2020

Integrated Natural Resources Management Plan

Camps Beauregard, Minden and Villere

Louisiana Army National Guard
Integrated Natural Resources Management Plan
Camps Beauregard, Minden, and Villere

February 2020

Revised by:

Kevin Chapman
Conservation Manager
Louisiana Military Department

SIGNATURE PAGE

Revised Integrated Natural Resources Management Plan
Camps Beauregard, Minden, and Villere

This Revised Integrated Natural Resources Management Plan (INRMP) meets the requirements for INRMPs listed in the Sikes Act Improvement Amendments (16 U.S.C. 670a et seq.), AR 200-1, and the "Executive Summary" within this Plan. It has set appropriate and adequate guidelines for conserving and protecting the natural resources of Camps Beauregard, Minden, and Villere.

Approving Officials

ANTHONY HAMMETT **Date**
COL, US Army National Guard
Directorate Chief, G9

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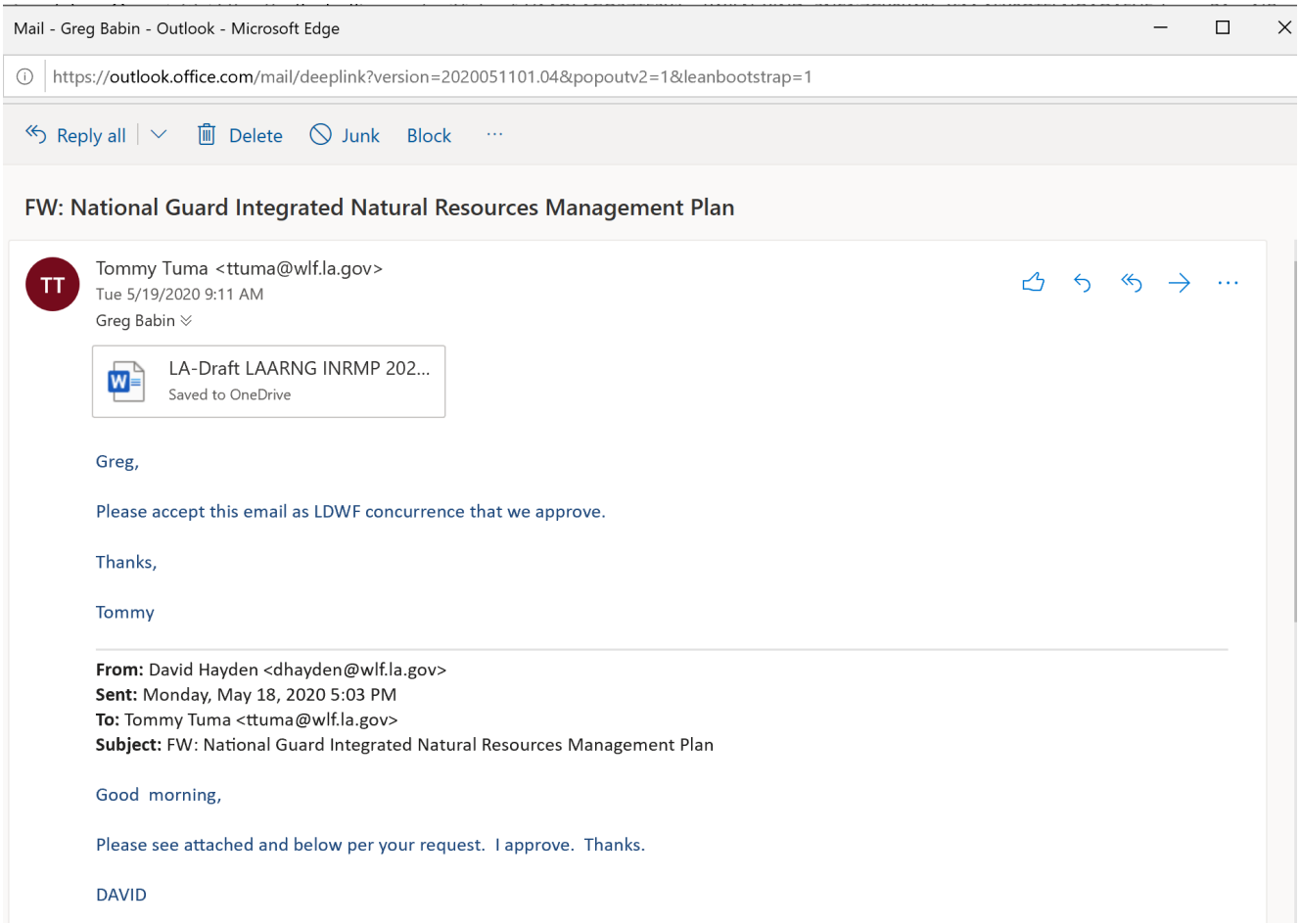
Louisiana Department of Wildlife and Fisheries


Mail - Greg Babin - Outlook - Microsoft Edge
https://outlook.office.com/mail/deeplink?version=2020051101.04&popoutv2=1&leanbootstrap=1
Reply all
Delete
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FW: National Guard Integrated Natural Resources Management Plan
TT
Tommy Tuma <ttuma@wlf.la.gov>
Tue 5/19/2020 9:11 AM
Greg Babin
LA-Draft LAARNG INRMP 202...
Saved to OneDrive
Greg,
Please accept this email as LDWF concurrence that we approve.
Thanks,
Tommy
From: David Hayden <dhayden@wlf.la.gov>
Sent: Monday, May 18, 2020 5:03 PM
To: Tommy Tuma <ttuma@wlf.la.gov>
Subject: FW: National Guard Integrated Natural Resources Management Plan
Good morning,
Please see attached and below per your request. I approve. Thanks.
DAVID

ANNUAL REVIEW PAGE

This page is used to certify the annual review and coordination of this Integrated Natural Resources Management Plan with the United States Fish and Wildlife Service and the Louisiana Department of Wildlife and Fisheries for the Louisiana Army National Guard.

By their signatures below, the certifying official acknowledges that the annual review and coordination of the Integrated Natural Resources Management Plan has occurred for the specified year.

Date of Annual Review	Name and Title of LAARNG Reviewing Official

Note: This document is updated annually for minor changes, and no less than every 5 years for operation and effect. U.S. Fish and Wildlife Service and Louisiana Department of Wildlife and Fisheries only sign this document during major revisions.

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Appendices

Acronyms/Abbreviations

AR	Army Regulation
ARNG	Army National Guard
ARNG-ILE	Director of Environmental Programs
ARNG-ILI	Director of Engineering
ARNG-TR	Director of Operations, Training, and Readiness
ATV	all-terrain vehicle
BAF	basal area factor
BMPs	Best Management Practices
CBTS	Camp Beauregard Training Site
CFMO	Construction and Facilities Management Officer
CFMO-EM	Construction and Facilities Management Office – Environmental Management Section
CRM	Cultural Resources Manager
CWA	Clean Water Act
DoD	Department of Defense
dbh	diameter breast height
EA	Environmental Assessment
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
GIS	Geographical Information System
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPMP	Integrated Pest Management Plan
IWFMP	Integrated Wildland Fire Management Plan
J3	Operations
LAAAP	Louisiana Army Ammunition Plant
LAARNG	Louisiana Army National Guard
LDAF	Louisiana Department of Agriculture and Forestry
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LMD	Louisiana Military Department
LNHP	Louisiana Natural Heritage Program
LRAM	Land Rehabilitation and Maintenance
MBF	1,000 board feet units
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
PAO	Public Affairs Officer
RCW	red-cockaded woodpecker
SJA	Staff Judge Advocate
SMZ	Streamside Management Zone
SPCC	Spill Prevention Control and Countermeasures Plan
TAG	The Adjutant General
TNC	The Nature Conservancy
USACE	U.S. Army Corps of Engineers
USA-MAC	U.S. Army Munitions and Armaments Command
USCB	U.S. Census Bureau
U.S.C	U.S. Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WMA	Wildlife Management Area

1.0 EXECUTIVE SUMMARY

1.1 INRMP Vision

Under the Natural Resource Management on Military Lands Act of 1960 (Title 16 of the *United States Code* [U.S.C.] Sections 670a *et seq.*), commonly known as the Sikes Act, as amended, according to the Sikes Act Improvement Act of 1997,

> The Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate the program, the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary. Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the Secretaries of the military departments shall carry out the program to provide for the conservation and rehabilitation of natural resources on military installations; the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and nonconsumptive uses; and subject to safety requirements and military security, public access to military installations to facilitate the use.

Per 16 U.S.C. § 670a(b) of the Sikes Act Improvement Act of 1997, to the extent appropriate and applicable, this Integrated Natural Resources Management Plan (INRMP) provides for the following:

- Fish and wildlife management, land management, forest management, and fish- and wildlife-oriented recreation
- Fish and wildlife habitat enhancement or modifications
- Wetland protection, enhancement, and restoration (where necessary) for the support of fish, wildlife, or plants
- Integration of, and consistency among, the various activities conducted under the plan
- Establishment of specific natural resource management goals and objectives and time frames for proposed projects
- Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources or mission requirements
- Enforcement of applicable natural resource laws (including regulations)
- No net loss in the capability of military installation lands to support the military mission of the installation

1.2 Purpose of this INRMP

This Revised INRMP has been written to guide the natural resources management programs at Camps Beauregard, Minden, and Villere, Louisiana from 2018 to 2022 and to provide a solid foundation from which to build the program. This INRMP will allow the Louisiana Army National Guard (LAARNG) to achieve its goal to ensure the sustainability of desired military training area

conditions and maintain ecosystem viability. In addition, this INRMP will ensure that natural resource conservation measures and Army activities on Camps Beauregard, Minden, and Villere are integrated and are consistent with federal stewardship requirements.

Maintaining optimal environmental conditions on the training lands is essential for the success of the military mission. Therefore, the focus of this INRMP is on the management of the natural resources in the training areas. The management measures have been developed based on the current conditions of the resources, and the military mission and activities as they are anticipated.

1.3 LAARNG Overview

Properties owned, controlled, and used by the LAANG encompass more than 33,675 acres, most of which are on the 7 training installations of Camp Minden, Camp Beauregard, Esler Field, Camp Villere, Gills Long Center, Jackson Barracks, and Camp Cook. The rest of the LAARNG lands are located throughout the state at 57 different cities/towns. The majority of these sites are occupied by facilities of 10 or fewer acres, and they include primary facilities such as Readiness Centers (RC), maintenance shops (CSMS and FMS), support facilities (AASF), and other similar types of buildings. This INRMP applies to the three largest of the LAARNG training facilities – Camps Beauregard, Minden, and Villere.

Located in Rapides Parish, Camp Beauregard covers approximately 13,361 acres. It is composed of a 719-acre cantonment area and a 12,642-acre range training area. For purposes of this INRMP, Esler Field, located immediately south of the Camp Beauregard Training Site (CBTS) and consisting of 2,136 acres, is included in the discussions with Camp Beauregard.

Located in Webster and Bossier Parishes, Camp Minden is a roughly 15,000-acre Major Army Command facility.

Located in St. Tammany Parish, Camp Villere covers approximately 1,480 acres.

1.4 Relationship to the Military Mission

The LAARNG has federal, state, and local missions. The LAARNG leadership recognizes that a healthy and viable natural resources base is required to support the military mission. To be effective, the natural conditions of the training areas must be maintained to provide realism. Areas that are obviously degraded by previous training activities detract from the realism of the current training activity. Vegetation is necessary for concealment; therefore, areas stripped of their vegetation are no longer representative of the undisturbed lands that might be encountered during real conflicts. The relationship between soils and vegetation and animal populations is very important in supporting the mission. In addition to providing concealment, vegetation protects the soils from erosion. Eroded soils are unable to support the vegetation, which results in a loss of realism; eroded areas also represent a safety hazard to the soldiers. This INRMP helps to ensure that environmental considerations are an integral part of planning activities at Camps Beauregard, Minden, and Villere and that natural resources are protected in accordance with state and federal laws and Army regulations and policies.

1.5 Partnerships

The LAARNG leadership and environmental personnel have fostered a number of partnerships with various agencies that assist and participate in the natural resources management program. Those partners include the U.S. Fish and Wildlife Service (USFWS); U.S. Army Corps of Engineers (USACE); U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS); Louisiana Department of Wildlife and Fisheries (LDWF); Louisiana Department of Agriculture and Forestry (LDAF); Louisiana Department of Culture, Recreation and Tourism; Louisiana Department of Environmental Quality (LDEQ); Louisiana Cooperative Extension Service; Louisiana Forestry Association; Louisiana State University; Louisiana Tech University; Northwestern State University; Federally Recognized Native American Tribes; The Nature Conversancy (TNC); and Grant, Rapides, Dorcheat, Bodcau, and Bogue Chitto-Pearl River Soil and Water Conservation Districts.

1.6 Primary Natural Resource Management Goals

The primary goals of this INRMP conform to the goals of the Conservation Program of the DoD, which is to support the military mission by:

- Providing for sustained use of its land and air resources
- Protecting valuable natural and cultural resources for future generations
- Meeting all legal requirements
- Promoting compatible multiple uses of those resources
- Achieving efficiencies and other savings by partnering with interested stakeholders

The LAARNG's Construction and Facilities Management Office – Environmental Management Section (CFMO-EM) has identified a number of objectives necessary to achieve these goals (in decreasing order of importance):

Objective 1. To support the Louisiana Military Department's (LMD) readiness and training mission.
Objective 2. To protect, maintain, and/or restore the natural resources of Camps Beauregard, Minden, and Villere through the application of ecosystem management principles.
Objective 3. To protect, maintain, and/or restore wetland ecosystems.
Objective 4. To protect and preserve cultural resources.
Objective 5. To maintain a sustainable, diverse, and productive forest.
Objective 6. To provide recreational use compatible with mission and natural resources management.
Objective 7. To make natural and cultural resources management decisions using the best available scientific and field-tested information.

The primary goals of the natural resources management program, as established by the LAARNG and outlined above, are to maintain ecosystem viability and ensure the sustainability of desired military training area conditions; to maintain, protect, and improve ecological integrity; to protect

and enhance biological communities, particularly sensitive, rare, threatened, and endangered species; to protect the ecosystems and their components from unacceptable damage or degradation; and to identify and restore degraded habitats.

The ability to achieve these goals depends directly on the health and condition of the natural resources. The success of the military mission depends on the condition of the natural resources as well. Protecting the ecological and biological integrity of the training lands ensures that those lands will continue to provide the vegetation, soil, and water resources necessary for realistic military training. Implementing ecosystem management principles will provide the quantity and diversity of fish and game for enjoyable hunting and fishing experiences.

To protect cultural resources, the natural resources staff will maintain adequate communication with the cultural resources staff. All activities on the installation having the potential to affect cultural resources will be coordinated with the cultural resources staff and will be in strict compliance with the Integrated Cultural Resources Management Plan (ICRMP).

The natural resources management program must remain flexible if it is to achieve long-term success. The program will achieve and maintain this flexibility by incorporating adaptive management techniques. Adaptive management is a process by which new information from monitoring data, scientific literature, or both is used to evaluate the success of the management measures currently in place. This information is then used to determine the changes in the management approach needed to ensure the continued success of the program. The natural resources management program might also be required to adapt to unforeseen changes in military mission and legal requirements.

Maintaining optimal environmental conditions on the training lands is essential for the success of the military mission of the LAARNG. Therefore, the focus of this INRMP is on the management of the natural resources on the training areas. The management measures have been developed based on the current conditions of the resources and the military mission and activities as they are anticipated. This INRMP will guide natural resources management at Camps Beauregard, Minden, and Villere and will provide a solid foundation on which to build the program.

1.7 Summary

This document reflects the commitment set forth by the Army to conserve, protect, and enhance the natural resources necessary to provide realistic military training for the LAARNG. The primary purpose and objective of this document is to present an implementable INRMP that guides the LAARNG in achieving natural resources management goals, meeting mission requirements, and complying with environmental policies and regulations. This document includes a comprehensive description, evaluation, and assessment of environmental conditions and natural resources at Camps Beauregard, Minden, and Villere in the attached appendices.

This INRMP is a plan that will direct the natural resources management program for at least 5 years. An ecosystem approach was used to develop the management measures for each resource area. Implementation of the management measures will maintain, protect, and enhance the ecological integrity of the training lands and the biological communities inhabiting them. In

addition, the natural resources management measures described in this Plan will protect the training sites' ecosystems and their components from unacceptable damage or degradation and identify and restore previously degraded habitats. This Plan will be reviewed for operation and effect no later than every 5 years to keep pace with changing needs in natural resources management and changes in the military mission.

2.0 OVERVIEW, GENERAL INFORMATION, COMPLIANCE, INTEGRATION, AND RESPONSIBILITIES

2.1 Purpose and Scope

Purpose

The LAARNG maintains Camps Beauregard, Minden, and Villere for the purpose of training Louisiana Army National Guardsmen. The LAARNG manages the land on all of its training sites for the goal that no net loss of training land result from training or natural resources management activities. In addition, the LAARNG hopes to enhance training potential and environmental quality to the greatest extent possible through its management practices. The overriding goals of this Plan are to minimize impact on training lands, to effectively repair damage caused by training activities, to improve the mission-specific qualities of the training lands, and to protect and enhance the ecosystem value of Camps Beauregard, Minden, and Villere.

This INRMP is the principle guiding document for LAARNG land management activities taking place on Camps Beauregard, Minden, and Villere; it is a revision of the 2015 INRMPs. The Sikes Act requires a review for operation and effect no less than every five years to keep the INRMP current. Major changes require a revision be conducted while minor changes can be incorporated with an update to the existing INRMP. A revision or update will be used based on the review for operation and effect. In the past, the LAARNG has prepared separate INRMPs for each installation. Internal review of the 2015 INRMPs determined that the three documents could be combined into one document that addresses all three installations. In addition, a new species was listed in January 2015 as threatened in the State of Louisiana (the northern long-eared bat), requiring its incorporation into the document. These aspects required a revision to the existing INRMP.

The Sikes Act requires the preparation of an INRMP for those military installations containing significant natural resources and specifies the key information to be included in the Plan. This is a living document which will be reviewed annually and updated as needed.

Natural resources management is an on-going, long-term process. This and subsequent INRMPs will serve to shape the direction of that process in order to support the military mission of the LAARNG, encourage sustainable management of natural resources, and ensure compliance with all relevant federal, state, and local laws. The ultimate goals outlined within this INRMP will not be achieved immediately but will be carried over into future documents and will continue to direct the focus of projects and management activities on Camps Beauregard, Minden, and Villere.

The INRMP addresses the geographic area associated with the three major training installations of

the LAARNG: Camps Beauregard, Minden, and Villere. This Plan provides management measures that were developed by considering various alternatives for meeting resource-specific goals and objectives at each installation.

Scope

The focus of this INRMP is to propose new or revised projects that will achieve the management goals and objectives set forth in this document. Unlike previous versions of the LAARNG's INRMPs, the management goals and objectives for each natural resource program have been placed in individual appendices. This will allow the CFMO-EM staff to easily perform annual updates without a complete rewrite of the entire document. Goals and objectives are described in Appendices E through J, and specific projects are outlined in Appendix K. The INRMP is based on the philosophy of ecosystem management with the intention of demonstrating the interdependency between the military mission and natural resources management.

The ecosystem management approach used to develop the discussion of the management strategies) for each resource followed two general steps:

- ***Goals and Objectives***. The goal and objectives for the management of the resource, as well as the relationship of the resource to other components of the ecosystem (including the human component) and the military mission, were described.

- ***Management Strategies***. Past management strategies, current conditions, and an array of management strategies based on a more informed knowledge of ecosystem management principles were evaluated and considered to develop management strategies that would achieve the goals and objectives for the resource, as well as those of the overall natural resources management program. An inventory of needs and monitoring programs necessary to generate data to ensure the continued success of the program and to provide the information needed to facilitate the integration of adaptive management techniques was included.

The management measures and strategies that will be implemented at Camps Beauregard, Minden, and Villere have been developed with consideration for the interrelationships between the individual components of the ecosystem, the requirements of the military mission, and other land use activities. The primary purpose of the INRMP is to develop a natural resource management plan that ensures mission needs are met. The focus is on maintaining the structure, diversity, and integrity of the biological communities, while meeting the requirements of the soldiers and military mission. An adaptive management strategy has been incorporated into this INRMP to monitor the temporal and spatial dynamics of the ecosystems and to adjust the management measures and strategies based on improved knowledge and data. The monitoring programs will generate the data needed to determine whether the management measures and strategies are effective in achieving their intended goals and objectives. This management approach will preserve and enhance the natural resources while providing the optimum environmental conditions required to sustain the military mission and realistic training conditions.

2.2 Authority

The preparation of this INRMP is in accordance with the provisions of the Natural Resource Management on Military Lands Act of 1960 (16 U.S.C. 670a *et seq.*), commonly known as the Sikes Act, as amended according to the Sikes Act Improvement Act of 1997. In addition, Section 3-11(b) of Army Regulation (AR) 200-1 (*Environmental Sustainability and Stewardship*) specifies Army policies and legal and other requirements, including statutes, laws, regulations, and other guidance applicable to the Army Natural Resources Management Program.

2.2.1 Federal and State Compliance

An ecosystem approach depends not only on the actions and practices of LAANG, but also on those of neighboring public and private landowners. The LAARNG has formed partnerships with federal and state agencies to help facilitate the implementation of this INRMP. The following agencies are considered stakeholders and were afforded an opportunity to comment on a draft of this INRMP.

U.S. Fish and Wildlife Service
The USFWS provides guidance to private landowners, enforces federal wildlife laws, and administers the Endangered Species Act. The USFWS is a cooperator in the development and implementation of this Plan in accordance with the Sikes Act. The agency is responsible for reviewing the relevant natural resources portions of this INRMP and providing guidance on federally protected species and wetland management.

Louisiana Department of Wildlife and Fisheries
The LDWF is the principal state agency responsible for conserving, protecting, and enhancing fish and wildlife and their habitats within the State of Louisiana. The LDWF is a cooperator in the development and implementation of this Plan in accordance with the Sikes Act. This agency, along with the USFWS, will assist the CFMO-EM in developing ongoing management plans relevant to natural resources use and review the relevant natural resources portions of this INRMP.

Natural Resources Conservation Service
The NRCS is an active partner on all of the LAARNG installations. The agency has completed a soil management plan for the installations, which includes updated soil surveys. The LAARNG, in cooperation with the NRCS, will continue to evaluate the effectiveness of existing Best Management Practices (BMPs) to reduce sedimentation and erosion of streams and assess possibilities of new ones.

Louisiana Department of Agriculture and Forestry
As the state agency tasked with forest ecosystem management, the LDAF plays a significant role in forest management on lands statewide. On Camps Beauregard, Minden, and Villere, the LDAF assists with the forest management program, prescribed burning program (Beauregard and Minden only), and wildfire suppression through a cooperative agreement. Approximately 90 percent of the prescribed fires on Camps Beauregard and Minden are conducted by the LDAF. Fire detection is coordinated through Range Control and the LDAF, which provides aerial fire and tower detection. The LDAF is responsible for fire protection and suppression of wildfire and non- structural fires on Camps Beauregard, Minden, and Villere with LAARNG support as necessary.

U.S. Army Corps of Engineers

The Clean Water Act gives the USACE regulatory authority over dredging and fill operations in all waters of the U.S., including many wetlands. Camps Beauregard and Minden are located in the Vicksburg District. Camp Villere is located in the New Orleans District.

Louisiana Office of Cultural Development

The Louisiana Office of Cultural Development – Divisions of Archaeology and Historic Preservation are under the Louisiana Department of Culture, Recreation, and Tourism. The Division of Archeology has state and federal roles relating to recording, protecting, and distributing information about the state's archeological sites. The Division of Archeology operates under three mandates: the federal National Historic Preservation Act, the state Archeological Resources Act, and the state Unmarked Burial Sites Act. The Division of Historic Preservation encourages the preservation of Louisiana's significant historic sites and buildings and oversees Section 106 environmental review.

2.2.2 National Environmental Policy Act

The required documentation for compliance with the National Environmental Policy Act of 1969 (NEPA), which requires federal agencies to consider the environmental consequences of major proposed actions, has been completed. The NEPA documentation is in the form of an Environmental Assessment (EA), which identifies, documents, and evaluates the effects of implementing the INRMP for the LAARNG. A copy of the EA is included as Appendix M of this document. The EA carries this INRMP's selected management measures forward as the Proposed Action.

2.3 Responsibilities

The persons that are directly responsible for, or are providing assistance in, the oversight and implementation of this INRMP are described in the following paragraphs.

National Guard Bureau (NGB)

NGB is the higher headquarters for the LAARNG. Three Directorates are involved in the management of natural resources: the Director of Environmental Programs (ARNG-ILE), the Director of Engineering (ARNG-ILI), and the Director of Operations, Training, and Readiness (ARNG-TR).

The Natural Resources Manager at ARNG-ILE is responsible for reviewing the INRMP and advising the Environmental Office before formally submitting the Plan to the USFWS and the LDWF. The Environmental Directorate ensures operational readiness by sustaining environmental quality and promoting the environmental ethic and is also responsible for tracking projects, providing technical assistance, quality assurance and execution of funds.

ARNG-ILI provides policy guidance and resources to create, sustain, and operate facilities that support the Army National Guard. The Engineering Directorate coordinates proposed construction projects with ARNG-TR and ARNG-ILE and provides design and construction support, as well as environmental management that are directly related to property maintenance (e.g., grounds maintenance, pest control).

ARNG-TR is responsible for training and training site support to include sustainable range management.

The Adjutant General (TAG)

TAG is the head of the combined Army and Air National Guard in Louisiana. NGB provides funding for natural resources management, and TAG has the responsibility to utilize that funding for sound environmental management and is personally responsible for implementation of this INRMP. TAG ensures that all installation land users are aware of and comply with procedures, requirements, or applicable laws and regulations that accomplish the objectives of the INRMP. TAG also ensures coordination of projects and construction among environmental, training, and engineering staffs.

Construction and Facilities Management Officer (CFMO)

The CFMO is responsible for providing financial and engineering services for all facilities under the jurisdiction of the LMD. The CFMO is responsible for master planning and ensuring that all construction projects comply with environmental regulations by consulting with the CFMO-Environmental Management Section (CFMO-EM) prior to any construction. The CFMO also provides necessary assistance with design of erosion control projects.

