafed weeds attract a variety of birds, produce seeds and berries, and may limit grass growth.

3. Planting Bare Areas. Endophyte-infected grasses (i.e. Fescue and Bermuda) monocultures are encouraged and have shown to reduce wildlife use. Selective herbicides can be used with both of these grasses.

4. Fertilizing. Selectively fertilize and stimulate grasses to promote a uniform cover. Irrigate, as required, to support turf growth. Control watering to enhance root production, and decrease seed-head production.

5. Reducing Edge-effect. Edge-effect refers to the highly attractive transition zone between two distinct habitat types (e.g., brush to grassland). Maintain the airfield as uniformly as possible to reduce this effect. Control cattail habitat and reduce secondary brush cover habitat because these are major habitats for a variety of flocking birds (i.e. Red-winged Blackbirds) and other wildlife species.

6. Leveling of Airfield. Level or fill high and low spots on the airfield to reduce attractiveness to birds and prevent standing water.

7. Dead Vegetation. Remove dead vegetation such as brush piles, grass clippings, hay bales, etc…, and the cover it affords as soon as possible.

8. Animal Remains. Remove dead birds or other animals from the airfield to avoid attracting vultures or other birds. Forward remains, which may be caused by collisions with aircraft, to the environmental department USDA Wildlife Biologist.

9. Drainage Ditches. Inspect ditches regularly to keep clear, and obstacle-free. Maintain ditch sides as steeply as possible at a minimum slope ratio of 5:1, to discourage wading birds, and emergent vegetation. Remove vegetation (i.e. cattails) as often as necessary to maintain flow, and discourage use by birds.

10. Standing Water. Coordinate with the Army Corps of Engineers, and the appropriate state environmental permitting office prior to altering wetlands. Small ponds or puddles, and some large bodies of standing water, must be eliminated to reduce attractiveness to birds. Low spot and ditch maintenance is essential.

11. Erosion Control Vegetation. Use/plant vegetation that will support the BASH reduction philosophy (i.e., do not control erosion using plants which produce seeds at heights below 14 to 18 inches). Sod areas with Bermuda grass, if available.

12. Waste Disposal. Operate disposal sites per FAA Order 5200.2. Landfills are the most significant attractant to bird species. These sites must comply with state and federal laws. Relocate landfills which do not meet FAA guideline criteria. If landfill relocation is not feasible, make every effort to make the site as unattractive to birds as possible. Consider the following methods.

a. Maintain a small working space to minimize exposed wastes.

b. Incinerate waste when possible/appropriate.

c. Utilize a carcass pit or trench, to limit access to scavenging birds and mammals.

d. Dump waste at night or during non-flying periods.

e. Cover waste material immediately.

f. Restrict gulls and other birds with physical barriers.

g. Relocate putrescible wastes.

h. Use bio-acoustics, avian dissuader lasers, high-intensity lights, pyrotechnics, and effigies to frighten birds away.

NASJRBNOLAINST 3750.2C
27 Apr 12

ANIMAL/BIRD STRIKE REPORT

In the event of a reported animal/bird strike, including suspected strike, obtain the following information. Do not attempt to obtain information if doing so may adversely affect safety on deck or airborne. It is important that all animal/bird strikes be expeditiously reported.

a. Date _____ Time of Strike (specify local or Zulu time): _____

b. Aircraft Type: _____ Call sign: _____ Squadron: _____

c. Geographic location of strike, be as exact as possible: _____

d. Phase of flight: ____ takeoff ____ landing ____ level ____ climbing
____ descending ____ taxiing ____ stationary

e. Lights being used: ____ none ____landing ____strobe ____both
____ N/A

f. Type of strike: _____ bird _____ deer _____ other: _____
If known, what type of bird (gull, blackbird, vulture, etc): _____

g. Number of remains/species seen at strike: ____ few ____ many _____

h. Who removed the remains: _____ None found _____ Environmental ____
_____ T-line _____ Crash/Fire _____ Other: _____

i. If known, what was the extent of damage to the aircraft? _____

j. Weather: _____ Surface Wind (direction & Speed) _____
k. Altitude at strike: _____
l. Airspeed at strike: _____
m. Visibility: _____

_____ _____
Printed Name extension

---

1. Fill out the above, notify the Air Traffic Control Facility Watch Supervisor at 678-3101 and forward this form to the Air Operations Duty Officer.

2. AODO shall notify the Staff Safety Officer (x3331) and Air Operations (x4592) during working hours. If the strike occurs after working hours and results in an aircraft accident or heavy aircraft damage, call the Staff Safety Officer at home (name, phone#, and beeper # are in the Flight planning Call List Book - Aircraft mishap call sheet).

3. All bird remains are to be delivered to the Wildlife Biologist (Bldg. 1). Deer remains must be tagged and removed by the USDA Wildlife Biologist.

Enclosure (2)

APPENDIX C
ENCROACHMENT ACTION PLAN

NAVAL AIR STATION JOINT RESERVE BASE
NEW ORLEANS

Final
Encroachment Action Plan

February 2007

Table of Contents

Appendices

List of Figures

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Acronyms

65LA ..... Southern Seaplane Airfield
AICUZ ..... Air Installation Compatible Use Zones
AOZ ..... Airport Overlay Zone
APZ ..... Accident Potential Zone
BRAC ..... Base Realignment and Closure
CCC ..... Cresent City Connection
CNIC ..... Commander, Navy Installations Command
CO ..... Commanding Officer
CPLO ..... Community Plans and Liaison Office
CZ ..... Clear zone
DNL ..... Day-Night Average Sound Level
EAP ..... Encroachment Action Plan
FAR ..... Floor Area Ratio
FHWA ..... Federal Highway Administration
ICRMP ..... Integrated Cultural Resources Management Plan
INRMP ..... Integrated Natural Resources Management Plan
IPL ..... Integrated Priority List
JLUS ..... Joint Land Use Study
JSF ..... Joint Strike Fighter
LAANG ..... Louisiana Air National Guard
LDOTD ..... Louisiana Department of Transportation and Development
LOA ..... Letter of Agreement
MGD ..... Million Gallons per Day
MSY ..... Louis Armstrong New Orleans International Airport
NAS JRB ..... Naval Air Station, Joint Reserve Base New Orleans
NAVFAC HQ ..... Naval Facilities Engineering Command Headquarters
NAVFAC SE ..... Naval Facilities Engineering Command Southeast
NETC ..... Naval Education and Training Command
NEW ..... Lakefront Airport
NGO ..... Non-governmental Organization
NLR ..... Noise Level Reduction
NOSC ..... Naval Operational Support Center
NSA ..... Naval Support Activity
OEA ..... Office of Economic Adjustment
PAO ..... Public Affairs Officer

RAICUZ..... Range Installation Compatible Use Zones
RPC ..... Regional Planning Commission
RSIP ..... Regional Shore Infrastructure Plan
TDR..... Transfer of Development Rights

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Executive Summary

Purpose

The goal of this Encroachment Action Plan (EAP) is to identify threats to the current and future missions of Naval Air Station, Joint Reserve Base New Orleans (NAS JRB, New Orleans), explain the relationship of those threats to the base and the surrounding community and propose actions to mitigate conflicts. The report begins by exploring the regional trends and drivers that compose the regional setting, then gives an overview of different strategies used to address encroachment, followed by an explanation of encroachment issues that affect NAS JRB, New Orleans, and concludes with a chapter detailing how to implement the recommendations contained within the report.

NAS JRB, New Orleans and Regional Setting

NAS JRB, New Orleans is located near the unincorporated town of Belle Chasse which is approximately seven miles to the southeast of downtown New Orleans (See Figure 1.0: Regional Area). NAS JRB, New Orleans and Belle Chasse lie within Plaquemines Parish, the southeastern most parish in Louisiana. NAS JRB, New Orleans' mission is to "Provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft and train Naval Air Reserve personnel for mobilization." NAS JRB, New Orleans is one of only three joint reserve bases in the United States and fills a crucial training need in close proximity to open water training ranges, as well as providing a strategic location for emergency response near the Mississippi River delta and City of New Orleans.

Methodology

The creation of an EAP document begins with an assessment of existing encroachment threats to NAS JRB, New Orleans. The information necessary for this documentation is obtained through local, regional, state and federal entities, both governmental and non-governmental. Data gathered during this stage is reviewed by a select number of stakeholders appointed by NAS JRB, New Orleans and NAVFAC Southeast (NAVFAC SE) for completeness and accuracy. After this initial stage, the gathered data is analyzed to produce a preliminary list of encroachment threats facing NAS JRB, New Orleans. The highlighted threats, along with initial findings of encroachment mitigation strategies, is reviewed by base personnel in order to establish a direction for the EAP document.

The next stage in the preparation of the EAP is the formation of the EAP team. This team can include members with backgrounds in facilities planning, environmental, real estate and public affairs, as well as security officers, legal staffs and mission component command operators. This team is then responsible for providing assistance and overall guidance during the creation of the EAP document. It is this team that attends a workshop generally outlining the prospectus of the report, and provides materials and input in the creation of the final EAP.

Encroachment Findings

Encroachment is defined as "any non-Navy or Navy action planned or executed in the vicinity of a naval activity or operational area which inhibits, curtails, or possesses the potential to impede the performance of the mission of the naval activity."

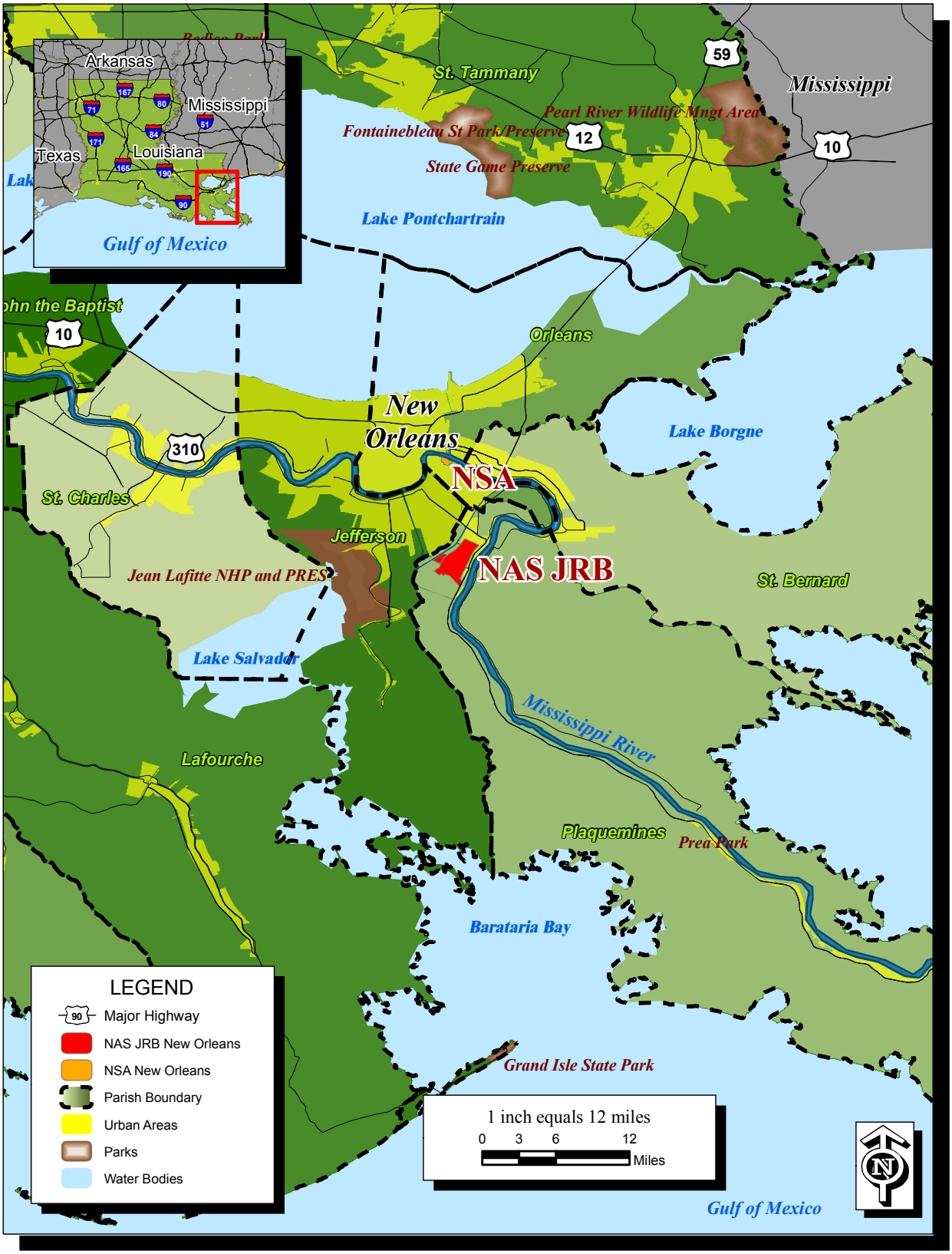


Figure 1-0: Regional Area

The elements found to be of immediate or mid-term concern to the mission of NAS JRB, New Orleans include urban growth, noise, airspace restrictions, stormwater management/flooding and conflicting regulatory or political guidance.

Urban Growth

Figure 2.0: Recent Developments and Proposed Roadway Extensions illustrates current and future urban growth events in the immediate vicinity of NAS JRB, New Orleans. The most recent major residential development within the immediate vicinity of the Base is the Springwood subdivision to the northeast of the intersection of Woodland Highway and Belle Chasse Highway (LA 23). This development broke ground in 1998 and, through several phases, has continued to add homes to the Belle Chasse area. This development includes approximately 315 new homes and/or lots for sale. Parish representatives mentioned that this was one of the largest Belle Chasse developments in recent history.

Figure 2-0: Recent Developments and Proposed Roadway Extensions

Although urbanization of northern Plaquemines Parish has not matched the pace of some of the neighboring parishes, several planned improvements to the infrastructure of the parish could allow for further development. The projects include widening and extension of Peters Road to connect with LA 23 south of NAS JRB, New Orleans, expansion of the Parish's wastewater treatment plant and construction of new electricity transmission lines and substation from Peters Road to Oakville. These projects pose threats either directly by proposing construction that is incompatible with existing AICUZ standards, or indirectly by promoting greater developability of land adjacent to NAS JRB, New Orleans.

Figure 3.0: Land Use with Priority Parcels provides analysis of existing land uses surrounding NAS JRB, New Orleans, as well as the number one, two and three priority off-Base areas that are of concern. These parcels are in order of importance and incompatible development on these parcels represents the closest, greatest threat to continued operations at NAS JRB, New Orleans. If intermediary development controls (such as zoning or easements) cannot ensure that development is compatible with military operations, then the Base should pursue acquisition of the property. Property acquired during the 2003 extension of Runway 04 (P-223) cost approximately $13,600 per acre. This land was zoned for agricultural uses. Prices have risen since that time due to general inflation and the effects of rebuilding after Hurricane Katrina. Base personnel currently estimate that property surrounding the Base could appraise at approximately $22,000 per acre. With that assumption, the total price of acquiring the Priority Parcels is as follows:

Parcel 1 (zoned for agriculture): 223 acres @ $22,000/acre = $4,906,000

Parcel 2 (zoned for agriculture): 230 acres @ $22,000/acre = $5,060,000

Parcel 3 (zoned for agriculture, residential and industrial):
3,767 acres @ $22,000/acre = $82,874,400

(This parcel grouping would not have to be acquired in its entirety to protect Base interests)

The properties listed above are owned by two families: the Hero and Pivach families. This is of potential benefit to the Base because it saves the time and expense of having to repeat the same outreach/negotiation process with many landowners.

Contact information for these families is as follows:

Pivach Real Estate
8311 Highway 23, Suite 102
Belle Chasse, LA 70037
Phone: (504) 394-2255

Hero Lands Company
428 Planters Canal Road
Belle Chasse, LA 70037
Phone: (504) 394-5188

Noise

The 2001 AICUZ Update reports that there were 65 total complaints regarding aircraft operations for the 23-month period running from January 1997 to November 1998. These complaints specifically include low-flying fixed wing aircraft, low-fly-

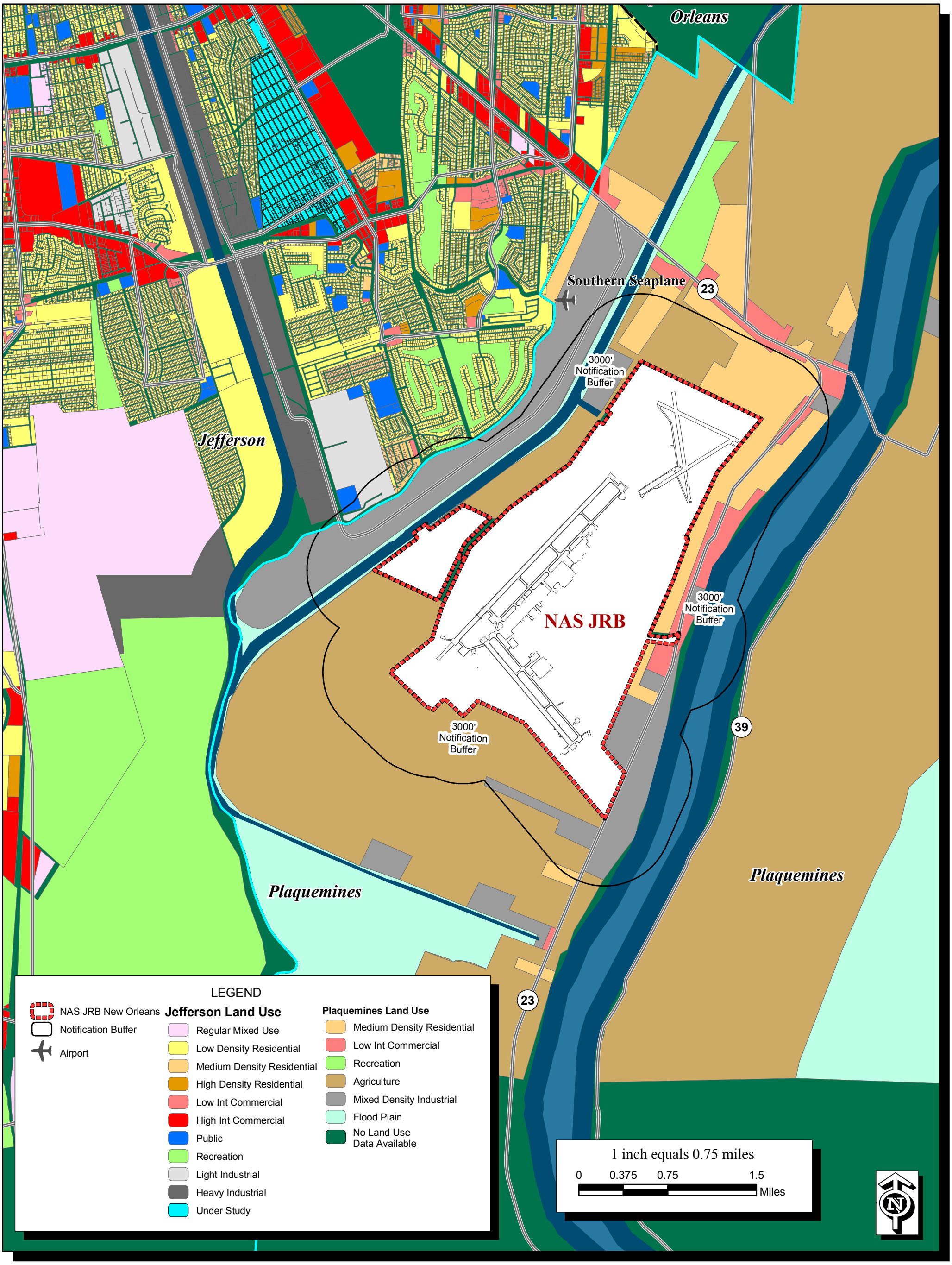


Figure 3-0: Land Use with Priority Parcels

ing helicopters, unusual or atypical flight patterns, and loud noises. Not all of these complaints dealt with day to day operations; in 1998, 17 of the complaints were associated with special events such as a photo shoot over New Orleans, Blue Angels practice for the annual Air Show and a flyover of the Veteran's Day Parade.

Although the 2001 AICUZ Update reports that the ratio of complaints to number of operations is relatively low, potential changes in aircraft and operations in the near future could increase the noise associated with operations, and thus, the impact on the surrounding community.

Airspace Restrictions

NAS JRB, New Orleans currently shares its airspace with several other airfields within a 17 mile radius: the Louis Armstrong/New Orleans International Airport (MSY) in Kenner, Lakefront Airport (NEW) in New Orleans and Southern Seaplane (65LA) in Belle Chasse. Although NAS JRB, New Orleans shares the airspace surrounding the base, there are currently few conflicts with these other operators. Air traffic controllers at NAS JRB, New Orleans report that conflicts, at their most severe, only result in a delay of arrivals and departures.

One potential threat to the air operations of NAS JRB, New Orleans, however, is small, privately owned airfields hosting small aircraft. The Southern Seaplane operation (a privately owned airstrip located a mile from the Base) does not pose a threat to air operations, although additional private airstrips that could be built in the future are of concern to the Base.

Stormwater Management/Flooding

Most of the New Orleans urbanized area lies below sea level as a result of subsidence from draining swampland for development. NAS JRB, New Orleans is no exception: it lies on land reclaimed from the swamp and is protected from flooding on the Mississippi River and Intracoastal Canal by levees. The average elevation of the base is approximately sea level, which makes drainage of any type a challenge.

Removal of stormwater runoff, therefore, is handled through a contract with the Jefferson-Plaquemines Parish Drainage District, which operates a pumping station on the Intracoastal canal. The base is able to handle regular rainfall and not suffer any flooding of buildings. During severe weather events, however, the existing stormwater system can be inadequate to remove sufficient runoff and prevent flooding to structures. To compound drainage issues, NAS JRB, New Orleans lies in a region which is periodically affected by hurricanes. Depending on the strength of the hurricane and its proximity to the Base, management strategies mostly include evacuation and strategically locating mission-critical assets.

Conflicting Regulatory or Political Guidance

The largest regulatory threat to continued operational efficiency of NAS JRB, New Orleans is not conflicting political guidelines. Instead, the threat is a lack of local and regional guidance aimed at protecting NAS JRB, New Orleans as a military resource.

Because there are no incorporated cities in Plaquemines Parish, the governing local body is the Plaquemines Parish Council. Plaquemines Parish maintains a zoning ordinance and comprehensive plan, though these regulations do not provide any special level of protection or additional review for development proposals near the base. The governing regional body is the Regional Planning Commission (RPC). The RPC has not, to date, created any plans that specifically address the issue of military encroachment, nor seek to preserve military readiness, although some documents have incorporated the Base into their plans. At a state level, the Louisiana Legislature has taken a step in protecting military installations. In 2004, the State of Louisiana passed HB1041, which requires local governing agencies to notify the commander of a military installation of any zoning or variance requests that are processed for properties lying within 3,000 feet of the installation perimeter. The notice is to be provided at least 30 days prior to any scheduled hearing or ruling on the request. While this measure provides an important new step in coordinating land use decisions between civilian and military entities, by itself, it only provides notification of potential land use changes.

Strategies to Prevent Encroachment

Various methods can be used to address encroachment issues facing a military installation. An effective strategy will customize the use of these methods to best mitigate the most pressing threats to military readiness. Below is a basic framework of strategies used in the implementation of EAP recommendations:

- Studies: Air Installation Compatible Use Zone (AICUZ), EAP and Joint Land Use Study (JLUS) are reports that, to different levels, document the existing operational and urban development environment, assess risks or conflicts and make recommendations to address the conflicts.

- Outreach: Through various publications, boards and events, NAS JRB, New Orleans can meet encroachment challenges head-on by engaging the community proactively

- Stewardship: The level of Navy resources dedicated to monitoring and addressing ongoing encroachment issues. Accuracy of information and ability to respond to threats directly relates to levels of staffing.

- Legislative Initiatives: The legal framework surrounding both development and activities in the area surrounding a military installation is the most effective way to protect operational readiness.

- Land Use Planning and Zoning: The local legal framework of comprehensive plans, zoning ordinances, overlay zones, building codes and property ownership disclosure laws can be powerful tools in avoiding or resolving land use and operational conflicts.

- Acquisition: Use of Navy funds, or Navy funds and those of an encroachment partner, to purchase properties of interest. Acquisition provides the most

control of land, although it also carries major implications of management and security.

Table 1-0, Implementation Actions, lists the recommendations of the EAP and is grouped into implementation time horizons of short-term (0 to 1 year), mid-term (1 to 5 years) and long-term (5 to 10 years). After the 10 year time horizon, it is likely that a new EAP will need to be conducted to adequately assess changes in Base operations and community dynamics.

Table 1-0 also includes the fields of Lead Agency, Supporting Organization, Expected Outcome and Relation to Other Actions. Below is a more detailed explanation of each category:

Lead Agency: This group or entity is responsible for initiating and coordinating efforts to accomplish the desired task. It may be able to accomplish this within its own power or jurisdiction, or may be the appropriate entity to request funding and/or support from elsewhere.

Supporting Organization: This group plays a secondary role to the Lead Agency. It may have resources that are necessary to accomplish the desired task, but lacks the position or influence to take the lead role.

Expected Outcome: The "best case scenario" result of the proposed task. Some tasks will have differing degrees to which a task can be complete, whereas others will be either implemented or not.

Relation to Other Actions: Other proposed actions that relate to the task by either subject matter or timing.

IMPLEMENTATION ACTIONS Short-Term Actions (0 to 1 Year) Status as of August 2006					
	Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to Other Actions
1.	Coordinate with Entergy regarding planned transmission line extension to the new Oakville substation	NAS JRB	Entergy	Avoidance of conflict with NAS JRB APZs	
2.	Coordinate with the RPC, LDOTD, CCC and FHWA about Peters Road widening, extension and bridge construction	NAS JRB	RPC, LDOTD, CCC and FHWA	Avoidance of major conflicts with regards to airspace (bridge) and alignment (road)	Related to discussion of new development areas within the Parish
3.	Lobby Parish to extend moratorium on development in the vicinity of the Base until a JLUS can be conducted and its recommendations adopted	NAS JRB		Additional time to coordinate land uses will prevent unnecessary conflicts from being created by new development	
4.	Obtain latest version of MSY Master Plan	NAS JRB	MSY	Identification of potential conflicts, coordination of regional air facility expansion	
5.	Make contact with military advisors to regional and state decision makers	NAS JRB		Most pertinent issues relating to encroachment can be discussed and acted upon by the appropriate entities	
6.	Make contact with property owners within APZs and noise contours to assess their willingness to cooperate with Navy efforts to maintain compatible uses	NAS JRB CPLO	NAS JRB PAO	Baseline assessment of opportunities and challenges with regards to surrounding property owners.	Could potentially lead to pressure on the Parish from the public for stricter land use regulations around the Base.
7.	Maintain distribution of *Currents* newsletter	NAS JRB		Continued communication with the community regarding changes at NAS JRB	
8.	Evaluate adequacy of staff devoted to encroachment issues	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	This item facilitates action on all other recommendations
9.	Continue to host/attend community events	NAS JRB		Improved public image, additional platforms to communicate the importance of the NAS JRB mission	
10.	Advocate the creation of a military advisory position at the Parish	NAS JRB	Plaquemines Parish	Better communication, greater responsiveness between the Parish and NAS JRB	

Table 1-0: Implementation Actions

IMPLEMENTATION ACTIONS **Mid-Term Actions (1 to 5 Years)** **Status as of August 2006**					
	Description of Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to other Actions
1.	Update AICUZ as warranted	Navy Region Southeast	CNI/CNO	Up-to-date document that can be used in encroachment partnering, community relations	Modification of APZs and noise contours could influence Base's area of impact
2.	Maintain and expand community events	NAS JRB		Improved public image, additional platforms to communicate the importance of the NAS JRB mission	Reinforces positive image and impact of newsletters, mailings
3.	Maintain adequately staffed CPLO	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	
4.	Evaluate effectiveness of EAP, revise as necessary	NAS JRB	Navy Region Southeast	Keep EAP and EAP recommendations current	Changes to AICUZ, or creation of a JLUS could impact recommendations
5.	Establish community vision workshop with local developers and decision makers	NAS JRB	Plaquemines Parish	Short-term, charrette-style workshop to foster discussion of major players and establish basic goals for how the community develops	Could be a stepping stone toward, or integrated with the JLUS process
6.	Continue to monitor development proposals for additional private airstrips in the vicinity of NAS JRB	NAS JRB		Proposed airfields that conflict with NAS JRB operations could be contested while being reviewed by the Parish	
7.	Continue to coordinate with MSY, FAA, update Memorandum of Understanding regarding procedures and responsibilities as necessary	NAS JRB	MSY	Mutual knowledge of operations, minimal conflicts resulting from close coordination	
8.	Conduct a Joint Land Use Study	Plaquemines/Jefferson Parishes	NAS JRB	Regional Land Use document which establishes a common vision for the area affected by NAS JRB	

IMPLEMENTATION ACTIONS **Long-Term Actions (5 to 10 Years)** **Status as of August 2006**					
	Description of Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to other Actions
1.	Pursue encroachment partnering opportunities	NAS JRB	NGOs/State/Parish	Potential partnership that could defray cost/responsibility of lands necessary for a buffer	
2.	Oppose any effort to extend Barriere Road through base property to Walker Road	NAS JRB		Prevention of road extension should prevent further development along the Barriere Canal	
3.	Maintain adequately staffed CPLO	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	
4.	Lobby the Parish, State to enact farther reaching legislation to protect military installations	NAS JRB		Additional safeguards such as military overlay zones, noise disclosure requirements, transfer of development rights program, additional building code requirements, etc.	Representatives on advisory bodies can aid in follow-up on potential or pending legislation
5.	Implement actions of the EAP	NAS JRB	Parish, Regional, State Government	Avoidance of a majority of encroachment issues, better framework to address on-going issues	
6.	Evaluate effectiveness of EAP, revise as necessary	NAS JRB	Navy Region Southeast	Keep EAP and EAP recommendations current	
7.	Coordinate with Plaquemines Parish about developments within the Base's APZs, noise contours, etc.	NAS JRB	Plaquemines Parish	Maintenance of land uses that are compatible, and minimal rezonings to incompatible uses	
8.	Continue to monitor development proposals for additional private airstrips in the vicinity of NAS JRB	NAS JRB		Proposed airfields that conflict with NAS JRB operations could be contested while being reviewed by the Parish	
9.	Continue to coordinate with MSY, FAA, update Memorandum of Understanding regarding procedures and responsibilities as necessary	NAS JRB	MSY	Mutual knowledge of operations, minimal conflicts resulting from close coordination	

1.0 Introduction

This report was prepared in accordance with Department of the Navy Instruction 11010.40, August 2006, regarding the Encroachment Management Program. As is the case with many military installations around the country, once remote stretches of land on the outskirts of major metropolitan regions have increasingly faced the threat of development, as well as other uses, that can interfere, or even preclude, the continuance of military operations in an area. This document analyzes the encroachment factors that exist between Naval Air Station Joint Reserve Base, New Orleans (NAS JRB, New Orleans) and the surrounding community, and makes recommendations that will allow both to minimize conflicts resulting from encroachment.

1.1 Goals and Objectives of the Encroachment Action Plan

The goal of this Encroachment Action Plan (EAP) is to identify threats to the current and future missions of NAS JRB, New Orleans, explain the relationship of those threats to the base and the surrounding community and propose actions to mitigate conflicts.

This EAP is structured to be both an informational and educational document, providing not just a detailed listing of encroachment challenges and strategies to address those challenges, but also a perspective on the processes external to the Base that have the potential to affect operations.

1.2 Methodology of the EAP

As graphically illustrated in Figure 1-1: EAP Methodology, the creation of an EAP document begins with an assessment of existing encroachment threats to NAS JRB, New Orleans. The information necessary for this documentation is obtained through local, regional, state and federal entities, both governmental and non-governmental. The specific areas of interest for encroachment challenges include urban growth, noise, airspace restrictions, stormwater management/flooding, conflicting regulatory or political guidance, endangered species/critical habitat, unexploded ordnance/munitions constituents, maritime sustainability, spectrum encroachment, air quality, waste/hazardous waste and cultural resources. Documents obtained to contribute to the EAP include Integrated Natural Resources Management Plans (INRMP), local and regional comprehensive plans, Regional Shore Infrastructure Plans (RSIP), Air Installation Compatible Use Zones reports (AICUZ), Joint Land Use Studies (JLUS), Integrated Cultural Resource Management Plans (ICRMP), federal or state environmental documents and plans, and permits. Data gathered during this stage is reviewed by a select number of stakeholders appointed by NAS JRB, New Orleans and NAVFAC SE for completeness and accuracy.

After this initial stage, the gathered data is analyzed to produce a preliminary list of encroachment threats facing NAS JRB, New Orleans. Research on means to address encroachment commences at this stage. The highlighted threats, along with initial findings of encroachment mitigation strategies, are reviewed by Base personnel in order to establish a direction for the EAP document.

The next stage in the preparation of the EAP is the formation of the EAP team. This team can include members with backgrounds in facilities planning, environmental,

real estate and public affairs, as well as security officers, legal staffs and mission component command operators. This team is then responsible for providing assistance and overall guidance during the creation of the EAP document. It is this team that attends a workshop generally outlining the prospectus of the report, and provides materials and input in the creation of the final EAP.

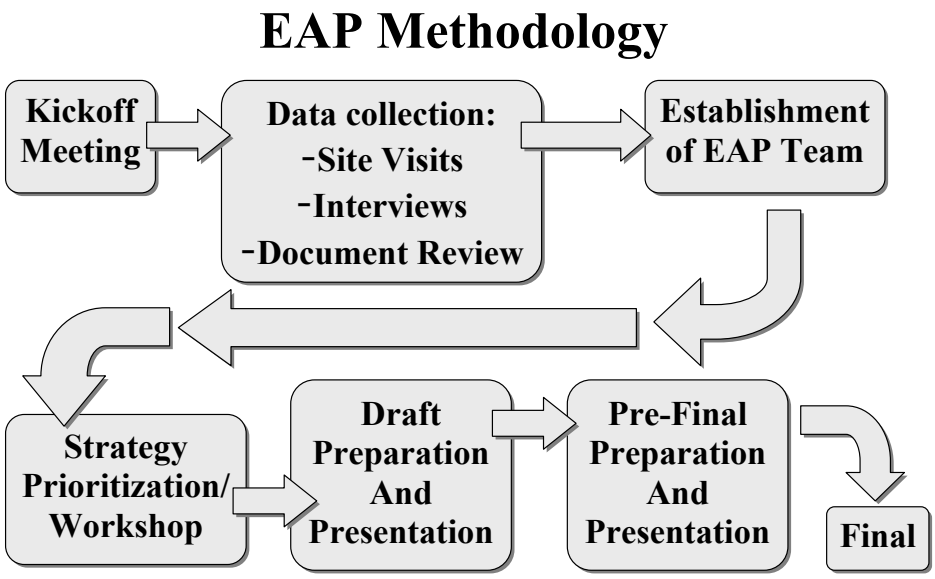


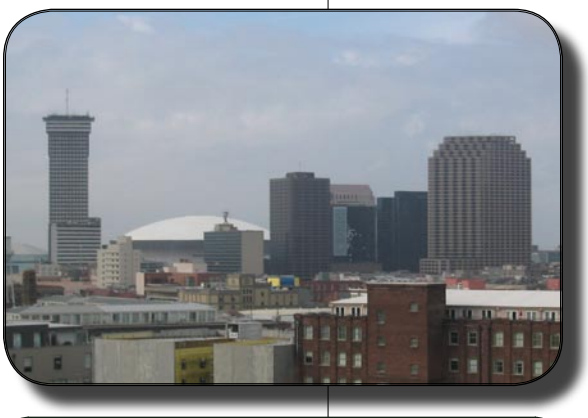
Figure 1-1: EAP Methodology

2.0 Regional Setting

NAS JRB, New Orleans is located near the unincorporated community of Belle Chasse, in Plaquemines Parish Louisiana. Plaquemines Parish is bordered by Jefferson Parish to the west, Orleans Parish to the north, and St. Bernard Parish to the northeast (See Figure 2-1: Regional Area). Plaquemines Parish is the most southeastern parish in Louisiana, and forms the delta where the Mississippi River meets the Gulf of Mexico. Belle Chasse is located approximately seven miles southeast of downtown New Orleans.

2.1 Regional Trends and Drivers

Encroachment is a complex topic that is influenced by many different factors, both natural and man-made. The following is a brief overview of the major factors that have influenced growth patterns in the New Orleans region, including Plaquemines Parish, in the past. This understanding helps to explain the current encroachment challenges facing NAS JRB, New Orleans, as well as give clues into potential future challenges that have not yet surfaced.



Downtown New Orleans

2.1.1 Population Characteristics/Demographics

The parishes that comprise the New Orleans metropolitan region, Orleans, Jefferson, St. Bernard and Plaquemines, are extremely varied in their development patterns, overall population and population demographics. For example, Orleans parish is characterized by its coincidence with the City of New Orleans, high center of population, and diverse ethnic composition. Plaquemines Parish, on the other hand, is mostly rural, has no incorporated cities, and is less ethnically diverse.

The focus of urban growth has historically centered around the City of New Orleans, in Orleans Parish, with smaller towns and unincorporated areas becoming part of the larger metroplex with time. According to Census data obtained every 10 years, the region experienced strong growth through the early and mid-20th century, with slight population losses for the last 20 years (See Figure 2-2: Population Trends in the Greater New Orleans Area). It appears that about mid-century, a migration outward from Orleans Parish to the surrounding parishes occurred, mirroring a national trend for large cities. The Parish to receive the most growth during this period was Jefferson Parish, which by the end of the 1990's had nearly matched Orleans' population. Plaquemines Parish experienced steady growth for this period as well, although not on the same scale as even St. Bernard Parish.

In August 2005, Hurricane Katrina struck the New Orleans area in one of the worst disasters in American history. Orleans, Jefferson, Plaquemines and St. Bernard Parishes were severely affected, but Plaquemines and St. Bernard especially so. The cumulative effect of the storm, flooding from breached levees and the subsequent evacuations caused the area to lose about half of its population.

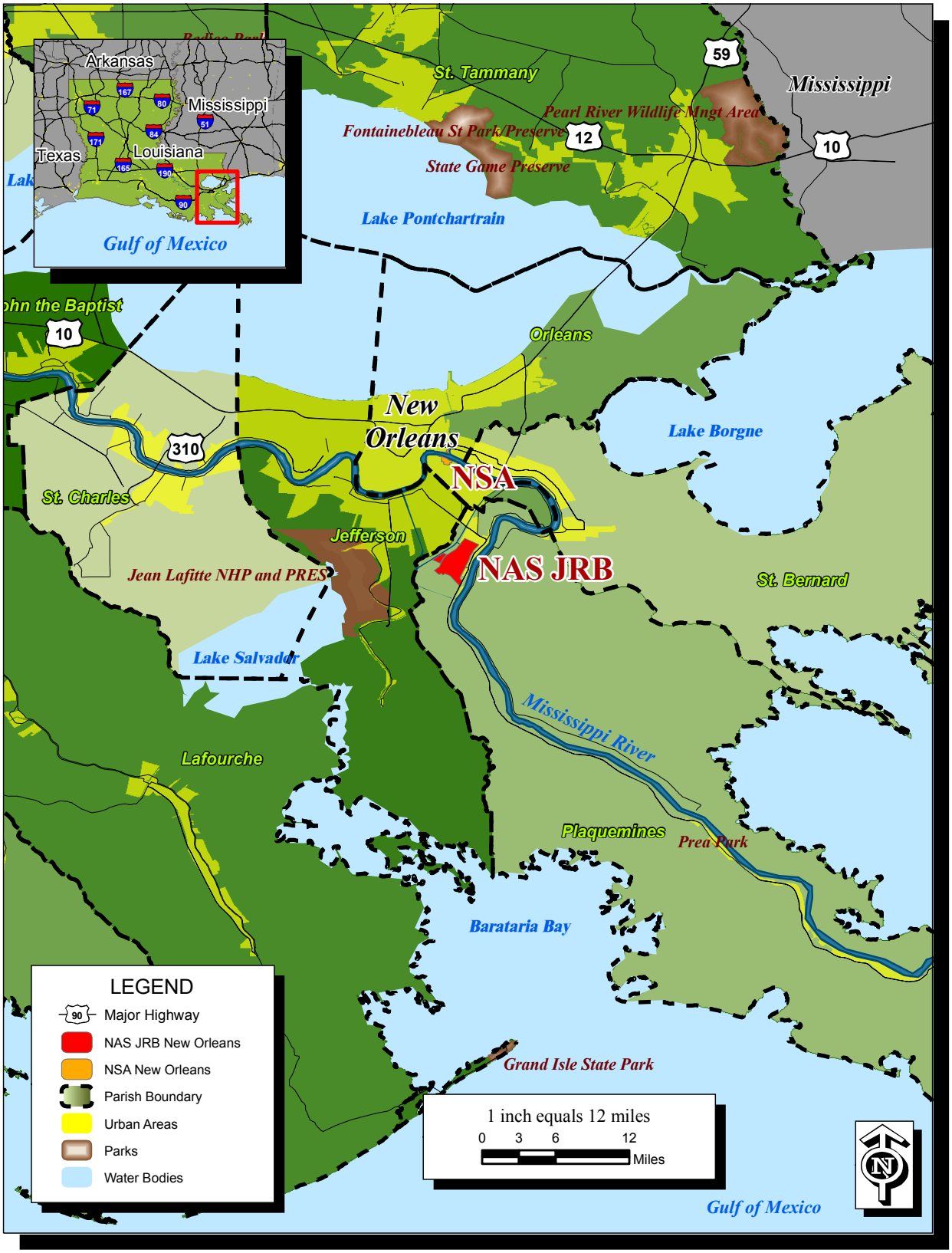


Figure 2-1: Regional Area

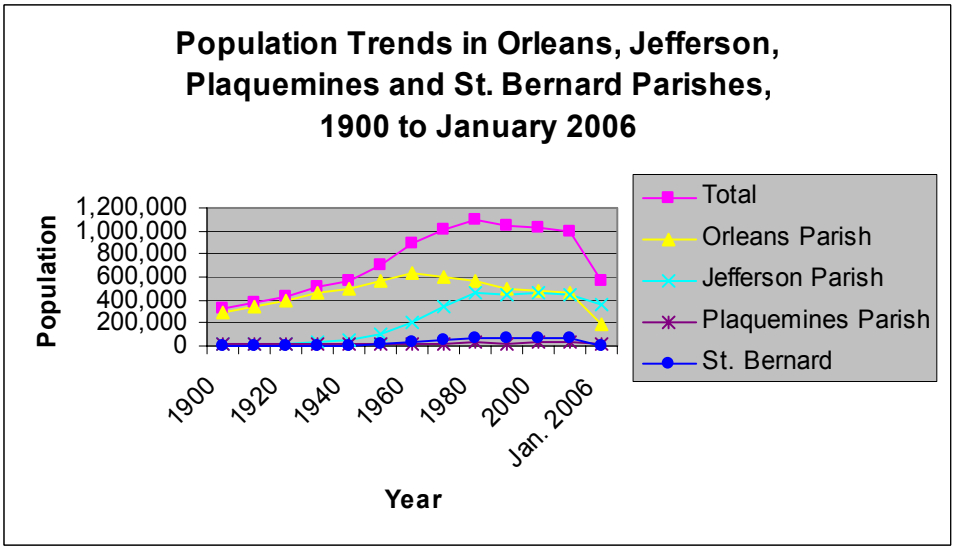


Figure 2-2: Population Trends in the Greater New Orleans Area

2.1.2 Government

The state of Louisiana is organized into parishes, which perform a similar role as counties in other states. Parishes represent the most local form of government for many areas of Louisiana, with the exception of incorporated municipalities, and there is a variety of governmental forms a parish can assume. Within the New Orleans metropolitan area, for instance, Orleans Parish and Plaquemines Parish offer two opposite configurations: Orleans Parish is co-incident with the City of New Orleans, and thus operates as one governmental entity, while Plaquemines Parish contains no incorporated municipalities and acts as the sole governmental authority for the entire 2,429 square mile jurisdiction.

Plaquemines Parish employs a President-Council form of government, with elected representatives from nine districts and a Parish President elected at large. Parish Council meetings are scheduled the 2nd and 4th Thursdays of each month and the Council is the ruling body for all decisions at the Parish level, including land use regulations such as rezonings and variances.

On the regional level, the greater New Orleans metropolitan area's governing body is the Regional Planning Commission (RPC), which is headquartered in downtown New Orleans. The RPC's membership includes five seats from each of the member parishes (Jefferson, Orleans, Plaquemines, St. Bernard and St. Tammany), as well as one seat for the Secretary of the Louisiana Department of Transportation and Development. The RPCs authority stems from its enabling legislation from the state legislature, which was authorized by local governmental bodies in 1962. As such, the RPC is the venue where regional policy and legally-binding decisions affecting the entire region are made.

In addition to setting policy, the RPC conducts studies and creates plans for the appropriation of state and federal funds for improvement projects. Because of the RPC's regional focus, many of its projects deal with transportation planning issues (i.e. regional roadways, freeways, shipping, rail, etc.), although additional services

include regional data compilation, citizen initiatives, support for local comprehensive planning, environmental planning and economic development.

Shipping on the Mississippi River

2.1.3 Economy

The major economic drivers of the region include trade and industry. Greater New Orleans is situated near the end of the Mississippi River system, which gives the city an advantage in goods being shipped out of the United States, as well as those coming in from other countries. The Port of New Orleans is the fifth largest port in the United States based on the volume of cargo handled. The port is particularly important in the shipment of steel, rubber, coffee, grain and petroleum products. In addition to the shipment of goods, the Port of New Orleans is a major cruise ship hub, with ships servicing the upper Mississippi River as well as Mexico and the Caribbean. Of course, tourism plays a major role in the New Orleans economy as well. It averages approximately 10 million visitors each year, and the hospitality industry employs nearly 66,000 people in service sector jobs such as lodging and dining. In 2004, it is estimated that $4.9 million were contributed to the local economy by tourists.

Plaquemines Parish's economy is directly related to that of the larger region because of the central role of shipping and petroleum refinement that is typical of the area. Other important sectors in Plaquemines Parish's economy include agriculture, fishing and government/military.

2.1.4 Historical Patterns of Development

New Orleans' regional history (and more so Plaquemines Parish) has centered on the trade afforded by the Mississippi River and Gulf of Mexico. Early European colonizers established permanent settlements in the region as early as the 1600's, which set the stage for a territorial authority exchange during the following 200 years that included the Spanish, French, English, and eventually, Americans. In 1718, the French established the City of New Orleans, which was ultimately acquired by the United States in 1803 as part of the expansive Louisiana Purchase.

By the early 20th Century, high demand for additional development and the technological advancements of high volume, low maintenance drainage pumps allowed for substantial expansion of the urbanized area of the New Orleans region. This was accomplished by using pumps to drain large portions of swamp surrounding the city and reclaiming it for development. This approach created the pump and levee system that keeps the city dry and is still in operation today. NAS JRB, New Orleans was opened in 1941 as part of this urban expansion under the name Naval Reserve Air Base, which operated at the present day Lakefront Airport.

The completion of three bridges (Huey P. Long, Crescent City Connection Spans I and II) during the mid to late 20th century allowed for further development of the land on the west bank of the Mississippi River and greater integration of both the East and West Banks into a single metropolitan area. During this time, the Naval Reserve Air Base also grew, eventually encompassing property in Belle Chasse,

as well as New Orleans. Eventually, all operations were transitioned to the installation at Belle Chasse where, in 1994, it was finally renamed Naval Air Station, Joint Reserve Base, New Orleans.

Hurricane Damage to Residential Structures

Most recently, the greater New Orleans area suffered one of the most devastating natural disasters in United States history in Hurricane Katrina. The established population of the metropolis was dispersed during evacuation prior to and after the storm, emptying the city of a majority of its inhabitants. The damage sustained by the buildings and infrastructure from the storm has caused difficulty in the repopulation of the area. Perhaps the most telling change has been the surge in housing prices, resulting from the "removal" of storm-damaged homes from the market. Homes that did not experience flooding, water or wind damage have appreciated in value up to 10% of their pre-hurricane worth. The long-term nature of the rebuilding will continue to put pressure on undamaged, established neighborhoods and close-in undeveloped land. This new market pressure has a great potential to affect northern Plaquemines Parish, including communities such as Belle Chasse, which borders much of the NAS JRB, New Orleans perimeter on the north and east sides.

2.1.5 NAS JRB, New Orleans

NAS JRB, New Orleans has hosted, and continues to host reserve units of the Navy, Marines, Army, Coast Guard, and Louisiana Air National Guard. The Base has maintained approximately the same footprint over the past 25 years, although the continued expansion of the surrounding community has lead to an increase in incompatible land uses near NAS JRB, New Orleans. Figure 2-3: 1978 Incompatible Uses depicts the incompatible land uses as calculated in the 1978 AICUZ. This methodology did not yet utilize the current DNL noise contour measurements, but can still serve as an historical reference for rough comparison. When viewed with Figure 2-4: 2003 Incompatible Uses, one can identify the growth in incompatible land uses between 1978 to 2001. The areas that have seen the greatest increase in incompatible development lie in Jefferson Parish across the Intracoastal Canal, and Plaquemines Parish near the bend in LA 23. Both areas are residential developments. Further discussion of incompatible land uses and threats of development is included in Chapter 4, Encroachment Findings.