Operations (J3)

The J3 is responsible for developing a baseline of current and projected training requirements and training lands/facilities for training sites; assisting the CFMO-EM in determining carrying capacity for training sites by providing military usage and training data; planning for land use based on accomplishing training requirements while minimizing negative environmental effects; prioritizing and scheduling Land Rehabilitation and Maintenance projects with CFMO-EM and the Installation Commander; and allocating funds and resources to accomplish these requirements.

Public Affairs Officer (PAO)

The PAO provides expertise in the development and production of environmental awareness materials that are distributed to troop commanders while also functioning as a liaison with the public during meetings and community educational events.

Staff Judge Advocate (SJA)

The LAARNG-SJA advises the TAG, J3, CFMO and CFM-EM on laws and regulations that affect military training land use and environmental compliance.

Installation Commander

The Installation Commander is directly responsible for the operation and maintenance of the installations, which includes implementation of this INRMP. The Commander ensures that all installation land users are aware, and comply with procedures, requirements, or applicable laws and regulations that accomplish the objectives of the INRMP. The Commander also ensures coordination of projects and construction between environmental, training, and engineering staffs. The Commander also has the responsibility of scheduling military training and safety for all personnel while training exercises are being conducted. This includes maintaining a high-quality training environment.

Environmental Management Section (CFMO-EM)

The CFMO-EM is responsible for characterizing flora, fauna, cultural resources, air quality, and water quality of the training sites; identifying compliance needs; and advising TAG on the best ways to comply with federal and state environmental laws and regulations.

The Natural and Cultural Resources Managers and staff are the primary stakeholders that will ultimately implement this INRMP and assure its success. They are familiar with all aspects of the training site, including training scheduling, conflict resolution, training facility locations, man-made structures, natural functions and resources, and requirements for improvement or maintenance of the training lands. They ensure sites are protected from soil erosion; wetlands and rare species habitats are protected from construction and training activities; stream banks are protected and stabilized; cemeteries are protected from disturbance; and all management plans are implemented and updated as needed. CFMO-EM provides technical assistance to training site personnel including: but not limited to, developing projects, securing permits, conducting field studies, locating and mapping natural and cultural resources, preparing plans, and reviewing the INRMP for operation and effect. CFMO-EM oversees the NEPA process for the LMD.

The CFMO-EM maintains the resources necessary to implement the INRMP and is responsible for the following:

- Developing and implementing programs to ensure the inventory, delineation, classification, and management of all applicable natural resources to include: wetlands, scenic areas, threatened and endangered species, sensitive and critical habitats, and other natural resources areas of special interest;
- Providing for the training of natural resources personnel;
- Implementing this INRMP;
- Reviewing all environmental documents (*i.e.* EAs, impact statements, remedial action plans) and construction designs and proposals to ensure adequate protection of natural resources, ensuring that technical guidance as presented in this INRMP is adequately considered;
- Coordinating with local, state, and federal governmental entities relevant to natural resources management.

2.3.1 Funding Responsibilities

In 2005, the Department of the Army created the Sustainable Range/Installations Environmental Activities Matrix to realign and clarify funding responsibilities for environmental requirements on ranges and facilities to avoid redundancy and gaps. This guidance shifts funding responsibility for certain Sustainment/Restoration/Modernization and Base Operations Support related range and land use facility requirements from Environmental Programs to proponents. In general, Environmental is the primary funding source for the majority of the requirements related to wetlands, threatened and endangered species, cultural resources, and all environmental plans. Soil erosion/stabilization is shared among the Range, Facilities, and Environmental Programs. Invasive species is largely a Facilities responsibility, as is increased management, care of water and land, collection and disposal of solid waste, and execution of the pest management activities. Environmental retains the responsibility for developing and coordinating integrated management plans to include the INRMP, ICRMP, Forest Plans, and Pest Management Plans.

Before requesting funding for projects, the CFMO-EM will determine funding responsibility, based on the Sustainable Range/Installations Environmental Activities Matrix. The CFMO-EM will coordinate closely with Facilities and Range Management to ensure that shifted funding requirements continue to be identified and appropriately implemented. The activities specified in the INRMP will require close teamwork among the staffs to ensure sustainability is maintained. The CFMO-EM is establishing a database which will track required projects, funding source, and completion date. This information will be used to update the INRMP annually.

2.4 Conditions for Implementation and Revision

The CFMO-EM has the primary role and responsibility for the implementation and annual review of this INRMP. Annual reviews will be conducted in light of the preceding year's accomplishments. During these annual reviews, the goals and objectives for the installation will be reviewed and updated if necessary, and a new schedule for undertaking proposed actions will be prepared. A database will be created to identify projects, funding status, projected implementation dates, and completion dates.

Annual reviews will be performed by the CFMO-EM in cooperation with the USFWS and the LDWF. The LAARNG will document the annual reviews through an exchange of letters or a jointly executed memorandum that summarizes the rationale for the conclusions the parties have reached. All documentation will be kept on file in the Camp Beauregard CFMO (Building 420).

If substantial revisions to the INRMP are deemed necessary during these reviews, and these revisions are expected to result in biophysical consequences materially different from those anticipated in the existing INRMP and analyzed in an existing NEPA document, then a new or supplemental NEPA analysis would be prepared and the public would be provided a reasonable opportunity to comment on the updated INRMP.

3.0 DOCUMENT CONTACT INFORMATION

Because of the size of the supporting documents referenced in this Plan, it is not feasible to include these as appendices to this INRMP. These documents can be obtained by contacting the following individuals. Copies of most of these documents can also be found on the LAANG's SRMS website.

Table 1. Contact Information for Document Acquisition

INRMP Appendix	Document	Contact Information
	Endangered Species Management Component (ESMC)	**Natural Resources Manager** **Greg Babin** 420 F Street, JFHQ-CB Camp Beauregard Pineville, Louisiana 71360 greg.babin@ngla.gov

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Appendix A INSTALLATION OVERVIEWS

A.1 Camp Beauregard

A.1.1 Location and Area

Camp Beauregard and Esler Field are located in north central Louisiana, northeast of the Cities of Alexandria/Pineville (**Figure A-1**), with borders extending into Grant and Rapides parishes. Camp Beauregard encompasses approximately 13,361 acres and is divided into two units, a 12,642 acre training site (CBTS) and a cantonment area of 719 acres. The CBTS is bordered by the Kisatchie National Forest to the north and west, undeveloped timber lands with scattered small residences to the east, and Esler Field to the south. The CBTS is designated as a Wildlife Management Area (WMA) under the limited management of the LDWF. Esler Field, which lies immediately south of the CBTS, encompasses a total of 2,136 acres.

A.1.2 Facilities and Developed Areas

Camp Beauregard has one cantonment area, which accounts for only 5.7 percent of the entire installation land area. This area is essentially urban and contains the majority of the facilities related to administrative, command, industrial, maintenance, warehousing, housing, logistical, billeting, and other installation support land uses. There are an additional 1,672 acres on the CBTS and Esler Field that are defined as permanently cleared, converted, or restricted, and include buildings, parking lots, mowed fields and roadsides, and military ranges. These areas are primarily used for training and maneuvers.

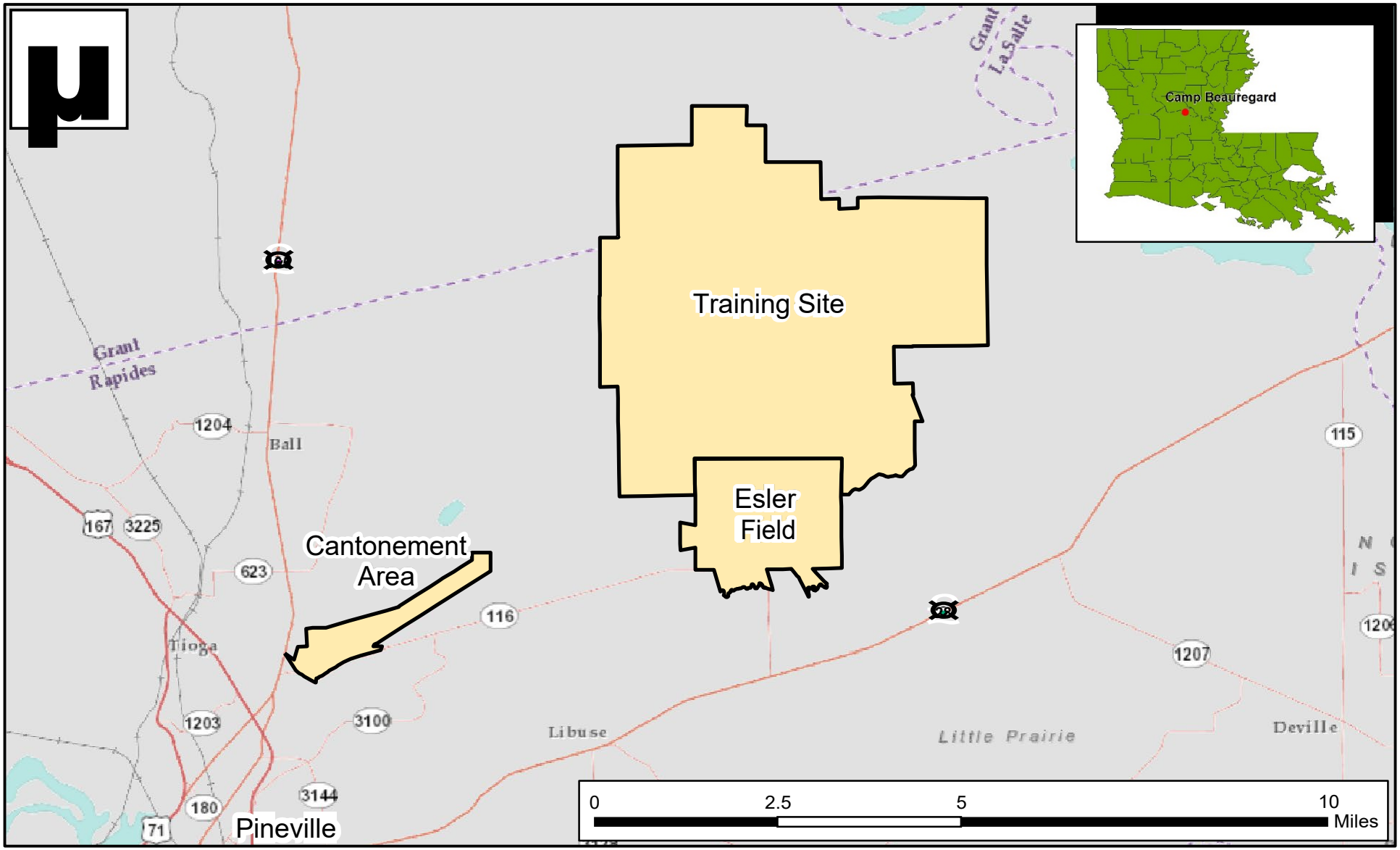
Currently, Camp Beauregard serves as one of the primary training sites for the LAARNG, with over 13 field-training areas and with housing for over a thousand soldiers. Existing training facilities on the CBTS include:

- MPMG Range
- Zero Range
- Modified Record Fire Range
- Mini Tank Range
- Non-automated Pistol Range
- 25 mm Pistol Range
- M203 Grenade Launcher Range
- Light Demolition Range
- Combat Pistol Qualification Course
- Hand Grenade Qualification Course
- Urban Assault Course
- U.S. Marshal Service Complex
- U.S. Marshal Service KD Range

The majority of Esler Field is either maintained grasslands and/or developed. There are approximately 30 buildings and structures on the facility to include the airport terminal, two runways, two aircraft hangers, a fire department, maintenance sheds, an airport office, several temporary trailers, storage buildings, an air traffic control tower, Federal Aviation Administration radio equipment buildings, taxiways, a Combined Maintenance Facility, and an Army Aviation Support Facility. In addition, the airfield encompasses approximately 500 acres adjacent to the runways and on the runway approaches that have been cleared of obstructions per Federal Aviation Administration regulations. Approximately five miles of paved roads, 10 miles of unpaved roads,

and numerous paved parking areas are located throughout the airfield.

Figure A-1. Location of LAARNG Camp Beauregard and Esler Field



Land Management Group, LLC.	Date: June 16, 2017

A.1.3 Installation History

The following history of Camp Beauregard was taken from the ICRMP and is presented with minor edits**:**

> Camp Beauregard has had an important role in the nation and state's development, and it has been involved in every major U.S. military conflict since its founding. Camp Beauregard was established in 1852 as the Louisiana State Seminary of Learning and Military Academy, and it was made a permanent encampment of the National Guard in 1906, when it was known as Camp Stafford. The facility first saw military action in the second decade of the twentieth century, when the National Guard was mobilized for the first time as tactical units for national defense. This mobilization occurred in 1916 when the Camp, still known as Camp Stafford, was used as a troop assembly site. National Guard units were mobilized from Stafford to support General John J. Pershing's punitive expedition into Mexico against Francisco "Pancho" Villa.
>
> The LAARNG was next called to military duty in 1917, when the U.S. declared war on Germany. Camp Stafford was selected that year to serve as a major training facility for citizen-soldiers, hosting National Guard troops from Louisiana, Arkansas, and Mississippi. When Stafford was chosen as a training cantonment, the name of the Camp was changed from Stafford to Beauregard in honor of the Confederate general Pierre Gustave Toutant de Beauregard. A total of 44,712 soldiers trained at Beauregard from 1917 until the armistice.
>
> The development of the training facility resulted in an economic boom for the region, and the facility became a focal point both economically and socially for the citizens of central Louisiana. Over five million dollars were spent expanding the Camp to accommodate training and troops, and the camp proper swelled to 3,427 acres, with an additional14,000 acres for use as firing ranges and 60,000 acres available for use during maneuvers.
>
> The training facility closed after the end of World War I, and the U.S. government ended its lease agreement with Camp Beauregard. The Camp persisted nevertheless and was opened again in 1920 as a training site for the LAARNG. The 1920's and 1930's were active years for the facility. As a training facility it was home to the motor transport units and soldiers of the LAARNG, and it served as the summer training encampment for soldiers from Alabama, Florida, and Mississippi. In addition to these military training activities, it was around this time that the Guard began to focus on the services it could offer state citizens. Among other services, the LAARNG brought electric power to the Louisiana State Training School; helped refugee citizens during the flood of 1927; began in 1930 training young men in a program known as the Citizen Military Training Camp; and served during the 1930's as the Headquarters Camp for District E of the Civilian Conservation Corps.
>
> The importance of Beauregard during this period after World War I made it a natural location for military attention during World War II. Camp Beauregard was home to the Louisiana Maneuvers of 1940, when the U.S. began training its mechanized forces for involvement in World War II, and it became Maneuver Headquarters for subsequent

training throughout the war. Over the course of the War, Camp Beauregard and nearby Camp Livingston served as the training and maneuvers installations for over half a million soldiers destined for the European and Pacific theaters. Beauregard served as headquarters for the 5th Corps, and some of the units activated from the facility included the 32nd Division, 106th Cavalry Regiment, 107th and 109th Air Observation Squadrons, and the 3rd Armored Division.

Camp Beauregard was deactivated at the end of World War II, as it had been after the end of the First World War. The War Department's lease on the Camp terminated, and the facility was again opened to the state's use. It was at this time that the facility neared its current size, becoming a state military reservation in 1948 with a 728-acre cantonment area and 14,000 acres of outside training area. Despite the rapid growth up to the mid-1940's, after World War II the facility entered a period of disuse and decline until 1971, serving in the intervening decades only as an assembly point for National Guard soldiers en route to Arkansas for summer training.

Louisiana saw the resurrection of Camp Beauregard as a major facility in 1971, and over the next eight years over five million dollars were spent upgrading the Camp, adding many of the facilities present there today.

The following history of Esler Field was taken from the ICRMP and is presented with minor edits:

The history of Esler Field is tied closely to that of Camp Beauregard. Pictures from as early as 1917 depict a dirt runway and several airplanes in an area identified simply as "Camp Beauregard". The airstrip does not appear to have had a formal name, but was variously referred to as the "Camp Beauregard airstrip" or the "artillery-airport camp".

Formal construction at the Camp Beauregard airstrip took place in 1939. At the same time, an emergency runway was constructed to the southwest of Alexandria in the present-day location of England Airpark. As hostilities in Europe escalated toward World War II, both airport facilities shifted to military control. By March 1940, runway construction at the artillery-airport was underway in anticipation of the Louisiana Maneuvers, with plans for partial completion by May of that year. By October, the airport had been slated for additional improvements to include a "large hangar, a tent camp to house 500 officers and men, and runway lights". The installation was renamed Esler Field in 1941, in honor of 2LT Wilmer Esler.

Alexandria Air Force Base, the Camp Beauregard artillery-airport, and Esler Field played a major role in training forces for deployment in WWII. During the Louisiana Maneuvers, the Blue Army orchestrated massive mock air strikes originating from the airports of central Louisiana. These facilities later served as the first official Army "aviation training facility" in Louisiana upon the arrival of the first Air Corps squadron in 1940. In 1947, the War Department's lease on Camp Beauregard ended, and Esler Field was closed.

The property was transferred to the Rapides Parish Police Jury after WWII. In the 1950's, Esler Field was reopened to serve once again as the regional airport for central Louisiana.

Esler Regional Airport continued to serve passenger flights until the 1990's. Shortly after the Air Force decommissioned England Air Force Base, Esler Field was closed and a new commercial airport, Alexandria International, was opened at England Airpark. The Esler Field property was leased to the LAARNG on June 1, 2001.

A.1.4 Surrounding Communities

The largest metropolitan area near Camp Beauregard and Esler Field is Alexandria/Pineville, which is located approximately 10 miles southwest of the training site. The Alexandria/Pineville metropolitan area has a combined population of approximately 62,312 (U.S. Census Bureau [USCB] 2016). The surrounding land use to the training site is rural in nature and is composed primarily of small, country residences and larger tracts of undeveloped timber lands. The Kisatchie National Forest surrounds the training site to the north and west, and Esler Field adjoins the training site to the south. No commercial property is located adjacent to the training area.

With many military installations, the ever-expanding residential and industrial development surrounding the installation encroaches on both the military mission and the biodiversity of the installation. Camp Beauregard is fortunate in that the installation is located in a relatively rural area with little residential and/or industrial development. As a result, training activities are not hindered or restricted on the installation as a result of developmental intrusion. In addition, there is currently no regulatory encroachment involving restrictions on training.

A.1.5 Regional Land Use

The parish seats of Grant and Rapides Parishes are Colfax and Alexandria, respectively. These parishes are located in the heart of the state's largest timber-producing areas, and modern reforestation practices are widely practiced. Farming is also a major source of income. The main crops grown in the area are cotton and soybeans. Sugarcane, corn, rice, and grain sorghum also contribute greatly to the farm income. Poultry, beef cattle, and other livestock have become increasingly important. The Catahoula District of the Kisatchie National Forest comprises a significant portion of Grant Parish.

A.1.6 Local and Regional Natural Areas

The Catahoula District of the Kisatchie National Forest borders the training area to the north and west. Camp Beauregard is designated as a WMA under the limited management of the LDWF. The Statewide WMA Program is designed to conserve and manage high quality habitats for a variety of wildlife species and to improve public access to these resources. Camp Beauregard WMA has a federal-aid management plan developed by region biologists, and deer is an important feature of this plan. Deer hunts, managed by the LDWF, are held each year on Camp Beauregard WMA to allow the harvest of surplus deer and prevent habitat damage resulting from overbrowsing. Biological data collected from harvested deer provide a basis for assessment of population health. Because Camp Beauregard is an active military reservation, special regulations apply to the use of Camp Beauregard WMA. An annual permit is required as is checking in and out of self-clearing stations on a daily basis. Limited camping is allowed by reservation only, and daily military clearance is required for all recreational users.

Camp Beauregard's designation as a WMA does not pose any restrictions or limitations to land use by the LAARNG. Coordination with the LDWF will occur when significant changes have been made to this document.

A.2 Camp Minden

A.2.1 Location and Area

Camp Minden is located in Webster and Bossier parishes in northwest Louisiana approximately 22 miles east of Shreveport (**Figure A-2**). The site is bordered by U.S. Highway 80 to the north, State Highway 164 to the south, Clarke Bayou to the west, and Bayou Dorcheat to the east. Camp Minden occupies 14,993 acres of land within the former boundaries of the Louisiana Army Ammunition Plant (LAAAP).

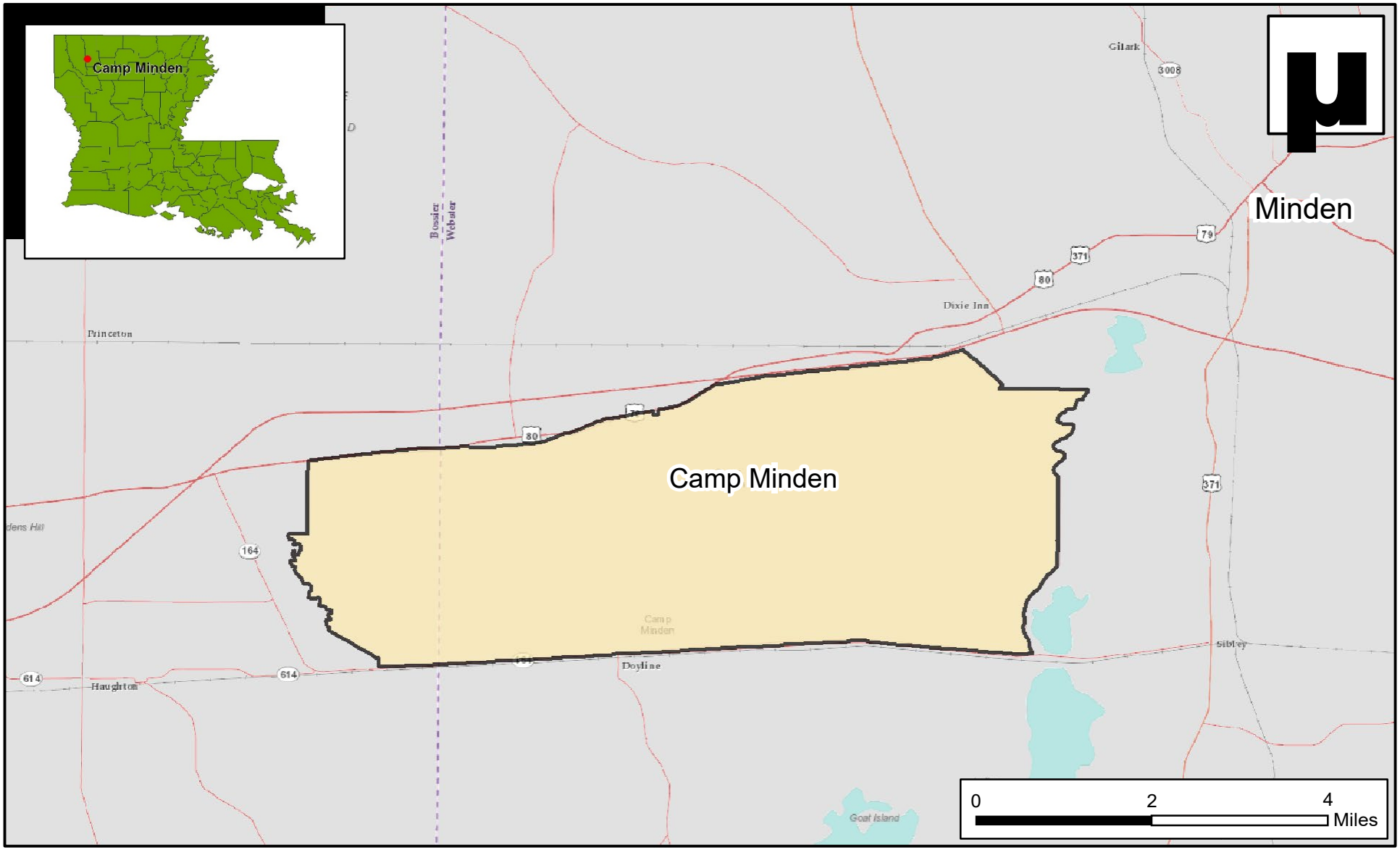
The U.S. Army is the recognized sole owner of the land with an unbroken chain of custody/ownership dating to the time of initial acquisition from private landowners and establishment of the LAAAP in 1941 (LAARNG 1998). Camp Minden has a dual purpose – military and industry. The NGB acquired property accountability for the majority of the facility from the U.S. Army Munitions and Armaments Command (USA-MAC) on September 22, 2000. The NGB then licensed the property to LMD for military training/use activities and designated the area as Camp Minden. USA-MAC retains property accountability for 257 acres of the LAAAP which is rented to various contractors and designated for industrial use/development. Land management within these 257 acres is the sole responsibility of the USA-MAC.

A.2.2 Facilities and Developed Areas

The main cantonment area is located adjacent to Gate 1 in the north central portion of the installation and consists of the Post Headquarters, Regional Training Institute, Armed Forces Reserve Center and Readiness Center, Post Exchange, Range Central, Facility Engineers, Unit Training Equipment Shop, state maintenance shop, billeting facilities, drill hall, and dining facility. Additional facilities include nine water wells, five water towers, a sewage treatment plant, and a water treatment plant.

Collectively, there are approximately 100 miles of paved and improved roads within the boundaries of Camp Minden. There are 60 miles of paved roads and the remaining 47 miles are gravel surfaced. Of this total, LMD has jurisdiction over approximately 43 miles of paved roads and 38 miles of gravel surfaced roads. Perimeter roads have been established along the property boundary. An undetermined number of miles of dirt roads and logging trails are also present throughout the undeveloped, wooded portions. There are 65 miles of railways present (LAARNG 1998).

Figure A-2. Location of LAARNG Camp Minden



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Date: June 21, 2017

Existing training facilities on Camp Minden include:

- Combat Pistol Range
- Multi-Purpose Training Range
- Wheel Vehicle Driving Course
- Light Maneuver Training Areas
- Heavy Maneuver Training Areas
- Land Navigation Course
- Field Training Areas
- Confidence Course
- Rappelling Tower
- ROPES Course

Camp Minden has a total of 13 maneuver training areas consisting of 11,419 acres.