The largest change in Base operations since the consolidation at the Belle Chasse property was the 2005 Base Realignment and Closure (BRAC) restructuring moves. NAS JRB, New Orleans escaped closure in this stage of decisions, and will be a receiving Base for units from Oregon, Georgia and Missouri. The Base will be receiving Navy/Marine personnel from Naval Support Activity, New Orleans and Marine Reserve Support Command from Kansas City, Missouri. This movement of personnel has the potential to greatly increase the Base population, both in workforce and families housed. Other personnel additions include intermediate maintenance support for the E-2C aircraft from NAS Altanta. In regards to movement of aircraft, the A-10s previously stationed at NAS JRB, New Orleans were relocated to Missouri, Barksdale AFB (also in Louisiana) and Nevada. Aircraft

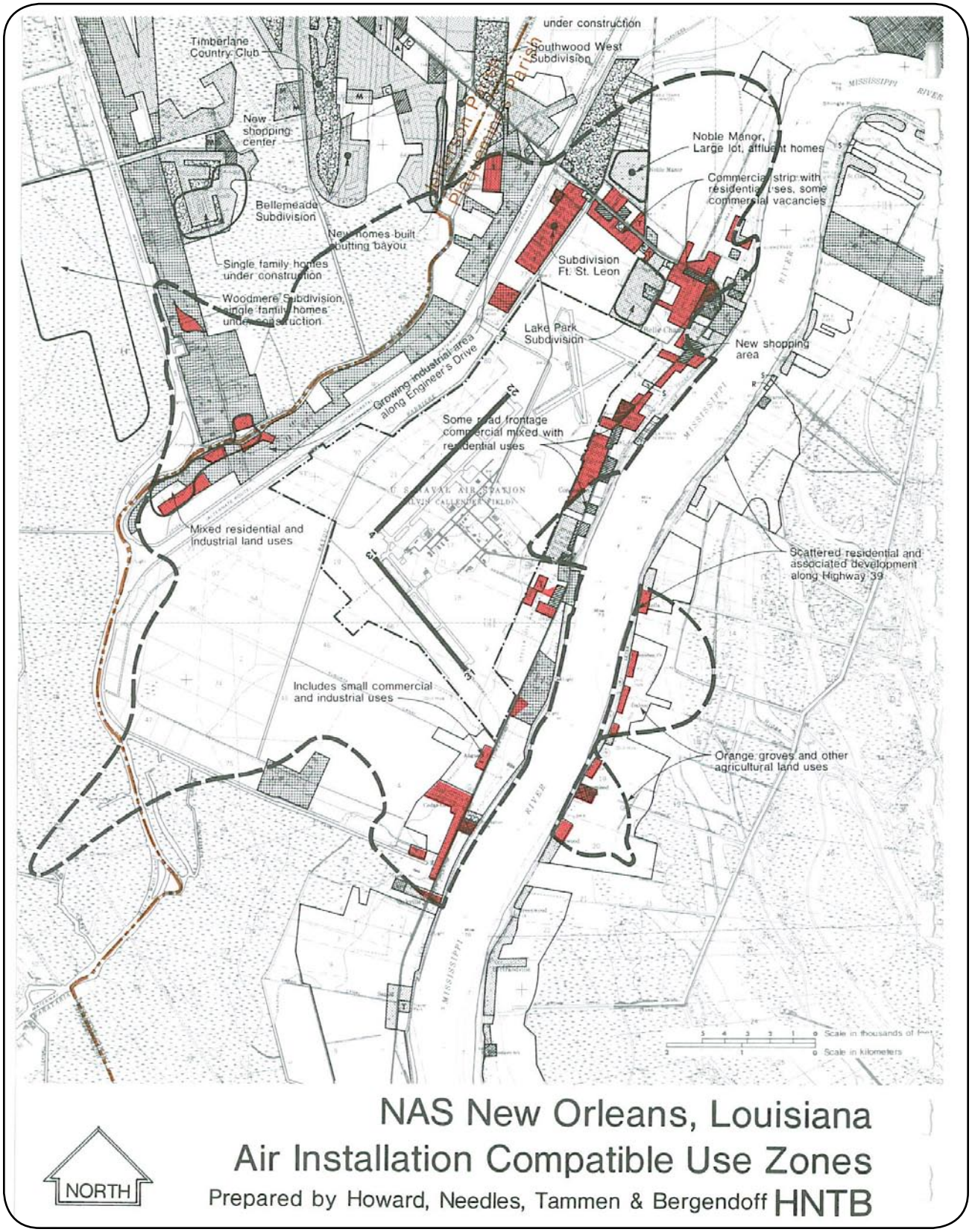


Figure 2-3: 1978 Incompatible Uses

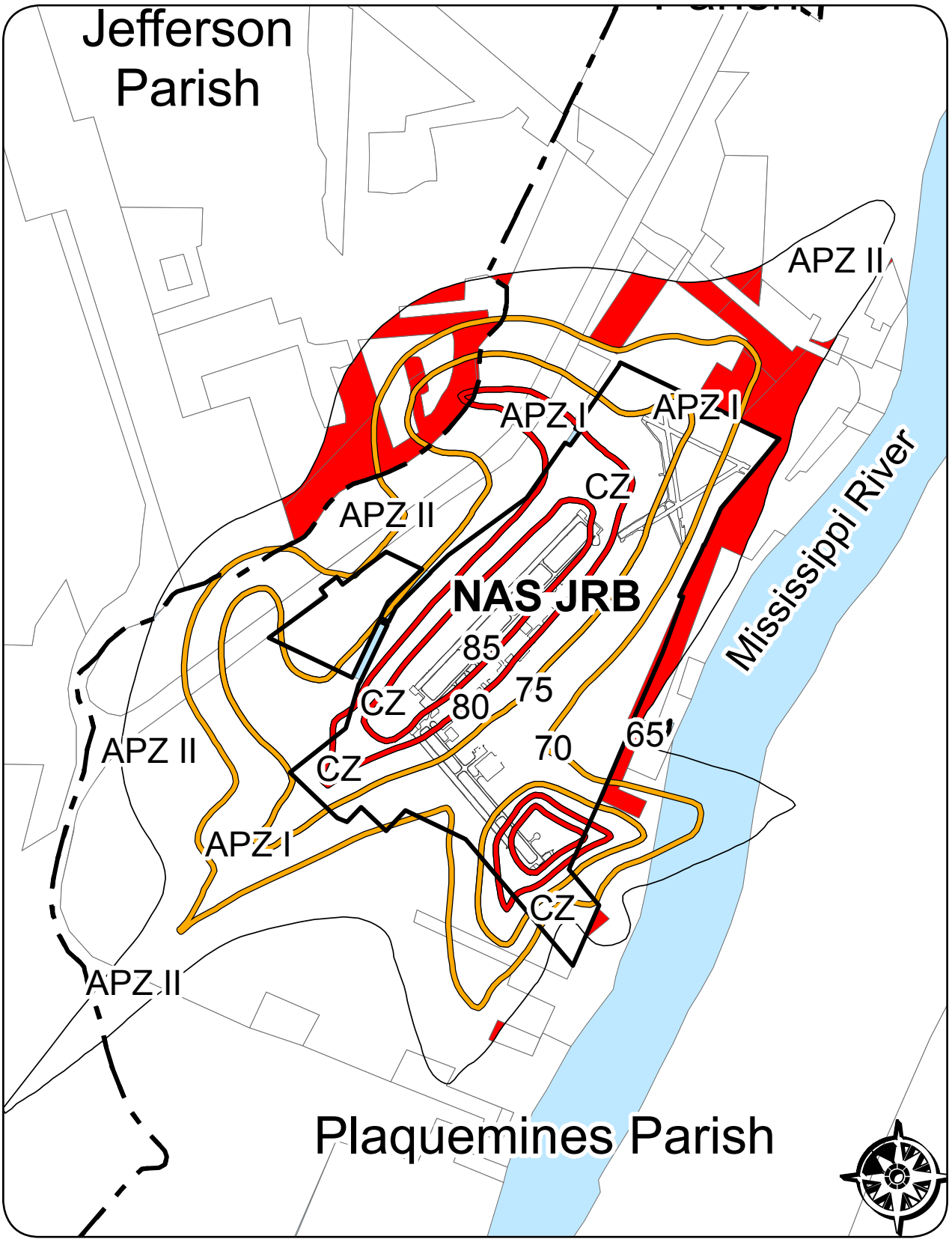


Figure 2-4: 2003 Incompatible Uses

that will be moving to NAS JRB, New Orleans include F-15s from Oregon. BRAC actions commenced in 2006 and are scheduled to be completed by 2008-2009.

Military Operations

NAS JRB, New Orleans operations are divided between the station and various reserve tenant commands. Together, the US Coast Guard, Marine Reserves and Louisiana Air National Guard (LAANG) occupy roughly half of the flightline support facilities. The Station's mission is to "Provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft and train Naval Air Reserve personnel for mobilization." Below is a brief description of the mission of each of the tenant commands:

Marine Forces Reserve

- The mission of the Marine Forces Reserve is to augment and reinforce active Marine forces in time of war, national emergency or contingency operations; provide personnel and operational relief for active forces in peacetime; and provide service to the community.

LAANG

- The mission of LAANG is to provide well-trained, well-equipped men and women who can augment the active force during national emergencies or war and provide assistance during national disasters and civil disturbances.

U.S. Coast Guard

- The mission of the Coast Guard is to provide search and rescue, aids to navigation, defense operations, marine safety and law enforcement.

NAS JRB, New Orleans conducts Reserve Force training out of Building 492, the Joint Services Training Center. Operational tenants and station training departments implement the regional training mission by providing basic and advanced training in the areas of aviation, aviation maintenance, supply, transportation, maintenance and other logistic services for the Department of Defense. All classroom training is coordinated by Navy Operational Support Center (NOSC), although each tenant is responsible for its own training programs.

Training conducted at NAS JRB, New Orleans is largely contained within the perimeter of the Base. In the past, as is also currently the case, military operations have not created conflicts with the surrounding community. The mobility and indoor small-arms range training activities occur on-base and have little to no impact on properties in the vicinity. Furthermore, future training for these types of activities is expected to be accommodated by the current space available at NAS JRB, New Orleans. Air training, however, presents the one exception to this rule. Air operations, by their nature, extend off the Base and present the greatest conflict with the surrounding community through the potential for aircraft crashes and noise/vibration associated with aircraft arrivals, departures and maneuvering. Units conducting air training courses include the Navy, Marines, U.S. Coast Guard and LAANG. These units will continue to have a need for air training into the foreseeable future.

Table 2-1: Aircraft Operations, displays the number and type of air operations at NAS JRB, New Orleans as reported in the most recent AICUZ document (2003). Most fixed wing operations are staged on Runway 04/22, whereas Runway 14/32 is used for mostly non-jet aircraft. The alignment of Runway 04/22 creates flight tracks to the northeast and southwest of the Station. Beyond the critical arrival/departure alignments, flight tracks traverse the region in all directions around NAS JRB, New Orleans.

Aircraft Types	Operation Type					Total
	Departures	Straight-In Arrivals	Overhead Arrivals	Patterns[1]		
				Touch & Go/ Low Approach	GCA Box	
F-15 (including transient F-15)	2,214	656	1,558	4,199	229	8,856
F/A-18 (including transient F/A-18)	1,204	397	807	2,869	1,589	6,866
A-10[3]	3,110	610	2,500	800	1,600	8,620
P-3	504	504		3,023	504	4,535
Transient F-16	318	64	254	127	33	796
HH65	359	359		2,153	359	3,230
C-12	751	751		4,504	751	6,757
C-130	250	250		1,503	250	2,253
T-39	250	250		1,503	250	2,253
Transient C-12 and C-9	268	268		1,608	268	2,412
Air Carrier[2]	58	58				116
General Aviation	640	640		3,839	640	5,759
Totals	9,926	4,807	5,119	26,128	6,473	52,453

[1]Patterns counted as two operations

[2]Only Straight-In arrival and departures on Runway 04-22

[3]A-10s relocated in 2006 as part of BRAC

Table 2-1: Aircraft Operations

Overall, NAS JRB New Orleans' flight tracks are unencumbered by surrounding development. The single largest area of overlap of an urbanized area and low-flight track alignment is the small community of Belle Chasse, which borders LA23 as it bends around the Base to the north and east. Fifteen of the Base's 41 flight tracks cross this area, and are used for almost a fifth (9,351) of all air operations. The 2001 AICUZ made recommended alterations to flight tracks 04D3, 04D5 and 04D7 to consolidate overflight of this community. The remaining flight tracks are aligned over largely uninhabited areas or agrarian land uses with extremely low development densities. Figures 2-5: Departure Flight Tracks and 2-6: Arrival Flight Tracks display the flight tracks as modeled for the 2003 AICUZ Addendum. Noise contours associated with flight operations are discussed in Chapter 4, Section 4.1.2, Noise.

The most significant forseeable change to aircraft operations is the introduction of new aircraft. The Navy's F/A-18s will likely be replaced by the F-35 Joint Strike Fighter (JSF) starting in 2010. The JSF's full flight characteristics and impacts are still under evaluation, but one key difference between the two aircraft is the JSF's ability to take-off and land in a vertical position. According to preliminary studies, the noise footprint of the JSF will be comparable to the F/A-18s, although higher noise levels could be generated directly under the flight path and during hovering maneuvers. Gaseous emissions, however, appear to be lower than the aircraft the JSF is replacing, especially carbon monoxide and unburned hydrocarbons. Despite these initial observations, full evaluation of the JSF is on-going and actual impacts will not be known until a formal environmental assessment has been completed.

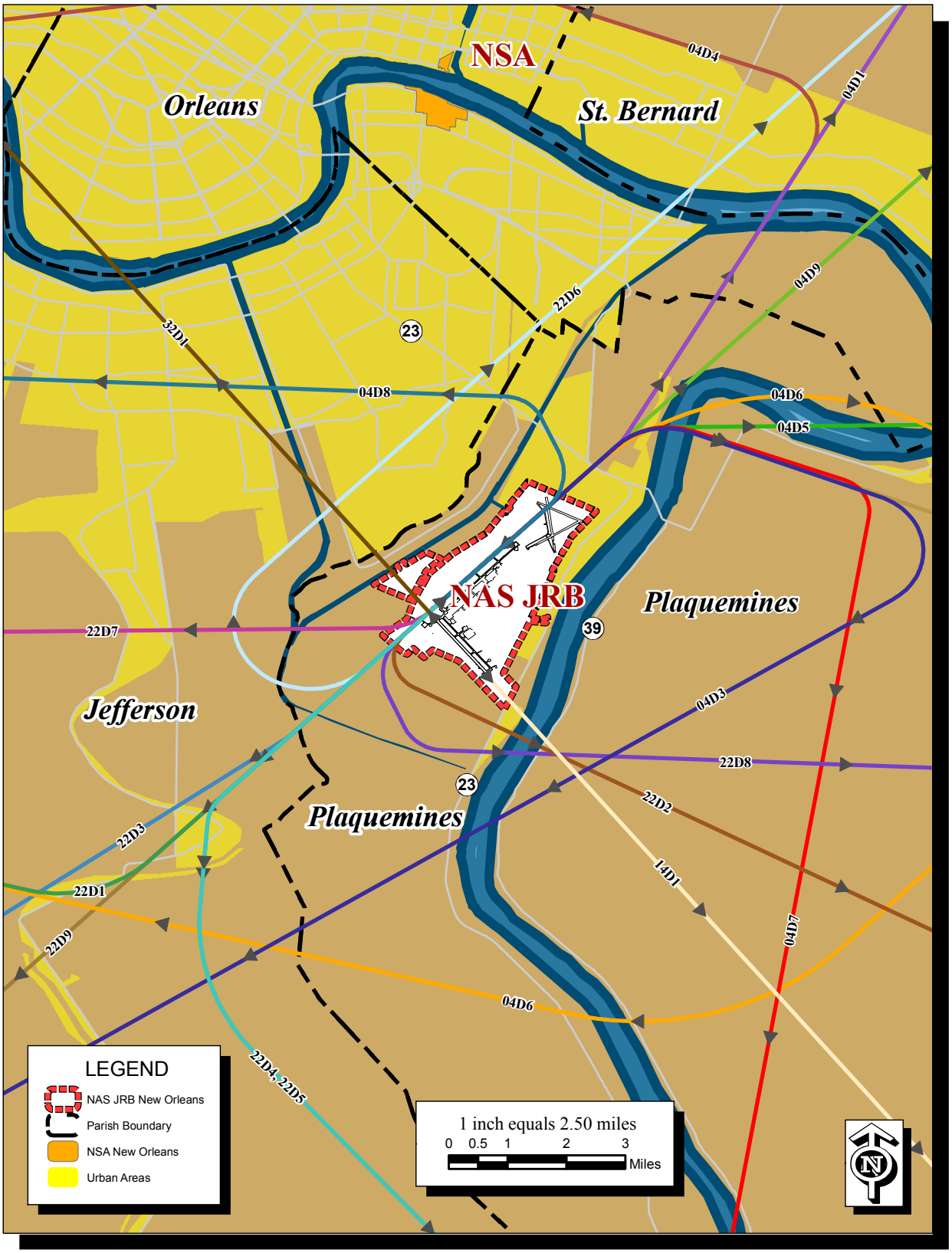


Figure 2-5: Departure Flight Tracks

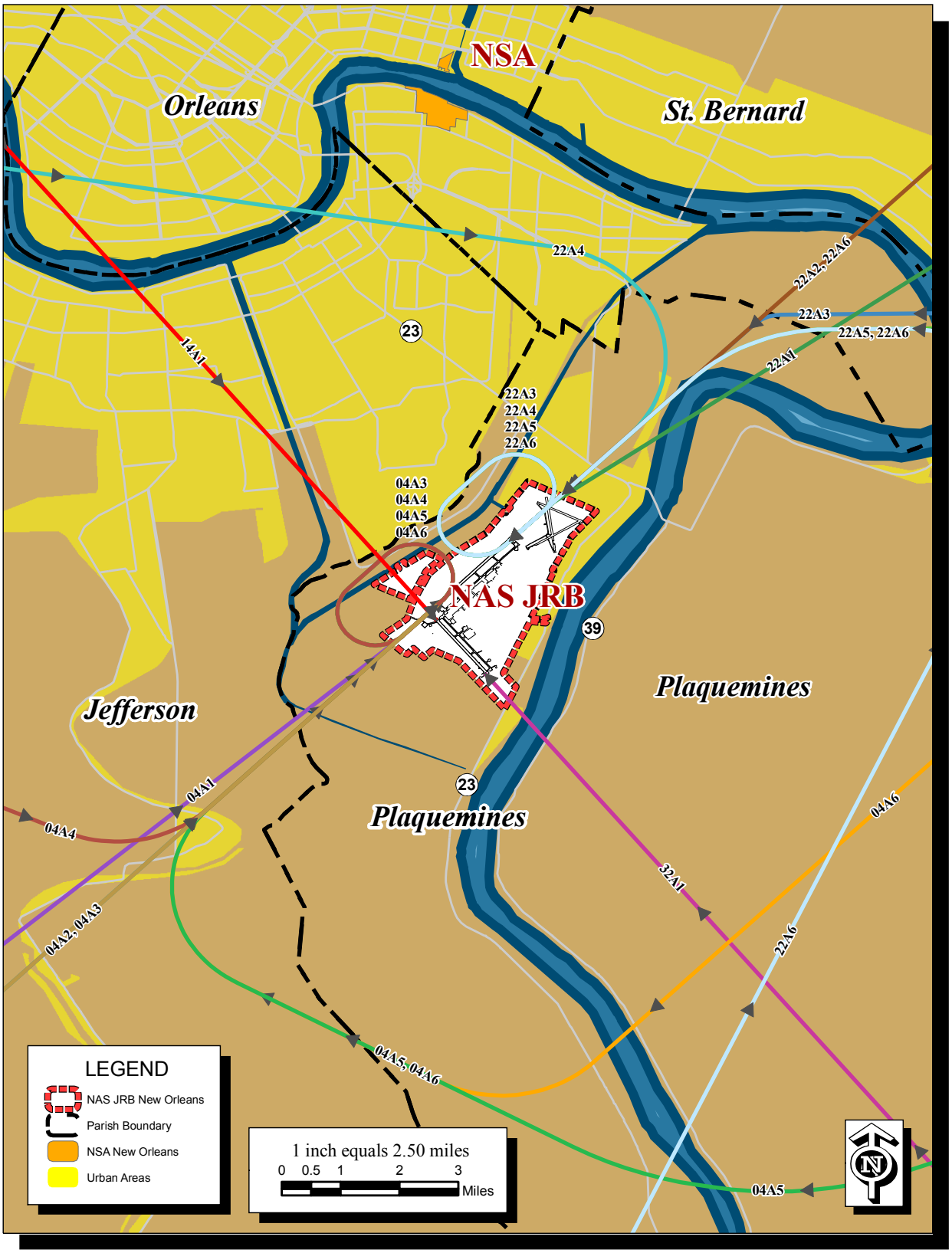


Figure 2-6: Arrival Flight Tracks

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3.0 EAP Toolbox and Definitions

The following discussion presents information about the strategies commonly used to mitigate encroachment challenges. From this discussion, one can understand the "toolbox" of options available to military and civilian personnel when seeking to mitigate encroachment threats. The discussion presented in Chapter 4.0, Encroachment Findings, then presents the specific challenges facing NAS JRB, New Orleans. Together, Chapters 3.0 and 4.0 explain "how" to deal with encroachment and then "what" specific issues need to be addressed.

3.1 Strategies to Address Encroachment

There is no limit to the number or variation of strategies that can be used to address encroachment. Each installation faces unique challenges, which often calls for a customized approach to best utilize available resources to meet local threats. Also included with the discussion of each strategy is information relating to the entity or entities responsible for overseeing the funding and/or implementation of that encroachment tool. Understanding the basic structure and motivation of each entity aids in formulating a successful approach to encroachment mitigation. Table 3-1: Encroachment Tools Analysis Table, provides the following information in matrix form at the conclusion of the chapter.

3.1.1 Studies

One of the central elements in addressing encroachment issues is coordination between the entities responsible for potential conflicts. Three documents have been established by the Department of Defense to lay a foundation for such coordination: the AICUZ, EAP and JLUS.

Aircraft Staging and Operations

All of these plans deal directly or indirectly with the land uses of the communities surrounding military installations. The goal is to present the different conflicts that can arise between military and non-military uses, and establish a community vision with the minimum number of conflicts. The AICUZ uses information about aircraft loading, operations and the surrounding community to determine incompatible land uses. The EAP, as mentioned in the introduction, is focused on identifying encroachment conflicts of all kinds for both the Base and the community and making recommendations to mitigate or avoid these conflicts. The JLUS is a document that seeks to establish a common land utilization goal between the military and the community.

The AICUZ and EAP are designed largely as educational and strategy-implementation tools, whereas the JLUS is a community effort to establish a collaborative vision for future growth or redevelopment. Even though a JLUS is sponsored by a municipality or parish, the study's recommended land use policies do not become law unless acted upon separately by the municipality or parish. These recommendations can be enacted in whole or in part, or in some cases, not at all.

The AICUZ and EAP are implemented by NAVFAC Headquarters (HQ), located in Washington, D.C. NAVFAC HQ is responsible for many base-related programs

on the regional and local levels, and its areas of focus include capital improvements programs, environmental, real estate, public works, base development and contingency engineering.

Implementation of an AICUZ or EAP involves multiple levels of Navy Command. Individual CO's are responsible for monitoring and reporting on the needs of their Installations. Requests for studies (or updates to previous studies) are filed with the appropriate Navy Region, where each request is ranked and recorded on an Integrated Priority List (IPL) for all Installations in the Region. Commander, Navy Installations Command (CNIC) maintains this list and is responsible for funding approval. Funding for studies is dependent upon allotments for any given year and amounts available vary from year to year.

Implementation of a JLUS involves multiple levels of DoD Command in partnership with a local governmental sponsor. Installations/regions are responsible for notifying the DoD's Office of Economic Adjustment (OEA) of the need for a Joint Land Use study. If the OEA determines that there is sufficient need and interest in a JLUS, then it authorizes the study and is available to financially and technically partner with the community.

Individiual Installations have much to gain and little to lose when approaching the Navy command for assistance via the AICUZ and EAP studies. There is no philosophical distinction between the Installation and the Command, so conflicts would mainly arise from timing of proposed projects. Because funds are finite, an individual Installation's study could be postponed if the need is not deemed urgent enough. Therefore, the best approach to take with the Command is to ensure requests are made early and their need fully justified.

Partnering with the OEA and surrounding communities for a JLUS is also a beneficial situation for an Installation. Because the majority of the responsibility for conducting a JLUS falls on the shoulders of the OEA and community, the military entity is able to provide insight and directly influence a regional visioning document without significant monetary expense. The time involved in this process can be considerable, but it is also worthwhile since it not only improves the plan, but also deepens ties with civilian stakeholders.

3.1.2 Outreach

One of the most effective tools in combating encroachment of all kinds is being active in its prevention. Prevention requires being aware of environmental forces that would create conflicting uses, and being in a position of advisement or authority to stop those forces. Because encroachment entails both the military installation and surrounding community, military personnel need to take an active role in seeking positions of influence off Base. The time and effort expended to fill these positions can be considerable, but the benefits are equally significant.

Formal Outreach

Positions of influence for military personnel in the civilian realm usually are characterized by advisory positions to an executive figurehead or legislative body.

These formalized appointments can either be a non-voting member of a review board (i.e. Planning Commission, City/Parish Board) or an advisory military panel that recommends policy, but ultimately has no legislative authority.

Informal Outreach

A complement to the formal outreach strategy of a military Installation is the inclusion of outreach through informal means. Informal avenues of outreach include newsletters, special events, community service, speaking engagements, sponsorships, community workshops and discussion forums. All of these venues allow the Navy to interact with the community, meet important decision makers outside of the political realm, serve the neighboring population and have influence over the image of the military held by the public.

3.1.3 Stewardship

Understanding the time commitment to community involvement is a key factor in a CPLO's effectiveness. An appointment to a position is only as influential as the time spent understanding the issues. Having an appointment on a local decision making body (even as a non-voting member) carries a great deal of responsibility and can require a large commitment of time.

3.1.4 Legislative Initiatives

One of the most effective ways to protect a military installation against incompatible uses is to craft a law that specifically controls these uses near a military Base. Since encroachment can come in many different forms, laws governing air space, frequency spectrum, sensitive species, etc. are all needed as integral parts to mitigating conflicts between military and non-military uses.

An effective network of legislation comes from various levels of government, from local municipalities to the federal government. These varying levels of government control everything from local land use regulations to national airspace travel, all of which impact NAS JRB, New Orleans on various levels.

Federal

Because of the federalized system of government in the United States, and private land use laws generally being a function of local, rather than state or national government, congressional guidance relating to military encroachment issues rarely place additional restrictions on private property owners. Instead, federal policy and legislation directs the military in how it addresses encroachment challenges.

Legislation at the federal level that helps military installations mitigate the challenges of encroachment includes:

1. Encroachment Partnering, Title 10 US Code Section 2684a. Authorizes military department to enter into agreements with eligible entities to acquire land:

   - To limit development or property use incompatible with a military installation's mission;

- To preserve habitat off Base to relieve current or anticipated environmental restrictions that might interfere with military training on Base;

- DOD can share real estate acquisition costs for projects that support these purposed (fee purchases, easements); and

- Eligible partners include states and their political subdivisions and private entities whose primary purpose is to conserve, restore or preserve land or natural resources.

Furthermore, funding provided by the federal government to address encroachment challenges comes as part of the yearly Defense Appropriations Bill, a consolidated bill for all military spending for the fiscal year. For 2006, the Department of Defense expects to receive approximately $37 million to address encroachment challenges department-wide.

State

As mentioned in the previous section, the state's strength to regulate encroachment-related conflicts is not directly through land use regulations. Many of the states that have seen success in protecting their military Installations have done so through programs that provide additional guidance to cities in comprehensive planning, funding for encroachment buffers/conservation, grants for land acquisition and state-level advisory positions.

As beneficial as protective legislation can be for a military Installation, it can also be complicated because of its inherent ties to the political process. Proposed bills can be modified, delayed, rewritten or discarded altogether depending on the political climate. Success in the legislative realm depends upon many factors, but the relationship with legislators, as well as backing by the public at large, are two essential ingredients to moving bills from proposal to passage.

Residentially Zoned Land

3.1.5 Land Use Planning and Zoning

Local municipalities' land use plans and zoning laws are powerful tools to guide development. These regulations are aimed at protecting the community's health, safety and welfare, as well as provide a fair certainty of what can be constructed on any given piece of land. In many cases, land use plans and zoning laws are created through municipalities, although regional governments, such as parishes, also have this authority. Zoning regulations can also assume more forms than the Base zone that is applied to a property. Examples of these other forms include historic districts, scenic corridors, redevelopment districts, environmental overlays and transit oriented districts. These additional levels of review usually apply to a whole district or corridor, and therefore can affect all zoning categories included in that area.

Land use planning and zoning, by nature, are fluid designations that many times change as the needs of the community evolve. The process of changing a property's zoning from one designation to another is called rezoning, and generally occurs in two different ways: in a broad, comprehensive plan update that serves as a "road map" for the land use policies of the entire community, or on a piece-by-piece basis by individual land owners. The majority of rezonings occur by the second method, as comprehensive plans are only updated every 10 to 20 years.

Some common applications of Land Use Planning and Zoning regulations that can be helpful in mitigation encroachment:

- Airport Overlay Zone (AOZ)
    - This zone takes into consideration the special operations conducted at an airport (civilian or military) and crafts additional regulations to protect the safety of individuals in the surrounding land uses, as well as safe operation of the air facility.
    - Additional restrictions placed on properties within the AOZ include limits on residential density, employee density, total number of employees, total number of persons from the general public allowed to gather in one facility, floor area ratio (FAR) of structures, as well as the exclusion of land uses such as civic assembly buildings, medical services, travelers accommodation, and hazardous material storage. These criteria are adjusted to apply to different subzones within the AOZ, but the same type of regulations are in effect.
- Military Installation Overlay Zone
    - This zone is similar in structure to an AOZ, but tailors its regulations to address potential conflicts with any kind of military Installation, not just air stations. The Military Installation Overlay Zone can also be combined with an AOZ to create an overlay which addresses both air and ground operations. Examples of Military Airport Overlay Zones from the Cities of San Antonio, Texas and Tucson, Arizona are included Appendix D and Appendix E, respectively.
- Transfer of Development Rights (TDR)
    - This program establishes a mechanism through which existing development rights are assessed for two separate types of property: sending and receiving properties. The property on which development presents a conflict to the community (in this case, conflict with the community's goal of retaining their military Base), becomes the sending property, meaning that instead of development proceeding on that property, that it would "send" some or all of its development rights to a different property with no conflict. The "receiving" property, then, is one for which the owner desires greater development potential, and receipt of the development

rights from the "sender" property would not create a conflict for the community.

- TDR programs can be a challenge to implement because of the complexity added to the zoning regulations, as well as coordinating the terms of agreement (for both sending and receiving properties) for each transfer. Even though the program is complex and somewhat uncommon, it presents the ideal flexibility needed to preserve private property rights while also protecting assets (such as military Installations) that operate in the public interest. A model TDR ordinance is included in Appendix F for reference.

3.1.6 Acquisition

Land acquisition is one of the most effective means to resolve encroachment issues but also presents the greatest cost in terms of time, expense and controversy surrounding its use.

There are several different ways to secure control over a piece of property. The following methods are common options:

- Fee Simple Purchase: Agreement is struck between the military and a land owner where the property is bought for a mutually agreed upon price;

- Life Estate: Contract is established whereby the property owner agrees to will or to sell his or her property, with the stipulation that the ownership transfer occurs either upon the owner's death, or permanent vacation of the property. The benefit to owner in this arrangement is his ability to remain on the property as long as he wishes, while the military benefits by knowing that land uses will not change and that it will gain control of the land at some point in the future;

- Easement: Agreement is struck between the military and a land owner where certain development rights are purchased for a mutually agreed upon price. This option does not convey ownership of the land itself, rather, it establishes limitations of what can and cannot be built on the land regardless of the underlying zone;

- First Right of Refusal: Contract is established whereby the property owner agrees to give the military the first opportunity to purchase a property when and if it is listed for sale. If an agreement between the land owner and the military is not reached, then the land owner is free to sell to another group or individual; and

- Land Exchange: An agreement is struck between two or more entities for an exchange of land and/or other property of equal value. This is a transfer of ownership and many times requires more than one participant for there to be enough properties of interest to make the deal worthwhile.

Encroachment Tools Analysis Table			
Tool	**Cost**	**Benefit**	**Lead Implementing Agency**
Studies			
1. AICUZ	Time and expense of creating report.	Clear delineation of impacts generated by air operations.	1. NAVFAC HQ
2. EAP	Time and expense of creating report.	Clear delineation of encroachment threats facing an installation, strategies to address threats.	1. NAVFAC HQ
3. JLUS	Time and expense of creating report (cost can be offset by grants from OEA).	Formalizes dialogue between regional stakeholders with regards to land use planning and management. Provides a common vision for growth and development, although the JLUS itself is not a regulatory document.	1. Local communities, parishes or regional planning authority.
Outreach			
1. Formal Outreach	Time required to review materials and attend meetings.	Provides a consistent, formalized venue for the base to express its opinions on matters relating to military facilities	1. NAS JRB CPLO 2. NAS JRB CPLO
2. Informal Outreach	Time and expense associated with hosting/attending events, creating publication, etc.	Integrates the military into the community, provides networking opportunities, can foster understanding of issues from military and civilian perspectives, provides the military	1. NAS JRB 2. NAS JRB 3. NAS JRB CPLO
Stewardship			
1. CPLO	Expense of staffing position.	Provides a conduit through which encroachment challenges can be identified and addressed. Staffing this position is one of the first, and most important, steps in mitigating encroachment threats to the base.	1. CNI, NAVFAC HQ
Legislation			
1. Encroachment Partnering (Federal)	Time invested in seeking out and developing partnerships	Shares the burden of acquisition of property rights, whether as an easement or property purchase.	1. NAS JRB CPLO
2. Rezoning Notification (State)	None to base.	Base receives additional notification about proposed changes to zoning; allows time to prepare a response and/or recommendation.	1. NAS JRB, designee

Table 3-1: Encroachment Tools Analysis Table

Encroachment Tools Analysis Table			
Tool	**Cost**	**Benefit**	**Lead Implementing Agency**
Planning and Zoning			
1. JLUS	Time and expense of creating report.	Formalizes dialogue between regional stakeholders with regards to land use planning and management. Provides a common vision for growth and development, although the JLUS itself is not a regulatory document.	1. Local Communities/Parishes
2. Military Overlay Zone	None to base. Community may object because of additional restrictions placed on residents and/or businesses.	Depending on extent of regulations, can control all aspects of development within a defined district. Items addressed can include allowable land uses, transportation/circulation, building codes, etc.	
3. Noise Disclosure	None to base.	Property buyers are informed of potential noise impacts. Ideally, notification would reduce the number of complaints due to operations.	
4. Building Codes	None to base. Community may object because of additional cost to implement further building code requirements.	Buildings codes can help protect businesses and resident from the impacts of military operations (i.e. noise), as well as protect the base from certain impacts of urbanization (i.e. light pollution).	
5. Transfer of Development Rights	None to base. Difficult for local planning authority to establish and administer because of complexity.	Can satisfy the needs of multiple parties by maintaining valuation of development rights, but providing flexibility regarding location.	
6. Comprehensive Plan	None to base. Long-term document; changes can take a long time to take effect.	Can set a policy of assigning compatible uses near the base. Zoning would generally come into conformance over time.	
Acquisition			
1. Fee Simple Purchase	Highest upfront cost, highest continuing cost (upkeep), negative impact on community from lost taxable land.	Most extensive control of land.	1. NAVFAC HQ
2. Life Estate	Military must wait to gain control of land.	The base is assured control of the land and the owner is allowed to remain	
3. Easement	Potentially high upfront cost, maintenance responsibilities in some cases, control limited to scope of easement.	Ideally, provides the amount of control necessary, without additional expense and/or hardship on the property owner. Cost is generally less than fee simple purchase.	
4. First Right of Refusal	Military must wait for opportunity to purchase land, no guarantee of final control.	Military is free from responsibilities of ownership until owner decides to sell, and receives the first opportunity to purchase.	
5. Land Exchange/Conveyance	Large amount of time coordinating exchange (can involve multiple parties), potential other costs.	Can be an alternative to requesting large amounts of liquid funds for buffer acquisition, can accomplish multiple goals for all parties with one transaction.	

4.0 Encroachment Findings

Encroachment is defined as "any non-Navy action planned or executed which inhibits, curtails, or possesses the potential to impede the performance of Navy activities." For the purposes of the EAP program, the specific areas of focus include urban growth, noise, airspace restrictions, stormwater management/flooding, conflicting regulatory or political guidance, endangered species/critical habitat, unexploded ordnance, maritime sustainability, spectrum encroachment, air quality, waste/hazardous waste and cultural resources. The topics are arranged into those affecting NAS JRB, New Orleans, and those that do not currently threaten operations, and Table 4-1: Encroachment Summary Table, provides the following information in matrix form at the conclusion of the chapter.

4.1 Issues Applicable to NAS JRB, New Orleans

The following is an analysis of the current threats, current Navy management, planning, and outreach, and recommended further actions, as it relates to each encroachment topic. The strategies to address encroachment as explained in Section 3.1 are applied to each encroachment challenge to indicate the most effective way to mitigate each threat.

4.1.1 Urban Growth

Current Threats

Plaquemines Parish prides itself on its small-town character, including the prevalence of many farms, orchards and natural area open spaces. This rural character has been preserved in part by the separation of the parish from Orleans and Jefferson parishes by the Intracoastal Waterway. Currently, there are two vehicular access points to the northern end of the Parish: Woodland Highway and LA23/Belle Chasse Highway.

Rural Estate Home in Plaquemines Parish

The last major residential development within the immediate vicinity of NAS JRB, New Orleans is the Springwood subdivision to the northeast of the intersection of Woodland Highway and Belle Chasse Highway. This development broke ground in 1998 and, through several phases, has continued to add homes to the Belle Chasse area. This development includes approximately 315 new homes and/or lots for sale. Parish representatives mentioned that this was one of the largest developments in Belle Chasse in recent history.

Although urbanization of northern Plaquemines Parish has not matched the pace of some of the neighboring parishes, several planned improvements to the infrastructure of the parish could create excess capacity, and thus, allow for further development. The scope of the improvements include the roadway, wastewater and electric systems of the parish.

Roadway Expansion

The Peters Road extension is a project that could most significantly impact further urbanization in the parish. This project is identified under the New Construction/ Capacity Increases section of the RPC's Metropolitan Transportation Plan, Fiscal

Year 2027, and is depicted in Figure 4-1: Proposed Roadway Extensions. The project includes the following improvements:

- Peters Road widening to three lanes between US 90B and the Bayou Barataria Bridge;
- Peters Road/Westbank Expressway Interchange; and
- Peters Road extension to LA 23 with bridge.

Figure 4-1: Proposed Roadway Extensions

Existing Intracoastal Canal Crossing at LA23

This project poses two distinct non-land use threats to NAS JRB, New Orleans. First is the location and design of the bridge crossing the Intracoastal Canal. The existing bridge for LA 23 is 150 feet in height and the preliminary drawings from the Environmental Assessment of the bridge at Peters Road show a structure of 121 feet in height. The Imaginary Surface zone for NAS JRB, New Orleans near the location of the bridge, as detailed in the Navy's P-80.3 guidance is at an elevation of 150 feet above the height of the runway (inner horizontal surface). If the height of the bridge exceeds 150 feet, there could be a conflict with aircraft operations. Given that the Peters Road bridge will be built atop the existing levees on either side of the Intracoastal canal, and that the airfield is built on land with an elevation lower than the levees, the total height of the bridge compared to the elevation of the airfield could potentially exceed 150 feet. Additionally, the location of the bridge could fall within an expanded APZ II zone depending on aircraft loading and training changes due to recent BRAC decisions. Because the roadway and bridge are still in the design/review stage, NAS JRB New Orleans should contact the Louisiana Department of Transportation and Development (LDOTD) to ensure the Base's concerns are incorporated into the bridge siting and design. This, of course, is a secondary course of action if the Base cannot persuade LDOTD to relocate the crossing or abandon it altogether. In either case, the goal is assurance of safety for both ground vehicles and aircraft.

The second encroachment issue related to the extension of Peters Road is that of increased accessibility and capacity for undeveloped land to the southwest of the Base. The vast majority of this land is currently zoned agricultural, although small portions along Walker Road/Bayou Road have already been rezoned and subdivided for single family homes. The area of most concern lies within the APZs extending from runway 04. Of the agricultural land to the southwest of NAS JRB, New Orleans, approximately 530 acres fall within the APZ I, and an additional 530 acres fall within the APZ II. This land also experiences a range of DNLs, as low as 65 dB and as high as 80 dB. Further discussion of development threats is included in the "Loss of Undeveloped Land" portion of this section.

Wastewater Utility Expansion

Another infrastructure improvement occurring in the parish is the expansion of the current wastewater treatment plant. The last upgrade to the system occurred in the 80s and improvements included revisions to the primary and secondary clarifiers. Currently, the system handles 3 million gallons per day (MGD), although only 50 percent of the system is utilized during dry weather flow. The justification for the current upgrade relates to capacity, both for overall usage by the parish and to prevent the spills that characterize the existing system during wet weather flows. The expansion is currently in design phase and includes improvements to the headworks, primary and secondary clarifiers, trickling filter and pumps, drying beds, sludge press and lift station. The project also includes installation of a force main. The encroachment threat of the parish's wastewater treatment upgrades is

straightforward: greater capacity is able to accommodate more homes and businesses. Although growth itself is not an encroachment threat, the parish does not currently have adequate regulations to protect NAS JRB, New Orleans from development near the Base.

Electric Utility Expansion

The second major utility upgrade is expansion of electric transmission lines and the addition of a substation in Oakville, just south of NAS JRB, New Orleans. This upgrade is being planned by Entergy, the region's electricity provider. Plans call for a radial 230kV transmission line to be constructed between the existing Peters Road substation and the planned Oakville substation. The new Oakville substation will be sized as 230kV as well. Entergy reports that the project is necessary to improve both the reliability and capacity of the existing system.

Like the extension of Peters Road, the Entergy improvement plans present two encroachment threats to NAS JRB, New Orleans: conflicts with APZ guidelines for facilities within the zones and potential excess capacity for further commercial/residential development near the Base. According to OPNAVINST 11010.36B, utilities are only conditionally compatible within the APZ I of an airfield; the uses deemed incompatible for this area include passenger terminals and major above ground transmission lines. Depending on the alignment of the transmission lines, they could create a new hazard/incompatible use within the APZ I. Secondly, the increased capacity of Entergy to provide electricity to development south of NAS JRB, New Orleans could spur development on previously undeveloped land.

Clearing of Land Near the Back Gate

Loss of Undeveloped Land

The 2003 addendum to the 2001 AICUZ Update identifies several areas that contain or are planned for incompatible land uses. Two of these areas relate to the APZs extending from Runway 22, and one relates to the APZ extending from Runway 4; all three incompatibilities are residential uses.

The most imminent threat of encroachment comes from a new residential subdivision near the Base's back gate, just off Barriere Road (See Priority Parcel #1 on Figure 4-2: Land Use with Priority Parcels). The location of this project places it within the 65-70 dB and 70-75dB noise contours. Plans show a proposed number of 40 lots within a development encompassing a total of approximately 15 acres. The land was formerly an undeveloped wooded area, which is consistent with both noise and APZ guidelines set forth in the AICUZ program. OPNAVINST 11010.36B categorizes this type of residential development as generally incompatible with the noise zones associated with the location. There is no overlap of this development and the current APZs of the Base. If the residential units are absolutely necessary, they should include measures to achieve a Noise Level Reduction (NLR) of 25dB to 30 dB, depending on the noise contour.

With regard to further development and the parcels of greatest concern to the Navy, NAS JRB, New Orleans has developed a prioritization list to direct encroachment

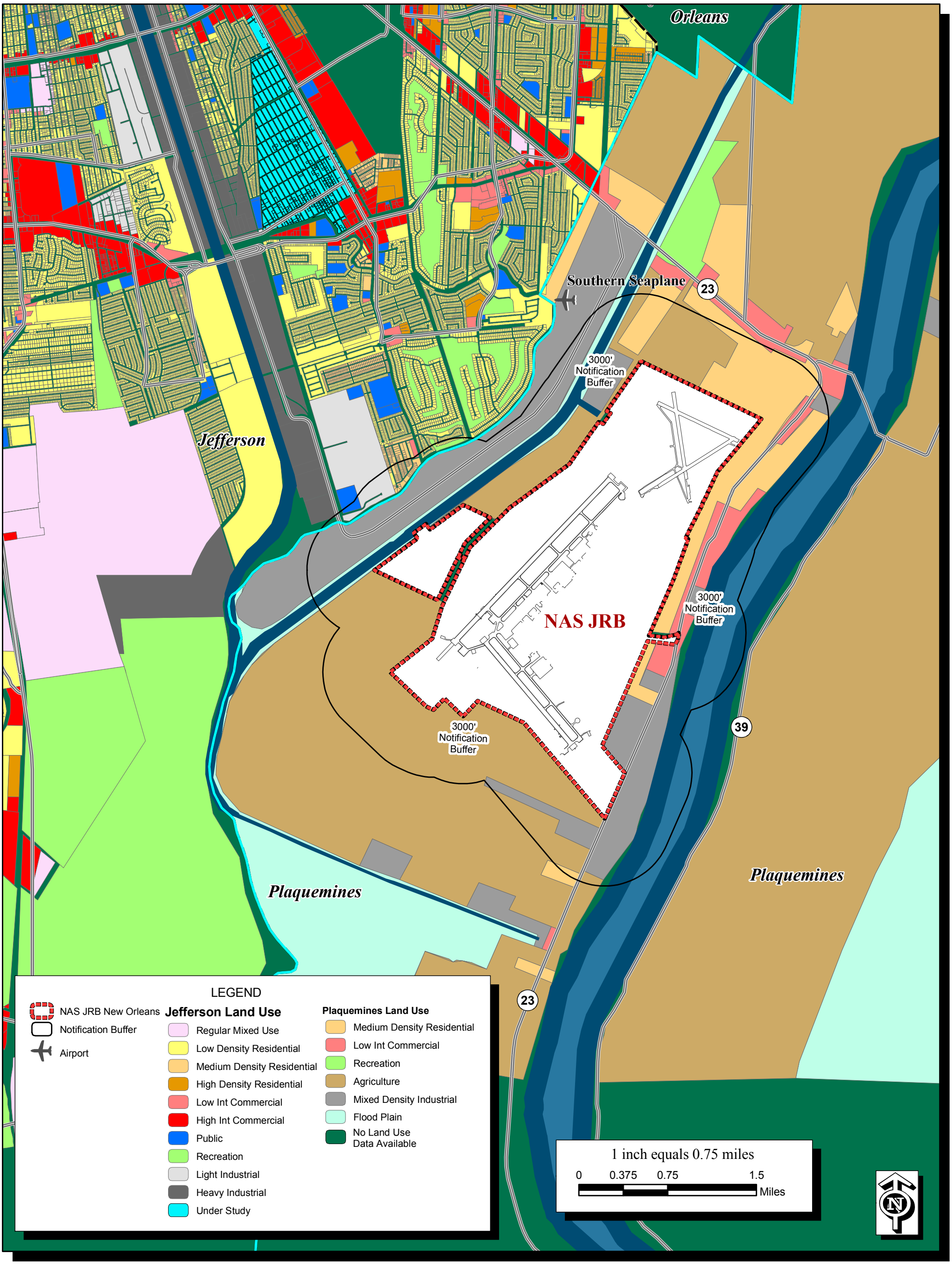

Figure 4-2: Land Use with Priority Parcels

mitigation efforts. The Base has identified three different areas of land, or Priority Parcels, that should receive the most immediate attention:

- Parcel 1 (zoned agricultural) - 223 acres adjacent to the northern perimeter and bounded by Goodnews Avenue and Barriere Road;

- Parcel 2 (zoned agricultural) - 230 acres located between the Base perimeter and the Intracoastal Canal; and

- Parcel 3 (zoned agricultural, residential and industrial) - 3,767 acres located to the south of the Base perimeter and bounded by the Intracoastal Canal, Walker Road and LA23.

Despite the long-term forecast for accelerated development, NAS JRB, New Orleans has been given a temporary respite; in March of 2005, the Parish Council instituted a two year moratorium on new developments in the area defined by Belle Chasse on the north and Myrtle Grove on the south. This corridor measures approximately 15 miles in length. The moratorium was instituted to provide adequate time to analyze the effects of a number of anticipated projects on the parish's utilities. The current moratorium is set to expire in March of 2007, although the disruption to the parish government from Hurricane Katrina could potentially warrant an extension. Even if there is not an extension, the Navy has an unparalleled opportunity to use the next half-year to formalize positions of influence and lines of communication that will undoubtedly be necessary once development resumes.

Current Navy Management, Planning and Outreach

Communication between NAS JRB, New Orleans and the Plaquemines Parish Planning Department has been sporadic, and meetings have occurred only at the request of Base personnel. At the meetings that have occurred, topics such as zoning, rezoning, new development and Base concerns were raised.

Regarding the residential subdivision under construction near the back gate, no formal notification was sent to NAS JRB, New Orleans because the Base is not an immediate land owner and the HB1041 had not yet been enacted at the time of rezoning.

OPNAVINST 11010.36B allows for more uses than agriculture in these zones, although the allowable uses are very specific and have specific densities associated with the allowable uses. Without cooperation from the parish in retaining some of the land uses that are currently compatible, the Base has few options.

Recommendations, Further Actions

1. *(Outreach) NAS JRB, New Orleans CPLO should contact the LDOTD and provide comment on the design drawings of the proposed Peters Road bridge crossing of the Intracoastal Canal. The Base should ensure that the bridge design height does not conflict with the imaginary surfaces and APZs (present and future) generated by the airfield;*

2. *(Outreach) The route from South Peters Road to Oakville offers the option of siting the transmission lines under either an APZ I or APZ II. Make contact with Entergy and ensure transmission lines are sited within the APZ II.;*

3. *(Outreach) Ensure that the NAS JRB, New Orleans CPLO has made contact with adjacent land owners, to assess their willingness to coordinate with Navy efforts to maintain compatible uses;*

4. *(Outreach) Conduct workshop with community stakeholders and developers to communicate importance of developing a coordinated regional land use vision;*

5. *(Study) Submit request for a JLUS, which could involve separate planning agencies in a coordinated approach to land use planning around NAS JRB, New Orleans;*

6. *(Planning and Zoning) Lobby the Parish to create a Military Overlay Zone that creates additional safeguards against incompatible land uses and/or rezonings near the Base (for examples from other cities, see Appendices D and E);*

7. *(Planning and Zoning) Lobby the Parish to create a Noise Disclosure requirement for properties sold within the noise contours of the Base (see Appendix F);*

8. *(Planning and Zoning) Lobby the Parish to strengthen building codes to address conflicts between urbanization and military operations;*

9. *(Planning and Zoning) Lobby the Parish to develop a Transfer of Development Rights program to direct more intensive development away from the Base; and*

10. *(Acquisition) Purchase, or work with partners to purchase, properties of greatest importance to the operational viability of NAS JRB, New Orleans.*

4.1.2 Noise

Current Threats

The 2001 AICUZ Update reports that there were 65 total complaints regarding aircraft operations for the 23-month period running from January 1997 to November 1998. These complaints specifically include low-flying fixed wing aircraft, low-flying helicopters, unusual or atypical flight patterns, and loud noises. Not all of these complaints dealt with day to day operations; in 1998, 17 of the complaints were associated with special events such as a photo shoot over New Orleans, Blue Angels practice for the annual Air Show and a flyover of the Veteran's Day Parade. Figure 4-3: Land Use Incompatiblity displays the land uses that are deemed "incompatible" using AICUZ compatibility criteria. These highlighted land uses represent the areas most likely to generate noise complaints, although in reality, some individuals within these noise contours will not be bothered by noise and those outside the lowest noise contours will still file some complaints.