A.2.3 Installation History

The following history of Camp Minden was taken from the ICRMP and is presented with minor edits**:**

> After World War II broke out in Europe in 1939, the U.S. began preparing to build ammunitions plants. Specific criteria had to be met to determine viable locations. These locations had to be non-coastal, remote, large land tracts with substantial labor force, and be in close proximity to transportation routes and utilities including electricity, gas, and water. Northwest Louisiana met these criteria.
>
> In July 1941, an area of nearly 16,000 acres located in Webster and Bossier Parishes was condemned by the U.S. government to be used for the site of an ammunition plant. About 300 families were relocated. The landscape was completely transformed and all structures were eventually demolished. The Silas Mason Company of New York City began construction in July 1941 and by May 1942 eight lines were producing ammunition. In 1945, an additional production line was constructed, resulting in a total of 709 structures. Over 100 million munitions items of 65 different types were produced during the World War II era. On September 6, 1945, the plant was placed on stand-by status.
>
> The LAAAP was placed back in service on February 23, 1951 in preparation for the Korean War. During this period, the Remington Rand Corporation operated the plant. Sixty-three new buildings and a 155 mm shell manufacturing line facility were constructed during this time, and each of the nine WWII-era loading lines was rehabilitated. The plant produced 16 different types of munitions during the Korean War. The plant was placed on stand-by again in 1958 until September 20, 1961, when the Vietnam War caused the facility to be reactivated. A small grenade component production line facility and 134 additional buildings were constructed through the 1960s and early 1970s. A total of 38 buildings located at the Area F mine load line were lost on August 16, 1968 after an explosion and subsequent fire. About 60 different kinds of munitions were produced at LAAAP during the Vietnam War era.
>
> Ammunition production continued at the LAAAP until October 1994. Under legislation proposed by Governor Kathleen Blanco, the plant was transferred to the State of Louisiana in 2005 and was renamed Camp Minden.

A.2.4 Surrounding Communities

The largest metropolitan area near Camp Minden is Shreveport/Bossier City, which is located approximately 22 miles to the east. The Shreveport/Bossier City metropolitan area has a combined population of approximately 263,405 (USCB 2016). The Town of Minden is located five miles east of the installation and has an estimated population of 12,577 (USCB 2016). The Village of Doyline lies near the center of the installation's southern border and has an estimated population of 812 (USCB 2016). Surrounding land use is rural in nature and is composed primarily of small, country residences and larger tracts of undeveloped timber lands. Very little commercial property (limited to a few gas stations off Interstate 20) is located near Camp Minden.

With many military installations, the ever-expanding residential and industrial development surrounding the installation encroaches on both the military mission and the biodiversity of the installation. Camp Minden is fortunate in that the installation is located in a relatively rural area with little residential and/or industrial development. As a result, training activities are not hindered or restricted on the installation as a result of developmental intrusion. In addition, there is currently no regulatory encroachment involving restrictions on training.

A.2.5 Regional Land Use

The parish seats of Bossier and Webster Parishes are Benton and Minden, respectively. Timber production replaced cotton as the main source of income in the mid-1900s. Extensive oil and gas production, sand and gravel deposits, woodland products industry, ammunitions, and other light industries have created a healthy economic climate. In addition, the area's location to nearby Shreveport/Bossier City has influenced the economic conditions. Agriculture in this area is an important industry. The main cultivated crops in the parish are cotton, grain sorghum, corn, wheat, hay, and sweet potatoes.

A.2.6 Local and Regional Natural Areas

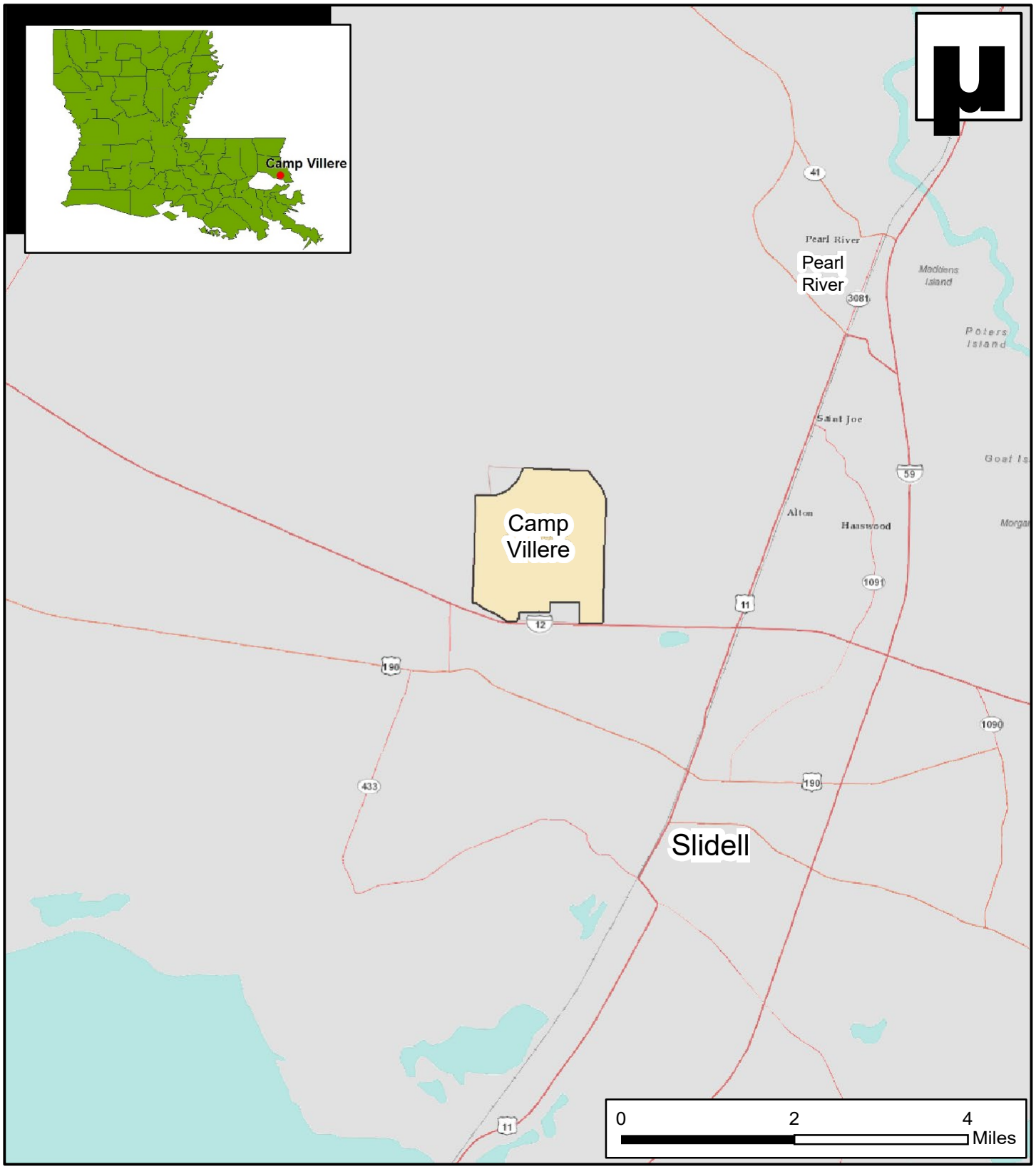
There are no local or regional natural areas within five miles of Camp Minden.

A.3 Camp Villere

A.3.1 Location and Area

Camp Villere is located on approximately 1,480 acres in St. Tammany Parish in southeast Louisiana approximately three miles northeast of Slidell (**Figure A-3**). The installation is bordered by a service road for U.S. Interstate 12 to the south and urban development to the east and west with Slidell Airport being located to the northwest.

Figure A-3. Location of LAARNG Camp Villere



Land Management Group, LLC.

Date: June 21, 2017

A.3.2 Facilities and Developed Areas

Camp Villere contains a small cantonment area on the southwest corner of the installation. The training site is primarily used as a maintenance support site and equipment storage facility. Training facilities present at Camp Villere consist of a rope course, confidence course, seven bivouac sites, two small arms ranges offering alternate C qualification, and the Slidell Regional Public Safety Academy. One of the arms ranges is currently licensed to local law enforcement agencies.

A.3.3 Facilities and Developed Areas

The following history of Camp Villere was taken from the ICRMP and is presented with minor edits**:**

> Camp Villere was established in 1942 and named in 1944 for Jacques Philippe Villere, the second governor of Louisiana and Major General in the Louisiana State Militia during the War of 1812. During the 1940's the Camp was used by the U.S. Army as a rifle and pistol marksmanship training area for soldiers at Camp Plauche in New Orleans. It also served as a training facility for the reserve components of the services with their creation in the late 1940's.
>
> It was used by the regular Army as a range and training facility, as well as for ammunition storage, over the course of the next two decades, and during the 1950's it was used by both the LAARNG and regular U.S. Army, with control of the facility passing to the LAARNG in the late 1950's. At that time the facility was larger than Camp Villere is today, covering the area to the east almost as far as Abita Springs. By 1975 the Camp consisted of 6,627 acres held in leases, licenses, and easements.
>
> The facility approached its current size in the 1970's. The Secretary of the Army was authorized in 1974 to convey about 1,710 acres to the State of Louisiana. The transfer did not occur until 1975, when the federal government quitclaimed the roughly 1,710 to Louisiana for official National Guard use. The land leases to Camp Villere were allowed to terminate or expire that year. The lease terminations, along with various land deals over the last thirty years, such as the donation of acreage to the Slidell municipal airport in 1981, have brought the camp to its current size.

A.3.4 Surrounding Communities

Several cities and towns are found near Camp Villere. These include the Cities of Slidell and Mandeville and the Towns of Pearl River and Abita Springs. Slidell is located three mile southeast of Camp Villere and has a population of 28,013; Mandeville is situated 14 miles west of Camp Villere and contains 12,424 residents; Pearl River is located 4 miles northeast of Camp Villere and has 2,506 residents; and Abita Springs is found 17 miles northwest of Camp Villere with 2,365 residents (USCB 2016). The area immediately surrounding the installation is quickly filling with urban expansion due to the close proximity to the City of Slidell. As a result of the ever expanding population surrounding Camp Villere, some training and natural resource management activities have been hindered or restricted on the installation (*i.e.* large caliber fire and prescribed burning).

A.3.5 Regional Land Use

St. Tammany Parish is one of the seven parishes in the New Orleans-Metairie-Kenner, Louisiana, Metropolitan Statistical Area as defined by the Office of Management and Budget for use in federal statistical activities. It is one of the fastest growing suburban parishes in the New Orleans area and the entire state, serving as a bedroom community to the neighboring economic centers in Orleans and Jefferson Parishes.

St. Tammany Parish contains 721,830 acres with 159,081 acres being water, including Lake Ponchartrain, rivers, bayous, streams, and small lakes (USDA 1990). Tammany parish consists of a mixture of developed lands, evergreen forest, mixed forest, grasslands, pastures, cultivated crops, forested wetlands, emergent herbaceous wetlands, barren land, and open water. The current trend towards urban expansion and build-up has resulted in a net loss in cropland and the increase of small farms.

A.3.6 Local and Regional Natural Areas

Big Branch Marsh National Wildlife Refuge (NWR) and the Pearl River WMA are located within five miles of Camp Villere. Big Branch Marsh NWR is situated southeast of the installation along the northern shore of Lake Ponchartrain. It contains 18,000 acres of pine flatwoods, oak ridges, and fresh, brackish, and saltwater marsh. The Pearl River WMA is located west of the installation between the Pearl River Canal and the Pearl River. It consists of 35,031 acres of bottomland hardwood forest and intermediate marsh.

The proximity of these natural areas to Camp Villere does not pose any restrictions or limitations to land use by the LAARNG.

A.4 Military Mission

A.4.1 LAARNG Military Mission

The LAARNG has federal, state, and local mission objectives. When activated by the President of the United States in times of war and national emergency, the federal mission is to augment the active Army and Air Force in support of national interests worldwide. When activated by the Governor of Louisiana, the state mission is to support state and local civil authorities in state and local emergencies including the protection of life and property; the preservation of peace, order, and public safety; and engineering assistance. On a community level, the LAARNG's mission is to support local domestic concerns through community action projects and programs. Both state and federal funding are provided to ensure that the LAARNG is constantly ready to support any mission or need requiring military personnel and equipment.

A.4.2 Camp Beauregard Military Mission

Camp Beauregard provides facilities for annual training, which occurs for a two-week period for each unit. Facilities also support weekend training, which occurs once a month for all assigned and attached units of the LAARNG. The installation is also available to other units and agencies that are not assigned or attached. Camp Beauregard is primarily designed as a regional engineer

training site under the Army Readiness Training Evaluation Program and can also accommodate other combat and noncombat units. In addition to providing military training for LAARNG members, Camp Beauregard provides the following services:

- Military training land and support for the Joint Readiness Training Command, Reserve Officers Training Corps units, Southwest Leadership Brigade, Officers Candidate School Leadership Company, 2nd Noncommissioned Officers Academy Battalion, and several other reserve and active component units;
- Mobilization station as a satellite of Fort Polk;
- Training center for the Special Operations Group of the U.S. Federal Marshall Service;
- Training facility for the Louisiana Youth Challenge Program;
- Training facility for the Louisiana Department of Corrections;
- Branch headquarters for the State Civil Service;
- Branch headquarters for the Louisiana Office of Emergency Preparedness; and
- Recreational opportunities through a cooperative program with the LDWF, which established the Camp Beauregard WMA.

Additionally, Camp Beauregard serves as both a staging base for LAARNG personnel and logistical staging area for various emergency response agencies during times of state and federal emergencies.

The LAARNG is proposing two projects on the training site within the next five years. These include the construction of a new 3 to 4 lane Multipurpose Machinegun Range and modification and update of the existing Multipurpose Machinegun Range. The completed facilities will reduce training safety issues and make more of the ranges simultaneously operational.

A.4.3 Camp Minden Military Mission

Camp Minden is the largest LAARNG training site in the State; thus, it is one of the National Guard's premier installations in support of the mission. A full range of mission-related training activities are conducted on Camp Minden, including maneuver exercises such as infantry, reconnaissance, navigation, and concealment tactics; construction activities that include building supply routes, trails, roads, and firebreaks; engineering missions; and bivouacking. Camp Minden is home to four of the highest priority military units in the LAARNG: 1083rd Transportation Company, 39th Military Police Company, 122nd Air Support Operations Squadron, and the 199th Leadership Regiment. Other units stationed at Camp Minden include Company A Recruitment Sustainment Program, Detachment 1/139th Signal Company, and Detachment 1/489th Maintenance.

Camp Minden also serves as the Reception, Staging, and Onward Integration (RSOI) for Emergency Management Assistance Compact (EMAC) units during emergency response events. The LAARNG has spent the last several years creating and/or revising mission requirements throughout the State and has determined that additional facilities and associated infrastructure upgrades are required at Camp Minden. In order to develop the necessary requirements to meet the LAARNG's mission for Camp Minden, a Site Development Plan was developed in 2008 to address those needs. The LAARNG's mission required several new facilities be constructed at

Camp Minden in the near future as well as potential facilities in the next 5-20 years. Since then, construction of the Regional Training Institute, Armed Forces Reserve Center and Readiness Center, Bachelor's Enlisted Quarters, Installation Barracks, Forward Operating Base, Unit Equipment Training Site, and two M16 ranges are either completed or are ongoing. Future activities include a Tactical Assembly Area, Urban Assault Training Site, Leadership Reconnaissance Course, Live Fire Shoot House, Live Fire Breach Facility, Light Demolition Range, Convoy Non-Live Fire Range, and Driving Course.

A.4.4 Camp Villere Military Mission

The primary function of Camp Villere today remains the same as it was in the 1970's: small arms and rifle training for the regular and reserve components of all military services. A total of approximately 25,000 people are trained annually at Camp Villere. In addition to the military personnel who use the Camp for weekend and annual training, approximately 15,000 local police and firemen attend the Slidell Regional Public Safety Academy located on the facility. Other groups, such as the local sheriff's department and the Federal Bureau of Investigations, also train at Camp Villere.

The overall mission of Camp Villere is not anticipated to change over the next five years. Current activities at Camp Villere consist of use as a maintenance support site and equipment storage facility and training facilities consisting of a rope course, confidence course, bivouac sites, and two small arms ranges. Because of the proximity of residential areas, additional range development would be cost prohibitive given the safety features that would be required. Therefore, there will be few modifications in existing facilities and no expected increase in training demands.

A.4.5 Military Mission and Strategic Vision of Future Land Use

The LAARNG's mission is to provide an efficient and effective platform for training, mobilization, deployment, and sustainment support. Combined, Camps Beauregard, Minden, and Villere provide state-of-the-art facilities to support the full spectrum of training requirements of today's modern armed forces. Installation lands and ranges provide excellent training opportunities for mechanized maneuver and small unit exercises, combined arms training, and live-fire training.

The LAARNG is committed to observing applicable federal, state, and local laws and regulations aimed at sustaining the installation and the environment. There is a relationship between the mission and environmental compliance. The lands of the LAARNG are used primarily for military training, and environmental compliance is necessary to preserve the land and its natural resources. By preserving natural resources, the LAARNG increases its ability to train soldiers; therefore, environmental management and sustainability are an integral part of the LAARNG's mission.

A.5 References

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Appendix B PHYSICAL ENVIRONMENT

B.1 Camp Beauregard

B.1.1 Climate

Louisiana's weather is governed largely by the state's proximity to the Gulf of Mexico, its subtropical latitude, and its location relative to the extensive land mass to the north. Prevalent winds are from the south or southeast with much warm moist air from the Gulf bringing high levels of humidity. Thirty years of data from the Alexandria Esler Field weather station indicates an average annual rainfall of 57.46 inches. The average temperature is 65.9 ºF. Temperatures range from 38.3 ºF in winter to 92.4 ºF in summer. Mean annual relative humidity is 74 percent, and 42 percent of the time, relative humidity is greater than 80 percent. (National Climatic Data Center 2017). Grant and Rapides parishes experience a long growing season with approximately 273 consecutive days above 28 ºF in most years.

In summer, physical conditions are favorable for regular development of isolated thundershowers scattered across the State. Occasional periods of hot dry weather interrupt prevailing summer moist conditions in Louisiana. Thunderstorm activity is usually associated with converging frontal systems during spring and early summer, and convectional currents during the summer. In pre-settlement times, lightning generated by these thunderstorms was responsible for the growing season fires that maintained many of the natural communities present in this area. Tropical disturbances (tropical storms and hurricanes), which spawn high winds and excessive rainfall, regularly develop in the Gulf of Mexico and occasionally affect central Louisiana.

B.1.2 Landforms

Camp Beauregard is located in the Upper West Gulf Coastal Plain physiographic region (U.S. Geological Survey [USGS] 2003). Topographic relief for the installation is depicted on the USGS Alexandria, Holloway, Green Gables, and Ball topographic quadrangles. Topography on Camp Beauregard is hilly to gently rolling, with elevation ranging from approximately 210 feet mean sea level to approximately 40 feet above mean sea level. The higher elevations of the site occur on scattered knolls that are separated by broad drainages. The lower elevations of the site are located along the floodplains of Flagon Bayou and its tributaries at the eastern boundary of the installation.

B.1.3 Geology

Camp Beauregard consists of steeply sloping uplands and nearly level upland drainages, both of which are carved into two terrace formations. The bulk of Camp Beauregard lies on the Williana terrace, the oldest of the Pleistocene formations in the State. These formations are well-oxidized, cross-bedded, fluvial coarse sands with extensive irregular zones or layers of chert gravels (Saucier

1974). They appear to have been deposited by swiftly flowing braided streams as a widespread blanket over a dissected Tertiary age landscape (Saucier 1974). Subsequent erosion resulted in the diminishment of the blanket of soil to discontinuous ridge and hilltop caps of graveliferous material (Saucier 1974). Although these gravel deposits can be as thick as 15 feet in places, at Camp Beauregard they are only several feet thick (Klug 1955).

Camp Beauregard lies across a unit of the Williana Terrace that is approximately 15 square miles in size. The ground surface is eroded deeply from stream action, and erosion, in some places, has exposed the older Tertiary bedrock. The sediments underlying the ground surface consist of gravel, course sand, silt, and unconsolidated clay. Intermittent streams dissect the surface heavily, and the general appearance of Camp Beauregard is of rolling hills (Fisk 1940).

The western edge of Camp Beauregard is situated on the Bentley terrace formation. The Bentley terrace also is categorized as an undifferentiated terrace, sharing the same general depositional and formational history as the adjacent Williana terrace (Saucier 1974). The topography of the Bentley Terrace is relatively angular, distinguishing it from the more gently rolling hills of the Williana Terrace (Fisk 1940). This area contains red clays and brown silts with layers of gravel.

The area directly surrounding Flagon Bayou consists primarily of recently deposited alluvium and materials of the Fleming formation of the Miocene series. The Fleming formation consists of undifferentiated fluvial silts and sands, with calcareous brackish-water clays (Fisk 1940). Two of six members of the Fleming formation are present. First is the Carnahan Bayou member, located along slopes of a finger-ridge between two small tributaries flowing west into Flagon Bayou and in the Longleaf Glade Natural Area (McInnis et al. 1995a). This member is fluvial in origin and is characterized by alternating beds of siltstones, sandstones, clays, and black chert gravel (McInnis et al. 1995a). The second member of the Fleming Formation is Dough Hills, exposed along the western slopes above Flagon Bayou in the southwestern corner, as well as in glade-like areas of the Flagon Bayou Tributaries Natural Area (McInnis et al. 1995).

The youngest soils present consist of the alluvial deposits along Flagon Bayou and other streams (Fruge 1996). These soils are Holocene in age, and they include meander belt alluvium, backswamps, natural levees, and undifferentiated alluvium.

Low, circular mounds known sometimes as “pimple mounds” are found throughout Camp Beauregard. These features can be up to 100 feet in diameter and up to five or six feet in height (Kniffen 1988). The origin of these mounds is still under debate. It has been suggested that pimple mounds are the result of Native American construction, burrowing animals, ants, the wallowing of bison, clumps of vegetation, gas, artesian water, whirlwinds, and overturned trees (Kniffen 1988). Saucier (1974) favors a biological origin for these features, based on geological and temporal factors, such as the fact that none are associated with deposits younger than 2,000 years old.

B.1.4 Soils

Soil types on Camp Beauregard and Esler Field were determined by using the Soil Survey of Fort Louisiana (USDA 2004). Two soil associations comprise approximately 90 percent of the surface area: the Ruston-Malbis Association in Rapides Parish and the Smithdale-Ruston Association in Grant Parish. Based on the soil surveys, there are 17 soil series present on Camp Beauregard and Esler Field (**Table B-1**).

The NRCS has written a Soil Erosion Control & Site Restoration Plan for Camp Beauregard which addresses areas in need of erosion management and provides methods of easing runoff and controlling erosion.

Table B-1. Soils at Camp Beauregard and Esler Field

Symbol	Series
CeC	Cadeville very fine sandy loam, 1-5 percent slopes
CeE	Cadeville very fine sandy loam, 5-20 percent slopes
GaB	Glenmora very fine sandy loam, 1-3 percent slopes
GeC	Gore silt loam, 1-5 percent slopes
GeD	Gore silt loam, 5-12 percent slopes
GoA	Guyton-Ouachita silt loams, frequently flooded
GsA	Guyton-Sardis silt loams, frequently flooded
KeC	Keithville very fine sandy loam, 1-5 percent slopes
KnB	Kolin silt loam, 1-5 percent slopes
LsB	Libuse silt loam, 1-5 percent slopes
MkD	Mckamie very fine sandy loam, 5-12 percent slopes
PkC	Pinetucky fine sandy loam, 1-5 percent slopes
RsB	Ruston fine sandy loam, 1-3 percent slopes
RsC	Ruston fine sandy loam, 3-8 percent slopes
RSG	Ruston soils, graded, 1-12 percent slopes
SmE	Smithdale fine sandy loam, 8-12 percent slopes
UrA	Urbo silty clay loam, frequently flooded

Source: USDA 2004.

B.1.5 Surface Water Resources

Camp Beauregard is located within the Ouachita Drainage Basin (LDEQ 2017). The rolling uplands of Camp Beauregard are generally higher and more dissected than the immediately surrounding area in all directions; thus, the installation drains to the east, west, north, and south. Drainages of Camp Beauregard consist primarily of intermittent streams; the only permanent streams on the installation are Flagon Bayou and Clinton Branch. The southern one-half and most of the eastern and western portions of the installation are drained by tributaries to Flagon Bayou, which include Mill Creek and unnamed tributaries of Beaver Creek. Flagon Bayou headwaters drain the uplands of southern Grant Parish and northeastern Rapides Parish. South of the installation, Flagon Bayou flows east, then turns north and flows through the northeastern corner of the installation before turning east again and discharging into Catahoula Lake. The northern portion of Camp Beauregard is drained by Clinton Branch and its tributaries, and the headwaters of unnamed tributaries that flow northeastwardly into the Little River shortly before it discharges into Catahoula Lake. Two small man-made lakes on Camp Beauregard (Twin Lakes) occur on tributaries to Clinton Branch.

B.1.6 Groundwater Resources

The Carnahan Bayou Aquifer is the major freshwater aquifer beneath Camp Beauregard. This aquifer consists of Miocene sands that dip and thicken southward. Freshwater is at a depth of approximately 800 feet; however, because of an underlying clay unit, wells are not constructed below 675 feet. Groundwater beneath this clay unit is salty. The Carnahan Bayou Aquifer is

recharged by rainfall from outcrop areas located in the parishes north of Rapides Parish (LAARNG 2001).

B.2 Camp Minden

B.2.1 Climate

Thirty years of data from the Minden weather station (National Climatic Data Center 2017) indicates an average annual rainfall of 55.41 inches. The average temperature is 64 ºF. Temperatures range from 34.5 ºF in winter to 91.7 ºF in summer. Relative humidity is high throughout the year, with average monthly values from 83 to 91 percent.

In winter, temperatures are more variable, ranging on average from 55 ºF to 65 ºF in the afternoons and from 40 ºF to 50 ºF in early morning hours; although higher and lower temperatures often occur. Periodic continental cold fronts from the northwest displace the warmer maritime air. Freezing temperatures are usually recorded 30 to 40 days in an average year in North Louisiana.

B.2.2 Landforms

Camp Minden is located in the Upper West Gulf Coastal Plain physiographic region (USGS 2003). The installation is bounded to the east by Bayou Dorcheat and to the west by Clark Bayou. Topographic relief for the installation is depicted on the USGS Doyline and Minden South topographic quadrangles. The area is generally flat to gently rolling except near streams where downcutting has occurred. The highest elevation at Camp Minden is approximately 225 feet, while the lowest (along Bayou Dorcheat) is 145 feet. The greatest change in elevation over a relatively short distance is along the east-facing escarpment of Bayou Dorcheat. Much micro-topographic variation occurs due to the presence of natural hillocks or "pimple mounds". These mounds average approximately 3 feet high and 50 feet in diameter and are especially evident in areas with Wrightsville soils, where they support islands of upland vegetation in otherwise wetland forests.

B.2.3 Geology

Camp Minden is located in the Western Gulf Coastal Plain Province, north and east of the present-day Red River channel. Pertinent geological elements in the area include Tertiary, Pleistocene, and Holocene deposits. Tertiary deposits are the result of sea level fluctuations on shallow marine sediments. Sands, silts, and clays comprise the majority of the deposits. Tertiary deposits have been identified to the west, but not inside Camp Minden's boundaries. Tertiary deposits, however, directly underlie the more recent surface sediments found throughout the facility. When exposed, Tertiary deposits appear as uplifted and heavily eroded hills.

Tertiary deposits were eroded during the Pleistocene era by the Red River and its tributaries. The resulting terraces are found in descending order, from oldest to youngest, along the tops and flanks of the older Tertiary deposits. In northwest Louisiana, several terraces have been identified that roughly correspond to the sequence of terraces described for central Louisiana that includes the Williana, Bentley, Montgomery, and Prairie terraces. Only the two more recent formations, the Montgomery and Prairie terraces, are found at the surface within Camp Minden's boundaries (Peter et al. 1990). While there is some disagreement about the actual extent of each terrace, the general distribution suggests that Montgomery terrace deposits are dominant in the northern part

of Camp Minden. There the uplands are higher in elevation and more dissected. Meanwhile the southern part of the installation is primarily comprised of Prairie terrace deposits that are lower in elevation and have fewer deeply-cut drainage channels. At the lowest elevations, Holocene alluvial deposits are accumulating along the present-day waterways.

Pimple mounds have been observed within both the uplands and bottoms of the Camp Minden property. Most often, these small circular rises are associated with the Pleistocene terraces present at the facility.

B.2.4 Soils

Soil types on Camp Minden were determined by using the USDA Soil Survey of Fort Louisiana (USDA 2004). The primary soil association is Kolin-Gore-Wrightsville, which covers roughly 78 percent of the installation. Overall, 13 soils have been mapped for Camp Minden and are primarily silty and sandy loams with a clay subsoil (**Table B-2**).

The NRCS has written a Soil Erosion Control & Site Restoration Plan for Camp Minden which addresses areas in need of erosion management and provides methods of easing runoff and controlling erosion.

Table B-2. Soils at Camp Minden

Symbol	Series
BnC	Bienville loamy fine sand, 1-5 percent slopes
CaB	Cahaba fine sandy loam, 1-3 percent slopes
GeC	Gore silt loam, 1-5 percent slopes
GeD	Gore silt loam, 5-12 percent slopes
GnA	Gurdon silt loam, 1-3 percent slopes
GoA	Guyton-Ouachita silt loams, frequently flooded
GtA	Guyton silt loam
KnB	Kolin silt loam, 1-5 percent slopes
PkC	Pinetucky fine sandy loam, 1-5 percent slopes
PkD	Pinetucky fine sandy loam, 5-8 percent slopes
RsB	Ruston fine sandy loam, 1-3 percent slopes
SmD	Smithdale fine sandy loam, 5-12 percent slopes
WvA	Wrightsville silt loam

Source: USDA 2004.

B.2.5 Surface Water Resources

Camp Minden is located in the Red River Drainage Basin (LDEQ 2017). This hydrologic segment includes most of Webster Parish, southeast Bossier and northwest Claiborne parishes, and portions of Bienville and Red River parishes. The primary streams on Camp Minden are Bayou Dorcheat and Clark Bayou, which create the eastern and western boundaries of the installation, respectively. Bayou Dorcheat originates in southern Arkansas, is impounded within Lake Bistineau just south of Camp Minden, and merges with Red Chute Bayou south of the dam to form Loggy Bayou, which subsequently enters the Red River. Bayou Dorcheat is designated by the LDWF as a Louisiana Natural and Scenic River from the Arkansas state line to its entrance into Lake Bistineau (LDWF 2010). As a result of this designation, channelization, clearing and snagging, channel

realignment, reservoir construction, and commercial harvesting or cutting of trees or timber in violation of the provisions of the Louisiana Scenic Rivers Act are strictly prohibited (LDWF 1988).

Clarke Bayou is a major tributary of Bayou Dorcheat, with its headwaters near Bellevue, draining into Lake Bistineau south of the training site. Boone Creek, a smaller tributary of Bayou Dorcheat, originates a short distance north of the training site boundary and flows southward to the upper end of Lake Bistineau. Caney Bayou is a small tributary of Clarke Bayou, with headwaters just north of the training site. Intermittent tributaries to the major streams mentioned above are also present.

Hydrologic influences in the area include Lake Bistineau, which encompasses the majority of Bayou Dorcheat south of Camp Minden. Lake Bistineau was a natural lake formed as a result of ponding of Bayou Dorcheat by the Great Raft (Peter et al. 1990). The Raft was a series of logjams cemented with soil, debris, and vegetation that clogged the main channel of the Red River for more than 100 miles beginning near the Arkansas boundary and extending southward. The Raft was finally removed in 1873. The Lake Bistineau Dam was built in 1942 to prevent the extreme low levels in Bayou Dorcheat during dry periods. A comparison of a map of Lake Bistineau in 1863 with current maps shows that the upper end of the lake occupied roughly the same area which it does today (Peter et al. 1990), thus the dam is serving to maintain approximate historic water levels of the lake.

Other factors influencing the hydrology at Camp Minden include the channelization of southern portions of Boone Creek and Clarke Bayou that occurred at the time of acquisition of the site by the DoD in 1941. The channelization is evidenced by dredge spoil mounds still present and unnaturally straight stream segments. A portion of Bayou Dorcheat was reportedly channelized near present day Minden south to Lake Bistineau by early settlers to improve access by boats.

B.2.6 Groundwater Resources

The three major sources of groundwater that exist beneath Camp Minden include the Terrace, Sparta and Wilcox aquifers (LAARNG 1998). The uppermost aquifer is located in the Terrace deposits. The Terrace aquifer is divided into the Upper and the Lower Terrace aquifer and is separated by a semi-confining 5 to 15 foot thick clay-rich unit. The Upper Terrace is present in the central portion of the facility. The Lower Terrace aquifer underlies the Upper Terrace and is laterally continuous beneath the entire installation. The groundwater flow pattern within this water table aquifer is strongly influenced by the topography, major streams, ditches, ponds and lakes. Clarke Bayou, Dorcheat Bayou, and Boone Creek all appear to be major discharge areas for this aquifer. The areas in between these watercourses appear to be recharge areas to the shallow aquifer, with most recharge derived from local rainfall. There are two north-to-south groundwater divides in the Terrace aquifer which are defined by the topography. This aquifer is not used as a primary potable water supply.

The Sparta aquifer underlies the Terrace water table aquifer in the eastern half of the facility and has a thickness in the central to eastern portion of Camp Minden ranging from 0 to 45 feet. This aquifer is a major source of water supply east of Camp Minden but is too thin to act as a significant water supply for the installation. Where the Terrace aquifer is underlain by the Sparta aquifer, water from the Lower Terrace aquifer recharges the Sparta aquifer.

The Wilcox aquifer underlies the entire installation. The Wilcox ranges in thickness from 350 to 550 feet. The Wilcox consists of layered, interbedded, non-marine, fine-grained sands, silts, clays, and thin beds of lignite. Massive well sorted sand beds are found within the Wilcox and vary in thickness from 0 to 100 feet with an average thickness of 30 feet. The aquifer has a hydraulic conductivity of about 17 feet per day. The potable water supply for Camp Minden is obtained from this aquifer through the pumpage of nine on-site wells. Water flow is down dip, to the northeast.

B.3 Camp Villere

B.3.1 Climate

St. Tammany Parish has a semi-tropical marine climate; warm and humid with mild winters and hot summers. Thirty years of data from the Slidell weather station indicates an average annual rainfall of 62.89 inches. The average temperature is 67.7 ºF. Temperatures range from 52.4 ºF in winter to 81.4 ºF in summer. Mean annual relative humitidity is very high throughout the year. St. Tammany Parish is north of Lake Pontchartrain on the Gulf Coast and has suffered extensive property damage from tropical storms, floods, and hurricanes. Since 1965, the parish has received 20 Presidential Disaster Declarations, more than any other parish in the state, and 12 declarations have been from tropical storms or hurricanes (St. Tammany Parish 2015).

B.3.2 Landforms

Camp Villere is located in the East Gulf Coastal Plain physiographic region which stretches from the Florida Panhandle and southwest Georgia to the Florida Parishes of Louisiana (USGS 2003). Topographic relief for the installation is depicted on the USGS Slidell topographic quadrangle. The terrain of Camp Villere is relatively flat, with elevation ranging from approximately 15 feet mean sea level along the drainages to 25 feet mean sea level in the northwest corner of the installation.

B.3.3 Geology

Camp Villere is located in an area of the state with a different geological history than Camp Beauregard or Camp Minden. Camp Villere is in the East Gulf Coastal Plain physiographic zone, and much of the installation is situated on the Prairie terrace. The Prairie terrace is an area of Pleistocene epoch relict lagoons, barrier islands, and shallow offshore zones (Saucier 1974). Most of the barrier island complexes of a Pleistocene shoreline now lie beneath Lake Pontchartrain and its swamps, and the area where Camp Villere is situated probably was the Pleistocene relict lagoon that existed north of the barrier islands (Saucier 1974). In addition, deposition of alluvium throughout the Pleistocene in response to sea level increases contributed to terrace formation in this area, as did colluvial deposition (TNC 2000). The final contributing factor to terrace formation around Camp Villere was the structural uplifting to the north and subsidence to the south of east-west fault lines located along the north shore of Lake Pontchartrain (TNC 2000).

Pimple mounds, although associated with prairie terrace deposits elsewhere in the state, are conspicuously absent from the Prairie terrace of southeastern Louisiana (Saucier 1974).

B.3.4 Soils

Soil types on Camp Villere were determined by using the USDA Soil Survey of Fort Louisiana (USDA 2004). The primary soil association is Myatt-Stough-Prentiss complex which is characterized by level to 3 percent slopes and fine sandy loams that are poor to moderately well drained, and have low fertility. Overall, eight soils have been mapped for Camp Villere and are primarily sandy loams with a clay subsoil (**Table B-3**).

Camp Villere is lacking a Soil Erosion Control & Site Restoration Plan. This plan would address areas in need of erosion management and provide methods of easing runoff and controlling erosion.

Table B-3. Soils at Camp Villere

Symbol	Series
BrA	Brimstone-Guyton silt loams
GuA	Guyton silt loam, occasionally flooded
LaA	Latonia fine sandy loam
MtA	Myatt fine sandy loam
MyA	Myatt fine sandy loam, frequently flooded
ObA	Ouachita and Bibb soils, frequently flooded
PrA	Prentiss fine sandy loam, 0-1 percent slopes
StA	Stough fine sandy loam

Source: USDA 2004.

B.3.5 Surface Water Resources

Camp Villere is located within the Ponchartrain Drainage Basin (LDEQ 2017). The hydrologic unit encompassing Camp Villere drains much of St. Tammany Parish and extreme southwestern Washington Parish to Lake Pontchartrain. The primary natural drain on Camp Villere is intermittent and enters Camp Villere from the north and flows south while being west of and parallel to Engineer Road. It then turns west, near the intersection of Engineer Road and Igloo Road, and flows off of Camp Villere's western boundary. The only permanent stream on Camp Villere is a channelized drain flowing south out of the "igloo" area, leaving the Camp at the southern boundary.

Surface flow of water on the installation is generally to the south. The presence of I-12 just past the southern boundary may temporarily impede drainage during heavy rainfall events. The eastern and southern parts of Camp Villere are located primarily within the watershed of Bayou Vincent, a tributary of Bayou Bonfouca. The western part of Camp Villere is located in the drainage of Liberty Bayou. Bayou Bonfouca and Liberty Bayou converge approximately 4.5 miles southwest of Camp Villere shortly before entering Lake Pontchartrain.

B.3.6 Groundwater Resources

The source of groundwater at Camp Villere is the Southeast Louisiana Aquifer System (LDEQ 2017). This system provides groundwater for all of southeast Louisiana located east of the Mississippi River and north of Lakes Ponchartrain and Maurepas.

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Appendix C ECOSYSTEMS AND THE BIOTIC ENVIRONMENT

C.1 Ecosystem Classification

The U.S. Forest Service adopted a policy of ecosystem management on June 4, 1992, that applied to national forests, grasslands and research programs. An Ecological Classification and Mapping Task Team was formed to develop a consistent approach to ecosystem classification and mapping at multiple geographic scales. By 1994 the system was developed and is known as the National Hierarchical Framework of Ecological Units. In summary, the National Hierarchical Framework provides a scientific basis for regionalization of ecosystems into successively smaller, more homogeneous units. At the Section level, these units allow managers, planners, and scientists in the Forest Service, in cooperation with other agencies, to study management problems on a multi-forest and statewide basis; organize data collected during broad-scale resource inventories; and interpret these data among regions (U.S. Forest Service 1994).

Camp Beauregard's ecosystem based land classification is as follows:

Domain	200 Humid Temperate
Division	230 Subtropical
Province	232 Outer Coastal Plain Mixed Forest
Section	232F Coastal Plain and Flatwoods, Western Gulf

Camp Minden's ecosystem based land classification is as follows:

Domain	200 Humid Temperate
Division	230 Subtropical
Province	231 Southeastern Mixed Forest
Section	231E Mid Coastal Plain, Western

Camp Villere's ecosystem based land classification is as follows:

Domain	200 Humid Temperate
Division	230 Subtropical
Province	232 Outer Coastal Plain Mixed Forest
Section	232B Coastal Plains and Flatwoods, Lower

C.2 Vegetation

Natural communities are composed of groups of plant and animal species that regularly or often occur in association with each other in certain landscapes or physical environments. The Louisiana Natural Heritage Program (LNHP) has developed a classification system based on data gathered from secondary sources such as previously existing inventories, scientific literature, and consultation with experts in the field. The resulting classifications were then refined through data collected from scores of field surveys conducted throughout Louisiana since 1984 by LNHP staff. The communities are prioritized through a ranking system. Exemplary natural communities include all or any examples of rare types (such as Fleming Glade) and also the highest quality examples of more common community types (such as Bottomland Hardwood Forests). The communities are presented in LNHP's *Natural Communities of Louisiana* (LDWF 2009).

C.2.1 Camp Beauregard

With the exception of a stand of mature, fire-suppressed upland longleaf pine found near the north gate of the cantonment area, all of the natural communities are found on the CBTS and/or Esler Field.

According to the current natural community classification, the LNHP tracks 68 community types, 5 of which are found on Camp Beauregard and Esler Field (**Table C-1**) and are depicted on **Figure C-1**. These plant communities are believed to have existed on Camp Beauregard during pre-settlement times; however, they have changed significantly from presettlement conditions as a result of human influence. These influences include modifications in fire regime, silviculture, and drainage of areas with persistent standing water. The plant communities that are present today are largely a result of anthropogenic influence; therefore, they differ somewhat from the natural

community composition and condition according to the type and degree of influence. *Note: Natural Pine, Open Water, and Disturbed Areas/Open Field are not recognized natural communities by LNHP.*

The plants listed for each community type in the following sections are typical and are primarily the dominant species. It should be noted that not every species will be located within every site. Rather the species present describe the variability and the complexity of taxa found in each of these communities.

Table C-1. Natural Communities on Camp Beauregard and Esler Field

Natural Community	Status on Camp Beauregard	Acreage
Mixed Hardwood/ Loblolly Forest	Generally found on lower slopes than the Natural Pine; some good examples remaining; however, distribution, composition, and structure have been altered by disturbance and silviculture.	4,405
Natural Pine	Altered community found in relatively level, topographically higher positions than the Mixed Hardwood/Loblolly Forest; heavily influenced by fire and silviculture.	4,400
Bottomland Hardwood Forest	Found along Flagon Bayou and in broad floodplains along streams; mildly altered in extent and composition, although undisturbed old-growth areas are rare.	2,233
Western Upland Longleaf Pine Forest	Longleaf Pine Demonstration Areas; some high quality examples of longleaf pine remain but have been degraded by invasion of loblolly pine.	814
Hardwood Slope Forest	Isolated community found along the western, steeper slopes of Flagon Bayou; mature, undisturbed examples are rare. Contains some Forested Seeps and Fleming Glades.	576
Small Stream Forest	Natural community along the floodplains of small streams with some good examples remaining, although some have been significantly altered by past silviculture.	319
Open Water	Lakes, ponds, and Flagon Bayou.	365
Disturbed Areas/Open Field	Man-made community completely altered by clearing; includes developed and maintained areas.	1,672

Mixed Hardwood/Loblolly Forest

Mixed Hardwood/Loblolly Forest and Natural Pine represent the first and second largest community types on Camp Beauregard and are, therefore, the dominant communities. The total acreage in these two communities accounts for approximately 60% of the total installation land area. In contrast to the Natural Pine stands, the Mixed Hardwood/Loblolly Forest is almost equally stocked with pine and hardwood. Large, mature to over-mature pine with an understory dominated by hardwood is characteristic of the community. The mid- and understory of the Mixed Hardwood/Loblolly Forest on Camp Beauregard is relatively open due to an active burn rotation.

The Mixed Hardwood/Loblolly Forest community is found on mid- and lower slopes generally between the Natural Pines and stream bottoms, and in areas where fire is suppressed, may be found on ridges and upper slopes. Acidic soils are a trademark of this community, and soil texture may be of almost any type, from sandy loams to silty loams, silty clays, and clay.

The overstory is a mix of hardwoods and pine species, dominated by loblolly pine (*Pinus taeda*), longleaf pine (*Pinus palustris*), southern red oak (*Quercus falcata*), white oak (*Quercus alba*), black hickory (*Carya texana*), blackgum (*Nyssa sylvatica*), sweetgum (*Liquidambar styraciflua*), blackjack oak (*Quercus marilandica*), post oak (*Quercus stellata*), water oak (*Quercus nigra*), cherrybark oak (*Quercus pagoda*), southern magnolia (*Magnolia grandiflora*), deciduous holly (*Ilex decidua*), red maple (*Acer rubrum*), winged elm (*Ulmus alata*), and shortleaf pine (*Pinus echinata*).

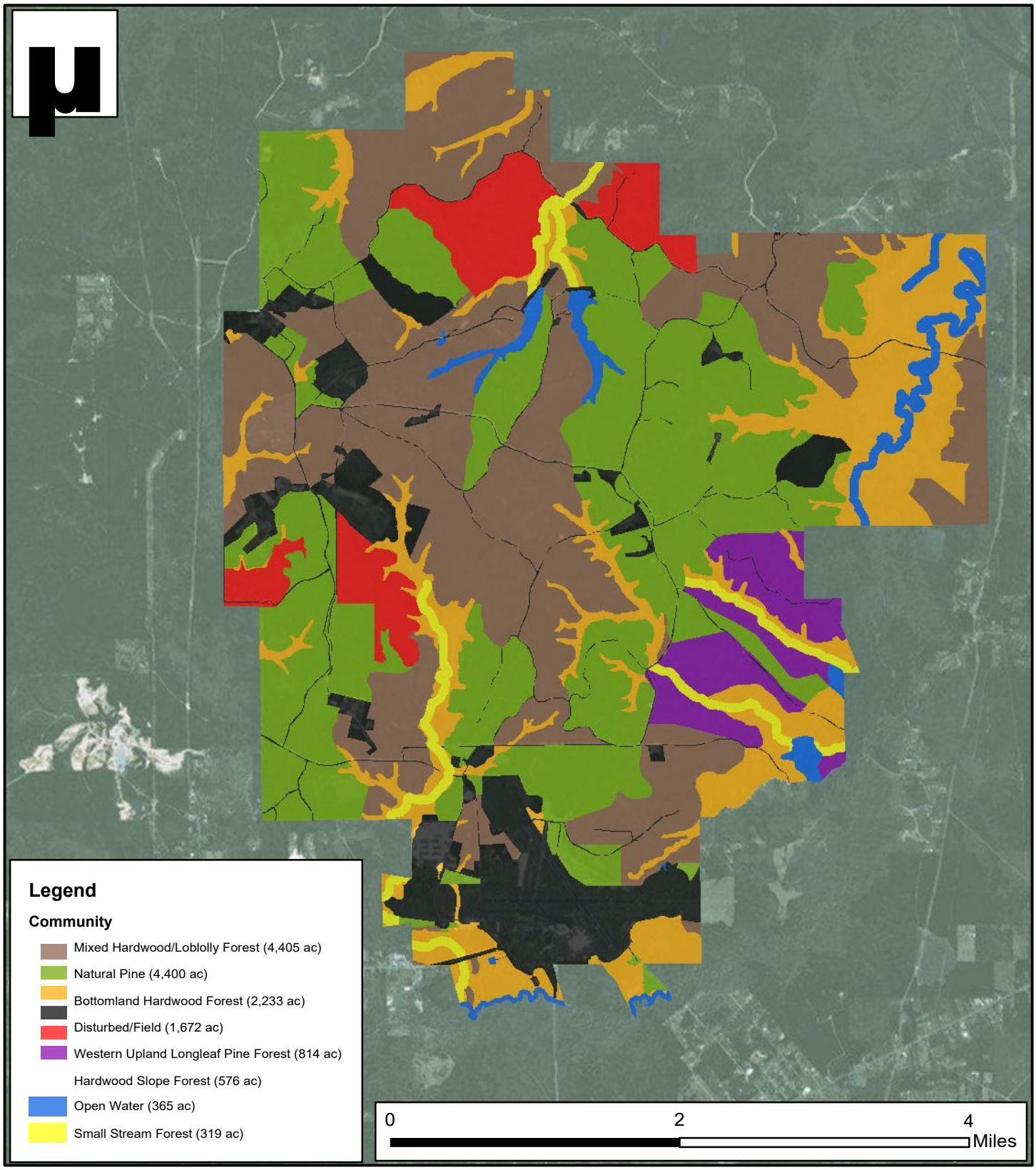
In the midstory, taxa found include sweetgum, water oak, black hickory, common sweetleaf (*Symplocos tinctoria*), red maple, American beautyberry (*Callicarpa americana*), southern red oak, wax myrtle (*Myrica cerifera*), and Chinese privet (*Ligustrum sinense*). Vines found in this community are wild grapes (*Vitis aestivalis* and *Vitis rotundifolia*), greenbriers (*Smilax* spp.), Virginia creeper (*Parthenocissus quinquefolia*), Alabama supplejack (*Berchemia scandens*), and trumpet honeysuckle (*Lonicera sempervirens*).

The understory includes such dominants as huckleberries (*Vaccinium* spp.), blackberries (*Rubus* spp.), poison ivy (*Toxicodendron radicans*), broomsedge bluestem (*Andropogon viginicus*), winged sumac (*Rhus copallinum*), lantana (*Lantana camara*), wild indigo (*Baptisia* spp.), fragrant false garlic (*Nothoscordum borbonicum*), Christmas fern (*Polystichum acrostichoides*), goldenrods (*Solidago* spp.), daisy fleabane (*Erigeron pulchellus*), woods bedstraw (*Galium circaezans*), woods vetch (*Vicia alba*), snakeroots (*Sanicula* spp.), Jack in the pulpit (*Arisaema triphyllum*), violets (*Viola* spp.), and wakerobins (*Trillium* spp.).

Natural Pine

The Natural Pine stands are mostly even-aged stands of loblolly and shortleaf pine that resulted from clear cuts, row crop, or pasture fields being regenerated naturally by adjacent seed-trees or artificially by planted seedlings. The Natural Pine stands are very well stocked with pine sawtimber and include an understory of scattered pine and hardwood.

Figure C-1. Natural Communities at Camp Beauregard and Esler Field



Land Management Group, LLC.

Date: 16 June 2017

Relatively level, the Natural Pines occupy the upland areas between the streams on Camp Beauregard that interlace the installation. The Natural Pine stands burn more frequently than the typical forest because of an established prescribed burning program which maintains a relatively open structure. Prior to settlement, the frequency of fire in this area was estimated at every 5 to 15 years. Man's presence has modified the community and fire frequency.

Loblolly pine is the dominant pine species in the overstory. Dominant taxa in the midstory includes loblolly pine, southern red oak, water oak, longleaf pine, black hickory, sweetgum, willow oak (*Quercus phellos*), American beautyberry, winged sumac, Chinese privet, parsley hawthorn (*Crataegus marshallii*), yaupon (*Ilex vomitoria*), and sassafras (*Sassafras albidum*).

The understory is open with shrubs and regenerating tree species from the midstory present. Other dominant species include huckleberries, blackberries, poison ivy, fragrant false garlic, lantana, thistle (*Cirsium* spp.), and Chinese tallow (*Triadica sebifera*). Understory grass taxa include broomsedge bluestem, goldenrods, and various panic grasses (*Panicum* and *Dichanthelium* spp.).

Vines include wild grapes, Virginia creeper, trumpet creeper (*Campsis radicans*), trumpet honeysuckle, poison ivy, and greenbriers.

Note: Natural Pine is not a designated LNHP natural community because this community type is essentially man-made and not a "naturally" occurring community.

Bottomland Hardwood Forest

The Bottomland Hardwood Forest community is located along Flagon Bayou and along the broad floodplains of the perennial and some intermittent streams of Camp Beauregard. This community is located on mostly poorly drained silty clay loams, silty clays, and clays, and is frequently flooded for long periods. The flora is contingent on the limited oxygen available in a frequently water-saturated environment. Varying anaerobic conditions influence the taxa comprising the different associations.

The two types of Bottomland Hardwood Forest communities that occur on Camp Beauregard are 1) the sweetgum/water oak association and 2) the overcup oak (*Quercus lyrata*)/water hickory (*Carya aquatica*) association. The sweetgum/water oak association is rare on the installation, and has a dense canopy with scattered understory trees. It is usually located high on slopes and, when unaltered, is populated with large sweetgums and water oaks. The overcup oak/water hickory association is much more common. This association is located along Flagon Bayou where the soils are more fully saturated. The trees are as mature as those in the sweetgum/water oak association, but generally smaller. Understory herbs and shrub establishment is limited because of frequent flooding. Small tree trunks and large branches are often found in the understory, a consequence of repeated flooding. As with the sweetgum/water oak association, the canopy is dense.