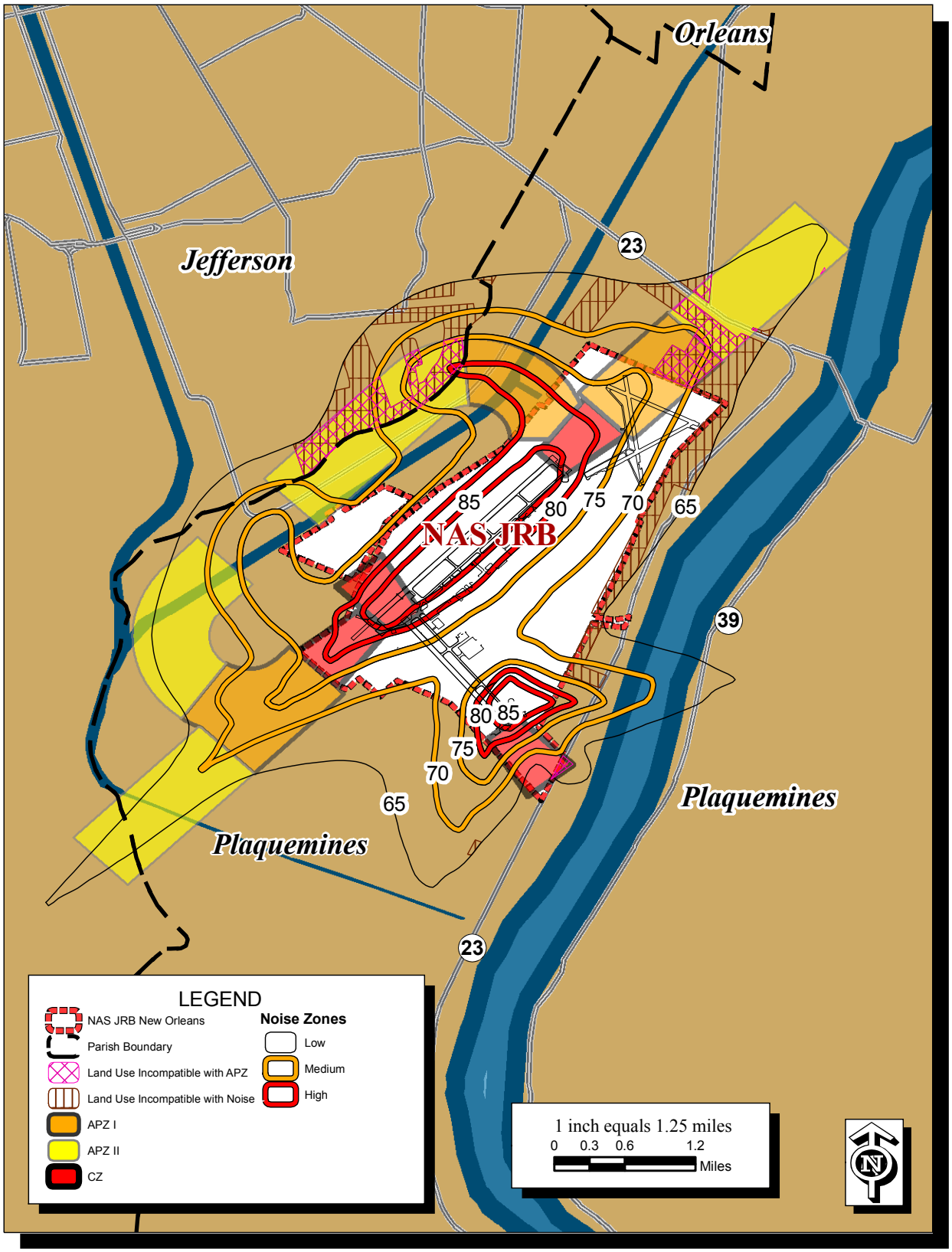

Figure 4-3: Land Use Incompatibility

Current Navy Management, Planning and Outreach

In order to mitigate noise conflicts with the surrounding community, NAS JRB, New Orleans has established noise abatement procedures as part of its Air Operations Manual. These steps, which affect maneuvers over particular areas and at certain elevations, are aimed at addressing citizen concerns and reducing the annual number of complaints.

According to the 2001 AICUZ Update, the ratio of complaints to number of operations is relatively low. The report states that "a total of 65 complaints within a 23-month period indicates relatively few noise conflicts with local residents, especially in view of the large number of air operations conducted…and the large number of people residing within the NAS JRB, New Orleans area of operation."

Recommendations, Further Actions

Noise mitigation, like most other encroachment issues, involves two parties: the noise generator and the noise recipient. The Base's responsibility to mitigate noise concerns relates to noise generation. Already, the Base has taken steps to lessen the noise footprint in areas of higher sensitivity. To a certain point, additional regulations can effectively adjust operations to better meet the expectations of the community. However, the effectiveness of these abatement procedures will reach a point of diminishing return if incompatible development continues to occur within the noise contours of the Base.

The community, therefore, can also take steps to maintain, or reduce, the current number of noise complaints. Although these actions are solely in the hands of the governing jurisdiction of Plaquemines Parish, NAS JRB, New Orleans can play an advocacy role in seeing them implemented. These actions include:

1. *(Planning and Zoning) Lobby the Parish to limit development scale and density for property within noise contours through a Military Overlay Zone;*

2. *(Planning and Zoning) Lobby the Parish to assign less noise-sensitive land uses for property within noise contours through its Comprehensive Plan;*

3. *(Planning and Zoning) Lobbying the Parish to establish additional building code requirements for structures within noise contours; and*

4. *(Planning and Zoning) Lobbying the Parish to establish a real estate disclosure requirement for properties sold within noise contours*.

4.1.3 Airspace Restrictions

Current Threats

NAS JRB, New Orleans currently shares its airspace with several other airfields within a 17 mile radius: the Louis Armstrong/New Orleans International Airport (MSY) in Kenner, Lakefront Airport in New Orleans (NEW) and Southern Seaplane in Belle Chasse (65LA) (See Figure 4-4: Regional Airspace). There is an airport in Slidell, 37 miles away from the Base, but at this distance the potential for airspace conflicts is extremely low.

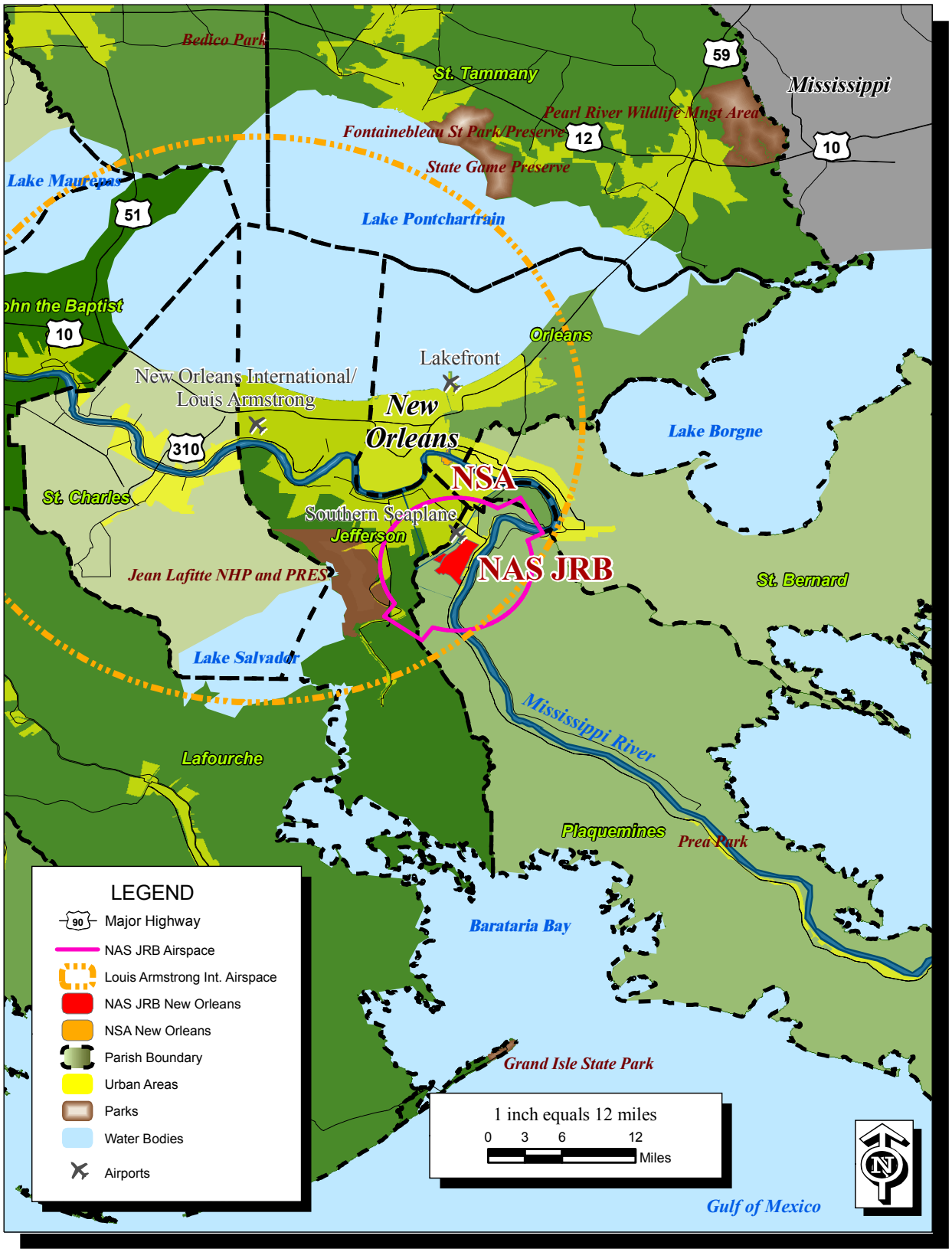

Figure 4-4: Regional Airspace

Air traffic for the region is controlled by both NAS JRB, New Orleans and MSY. All aircraft operating in Class D airspace are controlled by NAS JRB, New Orleans Tower Control, while aircraft operating in Class B airspace are controlled by New Orleans Approach Control at MSY. Joint procedures and responsibilities have been established between the two entities and are outlined in a MSY Tower/NAS JRB, New Orleans Letter of Agreement (LOA).

Although NAS JRB, New Orleans shares the airspace surrounding the Base, there is no significant threat to air operations from these other operators. Air traffic controllers at NAS JRB, New Orleans report that conflicts are few, and at their most severe, only result in a delay of arrivals and departures. According to facility planners at MSY, the next 10-15 years will not bring about substantial change in their operations. The current airfield facilities will continue to serve the region adequately with minimal expansion. As a matter of fact, the damage to the City of New Orleans by Hurricane Katrina set back the need for expansion approximately five years. Currently, airport officials estimate that it will be 2008-2010 before operations reach pre-Katrina levels again.

One potential threat to the air operations of NAS JRB, New Orleans is small, privately owned airfields hosting small aircraft in close proximity to the Base. The main concern with these facilities relates to the introduction of general aviation pilots and the potential for unexpected pilot behavior that could lead to an incident with a military aircraft. At the current time, the only such facility is Southern Seaplane, Inc., a combination canal/grass runway that supports both water-based and land-based airplanes. This airstrip is located off of Coquille Drive in Belle Chasse, approximately one mile from the northwestern extent of the Base perimeter, although Base personnel have indicated that in its current configuration and level of operation, it does not present a hazard to operations.

Current Navy Management, Planning and Outreach

Air Operations for NAS JRB, New Orleans is in contact with MSY on a daily basis for logistical reasons. This routine communication allows for early identification of potential conflicts.

The CPLO periodically reviews community plans for any additional air uses that might be in conflict with the Base, although no formal means of outreach exist.

Recommendations, Further Actions

Air Operations personnel from the Base communicated that even with the potential expansion of the existing Louis Armstrong Airport, there is no foreseeable conflict that would significantly impair the air station's operations. As is even the case currently, impacts are likely to take the form of increased delays in queuing for arrivals and departures.

1. *(Outreach) The current day to day communication and existing LOA between NAS JRB, New Orleans and MSY are integral parts to avoiding airspace conflicts. These efforts should just be one part of a comprehensive dialogue between the entities, however. Of equal importance to short term communication is famil-*

iarity with both airfields' long term plans. MSY is in the process of updating its Airport Master Plan, and a Draft is expected to be submitted to the FAA in summer 2006. Air Operations for NAS JRB, New Orleans should ensure that it obtains the final release of this master plan, as well as other facilities planning documents in order to address topics as early as possible.

Pumping Station on the Intracoastal Canal

4.1.4 Stormwater Management and Flooding

Current Threats

Most of the New Orleans urbanized area lies below sea level as a result of subsidence from draining swampland for development. NAS JRB, New Orleans is no exception: it lies on land reclaimed from the swamp and is protected from flooding on the Mississippi River and Intracoastal Canal by levees. The average elevation of the Base is approximately sea level, which makes drainage of any type a challenge.

Current Navy Management, Planning and Outreach

Physical assets that comprise the stormwater management infrastructure of NAS JRB, New Orleans include drainage ditches and pumps that collect runoff and lift the water to the elevation of the Intracoastal canal, where it is discharged. The main pumping station is located to the east of the Base, off the terminus of Barriere Road. The Base has a contract with the Jefferson-Plaquemines Parish Drainage District, which operates the pumping station on the Intracoastal canal.

The Base is able to handle regular rainfall and not suffer any flooding of buildings. The drainage ditches, in fact, act both as drainage conduits and stormwater retention, allowing the Base to avoid flooding of mission-critical areas for an extended period of time. During severe weather events, however, this system can be inadequate to remove sufficient runoff and prevent flooding to structures.

Of course, the largest concern with respect to severe weather events is that of a hurricane. In the case of a hurricane that were of sufficient size to top the levees protecting the Base, floodwater measurements could reach above 10 feet in height. With the technology currently available, there is no way to mitigate for this type of disaster, short of constructing secondary levees. Therefore, management of this type of event includes precautionary measures such as evacuation and location of the most mission critical elements (Emergency Operation Center, Armory, Security, etc.) above worst-case scenario flood levels.

Recommendations, Further Actions

1. *(Outreach/Study) Maintenance of an agreement with the Jefferson-Plaquemines Drainage District is a necessity for future stormwater management. Research indicates that there are no existing plans for expansion of the pumping facilities. It will be important for the Base to be aware of its contractual limit on stormwater flows, and how proposed Base improvements will impact that amount. The*

Base Master Plan will allow NAS JRB, New Orleans to effectively calculate its eventual runoff measurements based on the amount of new impervious surface introduced to the Base footprint. As long as the pumping requirements of the Base remain within the contracted amounts, and those needs do not exceed the overall capacity of the Drainage District's pumping station, there should be no issue in preventing threats to operations due to flooding.

4.1.5 Conflicting Regulatory or Political Guidance

Current Threats

The largest regulatory threat to continued operational efficiency of NAS JRB, New Orleans is not competing or conflicting political guidelines. Instead, the threat is a lack of local and regional guidance aimed at protecting NAS JRB, New Orleans as a military asset.

Because there are no incorporated cities in Plaquemines Parish, the governing local body is the Plaquemines Parish Council. Parish offices are normally headquartered out of Port Sulphur, LA, although many have been temporarily relocated to Belle Chasse because of Hurricane Katrina. In terms of access to the local government, the move to Belle Chasse is beneficial for NAS JRB, New Orleans since Port Sulphur is approximately 25 miles away from the Base, while Belle Chasse borders the northeastern portion of the perimeter. Plaquemines Parish maintains a zoning ordinance and comprehensive plan, though these regulations do not provide any special level of protection or additional review for development proposals near the Base. Furthermore, inferential accounts of parish politics suggest that obtaining an approval of a rezoning request is not difficult. This is particularly troubling for properties near NAS JRB, New Orleans that are currently zoned for compatible uses, but could easily become incompatible through a less-than-grueling review process.

The RPC has not, to date, created any plans that specifically address the issue of NAS JRB, New Orleans encroachment, although some documents have incorporated the Base's considerations into their plans. For example, the RPC's 2004 Metropolitan Transportation Plan aligns the proposed extension of Peters Road in such a way that it is not adjacent to the southwestern edge of the Base perimeter. The RPC also created a document in 2005 analyzing potential reuses of the Base, in preparation of the BRAC decision of 2005. Although this document does not appear to promote the interests of the Base, the premise of the study underscores the installation's vital economic role in Plaquemines Parish and the region as a whole.

Finally, the Louisiana Legislature plays a role in setting policy for the greater New Orleans area. In 2004, the State of Louisiana passed HB1041, which requires local governing agencies to notify the Commander of a military Installation of any zoning or variance requests that are processed for properties lying within 3,000 feet of the Installation perimeter. The notice is to be provided at least 30 days prior to any scheduled hearing or ruling on the request. (See Appendix A for the full text of the bill)

While this measure provides an important new step in coordinating land use decisions between civilian and military entities, by itself, it only provides notification of potential land use changes. In other words, even if the Base Commander is notified of an objectionable rezoning case near the Base perimeter and sends a representative of the Base to the rezoning hearing, and this representative provides reasons against the rezoning action, the local governing body is under no obligation to reject the request.

Other than this piece of legislation at the state level, there are no existing regional or local regulations that are specifically aimed at preserving the military integrity of NAS JRB, New Orleans.

Current Navy Management, Planning and Outreach

The NAS JRB, New Orleans CPLO is responsible for remaining informed on issues of regulatory guidance. The current avenues of communication are indirect (no formal, regularly scheduled forums with policy makers), so the collection of information is time-intensive and uncoordinated between agencies.

Historically, development in Plaquemines Parish has occurred slowly and in a piece-meal fashion, and because HB1041 went into effect as recently as 2004, its helpfulness in combating land use incompatibilities remains to be seen. The largest benefits of the legislation include the fact that it is currently in force, and if applied appropriately, could provide the Base advisory input on local land use redesignations.

Recommendations, Further Actions

1. *(Outreach/Legislation) Coordinate with Plaquemines Parish government about applicability of HB1041 to the area surrounding NAS JRB, New Orleans;*

2. *(Outreach) Work with the Plaquemines Parish government to create a formalized, appointed position of authority within Parish with oversight of issues related to military operations; and*

3. *(Outreach) Encourage coordination of local, regional and state entities in planning efforts related to military installations. Specific actions could include:*

    - *Hosting charettes to address encroachment issues*

    - *Providing staff to act as a liaison between the different governmental agencies*

    - *(Study) Encourage local governmental entities to sponsor a JLUS, which could involve separate planning agencies in a coordinated approach to land use planning around NAS JRB, New Orleans*

4.2 Issues Presently Not Applicable to NAS JRB, New Orleans

Not all issues of potential encroachment are currently a threat to operations at NAS JRB, New Orleans. The following is a list of encroachment topics that, for reasons that are natural or political, are unlikely to affect the Base now or in the near future. Although these items do not present a current danger, this does not necessarily exclude them from becoming one in the longer-term future. Periodic revisiting of some of these encroachment issues will be necessary to ensure they do not develop into threats.

4.2.1 Endangered Species and Critical Habitat

NAS JRB, New Orleans conducted an Integrated Natural Resources Management Plan in 2001 to examine "multiple use, protection and enhancement of natural resources, sustainable yield and maintaining biological integrity." In the section devoted to Rare, Threatened and Endangered Species, the report found that "no threatened or endangered species is known to inhabit NAS JRB, New Orleans, and no known unique or critical habitats have been identified."

Even though the INRMP made this conclusion in 2001, this does not exclude the Base from hosting endangered species in the future. Because of the fluid nature of certain species designation as endangered, as well as the possibility of migration, INRMPs are generally updated every five to ten years. Although the presence of endangered species and/or their habitat is largely unpreventable, conducting documents like the INRMP can minimize conflicts and provide the most options in how the Base can accommodate these natural resources.

4.2.2 Unexploded Ordnance and Munitions Constituents

Unexploded ordnance have been cleared from all areas in use by the Base and therefore do not present a hazard to operations. In addition, the areas of the Base that are not currently in use do not contain any known unexploded ordnance or munitions constituents.

4.2.3 Maritime Sustainability

Navy instruction describes maritime sustainability as "regulatory or permit requirements protecting ocean resources [that] cumulatively affects the Navy's ability to conduct operations, training exercises or testing in the marine environment."

NAS JRB, New Orleans supports offshore ranges W-92 and W54ABC. These are located in the Gulf of Mexico and are subject to maritime regulations. Currently, units that are being deployed for offshore training (supersonic, instrumentation, etc.) send scouts to ensure the range is clear of watercraft and wildlife before the commencement of training activities. Base personnel indicated that marine regulations are not a threat to operations.

4.2.4 Spectrum Encroachment

A full spectrum of frequencies is important to military training for communications and equipment operability. In some cases, traditional military bandwidths

have been lost to other uses, reducing the flexibility and ability of the military to carry out its mission.

Fortunately for NAS JRB, New Orleans, standard military frequencies have met, and continue to meet, the operational needs of the Base. Those involved in electronic operations at NAS JRB, New Orleans indicated that communication with other frequency users (refineries, oil platforms, other military installations) is good, and that there are no current efforts to truncate or sell military bandwidths.

4.2.5 Air Quality

Bases are contributors to the air quality of the region in which they operate. In this sense, a large part of a Base's flexibility in relation to air quality regulations depends on the contributors located off-Base.

In Louisiana, the main non-attainment area with regards to national air quality standards is the Baton Rouge metropolitan area. Conversely, the New Orleans metropolitan area consistently meets air quality standards, and was listed as being in attainment of these standards for 2004. This preserves certain flexibility on the part of the Base because it does not have to adhere to a state implementation plan.

4.2.6 Waste and Hazardous Waste

Hazardous Waste is only temporarily stored on site; after a maximum of 90 days it is removed by a contractor. The storage facilities are adequate for temporary storage, and are designed to contain the waste even during a flood/storm event.

4.2.7 Cultural Resources

The area around NAS JRB, New Orleans has a long history of habitation, from precolonial times to the present day. However, according to the Plaquemines Parish local historian, Rod Lincoln, there are no sites in the vicinity of NAS JRB, New Orleans that are of enough historical significance/sensitivity to place restrictions on operations.

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Encroachment Summary Table			
Issue	**Current Threat**	**Current Navy Management, Planning and Outreach**	**Recommendations, Further Actions**
Applicable to NAS-JRB			
1. Urban Growth			
1a. Roadway Expansion			
- Peters Road widening, extension, bridge construction	- Increases developability of land around the base, bridge could be an obstruction to Naval airspace	- Monitoring developments.	1. (Outreach) Coordinate with the RPC, LDOTD, CCC and FHWA about alignment, bridge construction concerns.
- LA 406 Woodland Hwy widening	- Increases developability of land to the north of the base, potentially within APZ zones	- Monitoring developments.	1. (Outreach) Continue to monitor proposals submitted to Plaquemines Parish PPZ Dept.
- Barrier Road extension to Walker Road	- Increases developability of land adjacent to the northwest perimeter	- Monitoring developments.	1. (Outreach) Oppose any effort to construct thoroughfare through base property.
- LA 23 Belle Chasse Hwy widening, Wall St. to LA 3017	- Increases access and overall developability to northern Plaquemines Parish	- Monitoring developments.	1. (Outreach) Continue to monitor proposals submitted to Plaquemines Parish PPZ Dept.
1b. Electric Utility Expansion			
- New Entergy transmission lines running from Peters Road substation to New substation at Oakville	- Potential conflict with NAS-JRB APZs, increases overall developability of northern Plaquemines Parish	- Monitoring developments.	1. (Outreach) Maintain contact with Entergy regarding construction and implications on urbanization of parish.
1c. Wastewater Utility Expansion			
- Parish is expanding wastewater treatment capacity	- Increases overall developability of the parish	- Monitoring developments.	1. (Outreach) Remain informed of available wastewater capacity, and impacts it may have on urbanization of parish.
1d. Loss of Undeveloped Land			
- Residential development occurring along Barriere Road	- Development is in the 65 dB to 70 dB noise contours, but not within APZs	- Navy is unsure of noise attenuation measures being enforced by the Parish. Base was not notified of any rezoning action by the Parish.	1. (Outreach) Ensure that the NAS-JRB CPLO has made contact with adjacent land owners, to assess their willingness to coordinate with Navy efforts to maintain compatible uses.
			2. (Outreach) Conduct workshop with community stakeholders and developers to communicate the importance of developing a coordinated regional land use vision.
			3. (Study) Submit a request for a JLUS, which could involve separate planning agencies in a coordinated approach to land use planning around NAS-JRB.
			4. (Planning and Zoning) Lobby the Parish to create a Military Overlay Zone that creates additional safeguards against incompatible land uses and/or rezonings near the base.
			5. (Planning and Zoning) Lobby the Parish to create a Noise Disclosure requirement for properties sold within the noise contours of the base.
			6. (Planning and Zoning) Lobby the Parish to strengthen building codes to address conflicts between urbanization and military operations.
			7. (Planning and Zoning) Lobby the Parish to develop a Transfer of Development Rights program to direct more intensive development away from the base.
			8. (Acquisition) Purchase, or work with partners to purchase, key properties.
2. Noise	- Further urbanization of the land within base noise contours could increase complaints from operations	1. NAS-JRB has a complaint log book which provides an account of the time, day, location and type of disturbance observed.	1. (Planning and Zoning) Lobby the Parish to limit development scale and density for property within noise contours through a Military Overlay Zone
		2. Noise abatement procedures such as areas of avoidance and specific departure maneuvers have been put in place to mitigate noise generation.	2. (Planning and Zoning) Lobby the Parish to assign less noise-sensitive land uses for property within noise contours through its Comprehensive Plan.
			3. (Planning and Zoning) Lobby the Parish to establish additional building code requirements for structures within noise contours.

Table 4-1: Encroachment Summary Table

Encroachment Summary Table			
Issue	**Current Threat**	**Current Navy Management, Planning and Outreach**	**Recommendations, Further Actions**
2. Noise (continued)			4. (Planning and Zoning) Lobby the Parish to establish a real estate disclosure requirement for properties sold/units rented within noise contours.
3. Airspace Restrictions	- Shared airspace with MSY does not currently present an issue with training, but future growth in civilian air operations could cause delays for NAS-JRB flights	1. Existing Letter of Understanding details joint procedures and responsibilities between MSY and NAS-JRB.	1. (Outreach) Continue communications with MSY, FAA. Obtain a copy of MSY's
			2. (Outreach) Obtain a copy of MSY's updated Airport Master Plan after it is finalized (Draft is currently under review).
4. Stormwater Management/Flooding	- The base is mostly below sea level; stormwater storage capacity is a permanent potential constraint to operations. Weather events such as hurricanes could be especially disastrous for the installation.	1. Limited amounts of excess stormwater can be stored in existing drainage swales.	1. (Study) NAS-JRB can use the station Master Plan to adequately plan for necessary drainage/pumping services from the Jefferson-Plaquemines Drainage District.
5. Conflicting Regulatory or Political Guidance	- Other than the Regional Planning Commission, no single entity is setting a course for urbanization of the region. State and local government at all levels lack special military regulatory guidelines.		1. Ensure that the NAS-JRB CPLO has made contact with adjacent land owners, to assess their willingness to coordinate with Navy efforts to maintain compatible uses.
			2. Conduct workshop with community stakeholders and developers to communicate importance of developing a coordinated regional land use vision.
			3. Submit request for a JLUS, which could involve separate planning agencies in a coordinated approach to land use planning around NAS-JRB
Not Applicable to NAS-JRB			
1. Endangered Species/Critical Habitat	- 2001 Integrated Natural Resources Management Plan (INRMP) indicates that no Endangered Species or Critical Habitat exist on the base property.		1. INRMPs should be updated every five to ten years to ensure accuracy.
2. Unexploded Ordnance/Munitions Constituents	- All areas in use by the base have been cleared of UXO		
3. Maritime Sustainability	- Operations in the Gulf of Mexico may be threatened by Maritime Regulations		
4. Spectrum Encroachment	- standard bandwidths assigned for the military are currently adequate for operations, and base personnel are not aware of any attempts for consolidation.		
5. Air Quality	- the New Orleans metropolitan area was listed as being in attainment of national air quality standards in 2004.		
6. Waste/Hazardous Waste	- Hazardous waste not permanently stored on base; contractor disposes of hazardous waste every 90 days.	1. Contracting service removes and disposes of hazardous waste every 90 days.	
7. Cultural Resources	- Area has many cultural resources, but impact of military operations on the resources is yet to be determined.		

5.0 Implementation Strategies

Synthesis of the EAP strategies and encroachment findings results in an implementation plan that can be used by NAS JRB, New Orleans to manage issues related to encroachment. This chapter begins with a presentation of the tools discussed in Chapter 3 as they specifically relate to NAS JRB, New Orleans. The discussion begins with a brief review of each tool, then details how they are or are not being used at the Base. Recommendations are also included explaining how to better utilize each approach. At the conclusion of the chapter, all the recommendations and strategies discussed in Chapters 4 and 5 are consolidated into a prioritized matrix for implementation (Table 5-1).

5.1 Studies

Studies: Three primary documents are valuable tools in assessing encroachment impacts and formulating strategies to protect station operations:

- AICUZ – Study conducted through Commander, Navy Region Southeast studying the characteristics and impacts of aircraft operations:

- EAP – Study conducted through Commander, Navy Region Southeast studying regional characteristics, trends and drivers of development; identifies and generates measures to address issues of encroachment; and

- JLUS – Study/workshops conducted through NAVFAC SE/CNI and the Parish government studying existing land use patterns and policies (both civilian and military), assessing impacts and establishing a compatible regional land use vision.

NAS JRB, New Orleans conducted an initial AICUZ study in 1978, which was updated in 2001. The reason for the update was the replacement of the Air Force Reserve's F-16 Fighting Falcons with A-10 Thunderbolt IIs. Subsequent to the update was an addendum, prepared in 2003, analyzing the effects of the proposed extension of runway 04/22 on the noise contours and APZs of the Base.

No JLUS or EAP has been previously prepared for NAS JRB, New Orleans.

Recommendations:

1. *Although the Base's 2003 AICUZ includes analysis of F-15 aircraft, the movement of additional F-15s to NAS JRB, New Orleans and the relocation of the A-10s to Barksdale AFB could warrant another AICUZ update to accurately depict the new number and type of operations. Moreover, the potential introduction and eventual transition of the JSF could further change the APZ and Noise Contour elements. The JSF is anticipated to transition into use between 2010-2014;*

2. *Implement recommendations of the EAP and update as necessary. Some of the encroachment challenges that are facing NAS JRB, New Orleans will remain constant for years to come, while others could potentially change on a yearly basis, requiring refinement and adjustment of the strategies contained within this document; and*

3. The Base could potentially benefit from collaborating with the surrounding community to produce a JLUS. Parish land use planning appears to be mostly reactionary, so the cooperative and proactive nature of a JLUS could be the catalyst to establish a common community vision. On the other hand, even if a JLUS is completed, it does not ensure that the community will follow through with the resolutions in the study. This action could be further complicated by the fact that the community is the one to sponsor a JLUS effort, although technical and financial assistance may be available through the DoDs Office of Economic Adjustment.

Louisiana Speaks Community Workshop

5.2 Outreach

Outreach involves a proactive effort on the part of an Installation to identify and address issues of concern and/or common interest with the community. This can take the form of either Formal Outreach, such as membership on boards and committees, or informal outreach such as mailings, workshops and involvement in community events.

Community outreach is currently the responsibility of the Public Affairs Officer (PAO) and the Community Plans and Liaison Office (CPLO) at NAS JRB, New Orleans. The Assistant Air Operations and Emergency Management Officer acts as the single-person CPLO to oversee and execute actions relating to land use incompatibility and encroachment. Although not widely used in the Navy, the CPLO is a standard component of Marine Corps stations. These offices can include full staffs to monitor development and coordinate with local jurisdictions on conflicts between military and non-military land uses.

Assuming current staffing levels at NAS JRB, New Orleans hold for encroachment related issues, it would be preferable to have civilian as the single-person CPLO rather than an Officer. Having a civilian in this position would allow for continuity for the Base and community since he or she would be able to stay in the position through multiple military rotations.

Recommendations:

1. If a multi-person CPLO is not feasible for NAS JRB New Orleans, transition the existing encroachment position from a military to civilian billet to provide continuity.

5.2.1 Formal Outreach

Existing advisory boards that exert influence over NAS JRB, New Orleans include the Governor's Military Advisory Board (State of Louisiana) and the Mayor's Military Advisory Committee (Greater New Orleans). Currently, there are no formal military advisory positions for Plaquemines Parish, Jefferson Parish or the City of Gretna.

The Governor's Military Advisory Board is composed of a maximum of 25 members, all appointed by the governor. Board positions available to military personnel are non-voting, and include representatives from the Joint Readiness Training Center, Eighth Air Force, Naval Forces Reserve, Marine Forces Reserve, Eighth Coast Guard District, 377th Theater Army Area Command and the U.S. Army Corps of Engineers, Mississippi River Valley Division. The Board is charged with increasing awareness of issues concerning Installations, formulating goals to increase coordination of governmental entities with the military and strengthening the ability of the State of Louisiana to secure and expand the military presence within the state. See Appendices B and C for more information.

The Mayor's Military Advisory Committee assumes a larger role as it relates to overall economic development for the city and quality of life issues for military personnel and their families. The Committee is also charged with addressing any potential threats that would cause closure, removal or transferal of existing military assets in the greater New Orleans region.

Being involved in a political advisory body yields mixed results for those comprising the body. First of all, the influence exerted by any single representative on the committee is muted by the diverse membership of the committee. Just because the group represents military interests in a state or region does not mean that they will always agree on a course of action on a specific issue. Secondly, the actual decision makers are being influenced by any number of external factors that could cause them to heed or disregard the advice of the advisory body. These factors can include political allegiances, campaign promises, pressure from the public, financial constraints, media exposure, delayed legislative agendas and ideological differences. These factors can either hurt or advance the goals of the military in a state or region, but either way, they add to the unpredictability of the political climate.

Currently, NAS JRB, New Orleans is not directly represented on either the Governor's Military Advisory Board or the Mayor's Military Advisory Committee.

Recommendations:

1. *Identify existing members of the Governor's Military Advisory Board and Mayor's Military Advisory Committee with ties to the interests of NAS JRB, New Orleans. Ensure that these individuals are up to date on challenges facing the Base and are willing to push for solutions during meetings;*

2. *Depending on the final relocations resulting from BRAC 2005, contact existing board members to recommend to the Governor that the current seat for the Naval Reserve Forces representative, if vacated, be filled by a representative from NAS JRB, New Orleans; and*

3. *The CPLO should work with the Parish President and Council to create an advisory position for a representative from NAS JRB, New Orleans. An ideal appointment would be at the Development Board level, where plans are conceptually approved or denied before moving to the full Parish Council for approval. This position would most likely be non-voting, but the CPLO's input could be*

critical since any rezoning or variance cases would have to come through the Development Board before the proposed development could move forward.

5.2.2 Informal Outreach

NAS JRB, New Orleans currently has informal contact with the community through the annual New Orleans Air Show, held on Base in October of each year. This event is well attended, and provides a platform for the community to familiarize itself with the Base and some of the personnel who work there. Off Base, special events such as Mardi Gras parades have been officiated by various levels of command from NAS JRB, New Orleans. The Navy also dispenses information through its newsletter, *Currents*. This publication is produced with the goal of keeping nearby neighborhoods apprised of developments and plans of the Base.

Because informal outreach usually is targeted at a broad audience, it is difficult to ascertain how the gesture will be received. Therefore, it is advisable to limit the content of such outreach efforts to general news and announcements that are suitable for the public at large.

Recommendations:

1. *Maintain Navy involvement in activities such as the New Orleans Air Show and other community events;*

2. *Make contact with property owners located within the noise contours of 65 DNL and higher, as well as Clear Zone, APZ I and APZ II, to assess their willingness to cooperate with Navy efforts to maintain compatible uses. This should be coordinated through the CPLO, and because of the large number of residents in the area, would probably begin as a letter campaign. This action could educate the public about the safety standards of the Navy and how important compatible land uses are to the readiness of the Base. Subsequent campaigns could include phone calls and/or house visits (possibly by the Public Affairs Officer) to citizens with questions or concerns;*

3. *Maintain distribution of installation newsletters; and*

4. *Establish a community workshop with developers and decision makers of the greater New Orleans area.*

    - *This workshop could be held on a biannual or annual basis, and focus on issues of common concern between plans for projects on and off Base.*

    - *Attendees should include representatives from Plaquemines Parish government: Parish President, Parish Council members, Parish staff from Permits, Planning and Zoning Department; Neighboring decision makers and parish staff from Jefferson Parish and St. Bernard Parish; Regional planners from the Regional Planning Commission; and Developers, mostly local, but also national, with an interest in Plaquemines Parish (national builders have not traditionally played a large role in the New Orleans market because the sales*

volume is low, allowing for more local and custom builders to characterize the local industry.)

- *The workshop should be structured as a one-day or two-day charrette-style event. NAS JRB, New Orleans will need to coordinate the workshop including scheduling, meeting location, notification, workshop supplies, appointing a mediator(s), collecting information during the workshop and summarizing conclusions and/or agreements in a report for distribution. Any number of these items can be delegated to a co-sponsor such as a governmental body or developer. Funding for workshop expenses (materials, room reservations, report reproduction, etc.) can be covered either by the Navy or by charging participants, although any cost associated with the workshop could reduce participation.*

5.3 Stewardship

Of all the tools available to a Base for encroachment mitigation, stewardship is the most basic and most necessary. This tool relates to the commitment a Base has in addressing encroachment challenges in terms of time, money, and/or staffing. Without a basic commitment to provide the personnel to manage encroachment concerns, no implementation plan can be enacted.

As an example, one of the responsibilities that could be laid upon staff from NAS JRB, New Orleans is that of board membership on a group such as the Plaquemines Parish Development Board. This board meets as frequently as twice a month, to as infrequently as once every other month to review proposed projects. Review time necessary before each meeting can vary depending on case load and applicability of projects to the interests of NAS JRB, New Orleans. However, Plaquemines Parish has historically experienced a very slow, steady rate of growth that, during any given decade, has only increased the population by a few thousand individuals. With the exception of a heavier workload stemming from rebuilding efforts associated with Hurricane Katrina, an appointee to a commission or review board in Plaquemines Parish could expect a relatively light workload. Consideration should also be given to the time that will be spent in hearings and meetings, although given the semi-rural setting, this could also be relatively manageable.

Recommendations:

1. *Ensure that the CPLO's job description allows for adequate time and/or support personnel to adequately address the demands of community involvement. Support personnel, if needed at all, would only be on a temporary basis, to help in preparation of meeting, attendance of meetings as an appointee, or preparation of workshops.*

5.4 Legislative Initiatives

Legislative initiatives are tools that are enacted by governmental bodies at various levels that could aid in NAS JRB, New Orleans' efforts to fight encroachment. Federal and State levels of governments enact laws through their legislative bodies, while local governments enact laws through their municipal councils. Local legislation is discussed in Section 5.5, Land Use Planning and Zoning.

Downsides to implementing additional legislative initiatives include a lengthy approval process and lack of control regarding the final legal strength and/or applicability of the initiative.

5.4.1 Federal

The main federal tool currently available to NAS JRB, New Orleans is the Encroachment Partnering discussed in Chapter 3. This tool authorizes the Navy to enter into a partnership with other governmental and non-governmental entities for the purpose of purchasing land and/or easements to protect common interests.

Recommendations:

1. *Develop relationships/pursue partnering opportunities with non-governmental agencies and local governmental bodies for the purpose of acquiring any parcels for which it is appropriate.*

5.4.2 State

The State of Louisiana, although pro-military in general, has not been aggressive in establishing laws to protect the operations of its military Installations. In 2004, however, the state legislature passed House Bill 1041 which established the requirement of local governments to notify military Installations of rezoning cases on property located within 3,000 feet of an installation perimeter (See Figure 5-1: Belle Chasse Area Land Use). This notification law does not prevent or alter the process for a rezoning, rather it simply ensures that the Commanding Officer of the potentially effected Base is aware of the rezoning proposal.

Recommendations:

1. *Substantial help in addressing the encroachment challenges of NAS JRB, New Orleans could come from the state. However, stronger laws are needed to protect existing and future military operational capabilities. Below is a brief list of some of the states that are at the forefront of using their resources to help preserve military operability, as well as the types of measures they have put into place:*

Florida:

- *Notification of Changes to Planning Documents*
- *Land Use Compatibility for Future Plans*
- *Military Non-Voting Representative on Planning Council*
- *Joint Conservation/Encroachment Acquisition of Land*
- *Military Grants*
- *Military Liaisons in State Departments*

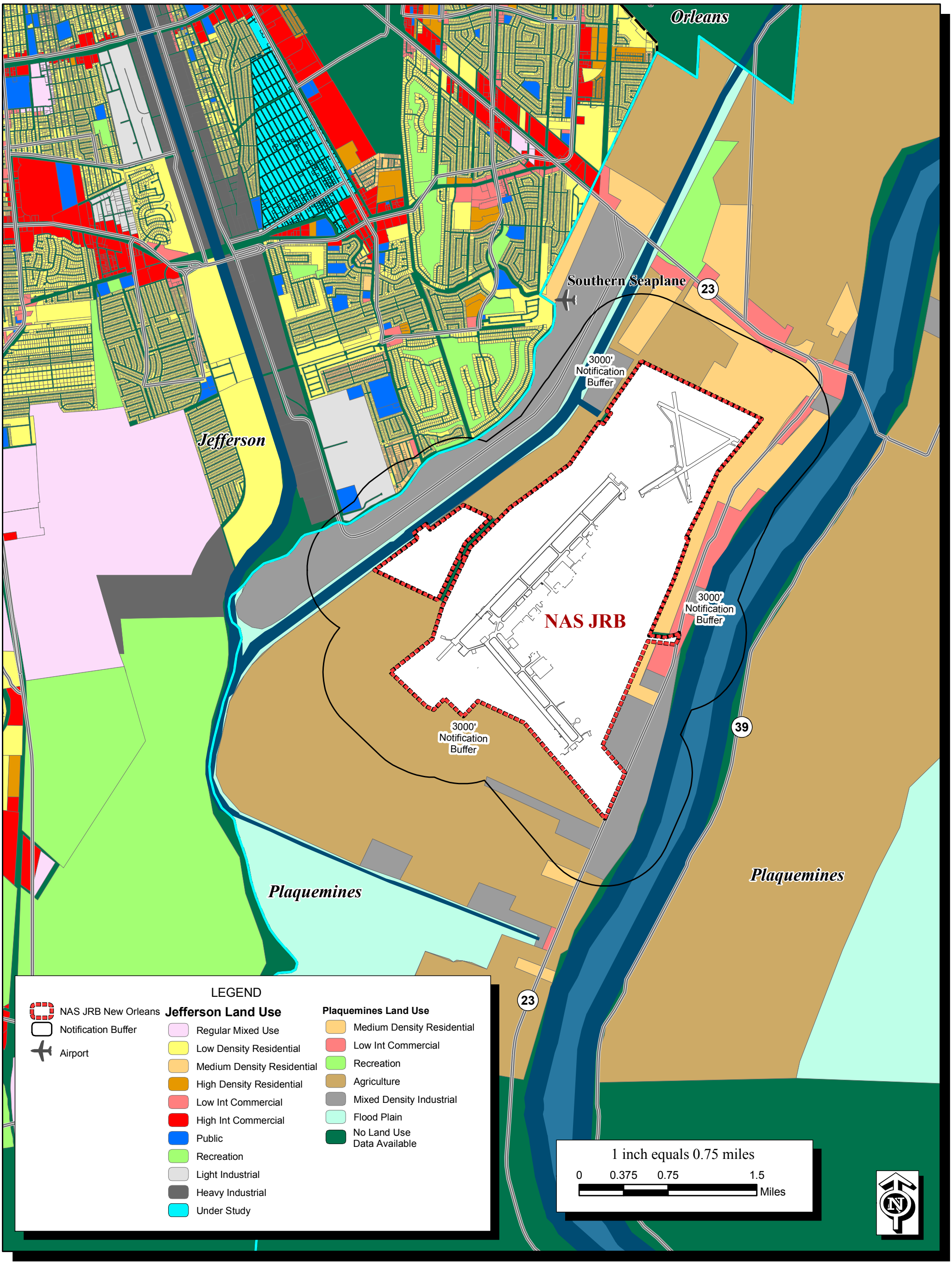

Figure 5-1: Belle Chasse Area Land Use

California:

- *Notification of Review of Projects*
- *Land Use Compatibility for Future Plans*
- *Defense Retention and Conversion Council*
- *Agricultural Land Preservation*
- *Office of Military and Aerospace Support*

Arizona:

- *Statewide Funding for Property Acquisition*
- *Real Estate Disclosure Requirements*
- *Authorization of Land Exchanges*
- *Agricultural Preservation Districts*
- *Military Affairs Commission*
- *Military Facilities Task Force*
- *Military Regional Compatibility Project*

5.5 Land Use Planning and Zoning

Land Use Planning and Zoning are some of the most influential regulations that affect an Installation because of their comprehensive application to the land surrounding an Installation. Like other legislative initiatives, they are enacted by an entity other than the military, but can be a great aid in addressing encroachment concerns. Before military personnel can effectively lobby local and parish governments, they should understand some of the procedures that affect the passage of planning and zoning regulations.

The process for rezoning a piece of property in Plaquemines Parish begins with an application to the Permits, Planning and Zoning Department. Once an application has been submitted and the appropriate fees paid, a review period begins which includes public notification of the proposed project and generation of comments by the Parish's planning staff. Public notification occurs in several ways: a description of the project and the proposed zoning redesignation is published in the local periodical, the Plaquemines Gazette. This publication is printed every Friday, and is available either through subscription or for purchase at local retailers. The notice runs in the paper for no less than 30 days. In addition to this, signs are posted on the site of the proposed rezoning describing the request and hearing dates and letters are sent from the Parish to the adjacent property owners, informing them of the rezoning application. Property owners that are not directly across the street or

adjoining the property line of the property to be rezoned do not receive notification letters. Lastly, public hearing dates are posted in public buildings.

After the review/comment period of 30 days, rezoning applications are deliberated by the Development Board in a public hearing. This is an opportunity for the public to give input, as well for the Board members to formally discuss the merits of the application. The ruling made by the Development Board is either to recommend approval or denial by the Parish Council. A third option is to defer to the Council altogether and not make a ruling on the application. The Development Board does not have a set meeting schedule, and hearing frequency can vary from as much as twice a month to once every other month, depending on workload.

Once a rezoning application receives a recommendation from the Development Board, it is then scheduled to be addressed in the next Parish Council meeting. The Parish Council has a regular schedule of meetings on the 2nd and 4th Thursdays of the month. After reviewing the recommendation of the Development Board, and hearing any additional comment from the public, the Council decides to either approve or deny the rezoning application. The ruling of the Council is the final determination on the application unless the decision is appealed by the applicant. If appealed, the decision would go the court system for review.

Factors that influence the approval or denial of an application include other relevant land use documents (comprehensive plans, special area plans, economic initiatives, etc.), public opinion, organized citizen groups, and the agendas of elected officials. All property owners have the right to submit a request to rezone their property; however, it is not guaranteed that the request will be approved.

The land surrounding NAS JRB, New Orleans represents a mix of land uses that do not appear to have been structured to accommodate military operations (See Figure 5-1: Belle Chasse Area Land Use). Fortunately for the Base, the west and south sides of the perimeter have remained largely undeveloped, with most development being concentrated to the north and east, along LA23. The Base itself occupies the majority of the developable land between the Intracoastal Canal and the Mississippi River just south of where LA23 turns south to parallel the river. The land uses associated with the community of Belle Chasse are characterized by community commercial and industrial stretched along LA23, with single family residential filling in between the other land uses. Proximity to LA23 is crucial in Plaquemines Parish, as it is the only roadway on the west bank that connects lower Plaquemines to the northern portions of the parish, and provides the most direct route to the rest of the metropolitan region. Therefore, NAS JRB, New Orleans, because of its close proximity to both Belle Chasse and LA23, can expect to experience a higher number of land use conflicts than it would it if were in another, more rural, portion of the parish.

Since land use regulations are the jurisdiction of Plaquemines Parish, NAS JRB, New Orleans has no power in and of itself to change these regulations. If the Base wants to influence land use policy in Plaquemines Parish, it will have to do so in partnership with the Parish government (with the exception of superceding legislation from a higher authority such as the region or the state).

Industrial Use Along Barriere Road

Single Family Residential North of NAS JRB

Commercial Use in Belle Chasse along LA23

Parish Governmental Center in Belle Chasse

Industrial Use on the East Side of LA23

Undeveloped Land South of the Base

The Base therefore has two main roles it can play in attempting to convince the Parish to enact legislation on its behalf: lobbyist for military interests and/or support staff in structuring new regulations aimed at protecting military interests. The lobbying option implies that local officials may be uninformed about the need for or uninclined to pass legislation that protects military training and assets. This role becomes that of an educator and persuader, supplying information where appropriate, while also leveraging assets to entice the local decision makers to pass a piece of legislation. Lobbying can be in both formal and informal settings, whether arranging community meetings or making a weekly call to a local official's office.

The second role involves acting as support staff to a local jurisdiction. This support is sometimes necessary when lawmakers need additional information before acting upon a piece of legislation, and their lack of staffing slows the decision making process. If NAS JRB, New Orleans can help research Airport Overaly zones, for example, in other municipalities, perhaps a precedent or model ordinance could be uncovered that could serve as a template for the Belle Chasse area. This extra support staff might be outside the CPLO (Navy real estate, environmental or legal staffing, depending on the ordinance), but could be organized and lead by the CPLO. It would be important to ensure that although the additional support is being provided by the Navy, that the effort has firm backing from multiple members of the local governing body. This backing will give the research the best opportunity to be meaningfully used in the crafting of a regulation that protects military readiness.