Cherrybark oak, swamp chestnut oak (*Quercus michauxii*), nuttall oak (*Quercus nuttalli*), laurel oak (*Quercus laurifolia*), overcup oak, water oak, willow oak, sweetgum, blackgum, water hickory, American elm (*Ulmus americana*), sugarberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), red maple, water locust (*Gleditsia aquatica*), American sycamore (*Platanus*

occidentalis), river birch (*Betula nigra*), black willow (*Salix nigra*), shagbark hickory (*Carya ovata*), and Chinese tallow may be found in addition to other species. Bald cypress (*Taxodium distichum* var. *distichum*) is scattered and usually found in depressions.

Dominant taxa found in the midstory includes, but is not limited to, American sycamore, black willow, Chinese tallow, stiff dogwood (*Cornus foemina*), planertree (*Planera aquatica*), red mulberry (*Morus rubra*), deciduous holly, eastern swamp privet (*Forestiera acuminata*), common buttonbush (*Cephalanthus occidentalis*), *Baccharis* spp., green hawthorn (*Crataegus viridis*), American snowbell (*Styrax americana*), and dwarf palmetto (*Sabal minor*). Some of the vines that are present are greenbriers, Alabama supplejack, peppervine (*Ampelopsis arborea*), trumpet creeper, wild grapes, crossvine (*Bignonia capreolata*), Virginia creeper, and poison ivy.

Understory species are often scarce because of flooding and shading. Understory taxa includes sedges (*Carex* spp.), umbrella sedges (*Cyperus* spp.), rushes (*Juncus* spp.), bonesets (*Eupatorium* spp.), false nettle (*Boehmeria cylindrica*), penny worts (*Hydrocotyle* spp.), lizard's tail (*Saururus cernuus*), smartweeds (*Polygonum* spp.), water primrose (*Ludwigia* spp.), cardinal flower (*Lobelia cardinalis*), St. John's wort (*Hypericum* spp.), giant cane (*Arundinaria gigantea*), climbing hempvine (*Mikania scandens*), plume-grass (*Erianthus* spp.), and various ferns. Tree trunks and limbs are host to a wide range of mosses, liverworts, and lichens.

Western Upland Longleaf Pine Forest

The Western Upland Longleaf Pine Forest community occurs in four distinct locations, the Longleaf Pine Demonstration Areas (Longleaf Glade, Longleaf Seep, Mill Creek, and Mayhaw Road). These areas remain in longleaf because they are actively managed for red-cockaded woodpeckers (RCW) through a Safe Harbor Agreement between the USFWS and the LAARNG.

The Western Upland Longleaf Pine Forest community occurs on acidic sands, sandy loams, loamy sands, and occasionally on acidic silt loams. Frequent fires are necessary to maintain this community type. Upland Longleaf Pine Forest understory is so flammable that in relatively moist conditions, fire can be ignited. Some hardwoods survive this fire regime and usually do so by resprouting from the base of burned trees. Originally, most of Camp Beauregard was longleaf pine forest, but much of the area has been converted to loblolly pine. The areas of longleaf pine that do remain will slowly be invaded by loblolly pine and assorted hardwoods and shrubs if the areas are not frequently burned.

Longleaf pine is the dominant overstory taxon in the Western Upland Longleaf Pine Forest community. In areas where fire is suppressed, the overstory also contains shortleaf pine, loblolly pine, southern red oak, and sweetgum.

Midstory associates include sweetgum, red maple, American beautyberry, black hickory, devil's walkingstick (*Aralia spinosa*), yaupon, huckleberries, wax myrtle, and winged sumac. The understory is very diverse and includes many grasses, composites, legumes, and many other forbs. Dominant species include many of the bluestems, fragrant false garlic, clovers (*Trifolium* spp.), blackberries, thistle, bracken fern (*Pteridium aquilinum*), threeawn grasses (*Aristida* spp.), panic grasses, Florida paspalum (*Paspalum floridanum*), dropseeds (*Sporobolus* spp.), and bristle grasses (*Setaria* spp.).

Hardwood Slope Forest

The Hardwood Slope Forest community is found in hilly terrain on steep to fairly steep slopes, and is usually positioned on mid- to lower slopes. Soils are typically sandy loams to silty loams and acidic in nature. This community generally has a moderately to densely crowded canopy stocked with various hardwoods with loblolly pine as a common associate.

Only a few areas of Hardwood Slope Forests remain on Camp Beauregard that are limited to steep erosion prone areas upslope of the Small Stream Forest community. The tributaries flowing into the western side of Flagon Bayou provide the best remaining examples on the installation. Acting as a natural fire break, Hardwood Slope Forests protect the adjacent Small Stream Forests in two ways: 1) fire has a hard time moving downhill; and 2) fire cannot sustain itself in the moist groundcover/litter.

Dominant overstory taxa in this community are white oak and American beech (*Fagus grandifolia*). Other common associates are loblolly pine, longleaf pine, southern red oak, water oak, sweetgum, blackgum, black hickory, southern magnolia, swamp chestnut oak, cherrybark oak, black oak (*Quercus velutina*), post oak, American holly (*Ilex opaca*), mockernut hickory (*Carya alba*), shagbark hickory, red maple, American elm, and American basswood (*Tilia americana*).

The midstory contains American beautyberry, flowering dogwood (*Cornus florida*), American hornbeam (*Carpinus caroliniana*), hophornbean (*Ostrya virginiana*), bigleaf snowbell (*Styrax grandifolia*), witchhazel (*Hamamelis virginiana*), southern arrow-wood (*Viburnum dentatum*), huckleberries, sweetleaf, parsley hawthorn (*Crataegus marshallii*), rusty blackhaw (*Viburnum rufidulum*), mountain azalea (*Rhododendron canescen*s), oakleaf hydrangea (*Hydrangea quercifolia*), and young overstory tree species.

Understory associates include winged sumac, huckleberries, blackberries, Christmas fern, goldenrods, woods bedstraw, woods vetch, snakeroots, Jack in the pulpit, violets, partridgeberry (*Mitchella repens*), may apple (*Podophyllum peltatum*), and spangle grasses (*Chasmanthium* spp.). Vines found in this community include wild grape, greenbrier, Virginia creeper, Alabama supplejack, crossvine, poison ivy, and trumpet honeysuckle.

Scattered Forested Seeps and Fleming Glades are located within the Hardwood Slope Forest natural community on Camp Beauregard; however, these areas are too small to map accurately. The following paragraphs provide short descriptions of these areas.

Forested Seeps form in upland areas on sloping hillsides at the head of streams and along narrow drainages. They develop on poorly drained, deep, acid loamy fine sand and have a relatively high percentage of organic matter. These soils sit on an impermeable subsurface layer that causes the surface layer to remain wet year round. This community is described as predominantly an evergreen shrubby thicket associated with longleaf pine; however, at Camp Beauregard a fair percentage of hardwoods are present in these areas. Taxa that can be found in the overstory/midstory include sweetbay (*Magnolia virginiana*), swamp tupelo (*Nyssa biflora*), American holly, red maple, loblolly pine, American beech, southern magnolia, black cherry

(*Prunus serotina*), persimmon (*Diospyros virginiana*), and sweetgum. On Camp Beauregard, some forested seeps have deep sphagnum moss beds as well as other mosses and liverworts.

Fleming Glades are usually located on upper slopes and ridge tops where the topography is hilly. Soils are generally sandy loams. Glades can be described as openings in usually forested areas that are influenced by the occurrence of rock at or near the surface. In some locations on Camp Beauregard a thick layer of clay is present that may have the same effect as rock. The Fleming Glades do not have a definite woody over- or understory, but rather individual and small clusters of trees and shrubs are present. Longleaf pine, shortleaf pine, blackjack oak, post oak, and blackgum are the dominant species.

Small Stream Forest

The Small Stream Forest is typically found on narrow floodplains bordering small streams. The width of floodplains is dependent on size of the adjoining stream and is flooded on an annual basis for brief periods, but rarely more than two days at a time (generally in the winter and spring). The predominant soils are fine sandy loams, silty loams, silty clay loams, silty clays and acid variable clays; however, the percent sand, silt, clay (calcareous or acidic), and organic material is highly variable.

The structure of Small Stream Forests is variable, though typically composed of long-lived canopy species such as American beech and southern magnolia. Species regeneration may be influenced by an increase or decrease in flooding (dependent on timing, duration, frequency, and depth), windstorms, diseases, insect predation, sediment deposition (during flooding), age, and beavers.

Species composition is variable and dependent on soil type. The overstory includes American beech, water oak, white oak, swamp chestnut oak, cherrybark oak, willow oak, laurel oak, shumard's oak (*Quercus shumardii*), nuttall oak, southern sweetgum, red maple, bald cypress, southern magnolia, sweetbay, sweetgum, American sycamore, river birch, winged elm, slippery elm (*Ulmus rubra*), shagbark hickory, honeylocust, Carolina basswood (*Tilia caroliniana*), and red mulberry.

Midstory species consists of regenerating overstory species as well as American hornbeam, hophornbean, witchhazel, huckleberries, southern arrow-wood, American snowbell, common sweetleaf, white fringetree (*Chionanthus virginicus*), hawthorns (*Crataegus* spp.), deciduous holly, common elderberry (*Sambucus nigra* ssp. *canadensis*), and giant cane.

Understory dominants that can be found in this community are Christmas fern, lizard's tail, Jack in the pulpit, St. John's wort, cardinal flower, spangle grasses, various panic grasses, sedges, rushes, false nettle, water primrose, smartweeds, goldenrods, violets, and spider lily (*Hymenocallis* sp.). Some of these species are found in transition zones between the Small Stream Forest and adjacent communities where flooding is not as severe.

Open Water

There are no naturally occurring lakes or ponds on Camp Beauregard; however, there are 365 acres of open water. This includes lakes and ponds created by impounding surface streams (either man-made or as a result of beaver activity) and the open waters of Flagon Bayou. No aquatic vegetation

was observed within the lakes or ponds. Vegetation along the lakes' and ponds' edges includes soft rush (*Juncus effuses*), bushy bluestem (*Andropogon glomeratus*), alligator weed (*Alternanthera philoxeroides*), bulrush (*Scirpus* spp.), penny worts, milletgrass (*Milium effusum*), and broad-leaved cattail (*Typha latifolia*). Vegetation observed in Flagon Bayou includes swamp tupelo, common buttonbush, and bald cypress.

Open Fields and Disturbed Areas

Camp Beauregard has some areas that do not fall into LNHP's specific community designations as characterized. These are best described as open fields and disturbed areas, where development and/or clearing of the natural vegetation has occurred. These areas are defined as permanently cleared, converted, or restricted, and include buildings, parking lots, mowed fields and roadsides, and military ranges. These areas are primarily used for training and maneuvers. Species requiring more sunlight are present, along with opportunistic species not usually found in the area. Roadways that have opened the canopy and increased light penetration have also opened road shoulders to invasive species often dispersed into an area by motor vehicles.

C.2.2 Camp Minden

A total of 6 of the 68 community types tracked by the LNHP occur on Camp Minden (**Table C-2**) and are depicted on **Figure C-2**. *Note: Natural Pine, Open Water, and Disturbed Areas/Open Field are not recognized natural communities by LNHP.* The natural communities at Camp Minden have changed significantly from presettlement conditions as a result of human influence. These influences include modifications in fire regime, silviculture, and drainage of areas with persistent standing water.

Table C-2. Natural Communities on Camp Minden

Natural Community	Status on Camp Minden	Acreage
Natural Pine	Altered community found in relatively level, topographically higher positions; heavily influenced by fire and silviculture.	5,126
Mixed Hardwood/ Loblolly Forest	Generally found on lower slopes than the Natural Pine; some good examples remaining; however, distribution, composition, and structure have been altered by disturbance and silviculture.	4,724
Bottomland Hardwood Forest	Found along small creeks and drains and the Bayou Dorcheat floodplain; mildly altered in extent and composition, although relatively undisturbed.	828
Bald Cypress Swamp	Natural community occurring in the alluvial floodplain of Bayou Dorcheat; mildly altered by silviculture.	593
Hardwood Slope Forest	Scattered remnants remain; small community slightly altered by disturbance.	474
Small Stream Forest	Natural community along the floodplains of small streams with some good examples remaining, although some have been significantly altered by past silviculture.	423
Wet Hardwood Flatwoods	Only one area remains, Willow Oak Demonstration Area. Low depressional area because of frequent inundation with water, relatively undisturbed.	34
Open Water	Excavated ponds.	40

Natural Community	Status on Camp Minden	Acreage
Disturbed Areas/Open Field	Man-made community completely altered by clearing; includes developed and maintained areas.	2,751

Natural Pine

Natural Pine and Mixed Hardwood/Loblolly Forest represent the first and second largest community types on Camp Minden and are, therefore, the dominant communities. The total acreage in these two communities accounts for approximately 65% of the total installation land area. The Natural Pine stands are mostly even-aged stands of loblolly and shortleaf pine that resulted from row crop and pasture fields being regenerated naturally by adjacent seed-trees or artificially by planted seedlings. The Natural Pine stands are very well stocked with pine sawtimber and include an understory of scattered pine and hardwood.

Relatively level, the Natural Pines occupy the upland areas between the streams on Camp Minden that interlace the installation. The Natural Pine stands burn more frequently than the typical forest because of an established prescribed burning program which maintains a relatively open structure. Prior to settlement, the frequency of fire in this area was estimated at every 5 to 15 years. Man's presence has modified the community and fire frequency.

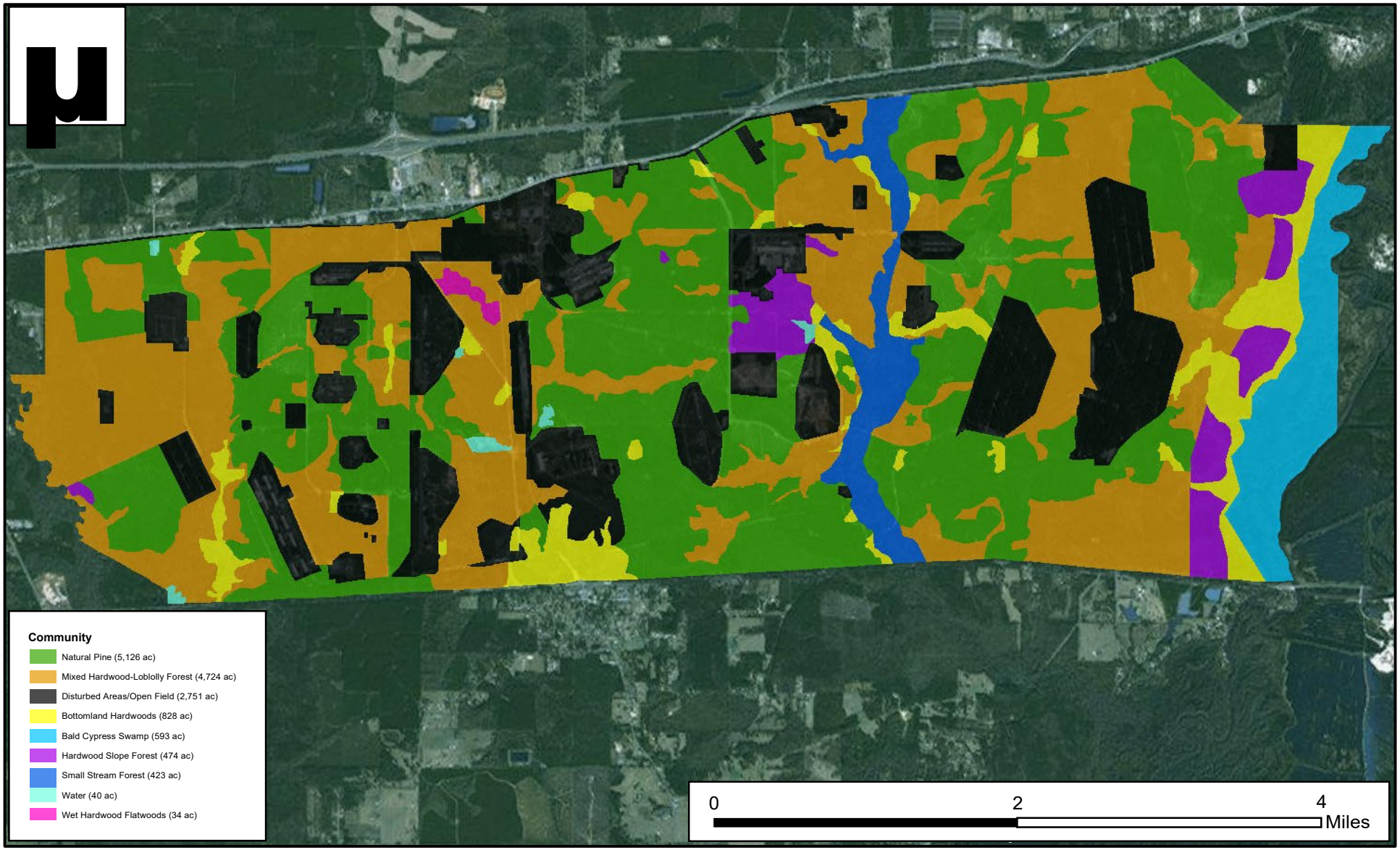
Loblolly pine is the dominant pine species in the overstory. Dominant taxa in the midstory includes loblolly pine, southern red oak, tulip tree (*Liriodendron tulipifera*), flowering dogwood, black hickory, sweetgum, red maple, devil's walkingstick, red buckeye (*Aesculus pavia*), American beautyberry, white fringetree, and hawthorns.

The understory is moderately dense with many shrubs and regenerating tree species from the midstory present. Other dominant species include yaupon, winged sumac, huckleberries, Chinese tallow, *Baccharis* spp., poison ivy, and blackberries. Understory grass taxa include broomsedge bluestem, purpletop tridens (*Tridens flavus*), Virginia wildrye (*Elymus virginicus*), and various panic grasses.

Vines include wild grapes, Virginia creeper, trumpet honeysuckle, Alabama supplejack, and greenbrier (*Smilax bona-nox*).

Note: Natural Pine is not a designated LNHP natural community because this community type is essentially man-made and not a "naturally" occurring community.

Figure C-2. Natural Communities at Camp Minden



Land Management Group, LLC.

Date: June 21, 2017

Mixed Hardwood/Loblolly Forest

In contrast to the Natural Pine stands, the Mixed Hardwood/Loblolly Forest is almost equally stocked with pine and hardwood. Large, mature to over-mature pine with an understory dominated by hardwood is characteristic of the community.

The Mixed Hardwood/Loblolly Forest community is found on lower slopes between the Natural Pine and stream bottoms. With the absence of fire, this community may be found on ridges and upper slopes. Presence on acidic soils is a trademark. Soil texture is variable, from sandy loams to silty loams, silty clays, and clay. At Camp Minden, this community is situated on broad flats and lower upland slopes adjoining riparian areas (*i.e.* Caney and Boone Creeks) and also may be found on hilly terrain that would normally be susceptible to fire (*i.e.* areas adjoining Bayou Dorcheat).

The overstory is composed of loblolly pine, southern red oak, water oak, willow oak, sweetgum, shortleaf pine, white oak, swamp chestnut oak, cherrybark oak, blackjack oak, American holly, red maple, blackgum, mockernut hickory, and winged elm.

In the midstory, taxa found include flowering dogwood, devil's walkingstick, black hickory, southern red oak, water oak, willow oak, sweetgum, red maple, winged elm, sassafras, longleaf pine, American snowbell, common witchhazel, arrow-wood, huckleberries, common sweetleaf, white fringetree, hawthorns, and American beautyberry.

The understory is moderately dense and is dominated by poison ivy, winged sumac, huckleberries, lantana, and broomsedge bluestem. Vines found in this community are wild grapes, greenbriers, Virginia creeper, and trumpet creeper.

This community has been altered by drainage modifications in areas adjacent to roads and tank trails. In general, this community is similar to presettlement conditions.

Bottomland Hardwood Forest

Bottomland Hardwood Forests exist scattered throughout Camp Minden; the majority of which occur as narrow bands along the small creeks and drains and within the Bayou Dorcheat floodplain. Frequently flooded for long periods, the Bottomland Hardwood Forest is typically located on poorly drained silty clay loams, silty clays, and clays. The floral composition is not contingent on water availability, but rather the lack of oxygen associated with water saturation. Different community associations develop based on anaerobic conditions. Trees located on higher topographic positions on the floodplain tend to be larger and longer living, where soils are more aerobic and fertile. Understory development is influenced by flooding frequency. Trees located on lower topographic positions tend to have a dense canopy and while reaching the same age, are smaller in size. Small tree trunks and large branches are often found in the understory where they have been deposited by repeated flooding.

Slope position is a factor affecting the size of the trees present. White oak, southern red oak, water oak, swamp chestnut oak, red mulberry, loblolly pine, red maple, sweetgum, water hickory, cherrybark oak, laurel oak, overcup oak, blackgum, American elm, sugarberry, green ash, Carolina ash (*Fraxinus caroliniana*), honey locust (*Gleditsia triacanthos*), sycamore, river birch, and black

willow can be found in the Bottomland Hardwood Forest community. Bald cypress is scattered and usually found in depressions.

Midstory taxa include red maple, sweetgum, American hornbeam, hophornbean, white fringetree, stiff dogwood, eastern swamp privet, planertree, green hawthorn, American snowbell, and dwarf palmetto. The understory consists of predominantly of poison ivy, lizard's tail, may apple, blackberries, and bushy bluestem. Vines that are present are wild grapes, trumpet creeper, greenbriers, Alabama supplejack, peppervine, crossvine, and Virginia creeper.

Species composition has changed from pre-settlement times. Human influence has altered distribution, composition, and density of some species in the Bottomland Hardwood Forest community. As an example, selective logging has reduced the frequency of bald cypress.

Bald Cypress Swamp

On Camp Minden, the Bald Cypress Swamp natural community is found bordering Bayou Dorcheat, on the alluvial floodplain intermixed with the Hardwood Slope Forest and Bottomland Hardwood Forest. It is usually found in the lowest areas of floodplains that border larger streams. Soils are chiefly silt loams and often flooded. Areas impassible in spring except by boat are easily accessed in summer.

The dominant tree in the Bald Cypress Swamp community is bald cypress. Other taxa found in the overstory include red maple, various ash, water locust, and swamp tupelo. Spanish moss (*Tillandsia usneoides*) is found draped on many of the trees and is especially concentrated on bald cypress.

Species found in the midstory are Carolina ash, planertree, black willow, and regenerating overstory species, among others. Understory taxa found here are Virginia sweetspire (*Itea virginica*), common buttonbush, and other assorted woody plants. Most of the herbs and ferns are found on stumps, logs, and other elevated positions. Little vegetation grows on the ground because standing water is present for long periods of time. In addition, the growing season is limited by the length of inundation.

Hardwood Slope Forest

Only a few areas of Hardwood Slope Forests remain on Camp Minden. The Hardwood Slope Forest natural community is extremely similar to the Bottomland Hardwood Forest Community. The Hardwood Slope Forest community is more upland, tends to contain less loblollypine, and is less variable in its composition than the Bottomland Hardwood Forest Community. Dominant species include southern red oak, white oak, green ash, American elm, redbud (*Cercis canadensis*), American hornbeam, hophornbean, may apple, broomsedge bluestem, and Virginia creeper.

Small Stream Forest

The Small Stream Forest community is found on narrow floodplains bordering small streams. The width of the community is dependent on size of the adjoining stream. This community is typically flooded annually for brief periods, and rarely more than two days at a time (generally in the winter and spring). The predominant soils are fine sandy loams, silty loams, silty clay loams, silty clays

and acid variable clays; however, the percent sand, silt, clay (calcareous or acidic), and organic material is highly variable.

Small Stream Forests are variable in structure. Typically, this community is composed of long-lived canopy species such as American beech and southern magnolia. Species regeneration may be influenced by an increase or decrease in flooding (dependent on timing, duration, frequency, and depth), windstorms, diseases, insect predation, sediment deposition (during flooding), age, and beavers.

Species vary depending on soil type. The overstory includes such dominants as water oak, swamp chestnut oak, cherrybark oak, willow oak, laurel oak, American beech, sweetbay magnolia (*Magnolia virginiana*), blackgum, sweetgum, sycamore, red maple, river birch, American elm, winged elm, slippery elm, white ash (*Fraxinus americanus*), Carolina ash, pignut hickory (*Carya glabra*), shagbark hickory, honey locust, and red mulberry.

Midstory species consists of regenerating overstory species as well as pawpaw (*Asimina triloba*), box elder (*Acer negundo*), red mulberry, American hornbeam, hophornbean, huckleberries, arrow-wood, Virginia sweetspire, American snowbell, common sweetleaf, white fringetree, hawthorns, elderberry, giant cane and others. Understory dominants include poison ivy, blackberry, pawpaw, and Cherokee sedge (*Carex cherokeensis*).

Wet Hardwood Flatwoods

The Wet Hardwood Flatwoods community occurs within only one area on Camp Minden, the Willow Oak Demonstration Area. This community is a poorly drained, depressional area within the Mixed Hardwood/Loblolly Forest. Commonly, the edges of the depression are even with the surrounding forest and gradually become deeper near the center. The Wet Hardwood Forest tends to flood in the wet season and can become quite dry in the summer and fall. Another feature in the Wet Hardwood Flatwoods community is pimple mounds that topographically are slightly higher than the surrounding woods. This feature creates a niche for species generally found in drier habitats.

Taxa found in the overstory in the deeper areas are willow oak, water oak, overcup oak, laurel oak, post oak, green ash, sweetgum, American elm, and red maple.

Midstory taxa consist of willow oak, green ash, Carolina ash, Chinese tallow, winged elm, red maple, blackgum, persimmon, hawthorns, common buttonbush, possomhaw (*Ilex decidua*), blackberry, and dwarf palmetto. Vines included in this habitat are round leaf greenbrier (*Smilax rotundifolia*), trumpet creeper, wild grapes, poison ivy, and trumpet honeysuckle.

The herbaceous layer is very dense and forms a carpet in wetter areas. Taxa most frequently found in the herbaceous layer include swamp smartweed (*Polygonum hydropiperoides*), sedges, beakrushes (*Rhynchospora* spp.), bearded beggarticks (*Bidens aristosa*), rushes, panic grasses, and St. John's wort.

Midstory species found on the pimple mounds are American beautyberry, huckleberries, white fringetree, hawthorns, Carolina buckthorn (*Frangula caroliniana*), Virginia creeper, wild grapes, and greenbriers.

Open Water

There are no naturally occurring lakes or ponds on Camp Minden; however, there are 42 acres of excavated ponds. No aquatic vegetation was observed within the ponds. Vegetation along the ponds' edges includes soft rush, bushy bluestem, and ragweed (*Ambrosia artemisiifolia*).