Recommendations:

1. *Lobby Plaquemines Parish to create a noise notification area/noise disclosure law for new home and existing home sales;*

2. *Lobby Plaquemines Parish to create a Transfer of Development Rights program; and*

3. *Lobby Plaquemines Parish to create a Military Installation Overlay Zone for properties lying within the Base's sphere of influence, including noise contours of 60 DNL and above and all levels of APZs. (For examples from other cities, see Appendices D and E). This zone should include regulations such as:*

    - *Prohibiting rezoning to incompatible land uses:*
    - *Extended comment period to allow for adequate military review: and*
    - *Stricter building codes for land uses that are allowable.*

5.6 Acquisition

NAS JRB, New Orleans has acquired Safety Plane easements surrounding the Base that relate to the Approach/Departure imaginary surfaces. These easements are detailed in Appendix I, NAS JRB, New Orleans Easements, and generally affect land to the north, west and south of the Base. These easements, however, simply prohibit vegetation and/or structures from penetrating an allowable height defined by the slope that is 20 feet below the 50:1 Approach/Departure imaginary surface.

Since most of the concern about incompatible development relates to residential development, the limitation on building height will not be effective against low-profile residential structures.

Private land owners can be very accommodating or very difficult to work with when discussing acquisition. Reasons for not wanting to sell are not always monetary. There is a sentimental value to land, especially in rural areas, that plays a large role in negotiations. Private land use laws also give the land owners many rights that make even easement acquisition difficult at times. This is why having acquisition partners is so important: if the Navy is unable to offer something of value to the potential land seller, the partner may.

Recommendations:

1. *Acquisition should be viewed as one tool of many to address encroachment challenges at NAS JRB, New Orleans. It is very likely that either timing or location will dictate that acquisition be employed in order to gain appropriate control of some properties. From the list of options above, easements represent a workable middle-ground which can be employed where purchase is too costly and land use regulations are too lax. Furthermore, because the Navy is generally not interested in owning more property than is necessary, easements provide an appropriate solution to controlling land it does not own.*

Regarding actions recommended for specific pieces of property, NAS JRB, New Orleans should continue investigating ways to preserve open space/prohibit development on the parcels identified by the numbers 1, 2 and 3 in Figure 4-2, Land Use with Priority Parcels. These parcels are in order of importance and incompatible development on these parcels represents the closest, greatest threat to continued operations at NAS JRB, New Orleans. If intermediary development controls cannot ensure that development is compatible with military operations, then the Base should pursue acquisition of the property. Property acquired during the 2003 extension of Runway 04 (P-223) cost approximately $13,600 per acre. Prices have risen since that time, however, due to general inflation and the effects of rebuilding after Hurricane Katrina. Base personnel currently estimate that property surrounding the base could appraise at approximately $22,000 per acre. With that assumption, the total price of acquiring the Priority Parcels is as follows:

Parcel 1: 223 acres @ $22,000/acre = $4,906,000

Parcel 2: 230 acres @ $22,000/acre = $5,060,000

Parcel 3: 3,767 acres @ $22,000/acre = $82,874,400
(This parcel grouping would not have to be acquired in its entirety to protect Base interests)

The ownership of the parcel groupings listed above is of potential benefit to NAS JRB, New Orleans, since it involves only two landowners: the Pivach and Hero families. This benefit stems from the fact that the Base would not have to spend additional time and expense assembling land from a disparate group of land owners, each being involved in a separate negotiating process.

Expenditures (including land acquisitions) over $750,000 require specific congressional approval and can be justified as either encroachment mitigation or operational growth. The funding would need to be included in a Military Construction (MILCON) project for approval. Because the money involved in acquiring any of these parceling groupings well exceeds the $750,000 discretionary limit on installation spending, encroachment partnering of some sort would be highly advantageous. Details on the DoD's Encroachment Partnering program are discussed in Section 3.1.4 Legislative Initiatives.

In addition to partnering with local, state and federal government entities, specific private conservation groups that could be accessed for preservation of land surrounding NAS JRB, New Orleans include:

- The Nature Conservancy
- Ducks Unlimited
- The Conservation Fund
- National Audubon Society
- Audubon, Louisiana Chapter, Orleans Audubon Society
- The Trust for Public Land
- Georgia Environmental Policy Institute, Conservation Easement Information (www.gepinstitute.com/consease.htm)

Additional detail is provided in Appendix K, Encroachment Partnering Contact Information, regarding the missions and points of contact for each of the groups listed above. Each of these groups takes a slightly different approach to conserving land: some focus on wildlife habitat, while others focus on open space for active and passive use by humans. The properties indicated as Priority Parcels by NAS JRB, New Orleans do not present a particularly unique asset to conservation groups other than their wooded, undeveloped character. The Base's INRMP concluded that no threatened or endangered species inhabit the property within the fenceline of NAS JRB, New Orleans, and therefore, it is highly unlikely that any of the three Priority Parcels would contain critical habitat. Although this might lower the urgency of partnering with the Navy for the Priority Parcels, it does not negate the potential partnership altogether. Furthermore, for the groups whose aim is directly related to open space preservation, the Priority Parcels may still be appropriately situated to benefit the community, military and overall environment.

5.7 Additional Considerations

Items that should also be taken into account that are outside of the control of NAS JRB, New Orleans:

- The moratorium placed on development in March 2005 is set to expire in March 2007. Unless it is extended, the Parish will begin accepting development applications at that time. The existing calm in development activity should be used to initiate plans to acquire key parcels, or at least make progress with the Parish in establishing new development standards, land use plans and advisory positions.

- The value of undeveloped land close to the Central Business District (Downtown) of New Orleans will continue to rise as repopulation of the city continues and overall growth resumes. Additional pressure for new development will come from the relocation of residents from the storm-battered southern two-thirds of Plaquemines Parish. Together, the attractiveness of the Belle Chasse area for residents from the north and south will increase threats of further development near NAS JRB New Orleans, and the Base will feel much of this development pressure within the planning horizon (10 years) of this EAP.

5.8 Implementation Actions

The application of strategies in the encroachment mitigation "toolbox" to the threats facing NAS JRB, New Orleans involves coordination with both the immediacy of the threat and the length/time necessary to implement the strategy. Table 5-1, Implementation Actions, organizes the recommended actions into Short (up to one year), Mid (one to five years) and Long-term (five to ten years) timeframes for implementation. After the 10 year time horizon, it is likely that a new EAP will need to be conducted to adequately assess changes in Base operations and community dynamics.

Table 5-1 also includes the fields of Lead Agency, Supporting Organization, Expected Outcome and Relation to Other Actions. Below is a more detailed explanation of each category:

Lead Agency: This group or entity is responsible for initiating and coordinating efforts to accomplish the desired task. It may be able to accomplish this within its own power or jurisdiction, or may be the appropriate entity to request funding and/or support from elsewhere.

Supporting Organization: This group plays a secondary role to the Lead Agency. It may have resources that are necessary to accomplish the desired task, but lacks the position or influence to take the lead role.

Expected Outcome: The "best case scenario" result of the proposed task. Some tasks will have differing degrees to which a task can be complete, whereas others will be either implemented or not.

Relation to Other Actions: Other proposed actions that relate to the task by either subject matter or timing.

IMPLEMENTATION ACTIONS Short-Term Actions (0 to 1 Year) Status as of August 2006					
	Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to Other Actions
1.	Coordinate with Entergy regarding planned transmission line extension to the new Oakville substation	NAS JRB	Entergy	Avoidance of conflict with NAS JRB APZs	
2.	Coordinate with the RPC, LDOTD, CCC and FHWA about Peters Road widening, extension and bridge construction	NAS JRB	RPC, LDOTD, CCC and FHWA	Avoidance of major conflicts with regards to airspace (bridge) and alignment (road)	Related to discussion of new development areas within the Parish
3.	Lobby Parish to extend moratorium on development in the vicinity of the Base until a JLUS can be conducted and its recommendations adopted	NAS JRB		Additional time to coordinate land uses will prevent unnecessary conflicts from being created by new development	
4.	Obtain latest version of MSY Master Plan	NAS JRB	MSY	Identification of potential conflicts, coordination of regional air facility expansion	
5.	Make contact with military advisors to regional and state decision makers	NAS JRB		Most pertinent issues relating to encroachment can be discussed and acted upon by the appropriate entities	
6.	Make contact with property owners within APZs and noise contours to assess their willingness to cooperate with Navy efforts to maintain compatible uses	NAS JRB CPLO	NAS JRB PAO	Baseline assessment of opportunities and challenges with regards to surrounding property owners.	Could potentially lead to pressure on the Parish from the public for stricter land use regulations around the Base.
7.	Maintain distribution of *Currents* newsletter	NAS JRB		Continued communication with the community regarding changes at NAS JRB	
8.	Evaluate adequacy of staff devoted to encroachment issues	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	This item facilitates action on all other recommendations
9.	Continue to host/attend community events	NAS JRB		Improved public image, additional platforms to communicate the importance of the NAS JRB mission	
10.	Advocate the creation of a military advisory position at the Parish	NAS JRB	Plaquemines Parish	Better communication, greater responsiveness between the Parish and NAS JRB	

Table 5-1: Implementation Actions

IMPLEMENTATION ACTIONS					
Mid-Term Actions (1 to 5 Years) Status as of August 2006					
	Description of Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to other Actions
1.	Update AICUZ as warranted	Navy Region Southeast	CNI/CNO	Up-to-date document that can be used in encroachment partnering, community relations	Modification of APZs and noise contours could influence Base's area of impact
2.	Maintain and expand community events	NAS JRB		Improved public image, additional platforms to communicate the importance of the NAS JRB mission	Reinforces positive image and impact of newsletters, mailings
3.	Maintain adequately staffed CPLO	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	
4.	Evaluate effectiveness of EAP, revise as necessary	NAS JRB	Navy Region Southeast	Keep EAP and EAP recommendations current	Changes to AICUZ, or creation of a JLUS could impact recommendations
5.	Establish community vision workshop with local developers and decision makers	NAS JRB	Plaquemines Parish	Short-term, charrette-style workshop to foster discussion of major players and establish basic goals for how the community develops	Could be a stepping stone toward, or integrated with the JLUS process
6.	Continue to monitor development proposals for additional private airstrips in the vicinity of NAS JRB	NAS JRB		Proposed airfields that conflict with NAS JRB operations could be contested while being reviewed by the Parish	
7.	Continue to coordinate with MSY, FAA, update Memorandum of Understanding regarding procedures and responsibilities as necessary	NAS JRB	MSY	Mutual knowledge of operations, minimal conflicts resulting from close coordination	
8.	Conduct a Joint Land Use Study	Plaquemines/Jefferson Parishes	NAS JRB	Regional Land Use document which establishes a common vision for the area affected by NAS JRB	

IMPLEMENTATION ACTIONS

Long-Term Actions (5 to 10 Years)
Status as of August 2006

	Description of Action	Lead Agency	Supporting Organization	Expected Outcome	Relation to other Actions
1.	Pursue encroachment partnering opportunities	NAS JRB	NGOs/State/Parish	Potential partnership that could defray cost/responsibility of lands necessary for a buffer	
2.	Oppose any effort to extend Barriere Road through base property to Walker Road	NAS JRB		Prevention of road extension should prevent further development along the Barriere Canal	
3.	Maintain adequately staffed CPLO	NAS JRB	Navy Region Southeast	Appropriate organization/vigilance at NAS JRB	
4.	Lobby the Parish, State to enact farther reaching legislation to protect military installations	NAS JRB		Additional safeguards such as military overlay zones, noise disclosure requirements, transfer of development rights program, additional building code requirements, etc.	Representatives on advisory bodies can aid in follow-up on potential or pending legislation
5.	Implement actions of the EAP	NAS JRB	Parish, Regional, State Government	Avoidance of a majority of encroachment issues, better framework to address on-going issues	
6.	Evaluate effectiveness of EAP, revise as necessary	NAS JRB	Navy Region Southeast	Keep EAP and EAP recommendations current	
7.	Coordinate with Plaquemines Parish about developments within the Base's APZs, noise contours, etc.	NAS JRB	Plaquemines Parish	Maintenance of land uses that are compatible, and minimal rezonings to incompatible uses	
8.	Continue to monitor development proposals for additional private airstrips in the vicinity of NAS JRB	NAS JRB		Proposed airfields that conflict with NAS JRB operations could be contested while being reviewed by the Parish	
9.	Continue to coordinate with MSY, FAA, update Memorandum of Understanding regarding procedures and responsibilities as necessary	NAS JRB	MSY	Mutual knowledge of operations, minimal conflicts resulting from close coordination	

House Bill 1041, Notification to Military Installations

ENROLLED

Regular Session, 2004

ACT No. 787

HOUSE BILL NO. 1041

BY REPRESENTATIVES TUCKER, ARNOLD, BAYLOR, FUTRELL, KATZ, LAMBERT, MARCHAND, RITCHIE, SCALISE, AND TOOMY

AN ACT

To enact R.S. 33:4734 and 4780.51, relative to municipal and parish zoning; to provide for advance notice of zoning actions to certain military installations; and to provide for related matters.

Be it enacted by the Legislature of Louisiana:

Section 1. R.S. 33:4734 and 4780.51 are hereby enacted to read as follows:

§4734. Notification to military installations

A. The local governing authority considering any action to be taken on an application for a zoning request or variance affecting property within three thousand feet of the boundary of a military installation shall notify the commander of the installation thirty days in advance of taking such action.

B. As used in this Section, "military installation" shall include any base, military airport, camp, post, station, yard, center, home port facility for a ship, or any other military activity center that is under the jurisdiction of the United States Department of Defense.

* * *

§4780.51. Notification to military installations

A. The governing authority of any parish considering any action to be taken on an application for a zoning request or variance affecting property within three thousand feet of the boundary of a military installation shall notify the commander of the installation thirty days in advance of taking such action.

CODING: Words in ~~struck through~~ type are deletions from existing law; words underscored are additions.

H.B. NO. 1041 **ENROLLED**

B. As used in this Section, "military installation" shall include any base, military airport, camp, post, station, yard, center, home port facility for a ship, or any other military activity center that is under the jurisdiction of the United States Department of Defense.

SPEAKER OF THE HOUSE OF REPRESENTATIVES

PRESIDENT OF THE SENATE

GOVERNOR OF THE STATE OF LOUISIANA

APPROVED: _____

CODING: Words in ~~struck through~~ type are deletions from existing law; words underscored are additions.

Governor's Military Advisory Board Executive Order

State of Louisiana

EXECUTIVE DEPARTMENT

EXECUTIVE ORDER NO. KBB 2004 - 41

GOVERNOR'S MILITARY ADVISORY BOARD

WHEREAS, the state of Louisiana has a vital interest in the installations and/or units of the U.S. Coast Guard and/or the armed forces of the United States located within the state, in the Louisiana Military Department, and in the concerns of the Active, Guard, Reserve, and/or retired military personnel, and their families, who reside in Louisiana (hereafter "military");

WHEREAS, in the past, the state of Louisiana has successfully employed a coordinating body to provide a forum for these various military components and to serve as a liaison between the various military entities and representatives of civilian interests; and

WHEREAS, various situations will continue to arise which necessitates the continued use of such a coordinating body;

NOW THEREFORE I, KATHLEEN BABINEAUX BLANCO, Governor of the state of Louisiana, by virtue of the authority vested by the Constitution and laws of the state of Louisiana, do hereby order and direct as follows:

SECTION 1: The Governor's Military Advisory Board (hereafter "Board") is reestablished within the executive department, Office of the Governor.

SECTION 2: The duties and objectives of the Board shall include, but are not limited to, the following:

A. Providing a public forum for issues concerning the installations and/or units of the U.S. Coast Guard and/or the armed forces of the United States located within the state, Active, Guard, Reserve, and/or retired military personnel and their families who reside in Louisiana (hereafter "the military");

B. Formulating goals and objectives to enhance cooperation, coordination, communication, and understanding between the military, the Louisiana Congressional Delegation, the communities in the state interfacing with the military, and/or state and local government agencies;

C. Strengthening and/or increasing the state of Louisiana's role in securing defense related business contracts for Louisiana businesses and/or selling Louisiana products to the installations and/or units of the U.S. Coast Guard and/or the armed forces of the United States located within the state;

D. Studying and determining the means to increase and/or strengthen the presence of the U.S. Coast Guard and/or armed forces of the United States located within the state;

E. Reviewing and/or disseminating information about proposed legislation related to and/or directly impacting the U.S. Coast Guard and/or military communities within the state; and

F. Proposing and/or sponsoring activities, legislation, initiatives, programs,

or projects which increase, support, or enhance the U. S. Coast Guard and/or military's presence within the state or which enhance or improve the quality of life for the U.S. Coast Guard and/or military communities;

SECTION 3: Annually, on January 1st, the Board shall submit a report to the governor regarding the status of and/or progress achieved on the issues addressed in Section 2 of this Order.

SECTION 4: The Board shall be composed of a maximum of twenty-five (25) members, who shall be appointed by and serve at the pleasure of the governor.

A. The voting members of the Board shall be selected as follows:

1 The adjutant general of Louisiana, or the adjutant general's designee;

2. The president of the Louisiana State Senate, or the president's designee;

3. The speaker of the Louisiana House of Representatives, or the speaker's designee;

4. The secretary of the Department of Economic Development, or the secretary's designee;

5. The secretary of the Department of Veterans Affairs, or the secretary's designee;

6. The chair of the Louisiana Employer Support of the Guard and Reserve, or the chair's designee;

7. One (1) representative each from the Greater New Orleans, Ft. Polk-Central Louisiana, Barksdale/Bossier/Shreveport, and the Lake Charles area that have established ongoing relationships with the military from their community;

8. One (1) representative for Louisiana businesses and industries from the areas described in subsection 4(A)(7); and

9. One (1) representative of local governments from the areas described in subsection 4(A)(7).

B. The non-voting members of the Board shall be selected as follows:

1. The commander, Joint Readiness Training Center (JRTC) and Ft. Polk, or the commander's designee;

2. The commander, Eighth Air Force, or the commander's designee;

3. The commander, Naval Forces Reserve, or the commander's designee;

4. The commander, Marine Forces Reserve, or the commander's designee;

5. The commander, Eighth Coast Guard District, or the commander's designee;

6. The commander, 377th Theater Army Area Command, or the commander's designee; and

7. The commander, U.S. Army Corps of Engineers, Mississippi River Valley Division, or the commander's designee.

C. The Board may create subcommittees composed of Board members, non-Board members, and/or both Board members and non-Board members, which meet in accordance with the open meetings law, R.S. 42:4.1, *et seq*.

SECTION 5: The governor shall appoint the chair and vice-chair of the Board from its membership. All other officers, if any, shall be elected by the Board from its membership.

SECTION 6: The Board shall meet at regularly scheduled quarterly meetings, and at the call of the chair.

SECTION 7: Support staff, facilities, and resources for the Board shall be provided by the Louisiana Department of Economic Development.

SECTION 8:

A. Board members shall not receive additional compensation or a per diem from the Office of the Governor for serving on the Board.

B. Board members who are employees or elected public officials of the state of Louisiana or a political subdivision of the state of Louisiana may seek reimbursement of travel expenses, in accordance with PPM 49, from their employing department, agency and/or office or elected office.

C. Board members who are also a member of the Louisiana Legislature may seek a per diem from the Louisiana State Senate or House of Representatives, as appropriate, for their attendance at Board meetings and/or services on the Board.

SECTION 9: All departments, commissions, boards, offices, entities, agencies, and officers of the state of Louisiana, or any political subdivision thereof, are authorized and directed to cooperate with the Board in implementing the provisions of this Order.

SECTION 10: This Order is effective upon signature and shall continue in effect until amended, modified, terminated, or rescinded by the governor, or terminated by operation of law.

IN WITNESS WHEREOF, I have set my hand officially and caused to be affixed the Great Seal of Louisiana, at the Capitol, in the city of Baton Rouge, on this 15th day of October, 2004.

/S/ Kathleen Babineaux Blanco
GOVERNOR OF LOUISIANA

ATTEST BY
THE GOVERNOR

/S/ W. Fox McKeithen
SECRETARY OF STATE

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Governor's Military Advisory Board

C/O Frank Mulhern 101 France Street
Baton Rouge, LA 70802
(225) 342-5372

Bd w/max of 25 membs. Ex-O voting membs: Adjutant Gen of LA/ ds;LA Senate Pres/ds;LA Speaker/ds; Sec DED/ds; Sec Dept Vet Affiar;ds; Chair LA Employer Support of Guard/Reserve/ds; Vote membs apt by/serv at Gov pleas: Rep each Greater NO, Ft Polk-Central LA, Barksdale/Bossier/Shreveport, Lake Charles area; Rep LA Busn & Ind; Rep Local Gov. Non-vote membs (Commanders) JRTC & Fort Polk/ds; 8th Air Force/ds; Naval Reserve Force/ds; Marine Force/ds; 8th Coast Guard/ds; 377th Theater Army Area Command/ds; US Army Corp of Engineer, Miss River Valley Div/ds. Gov appoints chair and vice-chair.

(created by KBB 04-41)

Berry, T.L. "Sonny" (Jr.)	244 Berry Lane Leesville, LA 71446	(337) 238-4745
Brunelli, John B	4400 Dauphine Street New Orleans, LA 70146-5100	(504) 678-5344
Detweiler, William M	2418 Calhoun Street New Orleans, LA 70118	(504) 834-1700
Garber, Wayne T	3761 Des Cannes Hwy Iota, LA 70543	(337) 824-6328
Howerton , William B	300 South 8th Street Leesville, LA 71446	(337) 537-3421
Hutchinson, Don J	P. O. Box 94185 Baton Rouge, LA 70804-9185	(225) 342-5388
Jakes, Brian (Sr.) P	223-A South Cate Street Hammond, LA 70403	(504) 345-1119
Jones, Charles (Colonel) B	126 Lemoine Street Marksville, LA 71351	(318) 253-9356
Kinlaw, Larry	1414 Basswood Drive Denham Springs, LA 70726-000	(504) 342-0332
Landreneau, Bennett (Maj Gen) C	304 F St. Camp Beauregard Pineville, LA 71360-3737	(318) 641-3861/641-3858
Livingston, James (USMC/Gen) E	3609 Red Oak Court New Orleans, LA 70131	(504) 584-5018
Mize, David (Major Gen.) M	4400 Dauphine Street New Orleans, LA 70146-5400	(504) 678-1580

Randolph, Edward "Ned" (Jr.) G	2517 Avenue B Alexandria, LA 71301	(318) 449-5000
Smith, John (Rep.) R	611-B South 5th Street Leesville, LA 71446	(337) 238-2709
Strickland, Joey	P.O. Box 94095, Capitol Station Baton Rouge, LA 7084-9095	(225) 922-0501
Suggs, Carroll W	320 West Livingston Drive Metairie, LA 70001	(504) 828-3323
Viser, Murray W	345 Drexel Drive Shreveport, LA 71106	(318) 220-0041
Walker, Lorenz J	1305 Holiday Place Bossier City, LA 71112	(318) 741-8502

Appendix D

City of San Antonio, Texas: Military Airport Overlay Zone

35-334 "MOAZ" Military Airport Overlay Zones

Purpose

The city of San Antonio has designated the military airport overlay zones in order to promote the public health, safety, peace, comfort, convenience, and general welfare of the inhabitants of military airport environs and to prevent the impairment of military airfields and the public investment therein. The land areas below military airport take off and final approach paths are exposed to significant danger of aircraft accidents. It is, therefore, necessary to limit the density of development and intensity of uses in such areas. The military airport overlay zones are intended to:

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- Guide, control, and regulate future growth and development.
- Promote orderly and appropriate use of land
- Protect the character and stability of existing land uses.
- Enhance the quality of living in the areas affected.
- Protect the general economic welfare by restricting incompatible land uses.
- Prevent the establishment of any land use which would endanger aircraft operations and the continued use of military airports.

(a) Definitions and Boundaries

(1) For the purpose of this subdivision, the following terms shall have the meaning given in this section:

Clear Zones: The area at the ends of the runways of military airports which measure three thousand (3,000) feet by three thousand (3,000) feet in length and width. Beyond the clear zones, the city has designated two (2) military overlay zones (see diagram):

Military Airport Overlay Zone 1 (MAOZ-1) The area that extends approximately five thousand (5,000) feet in length and three thousand (3,000) feet in width beyond the clear zone.

Military Airport Overlay Zone 2 (MAOZ-2) The area that extends approximately seven thousand (7,000) feet in length and three thousand (3,000) feet in width beyond district 1.

Official Map. The specific boundaries of the military airport overlay zones are shown on the official zoning map maintained in the department of development.

(b) Zoning Classification

(1) Overlay District.

The “MOAZ” military airport overlay zones are designed as overlays to the regular zoning districts. Property located within these districts must also be designated as being within one of the regular zoning districts. Authorized uses must be permitted in both the regular zoning district and the overlay district and must comply with height, yard, area, and parking requirements of the regular zoning district.

(2) Zoning Designation.

The zoning designation of property located within the military airport overlay zones shall consist of the regular zone symbol and the overlay district symbol as a suffix. For example, if a parcel is zoned “C-1” and is also located within district 2, the zoning designation of the property would be “C-1” (MAOZ-2). In effect, the designation of

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property as being within a military airport overlay zone places such property in a new zoning district classification and all procedures and requirements for zoning/rezoning must be followed.

(c) Uses

(1) Permitted Uses.

The following uses are permitted within the military airport overlay zones, subject to the limitations indicated in the military airport overlay zone permitted use Table and the conditions set forth for visual and electrical interference and storage of flammables [sections 35-334(e) through 35-334(f)]:

MILITARY AIRPORT OVERLAY ZONE PERMITTED USE TABLE

MAOZ PERMITTED USE	MAOZ-1	MAOZ-2
Single Family Residence (minimum one dwelling unit per acre)		P
ALCOHOL - retail sales	P4	P7
RACING - auto or truck track		P1
ANIMAL - equestrian center and riding trails	P	P
ANIMAL - pound or shelter	P	P
BREEDER - small animal only	P	P
CEMETERY - pets (limited to small animals)	P	P
DOG TRAINING – indoor	P	P
DOG TRAINING - outdoor permitted	P	P
KENNEL - boarding & breeding (see health & environmental)	P	P
PET GROOMING - small animals only	P	P
SMALL ANIMAL CLINIC - no outside runs	P	P
SMALL ANIMAL HOSPITAL - outside runs are permitted	P	P
STOCKYARD	P	P
VETERINARY HOSPITAL - large & small animal (outside runs, pens & paddocks permitted)	P	P
VETERINARY HOSPITAL - large & small animal (no outside runs, pens & paddocks permitted)	P	P
VETERINARY HOSPITAL - small animal (outside runs, pens & paddocks permitted)	P	P
VETERINARY HOSPITAL - small animals (no outside runs, pens & paddocks permitted)	P	P
TRUCK & HEAVY EQUIPMENT – auction	P	P
AMBULA"NC"E SERVICE	P	P
AUTO - glass tinting	P	P
AUTO - manufacture	P	P
AUTO & LIGHT TRUCK - oil, lube & tune up	P	P
AUTO & LIGHT TRUCK AUCTION	P	P
AUTO & VEHICLE SALES - new and used-small scale (no more than 15 vehicles currently licensed and in running condition on site at any given time for storage and/or sale	P	P
AUTO & VEHICLE SALES - new and used-large scale	P	P
AUTO ALARM & RADIO - retail (install. incidental to sales)	P4	P7
AUTO GLASS SALES – installation permitted	P4	P7

AUTO MUFFLER SALES - installation permitted	P4	P7
AUTO PAINT & BODY - repair with outside storage limited to 3 vehicles (all outside storage of parts to be totally screened)	P	P
AUTO PAINT & BODY - repair with outside storage of vehicles and parts permitted but totally screened from view of adjacent property owners and public roadways	P	P
AUTO PARTS RETAIL - no outside storage	P4	P7
AUTO PARTS RETAIL - w/installation & no outside storage	P4	P7
AUTO STATE VEHICLE INSPECTION STATION	P	P
AUTO UPHOLSTERY - sales and installation completely enclosed	P	P
CARWASH - automatic and attendant operated	P	P
CARWASH - automatic self service drive-thru	P	P
CARWASH - self service	P	P
LIMOUSINE SERVICE -dispatch & office use only no servicing of vehicles onsite	P	P
PARKING & TRANSIENT VEHICLE STORAGE - related to a delivery (auto, truck, trailer & marine)(each vehicle limited to 24 hours maximum parking time within any 48 hour period)	P	P
PARKING AND/OR STORAGE - long term	P2	P
PARKING LOT - noncommercial	P2	P
PARKING LOT or GARAGE - commercial	P2	P
TAXI SERVICE - parking & dispatch (no washing or mechanical service permitted)	P	P
TAXI SERVICE - parking & dispatch (washing or mechanical service permitted)	P	P
TIRE REPAIR - auto & small truck	P	P
TRUCK REPAIR & MAINTENA”NC”E	P	P
TRUCK STOP OR LAUNDRY – full mechanical service & repair permitted	P	P
TRUCK STOP OR LAUNDRY – tire repair permitted	P	P
VEHICLE STORAGE - see "AUTO PARKING AND/OR STORAGE LONG TERM"	P	P
WRECKER SERVICE	P	P
BEVERAGE MANUFACTURE - non-alcohol	P	P
DRY GOODS – wholesale	P	P
BATCHING PLANT	P3	P3
BATCHING PLANT - temporary in (6 months maximum)	P3	P3
BOOKBINDER	P3	P3
CABINET or CARPENTER SHOP	P3	P3
CAN RECYCLE COLLECTION STATION - no shredding	P3	P3
COFFEE ROASTING	P3	P3
CONTRACTOR FACILITY	P3	P3
CREAMERY	P3	P3
DRY CLEANING – plant	P3	P3
LAUNDRY – plant	P3	P3
LUMBER YARD and BUILDING MATERIALS	P3	P3
MACHINE SHOP	P3	P3
PECAN SHELLING	P3	P3
RUG CLEANING	P3	P3
WELDING SHOP - limited to three employees & screening of outside storage	P3	P3
ABRASIVE – manufacturing	P3	P3
AIR PRODUCTS - manufacturing	P3	P3
ARTIFICIAL LIMB ASSEMBLY	P3	P3
ASBESTOS PRODUCTS - manufacturing	P3	P3
ASPHALT PRODUCTS - manufacturing	P3	P3
BAG CLEANING	P3	P3
BATTERY – manufacturing	P3	P3
BEVERAGE - manufacturing or processing	P3	P3

BIOMEDICAL PRODUCTS - manufacturing	P3	P3
BOAT & MARINE - manufacturing	P3	P3
BOILER and TANK WORKS	P3	P3
BROOM, BRUSH - manufacturing	P3	P3
BUILDING SPECIALTIES - wholesale outside storage permitted	P3	P3
BULK PLANT or TERMINAL	P3	P3
CANDLE – manufacturing	P3	P3
CANDY – manufacturing	P3	P3
CANVAS PRODUCTS - manufacturing	P3	P3
CLOTHING MANUFACTURE - non-chemical process		P3
CO”NC”RETE PRODUCTS - manufacturing	P3	P3
COTTON COMPRESS, GINNING and BAILING	P3	P3
DRUG – manufacturing	P3	P3
ELECTRONIC COMPONENT - manufacturing	P3	P3
FELT PRODUCTS - manufacturing		P3
GLASS MANUFACTURE	P3	P3
GRAIN – drying	P3	P3
GRAIN – milling	P3	P3
FISH HATCHERY	P3	P3
HOSIERY – manufacturing		P3
ICE CREAM - manufacturing	P3	P3
ICE PLANT – manufacturing & processing	P3	P3
INSULATION PRODUCTS - manufacturing & processing	P3	P3
JUNKYARD or SALVAGE YARD	P3	P3
MATTRESS - manufacturing & rebuilding		P3
METAL FORGING or ROLLING MILL	P3	P3
METAL PRODUCTS - fabrication	P3	P3
MILLINERY - manufacturing		P3
MILLWORK & WOOD PRODUCTS - manufacturing	P3	P3
MOVING and TRANSFER COMPANY - with trucks attached to trailers for a total exceeding 24 feet in length	P3	P3
NOVELTY and SOUVENIR - manufacture	P3	P3
OFFICE EQUIPMENT, FURNITURE - manufacture	P3	P3
OIL WELL SUPPLIES and MACHINERY - manufacturing.	P3	P3
PACKING and GASKET - manufacturing	P3	P3
PACKING PLANT - no rendering	P3	P3
PAPER PRODUCTS - manufacturing	P3	P3
PIPE STORAGE	P3	P3
PLANING MILL	P3	P3
PLASTIC / VINYL - manufacturing or processing	P3	P3
PLAYGROUND EQUIPMENT - manufacturing	P3	P3
POULTRY PROCESSING - caged hen operation	P3	P3
POULTRY PROCESSING & LIVE POULTRY STORAGE - completely enclosed	P3	P3
PROCESSING - other than food	P3	P3
REFRIGERATION EQUIPMENT - manufacturing	P3	P3
RENDERING PLANT	P3	P3
SAND or GRAVEL - storage & sales	P3	P3
SHOE – manufacturing		P3
SHOE - wholesale (manufacturing permitted)		P3
SHOE POLISH - manufacturing	P3	P3
SIGN MANUFACTURE	P3	P3

STONE CURING, MONUMENT - manufacturing	P3	P3
STORAGE - outside (open with no screening required)	P3	P3
STORAGE - outside (screening from public ROWs and adjacent property required)	P3	P3
TEXTILE – manufacturing	P3	P3
TILE – manufacturing	P3	P3
TILE, ROOFING & WATERPROOFING PRODUCTS - manufacturing	P3	P3
TOBACCO – processing	P3	P3
TOOL – manufacturing	P3	P3
TOY – manufacturing	P3	P3
TRAILER – manufacturing	P3	P3
VENETIAN BLIND - cleaning & fabrication	P3	P3
VULCANIZING, RECAPPING	P3	P3
WATER DISTILLATION	P3	P3
WELL DRILLING CONTRACTOR	P3	P3
WIRE PRODUCTS - manufacturing	P3	P3
WOOD PROCESSING by CREOSOTING or OTHER PRESERVING TREATMENT	P3	P3
WOOL PULLING and SCOURING	P3	P3
MEDICAL - surgical supplies wholesale	P	P
AERIAL SURVEY - Administrative offices no on-site flight services	P	P
OFFICE	P4	P7
FLORIST – wholesale	P	P
LANDSCAPING MATERIALS - sales & storage	P	P
NURSERY - plant wholesale onsite growing permitted	P	P
PRINTER - large scale other than quick print	P	P
COSMETICS - manufacturing or processing	P	P
FOOD & FOOD PRODUCTS - processing	P	P
PU”NC”H CO”NC”ENTRATE - processing & mixing	P	P
PU”NC”H CO”NC”ENTRATE PRODUCTS - mixing only	P	P
ARCHERY RANGE - outdoor	P	P
ARCHERY RANGE – indoor	P	P
ATHLETIC FIELDS	P	P
GOLF COURSE - private (see residential use table)	P9	P
GOLF COURSE – public	P9	P
GOLF DRIVING RANGE	P9	P
RIFLE & PISTOL RANGE - indoor	P	P
STABLE & EQUESTRIAN CENTER	P	P
TENNIS, RACQUETBALL or HANDBALL - private (outside courts permitted)	P9	P
TENNIS, RACQUETBALL or HANDBALL - public (outside courts not permitted)	P9	P
TENNIS, RACQUETBALL or HANDBALL - public (outside courts permitted)	P9	P
TENNIS, RACQUETBALL or HANDBALL -private (outside courts not permitted)	P9	P
AIR CONDITIONERS - retail	P4	P7
ANTIQUE STORE – retail	P4	P7
APOTHECARY - see (DRUGSTORE - apothecary)	P4	P7
APPAREL & ACCESSORY STORE - retail	P4	P7
APPLIA”NC”E - retail	P4	P7
ART GALLERY	P4	P7
BAKERY – retail	P4	P7
BOOKSTORE	P4	P7
BUILDING SPECIALTIES - retail outside storage permitted	P4	P7
BUSINESS MACHINES - retail	P4	P7
CAMERA, PHOTOGRAPHIC EQUIPMENT & SUPPLIES - retail	P4	P7

CANDY, NUT and CONFECTIONERY - retail	P4	P7
CATERING SHOP	P4	P7
CONVENIE"NC"E ICE HOUSE - retail convenience store	P4	P7
CONVENIE"NC"E STORE – w/ gas sales	P4	P7
DAIRY PRODUCTS – retail	P4	P7
DRUGSTORE - apothecary	P4	P7
DRY GOODS – retail	P4	P7
FARM SUPPLIES	P4	P7
FEED, SEED, FERTILIZER SALES - no outside storage	P4	P7
FISH MARKET – retail	P4	P7
FLOOR COVERING - retail	P4	P7
FLORIST – retail	P4	P7
FOOD LOCKER PLANT - retail	P4	P7
FOOD STORE	P4	P7
FRUIT and PRODUCE - retail	P4	P7
FURNITURE SALES – retail	P4	P7
GIFT SHOP – retail	P4	P7
GLASS – retail	P4	P7
GROCERY STORE - retail	P4	P7
HARDWARE SALES – retail	P4	P7
HEAD SHOP	P4	P7
HOBBY STORE - retail	P4	P7
HOME IMPROVEMENT CENTER	P4	P7
JEWELRY STORE – retail	P4	P7
LEATHER GOODS or LUGGAGE STORE - retail	P4	P7
MEDICAL - surgical supplies retail	P4	P7
MILLINER – custom	P4	P7
NEWSSTAND	P4	P7
NURSERY - retail (growing plants on site permitted)	P4	P7
NURSERY - retail (no growing plants on site permitted)	P4	P7
OFFICE EQUIPMENT and SUPPLY - retail	P4	P7
PAINT and WALLPAPER STORE - retail & wholesale	P4	P7
PET SHOP – retail	P4	P7
PLUMBING FIXTURES - retail	P4	P7
RUG or CARPET – retail	P4	P7
SECONDHAND MERCHANDISE - retail no outside storage or display of inventory permitted)	P4	P7
SHOE – retail	P4	P7
SILK SCREENING – retail	P4	P7
SPORTING GOODS - retail	P4	P7
STAMPS and COIN SALES - retail	P4	P7
STATIONARY PRODUCTS - retail	P4	P7
TAMALE - preparation retail	P4	P7
THRIFT STORE - retail see (SECONDHAND MERCHANDISE)	P4	P7
TOBACCO STORE - retail	P4	P7
TOY STORE – retail	P4	P7
TROPHY SALES, ENGRAVING & ASSEMBLY	P4	P7
VARIETY STORE – retail	P4	P7
MACHINERY, TOOLS & CONSTRUCTION EQUIPMENT SALES & SERVICE	P	P
FARM EQUIPMENT SALES, SERVICE or STORAGE	P	P
OIL WELL SUPPLIES and MACHINERY SALES - used	P	P
PORTABLE BUILDING SALES	P	P

AIR CONDITIONING / REFRIGERATION - service & repair	P4	P7
ALTERING/REPAIR OF APPAREL	P4	P7
APPLIA”NC”E - repair major	P4	P7
APPLIA”NC”E - repair small	P4	P7
BANK, SAVINGS and LOAN		P6
BARBER or BEAUTY SHOP	P4	P7
BICYCLE – repair	P4	P7
BOAT & MARINE - sales, service (outside storage not permitted)	P	P
BOAT & MARINE - storage (outside permitted)	P	P
BODY PIERCING	P4	P7
CEMETERY or MAUSOLEUM	P5	P5
COPY OR BLUEPRINTING - example "Quick Print"	P4	P7
COPY SERVICE - blueprinting and photocopying	P4	P
COSMETICS - permanent	P4	P7
DELICATESSEN	P4	P7
DRY CLEANING - limited to five employees	P4	P7
DRY CLEANING - pickup station only	P4	P7
ELECTRIC REPAIR - heavy equipment	P3, 4	P3, 7
ELECTRIC REPAIR - light equipment	P3, 4	P3, 7
ELECTRONIC EQUIPMENT - repair	P3, 4	P3, 7
ELEVATOR MAINTENA”NC”E - service	P4	P
EXTERMINATORS	P4	P7
FOOD - restaurant or cafeteria	P4	P4
FURNITURE REPAIR / UPHOLSTERING	P4	P7
GASOLINE FILLING STATION - w/o repair service (car wash allowed)	P4	P7
GASOLINE FILLING STATION - with repair service and/or car wash	P4	P7
GUNSMITH	P4	P7
JANITORIAL / CLEANING SERVICE	P4	P7
LABORATORY – research	P3, 4	P3, 7
LABORATORY – testing	P3, 4	P3, 7
LAUNDRY and DRY CLEANING - self service	P4	P7
LAUNDRY- limited to max of five employees	P4	P7
LAUNDRY or DRY CLEANING - pickup station only	P4	P7
LAWNMOWER REPAIR	P4	P7
LINEN or UNIFORM SUPPLY, DIAPER SERVICE (pickup & supply only)	P4	P7
LOAN OFFICE		P7
LOCKSMITH	P4	P7
MANUFACTURED HOME / OVERSIZE VEHICLE SALES, SERVICE or STORAGE	P	P
MASSAGE - parlor	P4	P7
MASSAGE - therapeutic	P4	P7
MINI WAREHOUSE - over 2.5 AC.	P	P
MORTUARY - embalming and preparation only	P4	P7
PALM READING	P4	P7
PAWN SHOP	P4	P7
PICTURE FRAMING	P4	P7
POST OFFICE	P4	P4
REDUCING SALON	P4	P7
SHOE – repair	P4	P7
SIGN SHOP - no outside storage	P4	P7
STUDIO - fine or performing arts		P7
STUDIO - interior decorating	P4	P7

STUDIO - photographic	P4	P7
STUDIO - sound & recording		P7
TAILOR SHOP	P4	P7
TATTOO PARLOR/STUDIO	P4	P7
TAXIDERMIST	P	P
TOOL RENTAL - fenced & screened outside storage permitted	P4	P7
TOOL RENTAL - outside storage permitted	P4	P7
TREE CUT & TRIM SERVICE	P	P
WATCH REPAIR	P4	P7
CARTING, CRATING, HAULING, STORAGE	P	P
COLD STORAGE PLANT	P	P
FUR DYEING, FINISHING and STORING	P	P
ICE CREAM TRUCK STORAGE	P	P
MOVING COMPANY	P	P
STORAGE - outside (under roof and screened)	P	P
FREIGHT DEPOT	P	P
TELEPHONE EQUIPMENT INFRASTRUCTURE	P8	P8
WIRELESS COMMUNICATION SYSTEMS	P8	P8
SANITARY LANDFILL, SOLID WASTE FACILITY	P	P
OFFICE WAREHOUSE	P	P
WAREHOUSING - no outside storage permitted	P	P
BAKERY - wholesale	P	P
BARBER and BEAUTY EQUIPMENT - wholesale	P	P
CAMERA, PHOTOGRAPHIC EQUIPMENT & SUPPLIES - wholesale	P	P
DAIRY EQUIPMENT SALES - wholesale	P	P
DAIRY PRODUCTS - wholesale	P	P
DRUG SALES - wholesale	P	P
FISH MARKET - wholesale	P	P
FOOD PRODUCTS - wholesale & storage	P	P
FRUIT and PRODUCE - wholesale	P	P
FURNITURE SALES - wholesale	P	P
GLASS - wholesale	P	P
GROCERY - wholesale	P	P
HARDWARE SALES - wholesale	P	P
OFFICE EQUIPMENT and SUPPLY - wholesale	P	P
PAPER SUPPLIES - wholesale	P	P
PLUMBING FIXTURES - wholesale	P	P
SHOE - wholesale no manufacturing	P	P
SPORTING GOODS - wholesale	P	P
STONE MONUMENT - retail & wholesale	P	P
TAMALE - preparation wholesale	P4	P7

1 With no public assembly.

2 Maximum 100 parking spaces.

3 No industrial or manufacturing uses will be allowed if operations emit into the air any substance which would impair the visibility or otherwise interfere with the operation of aircraft, e.g., steam, dust, smoke. Nor will any use be allowed which would interfere with aircraft communication systems or navigational equipment through electrical disturbances.

4 Building size is limited to maximum 3,000 sq. ft.

5 Excludes chapels.

6 Low-intensity office use only.

7 Building size limit in MAOZ-2 is 250,000 sq. ft.

8 With height restrictions.

9 With no clubhouses.

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(2) Prohibited Uses.

A. Residential uses, except as provided for in exceptions for residential uses [section 35-334(d)].

B. All other uses not permitted under subsection (a) of this section

(3) Military Airport Overlay Zone 1 Size Limitation.

Any retail, office or personal service use that is permissible in the "MAOZ-1" may not exceed 3,000 square feet in total floor area. Front, rear and side yard setbacks of 20 feet shall be required on all lots. There shall be a separation of at least 20 feet between each such use.

(4) Military Airport Overlay Zone 2 Size Limitation.

Any retail, office or personal service use that is permissible in the "MAOZ-2" may not exceed 250,000 square feet in total floor are

(5) Plat Notice.

A notice shall be placed on all final plats for properties located within Military Airport Overlay Zones 1 and 2 that the property, either partially or wholly, lies within a military airport overlay zone and is subject to noise and/or aircraft accident potential which may be objectionable

(d) Exceptions for Residential Uses

(1) Existing Residences.

Notwithstanding any other provisions of the zoning ordinance, residential uses located within the military airport overlay zones which were lawfully in compliance with the provisions of this chapter on the effective date of this chapter may be repaired and enlarged provided (1) the number of dwelling units is not increased and (2) all other applicable requirements of this district are met.

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(2) Vacant Lots.

Vacant platted lots which are zoned for single-family residential uses may be used for single-family residences providing they conform to all other applicable requirements of this district. Such lots may not be subdivided into more than one additional lot for single-family residential use.

(3) Unplatted Property.

Unplatted properties zoned for single-family residential may be platted and used for single-residences in the "MOAZ-2", providing they conform to all other applicable requirements of this district. Such lots may not exceed a density of one single-family residence per acre.

(e) Visual and Electrical Interference

Notwithstanding any other provisions of these regulations, no use shall be made of land within the military airport overlay zones in such a manner to:

(1) Release into the air any substance which would impair visibility or otherwise interfere with the operation of aircraft; e.g., steam, dust, smoke, etc.;

(2) Produce light emissions, either direct or indirect (reflective) which would interfere with pilot vision;

(3) Produce electrical emissions which would interfere with aircraft communications systems or navigational equipment; or

(4) Attract birds or waterfowl, or in any other manner constitute an airport hazard.

(f) Storage of Flammables

The provisions of this section shall apply throughout the military airport overlay zones. All technical terms shall be interpreted as defined in the Uniform Fire Code.

(1) Solid Materials.

A. The storage or manufacture of flammable solid materials or products is permitted only if the flammable material or products are stored or manufactured within completely enclosed buildings having noncombustible exterior walls and protected throughout by an automatic fire extinguishing system.

B. The storage or manufacture of explosive materials and of materials or products which decompose by detonation is prohibited.

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(2) Liquid Materials.

A. The manufacture of flammable or combustible liquids or materials which produce flammable or combustible vapors or gases is prohibited.

B. All above ground storage of flammable or combustible liquids or materials which produce flammable or combustible vapors or gases shall be in enclosed fireproof vaults. This requirement does not apply to liquids or materials used for single-family residences.

C. The storage of flammable and combustible liquids, or of materials that produce flammable or combustible vapors or gases, shall be permitted only in accordance with the Uniform Fire Code.

(g) Height Regulations

The height of structures within the military airport overlay zones shall be governed by the height requirements of the underlying zoning district as well as the provisions of the joint airport zoning regulations in Division 11, Article III of this chapter.

(h) Procedure

(1) Site Plan.

Except for single-family residences, a site plan shall be submitted to the director of development services for approval by the planning commission prior to the issuance of building permits. All building plans must be in compliance with an approved site plan. The applicant shall submit eight (8) blue- or black-line copies and one reproducible 8 1/2 x 11-inch reduced copy of the site plan accompanied by the plan review fee specified in Appendix “C”. The plan review fee shall be in addition to any other required fees.

(2) Purpose.

The purpose of the site plan is to ensure the proposed development complies with the provisions and intent of this chapter. The plan review will focus on the following:

A. **Ordinance Provisions**. Permitted uses, potential visual and electrical interference, and storage of flammables.

B. **Intent.** The site design should locate the most intensive uses farthest away from the end and centerline of the runway.

(3) Plan Requirements.

The plan shall include the following as a minimum.

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A. Site size, location information, and adjacent land uses.

B. Dimensioned layout, with the location, size, and height of all buildings and structures.

C. The location and size of all above and below ground storage containers for flammable and combustible materials.

D. Size and location of all vehicular access points, streets, and parking areas.

E. Major physical features such as creeks, topography, and easements.

F. Diagrams indicating the location, dimensions, and angles of any or other reflective surfaces proposed in the development design.

G. A staging plan if appropriate.

(4) Staff Review.

The director of development services shall, upon receipt of the site plan, distribute copies to other departments/agencies, as the director deems necessary. Departments/agencies receiving copies of the site plan shall, within twenty (20) days of receipt of the plan, submit to the director of development services their written recommendation and comments about the plan. No later than thirty (30) days after submission of the site plan, the director shall submit the plan with a recommendation to the planning commission for consideration.

(5) Planning Commission Consideration.

The planning commission may approve the plan submitted, amend and approve the plan as amended, or disapprove the plan. If approved, the plan with amendments, if any, shall be stamped "approved" and be dated and signed by the chairman of the planning commission and by the secretary of the commission.

(6) Distribution of the Approved Plan.

One copy of the approved plan shall be submitted to the director of development services for use in issuing building permits. In addition, other copies of the approved plan may be requested as necessary by other departments and agencies.

(7) Changes in the Plan.

A. **Minor Changes.** After favorable action by the planning commission, minor alterations which do not substantially change the concept of the site plan may be approved by the director of development services, if required by engineering or other circumstances not foreseen at the time the plan was approved. Minor

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changes may not cause a change in location or an increase in size of any storage containers for flammable or combustible materials.

B. **Major Changes**. Major alterations to the site plan shall be resubmitted for consideration by the planning commission following the same procedures required in the original adoption of the plan. Major changes to a site plan include any alterations which would cause any of the above conditions as well as those which are determined as such by the director of development services.

(8) Time Limit.

The construction of the proposed development shall be started within two (2) years of the effective date of approval of the site plan by the commission. The planning commission may, no sooner than sixty (60) days prior to the end of the time period, upon request of the developer, extend the time one additional year if, in the judgment of the commission, additional time is warranted. In any event, construction must be started within (3) years of the effective date of approval. Failure to begin the development within the required time period or the period as extended shall automatically void the site plan, and no building permit shall be issued until the plan or an amended plan ha been resubmitted and properly approved by the commission.

(i) Supplemental Information

Whenever any application for a change in zoning in a military airport overlay zone is filed, thedirector of development services shall make formal request to the United States Air Force at least thirty (30) days prior to the zoning commission hearing for any relevant statistics, operational activities information, technical data, or other studies with bearing on the request.

The full Development Code can be accessed at the following web address:
http://www.sanantonio.gov/dsd/udc/index.asp

City of Tucson, Arizona: Airport Environs Overlay Zone

2.8.5 AIRPORT ENVIRONS ZONE (AEZ).

2.8.5.1 Purpose. The purpose of this overlay zone is to protect the health, safety, and welfare of persons and property in the vicinity of Tucson International Airport (TIA) and Davis-Monthan Air Force Base (DMAFB) and protect the long term viability of DMAFB. This is accomplished by: (1) reducing noise and safety hazards associated with aircraft operations; (2) preserving the operational stability of these airports; and (3) assisting in the implementation of policies and recommendations in the City's *General Plan* and Airport Environs Plan, the Air Installation Compatible Use Zone Report (AICUZ), and the Airport Noise Control, Land Use Compatibility (ANC*LUC*) Study and the Davis-Monthan Joint Land Use Study (DMJLUS). The overlay district further: (Ord. No. 9517, §2, 2/12/01; Ord. No. 10073, §1, 10/25/04)

A. Promotes the compatibility of uses with aircraft operations through the establishment of criteria for the regulation of building height and density.

B. Addresses potentially life-threatening situations in areas exposed to aircraft accident potential through restrictions on the congregation of large numbers of people or high concentrations of people and by restrictions on concentrations of people who are unable to respond to emergency situations, such as children, the elderly, the handicapped, and persons undergoing medical treatment.

C. Increases the protection of persons exposed to high levels of aircraft noise by requiring acoustical treatment in buildings located within these areas and regulating those uses which are sensitive to such noise.

D. Prohibits uses which create potential hazards to the safe approach and departure of aircraft.

E. Recognizes the role of Davis-Monthan Air Force Base in the Tucson community and protects the City's interest in ensuring the continued viability and operation of Davis-Monthan AFB by limiting incompatible land uses in the Approach-Departure Corridor (ADC). (Ord. No. 9781, §1, 10/28/02; Ord. No. 10073, §1, 10/25/04)

2.8.5.2 Maps Established. The Airport Environs Zone (AEZ) includes districts and zones that do not necessarily have the same boundaries. The boundaries of these districts and zones are identified for Tucson International Airport (TIA) and for Davis-Monthan Air Force Base (DMAFB) by the Airport Environs Zone (AEZ) Overlay Map series kept on file in the offices of the City Clerk, the Development Services Department (DSD), and the Department of Urban Planning and Design. The AEZ Overlay Map series is hereby established as the official AEZ Overlay Map series and becomes effective on May 16, 1990, as amended on January 28, 1991, April 27, 1992, October 28, 2002 and January 1, 2005. (Ord. No. 9392, §1, 5/22/00; Ord. No. 9781, §1, 10/28/02). The AEZ is made up of eleven (11) zones and districts. *(See Illustrative Maps 2.8.5.2-I and 2.8.5.2-II.)* Following are the zones and districts applicable to TIA environs and DMAFB environs. (Ord. No. 9781, §1, 10/28/02; Ord. No. 9967, §2, 7/1/04; Ord. No. 10073, §1, 10/25/04)

A. The following zones and districts are established in the TIA environs:

1. Compatible Use Zone-One (CUZ-1)

2. Compatible Use Zone-Two (CUZ-2)

3. Compatible Use Zone-Three (CUZ-3)

4. Noise Control District 65 (NCD 65) – High Noise District with exposures of 65-70 Ldn designated at TIA

5. Noise Control District 70 (NCD 70 – High Noise District with exposures of 70+ Ldn designated at TIA

B. The following zones and districts are established in the DM environs:

1. Approach Departure Corridor One (ADC-1) – Northwest end of DMAFB runway

2. Approach Departure Corridor Two (ADC-2) – Southeast end of DMAFB runway up to 30,000 feet from end of runway.

3. Approach Departure Corridor Three (ADC-3) – Southeast end of DMAFB runway 30,000 to 50,200 feet from end of runway.

4. Noise Control District -A (NCD A) - High Noise District with exposures of 65-70 Ldn designated at DMAFB.

5. Noise Control District – B (NCD B) - High Noise District with exposures of 70+ Ldn designated at DMAFB

C. The following district applies to both the TIA environs and the DMAFB environs:

1. Airport Hazard Districts (AHD) - A specifically designated area of land where uses, which constitute hazards to aircraft operations, are prohibited and heights are limited.

(Ord. No. 9781, §1, 10/28/02; Ord No. 10073, §1, 10/25/04)

2.8.5.3 Applicability. Sections 2.8.5.3, 2.8.5.4, 2.8.5.5 and 2.8.5.6 apply to the TIA environs. Where more than one (1) district or zone is applicable to a property, the requirements of all applicable districts or zones apply. Where requirements conflict, the most restrictive applies. The provisions of the Airport Environs Zone (AEZ) apply to the following on all property located within the TIA boundaries established by Sec. 2.8.5.2.A. For property partially within the TIA, the provisions apply to only those portions within the boundaries of the AEZ. For areas outside the city limits, which have not been annexed by the City, the AEZ overlay provisions apply upon annexation. (Ord No. 10073, §1, 10/25/04)

A. New development.

B. A change in, expansion of, or addition to the use of an existing structure as follows.

1. The residential density, employee density, and emergency evacuation plan and training requirements of Sec. 2.8.5.5 apply to the entire existing structure if the change, expansion, or addition results in an increase in any of the following.

a. Employee density.

b. Residential density.

c. Number of employees.

d. Number of persons of the general public for whom the structure was intended or designed to accommodate.

2. The noise attenuation requirements of Sec. 2.8.5.6 apply to the entire existing structure if the use of the existing structure is changed from any other land use to one (1) or more of the following uses.

a. Residential.

b. Place of public accommodation.

c. Administrative or Professional Office.

C. Expansion of an existing development as follows.

1. If the gross floor area of a structure or the gross floor area on a project site is expanded by less than fifty (50) percent, the provisions of the Airport Environs Zone (AEZ) apply only to the areas of expansion.

2. If the gross floor area of a structure is expanded by fifty (50) percent or more, the requirements of Sec. 2.8.5.6 apply to the entire structure. The sound attenuation requirement in this Section does not, however, apply to an expansion of the following types of structures existing prior to May 16, 1990.

a. A single-family or duplex dwelling.

b. A mobile home.

c. A manufactured housing unit.

3. If the gross floor area on a project site is expanded by fifty (50) percent or more, the employee density, lot coverage, and emergency evacuation plan and training requirements of Sec. 2.8.5.5 apply to the entire project site.

4. Cumulation of Expansions. Expansions are cumulated over time from May 16, 1990. Once a structure or project site is brought into conformance with the provisions of this Section, subsequent expansions are accumulated as of the date the existing structure or project site is brought into conformance.

D. Nothing contained in this Section affects existing property or the right to its continued use for the purpose legally used at the time these regulations become effective, nor do these regulations affect any reasonable repairs to, or alterations of, buildings or property used for such existing purposes.

E. Designation, amendment, or change of boundaries for an Airport Environs Zone are established through the amendment to the designation on the AEZ Maps in accordance with Sec. 2.8.5.2. (Ord. No. 9967, §2, 7/1/04)

(Ord No. 10073, §1, 10/25/04)

2.8.5.4 The following provisions apply to the TIA Environs. (Ord No. 10073, §1, 10/25/04)

A. *Permitted Uses.* The land uses permitted are those permitted by the underlying zone, except as restricted by this Section.

B. *Posting of Occupancy Limitations.* Any restriction of occupancy required under this ordinance as a condition of building permit issuance or certificate of occupancy will be posted on the premises. The owner/manager(s) of the premises may not permit the limitation to be exceeded. (Ord. No. 9392, §1, 5/22/00)

2.8.5.5 Compatible Use Zones for the TIA Environs. Land use regulations within the Compatible Use Zones are as follows. (Ord No. 10073, §1, 10/25/04)

A. *CUZ-1*. (Ord No. 10073, §1, 10/25/04)

1. Single-family and multifamily dwellings and mobile homes are permitted, only if the property is zoned IR, RH, SR, RX-1 (UR), RX-2, R-1, R-2, MH-1 (MH), MH-2 (MHP), or R-3 and such zone was in place prior to May 16, 1990. Other uses allowed by the underlying zoning are permitted, except as modified by Sec. 2.8.5.5.E.

    a. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP), are not permitted.

    b. Residential development may occur in compliance with underlying zoning, with no more than twenty-five (25) dwelling units per building.

2. No more than one (1) employee for every two hundred fifty (250) square feet of gross floor area of all buildings on a project site at any time may be accommodated by intention, design, or in fact.

3. Structures or uses with fifty (50) or more employees must develop an emergency evacuation plan and training program and implement it as approved by the Fire Department. (Ord. No. 9392, §1, 5/22/00)

4. The maximum height limit is seventy-five (75) feet, except where Sec. 2.8.5.7 reduces that limit.

B. *CUZ-2*. (Ord No. 10073, §1, 10/25/04)

1. Single-family and multifamily dwellings and mobile homes are permitted, only if the property is zoned IR, RH, SR, RX-1 (UR), RX-2, R-1, R-2, MH-1 (MH), MH-2 (MHP), or R-3 and such zone was in place prior to May 16, 1990. Other uses allowed by the underlying zoning are permitted, except as modified by Sec. 2.8.5.5.E.

    a. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP), are not permitted.

    b. Residential development may occur in compliance with underlying zoning, with no more than twenty-five (25) dwelling units per building.

2. Structures or uses with fifty (50) or more employees must develop an emergency evacuation plan and training program and implement it as approved by the Fire Department. (Ord. No. 9392, §1, 5/22/00)

3. The maximum height limit is seventy-five (75) feet, except where Sec. 2.8.5.7 reduces that limit.

C. *CUZ-3*. (Ord No. 10073, §1, 10/25/04)

1. In CUZ-3, single-family and multifamily dwellings and mobile homes are permitted, only if the property is zoned IR, RH, SR, RX-1 (UR), RX-2, R-1, R-2, MH-1 (MH), MH-2 (MHP), or R-3 and such zone was in place prior to May 16, 1990. Other uses allowed by the underlying zoning are permitted, except as modified by Sec. 2.8.5.5.E.

    a. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP), are not permitted.

b. Minimum lot area per dwelling unit is one hundred forty-four thousand (144,000) square feet.

2. In CUZ-3, no development may exceed seventy-five (75) percent lot coverage and 0.375 Floor Area Ratio (FAR). (Ord. No. 8653, §1, 2/26/96)

3. In CUZ-3, no structure or use or contiguous structure or use may accommodate, by intention or design, in whole or in part, at any one time, more than fifty (50) employees.

(Ord. No. 9781, §1, 10/28/02; Ord No. 10073, §1, 10/25/04)

D. *Prohibited Uses.*

1. Public assembly is prohibited within CUZ-1, CUZ-2, and CUZ-3.

a. Exception: Accessory Food Service uses for employees only; such uses will be provided on-site entirely within a structure devoted to a permitted principal use.

(Ord No. 10073, §1, 10/25/04)

2. In addition to public assembly, the following uses are prohibited within CUZ-1 and CUZ-2. (Ord No. 10073, §1, 10/25/04)

a. Civic Assembly of fifty (50) or more persons.

b. Day Care.

c. Educational Use: Elementary and Secondary Schools.

d. Medical Service.

e. Adult care homes, adult care facilities, specialized treatment homes, and group homes for the seriously mentally ill.

3. In addition to public assembly, the following uses are prohibited within CUZ-3.(Ord No. 10073, §1, 10/25/04)

a. Alcoholic Beverage Service (on premises).

b. Civic Assembly.

c. Cultural Use.

d. Day Care.

e. Educational Use.

f. Entertainment (indoor and outdoor).

g. Financial Service (except automated teller).

h. Food Service (on premises, except as accessory use).

i. General Merchandise Sales (retail stores over 2,500 square feet gross floor area).

j. Medical Service - Major.

k. Membership Organization.

l. Medical Service - Outpatient.

m. Recreation (indoor and outdoor).

n. Religious Use.

o. Swap Meet or Auction.

p. Travelers' Accommodation.

2.8.5.6 Noise Control Districts.

A. *NCD-65.*

1. Within Noise Control District-65, the following uses must be provided with sound attenuation, to reduce the interior noise level to an Ldn of 45 or less, as specified by Development Standard 9-05.0.

(Ord No. 10073, §1, 10/25/04)

a. All site-built residential uses.

b. All places of public accommodation.

c. All Administrative and Professional Offices.

2. A manufactured housing unit will not be considered equivalent to a single-family dwelling within the boundaries of NCD-65, unless located on a property zoned MH-1 or MH-2 or unless it can be demonstrated that the unit provides adequate sound attenuation to reduce the interior noise level to Ldn 45. (Ord. No. 9374, §1, 4/10/00)

3. Prohibited Uses: Within NCD-65, the following uses are prohibited.

a. Day Care.

B. *NCD-70.*

1. Within Noise Control District-70, the following uses must be provided with sound attenuation to reduce the interior noise level to an Ldn of 45 or less, as specified by Development Standard 9-05.0. (Ord No. 10073, §1, 10/25/04)

a. All site-built residential uses.

b. All places of public accommodation.

c. All Administrative and Professional Offices.

2. Single-family and multifamily dwellings are permitted, provided the property is residentially zoned as of May 16, 1990, and provided the interior noise level is reduced to an Ldn of 45 or less as specified in Sec. 2.8.5.6.B.1.

3. A manufactured housing unit will not be considered equivalent to a single-family dwelling within the boundaries of NCD-70, unless located on a property zoned MH-1 or MH-2 or unless it can be demonstrated that the unit provides adequate sound attenuation to reduce the interior noise level to Ldn 45. (Ord. No. 9374, §1, 4/10/00)

4. Special Exception Land Uses. The following uses are generally considered to be inappropriate within the high noise area, NCD-70. They may be approved as Special Exception Land Uses upon application, review, and approval in accordance with Sec. 23A-50, 23A-53, Full Notice Procedure, Zoning Examiner Special Exceptions. In addition to the standard notice required for Special Exception Land Use applications, the Tucson Airport Authority and Davis-Monthan Air Force Base will be notified of all such applications within the boundaries of the Airport Environs Zone (AEZ). (Ord. No. 9781, §1, 10/28/02; Ord. No. 9967, §2, 7/1/04; Ord No. 10073, §1, 10/25/04)

   a. Civic Assembly.

   b. Cultural Use.

   c. Educational Use: Postsecondary Institution.

   d. Entertainment.

   e. Medical Service - Major.

   f. Swap Meet or Auction.

   In addition to the required findings and conditions specified in Section 23A-50, 23A-53, Full Notice Procedure, Zoning Examiner Special Exceptions, these uses must be shown to be consistent with the intent of the Airport Environs Zone (AEZ) and the Airport Environs Plan or the Air Installation Compatible Use Zone (AICUZ) Report and must be capable of sound attenuation to mitigate the effects of high noise. In addition, all activity associated with the use must be shown to take place within an enclosed building. An acoustical engineer must demonstrate that the proposed use is noise insulated to an interior noise level of an Ldn of 45 or less. (Ord. No. 9781, §1, 10/28/02; Ord. No. 9967, §2, 7/1/04; Ord No. 10073, §1, 10/25/04)

5. Prohibited Uses. Within NCD-70, the following uses are prohibited.

   a. Day Care.

   b. Educational Use: Elementary and Secondary Schools.

2.8.5.7 Applicability. Sections 2.8.5.7, 2.8.5.8, 2.8.5.9 and 2.8.5.10 apply to the DMAFB Environs. Where more than one (1) district or zone is applicable to a property, the requirements of all applicable districts or zones apply. Where requirements conflict, the most restrictive applies. The provisions of the Airport Environs Zone (AEZ) apply to the following on all property located within the DMAFB Environs boundaries established by Sec. 2.8.5.2. B. For property partially within the AEZ, the provisions apply to only those portions within the boundaries of the AEZ. For areas outside the city limits, which have not been annexed by the City, the AEZ overlay provisions apply upon annexation.

A. New Development.

1. For property located within the zones and districts ADC-1. ADC-2, ADC-3, NCD-A and NCD-B, the provisions established by Section 2.8.5.8, Approach-Departure Corridors for DMAFB Environs and Section 2.8.5.9, Noise Control Districts for DMAFB Environs will apply on January 1, 2005.

B. Changes, Expansions and Additions to Use of Existing Development. The following provisions will apply on January 1, 2005.

1. For a change of use of an existing structure, the provisions of Section 2.8.5.8, Approach-Departure Corridors for DMAFB Environs, applies to the entire existing structure if it results in an increase in the number of employees.

2. The noise attenuation requirements and performance criteria established by Section 2.8.5.9, Noise Control Districts for DMAFB Environs, applies to the entire existing structure if the use of the existing structure is changed to one or more allowed uses requiring sound attenuation.

3. Dwelling units existing within the AEZ on January 1, 2005 may expand or reconstruct provided that the new construction conforms to AEZ requirements.

C. Nothing contained in this Section affects existing property or the right to its continued use for the purpose legally used at the time these regulations become effective, nor do these regulations affect any reasonable repairs to, or alterations of, buildings or property used for such existing purposes.

D. Nothing in these provisions shall preclude the renovation of existing structures.

E. Proposed expansion of a nonconforming use or structure is subject to the provisions of Section 5.3.6.2.B.

F. Owners of property within the DMAFB Environs and in the vicinity of the military airport should be aware that Arizona Revised Statutes (A.R.S.), Title 28, and A.R.S., Title 32, contain provisions which may apply to some properties regulated under this Section. The provisions require property owners to inform potential purchasers, lessees, and renters that a property is in an airport zoning district. Nothing herein shall require any notice be provided by property owners that would be in addition to the requirements provided by state law.

G. The land uses permitted are those permitted by the underlying zone, except as restricted by Sections 2.8.5.8 and 2.8.5.9.

2.8.5.8 Approach Departure Corridors (ADC) for DMAFB. The land use regulation within the ADCs are as follows.

A. ADC-1

1. Performance Criteria. The following Performance Criteria applies to ADC-1

a. No more than thirty (30) employees per acre of site area.

b. The minimum project site area is three (3) acres.

c. The maximum FAR is .50 of the project site area.

2. Prohibited Land Uses. The following land uses are prohibited in ADC-1

a. Civic Use Group

1. Civic Assembly- Outdoor and Indoor

2. Cultural Use

3. Religious Use

4. Educational Use

b. Commercial Services Use Group

1. Administrative and Professional Offices

2. Alcoholic Beverage Service

3. Day Care

4. Entertainment – Outdoor & Indoor

5. Food Service

6. Medical Services

7. Personal Service

8. Transportation Service – Air Carrier

9. Travelers Accommodation-Campsite

10. Travelers Accommodation-Lodging

c. Industrial Use Group

1. Hazardous Material Manufacturing

d. Recreational Use Group

1. Neighborhood Recreation

2. Recreation

e. Residential Use Group

f. Restricted Adult Activities Use Group

g. Retail Trade Use Group

h. Storage Use Group

1. Hazardous Material Storage

i. Wholesaling Use Group

1. Hazardous Material Wholesaling

3. Exceptions. The following provisions allow for exceptions to Prohibited Uses in ADC-1 under certain circumstances.

a. Land uses in the Commercial Services Use Group and Retail Trade Use Group are permitted in ADC-1 only if the property was zoned RCV, NC, C-1, C-2, C-3, C-3, P or RV prior to January 1, 2005. (Rezoning from these zones to zones which provide for allowed uses in ADC-1 is encouraged).

b. Land uses in the Commercial Services Use Group and the Retail Trade Use Group are permitted on property zoned P-I, I-1 or I-2 in ADC-1 only if a protected development right plan was approved by Mayor and Council specifically for such use prior to June 30, 2005.

c. Developments that are not in conformance with the performance criteria of 2.8.5.8. A. are permitted only if a protected development right plan, was approved by Mayor and Council specifically for such development prior to June 30, 2005.

d. Single Family dwelling units are permitted only if the property is zoned IR, RH, SR, RX-1, RX-2, R-1, R-2, or R-3, MH-1 or MH-2 and such zone was in place prior to January 1, 2005. (Rezoning from these zones to zones which provide for allowed uses in ADC-1 is encouraged).

1. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP) are not permitted.

2. Residential development is limited to a density of not more than (1) dwelling unit per acre.

e. Parcels less than the minimum size required in ADC-1 and recorded prior to January 1, 2005 may be developed in conformance with all other requirements specified in Section 2.8.5.8 A. 1., 2., and 3.

f. Individual parcels of less than three (3) acres may be separately owned provided each such parcel is part of a development plan and covenants provided in this subsection which encompasses at lease three (3) acres. The City must be a party for notification purposes to the covenants.

g. Non-contiguous parcels located within ADC-1 may be included within a single plat or development plan for the purpose of determining employee limits, floor area ratios and other performance criteria provided there are recorded covenants requiring conformance with the approved plat or development plan in the form approved by the DSD Director. Non-contiguous parcels that do not meet the above criteria may be considered through Special Exception process as specified in Section 2.8.5.10 A.

B. ADC-2

1. Performance Criteria. The following Performance Criteria applies to ADC-2

a. No more than twenty (20) employees per acre of site area at any time may be accommodated by intention, design, or in fact.

b. The minimum project site area is five (5) acres.

c. The maximum FAR is .30 of the project site area.

2. Prohibited Land Uses. The following land uses are prohibited in ADC-2

a. Civic Use Group

1. Civic Assembly- Outdoor and Indoor

2. Cultural Use

3. Religious Use

4. Educational Use

b. Commercial Services Use Group

1. Administrative and Professional Offices

2. Alcoholic Beverage Service

3. Day Care

4. Entertainment – Outdoor and Indoor

5. Food Service

6. Medical Services

7. Personal Service

8. Transportation Service – Air Carrier

9. Travelers Accommodation-Campsite

10. Travelers Accommodation-Lodging

c. Industrial Use Group

1. Hazardous Material Manufacturing

d. Recreational Use Group

1. Neighborhood Recreation

2. Recreation

e. Residential Use Group

f. Restricted Adult Activities Use Group

g. Retail Trade Use Group

h. Storage Use Group

1. Hazardous Material Storage

i. Wholesaling Use Group

1. Hazardous Material Wholesaling

3. Exceptions. The following provisions allow for exceptions to Prohibited Land Uses in ADC-2 under certain circumstances.

a. Land uses in the Commercial Services Use Group and Retail Trade Use Group are permitted in ADC-2 only if the property was zoned RCV, NC, C-1, C-2, C-3, C-3, P or RV prior to January 1, 2005. (Rezoning from the previously mentioned zones to zones which provide for allowed uses in ADC-2 is encouraged).

b. Land uses in the Commercial Services Use Group and the Retail Trade Use Group are permitted in P-I, I-1 or I-2 in ADC-2 only if a protected development right plan was approved by Mayor and Council specifically for such use prior to June 30, 2005.

c. Developments that are not in conformance with the performance criteria of 2.8.5.7. B. 1. are permitted only if a protected development right plan, was approved by Mayor and Council specifically for such development prior to June 30, 2005.

d. Single Family dwelling units are permitted only if the property is zoned IR, RH, SR, RX-1, RX-2, R-1, R-2, R-3, MH-1 or MH-2 and such zone was in place prior to January 1, 2005. (Rezoning from the previously mentioned zones to zones which provide for allowed uses in ADC-2 is encouraged).

1. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP) are not permitted.

2. Residential development is limited to a density of not more than (1) dwelling unit per acre.

e. Parcels less than the minimum size required in ADC-2, recorded prior to January 1, 2005 may be developed in conformance with all other requirements specified in Section 2.8.5.8 B. 1., 2., and 3.

f. Individual parcels of less than five (5) acres may be separately owned provided each such parcel is part of a development plan and covenants provided in this subsection which encompasses at lease five (5) acres. The City must be a party for notification purposes to the covenants.

g. Non-contiguous parcels located within ADC-2 may be included within a single plat or development plan for the purpose of determining employee limits, floor area ratios and other performance criteria provided there are recorded covenants requiring conformance with the approved plat or development plan in the form approved by the DSD Director. Non-contiguous parcels that do not meet the above criteria may be considered through Special Exception process as specified in Section 2.8.5.10 A.

C. ADC-3

1. Performance Criteria. The following Performance Criteria applies to ADC-3.

a. The maximum FAR is .40 of the project site area for land uses in the Industrial, Wholesaling and Storage land use groups.

b. The maximum FAR for all other non-residential land use groups is .20 of the project site area.

c. The minimum project site area is five (5) acres.

d. The maximum building height is sixty-two (62) feet from design grade elevation.

e. Any meeting space and function areas where people gather in excess of 5,000 square feet in area will be located underground.

2. Prohibited Land Uses. The following land uses are prohibited in ADC-3.

a. Civic Use Group

1. Education Use, Elementary and Secondary Schools

b. Commercial Use Group

1. Day Care

2. Medical Service, Major and Extended Care

c. Industrial Use Group

1. Hazardous Material Manufacturing

d. Residential Use Group

e. Storage Use Group

1. Hazardous Material Storage

f. Wholesaling Use Group

1. Hazardous Material Wholesaling

g. Landfills or facilities providing services that are critical for public health and safety, such as fire protection, police communications, sewage and water treatment or storage are not permitted.

3. Exceptions. The following provisions allow for exceptions to Prohibited Uses in ADC-3 under certain circumstances.

a. Developments that are not in conformance with the performance criteria of 2.8.5.8., Approach Departure Corridors (ADC) for DMAFB are permitted only if a protected development right plan was approved by Mayor and Council specifically for such development prior to June 30, 2005.

b. Single Family dwelling units are permitted only if the property is zoned IR, RH, SR, RX-1, RX-2, R-1, R-2, R-3, MH-1 or MH-2 and such zone was in place prior to January 1, 2005. (Rezoning from the previously mentioned zones to zones which provide for allowed uses in ADCs is encouraged).

1. Residential clustering options as described in Sec. 3.6.1, Residential Cluster Project (RCP) are not permitted.

2. Residential development is limited to a density of not more than (1) dwelling unit per acre.

c. Parcels, less than the minimum size required in ADC-3 and recorded prior to January 1, 2005 may be developed in conformance with all other requirements specified in Section 2.8.5.8 C., 1., 2., and 3.

d. Individual parcels of less than five (5) acres may be separately owned provided each such parcel is part of a development plan and covenants provided in this subsection which encompasses at lease five (5) acres. The City must be a party for notification purposes to the covenants.

e. Non-contiguous parcels located within ADC-3 may be included within a single plat or development plan for the purpose of determining employee limits, floor area ratios and other performance criteria provided there are recorded covenants requiring conformance with the approved plat or development plan in the form approved by the DSD Director. Non-contiguous parcels that do not meet the above criteria may be considered through Special Exception process as specified in Section 2.8.5.10 A.

2.8.5.9 Noise Control District for DMAFB Environs.

A. NCD-A – 65-70 Ldn

1. Performance Criteria. The following Performance Criteria applies to NCD-A

a. Within Noise Control District A (NCD-A), the following uses must be sound attenuated, to reduce the interior noise level by twenty-five (25) decibels, to 40-45 Ldn, per Development Standard 9-05.0.

1. All site-built residential uses.

2. All places of public accommodation.

3. All Administrative and Professional Offices.

A manufactured housing unit will not be considered equivalent to a single-family dwelling within the boundaries of NCD-A, unless located on a property zoned MH-1 or MH-2 or unless it can be demonstrated that the unit provides sound attenuation to reduce the interior noise level by 25 decibels per Development Standard 9-05.0.

2. Prohibited Uses. The following land uses are not permitted within NCD-A.

a. Civic Use Group.

1. Civil Assembly – Outdoor

2. Educational Use – Elementary and Secondary

b. Commercial Use

1. Day Care

2. Medical Services – Major and Extended Care

3. Entertainment – Outdoor

c. Residential Use Group

3. Exceptions. The following provision allow for exceptions to Prohibited Land Uses in NCD-A under certain circumstances.

a. Single Family dwellings are permitted only if the property is zoned IR, RH, SR, RX-1, RX-2, R-1, R-2, R-3, MH-1 and MH-2 and such zone was in place prior to January 1, 2005.

B. NCD-B - 70+ Ldn

1. Performance Criteria. The following Performance Criteria applies to NCD-B

a. Within Noise Control District B (NCD-B), the following uses must be provided with sound attenuation to reduce the interior noise level by twenty-five (25) decibels per Development Standard 9-05.0.

1. All site-built residential uses.

2. All places of public accommodation.

3. All Administrative and Professional Offices.

b. A manufactured housing unit will not be considered equivalent to a single-family dwelling within the boundaries of NCD-B, unless located on a property zoned MH-1 or MH-2 or unless it can be demonstrated that the unit provides sound attenuation to reduce the interior noise level by 25 decibels per Development Standard 9-05.0.

2. Prohibited Uses. The following uses are not permitted within NCD-B.

a. Civic Uses Group

1. Cemetery

2. Civic Assembly – Outdoor

3. Cultural Use

4. Educational Use

5. Religious

b. Commercial Use

1. Day Care

2. Medical Services – Major and Extended Care

3. Entertainment – Indoor and Outdoor

c. Residential Use Group

3. Exceptions. The following provision allows for exceptions to Prohibited Land Uses in NCD-B under certain circumstances.

a. Single Family dwellings are permitted only if the property is zoned IR, RH, SR, RX-1, RX-2, R-1, R-2, R-3, MH-1 or MH-2 and such zone was in place prior to January 1, 2005.

(Ord. No. 10073, §1, 10/25/04)

2.8.5.10 Special Exception Land Uses.

A. All developments that are proposed to exceed the limits of Performance Criteria established in Section 2.8.5.8., A, B. and C, must be approved as Special Exception Land Uses upon application, review, and approval in accordance with Sec. 23A-40, Limited Notice Procedure. These applications will be analyzed for: 1) land use compatibility with base operations, 2) proximity to the end of the runway, 3) location in relationship to major flight tracks, and 4) compliance with the intent of the DM Joint Land Use Study.

In addition to the notice required for Special Exception Land Use applications, the Davis-Monthan Air Force Base will be notified of all such applications within the boundaries of the DMAFB Environs.

(Ord. No. 9781, §1, 10/28/02; Ord. No. 10073, §1, 10/25/04)

2.8.5.11 Airport Hazard Districts for TIA and DMAFB Environs. No structure, use of land, or tree may exceed the height limitations by the Airport Hazard Districts within the Airport Environs Zone (AEZ). Refer to official maps established. Certain uses are prohibited from these districts as noted below and as determined by the Federal Aviation Administration (FAA).

A. The Airport Hazard Districts are identified on the Airport Environs Zone (AEZ) Maps and are established as follows.

1. *Tucson International Airport.* The height limits around Tucson International Airport are based on distances away from established ends of runways. The M.S.L. elevations of the established ends of runways are as follows.

a. NE end of runway 21 is 2,567 feet M.S.L.

b. SW end of runway 3 is 2,561 feet M.S.L.

c. NW end of runway 11L is 2,575 feet M.S.L.

d. SE end of runway 29R is 2,641 feet M.S.L.

e. NW end of runway 11R is 2,583 feet M.S.L.

f. SE end of runway 29L is 2,660 feet M.S.L.

2. *Davis-Monthan Air Force Base.* The height limits around Davis-Monthan Air Force Base are based on distances away from established ends of runways and also on a conical or inclined surface extending outward and upward from the established runway elevation at a ratio of 60:1. The established ends of runway M.S.L. elevations are as follows.

a. NW end of the NW/SE runway is 2,590 M.S.L.

b. SE end of the NW/SE runway is 2,705 M.S.L.

B. Height Measurement. The height of a building, structure, or tree is measured from the M.S.L. elevation at the end of the runway to a point specified in Sec. 3.2.7 or to the highest point of a tree. *(See Illustration 2.8.5.7.11 B.)*

Height of a building, structure or tree is measured from the msl elevation at the end of the runway to a point specified in sec. 3.2.7 or to the highest point of a tree.

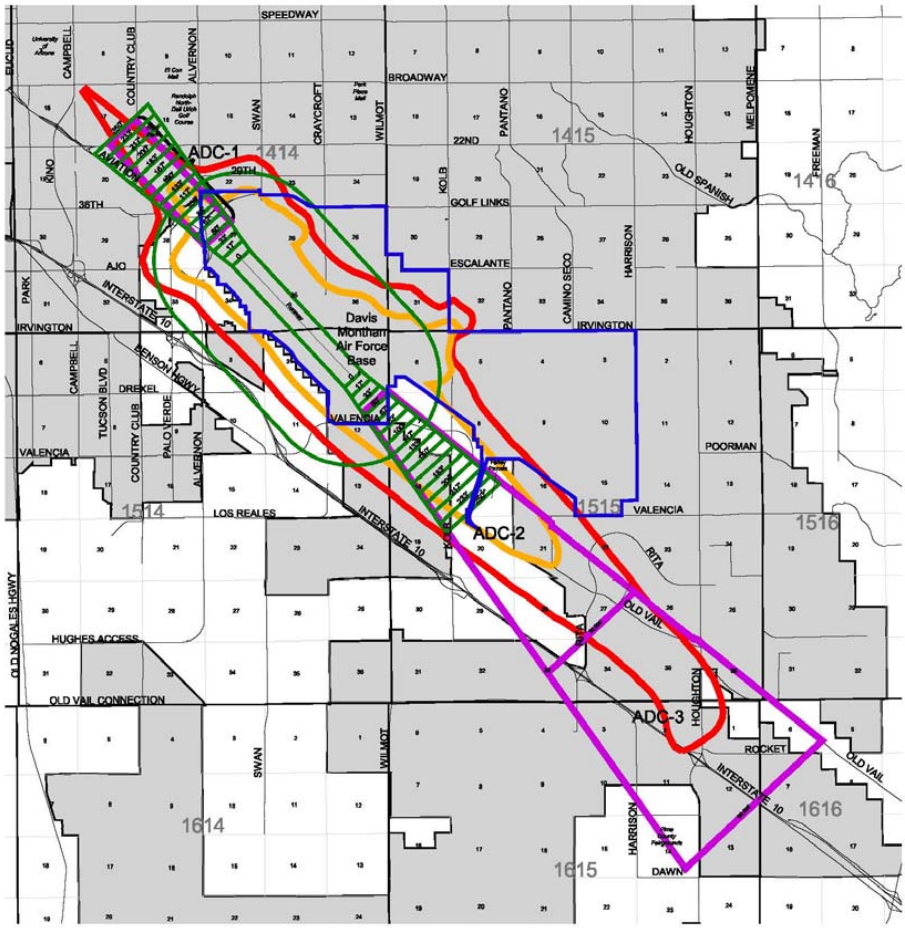
2.8.5.11.B Height Measurement in Airport Hazard Districts

C. Conflicts in Heights. Where two (2) or more height restrictions are placed on a parcel, the more restrictive height limit prevails. Height limit exceptions noted in Sec. 3.2.7.3 do not apply within the Airport Environs Zone (AEZ).

D. Prohibited Uses. Airport hazards as defined in Sec. 6.2.1 are prohibited within the boundaries of the Airport Hazard Districts.

E. Variances. Variances from the provisions of Sec. 2.8.5.11are allowed as set forth in the provisions established by Arizona Revised Statutes (ARS), Title 28. (Ord. No. 9781, §1, 10/28/02)

(Ord. No. 10073, §1, 10/25/04)



Davis Monthan Airport
Environs Zone

Legend
- Airport Hazard District (Height Zones)
- ADC's
- 65 Noise Contour (NCD-A)
- 70 Noise Contour (NCD-B)
- Davis Monthan Boundary
- City of Tucson

N

Map 2.8.5.2-I AEZ Base Map

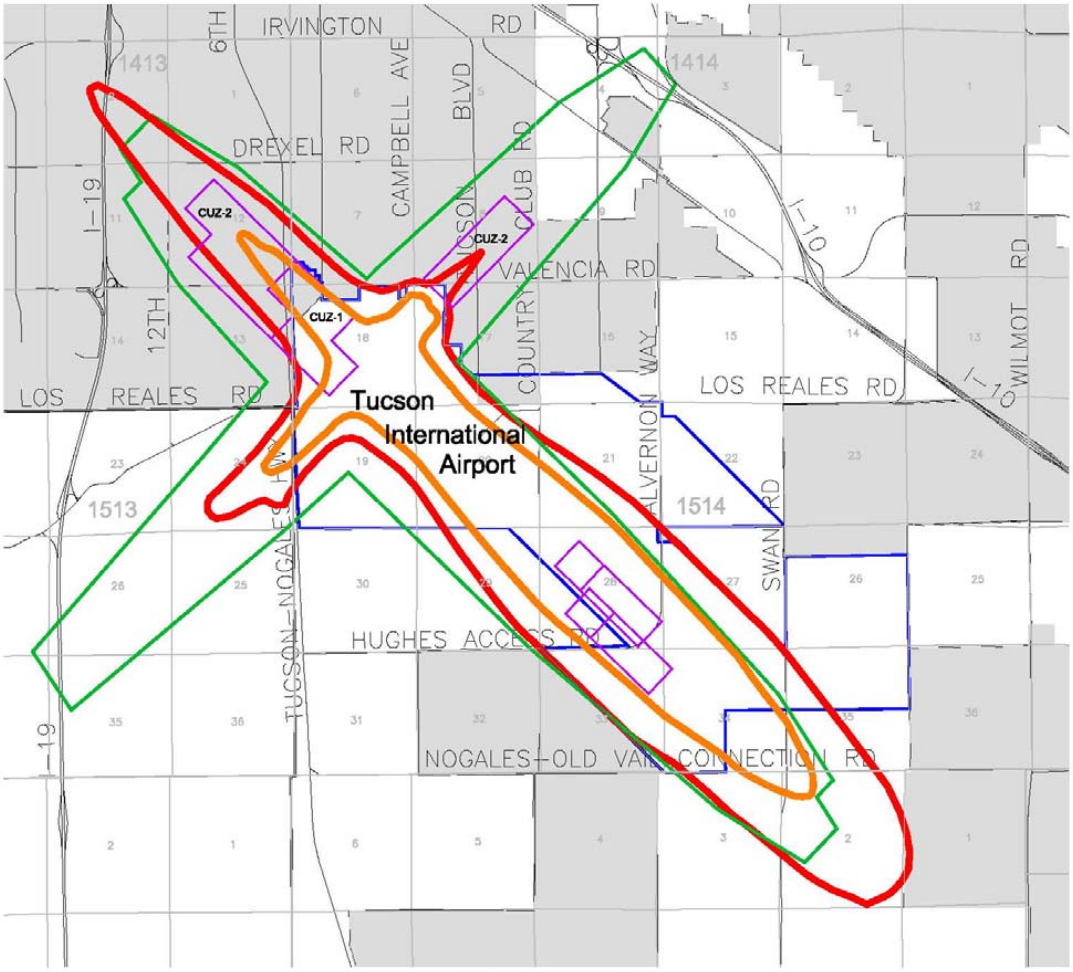
MAPS ORIGINALLY ADOPTED BY THE MAYOR AND COUNCIL, APRIL 16, 1990, BY ORDINANCE NO. 7399.

AMENDED JANUARY 26, 1991, BY ORDINANCE NO. 7557
AMENDED APRIL 27, 1992, BY ORDINANCE NO. 7805
AMENDED OCTOBER 28, 2002, BY ORDINANCE NO. 9781

AMENDED OCTOBER 25, 2004, BY ORDINANCE NO. 10073

Sec. 2.8.5.11

CITY OF TUCSON *LAND USE CODE*
ARTICLE II. ZONES
DIVISION 8. OVERLAY ZONES
AIRPORT ENVIRONS ZONE (AEZ)



TIA Airport Environs Zone

Legend
- TIA Boundary
- Airport Hazard District (AHD)
- 65 Noise Contour (NCD-65)
- 70 Noise Contour (NCD-70)
- Compatibility Use Zones (CUZ)
- City of Tucson

N

Map 2.8.5.2-II TIA Base Map

(Ord. No. 10073, §1, 10/25/04)

The full Land Use Code can be accessed at the following web address:
http://www.tucsonaz.gov/planning/codes/luc/complete_luc.pdf

Model Transfer of Development Rights (TDR) Ordinance

The model ordinance below establishes a general framework for severing development rights involving net density and intensity (through FARs) from a sending parcel and transferring them to a receiving parcel. Section 101 of the ordinance authorizes a transfer of development rights (TDR) for a variety of purposes, including environmental protection, open space preservation, and historic preservation, which are the most typical.

Under Section 104, the local government has two options in setting up the TDR program. The first involves the use of overlay districts, which would zone specific areas as sending and receiving parcels. The second involves identifying which zoning districts would be sending and receiving districts in the text of the ordinance itself, rather than through a separate amendment to the zoning ordinance. In both cases, the designations must be consistent with the comprehensive plan. Section 105 of the ordinance contains a table that shows, by use district, the permitted maximum increases in density and FAR that can be brought about through TDR.

Section 106 outlines a process by which the zoning administrator would determine the specific number of development rights for a sending parcel in terms of dwelling units per net acre or square feet of nonresidential floor area (for commercial and industrial parcels) and issue a certificate to the transferor. Sections 107 and 108 describe the instruments by which the development rights are legally severed from the sending parcel through instruments of transfer and attached to the receiving parcel. Section 107 describes how the applicant for a subdivision or other type of development permit would formally seek the use of development rights in a development project (e.g., a subdivision). Note that the transfer would not apply to rezonings, but only to specific projects where a development permit is going to be issued in order that development may commence.

Commentary to the ordinance describes, in Section 109, a development rights bank, a mechanism by which the local government purchases development rights before they are applied to receiving parcels, retains them permanently in order to prevent development, or sells them as appropriate in order to make a profit or direct development of a certain character to a specific area. Whether this is an appropriate role for local government or should be left to nonprofit organizations (e.g., land trusts) is matter for local discussion and debate. No ordinance language is provided, although the description in the commentary should be sufficient for local government officials to draft language establishing the bank.

Primary Smart Growth Principle Addressed: Preserve open space and farmland
Secondary Smart Growth Principle Addressed: Direct development towards existing communities

101. Purposes

The purposes of this ordinance are to:

(a) preserve open space, scenic views, critical and sensitive areas, and natural hazard areas;

(b) conserve agriculture and forestry uses of land;

(c) protect lands and structures of aesthetic, architectural, and historic significance;

(d) retain open areas in which healthful outdoor recreation can occur;

(e) implement the comprehensive plan;

(f) ensure that the owners of preserved, conserved, or protected land may make reasonable use of their property rights by transferring their right to develop to eligible zones;

(g) provide a mechanism whereby development rights may be reliably transferred; and

(h) ensure that development rights are transferred to properties in areas or districts that have adequate community facilities, including transportation, to accommodate additional development.

Comment: *The local government may tailor this list of purposes to its particular planning goals and objectives or leave it with a wide range of purposes and implement the ordinance to achieve specific goals and objectives.*

102. Authority

This ordinance is enacted pursuant to the authority granted by [*cite to state statute or local government charter or similar law*].

Comment: *It is important to determine whether the local government has legal authority to enact a TDR program because not all local governments in all states have identical powers. In addition, enabling legislation for TDR may require that the transfers be done in a certain manner other than is described in this model.*

103. Definitions

As used in this ordinance, the following words and terms shall have the meanings specified herein:

"**Development Rights**" mean the rights of the owner of a parcel of land, under land development regulations, to configure that parcel and the structures thereon to a particular density for residential uses or floor area ratio for nonresidential uses. Development rights exclude the rights to the area of or height of a sign.

Comment: *Unless sign area and height are excluded from the definition of "development rights," it is possible to transfer them to another parcel, resulting in larger or taller signs. In*

some cases, development rights might extend to impervious surface coverage, and a transfer of such rights would allow more extensive lot coverage.

"Density" or **"Net Density"** means the result of multiplying the net area in acres times 43,560 square feet per acre and then dividing the product by the required minimum number of square feet per dwelling unit required by the zoning ordinance for a specific use district.

"Density" or "Net Density" is expressed as dwelling units per acre or per net acre

"Floor Area" means the gross horizontal area of a floor of a building or structure measured from the exterior walls or from the centerline of party walls. "Floor Area" includes the floor area of accessory buildings and structures.

"Floor Area Ratio" means the maximum amount of floor area on a lot or parcel expressed as a proportion of the net area of the lot or parcel.

"Net Area" means the total area of a site for residential or nonresidential development, excluding street rights-of-way and other publicly dedicated improvements, such as parks, open space, and stormwater detention and retention facilities, and easements, covenants, or deed restrictions, that prohibit the construction of building on any part of the site. "Net area" is expressed in either acres or square feet.

[**"Overlay District"** means a district superimposed over one or more zoning districts or parts of districts that imposes additional requirements to those applicable for the underlying zone.]

Comment: *This definition is only necessary if the TDR designation is accomplished via an overlay district.*

"**Receiving District**" means one or more districts in which the development rights of parcels in the sending district may be used.

"**Receiving Parcel**" means a parcel of land in the receiving district that is the subject of a transfer of development rights, where the owner of the parcel is receiving development rights, directly or by intermediate transfers, from a sending parcel, and on which increased density and/or intensity is allowed by reason of the transfer of development rights;

"**Sending District**" means one or more districts in which the development rights of parcels in the district may be designated for use in one or more receiving districts;

"**Sending Parcel**" means a parcel of land in the sending district that is the subject of a transfer of development rights, where the owner of the parcel is conveying development rights of the parcel, and on which those rights so conveyed are extinguished and may not be used by reason of the transfer of development rights; and

"**Transfer of Development Rights**" means the procedure prescribed by this ordinance whereby the owner of a parcel in the sending district may convey development rights to the

owner of a parcel in the receiving district or other person or entity, whereby the development rights so conveyed are extinguished on the sending parcel and may be exercised on the receiving parcel in addition to the development rights already existing regarding that parcel or may be held by the receiving person or entity.

Comment: *This definition recognizes that development rights may be sold to an entity (e.g., the local government or a nonprofit organization) that will hold them indefinitely.*

"Transferee" means the person or legal entity, including a person or legal entity that owns property in a receiving district, who purchases the development rights.

"Transferor" means the landowner of a parcel in a sending district.

104. Establishment of Sending and Receiving Districts.

[*Alternative 1: Amend the zoning map using overlays*]

(1) The [local legislative body] may establish sending and receiving districts as overlays to the zoning district map by ordinance in the manner of zoning district amendments. The [planning director] shall cause the official zoning district map to be amended by overlay districts to the affected properties. The designation "TDR-S" shall be the title of the overlay for a sending district, and the designation "TDR-R" shall be the title of the overlay for a receiving district.

Comment: *When a zoning map is amended, one practice is to list the ordinance number and the enactment date in a box on the map, along with the signatures of the planning director and the clerk of the local legislative body (e.g., the clerk of council). This allows for an easy reference if there should be any later questions about whether the map amendment accurately reflects the legal description in the ordinance.*

(2) Sending and receiving districts established pursuant to Paragraph (1) shall be consistent with the local comprehensive plan.

[*Alternative 2—Specify zoning districts that can serve as sending and receiving districts*]

(1) The following zoning districts shall be sending districts for the purposes of the transfer of development rights program:

[*list names of districts*]

(2) The following zoning districts shall be receiving districts for the purposes of the transfer of development rights program:

[*list names of districts*]

Comment: *Since the sending and receiving districts are being established as part of the ordinance rather than through separate overlays, the local government would need to make a declaration of consistency with the comprehensive plan for such districts as part of the enactment of these two paragraphs.*

105. Right to Transfer Development Rights

(1) Each transferor shall have the right to sever all or a portion of the rights to develop from the parcel in a sending district and to sell, trade, or barter all or a portion of those rights to a transferee consistent with the purposes of Section 101 above .

(2) The transferee may retire the rights, resell them, or apply them to property in a receiving district in order to obtain approval for development at a density or intensity of use greater than would otherwise be allowed on the land, up to the maximum density or intensity indicated in Table 1.

Table 1
Maximum Density and Intensity Allowed in Zoning Districts through Transfer of Development Rights (TDR)

Note: District names, densities, and intensities are hypothetical examples only.

Zoning District Title	Maximum Density in Dwelling Units Per Net Acre	Maximum Intensity in Floor Area Ratio	Maximum Density with TDR	Maximum Intensity in Floor Area Ratio with TDR
R-1	4		8	
R-2	8		16	
R-3	16		32	
C-1		0.2		0.4
C-2		1.0		2.0
C-3		2.0		4.0
C-4		4.0		8.0
I-1		0.75		1.5

(3) Any transfer of development rights pursuant to this ordinance authorizes only an increase in maximum density or maximum floor area ratio and shall not alter or waive the development standards of the receiving district, including standards for floodplains, wetlands, and [*other environmentally sensitive areas*]. Nor shall it allow a use otherwise prohibited in a receiving district.

Comment: *In some cases, it may be desirable to allow the transfer of the right to additional impervious surface coverage on a site. For example, if a certain zoning district limits the amount of surface parking by a maximum impervious surface parking ratio and additional parking is needed, Table 1 should be amended to authorize this.*

106. Determination of Development Rights; Issuance of Certificate

(1) The [zoning administrator] shall be responsible for:

(a) determining, upon application by a transferor, the development rights that may be transferred from a property in a sending district to a property in a receiving district and issuing a transfer of development rights certificate upon application by the transferor.

(b) maintaining permanent records of all certificates issued, deed restrictions and covenants recorded, and development rights retired or otherwise extinguished, and transferred to specific properties; and

(c) making available forms on which to apply for a transfer of development rights certificate.