Open Fields and Disturbed Areas

Camp Minden has some areas that do not fall into LNHP's specific community designations as characterized. These are best described as disturbed areas and open fields, where development and/or clearing of the natural vegetation has occurred. These areas are defined as permanently cleared, converted, or restricted, and include buildings, parking lots, mowed fields and roadsides, military ranges, and storage igloos. These areas are primarily used for training and maneuvers. Species requiring more sunlight are present, along with opportunistic species not usually found in the area. Roadways that have opened the canopy and increased light penetration have also opened road shoulders to invasive species often dispersed into an area by motor vehicles.

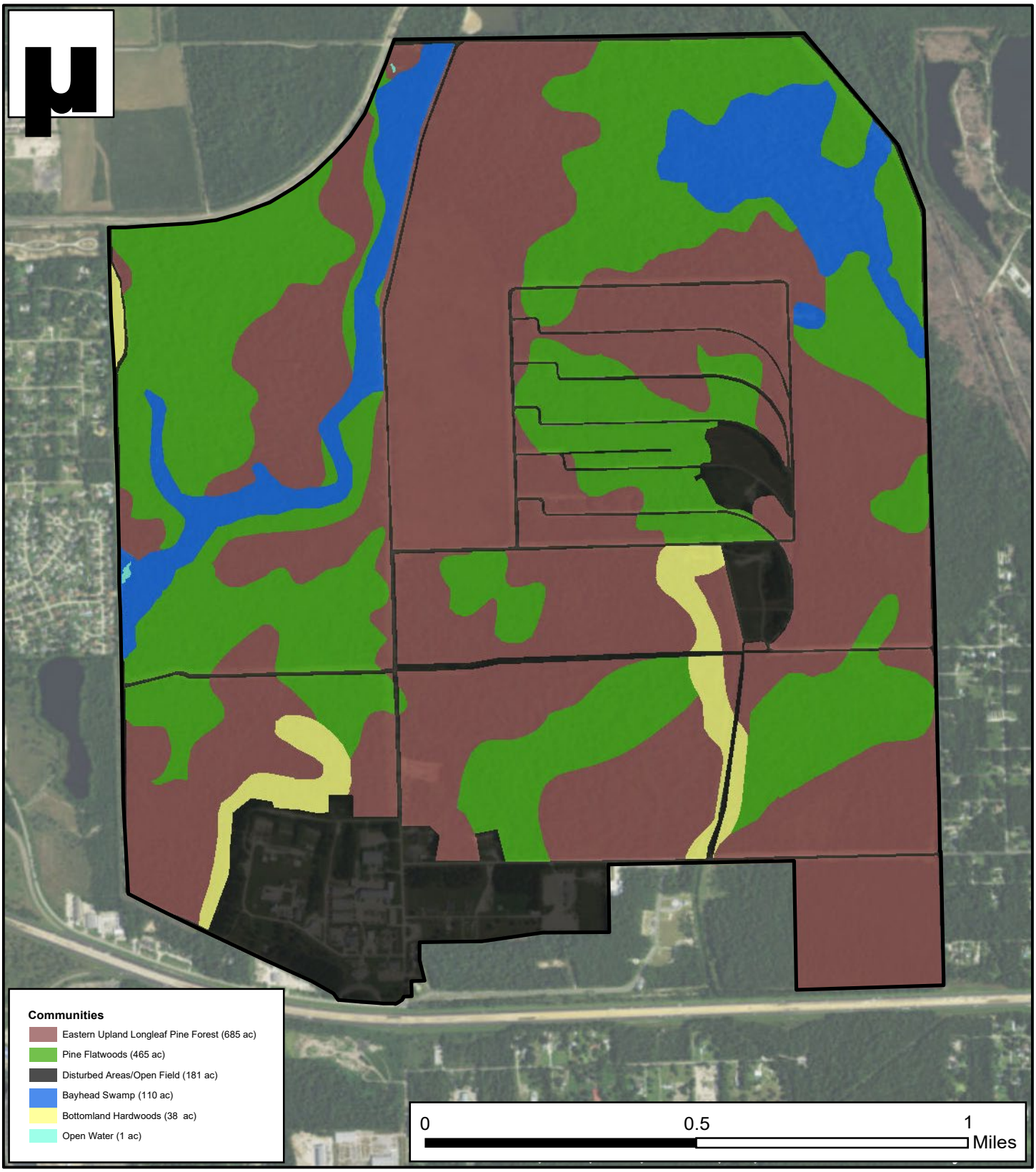
C.2.3 Camp Villere

A total of 4 of the 68 community types tracked by the LNHP occur on Camp Villere (**Table C-3**) and are depicted on **Figure C-3**. *Note: Open Water and Disturbed Areas/Open Field are not recognized natural communities by LNHP.* Some natural communities that occurred at Camp Villere prior to European settlement are still present, but they have been considerably modified through tree cutting and timber harvesting, water drainage, and in particular, the alteration of the natural fire regime. The once open woodlands have become a dense overstory dominated by slash pine (*Pinus elliottii*) and shortleaf pine with an equally dense understory of shrubs and vines and a sparse herbaceous ground cover.

Table C-3. Natural Communities on Camp Villere

Natural Community	Status on Camp Villere	Acreage
Eastern Upland Longleaf Pine Forest	On essentially flat, low relief areas sometimes with slight rises ("microridges"); significantly altered by absence of fire and planting of slash pine.	685
Pine Flatwoods	On low flats and in depressed areas; significantly altered by the absence of fire.	465
Bayhead Swamp	Generally occupy lowest positions on the landscape, other than permanent streams.	110
Bottomland Hardwood Forest	Relatively small plant community associated with permanent drains; occurs as narrow bands on both sides of drains.	38
Open Water	Two small ponds near northern and western property boundaries.	1
Disturbed Areas/Open Field	Man-made community completely altered by clearing; includes developed and maintained areas.	181

Figure C-3. Natural Communities at Camp Villere



Land Management Group, LLC.

Date: June 22, 2017

Eastern Upland Longleaf Pine Forest

The Eastern Upland Longleaf Pine Forest and the Pine Flatwood community form a complex mosaic covering almost 80% of Camp Villere. The Eastern Upland Longleaf Pine Forests are located on microridges slightly higher in elevation and composed of soils that drain slightly better than those of Pine Flatwoods. The community is characteristically dissected by the few, small creek bottoms that occur on the installation. Upland Longleaf Pine Forests and Pine Flatwoods are typically strongly influenced by the frequency, seasonality, and intensity of fire with the historic fire frequency believed to be every one to five years. However, at Camp Villere fire is suppressed, and prescribed burning is not conducted due to the installation's location adjacent to Interstate 12, Slidell Airport, and residential and commercial areas. The exclusion of fire at Camp Villere has resulted in a relatively dense mid and understory within both the Eastern Upland Longleaf Pine Forests and Pine Flatwoods.

The dominant overstory species in the Eastern Upland Longleaf Pine Forests is longleaf pine and is generally the only overstory species. Some overstory associates occur, including slash pine, shortleaf pine, and live oak (*Quercus virginiana*).

Dominant midstory species include water oak, southern red oak, sweetgum, blackgum, large gallberry (*Ilex coriacea*), yaupon, swamp titi (*Cyrilla racemiflora*), wax myrtle, red bay (*Persea borbonia),* flowering dogwood, black cherry, red maple, American holly, sassafras, Chinese tallow, common sweetleaf, inkberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), and huckleberry.

Groundcover associates include young species from the midstory such as large gallberry, yaupon, American holly, and huckleberry. Poison ivy is also common. Grasses include broomsedge bluestem, threeawn grasses, spangle grasses, panic grasses, bluestems, and ragweeds. Composites such as oneflower honeycombhead (*Balduina uniflora*), woolly sunbonnets (*Chaptalia tomentosa*), blazing stars (*Liatris* spp.), sweet goldenrod (*Solidago odora),* yellow-eyed-grass (*Xyris* spp.), St. John's wort, nutrush (*Scleria* spp.), bonesets, and blackberries are also common.

The exclusion of fire has allowed other pine species, hardwoods, and shrub species to encroach. The midstory and understory varies from moderate to dense.

Pine Flatwoods

The Pine Flatwoods are the other component of the mosaic that covers most of Camp Villere. The Flatwoods typically are present on flats, depressions, and broad swales. They usually contain soils that are poorly drained and seasonally flooded and the water table is usually at or near the surface for much of the year. However, during summer droughts, the soils dry to a hard crust.

The dominant tree species present is longleaf pine. Slash pine, live oak, blackgum, and sweetbay magnolia are encroaching because of lack of fire. Bald cypress also occurs in wetter areas. The woody understory is somewhat sparse, but some species that occur include swamp titi, wax myrtle, large gallberry, inkberry, poison ivy, swamp red bay (*Persea palustris*), sweetbay magnolia, laurel greenbrier (*Smilax laurifolia*), muscadine (*Vitis rotundifolia*), and St. John's worts.

Groundcover components in the Pine Flatwoods are very diverse and species rich. This has changed little in recently logged areas or mowed sites. Grasses are the predominate vegetation

type and include bushy bluestem, panic grasses, yellow eyed grass, threeawn grasses, jointgrasses (*Coelorachis* spp.), plume-grasses, Indiangrass (*Sorghastrum nutans*), beakrushes, umbrella sedges, nut-sedges (*Cyperus* spp.), and sandswamp whitetop (*Rhynchospora latifolia*).

Common herbs include clubmoss *(Lycopodium* spp.), bog buttons (*Lachnocaulon* spp.), yellow trumpets (*Sarracenia alata*), parrot pitcherplant (*Sarracenia psittacina*), false foxgloves (*Agalinis* spp.), asters (*Aster* spp.), pineland rayless goldenrod (*Bigelowia nudata*), early whitetop fleabane (*Erigeron vernus*), milkweeds (*Asclepias* spp.), Stoke's aster (*Stokesia laevis*), bonesets, colic root (*Aletris aurea*), tickseed (*Coreopsis* spp.), meadow beauties (*Rhexia* spp.), blazing stars, sundews (*Drosera* spp.), and bladderworts (*Utricularia* spp.).

The open areas are predominantly grasses and sedges whose specific composition is dependent on the soil type and water levels. The Flatwoods are notable for displays of showy wildflowers and presence of yellow trumpets, parrot pitcherplant, and sundews.

When fire is excluded from this community (as it currently is at Camp Villere), shrubs and trees invade the area as they out-compete and eliminate most of the sun tolerant understory species. Fire frequency is a dominant element controlling community structure, and ultimately species composition. Mowing and logging have some similar effects on species diversity.

Bayhead Swamp

The Bayhead Swamp community borders the shallow drains, edges of swamps, and depressions on Camp Villere. The soils are very acidic sandy loams. This community is seasonally flooded and stays wet throughout the growing season most years. The Bayhead Swamp community ranges from an evergreen shrub dominated swamp to a swamp forest with evergreen shrubs as an understory.

The dominant overstory species is swamp tupelo with sweetbay magnolia as a codominant. Other overstory species include longleaf pine, slash pine, bald cypress, red maple, sweetgum, water oak, and willow oak. Small trees and shrubs are common in the midstory and understory with the majority being evergreen. These species include swamp red bay, swamp titi, fetterbush, fringe tree (*Chionanthus virginicus*), riverflat hawthorn (*Crataegus opaca*), evergreen bayberry (*Morella caroliniensis*), wax myrtle, inkberry, large gallberry, doghobble (*Leucothoe* spp.), possumhaw (*Viburnum nudum*), greenbrier, and swamp azalea (*Rhododendron viscosum*). Groundcover may include netted chainfern (*Woodwardia areolata*), sensitive fern (*Onoclea sensibilis*), cinnamon fern (*Osmunda cinnamomea*), royal fern (*Osmunda regalis*), Kunth's maiden fern (*Thelypteris kunthii*), sedges, yellow-eyed-grass, St. John’s wort, and some orchid species.

Mature trees dominate most of the Bayhead Swamps on Camp Villere, but with a reduced fire frequency, shrubs may become the dominant component.

Bottomland Hardwood Forest

The Bottomland Hardwood Forest community occurs as a narrow band along both sides of the shallow drains on Camp Villere, and plant species composition is heavily influenced by hydrologic gradients. The soils are usually fine sand to silt loams with an organic layer, and are acidic and less fertile than other soil types on Camp Villere. These soils also drain poorly and are generally

wetter than the surrounding communities. This community is seasonally saturated or inundated for one to two months during the growing season.

This community exists at Camp Villere as a sparse overstory with areas of a dense midstory consisting of shrubs and herbaceous groundcover. The overstory consists of willow oak, black gum, water oak, southern magnolia, sweetgum, and slash pine. Typical woody species found in the midstory are red maple, wax myrtle, buttonbush, Carolina ash, swamp titi, and common sweetleaf. The dominant understory species is privet. Crossvine and yellow jessamine (*Gelsemium sempervirens*) are common vine species.

Open Water

Two areas of open water exist on Camp Villere, one near the northern property boundary and one near the western property boundary. These are small ponds and account for only 0.3 acres. No aquatic vegetation was observed within either waterbody.

Disturbed Areas/Open Fields

Camp Villere has some areas that do not fall into LNHP's specific community designations as characterized. These are best described as disturbed areas and open fields, where development and/or clearing of the natural vegetation has occurred. These areas are defined as permanently cleared, converted, or restricted, and include buildings, parking lots, mowed roadsides, and military ranges. These areas are primarily used for training and maneuvers. Species requiring more sunlight are present, along with opportunistic species not usually found in the area. Roadways that have opened the canopy and increased light penetration have also opened road shoulders to invasive species often dispersed into an area by motor vehicles.

C.3 Fish and Wildlife

C.3.1 Camp Beauregard

The majority of Camp Beauregard is suitable for fish and wildlife management. There are approximately 365 surface acres of water, to include Flagon Bayou bottoms, recreational lakes, and beaver ponds. Several projects are ongoing and planned to maintain or improve fish and wildlife habitat. Although not intended primarily for the benefit of wildlife, most of the planned elements being installed for other purposes will also benefit fish and wildlife.

Of the 197 species of amphibians, reptiles, birds and mammals considered likely residents or transients at Camp Beauregard (**Table C-4**), 101 species of birds and 25 species of reptiles or amphibians were recorded during field surveys conducted by TNC from 1993 to 1995 (McInnis et al. 1995). Clearly, the longleaf pine region of central Louisiana supports a tremendous variety of vertebrates and warrants conservation.

Camp Beauregard supports significant levels of several prized game animals including white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), and squirrels (*Sciurus* sp.), which are the most sought after game species. Additional game species present in huntable numbers include eastern cottontail (*Sylvilagus floridanus*), mourning dove (*Zenadia macroura*), wood duck (*Aix sponsa)* and other waterfowl, and woodcock (*Scolopax minor*) (LDWF 2017). In

addition, northern bobwhite quail (*Colinus virginianus*) populations are increasing as a result of ongoing conservation efforts.

The primary goals of the fish and wildlife program at Camp Beauregard are habitat management to meet mission needs and ecosystem management that also have a benefit to recreational hunting and fishing species. Wildlife habitat throughout the installation can be improved by rotational prescribed burning, accelerate thinning activities, and improving native grassland species.

Table C-4. Animal Taxa Recorded at Camp Beauregard Training Site

Scientific Name	Common Name
Amphibians	
Acris crepitans	Northern Cricket Frog
Ambystoma texanum	Small-mouthed Salamander
Ambystoma opacum	Marbled Salamander
Amphiuma tridactylum	Three-toed Amphiuma
Bufo woodhousei	Woodhouse's Toad
Desmognathus sp.	Dusky salamander
Eurycea quadridigitata	Dwarf Salamander
Gastrophyne carolinensis	Eastern Narrow-mouthed Toad
Hyla cinera	Green Treefrog
Hyla crucifer	Spring Peeper
Hyla versicolor	Gray Treefrog
Notophthalmus viridescens	Eastern Newt
Pseudacris feriarum	Upland Chorus Frog
Plethodon kisatchie	Louisiana Slimy Salamander
Rana catesbeiana	Bullfrog
Rana clamitans	Bronze Frog
Rana utricularia	Southern Leopard Frog
Scaphiopus holbrookii	Eastern Spadefoot
Siren intermedia	Lesser Siren
Reptiles	
Agkistrodon contortrix	Copperhead
Agkistrodon piscivorus	Cottonmouth
Anolis carolinensis	green Anole
Apalone mutica	Smooth Softshell
Apalone spinifera	Spiny softshell
Chelydra serpentina	Snapping Turtle
Cnemidophorus sexlineatus	Six-lined Racerunner
Coluber constrictor	Racer
Elaphe obsoleta	Rat Snake
Eumeces fasciatus	Five-lined skink
Farancia abacura	Mud Snake
Heterodon platyrhinos	Eastern Hog-nosed Snake
Kinosternon subrubrum	Eastern Mud Turtle
Lampropeltis getulus	Common Kingsnake
Masticophis flagellum	Coachwip
Nerodia fasciata	Southern Water Snake
Nerodia rhombifera	Diamond-backed Water Snake
Opheodrys aestivus	Rough Green Snake
Sceloporus undulatus	Eastern Fence Lizard
Scincella lateralis	Ground Skink

Scientific Name	Common Name
Sternotherus odoratus	Stinkpot
Storeria dekayi	Brown Snake
Terrapene carolina	Eastern Box Turtle
Thamnophis proximus	Western Ribbon Snake
Trachemys scripts	Slider
Virginia striatula	Rough Earth Snake
Birds	
Accipiter cooperii	Cooper's Hawk
Accipiter striatus	Sharp-shinned Hawk
Agelaius phoeniceus	Red-winged Blackbird
Aimophila aestivalis	Bachman's Sparrow
Aix sponsa	Wood Duck
Anas platyrhynchos	Mallard
Archilochus colubris	Ruby-throated Hummingbird
Ardea herodias	Great Blue Heron
Bombycilla cedrorum	Cedar Waxwing
Bubo virginianus	Great Horned Owl
Bubulcus ibis	Cattle Egret
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Buteo platypterus	Broad-winged hawk
Butorides striatus	Green Heron
Caprimulgus carolinensis	Chuck-Will's-Widow
Cardinalis cardinalis	Northern Cardinal
Carpodacus purpureus	Purple Finch
Casmerodius albus	Great Egret
Cathartes aura	Turkey Vulture
Catharus guttatus	Hermit Thrush
Certhia americana	Brown Creeper
Ceryle alcyon	Belted Kingfisher
Chaetura pelagica	Chimney Swift
Charadrius vociferus	Killdeer
Chodestes grammacus	Lark Sparrow
Chordeiles minor	Common Nighthawk
Cistothorus platensis	Sedge Wren
Coccyzus americanus	Yellow-billed Cuckoo
Colaptes auratus	Northern Flicker
Colinus virginianus	Northern Bobwhite
Contopus virens	Eastern Wood-Pewee
Coragyps atratus	Black Vulture
Corvus brachyrhynchos	American Crow
Corvus ossifragus	Fish Crow
Cyanocitta cristata	Blue Jay
Dendroica coronata	Yellow-rumped Warbler
Dendroica discolor	Prairie Warbler
Dendroica dominica	Yellow-throated Warbler
Dendroica pinus	Pine Warbler
Dryocopus pileatus	Pileated Woodpecker
Dumetella carolinensis	Gray Catbird
Egretta thula	Snowy Egret
Empidonax virescens	Acadian Flycatcher

Scientific Name	Common Name
Euphagus carolinus	Rusty Blackbird
Geothlypis trichas	Common Yellowthroat
Guiraca caerulea	Blue Grosbeak
Falco columbarius	Merlin
Falco sparverius	American Kestrel
Helmitheros vermivorus	Worm-eating Warbler
Hirundo rustica	Barn Swallow
Hylocichla mustelina	Wood Thrush
Icteria virens	Yellow-breasted Chat
Icterus galbula	Baltimore Oriole
Icterus spurius	Orchard Oriole
Ictinia mississippiensis	Mississippi Kite
Junco hyemalis	Dark-eyed Junco
Lanius ludovicianus	Loggerhead Shrike
Limnothlypis swainsonii	Swainson's Warbler
Lophodytes cucullatus	Hooded merganser
Melanerpes carolinus	Red-bellied Woodpecker
Melanerpes erythrocephalus	Red-headed Woodpecker
Meleagris gallopavo	Wild Turkey
Melospiza georgiana	Swamp Sparrow
Melospiza melodia	Song Sparrow
Mimus polyglottos	Northern Mockingbird
Mniotilta varia	Black-and-white Warbler
Molothrus ater	Brown-headed Cowbird
Myiarchus crinitus	Great Creasted Flycatcher
Oporornis formosus	Kentucky Warbler
Otus asio	Eastern Screech-owl
Pandion haliaetus	Osprey
Parula americana	Northern Parula
Parus bicolor	Tufted Titmouse
Parus carolinensis	Carolina Chickadee
Passer domesticus	House Sparrow
Passerculus sandwidhensis	Savannah Sparrow
Passerella iliaca	Fox Sparrow
Passerina ciris	Painted Bunting
Passerina cyanea	Indigo Bunting
Picoides pubescens	Downy woodpecker
Picoides villosus	Hairy Woodpecker
Pipilo erythrophthalmus	Rufous-sided Towhee
Piranga rubra	Summer Tanager
Polioptila caerulaea	Blue-gray Gnatcatcher
Progne subis	Purple Martin
Protonotaria citrea	Prothonotary Warbler
Quiscalus quiscula	Common Grackle
Regulus calendula	Ruby-crowned Kinglet
Regulus satrapa	Golden-crowned Kinglet
Sayornis phoebe	Eastern Phoebe
Scolopax minor	American Woodcock
Seiurus motacilla	Louisiana Waterthrush
Setophaga ruticilla	American Redstart
Sialia sialia	Eastern Bluebird

Scientific Name	Common Name
Sitta pusilla	Brown-headed Nuthatch
Sphyrapicus varius	Yellow-bellied Sapsucker
Spinus tristis	American Goldfinch
Spizella passerina	Chipping Sparrow
Spizella pusilla	Field Sparrow
Strix varia	Barred Owl
Sturnella magna	Eastern Meadowlark
Sturnum vulgaris	European Starling
Tachycineta bicolor	Tree Swallow
Thryothorus ludovicianus	Carolina Wren
Tosostoma rufum	Brown Thrasher
Troglodytes aedon	House Wren
Troglodytes troglodytes	Winter Wren
Turdus migratorius	American robin
Tyrannus tyrannus	Eastern Kingbird
Tyto alba	Barn Owl
Vermivora celata	Orange-crowned Warbler
Vermivora peregrina	Tennessee Warbler
Vireo flavifrons	Yellow-throated Vireo
Vireo griseus	White-eyed Vireo
Vireo olivaceus	Red-eyed Vireo
Vireo solitarius	Solitary Vireo
Wilsonia citrina	Hooded Warbler
Zenaida macroura	Mourning Dove
Zonotrichia albicollis	White-throated Sparrow
Mammals	
Blarina brevicauda	Short-tailed Shrew
Canis latrans	Coyote
Castor canadensis	American Beaver
Cryptotis parva	Least Shrew
Dasypus novemcinctus	Nine-banded Armadillo
Didelphis virginiana	Virginia Opossum
Glaucomys volans	Southern flying Squirrel
Lasiurus borealis	Red Bat
Lasiurus seminolus	Seminole Bat
Lutra canadensis	Nearctic River Otter
Lynx rufus	Bobcat
Mephitis mephitis	Striped Skunk
Mustela vison	North American Mink
Myotis austroriparius	Southeastern Myotis
Neotoma floridana	Eastern Wood Rat
Nycticeius humeralis	Evening Bat
Odocoileus virginianus	White-tailed Deer
Oryzomys palustris	Marsh Rice Rat
Peromyscus gossypinus	Cotton Mouse
Peromyscus leucopus	White-footed Mouse
Pipistrellus subflavus	Eastern Pipistrelle
Procyon lotor	Northern Raccoon
Reithrodontomys fulvescens	Fulvous Harvest Mouse
Scalopus aquaticus	Eastern Mole
Sciurus carolinensis	Gray Squirrel

Scientific Name	Common Name
Sciurus niger	Fox Squirrel
Sigmodon hispidus	Hispid Cotton Rat
Sylvilagus aquaticus	Swamp Rabbit
Sylvilagus floridanus	Eastern Cottontail
Tadarida brasiliensis	Brazilian Free-tailed Bat
Urocyon cineroargenteus	Gray Fox
Vulpes fulva	Red Fox

C.3.2 Camp Minden

The majority of Camp Minden is suitable for fish and wildlife management. There are 36 miles of perennial and intermittent streams, and excavated ponds account for 35 acres. There are no naturally occurring lakes or ponds; however, the seasonally flooded forest associated with the Dorcheat bottomlands can retain water for extended periods and provides excellent fish and wildlife habitat. Several projects are ongoing and planned to maintain or improve fish and wildlife habitat at Camp Minden. Although not intended primarily for the benefit of wildlife, most of the planned elements being installed for other purposes will also benefit fish and wildlife.

A wide variety of wildlife species inhabit Camp Minden, and they are dispersed throughout the various habitats on the installation. It is estimated that 51 species of mammals and 74 species of reptiles and amphibians are known to inhabit the areas in and around the facility. Approximately 80 percent of the 411 species of birds in the State of Louisiana are recorded as having been seen at or near Camp Minden (TNC 1995). This includes prize game species such as white-tailed deer, northern bobwhite quail, wild turkey, squirrels, eastern cottontail, mourning dove, wood duck and other waterfowl, and woodcock. In addition, a variety of fish species have been identified in Bayou Dorcheat, Clarke Bayou, Boone Creek, and Caney Branch, and some of the borrow pits on the facility have been stocked with largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*).

The primary goals of the fish and wildlife program at Camp Minden are habitat management to meet mission needs and ecosystem management that also have a benefit to recreational hunting and fishing species. Wildlife habitat throughout the installation can be improved by rotational prescribed burning, accelerate thinning activities, and improving native grassland species.

C.3.3 Camp Villere

The majority of Camp Villere is suitable for fish and wildlife management. There are 3 miles of perennial and intermittent streams, and open water accounts for 1 acre. There are no naturally occurring lakes or ponds; however, the seasonally flooded forest associated with the Bayhead Swamps and Bottomland Hardwoods may retain water for extended periods and provides excellent fish and wildlife habitat. Several projects are ongoing and planned to maintain or improve fish and wildlife habitat at Camp Villere. Although not intended primarily for the benefit of wildlife, most of the planned elements being installed for other purposes will also benefit fish and wildlife.