(2) An application for a transfer of development rights certificate shall contain:

(a) a certificate of title for the sending parcel prepared by an attorney licensed to practice law in the state of [*name of state*];

(b) [five] copies of a plat of the proposed sending parcel and a legal description of the sending parcel prepared by [licensed *or* registered] land surveyor;

(c) a statement of the type and number of development rights in terms of density or FAR being transferred from the sending parcel, and calculations showing their determination.

(d) applicable fees; and

(e) such additional information required by the [zoning administrator] as necessary to determine the number of development rights that qualify for transfer

Comment: *A local government should consult with its law director or other legal counsel to determine the requirements for an application for a TDR. Consequently, this paragraph as well as other Sections of the ordinance may need to be revised to reflect state-specific issues concerning real property law and local conditions.*

(3) A transfer of development rights certificate shall identify:

(a) the transferor;

(b) the transferee, if known;

(c) a legal description of the sending parcel on which the calculation of development rights is based;

(d) a statement of the number of development rights in either dwelling units per net acre or square feet of nonresidential floor area eligible for transfer;

(e) if only a portion of the total development rights are being transferred from the sending property, a statement of the number of remaining development rights in either dwelling units per net acre or square feet of nonresidential floor space remaining on the sending property;

(f) the date of issuance;

(g) the signature of the [zoning administrator]; and

(h) a serial number assigned by the [zoning administrator].

(4) No transfer of development rights under this ordinance shall be recognized by the [local government] as valid unless the instrument of original transfer contains the [zoning administrator's] certification.

107. Instruments of Transfer

(1) An instrument of transfer shall conform to the requirements of this Section. An instrument of transfer, other than an instrument of original transfer, need not contain a legal description or plat of the sending parcel.

(2) Any instrument of transfer shall contain:

(a) the names of the transferor and the transferee;

(b) a certificate of title for the rights to be transferred prepared by an attorney licensed to practice law in the state of [name of state];

(c) a covenant the transferor grants and assigns to the transferee and the transferee's heirs, assigns, and successors, and assigns a specific number of development rights from the sending parcel to the receiving parcel;

(d) a covenant by which the transferor acknowledges that he has no further use or right of use with respect to the development rights being transferred; and

(e) [*any other relevant information or covenants*].

(3) An instrument of original transfer is required when a development right is initially separated from a sending parcel. It shall contain the information set forth in paragraph (2) above and the following information:

(a) a legal description and plat of the sending parcel prepared by a licensed surveyor named in the instrument;

(b) the transfer of development rights certificate described in Section 106 (4) above.

(c) a covenant indicating the number of development rights remaining on the sending parcel and stating the sending parcel may not be subdivided or developed to a greater density or intensity than permitted by the remaining development rights;

(d) a covenant that all provisions of the instrument of original transfer shall run with and bind the sending parcel and may be enforced by the [*local government*] and [*list other parties, such as nonprofit conservation* organizations]; and

(d) [*indicate topics of other covenants, as appropriate*].

(4) If the instrument is not an instrument of original transfer, it shall include information set forth in paragraph (2) above and the following information :

(a) a statement that the transfer is an intermediate transfer of rights derived from a sending parcel described in an instrument of original transfer identified by its date, names of the original transferor and transferee, and the book and the page where it is recorded in the [land records of the county].

(b) copies and a listing of all previous intermediate instruments of transfer identified by its date, names of the original transferor and transferee, and the book and the page where it is recorded in the [land records of the county].

(5) The local government's [law director] shall review and approve as to the form and legal sufficiency of the following instruments in order to affect a transfer of development rights to a receiving parcel:

(a) An instrument of original transfer

(b) An instrument of transfer to the owner of the receiving parcel

(c) Instrument(s) of transfer between any intervening transferees

Upon such approval, the [law director] shall notify the transferor or his or her agent, who shall record the instruments with the [name of county official responsible for deeds and land records] and shall provide a copy to the [*county assessor*]. Such instruments shall be recorded prior to release of development permits, including building permits, for the receiving parcel.

Comment: *The procedures in paragraph (5) may need to be modified based on the structure of local government in a particular state and the responsibilities of governmental officials for land records and assessments. The important point is that the TDRs must be permanently recorded, and the property of the owner of the sending parcel, the value of which is reduced because of the transfer, should be assessed only on the basis of its remaining value.*

108. Application of Development Rights to a Receiving Parcel

(1) A person who wants to use development rights on a property in a receiving district up to the maximums specified in Table 1 in Section 105 above shall submit an application for the use of such rights on a receiving parcel. The application shall be part of an application for a development permit. In addition to any other information required for the development permit, the application shall be accompanied by:

(a) an affidavit of intent to transfer development rights to the property; and

(b) either of the following:

1. a certified copy of a recorded instrument of the original transfer of the development rights proposed to be used and any intermediate instruments of transfer through which the applicant became a transferee of those rights; or

2. a signed written agreement between the applicant and a proposed original transferor, which contains information required by Section 106(2) above and in which the proposed transferor agrees to execute an instrument of such rights on the proposed receiving parcel when the use of those rights, as determined by the issuance of a development permit, is finally approved.

(2) The [local government] may grant preliminary subdivision approval of a proposed development incorporating additional development rights upon proof of ownership of development rights and covenants on the sending parcel being presented to the [local government] as a condition precedent to final subdivision approval.

(3) No final plat of subdivision, including minor subdivisions, shall be approved and no development permits shall be issued for development involving the use of development rights unless the applicant has demonstrated that:

(a) the applicant will be the bona fide owner of all transferred development rights that will be used for the construction of additional dwellings, the creation of additional lots, or the creation of additional nonresidential floor area;

(b) a deed of transfer for each transferred development right has been recorded in the chain of title of the sending parcel and such instrument restricts the use of the parcel in accordance with this ordinance; and

(c) the development rights proposed for the subdivision or development have not been previously used. The applicant shall submit proof in the form of a current title search prepared by an attorney licensed to practice law in the state of [name of state] .

109. Development Rights Bank [*optional*]

Comment: *This section should establish a development rights bank, otherwise referred to as a "TDR Bank." The local government or any other existing or designated entity may operate the bank. The TDR Bank should:*

- *have the power to purchase and sell or convey development rights, subject to the local legislative body's approval;*
- *have the power to recommend to the local legislative body property where the local government should acquire development rights by condemnation;*
- *have the power, to hold indefinitely any development rights it possesses for conservation or other purposes;*
- *receive donations of development rights from any person or entity; and*
- *receive funding from the local government, the proceeds from the sale of development rights, or grants or donations from any source.*

No model ordinance language for the creation of the TDR bank is provided here because the specifics of such must be determined by the operating entity.

References

Fruita, Colorado, City of. Land Use Code, Chapter 17.09, Transfer of Development Rights/Credits [accessed December 14, 2004]: www.fruita.org/pdf/LUC_4_2004/Chapter17_comp.pdf

Howard County, Maryland. Zoning Ordinance, Section 106, Density Exchange Option Overlay District [accessed December 14, 2004]: http://www.co.ho.md.us/DPZ/DPZDocs/ClusterDEO070104.pdf

Redmond, Washington, City of. Community Development Guide, Section 20D.200, Transfer of Development Rights/Purchase of Development Rights Program [accessed December 14, 2004]: http://search.mrsc.org/nxt/gateway.dll/rdcdg?f=templates&fn=rdcdgpage.htm$vid=municodes:RedmondCDG

Sarasota County, Florida. Zoning Code, Section 4.11, TDR Overlay District Intent Statements and Section 6.12, TDR Overlay District Development Standards, website [accessed December 14, 2004]: http://www.scgov.net/Frame/ScgWebPresence.aspx?AAA498=AFC1BAAFC0A89CB7B9BBBAA7C0A4B273C8B5B3B5C86FBBAAC981B0ABB8A2C2B1C980ADB9C2B9

St. Mary's County, Maryland. Zoning Ordinance, Chapter 26, Transferable Development Rights [accessed December 14, 2004 http://www.co.saint-marys.md.us/planzone/docs/TDRammendment.pdf

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Appendix G

Sample Noise/Property Agreement

The following is a generic document which could be used to construct a Noise Agreement with property owners within established noise contours generated by NAS-JRB. Not all the sections included in this sample will be appropriate for the final version, and additional sections may have to be added to best serve the Base. In particular, Item #3 is currently void because of a lack of noise attenuation requirements imposed by the Parish. In order to include such a provision, these requirements would need to be enacted by the Parish.

Undersigned, the Undersigned covenants and agree as follows:

1. That the Undersigned acknowledges that the Undersigned is aware that the property is located in a high noise area due to its proximity to Naval Air Station, Joint Reserve Base New Orleans and the operations of the USA at and around Naval Air Station, Joint Reserve Base New Orleans. The Undersigned further acknowledges that such noise will, in all likelihood, continue indefinitely into the future and might, in fact, increase significantly.

2. That the undersigned for the Undersigned and the heirs, successors, assigns and personal representatives of the Undersigned, has granted and conveyed and by these presents does grant and convey unto the USA a perpetual easement to cause noise in any level of intensity caused by operations at Naval Air Station, Joint Reserve Base New Orleans for the use of aircraft and weapons at Naval Air Station, Joint Reserve Base New Orleans, in the vicinity of Naval Air Station, Joint Reserve Base New Orleans, or in the vicinity of the property to be heard upon the property, to have and to hold the said easement unto the USA, forever.

3. The Undersigned is aware of recent enacted noise attenuation requirements imposed by one or more ordinances recently enacted by the parish, which requirements effect construction on the property after the date of enactment, and acknowledge awareness of the fact that it is necessary and beneficial to the undersigned to comply therewith, agree to comply therewith, and agree to furnish any future purchaser, tenant, or occupant of the property, a copy of this instrument and to make such persons aware of the noise to which the property is now and might in the future be subject, the noise attenuation requirements imposed on the property, and that the provisions of this instrument are binding on such persons.

4. That no deed or plat of the property or any portion thereof shall be drawn, made, used or recorded unless there is noted on such deed or plat that the portion of the property described or represented therein in the latest report issued by Naval Air Station, Joint Reserve Base New Orleans or unless such deed or plat contained a statement accurately reflecting that no portion of the property described or shown therein is within the 65 dB noise contour.

5. That the Undersigned, for the Undersigned and the heirs, successors, assigns or personal representatives of the Undersigned, hereby releases the USA and all of its officials, officers, agents, servants, employees, contractors, invitees, and permittees from any and all claims, damages, or causes of action for personal injury, property damage, or of any other nature whatsoever, whether known or unknown, direct or indirect, foreseen or unforeseen, that the Undersigned or the heirs, assigns, successors, personal representatives, tenants, invitees, or permittees of the Undersigned might have in the past or might in the future sustain due to noise from Naval Air Station, Joint Reserve Base New Orleans or the aircraft and weapons operated there from or in the vicinity thereof.

6. That the restrictions herein imposed on the Property, releases herein granted, and the agreements herein made shall be binding upon the Undersigned, the heirs, assigns, successors, personal representatives, tenants, invitees, and permittees of the Undersigned and shall run with the title to the property.

7. That these covenants may be enforced by the USA, the Parish, the Undersigned, or any person owning any lot in Plaquemines Parish and/or Jefferson Parish as shown on the Plat.

8. That a violation of the covenants imposed herein shall not result in a forfeiture or reversion of title.

9. The restrictions imposed by this instrument may be canceled by the USA. However the restrictions imposed on the Property by this instrument shall remain in full force and effect until canceled by the USA or until the USA ceases to use Naval Air Station, Joint Reserve Base New Orleans as a military installation for a continuous period of more than one (1) year.

In witness whereof, the Undersigned has signed, sealed, and delivered the within Easement, Restrictive Covenants, Release, and Agreement as of _____, 20__.

Signed, Sealed and Delivered in the Presence of:

_____ _____ (L.S.)
(Witness)

_____
(Witness)

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Appendix H

Community Compatibility Brief

The following is a brief which was generated in August 2006 to serve as an outreach and educational tool for Base personnel when interacting with the public and public officials. It provides an overview of the existing encroachment situation as assessed in the full EAP and details preferred mitigation scenarios. Unlike the EAP itself, which is not designed for release and/or discussion with the community, this Community Compatibility Brief should be utilized whenever and wherever it could serve to raise awareness of encroachment conflicts.

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Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Welcome

Community Compatibility Brief

Naval Air Station, Joint Reserve Base New Orleans

Purpose

"Open a Dialogue on Issues Affecting NAS JRB and its Surrounding Community"

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Agenda

1. Existing Situation
2. Definition of Challenges
3. Definition of AICUZ/Discussion of Land Uses
4. Measures to Address Challenges
   - Overlay Zones
   - Zoning Scenarios
5. Impacts of Unaddressed Incompatibilities

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Existing Situation

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

NAS JRB Mission

"To provide flight, operational, logistical, and fiscal support for joint services tenant commands and transient aircraft and train Naval Air Reserve personnel for mobilization."

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

NAS JRB Contributions to Community

1. 5,930 Active Duty, Full-Time Support, Reservist and Civilian Jobs. (Jan. 2006)
   - Total Economic Contribution of: $375,866,008
2. Additional personnel indirectly employed via support industries and services
3. Critical infrastructure in disaster preparedness/response

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Definition of Challenges

Community Compatibility Brief

Naval Air Station, Joint Reserve Base New Orleans

“Introduction of incompatible land uses/activities can result in the degradation of training and testing capability, or elimination of specific operations or mission. This degradation may impact the overall readiness of the Navy.”

- OPNAV Instruction 11010

Definition of AICUZ/ Discussion of Land Uses

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Navy's AICUZ Program

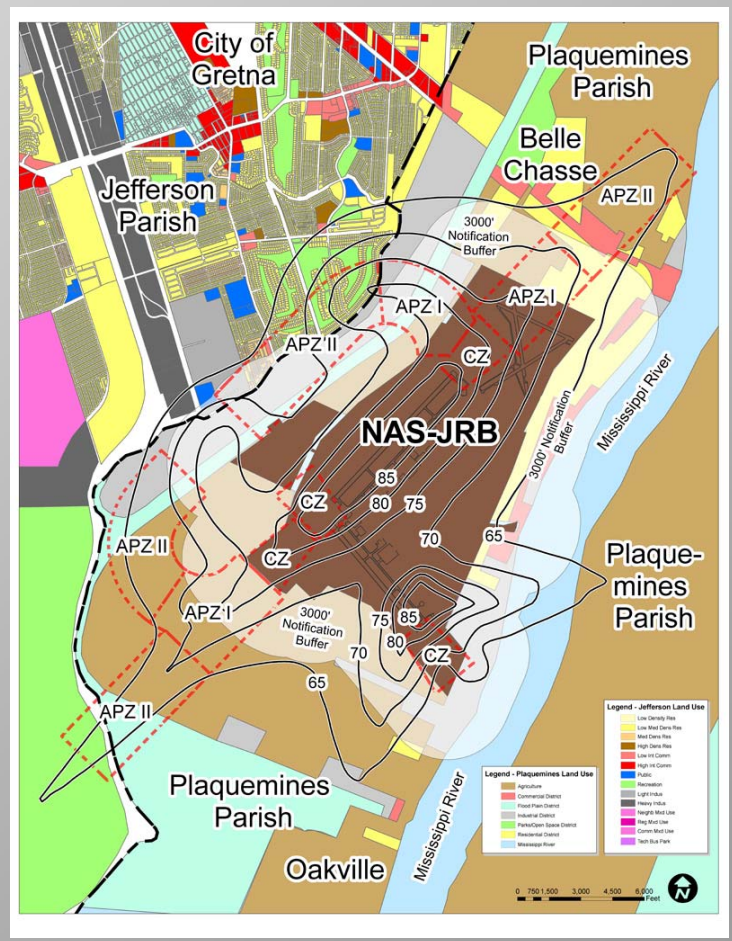
Encourages land use compatibility between the military air facility and local communities; maintains operational integrity. Objectives include:

- Protect health, safety and welfare of civilian, military communities.
- Reduce noise from aircraft operations; meet operation training and flight safety requirements on and near the Air Station.
- Encourage communication between the Navy, community.
- Inform general public about the AICUZ
- Seek cooperation to minimize noise impacts, accident potential impacts near NAS JRB, New Orleans.

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Navy's AICUZ Program



Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Existing Land Uses

Land Use	Area (Acres)
Agriculture	3,151
Industrial District	1,347
Residential District	971
Flood Plain District	680
Parks/Open Space District	224
Commercial District	150
Open Space	34

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Existing Land Uses

Agriculture - Compatible

Industrial – Conditionally Compatible

Residential – Mostly In-compatible with APZs, Conditionally compatible with Noise Contours

Measures to Address Challenges

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Zoning/Military Overlay Zone

- Zoning is one the best way to address land use conflicts, one example is the Military Overlay Zone.
  - Overlays traditional zoning, allows consideration of special conditions.
  - Do not change the underlying zones; they amend zoning standards.
  - Becomes a special development district.
- Local governments should not permit some uses near runway APZs or high noise zones. Some uses include:
  - Residential
  - Places of Assembly (i.e. sporting venues, theaters, etc.)
  - Hotels
  - Schools
  - Hospitals

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Zoning/Military Overlay Zone

- Cities with existing Military Overlay Zones:
  - San Antonio, Texas (Lackland AFB)
  - Tucson, Arizona (Davis-Monthan AFB)
  - Fairfield, California (Travis AFB)
  - Dover, Delaware (Dover AFB)
- Cities with Civilian Airport Overlays:
  - Salem, Oregon (McNary Field)
  - Yakima, Washington (Yakima Air Terminal/McAllister Field

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

The following gives benchmarks for three potential scenarios: a Recommended Scenario, Acceptable Scenario, and Undesirable Scenario.

Useful Definitions in the Discussion of Scenarios:

- DNL: Day-Night Average Sound Level: a measure of the accumulation of all noise produced by individual events throughout a 24-hour period, accounting for changing sound sensitivity during daytime and nighttime operations

- Decibel (dB): A unit used to express the intensity of an individual sound event from a specific listening location

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

Recommended Scenario:

Best course of action to preserve long-term viability of the base

- Lands that are undeveloped remain undeveloped.
- Land that are currently used for agriculture/forestry continue to be used for this purpose.
- APZs:
  - No further residential development of any kind in APZ I or APZ II.
  - Limited Industrial, trade and services development in APZ I.
  - Additional oversight for general development in APZ II.
- Noise Zones:
  - No further development of any kind in noise zones of 65 DNL or higher.

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

- Noise Zones (continued):
  - No further development of any kind in noise zones of 65 DNL or higher
  - Appropriately built residential in noise zones of 64 DNL and lower.
  - Appropriately built general development in noise zones of 79 DNL and lower.
  - Real Estate Disclosure to buyers of property located within noise zones of 55 DNL and higher.

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

Acceptable Scenario:

Could limit the future usability of the base.

- APZs:
  - No further residential development of any kind in APZ I.
  - Residential development within APZ II to be of a density no less than 1 DU/Acre.
  - Additional oversight for general development in APZ II.
- Noise Zones:
  - No further residential development in noise zones of 75 DNL and higher.
  - Appropriately built residential development in noise zones of 74 DNL and lower
  - Appropriately built general development for noise zones of 84 DNL and lower.
  - Real Estate Disclosure for buyers of property located within noise zones of 55 DNL and higher.

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

Undesirable Scenario:
Could greatly impact both current operations and future viability.

- APZs:
  - Further residential development in APZ I.
  - Residential development of density greater than 1 DU/Acre in APZ II.
  - Standard oversight for general development in APZ I and APZ II.
- Noise Zones:
  - Further residential development, built to common construction standards in noise zones of 55 DNL and higher.
  - Further general development, built to common construction standards, in noise zones of 65 DNL and higher.

Community Compatibility Brief

Naval Air Station, Joint Reserve Base
New Orleans

Zoning Scenarios

Helpful information regarding building code standards:

- Three major paths for noise transmission
  - Gaps and Cracks
  - Windows and Doors
  - Walls and Roofs
- Primary Approaches for Improving Sound Insulation:
  - Elimination of openings and flanking paths
  - Using higher Sound Transmission Class (STC) windows and doors
  - Adding mass to walls or ceilings
  - Isolation of panel elements through increasing their separation from other structural elements
  - Adding absorptive materials between studs and joists

Community Compatibility Brief
Naval Air Station, Joint Reserve Base
New Orleans

Impacts of Unaddressed Incompatibilities

Community Compatibility Brief

Naval Air Station, Joint Reserve Base New Orleans

Impacts to military training resulting from unaddressed incompatibilities include:

- Avoidance Areas
- Reduced Usage Days
- Limitations on Use of New Technologies
- Restricted Flight Altitudes and/or Speeds
- Inhibited New Tactics Development
- Restricted Night and All Weather Training

Appendix I

NAS JRB, New Orleans Easements

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TRACT I
DECLARATION OF TAKING
CIVIL NO. 9025
MAY 18, 1959
4.72 ACRES

DETAIL "E"

SERVITUDE EASEMENT
HERO LAND CO.
BND (R)-1203 0.5 AC.

TRACT IV
SEE DETAIL "E"

TRACT III
DECLARATION OF TAKING NO.7

TRACT II
DECLARATION OF TAKING NO.1 THRU 6
CIVIL NO. 4654
DEC. 30, 1954 THRU APRIL 10, 1957
3234.49 ACRES

TRACT II-A
HOUSING
CIVIL NO. 4654
4.50 ACRES

TRACT III
DECLARATION OF TAKING NO.7
CIVIL NO. 4654
JULY 1, 1958
1648.32 ACRES
(EASEMENT)

HT-AGREEMENT
95-RP-00124
DEPT OF THE AIR FORCE (ANG)
AUG. 21,1995
66.90 ACRES

OUT-AGREEMENT
NF(R)-35674
U.S. CUSTOM SERVICE
APRIL 11, 1977
4.772 ACRES

OUT-AGREEMENT
NOy(R)-69972
U.S. COAST GUARD
FEB. 21, 1966
23.07 ACRES

OUT-AGREEMENT
NF(R)-52102
F.A.A. VORTAC INSTALL.
EXP. 30 1995
0.92 ACRES

OUT-EASEMENT
NOy(R)-65230
UNITED GAS PIPE LINE CO.
AUG. 1, 1957
0.20 ACRES

OUT-EASEMENT
NF(R)-6466
STATE HWY DEPT.
OCT. 27, 1969
0.07 ACRES

LICENSE
98-RP-00080
TERRANCE O'CONNOR
AUG. 1, 1998
0.26 ACRES

GSA SOLD 0.263 ACRES TO MR. O' CONNOR FOR $47,500 ON JUNE 27,2000. RECORDED WITH PLAQUEMINES PARISH ON JULY 7,2000. SECTION 15,T 14S, R 24 E. BELLE CHASSE PLAQUEMINES PARISH, LA.

OUT-LEASE
NF(R)-11401
STATE HWY DEPT.
FEB. 16, 1971 (50 YRS)
0.03 ACRES

THIS PORTION OF THE DRAINAGE CANAL WAS NOT INCLUDED IN CIVIL NO. 4654 (SEE CORRECTION NO.13)

JUDGEMENT ON STIPULATION REGARDING MINERALS DATED DEC. 30, 1954 RECORDED COB 179/555

MISS. RIVER FUEL CO. GAS WELL FACILITIES

NO.	COURSE	DIST.
1	S83°05'30"E	690.83
2	N76°55'14"E	568.75
3	N53°04'16"E	56.04
4	N53°04'16"E	56.04
5	N55°10'13"E	163.41
6	CURVE RAD. (L)	437.96
7	S27°29'06"W	117.20
8	S27°29'06"W	117.20
9	N83°05'30"W	1246.12

POINT OF BEGINNING
FOR CIVIL 4654, 3238.99 AC.
X=2,417,652.02
Y=415,015.34
LAT. 29°48'04.807"
LONG. 90°00'59.388"

LA. GEODETIC MARKER NO.1638
LAT. 29°47'57.716"
LONG. 90°01'01.817"

MHWL MISSISSIPPI RIVER 4150 ±

DETAIL "A"

DETAIL "B"

DETAIL "C"

DETAIL "D"

NOT TO SCALE

ALL LAND SHOWN IS LOCATED IN PARISH PLAQUEMINES

00206

SUMMARY OF REAL ESTATE ACREAGE

ESTATE	ACQUISITIONS PURCHASE	CONDEMN.	EXCHANGE	TRANSFER			TOTAL	ENCUMBRANCES AND OUTGRANTS	
FEE	>107.29	3243.71					3351 3243.71	LEASE	408.00
EASEMENT	0.50	1648.32					1648.82	EASEMENT	4.65
LEASE								OTHER	79.63
OTHER									
TOTAL	0.50	4892.03					4892.53	TOTAL	492.28

SUMMARY OF JURISDICTION 4999.82

PROPERTY RECORD CARD NUMBER	TRACT	LAND ACQUIRED BY	AREA	DATE ACCEPTED BY USA	STATE LANDS COMMISSIONS ACTION	APPLICABLE STATE STATUTE	DEGREE
100101	I	CA-9025	4.72	——	——	——	PROPRIETARY
100103	II	CA-4654	3234.49	——	——	——	EXCLUSIVE
100106	IIA	CA-4654	4.50	——	——	——	EXCLUSIVE
100102	III	CA-4654	1648.32	——	——	——	EXCLUSIVE
100104	IV	ESMT.	0.50	——	——	——	NONE

GRAPHIC SCALE IN FEET
800 0 800 1600 2400

NO.	REV. OR COR	DESCRIPTION OF AMENDMENT OR CORRECTION	DATE	APPROVAL
2	REV.	ADDED 107.29 ACRES 1/16/03 REVISE PROPERTY LINE	02/26/04	
1	REV.	SOLD 0.263 ACRES EAST SIDE OF BELLE CHASSE HWY.	7/7/00	
1.	AMD	ADDED 98-RP-00080	1/29/99	P.C.S.

DR. 061M, LA. NEW ORLEANS, NAS
DRAWN BY: PHILLIP C. SIMMS
CHECKED BY: WILLIAM J. HOLLING
SUBMITTED: CADASTRAL SERVICES — WILLIAM J. HOLLING — DATE 4/1/98
SOUTHNAVFACENGCOM
CONCUR: DIRECTOR REAL ESTATE DIVISION — ERNEST R. NELSON, JR. — DATE 4/1/98
C.O.
APPROVED: HEAD LAND MANAGEMENT DEPARTMENT — EARL G. BAHAM — DATE 4/1/98
E'D FOR COMMANDER,NAVFAC

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHERN DIVISION
CHARLESTON, S.C.

REAL ESTATE SUMMARY MAP
NAVAL AIR STATION NEW ORLEANS
NEW ORLEANS LOUISIANA
ACTIVITY-CODE 1455-616
MANAGEMENT- NAVRESFOR

SIZE F | CODE IDENT. NO. 80091 | NAVFAC DRAWING NO. 5352413
SCALE: 1"=800' | SHEET 1 OF 1

THIS DRAWING SUPERSEDES 5029088

Appendix J

Encroachment Partnering Contact Information

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Potential Encroachment Partnering Organizations and Contacts		
Organization	**Mission**	**Contact**
The Nature Conservancy	The mission of The Nature Conservancy is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.	Richard Martin P.O. Box 4125 Baton Rouge, LA 70821 P: 225.338.1040 rmartin@tnc.org
Ducks Unlimited	Ducks Unlimited conserves, restores and manages wetlands and associated habitats for North America's waterfowl. These habitats also benefit other wildlife and people.	Jimmy Emfinger 193 Business Park Drive, Suite E Ridgeland, MS 39157 P: 601.206.5434 jemfinger@ducks.org
The Conservation Fund	The Conservation Fund forges partnerships to protect America's legacy of land and water resources. Through land acquisition, community and economic development, and conservation training, the Fund and its partners demonstrate effective conservation solutions emphasizing the integration of economic and environmental goals.	Ray Herndon 812 Park Avenue, Suite D Mandeville, LA 70448 P: 985.674.3332, Cell: 571.212.7985 rherndon@conservationfund.org
Audubon, National	Audubon's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity.	Roger Still 2620 Forum Blvd., Suite C-1 Columbia, MO 65203 P: 573.447.2249 rstill@audubon.org
Audubon, Orleans Chapter	Audubon's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity.	David Muth 419 Decatur Street New Orleans, LA 70130 P: 504.589.3882, ext. 128 dpmuth@cox.net
The Trust for Public Land	The Trust for Public Land conserves land for people to enjoy as parks, gardens, and other natural places, ensuring livable communities for generations to come.	 1137 Baronne Street New Orleans, LA 70113 P: 504.620.5150 www.tpl.org

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Appendix K

Community Stakeholders Contact Information

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EAP POINTS OF CONTACT

Name	Title	Organization	Address	Phone	Fax	E-Mail
Charlie Cazayoux	Airport Director	Louis Armstrong International Airport		504.464.2656		
Mario Rodriguez	Dep. Dir. Of Planning and Development	Louis Armstrong International Airport		504.465.2377		marior@flymsy.com
Don Mauras	Airport Architect	Louis Armstrong International Airport				donm@flymsy.com
Gary Revall	Tower Manager	Federal Aviation Administration		504.471.4300/4303		
Jeffrey W. Roesel, AICP	Principal Planner	New Orleans Regional Planning Commission	Amoco Building, 1340 Poydras Street, Ste. 2100 New Orleans, LA 70112	504.568.6611	504.568.6643	jroesel@norpc.org
Walter Brooks	Director	New Orleans Regional Planning Commission	Amoco Building, 1340 Poydras Street, Ste. 2100 New Orleans, LA 70112	504.568.6621	504.568.6643	wbrooks@norpc.org
Chris Laborde		New Orleans Regional Planning Commission	Amoco Building, 1340 Poydras Street, Ste. 2100 New Orleans, LA 70112	504.568.6615	504.568.6643	claborde@norpc.org
Rene Maggio	GIS Supervisor	Jefferson Parish	1221 Elmwood Park Blvd., Jefferson, LA 70121	504.736.6341	504.736.6343	rmaggio@jeffparish.net
Terri Wilkinson	Planner	Jefferson Parish	P.O. Box 10242, Jefferson, LA 70181	504.736.6331	504.736.6343	terriwilkinson@jeffparish.net
Don Lapeyrolerie	Planner	Jefferson Parish	P.O. Box 10242, Jefferson, LA 70181	504.736.6331	504.736.6343	dlapeyrolerie@jeffparish.net
Aaron Broussard - see below	Parish President	Jefferson Parish				
Cindy L. Roth	Exec. Assistant to Parish Pres.	Jefferson Parish	1221 Elmwood Park Blvd., Jefferson, LA 70121	504.736.6405	504.736.6638	
Angela Williams	Exec. Assistant - Westbank	Jefferson Parish	1221 Elmwood Park Blvd., Jefferson, LA 70121	504.736.6418	504.736.6638	
Thomas J. Capella	Councilman - At large	Jefferson Parish	200 Derbigny Street, Ste. 6200, Gretna, LA 70053	504.364.2624	504.364.2657	
John F. Young Jr.	Councilman - At large	Jefferson Parish	200 Derbigny Street, Ste. 6200, Gretna, LA 70053	504.364.2616	504.364.3499	
Chris Roberts	Councilman - District 1	Jefferson Parish		504.364.2607	504.364.2615	
Gerald A. Spohrer	Executive Director	West Jefferson Levee District	7001 River Road, Marrero, LA 70072	504.340.0318		
Connie Treadway		Plaquemines Parish, P&Z	102 Avenue G, Belle Chasse, LA 70083	504.297.5345		
Jack Griffin		Plaquemines Parish, Land Dept.	102 Avenue G, Belle Chasse, LA 70083	504.297.5341	504.297.5340	
Andy MacInnes		Plaquemines Parish, GIS Dept.	106 Avenue G, Belle Chasse, LA 70083	504.297.5320	504.394.9541	
Leonard Mistich	Executive Director	Plaquemines Assoc. of Business and Indus.		504.415.2765		
Andre Neff	Senior City Planner	City of New Orleans, Planning Commission	1300 Perdido Street, Ste. 9W03, New Orleans, LA 70112	504.658.7000	504.565.7915	aneff@cityofno.com
Leslie Alley	Deputy Director	City of New Orleans, Planning Commission	1300 Perdido Street, Ste. 9W03, New Orleans, LA 70112			
Ms. Dell Dempsey		LA Dept. of Econ. Development		225.342.4320		
LCDR Steve Ready	Executive Assistant	NAS JRB New Orleans	400 Russell Ave., New Orleans, LA 70143	504.678.3266	850.384.2059	stephen.e.ready@navy.mil
CAPT Adelmann	Commanding Officer	NAS JRB New Orleans		504.678.9885		
CMDR Widish		NAS JRB New Orleans, Air Ops		504.678.4594		
LTJ6 Candice Selby		NAS JRB New Orleans, OPS ATC Officer		504.678.3208		candace.selby@navy.mil
LT Tom Ewer	Ground Electronic Maint. Officer	NAS JRB New Orleans		504.678.3182		
Marion Fannaly	Director	NAS JRB, Environmental Department	Building 501, Code N12, 400 Russell Ave., New Orleans, LA 70143	504.678.9589	504.678.3409	marion.fanally@navy.mil
PHC Michael Cole		NAS JRB Public Affairs		504.678.3260		
Greg Strandberg		Navy Region, SE		904.542.5351		gregory.strandberg1@navy.mil
Steve Jones		NAVFAC SE		843.820.7309		steve.g.jones@navy.mil
Bob Riley		NAVFAC SE, Environmental		843.820.5536		robert.l.riley@navy.mil
Tom Grantham		NAS JRB Public Works		504.678.2885		thomas.grantham@navy.mil
Jim Tucker	State Representative - District 86	LA State Legislature	732 Behrman Highway, Suite C-2, Terrytown, LA 70056	504.393.5646		larep086@legis.state.la.us
Susan Percle	Chief Administrative Officer	City of Gretna	P.O. Box 404, Gretna, LA 70054	504.363.1507	504.363.1509	spercle@gretnala.com
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APPENDIX D
WETLAND DELINEATION
** This Delineation is out-of-date, and is presented for pre-planning purposes only*

Wetland Delineation Report

For Naval Air Station Joint Reserve Base New Orleans,
Plaquemines Parish, Louisiana

Prepared For

Department of the Navy
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, NC 29406

Prepared by

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TC&B Job Number 32-00412-021
June 22, 2001

Patricia A. Matthews, P.E.
Project Director

Executive Summary

A delineation of jurisdictional wetlands was performed on approximately 1,760 acres (712 ha) of the Naval Air Station, Joint Reserve Base New Orleans (NAS, JRB New Orleans). The field effort occurred during the periods 26 July 1999 to 5 August 1999, 9 to 12 November 1999, 19 to 28 June 2000, and 22 to 23 August 2000. Identification of wetlands was based on the *Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1) (Environmental Laboratory, 1987). Identified wetlands were flagged in the field and their boundaries surveyed using sub-meter accurate Global Positioning System (GPS) technology. A total of 75 potentially jurisdictional wetlands covering 258.338 acres (104.546 hectares [ha]) were initially documented within the 1,760 acres (712 ha) examined. During the U.S. Army Corps of Engineers (USACE) verification several additional small areas were added to the estimate. Once these areas were surveyed the totals increased to 89 areas covering 273.969 acres (110.874 ha). The USACE provided a verification letter, dated 16 May 2001, concurring with this acreage.

The wetlands have been classified using the *Classification of Wetlands and Deepwater Habitats of the United States* system. The majority of wetlands identified were classified as Palustrine Forested Deciduous wetlands, with the remaining wetlands being Palustrine Emergent or Palustrine Shrub/Scrub wetlands that were either persistent or non-persistent. The hydrology of the wetlands on NAS, JRB New Orleans is derived mostly from groundwater levels above, at, or near the soil surface, although a relatively few areas appear to receive some of their hydrology from surface runoff and precipitation.

Report of a Determination of Jurisdictional Wetlands On Naval Air Station, Joint Reserve Base New Orleans, Louisiana.

Naval Air Station, Joint Reserve Base New Orleans (NAS, JRB New Orleans) is located along the Gulf Intracoastal Waterway in the town of Belle Chasse, Plaquemines Parish, Louisiana (Exhibit 1). NAS, JRB New Orleans consists of approximately 3,200 acres (1,295 ha), with approximately 1,760 acres (712 ha) currently undeveloped. A delineation of jurisdictional wetlands was performed on the undeveloped areas to determine extent of jurisdictional waters subject to Section 404 of the Clean Water Act. The effort included identification, documentation, and delineation of wetlands, surveying of the wetland boundaries using sub-meter accurate Global Positioning System (GPS) technology, and obtaining verification by the U.S. Army Corps of Engineers (USACE) New Orleans District. The primary purpose of this delineation was to identify all jurisdictional wetlands on the base and map their location as an aid in planning and development of new facilities while maintaining compliance with the Clean Water Act and the goal of Executive Order (EO) 11990. EO 11990 directs Federal agencies to manage lands under their jurisdiction for no net loss of wetlands on Federal land.

Preliminary Data Gathering and Synthesis

Information concerning the geology, geography, vegetation, hydrology, and soils of NAS, JRB New Orleans was obtained to guide the field effort. Sources of information included Belle Chasse and Bertrandville, Louisiana United States Geological Survey (USGS) 7.5 minute quadrangle maps, Digital Ortho Quarter Quadrangle aerial infrared photography dated 1998, recent and historical aerial photography at a scale of 1" = 600', Natural Resource Conservation Service (NRCS) Soil Maps of Plaquemines Parish, Louisiana, NRCS descriptions of the soils mapped on the base, and a wetlands map dated 1989 produced from a previous delineation conducted by the USACE New Orleans District.

Delineation of Potential Jurisdictional Wetlands

The routine determination method published in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Technical Report Y-87-1) (Environmental Laboratory, 1987) as amended by USACE memoranda dated 23 and 27 August, 1991, and Questions and Answers to the 1987 Manual dated 7 October, 1991 was used to identify potential jurisdictional wetlands. NAS, JRB New Orleans is under forced drainage, which can create conditions that make the determination of potential jurisdictional wetlands more difficult than under natural conditions. In order to properly address issues related to forced drainage, field efforts were coordinated with the USACE New Orleans District. USACE guidance on changes in vegetation, hydrology, and soils as a result of forced drainage, and characteristics of the vegetation, hydrology, and soils the New Orleans District uses in making a determination in areas under forced drainage were followed during the field effort. A discussion of the USACE New Orleans District guidance follows.

Vegetation

Vegetation within NAS, JRB New Orleans away from the developed areas is predominantly forest. Much of the forest formed under conditions that were wetter than current conditions. Therefore, many of the mature canopy trees found in the forest reflect hydrology found in the past and may not necessarily reflect current hydrology (e.g., mature bald cypress trees found in what is now a well-drained area). The guidance given by the USACE New Orleans District was to give more consideration to the understory woody and herbaceous plants than the mature canopy trees for purposes of identifying hydrophytic vegetation, as the former are more accurate indicators of current hydrology

than the mature canopy trees. Common species mentioned by USACE New Orleans District as good indicators of current wetland hydrology include lizard's tail (*Saururus cernuus*) and smartweeds (*Polygonum* spp.). Not all potentially jurisdictional areas had an herbaceous understory. Vegetation alone was not a good guide to identifying potentially jurisdictional wetlands.

Hydrology

The USACE New Orleans District guidance regarding wetland hydrology indicators for areas under forced drainage were used throughout. In general, forced drainage does not remove completely primary and secondary indicators of wetland hydrology. One or more primary or secondary indicators of wetland hydrology as defined in the 1987 Manual were expected within potentially jurisdictional wetlands on NAS, JRB New Orleans.

Soils

All mapped soils on NAS, JRB New Orleans are listed as hydric by the NRCS. However, not all soils found on the base are "wetland" soils. As defined in the 1987 Manual, a wetland soil is a hydric soil that is saturated or inundated for sufficient periods of time to support a wetland plant community. Hydric soils that are drained and no longer saturated long enough to support wetland plants are not wetland soils, although these soils will continue to exhibit characteristics and indicators of hydric soils. Under forced drainage, hydric organic and mineral soils can change in texture and appearance compared to their undrained state in which they would be wetland soils. To distinguish between wetland soils and drained hydric soils considered upland soils, the following USACE New Orleans District guidance on identifying soils of uplands was used:

- Soil that has formed small pellets and has a texture resembling coffee grounds.
- Soil in which the mottles and matrix are close in hue/value/chroma (faint mottles).
- Clays having greatly increased mottling and redoximorphic features, and that become looser, break into smaller peds, have larger cracks, and show movement of organic material through the cracks.
- Mucks that have subsided as evidenced by exposure of roots of large trees from settling of the soils, and hollow pockets below the soil surface formed from the oxidation of organic material that is no longer saturated and under anaerobic conditions.

Transects and Observation Points

The 1987 Manual specifies that transects completely crossing the project area are required in areas of five or more acres. However, the USACE New Orleans District advised transects would not be required because of the site conditions and size of the project area. Transects were used, however, to aid the field effort within many areas of the base. In areas where the vegetation was extremely dense or a wetland occupied nearly all of an area, the use of transects was suspended. Throughout the undeveloped portions of NAS, JRB New Orleans investigated, a minimum of one observation point was placed within each plant community present.

Observation points were documented during the periods 26 July 1999 to 5 August 1999, 9 to 12 November 1999, 10 to 28 June 2000, and 22 to 23 August 2000. Each observation point

documented the vegetation, hydrology, and soils at that location. Soils were sampled to a depth of 16 inches (41 cm) using a shovel. Profiles of the soils were characterized and compared to NRCS descriptions of the soils mapped to the area. If a plant community covered more than one mapped soil type, an observation point for that community was placed in each of the mapped soil types. One observation point was placed within each wetland community found, except when a community with the same vegetation and hydrology was observed within close proximity to a documented wetland community, in which case the latter was referenced to the former documented wetland.

An observation point was placed at the upland-wetland boundary of each wetland found, except in cases where wetlands were separated by narrow areas of upland. In those instances, one observation point placed between the wetlands documented the upland-wetland boundaries of both wetlands. The upland-wetland boundary was placed at that point where at least one of the three criteria of a jurisdictional wetland (hydrophytic vegetation, wetland hydrology, hydric soils) was no longer observed. Plants classified as facultative (FAC), facultative wetland (FACW), and obligate wetland (OBL) dominate the vegetation on NAS, JRB New Orleans. At most observation points documented, the vegetation community is considered hydrophytic under the 1987 Manual. Similarly, all soils mapped to the base are classified as hydric by the NRCS and with rare exceptions meet this criterion. In most instances, the criterion used to determine the upland-wetland boundary was wetland hydrology.

Survey of Wetland Boundaries

The boundaries of identified wetlands were surveyed using a Trimble™ Pathfinder Pro XRS™ Global Positioning System with Omnistar™ satellite correction and the U.S.Coast Guard MSK Navigation correction as a backup. The geographic coordinates of each flag used to mark a wetland boundary were determined to sub-meter accuracy. The surveyed wetland boundaries were exported to ArcView and AutoCAD files upon completion, and placed over a georeferenced map of the base. Estimates of size of each wetland were calculated from polygons created using AutoCAD software.

Classification of Identified Wetlands

Identified wetlands were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al, 1979) to the subclass level, with modifiers for water regime, water chemistry, soil, and special modifiers added. All wetlands were palustrine (P), and either forested (FO), shrub/scrub (SS), or emergent (EM). Forested wetlands are those in which trees greater than 20 feet (6 m) are the dominant component of the vegetation within the boundary. Shrub/scrub wetlands are those in which shrubs and saplings less than 20 feet (6 m) are the dominant component of the vegetation within the boundary. Emergent wetlands are those in which herbaceous plants are the dominant vegetation within the boundary, even if the wetland is found within a forested area. Appropriate modifiers for water regime, water chemistry, soil, and special modifiers were appended to the classification when these variables were known or could be determined from conditions observed in the field. Modifiers for water chemistry were limited to salinity because information on pH for individual wetlands was unavailable.

Description of Conditions on NAS, JRB New Orleans

Vegetation

NAS, JRB New Orleans is located within the Bottomland Hardwoods and Cypress Vegetation Region (Brown, 1972). A forest management plan for the station (U.S. Navy, 1988) documented more than 400 acres (162 ha) of bottomland hardwood and cypress forests. These forested stands included 303 acres (123 ha) of mixed hardwood/bald cypress forest, 79 acres (32 ha) of black willow forest, and 40 acres (16 ha) of mixed hardwood/maple forest. Another 210 acres (85 ha) were classified as mixed hardwood. Upland forests covered approximately 90 acres (36 ha) of better-drained soils, including 60 acres (24 ha) of mixed hardwood/live oak, seven acres (three ha) of live oak, and 23 acres (nine ha) of brush habitat.

Historical aerial photography (1952 to 1996) documents that the majority of the area surrounding the abandoned runways was a mowed field to circa 1975. After this date, attempts were made to reforest the area surrounding the abandoned runways and other open areas by planting pine trees and bald cypress (U.S. Navy, 1988). The reforestation efforts failed for a variety of reasons. Second growth forests grew by natural processes following the reforestation efforts. An area having a 1,250-foot (381-m) radius around the VORTAC installation is maintained as open space for proper operation of this installation by brush-hogging. The open space around the VORTAC installation is predominantly grassland that grades into shrubland at the forest edge.

Vegetation found in any specific location on the Installation is determined to a large degree by the local drainage. In poorly drained areas, wetlands, and along canals, forest stands are dominated by trees tolerant of saturated soils and inundation, such as bald cypress, black willow, and two varieties of red maple (*Acer rubrum* var. *trilobum*, and *A. rubrum* var. *drummondii*) (Exhibit 2). In somewhat poorly drained areas, hardwood trees found within the forest stands include boxelder (*Acer negundo*), green ash, sugarberry, persimmon (*Diospyros virginiana*), pecan (*Carya illinoensis*), water oak (*Quercus nigra*), and cherry bark oak (*Quercus falcata* var. *leucophylla*). Chinese tallow can be found in conditions ranging from shallowly inundated to well-drained soils. The relatively dense canopy limits the amount of herbaceous vegetation growing within saturated or inundated areas. When an understory is present, plants such as lizard's tail (*Saururus cernuus*), seedbox (*Ludwigia* spp.), and smartweed (*Polygonum* spp.) are common (Exhibit 3).

In moderately-drained to well-drained areas, trees such as live oak (*Quercus virginiana*), Chinese tallow, persimmon, water oak, and sweetgum (*Liquidambar styraciflua*) dominate the forest canopy. Where the tree canopy allows sufficient sunlight to pass, shrubs such as yaupon (*Ilex vomitoria*), and American beautyberry (*Callicarpa americana*), woody vines, and herbaceous plants may grow in the understory (Exhibit 4). Saplings and small trees of Chinese tallow, persimmon, sweetgum, elms, and boxelder saplings dominate the forested area surrounding the abandoned runways. Other plants include yaupon, blackberry (*Rubus trivialis* and *R. louisianus*), and poison ivy (*Toxicodendron radicans*). Mature individuals of trees typically found in wetlands and swamps can be found in areas that are now moderately to well-drained but were inundated before or immediately after founding of NAS, JRB New Orleans.

Hydrology

The New Orleans area is generally flat, with a variance in elevation of 25 feet (8 m), from approximately 20 feet (6 m) above mean sea level (msl) to 5 feet (1.5 m) below msl. The terrain at NAS, JRB New Orleans is flat, with an elevation differential ranging from approximately 3.0 feet (0.9 m) above msl to 2.0 feet (0.6 m) below msl (U.S. Navy, 1989a). NAS, JRB New Orleans is protected from floodwaters by levees along the Gulf Intracoastal Waterway (GIWW) on the west, and along the Mississippi River on the east. Drainage on the station is through a series of open ditches and canals that are pumped continuously. Concord Canal drains the eastern portion of the installation. The on-station system drains into Bayou Barriere, a manifolded receiving canal running parallel with the GIWW, which forms much of the northwestern boundary of the station. The canal is owned and maintained by the Plaquemines Parish Drainage District (PPDD). Pumping stations maintain a water level in the canal of seven to ten feet (two to three m) below msl by transferring water from the canals into the GIWW. From there, the GIWW carries the discharge to Barataria Bay and eventually into the Gulf of Mexico.

According to the USACE, the 25-year floodplain elevation at NAS, JRB New Orleans is -1.75 feet (-0.53 m), and the 50-year floodplain elevation is -1.6 feet (-0.50 m). A slow moving hurricane of Force Two or above would flood NAS, JRB New Orleans with 10 feet (3 m) of water (U.S. Navy, 1999).

Soils

Five soil series are mapped at NAS, JRB New Orleans (U.S. Navy, 1987; Exhibit 5). These are Commerce, Rita, Sharkey, Tunica, and Westwego series. Specific soil types found within these series at NAS, JRB New Orleans include Commerce Silt Loam, Rita Muck, Sharkey Clay, Sharkey Silty Clay Loam, Tunica Clay, and Westwego Clay. All are listed as hydric by the NRCS. A brief description of each soil series follows.

Commerce – These soils are somewhat poorly drained, moderately slowly permeable, firm, mineral soils formed in Mississippi River alluvium. An apparent high water table ranges from 1.5 to 4.0 feet (0.46 to 1.22 m) below the surface from December through April.

Rita – These soils are deep, poorly drained, very slowly permeable soils in fresh water coastal marshes that have been protected from flooding by a system of levees and pumps. They formed in a thin layer of herbaceous organic material over semifluid clay sediments that shrank and consolidated as a result of artificial drainage. Most of the organic material has oxidized since drainage. Rita soils are poorly drained, runoff is slow, and permeability is very slow. The water table is maintained by pumping to a depth of 2.0 to 3.0 feet (0.61 to 0.91 m) below the surface.

Sharkey – This series consists of very deep, poorly, and very poorly drained, very slowly permeable, firm mineral soils that formed in clay alluvium. Most of these soils are considered artificially drained and no longer develop aquic conditions. Natural drainage classes range from poor or very poor in undrained areas to very poor in ponded areas. Surface runoff is negligible to very high depending on the slope, and permeability is very slow. Flooding in unprotected areas is long to very long in duration

most years. An apparent high water table is present from 0.0 to 2.0 feet (0.0 to 0.61 m) below the surface during December through April.

Tunica – This series consists of deep, poorly drained, very slowly permeable soils formed in clayey alluvium and underlying loamy alluvium. These soils are found in the floodplains of the Mississippi River and tributaries of the Southern Mississippi Valley Alluvium Major Land Resource Area. These soils are flooded unless protected by levees, and are saturated at 1.5 to 3.0 feet (0.46 to 0.91 m) below the surface during wet seasons.

Westwego – This series consists of deep, poorly drained, very slowly permeable soils that formed in fluid, clayey alluvium and organic material. The upper part of this soil typically has dried and shrank as a result of artificial drainage. The apparent water table ranges from 1.0 to 3.0 feet (0.30 to 0.91 m) below the surface, but is dependent on the pumping procedures used to drain a region.

Principal Findings of the Field Investigation and USACE Verification

Seventy-five individual potentially jurisdictional wetlands were initially identified on the undeveloped areas of NAS, JRB New Orleans. The initial estimate totaled 258.338 acres (104.546 ha). A preliminary wetland delineation report was prepared and provided to the USACE for verification on 9 February 2001. A site visit was conducted by the USACE on 11 April 2001, with the USACE adding several small areas to the initial estimate. These areas were then surveyed and the information was provided to the USACE for final verification. No additional data forms were requested by the USACE. The final total included 89 areas covering 273.969 acres (110.874 ha) (Table 1 and Exhibit 6). The USACE provided a verification letter, dated 16 May 2001, concurring with this acreage. A copy of this letter is included in this report, located after Table 1.

All of the verified wetlands have been classified using *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) (Table 1). The majority of these wetlands (74 of 89) are palustrine (P) forested (FO), with broad-leaf deciduous (1) or deciduous (6) trees dominating the vegetation. Hydrologic regimes in the forested wetlands are permanently flooded (H), intermittently flooded (J), saturated (B), or seasonally saturated (E). Two wetlands are classified as palustrine (P) shrub/scrub (SS) having broad-leafed deciduous (1) or deciduous (6) dominant plants. These wetlands are either saturated (B) or seasonally saturated (E). Thirteen wetlands are classified as palustrine (P) emergent (EM) and either persistent (1) or non-persistent (2). Hydrologic regimes of emergent wetlands are permanently flooded (H), intermittently flooded (J), saturated (B), or seasonally saturated (E). All wetlands on NAS, JRB New Orleans are freshwater wetlands (0) with mineral soils (n), and are considered partially drained (d), because NAS, JRB New Orleans is under forced drainage.

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Definitions of Terms

Emergent plant – a rooted herbaceous plant species that has parts extending above the water surface.

Hydric soil – one formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (usually 12 inches).

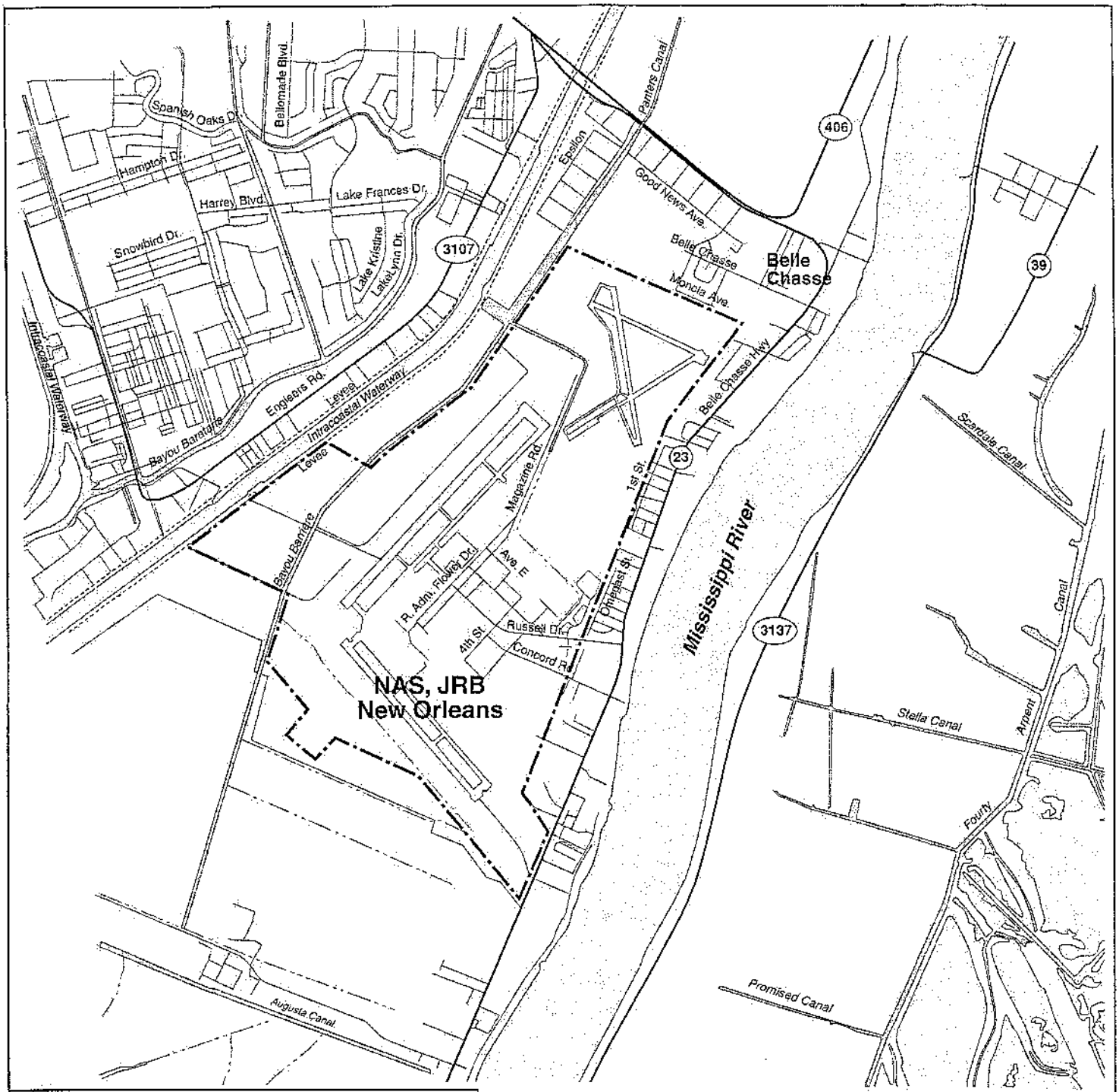
Hydrophytic vegetation – the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. A hydrophytic plant community occurs when greater than 50% of the dominant species have an indicator status of FAC, FACW, or OBL.

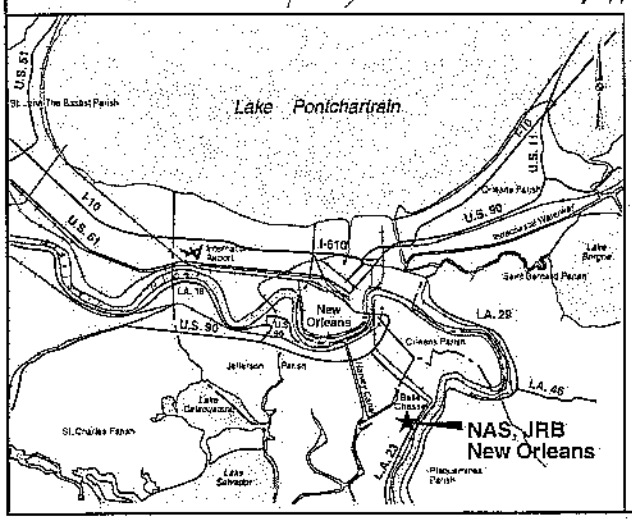
Indicator status – One of the categories that describes estimated probability of a plant species occurring in wetlands. The categories are:

Category	Symbol	Definition
Obligate Wetland Plant	OBL	Plants that occur almost exclusively in wetlands (>99% of the time).
Facultative Wetland Plant	FACW	Plants that occur in wetlands >67% to 99% of the time.
Facultative Plant	FAC	Plants that occur in wetlands >33% to 67% of the time.
Facultative Upland Plant	FACU	Plants that occur in wetlands >1% to 33% of the time.
Obligate Upland Plant	UPL	Plants that rarely occur in wetlands (<1% of the time).

Palustrine- non-tidal wetlands dominated by trees, shrubs, persistent emergent plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity attributable to ocean-derived salts is less than0.5 parts per thousand.

Wetland hydrology – the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.





Legend

NAS, JRB New Orleans Boundary

0 4600

Scale in Feet
(Approximate)

NAS JRB New Orleans

Site Map

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Exhibit 1	Job No. 32-00412-021	Date: September 2000

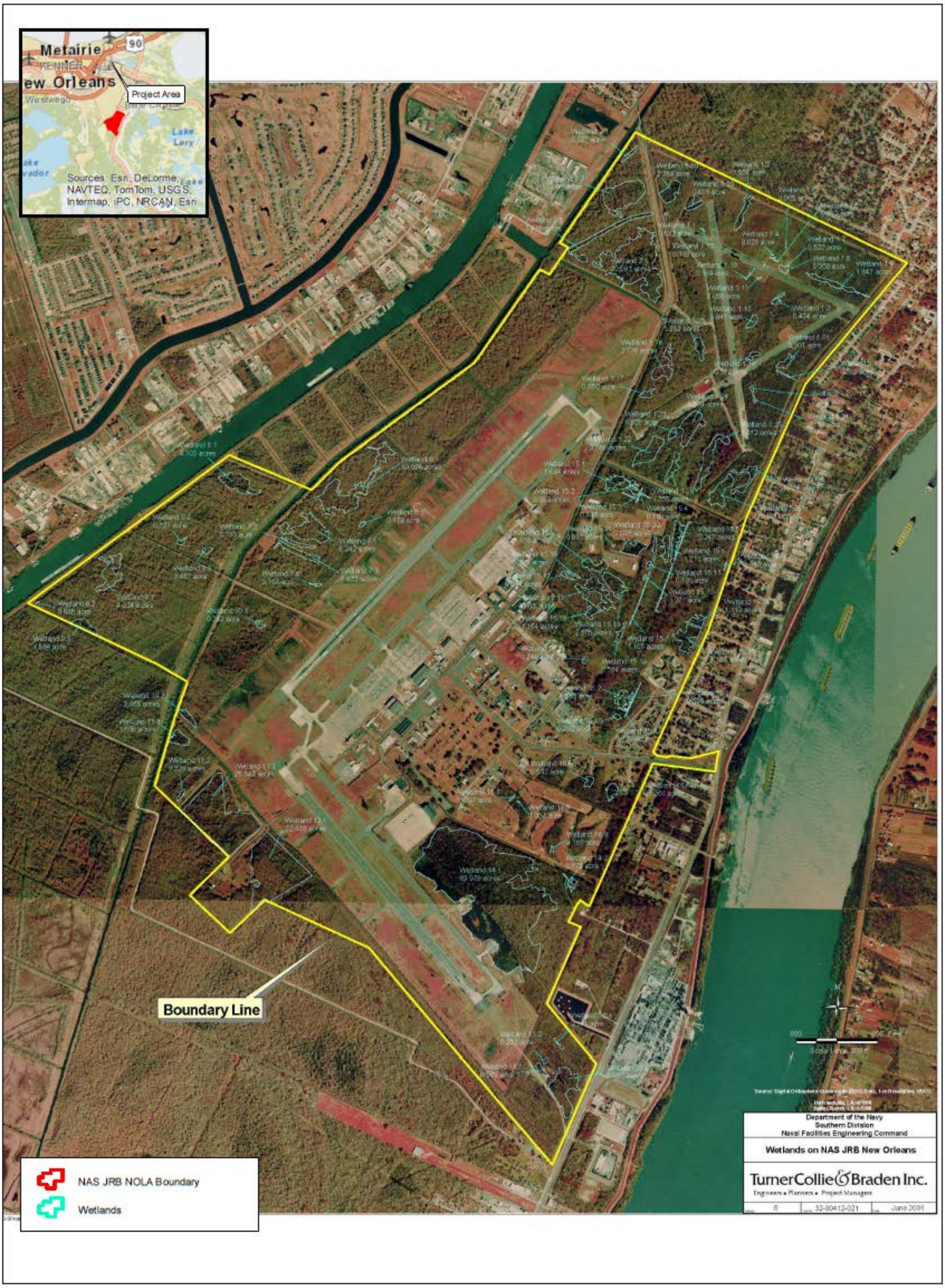
Metairie
90
ew Orleans
Project Area
Westwego
Lake Lery
Sources: Esri, DeLorme, NAVTEQ, TomTom, USGS, Intermap, iPC, NRCAN, Esri
Boundary Line
NAS JRB NOLA Boundary
Wetlands
Department of the Navy
Southern Division
Naval Facilities Engineering Command
Wetlands on NAS JRB New Orleans
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Photo 1 - Example of a forest wetland within the installation in which the dominant vegetation is trees, with only a few small shrubs and saplings. This area was photographed during January 1999.

Photo 2 - A forest wetland within the installation photographed in August 1999. Note the lack of an herbaceous understory within the wetland boundary.

NAS JRB New Orleans

Site Photographs

Turner Collie & Braden Inc.
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Exhibit 2	Job No. 32-00412-021	Date: September 2000

Photo 3 - An emergent wetland within the installation photographed in August 1999. The wetland is found within a forested area but does not have trees growing within the wetland boundary.

Photo 4 - An emergent wetland within the installation photographed in August 1999. This wetland formed in an opening of the tree canopy and supported lush growth of herbaceous wetland plants, such as *Polygonum spp.*

NAS JRB New Orleans

Site Photographs

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Exhibit 3	Job No. 32-00412-021	Date: September 2000

Photo 5 - An upland forest within the installation photographed in August 1999. Herbaceous plants were found throughout the understory, and were densest in openings of the tree canopy.

Photo 6 - An upland forest within the installation photographed in August 1999. The understory at this location consisted mostly of young *Sambucus candadensis.*

Photo 7 - A bald cypress forest within the installation photographed in July 1999. This area is considered upland because it is drained and no longer exhibits wetland hydrology.

NAS JRB New Orleans

Site Photographs

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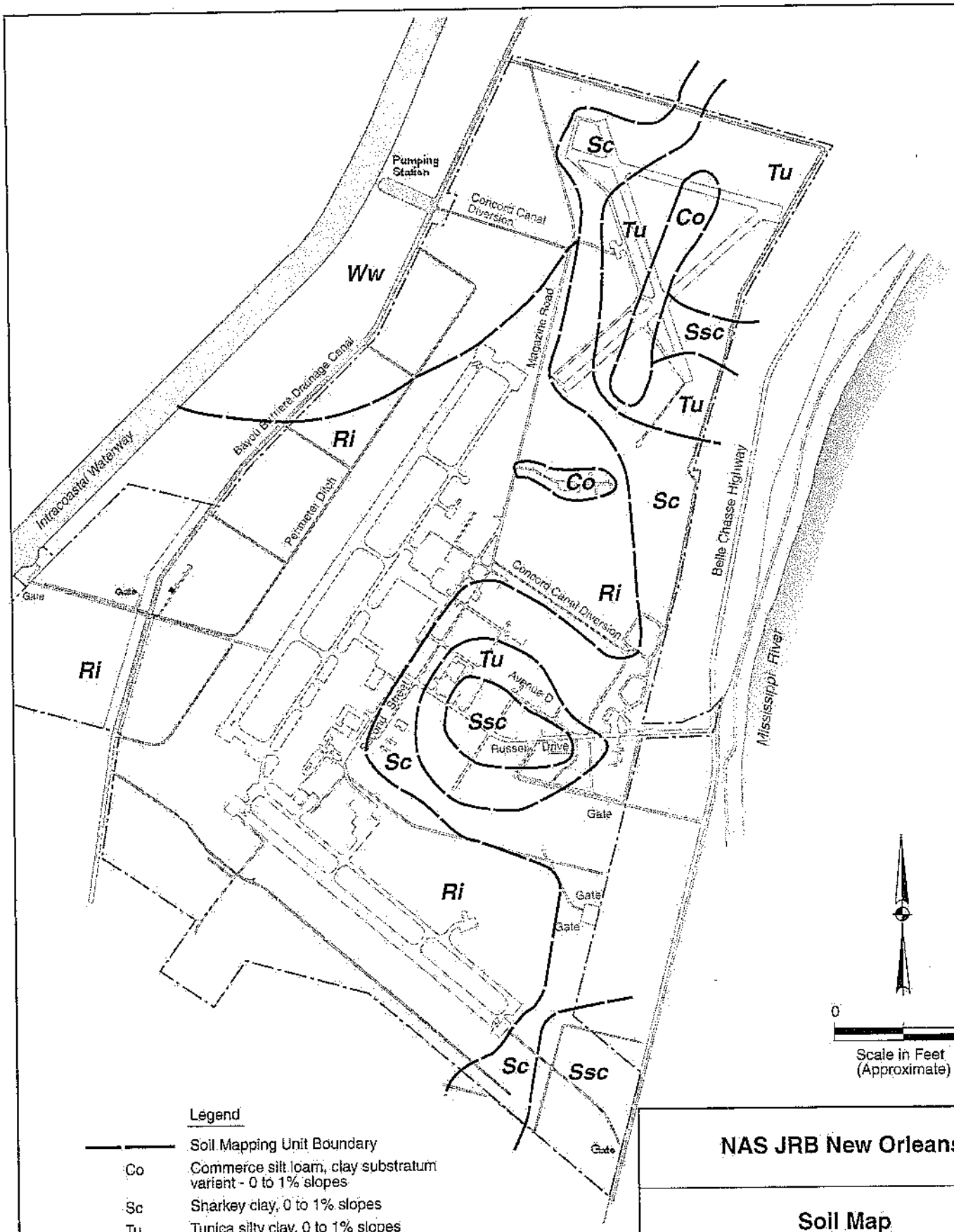
Exhibit 4	Job No. 32-00412-021	Date: September 2000



Legend

	Soil Mapping Unit Boundary
Co	Commerce silt loam, clay substratum variant - 0 to 1% slopes
Sc	Sharkey clay, 0 to 1% slopes
Tu	Tunica silty clay, 0 to 1% slopes
Ssc	Sharkey silty clay loam, 0 to 1% slopes
Ri	Rita muck
Ww	Westwego clay

Source: U.S. Navy 1988

NAS JRB New Orleans

Soil Map

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Exhibit 5	Job No. 32-00412-021	Date: September 2000

Table 1. Associated data forms, size, and classification of the verified wetlands located on NAS, JRB New Orleans. Data forms documenting the wetland and upland-wetland boundary are listed for each of the wetlands initially identified, no data forms were required for the 14 additional areas added by the USACE. Wetlands are classified using *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979).

Wetland	Associated Data Form	Boundary Data Form	Area in Acres (Hectares)	Classification*
1.1	SS 303	SS 303A	0.082 (0.033)	PSS6E0nd
1.2	SS 109	SS 504	0.434 (0.176)	PEM2E0nd
1.3	SS 302A	SS 302	0.170 (0.069)	PFO1E0nd
1.4	SS 117	SS 116	0.028 (0.011)	PEM2E0nd
1.5	SS 115	SS 116	0.097 (0.039)	PEM2E0nd
1.6	SS 113	SS 114	0.005 (0.002)	PEM1E0nd
1.7	SS 107	SS 108	0.522 (0.211)	PEM2E0nd
1.8	SS 107	SS 108	0.003 (0.001)	PEM1E0nd
1.9	SS 300	SS 300A	1.116 (0.452)	PFO6E0nd
1.10	SS 110	SS 112	0.189 (0.076)	PEM1E0nd
1.11	SS 111	SS 112	0.058 (0.023)	PEM1E0nd
1.12	SS 506	SS 507	0.103 (0.042)	PFO1E0nd
1.13	SS 503	SS 504	0.841 (0.340)	PFO1E0nd
1.14	SS 508	SS 509	0.522 (0.211)	PFO1J0nd
1.15	SS 305	SS 306	1.232 (0.499)	PFO1J0nd
1.16	SS 307	SS 308	2.766 (1.119)	PFO1J0nd
1.17	SS 309	SS 310	0.650 (0.263)	PFO1J0nd
1.18	SS 311	SS 312	0.901 (0.365)	PFO1J0nd
1.19	SS 313	SS 314	0.363 (0.147)	PFO1E0nd
1.20	SS 510	SS 511	0.205 (0.083)	PFO6J0nd
1.21	SS 512	SS 513	0.189 (0.076)	PFO6E0nd
1.22	SS 527	SS 528	3.566 (1.443)	PFO1E0nd
1.23	SS 518	SS 519	0.626 (0.253)	PFO6E0nd
1.24	SS 520	SS 521	3.889 (1.574)	PFO1E0nd
1.25	SS 516	SS 517	3.912 (1.583)	PFO1J0nd
1.26	SS 522	SS 523	3.101 (1.255)	PFO1E0nd
1.27	SS 526	SS 528	1.784 (0.722)	PFO1E0nd
1.28	-	-	1.355 (0.548)	PFO1E0nd
1.29	-	-	0.601 (0.243)	PFO1J0nd
1.30	-	-	2.369 (0.959)	PFO1E0nd
2.1	SS G	SS I	0.502 (0.203)	PFO1E0nd
2.2	SS F	SS I	7.936 (3.212)	PFO1E0nd
2.3	SS B	SS C	3.416 (1.382)	PFO1H0nd
2.4	SS A	SS D	20.081 (8.127)	PSS1B0nd
6.1	SS 6	SS 7	10.096 (4.086)	PEM1B0nd
6.2	SS 8	SS 10	0.179 (0.072)	PFO1E0nd

Wetland	Associated Data Form	Boundary Data Form	Area in Acres (Hectares)	Classification*
7.1	SS H	SS I	6.242 (2.526)	PFO1E0nd
7.2	SS J	SS K	0.703 (0.284)	PFO1B0nd
7.3	SS L	SS K	1.832 (0.741)	PFO1B0nd
7.4	SS O	SS P	0.168 (0.068)	PFO1E0nd
8.1	SS 600	SS 601	4.103 (1.660)	PFO6E0nd
8.2	SS 333	SS 334	0.327 (0.132)	PFO6E0nd
8.3	SS 335	SS 336	0.467 (0.189)	PFO6B0nd
9.1	SS 544	SS 545	4.024 (1.628)	PFO6E0nd
9.2	SS 332	SS 334	0.036 (0.015)	PEM1H0nd
9.3	-	-	1.584 (0.641)	PFO6E0nd
10.1	SS 604	SS 605	0.362 (0.146)	PFO6E0nd
10.2	-	-	1.066 (0.431)	PFO6E0nd
11.1	SS 100	SS 101	25.542 (10.337)	PFO1E0nd
11.2	-	-	0.328 (0.133)	PEM2B0nd
11.3	-	-	1.656 (0.670)	PFO6E0nd
12.1	SS 102	SS 103	22.438 (9.080)	PFO6E0nd
13.1	SS 538	SS 539	0.241 (0.098)	PFO6J0nd
13.2	SS 536	SS 537	0.223 (0.090)	PFO6J0nd
13.3	SS 540	SS 541	0.589 (0.238)	PFO6H0nd
13.4	SS 542	SS 543	6.865 (2.778)	PFO6J0nd
14.1	SS 104,105	SS 106	89.978 (36.413)	PFO1J0nd
14.2	SS 337	SS 338	0.675 (0.273)	PFO1Hond
15.1	SS R	SS T	1.684 (0.681)	PFO1B0nd
15.2	SS S	SS T	0.359 (0.145)	PFO1B0nd
15.3	SS S	SS T	0.148 (0.060)	PFO1B0nd
15.4	SS S	SS T	0.166 (0.067)	PFO1B0nd
15.5	SS AD	SS AE	2.247 (0.909)	PFO6H0nd
15.6	SS AF	SS AG	0.040 (0.016)	PEM1E0nd
15.7	SS W	SS Y	1.166 (0.472)	PFO6H0nd
15.8	SS U	SS V	1.211 (0.490)	PFO6H0nd
15.9	SS AB	SS AA	1.706 (0.690)	PFO1E0nd
15.10	SS Z	SS AA	2.686 (1.087)	PFO1E0nd
15.11	SS X	SS Y	0.199 (0.081)	PFO6B0nd
15.12	SS X	SS Y	0.071 (0.029)	PFO6B0nd
15.13	SS AC	SS AE	4.083 (1.652)	PFO1E0nd
15.14	SS AH	SS 535	1.113 (0.450)	PFO1E0nd
15.15	SS 534	SS 535	3.186 (1.289)	PFO1J0nd
15.16	-	-	0.206 (0.083)	PFO1E0nd
15.17	-	-	0.304 (0.123)	PFO1E0nd
15.18	-	-	1.154 (0.467)	PFO1E0nd
15.19	-	-	0.584 (0.237)	PFO1E0nd
15.20	-	-	2.026 (0.820)	PFO1E0nd

Wetland	Associated Data Form	Boundary Data Form	Area in Acres (Hectares)	Classification*
15.21	-	-	0.035 (0.014)	PFO1E0nd
16.1	SS 321	SS 322	0.244 (0.099)	PFO6J0nd
16.2	SS 319	SS 320	0.663 (0.268)	PFO1J0nd
16.3	SS 315	SS 316	0.586 (0.237)	PFO1J0nd
16.4	SS 317	SS 318	0.199 (0.081)	PEM1J0nd
16.5	SS 529	SS 530	0.642 (0.260)	PFO1J0nd
16.6	SS 532	SS 533	1.261 (0.510)	PFO1H0nd
16.7	SS 323	SS 324	0.097 (0.039)	PFO6J0nd
16.8	SS 327	SS 328	0.037 (0.015)	PFO1J0nd
16.9	SS 325	SS 326	0.165 (0.067)	PFO1J0nd
16.10	-	-	0.250 (0.101)	PFO1J0nd
		TOTAL:	273.969 (110.874)	

* Classification is by System, Subsystem and Class, Water Regiment, Water Chemistry, Soil, Special Modifier

Classification key:

System

P = Palustrine

Subsystems and Classes

FO = Forested

1 = Broad-leaved Deciduous

6 = Deciduous

EM = Emergent

1 = Persistent

2 = Nonpersistent

SS = Shrub/scrub

6 = Deciduous

Water Regiment

B = Saturated

E = Seasonal Saturated

H = Permanent

J = Intermittently Flooded

Water Chemistry

0 = Freshwater

Soil

n = Mineral soil

Special modifier

d = Partially Drained/Ditched

USACE Verification Letter

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

May 16, 2001

REPLY TO
ATTENTION OF:
Operations Division
Surveillance and Enforcement Section

Mr. Jimmy L. Kosclski
Turner, Collie, & Braden, Inc.
P.O. Box 130089
Houston, TX 77219-0089

Dear Mr. Kosclski:

Reference is made to your request, on behalf of the Naval Air Station Joint Reserve Base, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in Sections 2, 3, 4, 44, 45, 46, 47, 66, 74, and 75, Township 15 South, Range 12 East, and Sections 13, 14, 15, 16, 17, 18, 19, 21, 22, 24, 35, 54, 70, 77, 80, 89, 90, 91, 92, 93, 96, and 97, Township 14 South, Range 12 East, Plaquemines Parish, Louisiana (enclosed map). Specifically, this property is identified as the Naval Air Station Joint Reserve Base New Orleans.

Based on review of recent maps, aerial photography, soils data, and information provided with your request, we have determined that part of the property is wetland and subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into this wetland.

You and your client are advised that this approved jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date.

Should there be any questions concerning these matters, please contact Mr. Robert Heffner at (504) 862-2274 and reference our Account No. 20-010-1571. If you have specific questions regarding the permit process or permit applications, please contact our Eastern Evaluation Section at (504) 862-1950.

Sincerely,

Stacy J. Levingston III

for Ronald J. Ventola
Chief, Regulatory Branch

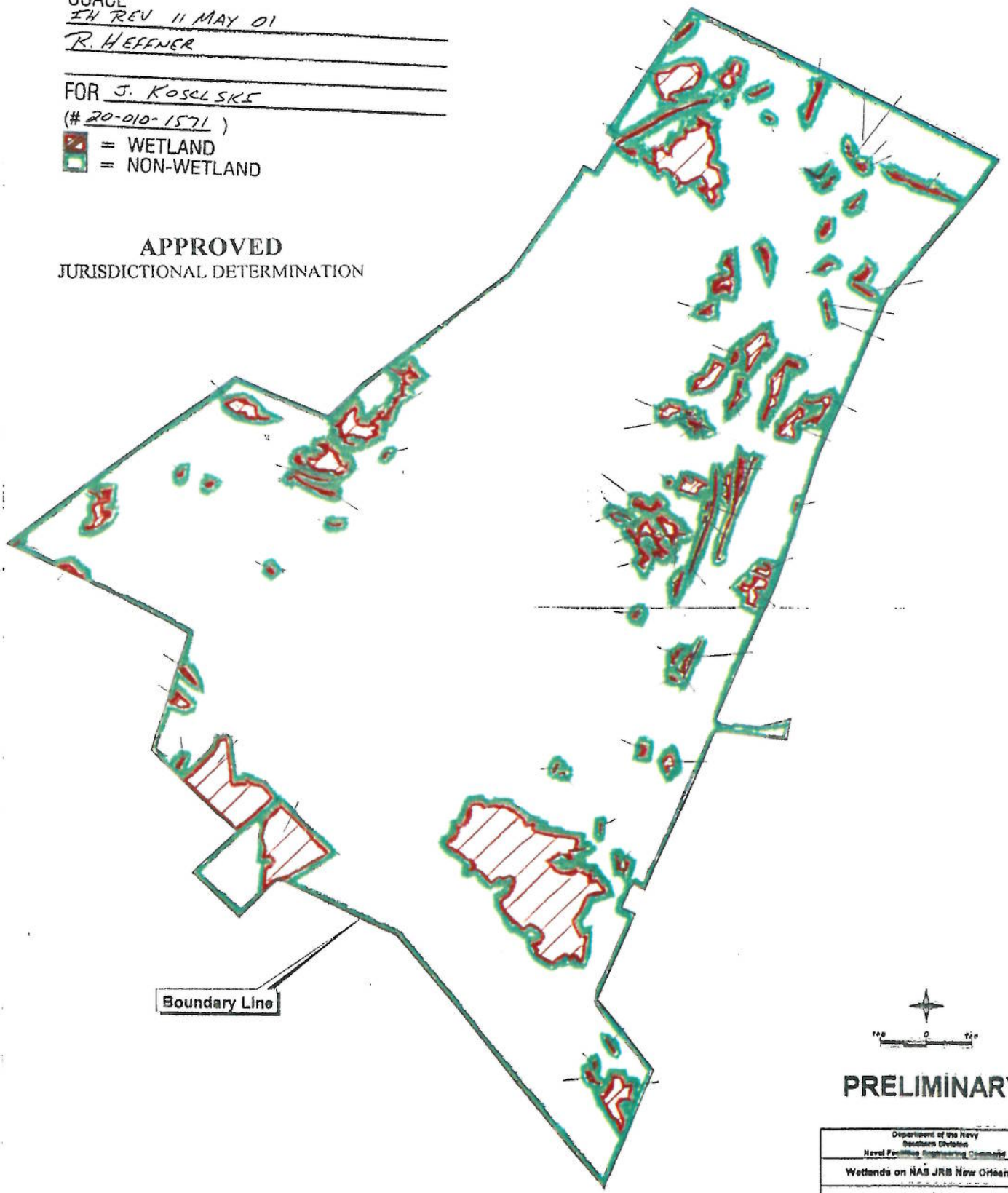
Enclosures

USACE
EH REV 11 MAY 01
R. HEFFNER

FOR J. KOSCLSKI
(# 20-010-1571)

= WETLAND
= NON-WETLAND

APPROVED
JURISDICTIONAL DETERMINATION



PRELIMINARY

Department of the Navy
Southern Division
Naval Facilities Engineering Command

Wetlands on NAS JRB New Orleans

Turner Collie & Braden Inc.
Engineers • Planners • Project Managers

Scale: 1" | Job No. 33-00413-001 | May 2001

U.S. Army Corps of Engineers - New Orleans District
Regulatory Branch

Basis for Jurisdictional Determination

Applicant: Jimmy L. Kosclski File Number: 20-010-1571 Date: 11 May 01

☒ A. Property referenced in the attached correspondence contains waters of the United States based on:

☒ The presence of wetlands determined by the occurrence of hydrophytic vegetation, hydric soils and wetland hydrology.[1] The wetlands are adjacent to navigable or interstate waters, or eventually drain or flow into navigable or interstate waters through a tributary system that may include man-made conveyances such as ditches or channelized streams.[2]

☐ The presence of waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, i.e., navigable waters of the United States (in part). Includes all property below the ordinary high water mark of the navigable stream or channel.[3]

☐ The presence of waters which are subject to the ebb and flow of the tide, including tidal wetlands, i.e., navigable waters of the United States (in part).[1, 3]

☐ The presence of one or more tributaries (stream channels, man-made conveyances, lakes, ponds, rivers, etc.) that eventually drain or flow into navigable or interstate waters. Includes property below the ordinary high water mark of the tributary.[3]

☐ The presence of interstate waters.[3]

☐ The presence of an impoundment(s) of waters of the United States.

☐ The presence of territorial seas.

☐ The site contains other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, or natural ponds, the use degradation or destruction of which could affect interstate or foreign commerce.

_____
_____
_____
_____
_____
_____
_____

☐ **B. Property referenced in the attached correspondence does not include or contain any of the waters of the United States described above.**

[1] Wetlands are identified and delineated using the methods and criteria established in the Corps of Engineers Wetland Delineation Manual (87 Manual).
[2] Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, etc. are "adjacent wetlands".
[3] The lateral limits of waters of the U.S. are/or have been determined by the high tide line, ordinary high water mark, and/or by the limit of adjacent wetlands.

Project Manager: Robert Heffner

Applicant: Jimmy L. Koscielski	File Number: 20-010-1571	Date: MAY 25 2001
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
✓	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

(over)

Area 1

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.1

Project/Site: **NAS JRB New Orleans**

Applicant/Owner: **Department of the Navy, Southern Division**

Investigator: **Schulze**

Date: **6/21/00**

County: **Plaquemines**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 303**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Carex flaccosperma***	**Herb**	**FAC+**	9.		
2. ***Rubus trivialis***	**Shrub**	**FAC**	10.		
3. ***Acer rubrum***	**Sapling**	**OBL**	11.		
4. ***Salix nigra***	**Tree**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a small depression which drains to the west into a roadside drainage ditch. A slight increase in eleveation in the ditch allows water to pond in this depression for extended periods of time.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**10YR 3/1**	**2.5YR 4/6**	**Many Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soil parameters are met. Area is identified as Wetland 1.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **6/21/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Schulze**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Community ID: **Forest**
Transect ID:
Plot ID: **SS 303A**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Celtis laevigata*	Sapling	FACW	9.		
2. *Celtis laevigata*	Tree	FACW	10.		
3. *Sambucus canadensis*	Shrub	FACW-	11.		
4. *Acer negundo*	Sapling	FACW	12.		
5. *Morus rubra*	Sapling	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology parameter is not met. Area is slightly sloping into Wetland 303, and is on the upland side of the upland/wetland boundary of Wetland 1.1.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		10YR 3/1	None		Clay
6 - 16		10YR 3/1	10YR 4/3	Many Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile rougly matches that of Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soil (chroma 1 or less in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 1.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.2

Project/Site: **NAS JRB New Orleans**					Date: **11/11/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Meadow**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 109**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Rubus trivialis***	**Shrub**	**FAC**	9.		
2. ***Polygonum hydropiperoides***	**Herb**	**OBL**	10.		
3. ***Ampelopsis arborea***	**W. Vine**	**FAC+**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15. Associated Non-dominants:		
8.			16. ***Sapium sebiferum***	**Tree**	**FAC**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two secondary indicators of wetland hydrology were observed. Wetland hydrology criterion is met. Area is a meadow that may be periodically cleared during maintenance of a Navy facility. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Commerce silt loam**

Drainage Class: **Somewhat poorly drained**

Taxonomy (Subgroup) **thermic Aeric Fluaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		10YR 4/1	None		Clay
5 - 17		2.5Y 4/1	10YR 4/6	Few Fine Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match that of Commerce silt loam, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wetland 1.2.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **6/19/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Rezsutek, Lowe**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Community ID: **Forest**

Transect ID:

Plot ID: **SS 504**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Tree	FACW	9.		
2. *Acer rubrum*	Tree	OBL	10.		
3. *Sambucus canadensis*	Shrub	FACW-	11.		
4. *Conoclinium coelestinum*	Herb	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is slightly sloping and appears well drained.**

SOILS SS 504

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		10YR 3/1	None		Clay
3 - 10		10YR 4/1	10YR 3/6	Few Fine Prominent	Clay
10 - 16		10YR 5/1	10YR 4/3	Common Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.13.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.3

Project/Site: **NAS JRB New Orleans**

Date: **6/19/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Hill, Schulze**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 302A**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	**Tree**	**OBL**	9.		
2. *Acer negundo*	**Sapling**	**FACW**	10.		
3. *Acer negundo*	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a depression with a slope towards the west that appears to pond water frequently.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	None		Clay
4 - 10		N 2.5/0	None		Clay
10 - 16		N 2.5/0	7.5YR 5/8	Few Fine Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soil (gleyed soil in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soils parameters are met. Area is identified as Wetland 1.3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Hill, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 302**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Celtis laevigata***	**Tree**	**FACW**	9.		
2. ***Acer negundo***	**Sapling**	**FACW**	10.		
3. ' ***Sapium sebiferum***	**Sapling**	**FAC**	11.		
4. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is slightly upslope of SS 302A and appears to drain well.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 3/1**	**2.5Y 3/3**	**Few Fine Prominent**	**Clay**
4 - 8		**10YR 3/1**	**10YR 3/6**	**Few Fine Prominent**	**Clay**
8 - 16		**10YR 3/1**	**N 2.5/0**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 302A.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.4

Project/Site: **NAS JRB New Orleans**					Date: **11/12/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 117**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	**Herb**	**OBL**	9.		
2. ***Cyperus virens***	**Herb**	**FACW**	10.		
3. ***Rhyncosia minima***	**Herb**	**UPL**	11.		
4. ***Rubus trivialis***	**Shrub**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **75.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- _X_ Water-Stained Leaves
- ___ Local Soil Survey Data
- _X_ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two secondary indicators of wetland hydrology were observed. Wetland hydrology criterion is met. Area is a shallow depression that appears to remain inundated or saturated at a frequency and duration necessary to support a hydrophytic vegetation community; however, the indicators we observed were marginal. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		10YR 2/1	None		Clay
2 - 5		10YR 3/1	10YR 3/4	Few Fine Distinct	Clay
5 - 17		10YR 4/1	10YR 4/4	Few Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wetland 1.4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **11/12/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 116**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Verbena brasiliensis***	**Herb**	**NI**	9.		
2. ***Rubus trivialis***	**Shrub**	**FAC**	10.		
3. ***Rhyncosia minima***	**Herb**	**UPL**	11.		
4. ***Cyperus virens***	**Herb**	**FACW**	12.		
5. ***Ampelopsis arborea***	**W. Vine**	**FAC+**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **75.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology criterion is not met. Area is the upland/wetland boundary of Wetland 1.5 and the point at which wetland hydrology was no longer observed. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		10YR 2/1	None		Clay
2 - 17		10YR 4/1	10YR 4/2	Common Fine Faint	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology is not met. Area is the upland/wetland boundary of Wetland 1.5 and the point at which indicators of wetland hydrology are no longer observed.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.5

Project/Site: **NAS JRB New Orleans**

Applicant/Owner: **Department of the Navy, Southern Division**

Investigator: **Rezsutek, Hill**

Date: **11/12/99**

County: **Plaquemines**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 115**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Ampelopsis arborea***	W. Vine	FAC+	9.		
2. ***Cyperus virens***	Herb	FACW	10.		
3. ***Polygonum hydropiperoides***	Herb	OBL	11.		
4.			12.		
5.			13. Associated Non-dominants:		
6.			14. ***Andropogon glomeratus***	Herb	FACW+
7.			14. ***Rhyncosia minima***	Herb	UPL
8.			14. ***Paspalum plicatulum***	Herb	FAC

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**6**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- _X_ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- _X_ Water-Stained Leaves
- ___ Local Soil Survey Data
- _X_ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and two secondary indicators of wetland hydrology were observed. Wetland hydrology criterion is met. Area is a long, narrow depression that appears to have wetland hydrology for a frequency and duration necessary to support a hydrophytic plant community. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 17		**10YR 4/1**	**7.5YR 3/4**	**Common Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wet 1.5.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.6

Project/Site: **NAS JRB New Orleans**	Date: **11/12/99**
Applicant/Owner: **Department of the Navy, Southern Division**	County: **Plaquemines**
Investigator: **Rezsutek, Hill**	State: **Louisiana**
Do Normal Circumstances exist on the site? YES **X** NO	Community ID: **Field**
Is the site significantly disturbed (Atypical Situation) YES NO **X**	Transect ID:
Is the area a potential Problem Area? YES NO **X**	Plot ID: **SS 113**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	Herb	OBL	9.		
2. ***Rumex crispa***	Herb	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

__X__ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- __X__ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	Not observed	(in.)
Depth to Free Water in Pit:	Not observed	(in.)
Depth to Saturated Soil:	11	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- __X__ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- __X__ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology criterion is met. Area is a small deep depression within a maintained field. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		**10YR 4/1**	**5YR 3/4**	**Few Fine Prominent**	**Clay**
6 - 11		**Charcoal**			
11 - 17		**2.5Y 4/1**	**5YR 4/6**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met. A thick layer of charcoal was observed beneath a surface clay layer suggesting that these soils have been severely disturbed in the past.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO		
Wetland Hydrology Present?	YES	**X**	NO		
Hydric Soils Present?	YES	**X**	NO	Is this Sampling Point Within a Wetland? YES	**X** NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wet 1.6**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans** | Date: **11/12/99**

Applicant/Owner: **Department of the Navy, Southern Division** | County: **Plaquemines**

Investigator: **Rezsutek, Hill** | State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 114**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Commelina sp.*	Herb	UPL	9.		
2. ' *Rhynchosia minima*	Herb	UPL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14. Associated Non-dominants:		
7.			15. *Geranium carolinianum*	Herb	UPL
8.			15. *Rubus trivialis*	Shrub	FAC

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **0.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is not greater than 50%. Hydrophytic vegetation criterion is not met.**
' Identification of this species is tentative because of the poor condition of the plants and lack of reproductive structures making positive identification very difficult.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology criterion is not met. Area is the upland/wetland boundary of Wetland 1.6 and the point at which indicators of wetland hydrology and a hydrophytic plant community were no longer observed. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 4/1	7.5YR 4/6	Few Medium Prominent	Clay
4 - 17		10YR 4/1	10YR 4/6	Few Fine Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES		NO	X	
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and wetland hydrology criteria are not met. Hydric soil criterion is met. Area is the upand/wetland boundary of Wetland 1.6 and is the point at which indicators of wetland hydrology and hydrophytic vegetation are no longer observed.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.8
Wetland 1.7

Project/Site: **NAS JRB New Orleans**					Date: **11/11/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Mowed field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 107**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Sesbania macrocarpa***	**Shrub**	**FAC+**	9.		
2. ***Ludwigia octovalvis***	**Herb**	**OBL**	10.		
3. ***Ampelopsis arborea***	**W. Vine**	**FAC+**	11.		
4. ***Cyperus virens***	**Herb**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15. Associated Non-dominants:		
8.			16. ***Polygonum hydropiperoides***	**Herb**	**OBL**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- X Other (Explain in Remarks)

Remarks: **One secondary indicator of wetland hydrology was observed. Area is a maintained mowed field. This area is believed to have a seasonally high water table and we believe the area would meet the criterion under normal rainfall and groundwater conditions. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Commerce silt loam**

Drainage Class: **Somewhat poorly drained**

Taxonomy (Subgroup) **thermic Aeric Fluaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**2.5Y 3/1**	**None**		**Clay**
4 - 17		**2.5Y 4/1**	**10YR 3/6**	**Few Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
___	Gleyed or Low-Chroma Colors	X	Other (Explain in Remarks)

Remarks: **Profile does not match that of Commerce silt loam, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the soil profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wetland 1.7.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Applicant/Owner: **Department of the Navy, Southern Division**

Investigator: **Rezsutek, Hill**

Date: **11/11/99**

County: **Plaquemines**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	
Is the area a potential Problem Area?	YES		NO	X	

Community ID: **Open field**

Transect ID:

Plot ID: **SS 108**

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Axonopus affinis*	Herb	FACW
2. *Verbena brasiliensis*	Herb	NI
3. *Rubus trivialis*	Shrub	FAC
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12. Associated Non-dominants:		
13. *Cardiospermum halicacabum*	W. Vine	FAC
13. *Cyperus virens*	Herb	FACW+
13. *Passiflora edulis*	W. Vine	FACU
13. *Solidago canadensis*	Herb	FACU

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One secondary indicator of wetland hydrology was observed. Area is a maintained mowed field. This area is the upland/wetland boundary of Wetland 1.7 and the point at which wetland hydrology is no longer observed. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Commerce silt loam**

Drainage Class: **Somewhat poorly drained**

Taxonomy (Subgroup) **thermic Aeric Fluaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		2.5Y 3/1	None		Clay
4 - 17		2.5Y 4/1	2.5Y 3/6	Few Medium Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
___	Gleyed or Low-Chroma Colors	X	Other (Explain in Remarks)

Remarks: **Area is at the edge of Wetland 7.3 and adjacent to a Navy test facility. Soils could not be examined here because of a layer of gravel surrounding the facility. A thin layer of soil has accumulated above the gravel layer that supports a herbaceous layer of vegetation. This area receives regular mowing because it is adjacent to a runway. We assumed the soils below the impenatrable gravel layer to be the mapped type and thus hydric.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion is not met. Area is the upland/wetland boundary of Wetland 1.7.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.9

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Hill, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 300**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Carya illinoensis*	Tree	FAC+	9.		
2. *Salix nigra*	Tree	OBL	10.		
3. *Ulmus crassifolia*	Tree	FAC	11.		
4. *Acer rubrum*	Tree	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percent of dominant plants that are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a low, wide swale that appears to catch and hold water for extended periods of time.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		**10YR 3/1**	**10YR 4/4**	**Few Fine Distinct**	**Clay**
6 - 16		**10Y 4/1**	**10YR 4/4**	**Many Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match that of Sharkey silty clay loam, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (gleyed colors in the upper 10 inches) was observed. Hydric soils parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soil parameters are met. Area is identified as Wetland 1.9.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Hill, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 300A**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Sapling**	**FACW**	9.		
2. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	10.		
3. ***Ostrya virginiana***	**Sapling**	**FACU-**	11.		
4. ***Rubus trivialis***	**Shrub**	**FAC**	12.		
5. ***Acer negundo***	**Tree**	**FACW**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **80.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is fairly level to slightly sloping, and is on the upland side of the upland/wetland boundary of Wetland 1.9.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	None		Clay
4 - 16		10YR 4/1	10YR 4/6	Few Fine Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **The profile roughly matches that of Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma of 1 or less in the upper 10 inches of soil profile) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 1.9 where indicators of wetland hydrology were no longer observed.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.10

Project/Site: **NAS JRB New Orleans**					Date: **11/11/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Mowed field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 110**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	**Herb**	**OBL**	9.		
2. ***Rubus trivialis***	**Shrub**	**FAC**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology criterion is met. Area is an open field that is periodically cleared during maintenance of a Navy facility. Area appears to have wetland hydrology only seasonally. 1996 and historical aerial photography was reviewed as part of this investigation.**

SOILS

SS 110

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		**10YR 3/1**	**None**		**Clay**
2 - 17		**10YR 4/1**	**7.5YR 3/6**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soil criterion is met. Brick and other construction materials were present in several pits dug at this site leading us to believe the area has been used as a refuse dump in the past.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wetland 1.10.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **11/11/99**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Rezsutek, Hill**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Community ID: **Mowed field**

Transect ID:

Plot ID: **SS 112**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Lonicera japonica*	W. Vine	FAC	9.		
2. *Dichanthelium dichotomum*	Herb	FAC	10.		
3. *Rubus trivialis*	Shrub	FAC	11.		
4. *Ampelopsis arborea*	W. Vine	FAC+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology criterion is not met. Area is a maintained field in proximity to an abandoned runway that appears to be well drained. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 3/2**	**None**		**Clay**
4 - 17		**2.5Y 4/1**	**7.5YR 3/4**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology is not met. Area is the upland/wetland boundary of Wetlands 1.10 and 1.11 and is the point at which indicators of wetland hydrology are not observed.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.11

Project/Site: **NAS JRB New Orleans**					Date: **11/11/99**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Hill**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Mowed field**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 111**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Rubus trivialis***	**Shrub**	**FAC**	9.		
2. ***Cyperus virens***	**Herb**	**FACW+**	10.		
3. ***Polygonum hydropiperoides***	**Herb**	**OBL**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15. Associated Non-dominants:		
8.			16. ***Ampelopsis arborea***	**W. Vine**	**FAC+**

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Hydrophytic vegetation criterion is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**8**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology criterion is met. Area is an open field that is periodically cleared during maintenance of a Navy facility. Area appears to have been plowed recently. 1996 and historical aerial photography was reviewed as part of this investigation.**

Map Unit Name
(Series and Phase) **Tunica silty clay** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		**10YR 3/1**	**7.5YR 4/6**	**Few Fine Prominent**	**Clay**
2 - 17		**10YR 4/1**	**7.5YR 4/6**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Tunica silty clay, which is listed as a hydric soil by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area is identified as Wetland 1.11.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.12

Project/Site: **NAS JRB New Orleans**					Date: **6/21/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 506**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Sambucus canadensis*	Shrub	FACW-	10.		
3. *Acer negundo*	Tree	FACW	11.		
4. *Celtis laevigata*	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100.0%

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	Not observed	(in.)
Depth to Free Water in Pit:	Not observed	(in.)
Depth to Saturated Soil:	Not observed	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a slight depression that appears to remain saturated longer than surrounding areas.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**10YR 4/1**	**10YR 4/3**	**Common Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO	
Wetland Hydrology Present?	YES	**X**	NO	
Hydric Soils Present?	YES	**X**	NO	Is this Sampling Point Within a Wetland? YES **X** NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.12.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/21/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 507**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Sambucus canadensis***	**Shrub**	**FACW-**	9.		
2. ***Acer rubrum***	**Tree**	**OBL**	10.		
3. ***Morus rubra***	**Tree**	**FAC**	11.		
4. ***Acer negundo***	**Tree**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		10YR 3/1	None		Clay
5 - 12		10YR 4/2	None		Clay
12 - 16		10YR 4/2	7.5YR 4/6	Few Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.12.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.13

Project/Site: **NAS JRB New Orleans**

Date: **6/19/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Rezsutek, Lowe**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Community ID: **Forest**