A wide variety of wildlife species inhabit Camp Villere, and they are dispersed throughout the various natural communities on the installation. It is estimated that at least 139 species of mammals, reptiles, amphibians, and birds are known to inhabit the areas in and around the

installation. A list of mammals, reptiles, amphibians, and birds of potential occurrence on Camp Villere is provided in **Table C-5** (list compiled by TNC).

Table C-5. Animal Taxa Recorded at Camp Villere

Scientific Name	Common Name
Amphibians	
Acris gryllus	southern cricket frog
Ambystoma opacum	marbled salamander
Ambystoma talpoideum	mole salamander
Ambystoma texanum	small-mouthed salamander
Bufo quercicus	oak toad
Bufo terrestris	southern toad
Bufo woodhousei	Woodhouse's toad
Desmognathus fuscus	dusky salamander
Eurycea guadridigitata	dwarf salamander
Gastrophryne carolinensis	eastern narrow-mouthed toad
Hyla chrysoscelis	Cope's gray treefrog
Hyla cinerea	green treefrog
Hyla femoralis	pine woods treefrog
Hyla squirella	squirrel treefrog
Plethodon mississippi	Mississippi salamander
Pseudacris crucifer	spring peeper
Pseudacris feriarum	upland chorus frog
Rana catesbiana	bull frog
Rana clamitans	bronze frog
Rana grylio	pig frog
Rana utricularia	southern leopard frog
Siren intermedia	lesser siren
Reptiles	
Agkistrodon conrortrix	copperhead
Agkistrodon piscivorus	cottonmouth
Anolis carolinensis	green anole
Chelydra serpentine	snapping turtle
Coluber constrictor	racer
Diadophis punctatus	ring-necked snake
Elaphe guttata	com snake
Eumeces inexpectatus	southern five-lined skink
Farancia abacura	mud snake
Kinosternon subrubrum	eastern mud turtle
Lampropeltis getulus	common kingsnake
Lampropeltis triangulum	milk snake
Nerodia cyclopion	western green water snake
Nerodia erythrogaster	plain bellied water snake
Nerodia fasciata	southern water snake
Sceloporus undulatus	eastern fence lizard
Scincella lateralis	ground skink
Sistrurus miliarius	pygmy rattlesnake
Terrapene Carolina	eastern box turtle
Thamnophis sauritus	eastern ribbon snake
Trachemys scripta	slider

Scientific Name	Common Name
Virginia valeriae	smooth earth snake
Birds	
Agelaius phoeniceus	Red-winged Blackbird
Aix sponsa	Wood Duck
Ammodramus henslowii	Henslow's Sparrow
Ardea herodias	Great Blue Heron
Bombycilla cedrorum	Cedar Waxwing
Bubo virginianus	Great Horned Owl
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red-shouldered Hawk
Cardinalis cardinalis	Northern Cardinal
Carduelis tristis	American Goldfinch
Casmerodius albus	Great Egret
Catharus guttatus	Hermit Thrush
Ceryle alcyon	Belted Kingfisher
Coccyzus americanus	Yellow-billed Cuckoo
Colaptes auratus	Northern Flicker
Contopus virens	Eastern Wood Pewee
Corvus brachyrhynchos	American Crow
Corvus ossifragus	Fish Crow
Cyanocitta cristata	Blue Jay
Dendroica coronata	Yellow-rumped Warbler
Dendroica pinus	Pine Warbler
Dryocopus pileatus	Pileated Woodpecker
Dumetella carolinensis	Gray Catbird
Empidonax virescens	Acadian Flycatcher
Falco sparverius	American Kestrel
Geothlypis trichas	Common Yellowthroat
Hirundo rustica	Barn Swallow
Hylocichla mustelina	Wood Thrush
Icteria virens	Yellow-breasted Chat
Icterus spurius	Orchard Oriole
Ictinia misisippiensis	Mississippi Kite
Junco hyemalis	Dark-eyed Junco
Lanius ludovicianus	Loggerhead Shrike
Melanerpes carolinus	Red-bellied Woodpecker
Melanerpes erythrocephalus	Red-headed Woodpecker
Melospiza georgiana	Swamp Sparrow
Melospiza melodia	Song Sparrow
Mimus polyglottos	Northern Mockingbird
Mniotilta varia	Black-and-white Warbler
Molothrus ater	Brown-headed Cowbird
Myiarchus crinitus	Great Crested Flycatcher
Oporornis fonnosus	Kentucky Warbler
Otus asio	Eastern Screech-Owl
Parus bicolor	Tufted Titmouse
Parus carolinensis	Carolina Chickadee
Passenna ciris	Painted Bunting
Passerculus sandwichensis	Savannah Sparrow

Scientific Name	Common Name
Passerella iliaca	Fox Sparrow
Passerina cyanea	Indigo Bunting
Picoides pubescens	Downy Woodpecker
Picoides villosus	Hairy Woodpecker
Pipilo erythrophthalmus	Rufous-sided Towhee
Piranga rubra	Summer Tanager
Polioptila caerulea	Blue-gray Gnatcatcher
Progne subis	Purple Martin
Protonotaria citrea	Prothonotary Warbler
Quiscalus quiscula	Common Grackle
Regulus calendula	Ruby-crowned Kinglet
Regulus satrapa	Golden-crowned Kinglet
Sayornis phoebe	Eastern Phoebe
Sialia sialia	Eastern Bluebird
Sitta pusilla	Brown-headed Nuthatch
Sphyrapicus varius	Yellow-bellied Sapsucker
Spizella passerina	Chipping Sparrow
Spizella pusilla	Field Sparrow
Strix varia	Barred Owl
Sturnella magna	Eastern Meadowlark
Sturnus vulgaris	European Starling
Tachycineta bicolor	Tree Swallow
Thryothorus ludovicianus	Carolina Wren
Toxostoma rufum	Brown Thrasher
Troglodytes aedon	House Wren
Troglodytes troglodytes	Winter Wren
Turdus migratorius	American Robin
Tyrannus tyrannus	Eastern Kingbird
Vermivora celata	Orange-crowned Warbler
Vireo flavifrons	Yellow-throated Vireo
Vireo griseus	White-eyed Vireo
Vireo olivaceus	Red-eyed Vireo
Vireo solitarius	Solitary Vireo
Zenaida macroura	Mourning Dove
Zonotrichia albicollis	White-throated Sparrow
Mammals	
Blarina brevicauda	short-tailed shrew
Cryptotis parva	least shrew
Didelphis virginiana	Virginia opossum
Mustela vison	North American mink
Odocoileus virginianus	white-tailed deer
Oryzomys palustris	marsh rice rat
Permoyscus leucopus	white- footed mouse
Procyon lotor	northern raccoon
Reithrodontomys fulvescens	fulvous harvest mouse
Sciurus carolinensis	gray squirrel
Sciurus niger	fox squirrel
Sylvilagus aquaticus	swamp rabbit
Vulpes fulva	red fox

C.4 Wetlands

C.4.1 Camp Beauregard

In 2012, the LAARNG finalized a planning level wetland delineation of Camp Beauregard. The purpose of this planning level effort was to approximate the location and extent of wetlands and waters of the U.S. regulated by the USACE under Section 404 of the Clean Water Act (CWA). The LAARNG requires current information/data regarding the location of potential wetlands and streams at the CBTS and Esler Field for planning purposes.

The overall procedure included: 1) preparing of a base map compatible with the Geographic Information System (GIS); 2) mapping of potential wetlands and other waters of the U.S. on the base map through interpretation of hydric soil data and current aerial photography; 3) collecting data in the field and modifying the aerial photograph interpretations as necessary; and 4) preparing the final map with corrections ascertained during the site visit.

Biologists used the information collected during the site visit to separate the potential wetland areas into three categories based on the percentage of wetlands expected to occur within each area. Category 1 (100%) are lakes, ponds, or excavated areas that hold water. Category 2 (75-100%) are areas where wetlands occur at a rate of 75-100%, meaning most of the area would likely be mapped as a wetland during a formal delineation. Category 3 (50-75%) are areas where wetlands occur at a rate of 50-75%. Within this category, over 50% of the area would likely be mapped as wetlands during a formal delineation.

These percentages were used to calculate the minimum and maximum wetland acres for each category. Based on the current normal conditions, it is estimated that the amount of wetlands within the CBTS and Esler Field range from **1,850.52 acres to 2,524.86 acres**. Generally, wetlands cover 13% to 17% of the CBTS and Esler Field based on these estimates. Open water areas encompass **81.56 acres**. Potential wetlands and open water areas are shown on **Figure C-4** and detailed in **Table C-6**.

Flow regime for waters of the U.S. was determined based on observation of the waterbodies and classified as perennial, intermittent, or ephemeral. A total of **46.11 miles** of streams are located within the CBTS and Esler Field (**Figure C-5**). These include five perennial streams, 13 intermittent streams, and 27 ephemeral streams (**Table C-7**).

Table C-6. Potential Wetlands and Open Water Areas on Camp Beauregard and Esler Field

Type	Possibility	Comment	Total Acres	Minimum Acres	Maximum Acres
Category 1	100%	Open Water	81.56	---	---
Category 2	75-100%	Hydric Soil	2,007.40	1,505.55	2,007.40
Category 3	50-75%	Partially Hydric Soil	689.94	344.97	517.46
		Totals	**2,778.90**	**1,850.52**	**2,524.86**

Figure C-4. Potential Wetlands and Open Water Areas
on Camp Beauregard and Esler Field

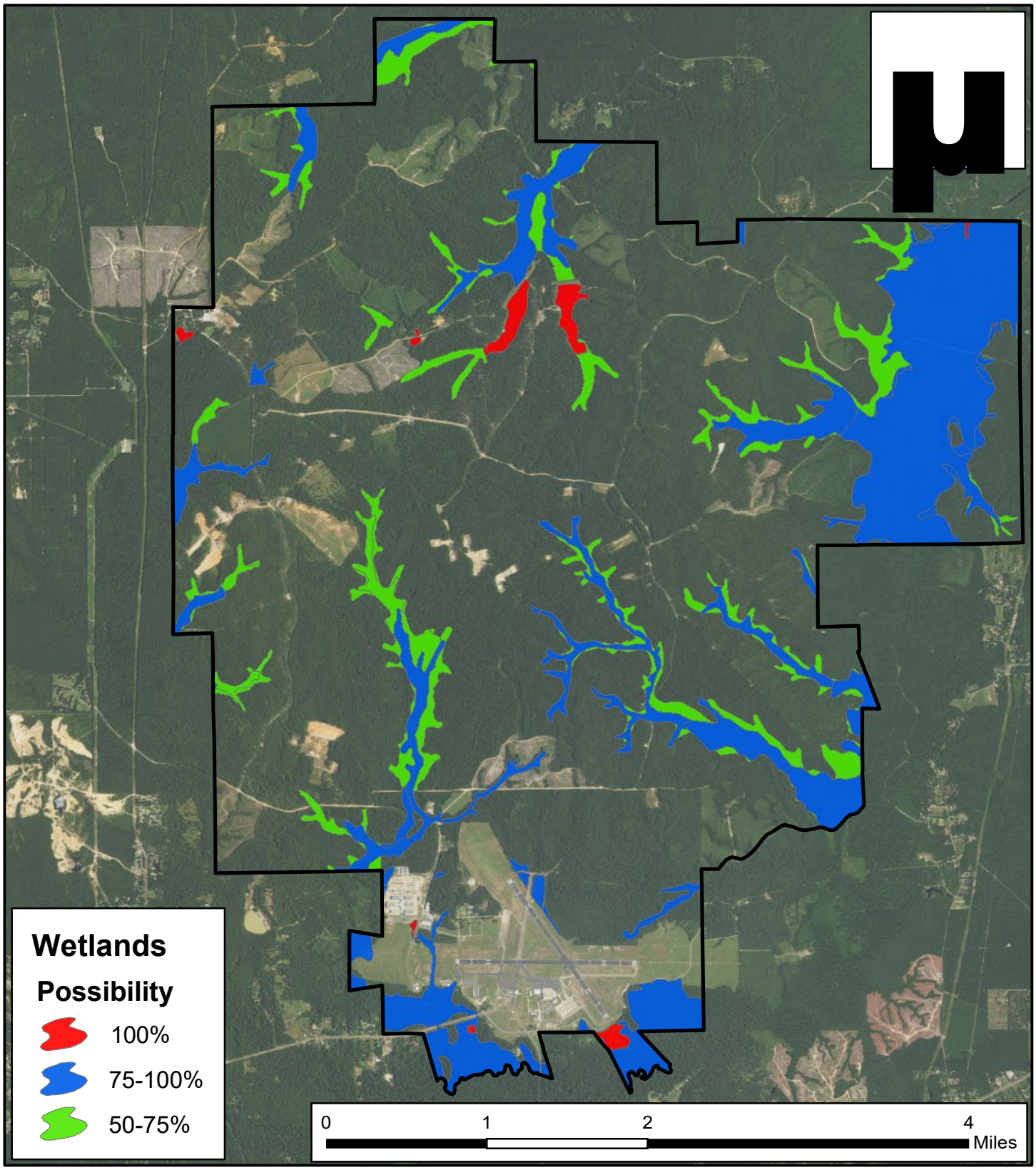


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Figure C-5. Potential Waters of the U.S. on Camp Beauregard and Esler Field

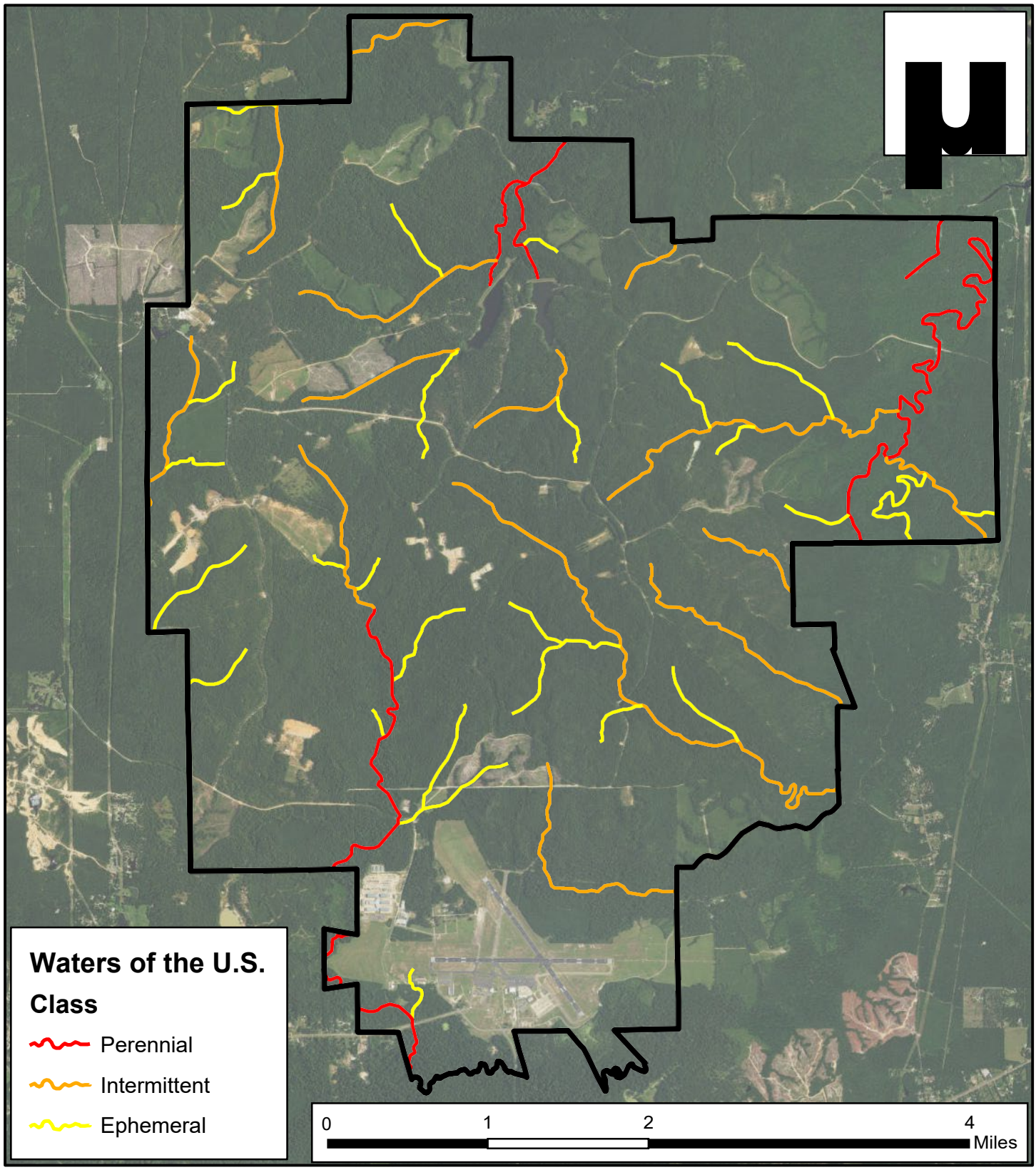

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Table C-7. Potential Waters of the U.S. on Camp Beauregard and Esler Field

Class	Frequency	Length (ft.)	Length (mi.)
Perennial	5	63,288	11.99
Intermittent	13	102,888	19.49
Ephemeral	27	77,288	14.64
	Totals	**243,464**	**46.11**

C.4.2 Camp Minden

The 2012 planning level wetland delineation also included Camp Minden. Based on the current normal conditions, it is estimated that the amount of wetlands on Camp Minden range from **3,440.44 acres to 4,587.25 acres**. Generally, wetlands cover 23% to 31% of Camp Minden based on these estimates. Open water areas encompass **35.19 acres**. Potential wetlands and open water areas are shown on **Figure C-6** and detailed in **Table C-8**.

A total of **49.05 miles** of streams are located on Camp Minden (**Figure C**-7). These include four perennial streams, 15 intermittent streams, and 23 ephemeral streams (**Table C-9**).

Table C-8. Potential Wetlands and Open Water Areas on Camp Minden

Type	Possibility	Comment	Total Acres	Minimum Acres	Maximum Acres
Category 1	100%	Open Water	35.19	---	---
Category 2	75-100%	Hydric Soil	4,587.25	3,440.44	4,587.25
		Totals	**4,622.44**	**3,440.44**	**4,587.25**

Table C-9. Potential Waters of the U.S. on Camp Minden

Class	Frequency	Length (ft.)	Length (mi.)
Perennial	4	62,550	11.85
Intermittent	15	128,726	24.38
Ephemeral	23	67,685	12.82
	Totals	**258,961**	**49.05**

Figure C-6. Potential Wetlands and Open Water Areas on Camp Minden

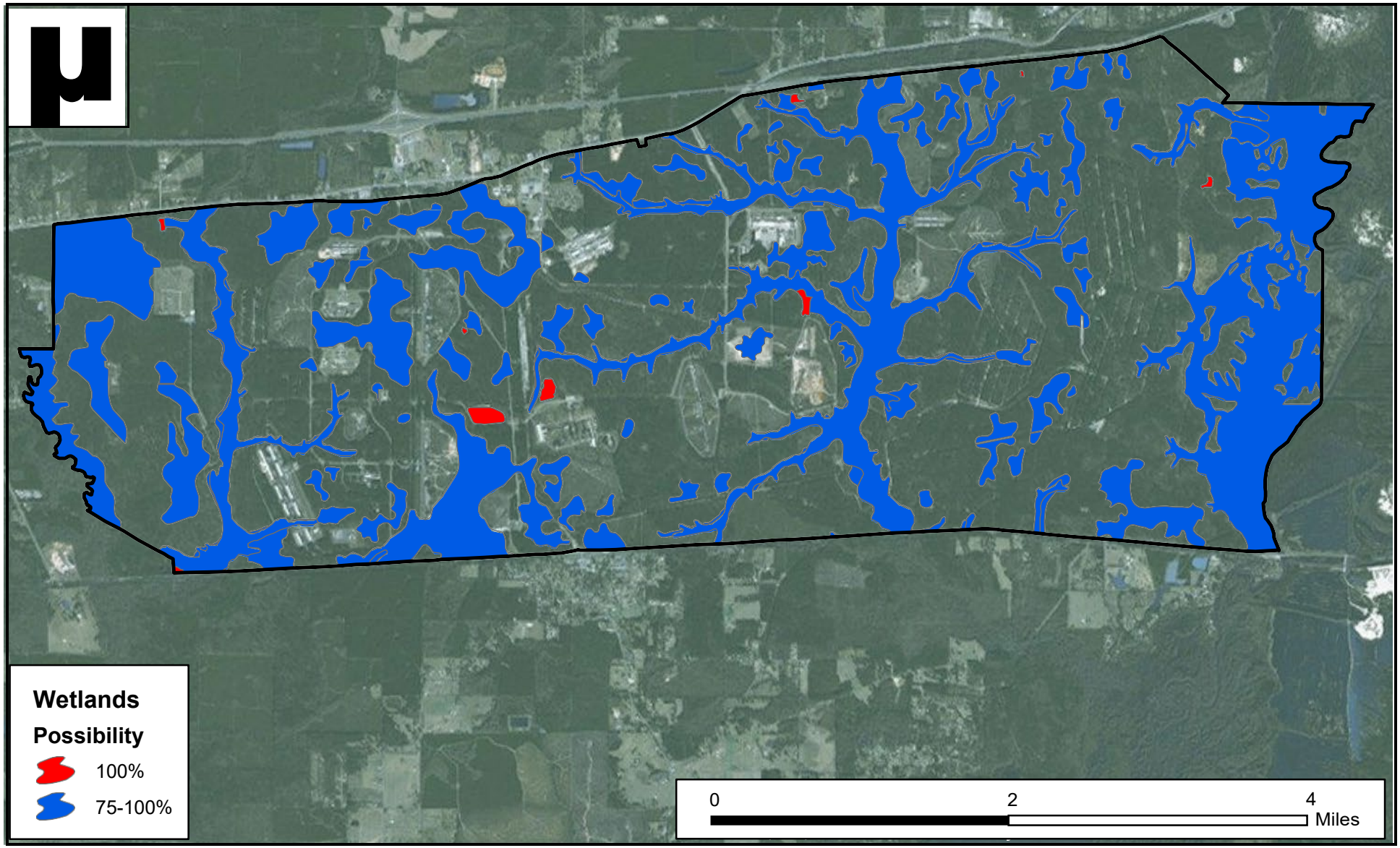

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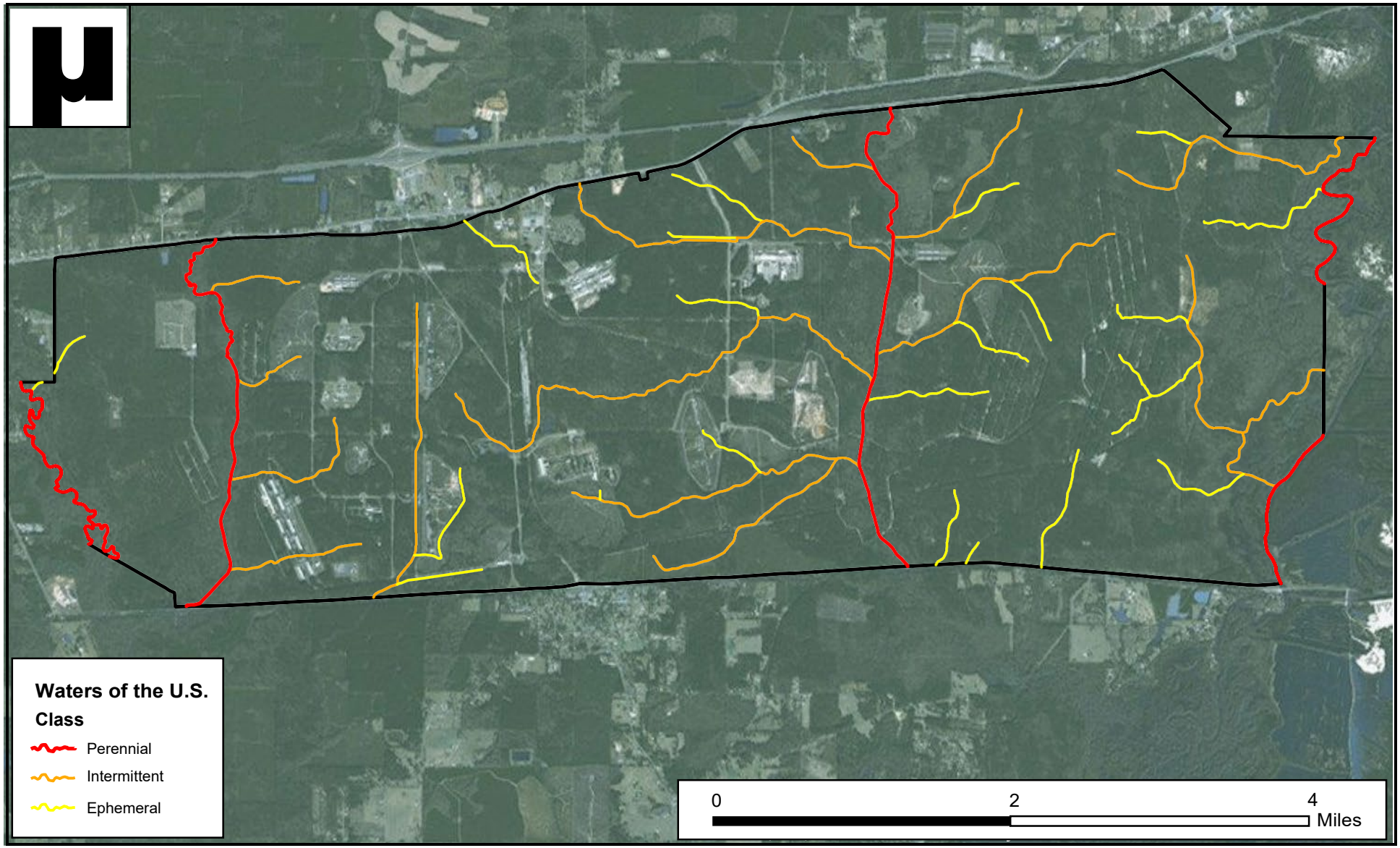
Figure C-7. Potential Waters of the U.S. on Camp Minden



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C.4.3 Camp Villere

The 2012 planning level wetland delineation also included Camp Villere. Based on the current normal conditions, it is estimated that the amount of wetlands on Camp Villere range from **562.29 acres to 764.24 acres**. Generally, wetlands cover 35% to 48% of Camp Villere based on these estimates. Potential wetlands are shown on **Figure C-8** and detailed in **Table C-10**.