Transect ID:

Plot ID: **SS 503**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Sapling	FACW	9.		
2. *Acer negundo*	Tree	FACW	10.		
3. *Catalpa bignonioides*	Tree	FAC-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **66.7%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a depression that remains saturated for extended periods of time.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		**10YR 3/2**	**None**		**Clay loam**
2 - 8		**2.5Y 4/2**	**10YR 4/4**	**Few Fine Distinct**	**Clay loam**
8 - 16		**2.5Y 5/1**	**10YR 4/4**	**Common Medium Prominent**	**Clay loam**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.13.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.14

Project/Site: **NAS JRB New Orleans**					Date: **6/21/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 508**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	**Herb**	**OBL**	9.		
2. ' ***Sapium sebiferum***	**Tree**	**FAC**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met. Trunks of Sapium sebiferum trees were buttressed.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
X Water Marks
X Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Soils were at or near field capacity during a period of drought, which indicates that this area remains saturated or inundated for extended periods under normal conditions.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 11		**10YR 4/1**	**7.5YR 3/3** **5YR 3/4**	**Common Medium Prominent** **Many Coarse Prominent**	**Clay**
11 - 16		**2.5Y 3/1**	**7.5YR 3/3**	**Common Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.14.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/21/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 509**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Tree**	**FACW**	9.		
2. ***Sambucus canadensis***	**Shrub**	**FACW-**	10.		
3. ' ***Sapium sebiferum***	**Tree**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 1		10YR 3/1	None		Clay
1 - 9		10YR 4/1	10YR 4/3	Common Medium Distinct	Clay, shell fragments mixed throughout
9 - 16		10YR 3/1	10YR 4/3	Common Medium Distinct	Clay, shell fragments mixed throughout

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met. The shell fragments found throughout the profile are an indication that these soils have been disturbed in the past.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.14.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.15

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 305**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Celtis laevigata*	Tree	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a shallow depression that appears to hold water for extended periods of time.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**10YR 3/1**	**None**		**Clay, some gravel and shell mixed throughout**
8 - 12		**N 2.5/0**	**7.5YR 4/6**	**Few Fine Prominent**	**Clay, with gravel and shell mixed throughout**
12 - 16		**10YR 3/1**	**10YR 3/6**	**Few Fine Prominent**	**Clay, with gravel and shell mixed throughout**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soil parameters are met. Area is identified as Wetland 1.15.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 306**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Celtis laevigata***	**Tree**	**FACW**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Acer negundo***	**Sapling**	**FACW**	11.		
4. ***Sambucus canadensis***	**Shrub**	**FACW-**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology parameter is not met. Area is fairly flat and slopes to Wetland 305. Area is on the upland side of the upland/wetland boundary of Wetland 1.15.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 2/1**	**None**		**Clay, small amount of sand mixed within**
4 - 16		**10YR 3/1**	**10YR 4/4** **N 2.5/0**	**Few Fine Distinct** **Few Fine Prominent**	**Clay, small amount of sand mixed within**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 1.15.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.16

Project/Site: **NAS JRB New Orleans**

Date: **6/22/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Love, Schulze**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 307**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer rubrum***	**Tree**	**OBL**	9.		
2. ***Acer rubrum***	**Sapling**	**OBL**	10.		
3. ***Sapium sebiferum***	**Sapling**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and two secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a shallow depression that holds water for extended periods of time.**

Map Unit Name
(Series and Phase) Rita muck

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**10YR 3/4**	**Common Fine Distinct**	**Clay, few oxidized root channels**
5 - 16		**10YR 4/1**	**10YR 3/4**	**Common Fine Distinct**	**Clay, few to common oxidized root channels**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soils parameters are met. Area is identified as Wetland 1.16.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 308**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Morus rubra*	Tree	FAC	10.		
3. *Sambucus canadensis*	Shrub	FACW-	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology parameter is not met. Area is generally flat with a slight slope to the west into Wetland 1.16.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**None**		**Clay**
5 - 16		**10YR 4/1**	**10YR 4/4**	**Common Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 1.16.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.17

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 309**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	**Tree**	**OBL**	9.		
2. *Acer rubrum*	**Sapling**	**OBL**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a shallow swale impounded by spoils from a nearby drainage canal.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 10		**10YR 3/1**	**7.5YR 4/6**	**Few Fine Prominent**	**Clay**
10 - 14		**N 2.5/0**	**None**		**Clay**
14 - 16		**10YR 5/6**	**N 2.5/0**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland?	YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soils parameters are met. Area is identified as Wetland 1.17.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 310**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Acer negundo*	Tree	FACW	10.		
3. *Sambucus canadensis*	Shrub	FACW-	11.		
4. ' *Sapium sebiferum*	Sapling	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is not met. Area is generally level and appears to be well drained.**

Map Unit Name
(Series and Phase) Rita muck

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	10YR 3/2	Few Fine Faint	Clay
4 - 16		10YR 4/1	7.5YR 4/6	Many Fine Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soil (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 1.17.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.18

Project/Site: **NAS JRB New Orleans**

Date: **6/23/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Love, Schulze**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Community ID: **Forest**
Transect ID:
Plot ID: **SS 311**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Sapling	OBL	9.		
2. *Acer rubrum*	Tree	OBL	10.		
3. *Saururus cernuus*	Herb	OBL	11.		
4. *Sapium sebiferum*	Sapling	FAC	12.		
5. *Sapium sebiferum*	Tree	FAC	13.		
6. *Acer negundo*	Sapling	FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a shallow blind depression that appears to remain saturated or inundated for extended periods.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**2.5Y 4/1**	**None**		**Silty clay**
8 - 16		**2.5Y 4/1**	**7.5YR 4/4**	**Many Medium Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.18.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 312**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Carya illinoensis***	**Tree**	**FAC+**	9.		
2. ***Cornus drummondii***	**Sapling**	**FAC**	10.		
3. ***Acer negundo***	**Sapling**	**FACW**	11.		
4. ***Conoclinium coelestinum***	**Herb**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally flat and drains well.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**2.5Y 4/2**	**5YR 4/6**	**Common Medium Prominent**	**Silty clay, coarse sand mixed throughout**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 1.18.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.19

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 313**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Celtis laevigata***	**Sapling**	**FACW**	9.		
2. ***Celtis laevigata***	**Tree**	**FACW**	10.		
3. ***Acer negundo***	**Sapling**	**FACW**	11.		
4. ***Cornus drummondii***	**Sapling**	**FAC**	12.		
5. ' ***Sapium sebiferum***	**Tree**	**FAC**	13.		
6. ***Polygonum hydropiperoides***	**Herb**	**OBL**	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is an abandoned ditch that no longer drains into an adjacent, functional drainage ditch, and was considered to be jurisdictional.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 10		**2.5Y 4/1**	**10YR 4/2**	**Few Fine Distinct**	**Silty clay**
10 - 16		**N 5/0**	**10YR 4/3**	**Common Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO				
Wetland Hydrology Present?	YES	X	NO				
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland?	YES	X	NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.19.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 314**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Sapling**	**FACW**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Sambucus canadensis***	**Shrub**	**FACW-**	11.		
4. ***Conoclinium coelestinum***	**Herb**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally flat and well drained.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**2.5Y 3/1**	**None**		**Silty clay**
4 - 16		**2.5Y 4/1**	**7.5YR 4/3**	**Common Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO		
Wetland Hydrology Present?	YES		NO	**X**	
Hydric Soils Present?	YES	**X**	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 1.19.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.20

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**	
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**	
Investigator: **Rezsutek, Lowe**					State: **Louisiana**	
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:	
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 510**	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	**Herb**	**OBL**	9.		
2. ' ***Sapium sebiferum***	**Sapling**	**FAC**	10.		
3. ***Vitis rotundifolia***	**W. Vine**	**FAC**	11.		
4. ***Salix nigra***	**Tree**	**OBL**	12.		
5. ***Acer rubrum***	**Tree**	**OBL**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
X Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrolog parameter is met. Area is experiencing drought conditions, and hydrology indicators were not strong.**

SOILS SS 510

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	None		Clay
4 - 11		10YR 4/1	10YR 4/2	Few Medium Faint	Clay
11 - 16		10YR 4/1	10YR 4/6 10YR 4/4	Common Medium Prominent Many Coarse Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.20.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 511**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Rubus louisianus***	**Shrub**	**FAC**	9.		
2. ***Acer negundo***	**Sapling**	**FACW**	10.		
3. ***Cornus drummondii***	**Sapling**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 3/1**	**None**		**Clay**
4 - 12		**2.5Y 3/1**	**10YR 3/4**	**Few Fine Distinct**	**Clay**
12 - 16		**10YR 4/1**	**7.5YR 3/4**	**Common Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met. Topsoil had a "coffee ground" texture**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.20.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.21

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 512**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Polygonum hydropiperoides***	**Herb**	**OBL**	9.		
2. ' ***Sapium sebiferum***	**Sapling**	**FAC**	10.		
3. ***Ampelopsis arborea***	**W. Vine**	**FAC+**	11.		
4. ***Salix nigra***	**Tree**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a depression with soil moisture approaching field capacity during drought condictions, an indication that this area holds water for extended periods.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		10YR 3/1	None		Clay
6 - 16		10YR 4/1	7.5YR 4/3	Many Coarse Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.21.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS-513**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Tree**	**FACW**	9.		
2. ***Conoclinium coelestinum***	**Herb**	**FAC**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 10		**10YR 3/1**	**None**		**Clay**
10 - 16		**10YR 4/1**	**10YR 3/4**	**Common Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.21.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.22

Project/Site: **NAS JRB New Orleans**						Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**						County: **Plaquemines**
Investigator: **Rezsutek, Lowe**						State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO			Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X		Transect ID:
Is the area a potential Problem Area?	YES		NO	X		Plot ID: **SS 527**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Shrub	FACW-	9.		
2. ' *Sapium sebiferum*	Tree	FAC	10.		
3. *Acer negundo*	Tree	FACW	11.		
4. *Acer rubrum*	Tree	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrolog parameter is met.**

SOILS SS 527

Map Unit Name
(Series and Phase) Rita muck

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 12		**10YR 4/1**	**10YR 4/2**	**Common Medium Faint**	**Clay**
12 - 16		**10YR 4/1**	**7.5YR 4/6**	**Few Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.22.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**			Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**			County: **Plaquemines**
Investigator: **Rezsutek, Lowe**			State: **Louisiana**
Do Normal Circumstances exist on the site?	YES **X**	NO	Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES	NO **X**	Transect ID:
Is the area a potential Problem Area?	YES	NO **X**	Plot ID: **SS 528**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Sambucus canadensis***	**Shrub**	**FACW-**	9.		
2. ' ***Sapium sebiferum***	**Sapling**	**FAC**	10.		
3. ***Acer rubrum***	**Tree**	**OBL**	11.		
4. ***Acer negundo***	**Tree**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- **X** Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

SOILS SS 528

Map Unit Name
(Series and Phase) **Rita muck** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		**10YR 3/1**	**None**		**Clay**
3 - 12		**10YR 4/1**	**10YR 4/2**	**Common Coarse Faint**	**Clay**
12 - 16		**10YR 4/1**	**5YR 4/4**	**Common Coarse Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO		
Wetland Hydrology Present?	YES		NO	**X**	
Hydric Soils Present?	YES	**X**	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.22.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.23

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**	
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**	
Investigator: **Rezsutek, Lowe**					State: **Louisiana**	
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**	
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:	
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 518**	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salix nigra*	**Tree**	**OBL**	9.		
2. *Acer rubrum*	**Tree**	**OBL**	10.		
3. *Celtis laevigata*	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- _X_ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- _X_ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a shallow depression that appears to remain saturated or inundated for extended periods of time.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**10YR 4/1**	**7.5YR 3/4**	**Common Fine Prominent**	**Clay**
8 - 16		**2.5Y 4/1**	**7.5YR 4/4**	**Common Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO	
Wetland Hydrology Present?	YES	**X**	NO	
Hydric Soils Present?	YES	**X**	NO	Is this Sampling Point Within a Wetland? YES **X** NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.23.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 519**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Sambucus canadensis***	**Shrub**	**FACW-**	9.		
2. ***Cornus drummondii***	**Tree**	**FAC**	10.		
3. ***Acer negundo***	**Sapling**	**FACW**	11.		
4. ***Acer rubrum***	**Tree**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is relatively flat and appears to be well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		**10YR 4/1**	**None**		**Clay**
2 - 12		**2.5Y 4/1**	**10YR 4/6**	**Common Fine Prominent**	**Clay**
12 - 16		**10YR 4/1**	**7.5YR 3/3**	**Common Medium Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.23.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.24

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 520**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Tree	FACW	9.		
2. *Quercus laurifolia*	Tree	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100.0%

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a small depression that appears to hold water for extended times.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		10YR 2/2	None		Clay loam
3 - 6		10YR 3/2	None		Clay
6 - 12		10YR 4/1	None		Clay
12 - 16		10YR 4/1	10YR 4/4	Common Fine Distinct	Clay loam

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.24.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 521**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Sambucus canadensis***	**Shrub**	**FACW-**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 10		10YR 3/2	None		Sandy clay loam
10 - 16		10YR 3/2	None		Clay loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. No indicator of hydric soils was observed. Hydric soil parameter is not met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES		NO	X	Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation parameter is met. Wetland hydrology and hydric soil parameters are not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.24.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.25

Project/Site: **NAS JRB New Orleans**	Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**	County: **Plaquemines**
Investigator: **Rezsutek, Lowe**	State: **Louisiana**
Do Normal Circumstances exist on the site? YES **X** NO	Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation) YES NO **X**	Transect ID:
Is the area a potential Problem Area? YES NO **X**	Plot ID: **SS 516**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer rubrum***	**Tree**	**OBL**	9.		
2. ***Berchemia scandens***	**W. Vine**	**FACW**	10.		
3. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- _X_ Water Marks
- ___ Drift Lines
- _X_ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- _X_ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a large depression that appears to remain saturated for extended periods of time.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		**10YR 3/2**	**None**		**Clay loam**
3 - 8		**10YR 4/2**	**5YR 4/4**	**Few Fine Prominent**	**Clay loam**
8 - 16		**10YR 5/1**	**10YR 4/4** **7.5YR 4/4**	**Common Medium Distinct** **Few Medium Prominent**	**Clay loam**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.25.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 517**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ' *Sapium sebiferum*	**Sapling**	**FAC**	9.		
2. *Ilex vomitoria*	**Shrub**	**FAC**	10.		
3. *Acer rubrum*	**Sapling**	**OBL**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally flat and sloping slightly towards Wetland 1.25, and appears well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 1		10YR 3/1	None		Clay loam
1 - 8		10YR 3/2	None		Clay loam
8 - 10		10YR 3/1	7.5YR 4/3	Common Fine Prominent	Clay loam
10 - 16		10YR 3/2	7.5YR 4/2	Common Coarse Distinct	Clay loam

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.25.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.26

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 522**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Celtis laevigata*	Tree	FACW	9.		
2. [1] *Sapium sebiferum*	Sapling	FAC	10.		
3. *Acer rubrum*	Sapling	OBL	11.		
4. *Acer negundo*	Tree	FACW	12.		
5. *Quercus laurifolia*	Tree	FACW	13.		
6. *Sambucus canadensis*	Shrub	FACW-	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
[1] The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

___ X ___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ X ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ X ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ X ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a shallow depression with a drainage outlet at one side that reduces but does not eliminate wetland hydrology.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		**10YR 2/1**	**None**		**Clay**
3 - 6		**10YR 3/1**	**None**		**Clay**
6 - 16		**10YR 4/1**	**7.5YR 3/3**	**Few Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.26.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 523**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Shrub	FACW-	9.		
2. *Acer negundo*	Sapling	FACW	10.		
3. *Conoclinium coelestinum*	Herb	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is next to a large drainage canal and appears well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**None**		**Clay**
5 - 16		**10YR 4/1**	**None**		**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met. Soil had a "coffee ground" texture at the surface.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 1.26.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 1.27

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 526**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Rubus louisianus***	**Shrub**	**FAC**	9.		
2. ***Acer rubrum***	**Tree**	**OBL**	10.		
3. ***Conoclinium coelestinum***	**Herb**	**FAC**	11.		
4. ***Polygonum hydropiperoides***	**Herb**	**OBL**	12.		
5. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary indicator of wetland hydrology was observed. Wetland hydrology parameter is met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	None		Clay
4 - 16		10YR 4/1	10YR 3/4	Few Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 1.27.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Hill, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 301**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Quercus nuttallii*	Tree	OBL	9.		
2. *Fraxinus pennsylvanica*	Tree	FACW	10.		
3. *Acer negundo*	Sapling	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally flat and somewhat well-drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**None**		**Clay**
5 - 16		**10YR 4/1**	**10YR 3/3**	**Few Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of wetland hydrology (chroma 1 or less in the upper 10 inches of soil) was oberved. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is a relatively well-drained forest.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **6/22/00**

Applicant/Owner: **Department of the Navy, Southern Division**

County: **Plaquemines**

Investigator: **Love, Schulze**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 304**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Morus rubra*	**Tree**	**FAC**	9.		
2. *Acer negundo*	**Tree**	**FACW**	10.		
3. *Acer negundo*	**Sapling**	**FACW**	11.		
4. ' *Sapium sebiferum*	**Tree**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Wetland hydrology parameter is not met. Area is generally flat and appears to drain to the southeast.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**10YR 3/1**	**7.5YR 4/6**	**Common Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches that of Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 500**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	**Tree**	**FACW**	9.		
2. ' *Sapium sebiferum*	**Tree**	**FAC**	10.		
3. *Sambucus canadensis*	**Shrub**	**FACW-**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
_X_ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is slightly sloping and well drained.**

SOILS SS 500

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		**10YR 2/1**	**5YR 3/3**	**Common Fine Prominent**	**Clay**
2 - 16		**10YR 4/1**	**10YR 4/2**	**Few Medium Faint**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met. Surface soil had a "coffee ground" texture.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is a shallow swale that drains surrounding areas but does not retain water.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 501**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Tree	FACW	9.		
2. *Quercus nigra*	Tree	FAC	10.		
3. *Celtis laevigata*	Sapling	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is a slight depression that appears to drain well.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 1		**10YR 3/1**	**None**		**Clay**
1 - 16		**10YR 4/1**	**10YR 4/3** **10YR 4/4**	**Few Fine Distinct** **Common Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/19/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 502**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Conoclinium coelestinum***	**Herb**	**FAC**	9.		
2. ***Cornus drummondii***	**Tree**	**FAC**	10.		
3. ***Acer negundo***	**Sapling**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

__X__ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- __X__ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 1		**10YR 3/1**	**None**		**Clay**
1 - 16		**10YR 4/1**	**10YR 4/3**	**Common Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/21/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 505**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Sapling**	**FACW**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Sambucus canadensis***	**Shrub**	**FACW-**	11.		
4. ***Celtis laevigata***	**Tree**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally level and slightly undulating, and appears to be well drained.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 2		10YR 3/2	None		Clay
2 - 7		10YR 4/1	5YR 4/4	Few Medium Prominent	Clay
7 - 14		10YR 3/1	5YR 3/4	Common Fine Prominent	Clay
14 - 16		2.5Y 2.5/1	10YR 3/2	Common Fine Distinct	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Westwego clay, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 514**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Ilex vomitoria***	**Shrub**	**FAC**	9.		
2. ***Acer negundo***	**Sapling**	**FACW**	10.		
3. ***Salix nigra***	**Tree**	**OBL**	11.		
4. ***Cornus drummondii***	**Tree**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

__X__ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- __X__ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally flat and appears to be well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 1		**10YR 3/1**	**None**		**Clay loam**
1 - 8		**10YR 3/2**	**None**		**Clay loam**
8 - 14		**10YR 4/2**	**7.5YR 3/4**	**Few Fine Prominent**	**Clay loam**
14 - 16		**10YR 4/1**	**7.5YR 4/4**	**Common Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/22/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 515**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	**Sapling**	**FACW**	9.		
2. ' *Sapium sebiferum*	**Tree**	**FAC**	10.		
3. *Cornus drummondii*	**Tree**	**FAC**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is a shallow depression but appears to be well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 2/1**	**None**		**Clay**
4 - 8		**10YR 3/1**	**None**		**Clay**
8 - 16		**10YR 4/1**	**7.5YR 3/3**	**Few Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO		
Wetland Hydrology Present?	YES		NO	**X**	
Hydric Soils Present?	YES	**X**	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 524**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Conoclinium coelestinum*	Herb	FAC	9.		
2. *Ilex vomitoria*	Shrub	FAC	10.		
3. *Acer negundo*	Tree	FACW	11.		
4. ' *Sapium sebiferum*	Tree	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 3/1** °	**None**		**Clay**
4 - 16		**10YR 4/1**	**10YR 4/3**	**Few Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met. Soils had a "coffee ground" texture at the surface.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO			
Wetland Hydrology Present?	YES		NO	X		
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES	NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 525**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Rubus louisianus***	**Shrub**	**FAC**	9.		
2. ***Rubus trivialis***	**Shrub**	**FAC**	10.		
3. ***Acer negundo***	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

SOILS SS 525

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**10YR 4/1**	**10YR 4/2** **10YR 4/3**	**Few Fine Faint** **Few Fine Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

Area 2

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 2.1

Project/Site: **NAS JRB New Orleans**

Applicant/Owner: **Department of the Navy Southern Division**

Investigator: **Rezsutek, Hardy**

Do Normal Circumstances exist on the site? YES **X** NO
Is the site significantly disturbed (Atypical Situation) YES NO **X**
Is the area a potential Problem Area? YES NO **X**
Area is under forced drainage.

Date: **7/30/99**

County: **Plaquemines Parish**

State: **Louisiana**

Community ID: **Forest**
Transect ID:
Plot ID: **SS G**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum var. trilobum*	Sapling	OBL	9.		
2. *Saururus cernuus*	Herb	OBL	10.		
3. *Acer negundo*	Sapling	FACW	11.		
4. *Ulmus americana*	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**

HYDROLOGY

__X__ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
__X__ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**16**	(in.)
Depth to Saturated Soil:	**4**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
__X__ Saturated in Upper 12 Inches
___ Water Marks
__X__ Drift Lines
___ Sediment Deposits
__X__ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
__X__ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Three primary and one secondary wetland hydrology indicators were observed. Area is a long, narrow depression that appears to be an abandoned drainage canal or borrow area that remains saturated or inundated for extended periods.**

SOILS SS G

Map Unit Name
(Series and Phase) **Westwego clay** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 7		**10YR 3/1**	**5YR 5/8**	**Common Fine Prominent**	**Clay**
7 - 16		**10YR 4/1**	**10YR 4/6** **N 2.5 3/0**	**Common Medium Prominent** **Common coarse prominent**	**Clay**
16 - 28		**10YR 5/1-4/1**	**10R 3/6** **5YR 5/8**	**Common Medium Prominent** **Common medium prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area identified as Wetland 2.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **7/31/99**

Applicant/Owner: **Department of the Navy Southern Division**

County: **Plaquemines Parish**

Investigator: **Rezsutek, Hardy**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO
Is the site significantly disturbed (Atypical Situation)	YES		NO X
Is the area a potential Problem Area?	YES		NO X

Area is under forced drainage.

Community ID: **Forest**

Transect ID:

Plot ID: **SS I**

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Tree	FACW
2. *Sambucus canadensis*	Shrub	FACW-
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14. Associated Non-dominants:		
15. *Rubus trivialis*	Shrub	FAC
15. *Sapium sebiferum*	Sapling	FAC

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No hydrology indicators were observed. Area is generally level to slightly sloping and appears to be well drained.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**5YR 5/8** **10YR 4/1**	**Common Fine Prominent** **Common fine prominent**	**Clay**
5 - 8		**N 2.5/0**	**10YR 4/2** **7.5YR 4/6**	**Many Coarse Prominent** **Common fine prominent**	**Clay**
8 - 14		**10YR 4/2**	**7.5YR 4/6**	**Common Medium Prominent**	**Clay**
14 - 28		**10YR 4/1**	**7.5YR 4/6**	**Common Fine Prominent**	**Clay; sand pockets**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Hydric soils criterion is met. Iron depletions surrounding darker mottles on surface layer were observed.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion is not met. Area lacks wetland hydrology and represents the wetland/upland boundary of Wetland 7.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 2.2

Project/Site: **NAS JRB New Orleans**

Date: **7/30/99**

Applicant/Owner: **Department of the Navy Southern Division**

County: **Plaquemines Parish**

Investigator: **Rezsutek, Hardy**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Area is under forced drainage.

Community ID: **Forest**
Transect ID:
Plot ID: **SS F**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum v. drummondii*	Tree	OBL	9.		
2. *Sambucus canadensis*	Shrub	FACW-	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15. Associated Non-dominants:		
8.			16. *Acer negundo*	Tree	FACW

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Herbaceous cover of less than 5% was present.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	3	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Three primary and one secondary wetland hydrology indicators were observed. Area is a circular, blind depression within a forest that appears to hold water for extended periods.**

SOILS SS F

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 20		**10YR 3/1**	**10YR 4/6** **N 2.5/0**	**Common Medium Prominent** **Common coarse prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology and hydric soil criteria are met. Area identified as Wetland 2.2. This area is characteristic of a blind depression within a forest that holds water for extended periods of time.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 2.3

Project/Site: **NAS JRB New Orleans**

Applicant/Owner: **Department of the Navy Southern Division**

Investigator: **Love, Hardy**

Date: **7/28/99**

County: **Plaquemines Parish**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Area is under forced drainage.

Community ID: **Forest**

Transect ID:

Plot ID: **SS B**

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum v. drummondii*	Sapling	OBL
2. *Saururus cernuus*	Herb	OBL
3. *Sapium sebiferum*	Sapling	FAC
4. *Sapium sebiferum*	Tree	FAC
5. *Acer rubrum v. drummondii*	Tree	OBL
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13. Associated Non-dominants:		
14. *Fraxinus pennsylvanica*	Tree	FACW
14. *Salix nigra*	Tree	OBL
14. *Taxodium dictichum*	Tree	OBL

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	18	(in.)
Depth to Free Water in Pit:	0	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary indicator was observed. Area is an abandoned drainage canal that is blocked at both ends and no longer drains.**

SOILS **SS B**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
		See remarks			

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
X	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
___	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Hydric soils parameter is met. Sulfidic odor was present and area was inundated with approximately 12 to 18 inches of water.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soil criteria are met. Area is identified as Wetland 2.3. Wetland formed as a result of a previously constructed drainage canal being blocked.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **7/28/99**
Applicant/Owner: **Department of the Navy Southern Division**					County: **Plaquemines Parish**
Investigator: **Love, Hardy**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS C**
Area is under forced drainage.					

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Fraxinus pennsylvanica*	Tree	FACW	9.		
2. *Acer negundo*	Sapling	FACW	10.		
3. *Toxicodendron radicans*	W. Vine	FAC	11.		
4. *Sambucus canadensis*	Shrub	FACW-	12.		
5. *Taxodium dictichum*	Tree	OBL	13.		
6. *Acer negundo*	Tree	FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Area appears to be fairly level and well drained.**

SOILS SS C

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	10YR 4/6	Few Fine Prominent	Clay
4 - 7		N 2.5/0	N 3/0 10R 4/8	Many Coarse Faint Many fine prominent	Clay
7 - 25		7.5YR 4/1	10R 3/6	Many Medium Prominent	Clay; Few iron and manganese soft masses with sharp boundaries

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion is not met. Area is representative of the upland/wetland boundary of Wetland 2.3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 2.4

Project/Site: **NAS JRB New Orleans**

Date: **7/27/99**

Applicant/Owner: **Department of the Navy Southern Division**

County: **Plaquemines Parish**

Investigator: **Rezsutek, Hardy**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS A**

Area is under forced drainage.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	**Sapling**	**FACW**	9.		
2. *Sambucus canadensis*	**Shrub**	**FACW-**	10.		
3. *Acer negundo*	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. A patch of Saururus sp. was found within 30 feet of pit.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**6**	(in.)
Depth to Saturated Soil:	**0**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary indicators of wetland hydrology were observed. Area is a depression near a mound of soil that appears to receive surface runoff and remain saturated to the surface for extended periods of time.**

SOILS SS A

Map Unit Name
(Series and Phase) **Westwego clay** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**10YR 2/1**	**10YR 4/6**	**Few Medium Prominent**	**Clay**
8 - 25		**10YR 4/1**	**10YR 4/6**	**Common Medium Prominent**	**Clay**
25 - 28		**10YR 5/1**	**5YR 5/8**	**Common Medium Prominent**	**Clay**
28 - 36		**10YR 5/1**	**10YR 4/6** **2.5YR 2.5/3**	**Common Medium Prominent** **Few medium prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **The soil surface layer resembled "coffee grounds" throughout the area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soil criteria are met. Area is identified as Wetland 2.4. Area appears to have formed after disturbance from heavy equipment. Small mounds of uplands are dispersed throughout Wetland 2.4, but they comprise less than 5 percent of the total area.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **7/30/99**

Applicant/Owner: **Department of the Navy Southern Division**

County: **Plaquemines Parish**

Investigator: **Rezsutek, Hardy**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Area is under forced drainage.

Community ID: **Forest**

Transect ID:

Plot ID: **SS D**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Herb	FACW-	9.		
2. *Acer negundo*	Tree	FACW	10.		
3. *Rubus trivialis*	Shrub	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%. Ferns were observed growing within this area.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Few drift lines were present, and appeared to form from heavy runoff passing through this area. Because the site is slightly sloping to the northwest, these lines were not considered wetland hydrology indicators.**

SOILS SS D

Map Unit Name
(Series and Phase) **Westwego clay** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		10YR 3/1	None		Clay
4 - 8		10YR 4/1	10YR 4/6	Common Medium Prominent	Clay
8 - 17		10YR 3/1	10YR 3/6	Few Medium Prominent	Clay
17 - 27		10YR 5/1	7.5YR 4/6	Few Fine Prominent	Clay; few iron masses

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion is not met. Area is representative of the upland/wetland boundary of Wetland 2.4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **7/30/99**
Applicant/Owner: **Department of the Navy Southern Division**					County: **Plaquemines Parish**
Investigator: **Rezsutek, Hardy**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS E**
Area is under forced drainage.					

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Celtis laevigata*	**Tree**	**FACW**	9.		
2. *Acer rubrum v. drummondii*	**Tree**	**OBL**	10.		
3. *Sambucus canadensis*	**Shrub**	**FACW-**	11.		
4.			12.		
5.			13.		
6.			14. Associated Non-dominants:		
7.			15. *Acer rubrum v. drummondii*	Sapling	**OBL**
8.			15. *Acer negundo*	Tree	FACW

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Few drift lines were present. Because the site is slightly sloping to the northeast and appears to drain well, these lines were not considered wetland hydrology indicators.**

SOILS SS E

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 12		**10YR 3/1**	**5YR 3/3**	**Few medium prominent**	**Clay; pockets of N 3/0**
12 - 20		**10YR 4/1**	**2.5YR 2.5/2** **5YR 4/6**	**Common coarse prominent** **Few medium prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **One indicator of hydric soils (mottles within a low chroma matrix within the upper 10 inches of the profile) was observed. Hydric soils criterion is met. The soil surface layer resembled "coffee grounds" throughout the area.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion is not met. Drift lines were observed, but no indicators of saturated soils were indentified. Area slopes to the northeast, and appears to drain well.**

Area 3

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**

Date: **7/27/99**

Applicant/Owner: **Department of the Navy Southern Division**

County: **Plaquemines Parish**

Investigator: **Love, Hill**

State: **Louisiana**

Do Normal Circumstances exist on the site?	YES	X	NO	
Is the site significantly disturbed (Atypical Situation)	YES		NO	X
Is the area a potential Problem Area?	YES		NO	X

Area is under forced drainage.

Community ID: **Forest**
Transect ID: **1@80'**
Plot ID: **SS 1**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ' *Solanum sp.*	Herb	FACU	9.		
2. *Sambucus canadensis*	Shrub	FACW-	10.		
3. *Acer rubrum v. drummondii*	Tree	OBL	11.		
4. *Celtis laevigata*	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15. Associated Non-dominants:		
8.			16. *Sapium sebiferum*	Sapling	FAC

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **75.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50%.**
' This plant could not be identified to species because of a lack of reproductive structures, but was assumed to be FACU for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No indicators of wetland hydrology were observed. Area is gently sloping to the south and appears somewhat well drained.**

Map Unit Name
(Series and Phase) **Westwego clay**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Thapto-Histic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		**N 2.5/0**	**2.5YR 4/8**	**Few fine prominent**	**Clay; friable**
6 - 40		**10YR 4/2**	**2.5YR 4/8**	**Common medium prominent**	**Clay; Fe and Mn concretions with sharp boundaries, matrix color grades into**

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: **Hydric soils criterion is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil criteria are met. Wetland hydrology criterion was not met. Area is under forced drainage. Area is characteristic of bottomland hardwood forest.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**5YR 4/1**	**10YR 4/6**	**Common Medium Prominent**	**Silty clay**
8 - 16		**5YR 4/1**	**10YR 3/3**	**Common Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schlze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 322**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer negundo***	**Tree**	**FACW**	9.		
2. ***Acer negundo***	**Sapling**	**FACW**	10.		
3. ***Sambucus canadensis***	**Shrub**	**FACW-**	11.		
4. ***Ampelopsis arborea***	**W. Vine**	**FAC+**	12.		
5. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 7		**10YR 3/1**	**10YR 4/4** **N 2.5/0**	**Few Fine Distinct** **Few Fine Prominent**	**Silty clay with shells mixed throughout**
7 - 13		**7.5YR 3/1**	**10YR 3/2**	**Few Fine Distinct**	**Silty clay**
13 - 16		**10YR 3/1**	**10YR 4/6** **N 2.5/0**	**Many Medium Prominent** **Few Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 16.1.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.2

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 319**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Acer rubrum***	**Tree**	**OBL**	11.		
4. ***Sambucus canadensis***	**Shrub**	**FACW-**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary and two secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a shallow blind depression that appears to remain saturated or inundated for extended periods.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**2.5Y 4/1**	**7.5YR 4/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.2.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 320**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Shrub	FACW-	9.		
2. *Acer rubrum*	Tree	OBL	10.		
3. *Acer negundo*	Tree	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally level and appears well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**7.5YR 4/1**	**7.5YR 4/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO		
Wetland Hydrology Present?	YES		NO	**X**	
Hydric Soils Present?	YES	**X**	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 16.2.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.3

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 315**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer rubrum***	**Tree**	**OBL**	9.		
2. ***Fraxinus pennsylvanica***	**Tree**	**FACW**	10.		
3. ***Celtis laevigata***	**Tree**	**FACW**	11.		
4. ***Acer rubrum***	**Sapling**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
_X_ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
_X_ Water Marks
_X_ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
_X_ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is fairly level with ponding created by sidecast material from a ditch excavated to the south.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 16		**10YR 4/2**	**7.5YR 4/4**	**Many Coarse Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/23/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 316**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	**Tree**	**OBL**	9.		
2. *Fraxinus pennsylvanica*	**Tree**	**FACW**	10.		
3. *Acer rubrum*	**Sapling**	**OBL**	11.		
4. *Sambucus canadensis*	**Shrub**	**FACW-**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is fairly flat and well drained to the southeast.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 10		**10YR 4/2**	**7.5YR 4/4**	**Common Fine Prominent**	**Silty clay**
10-16		**10YR 5/2**	**10YR 5/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 16.3.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.4

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 317**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Saururus cernuus*	**Herb**	**OBL**	9.		
2. *Sambucus canadensis*	**Shrub**	**FACW-**	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- X Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is an abandoned ditch that no longer drains.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**7.5YR 3/1**	**2.5YR 3/6**	**Few Fine Prominent**	**Silty clay**
5 - 16		**2.5YR 4/1**	**2.5YR 4/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 318**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Shrub	FACW-	9.		
2. *Acer negundo*	Sapling	FACW	10.		
3. *Acer negundo*	Tree	FACW	11.		
4. *Acer rubrum*	Tree	OBL	12.		
5. *Carya illinoensis*	Tree	FAC+	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is found between two drainage ditches and appears well drained.**

Map Unit Name
(Series and Phase) **Sharkey silty clay loam** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **thermic Vertic Haplaquepts** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 3		5YR 3/1	5YR 3/2	Few Fine Faint	Silty clay
3 - 16		2.5YR 4/1	10YR 3/3	Common Fine Prominent	Silty clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Sharkey silty clay loam, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland/wetland boundary of Wetland 16.4.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.5

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 529**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Acer negundo*	Tree	FACW	10.		
3. *Fraxinus pennsylvanica*	Tree	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a depression next to residential housing that appears to remain saturated for extended periods of time.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**10YR 3/1**	**None**		**Clay**
5 - 16		**10YR 4/1**	**10YR 3/6**	**Many Fine Prominent**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	**X**	NO				
Wetland Hydrology Present?	YES	**X**	NO				
Hydric Soils Present?	YES	**X**	NO	Is this Sampling Point Within a Wetland?	YES	**X**	NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.5.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 530**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Ligustrum sinense***	**Shrub**	**FAC**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Celtis laevigata***	**Tree**	**FACW**	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
_X_ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) Rita muck

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**10YR 3/1**	**None**		**Clay**
8 - 16		**10YR 3/1**	**10YR 3/3**	**Common Coarse Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 16.5.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.6

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 532**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Tree	OBL	9.		
2. *Acer negundo*	Tree	FACW	10.		
3. *Fraxinus pennsylvanica*	Tree	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met. Tree trunks were butressed.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	2	(in.)
Depth to Free Water in Pit:	0	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Three primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a depression that remains inundated for extended periods of time.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		10YR 4/1	7.5YR 4/4	Common Coarse Prominent	Clay
6 - 16		2.5Y 4/1	7.5YR 4/4	Few Medium Prominent	Clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
X	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. Two indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil; sulfidic odor) were observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO				
Wetland Hydrology Present?	YES	X	NO				
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland?	YES	X	NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.6.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 533**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Sambucus canadensis*	Shrub	FACW-	9.		
2. *Ligustrum sinense*	Shrub	FAC	10.		
3. *Fraxinus pennsylvanica*	Tree	FACW	11.		
4. *Acer negundo*	Sapling	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is adjacent to Wetland 16.6 near the wetland boundary.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES **X** NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**10YR 3/1**	**None**		**Clay**
4 - 16		**10YR 4/1**	**10YR 3/2** **10YR 3/3**	**Few Medium Faint** **Common Coarse Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is in the upland side of the upland/wetland boundary of Wetland 16.6.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.7

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 323**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ' *Sapium sebiferum*	**Tree**	**FAC**	9.		
2. *Sapium sebiferum*	**Sapling**	**FAC**	10.		
3. *Acer rubrum*	**Tree**	**OBL**	11.		
4. *Salix nigra*	**Sapling**	**OBL**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **One primary and one secondary indicator of wetland hydrology was observed. Wetland hydrology parameter is met. Area is a man-made depression within a golf course that is poorly drained.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**2.5Y 3/1**	**10YR 4/6**	**Few Medium Prominent**	**Silty clay**
8 - 16		**7.5YR 3/1**	**10YR 3/3** **N 2.5/0**	**Common Fine Distinct** **Common Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES	X	NO		
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES	NO X

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.7.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 324**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. ***Acer rubrum***	**Tree**	**OBL**	9.		
2. ***Acer negundo***	**Tree**	**FACW**	10.		
3. ***Sambucus canadensis***	**Shrub**	**FACW-**	11.		
4. ***Ligustrum sinense***	**Shrub**	**FAC**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is generally level to slightly undulating and appears well drained.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 5		**5YR 3/1**	**10YR 4/6**	**Few Fine Prominent**	**Silty clay**
5 - 16		**7.5YR 4/1**	**7.5YR 4/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is the upland side of the upland/wetland boundary of Wetland 16.7.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.8

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 327**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Sapling	OBL	9.		
2. *Fraxinus pennsylvanica*	Tree	FACW	10.		
3. ' *Sapium sebiferum*	Sapling	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met. Vegetation has been disturbed during the creation of a road to the north.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- X Water Marks
- ___ Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary and one secondary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a depression that appears to have become impounded after construction of a road on the northern edge.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**7.5YR 2.5/1**	**None**		**Silty clay**
8 - 16		**2.5Y 3/1**	**7.5YR 4/6** **N 2.5/0**	**Common Medium Prominent** **Common Coarse Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.8.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 328**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer negundo*	Sapling	FACW	9.		
2. *Acer rubrum*	Sapling	OBL	10.		
3. *Morus rubra*	Sapling	FAC	11.		
4. ' *Sapium sebiferum*	Tree	FAC	12.		
5. *Sambucus canadensis*	Shrub	FACW-	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**
' The species is listed as FAC by the USFWS in the 1996 draft list of Plants That Occur in Wetlands. It has been observed growing in wetlands by TC&B staff, and was considered FAC for this calculation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO **X**

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 4		**7.5YR 2.5/1**	**None**		**Silty clay with "coffee ground" texture**
4 - 16		**10YR 5/2**	**7.5YR 4/6**	**Common Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO **X**

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is on the upland side of the upland/wetland boundary of Wetland 16.8.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Wetland 16.9

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 325**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	Sapling	OBL	9.		
2. *Acer rubrum*	Tree	OBL	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) 100.0%

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

_X_ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- _X_ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- _X_ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- _X_ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **Two primary indicators of wetland hydrology were observed. Wetland hydrology parameter is met. Area is a series of depressions and low mounds that appears to have been disturbed in the past.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		**2.5Y 3/1**	**10YR 3/1**	**Few Fine Faint**	**Silty clay**
6 - 16		**7.5YR 4/1**	**10YR 4/6**	**Many Fine Prominent**	**Silty clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO	
Wetland Hydrology Present?	YES	X	NO	
Hydric Soils Present?	YES	X	NO	Is this Sampling Point Within a Wetland? YES X NO

Remarks: **Hydrophytic vegetation, wetland hydrology, and hydric soils parameters are met. Area is identified as Wetland 16.9.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/25/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Love, Schulze**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	**X**	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	**X**	Transect ID:
Is the area a potential Problem Area?	YES		NO	**X**	Plot ID: **SS 326**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Acer rubrum*	**Tree**	**OBL**	9.		
2. *Acer negundo*	**Tree**	**FACW**	10.		
3. *Celtis laevigata*	**Tree**	**FACW**	11.		
4. *Ampelopsis arborea*	**W. Vine**	**FAC+**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

__X__ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- __X__ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met. Area is a berm along the edge of Wetland 16.9 that is well drained.**

Map Unit Name
(Series and Phase) **Rita muck** Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents** Field Observations Confirmed Mapped Type? YES NO X

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 6		7.5YR 3/1	7.5YR 4/6	Few Fine Prominent	Silty clay, few sand pockets
6 - 16		7.5YR 3/1	10YR 3/4	Many Fine Prominent	Silty clay

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile does not match Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (mottles within a low chroma matrix in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met. Area is on the upland side of the upland/wetland boundary of Wetland 16.9.**

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: **NAS JRB New Orleans**					Date: **6/24/00**
Applicant/Owner: **Department of the Navy, Southern Division**					County: **Plaquemines**
Investigator: **Rezsutek, Lowe**					State: **Louisiana**
Do Normal Circumstances exist on the site?	YES	X	NO		Community ID: **Forest**
Is the site significantly disturbed (Atypical Situation)	YES		NO	X	Transect ID:
Is the area a potential Problem Area?	YES		NO	X	Plot ID: **SS 531**

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Ligustrum sinense*	**Shrub**	**FAC**	9.		
2. *Celtis laevigata*	**Tree**	**FACW**	10.		
3. *Acer negundo*	**Sapling**	**FACW**	11.		
4. *Fraxinus pennsylvanica*	**Tree**	**FACW**	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) **100.0%**

Remarks: **Percentage of dominant plant species which are OBL, FACW, FAC+, and/or FAC is greater than 50 percent. The hydrophytic vegetation parameter is met.**

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	**Not observed**	(in.)
Depth to Free Water in Pit:	**Not observed**	(in.)
Depth to Saturated Soil:	**Not observed**	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: **No wetland hydrology indicators were observed. Wetland hydrology parameter is not met.**

Map Unit Name
(Series and Phase) **Rita muck**

Drainage Class: **Poorly drained**

Taxonomy (Subgroup) **Typic Fluvaquents**

Field Observations
Confirmed Mapped Type? YES X NO

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions Structure, etc.
0 - 8		**10YR 3/1**	**None**		**Clay**
8 - 16		**10YR 4/1**	**10YR 3/3**	**Few Medium Distinct**	**Clay**

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface Layer in Sandy Soils
___	Sulfidic Odor	___	Organic Streaking in Sandy Soils
___	Aquic Moisture Regime	___	Listed on Local Hydric Soils List
___	Reducing Conditions	___	Listed on National Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Other (Explain in Remarks)

Remarks: **Profile roughly matches Rita muck, which is listed as hydric by the NRCS. One indicator of hydric soils (chroma 1 or less in the upper 10 inches of soil) was observed. Hydric soil parameter is met.**

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	YES	X	NO		
Wetland Hydrology Present?	YES		NO	X	
Hydric Soils Present?	YES	X	NO		Is this Sampling Point Within a Wetland? YES NO X

Remarks: **Hydrophytic vegetation and hydric soil parameters are met. Wetland hydrology parameter is not met.**

APPENDIX E
TREE PRESERVATION INSTRUCTION

DEPARTMENT OF THE NAVY
NAVAL AIR STATION
JOINT RESERVE BASE
400 RUSSELL AVE
NEW ORLEANS LA 70143-5012

IN REPLY REFER TO:
NASJRBNOLAINST 5090.1
N45
30 Oct 09

NAS JRB, NEW ORLEANS INSTRUCTION 5090.1

From: Commanding Officer, Naval Air Station, Joint Reserve Base, New Orleans

Subj: TREE PRESERVATION

1. Purpose. To publish regulations for the preservation of protected trees located onboard Naval Air Station (NAS), Joint Reserve Base (JRB), New Orleans.

2. Cancellation. This is a new instruction and should be read in its entirety.

3. Background. Development as well as maintenance onboard NAS JRB, New Orleans has the potential to impact established native species of trees. These established trees provide landscaping, wildlife habitat, shade to buildings reducing energy consumptions, and recreational opportunities. Many of the Live Oaks on station have been registered with the Live Oak Society and named to honor persons awarded the Congressional Medal of Honor.

4. Protection of Existing Trees during Development

a. All trees measuring 14 inches Diameter at Breast Height (DBH) and larger, as well as all Live Oak, Magnolia, and Bald Cypress trees of any size shall be considered to be protected trees and all reasonable efforts shall be made to retain and protect such trees during design and construction of the project. Protected trees shall not be removed, damaged or cut except with the concurrence of the base Natural Resource Program Manager and as allowed under the following criteria:

(1) Documented effort must be made to design clearing limits of roads, streets, driveways, sidewalks or parking lots around protected trees. Protected trees may only be removed after review of design and concurrence from all Planners, Environmental Staff and the Commanding Officer that there is no suitable alternative to save the trees.

(2) Designed clearing limits of utility corridors including gas, water and sewage lines must avoid crossing within the drip line of protected trees.

(3) Design footprint of a proposed structure must remain a minimum of 4.6 meters (15 feet) from the drip line of protected trees extending outward from the design footprint in order to allow access around the proposed structure for construction equipment, access to the building site for construction equipment or essential grade changes.

(4) Designed clearing limits of roads, streets, driveways, sidewalks or parking lots must incorporate a minimum three meter (ten feet) zone outside of the drip line of protected trees to allow for essential grade changes.

5. Ball fields and other designed special purpose open areas should be sited away from protected trees, or in a manner which protects the tree and provides shade for spectators.

a. Existing non-protected trees, 5cm (two inches) in diameter or greater, that are preserved and left on site, except those trees in a protected tree zone, may be utilized to satisfy tree replacement requirements. Existing non-protected trees and new trees used for replacement become protected trees and shall not be damaged by equipment, vehicles or movement and storage of building materials. A tree used for replacement shall be at least 4.6 meters (15 feet) from any other tree planted, preserved or protected.

b. Protected trees that pose a safety hazard to people, buildings, vehicles or other improvements may be cut and removed with the concurrence of the base Natural Resource Program.

c. Replacement will not be required for protected trees that are determined by the base Natural Resources Program Manager to be dead or seriously deteriorated as a result of age, decay, insects, disease, storm, fire, lightning or other acts of nature.

6. All protected trees, preserved understory vegetation, and non-protected trees retained as replacement trees shall be protected from injury during any land clearing or construction in the following manner:

a. Prior to any land clearing operations, temporary barriers shall be installed around all protected trees and other non-protected trees to be used as replacement trees within six meters outside of the clearing limits of construction of structures, and around trees to remain within the limits of land clearing or construction. These barriers shall remain until the completion of work, at which time the temporary barriers will be removed. The temporary barriers shall be at least one meter high, shall be placed at least three meters away from the base of any tree, and shall include all of the area under the drip line of any protected tree or non-protected tree used as a replacement tree. The barriers shall consist of either a wood fence with two by four posts placed a maximum of 2.5 meters apart, with a two by four minimum top rail, or a temporary wire mesh fence, or other similar barrier which will prevent access to the protected area. Tree protection shall comply with the guidelines in the Tree Protection Guide for Builders and Developers by the Florida Division of Forestry and such other site-specific requirements as may be established by the Natural Resource Program Manager.

b. No materials, trailers, equipment, paint, concrete, lumber or chemicals shall be stored, operated, parked, dumped, buried or burned within the protected areas. No attachments, wires, signs or permits shall be attached to a protected tree. Trees shall not be damaged by skinning, barking or bumping.

c. When removing branches from protected trees to clear for construction, or pruning to restore the natural shape of the entire tree, the guidelines in the National Arborist Association Pruning Standards for Shade Trees and the American National Standards for Tree Care Operations (ANSI #Z133.1) shall be followed. Protected trees around structures or open recreational areas shall be pruned to remove dead or damaged limbs and to restore their natural shape. They shall be fertilized as necessary to compensate for any loss or damage to roots and to stimulate root growth. Any damage to tree crowns or root systems shall be repaired immediately after damage occurs.

d. All protected and non-protected merchantable trees cut and removed from the construction or project site by the contractor or his sub-contractors will be paid for by the contactor.

e. Trees will be paid for at the current stumpage prices based on the average prices that are applicable in the Timber Mart-South Market Newsletter at the time of removal. Saw timber prices will be based on the Scribner Log Rule and pulpwood on the standard cord.

W. J. SNYDER

Distribution: (NASJRBNOLAINST 5216.1G)
List A
List B