A total of **2.63 miles** of streams are located on Camp Villere (**Figure C-9**). These include one perennial stream and two intermittent streams (**Table C-11**).

Table C-10. Potential Wetlands on Camp Villere

Type	Possibility	Comment	Total Acres	Minimum Acres	Maximum Acres
Category 1	75-100%	Hydric Soil	633.60	475.20	633.60
Category 2	50-75%	Partially Hydric Soil	174.19	87.09	130.64
		Totals	**807.79**	**562.29**	**764.24**

Table C-11. Potential Waters of the U.S. on Camp Villere

Class	Frequency	Length (ft.)	Length (mi.)
Perennial	1	8,182	1.55
Intermittent	2	5,679	1.08
	Totals	**13,861**	**2.63**

Figure C-8. Potential Wetlands on Camp Villere

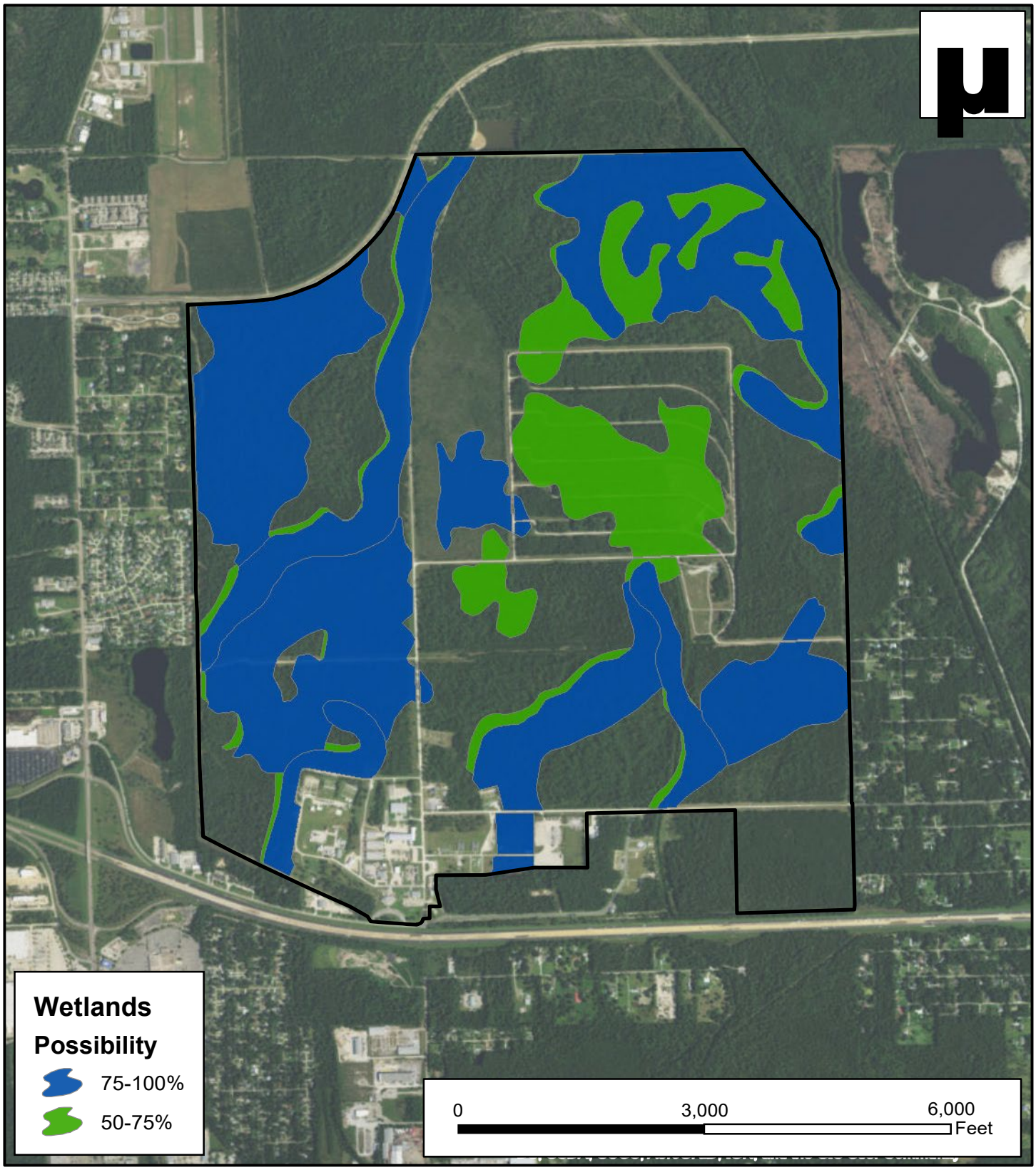

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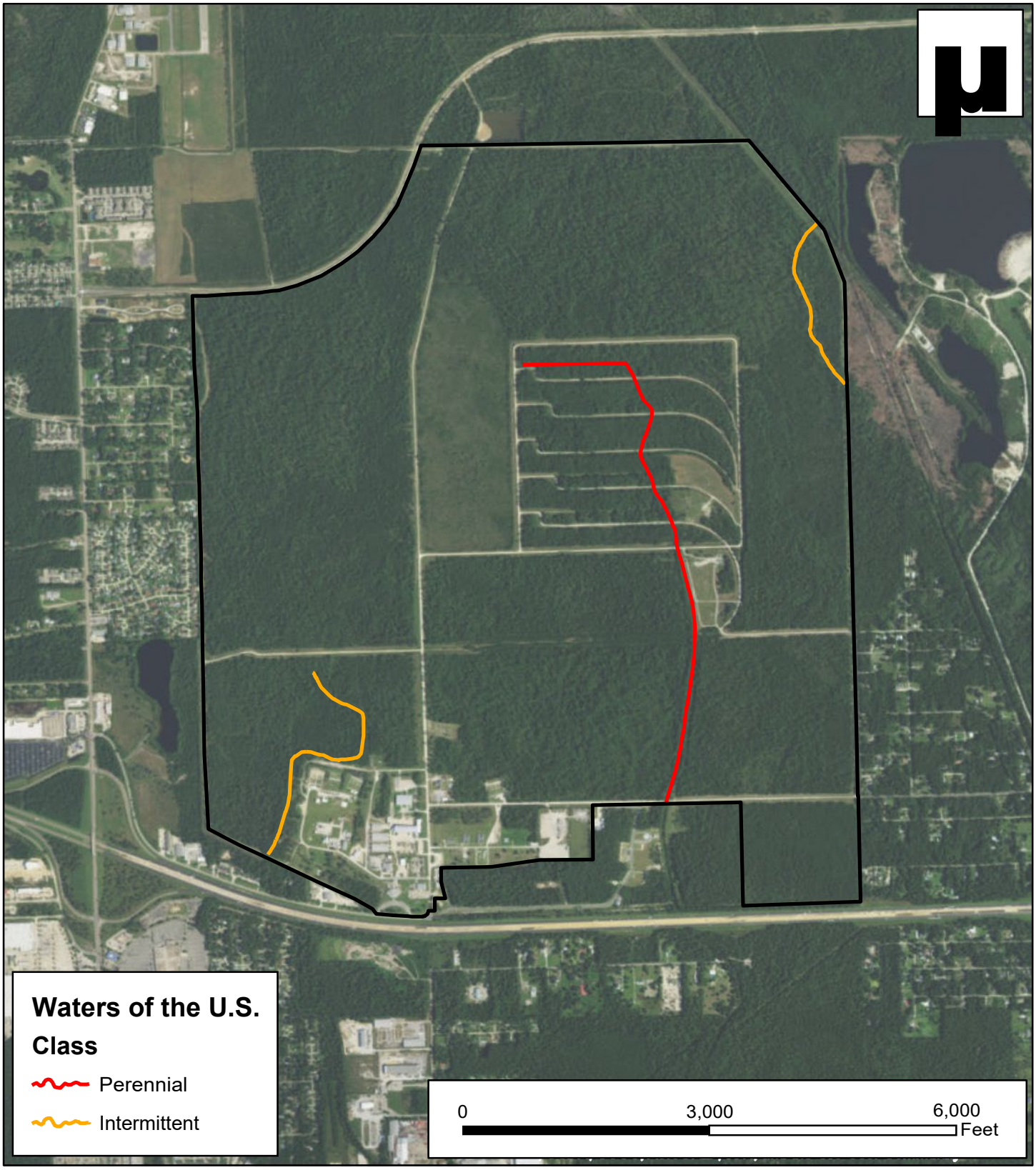
Figure C-9. Potential Waters of the U.S. on Camp Villere



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C.5 Pine Demonstration Areas

C.5.1 Camp Beauregard

The Catahoula Ranger District of Kisatchie National Forest lies adjacent to sections of Camp Beauregard along the western and northern boundaries. Because there are currently active clusters of the federally endangered RCW within the Catahoula Ranger District, Camp Beauregard personnel, in conjunction with the USFWS and TNC, established four Longleaf Pine Demonstration Areas that are actively being managed for RCW. These four areas, accounting for approximately 914 acres, have been identified on Camp Beauregard as Longleaf Glade (174 acres), Longleaf Seep (92 acres), Mill Creek (289 acres), and Mayhaw Road (359 acres) (**Figure C-10**).

Longleaf Glade Longleaf Pine Demonstration Area (174 acres)

This area is located in Township 6 North, Range 2 East, Sections 29, 32, and 33. This site consists mostly of an upland longleaf pine forest north of Mayhaw Road. Many relict or older trees (mostly longleaf pine, but some shortleaf pine and loblolly pine) are present, some estimated at 150 to 200 years of age. Many of the older longleafs in the area are near glades and have apparently grown slowly due to inhospitable conditions of the rocky and/or clayey substrate. Other natural communities at the site include mixed-hardwood/loblolly pine forest in fire-sheltered ravines and intermittent stream bottoms. A small seep occurs on the steep west-facing slopes to Clinton Branch. This site is contiguous with Clinton Branch Natural Area and Mayhaw Road Longleaf Pine Demonstration Area, forming a complex that encompasses approximately 600 acres.

In addition to longleaf pine, loblolly pine, and shortleaf pine, dominant overstory trees include southern red oak, blackjack oak, post oak, and cherrybark oak.

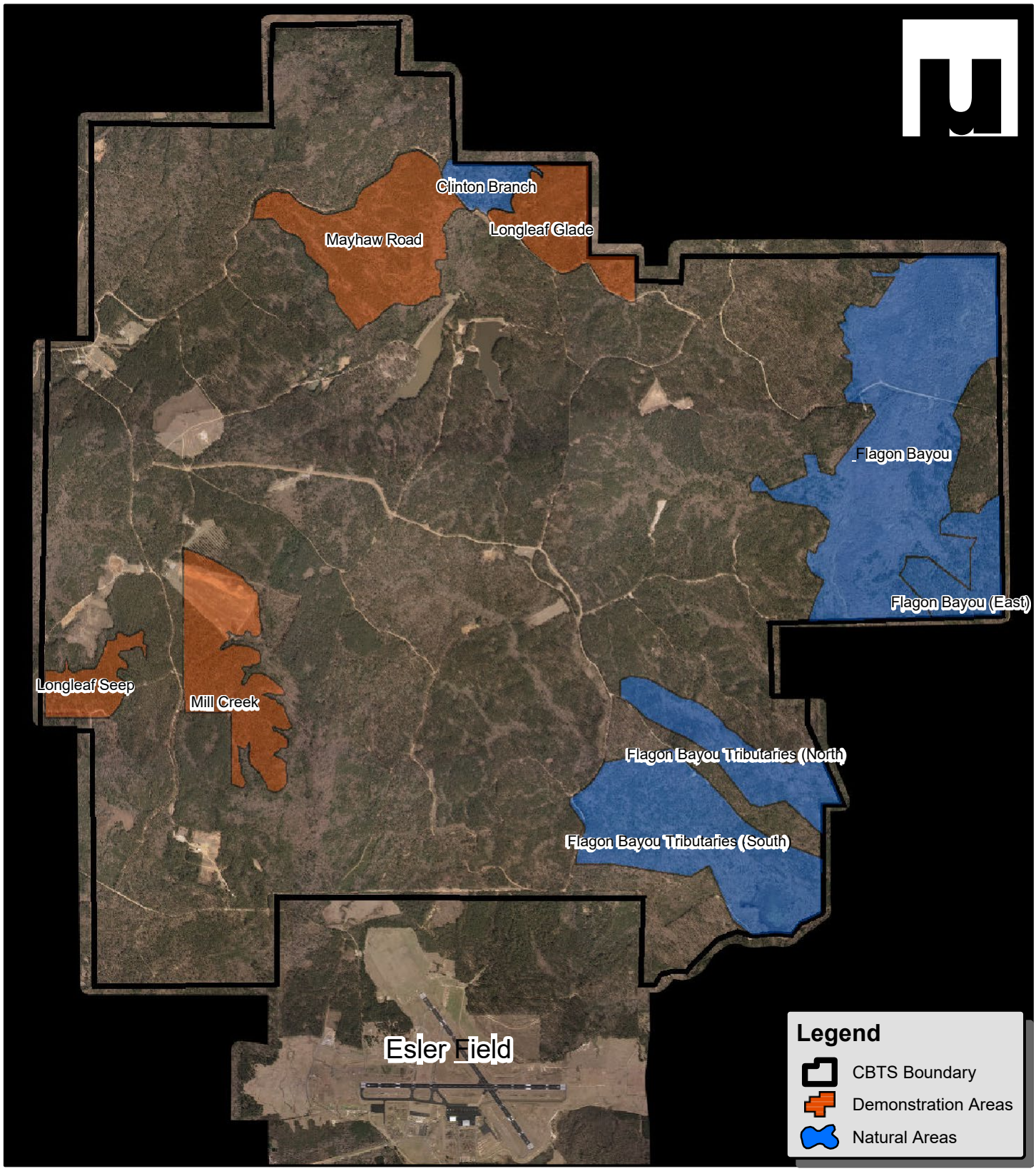
Longleaf Seep Longleaf Pine Demonstration Area (92 acres)

This area is located in Township 5 North, Range 1 East, Section 15. The Longleaf Seep Area supports a relatively old, upland longleaf forest that grades into wooded seeps and mixed-hardwood/loblolly natural communities along an unnamed tributary of Beaver Creek. The seepage areas are well-developed, occurring along the tributary and in the ecotonal areas between the riparian zone and the upland longleaf area. Dominants in the wooded seep include sweetbay magnolia, southern magnolia, blackgum, and red maple. The wooded seep develops into a mixed-hardwood/loblolly natural community further downstream, with some relict beech and longleaf pine. Other old-growth characteristics such as snags, canopy gaps, uneven-age forest, and old vines and shrubs are present in a few areas.

An upland longleaf forest, with average age of approximately 50 years is present on a portion of the south side of the tributary. A few relict longleaf pine trees over 100 years of age are present. This area of longleaf pine is notably older than other longleaf forests along Brushy Road.

The moist, shaded habitat provided by the wooded seep, which is the best developed seep located at Camp Beauregard, supports a diversity of salamanders.

Figure C-10. Demonstration and Natural Areas at Camp Beauregard



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Mill Creek Longleaf Pine Demonstration Area (289 acres)

This area is located in Township 5 North, Range 1 East, Section 12. The area between Brushy Road and Mill Creek consists of rolling uplands dominated by relatively even-aged longleaf pine forest of varying densities. The herbaceous groundcover of the site is diverse in open areas. Although the majority of the longleaf pines are less than 50 years old (estimated), this site is significant because it is the largest single stand of longleaf pine-dominated forest on Camp Beauregard. Two wooded seeps are present on the east-facing slopes of Mill Creek, supporting an additional array of species.

Mayhaw Road Longleaf Pine Demonstration Area (359 acres)

This area is located in Township 6 North, Range 2 East, Sections 30 and 31. This site is dominated by relatively open longleaf pine forests on rolling hills. Most longleaf pines are estimated to be 75 years or older; few, if any relict longleaf pines are present. The open nature of the forest has permitted natural regeneration of longleaf pine and as led to extensive use by soldiers. Scattered patches of post oak and blackjack oak occur throughout the site.

C.5.2 Camp Minden

Three Demonstration Areas have been designated at Camp Minden. These areas are designated as Type 3 lands, which are moderately disturbed areas that have retained most of the components of the estimated pre-settlement natural community and have not been significantly degraded (see Section 6.1 for a detailed description of Type 3 lands). The Demonstration Areas were established jointly between LAARNG environmental and TNC personnel during preparation of the 2001 INRMP and have been modified slightly from that date to reflect current conditions and/or training needs. These include Flatwoods, Willow Oak, and Raine Cemetery Demonstration Areas (**Figure C-11**). Collectively, they account for 615 acres of the training site.

Flatwoods Demonstration Area (496 acres)

The Flatwoods Demonstration Area is located along Clark Bayou and is the best remaining example of the estimated pre-settlement pine-oak/hickory flatwoods community found at Camp Minden. The flatwoods grade downslope into a mixed-hardwood loblolly pine forest toward Clark Bayou. This area formerly supported RCWs, but there are currently no known active cavities. Several large loblolly pine trees (estimated age 80+ years old) with abandoned cavities are present, along with some similarly aged shortleaf pine (without cavities). One of the most important features of the area is the diverse, herbaceous ground cover, supporting many species typical of upland calcareous prairies in north Louisiana.

Willow Oak Demonstration Area (34 acres)

The Willow Oak Demonstration Area is an ecologically significant area that is characterized by a flatwood depression forest on Wrightsville silt loam soils. The forest is uneven-aged with many old-growth characteristics. The average age of dominant trees is estimated to be 80 to 100 years old. Although the site was recently lightly thinned, it retains relatively natural composition, structure, and function. The ground cover includes a variety of wetland grasses, sedges and forbs. Scattered pimple mounds provide habitat for upland species, increasing the diversity of the area.

Figure C-11. Demonstration and Natural Areas at Camp Minden

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Raine Cemetery Demonstration Area (85 acres)

Raine Cemetery Demonstration Area is a high quality example of the mixed hardwood/loblolly pine forest that was once prevalent at Camp Minden. Well defined pimple mounds in the site indicate that little disturbance to the soil has occurred. Pine trees older than 80 years occur across the site together with mature hardwoods. Larger understory trees and vines, and numerous larges snags further indicate that the forest is of a mature age. The site has numerous wetland intrusions in areas of lower elevation.

C.5.3 Camp Villere

There are no pine demonstration areas designated at Camp Villere.

C.6 Natural Areas

C.6.1 Camp Beauregard

Four areas have been identified on Camp Beauregard as Natural Areas. The Natural Areas were established jointly between LAARNG environmental and TNC personnel during preparation of the 2001 INRMP and have been modified slightly from that date to reflect current conditions and/or training needs. These areas are designated by the installation. The majority of the acreage of the Natural Areas is also regulated by the CWA as forested wetlands. These areas encompass a total of approximately 1,769 acres and include Clinton Branch (67 acres), Flagon Bayou Tributaries (669 acres), Flagon Bayou (898 acres), and Flagon Bayou East (135 acres) (see **Figure C-10**).

The primary goal of designating these areas as Natural Areas is to provide (ultimately) an old growth component to the local ecosystem, provide refuge for species sensitive to disturbance, and provide areas for environmental education and scientific research. Because these four areas are either predominately steeply sloped or forested wetlands (which receive little use during military training) providing protection to these areas has little, if any, effect on military training.

Clinton Branch Natural Area (67 acres)

This site is contiguous with the Longleaf Glade and Mayhaw Road Longleaf Pine Demonstration Areas and includes riparian and mixed-hardwood/loblolly pine natural communities along Clinton Branch. This site supports a diverse, relatively undisturbed mixed pine-hardwood forest. Although the site has been selectively cut in the past, numerous older trees remain, especially American beech and southern magnolia, some estimated to be over 100 years old. This site also includes a relatively undisturbed riparian community and numerous rich-woods plants, some found nowhere else at Camp Beauregard.

Flagon Bayou Tributaries Natural Area [477 acres (south) and 192 acres (north)]

This two-part site includes the southern-most tributaries to Flagon Bayou on Camp Beauregard. This natural area supports the best remaining examples of headwater riparian, mixed-hardwood/loblolly pine, and hardwood slope natural communities at Camp Beauregard.

The southernmost tributary is a complex of natural communities. The stream is clear-flowing over a sand and gravel substrate. This area consists of riparian, mixed-hardwood/loblolly pine and hardwood slope natural communities. The boundary also includes a buffer area of upland pine. The forest at the site is diverse, with oldest trees (predominantly loblolly pine) 60 to 80 years old, and an occasional beech of 80 to 100 years old. Relatively steep north-facing slopes with some exposed sandstone support rich-woods species such as cucumber-tree (*Magnolia acuminata*), oak-leaf hydrangea, and wake robin (*Trillium ludovicianum*). Downstream, the floodplain widens, with shallow back-water areas and several clear, black-water sloughs. The sloughs flow into a large beaver pond, which provides habitat for wading birds, wood ducks, and other wildlife. The area between the sloughs and beaver pond supports a small area of near old-growth loblolly pine and various hardwoods. This area is open and park-like, apparently due to periodic inundation that restricts understory development. Topographic variation, scattered old trees, and open water provide a scenic and species-rich natural area.

The northern unit of this natural area captures a narrow floodplain with steeper slopes than the southern unit. Some of the slopes are bluff-like, with numerous exposed boulders of sandstone at the edge of open glades in the uplands, providing many scenic over-looks to the creek bottom below. To the southeast, the floodplain widens into a high quality mixed-hardwood/loblolly pine forest. A small, scenic cypress-tupelo pond is present at the eastern boundary.

Flagon Bayou Natural Area (898 acres)

The large floodplain of Flagon Bayou, which consists of bottomland hardwood forest and cypress swamp is an obvious area of ecological significance. This natural area floods annually for several months and provides habitat not present elsewhere at Camp Beauregard. Because natural fluctuation in water levels is critical to maintenance of floodplain forests, minor variation in elevation within the Flagon Bayou floodplain has led to significant changes in plant species composition. Primary dominants in the floodplain include overcup oak, baldcypress, and willow oak. Understory species, often occurring in thickets, include hawthorns, dwarf palmetto, buttonbush, and deciduous holly.

This site includes the most extensive bottomland hardwood site at Camp Beauregard, which provides important wetland values. Flagon Bayou is also an important drainage for Catahoula Lake.

Flagon Bayou East Natural Area (152acres)

This site is topographically diverse, dissected by many ravines formed from down-cutting toward Flagon Bayou. Because this area is apparently isolated from the highly pyrogenic, longleaf pine forests to the east and west, the forest is primarily a mixed-hardwood/loblolly pine natural community. Dominants include loblolly pine, white oak, blackgum, winged elm, white ash, southern red oak, sweetgum, red maple, and cherrybark oak, with scattered shortleaf pine.

This site includes the best remaining upland mixed-hardwood/loblolly pine forest at Camp Beauregard. It is unique among upland areas at Camp Beauregard in that it was not likely a part of the fire-maintained longleaf pine system. The highly dissected topography provides for diversity of species and scenic qualities.

C.6.2 Camp Minden

Two areas have been identified on Camp Minden as Natural Areas. The Natural Areas were established jointly between LAARNG environmental and TNC personnel during preparation of the 2001 INRMP and have been modified slightly from that date to reflect current conditions and/or training needs. These areas were designated by the installation. The majority of the acreage of the Natural Areas is also regulated by the CWA as forested wetlands. These areas encompass a total of 1,594 acres and include Boone Creek (421 acres) and Bayou Dorcheat (1,173 acres) (see **Figure C-11**).

The primary goal of designating these areas as Natural Areas is to provide (ultimately) an old growth component to the local ecosystem, provide refuge for species sensitive to disturbance, and provide areas for environmental education and scientific research. Because these two areas are either predominantly sloped or forested wetlands (which receive little use during military training) providing protection to these areas has little, if any, effect on military training.

Boone Creek Natural Area (421 acres)

This riparian forest and adjacent mixed-hardwood/loblolly forest along Boone Creek, particularly south of Burma Road, is a significant natural area. The majority of this forest has been subjected to only moderate disturbance in recent times, and contains many older trees, including at least one small grove of approximately 100 year-old beech. Numerous old-growth characteristics are present and the area supports several rich-woods species of plants that are generally disturbance- sensitive although many areas are dominated by the invasive Japanese honeysuckle. Portions of the area contain uneven-aged forest, although some even-aged, early regeneration areas are present. Unlike Bayou Dorcheat or Clarke Bayou, this riparian forest is intact on both sides of the stream, which is important for stream quality and as a potential corridor for wildlife species.

Dominants include loblolly pine, shortleaf pine, cherrybark oak, and sweetgum. Midstory and understory species include American hornbean and flowering dogwood. One seepage area has been located that contains sweetbay magnolia and numerous ferns. The upper portion of Boone Creek contains thick patches of giant cane.

Boone Creek was partially channelized approximately 40 years ago, as evidenced by the presence of spoil banks and the size of trees on the spoil. This activity apparently has had minimal effect on the mixed-hardwood/loblolly forest, but in places has reduced the width of the riparian zone. In addition, the placement of spoil has blocked the natural drainage of some sloughs in the floodplain, causing some areas to be wetter than normal. The deepening of Boone Creek has apparently caused excessive downcutting of small tributaries in the Boone Creek drainage system.

Bayou Dorcheat Natural Area (1,173 acres)

One of the most distinctive areas of Camp Minden is the floodplain and adjacent uplands of Bayou Dorcheat. Features such as ridges, swales, sloughs, flats, and shallow swamps support an intermingling mosaic of natural communities in this area. The Bayou Dorcheat Natural Area represents the best opportunity for management of a relatively large block of essentially unfragmented, biologically diverse forest. Natural plant communities recognized include two phases of mixed-hardwood/loblolly pine forest, various phases of bottomland hardwood forest, cypress swamp with open shrub areas, and upland hardwood slope forest.

Two plant communities associated with the Bayou Dorcheat floodplain, a hardwood slope community and a ridge and swale community, have been included in the Bayou Dorcheat Natural Area.

The hardwood slope community is relatively undisturbed, with a diversity of dominant and co-dominant hardwood species, many ranging from an estimated 24 to 36 inches in diameter and from 70 to 90 feet in height. Dominants include white oak, shortleaf pine, loblolly pine, and hickory. Several rich-woods species are found that indicate a relatively mesic, organically-rich, undisturbed site, and include coral honeysuckle, southern tway-blade orchid (*Listera australis*), and blunt-lobed cliff fern (*Woodsia obtusa*).

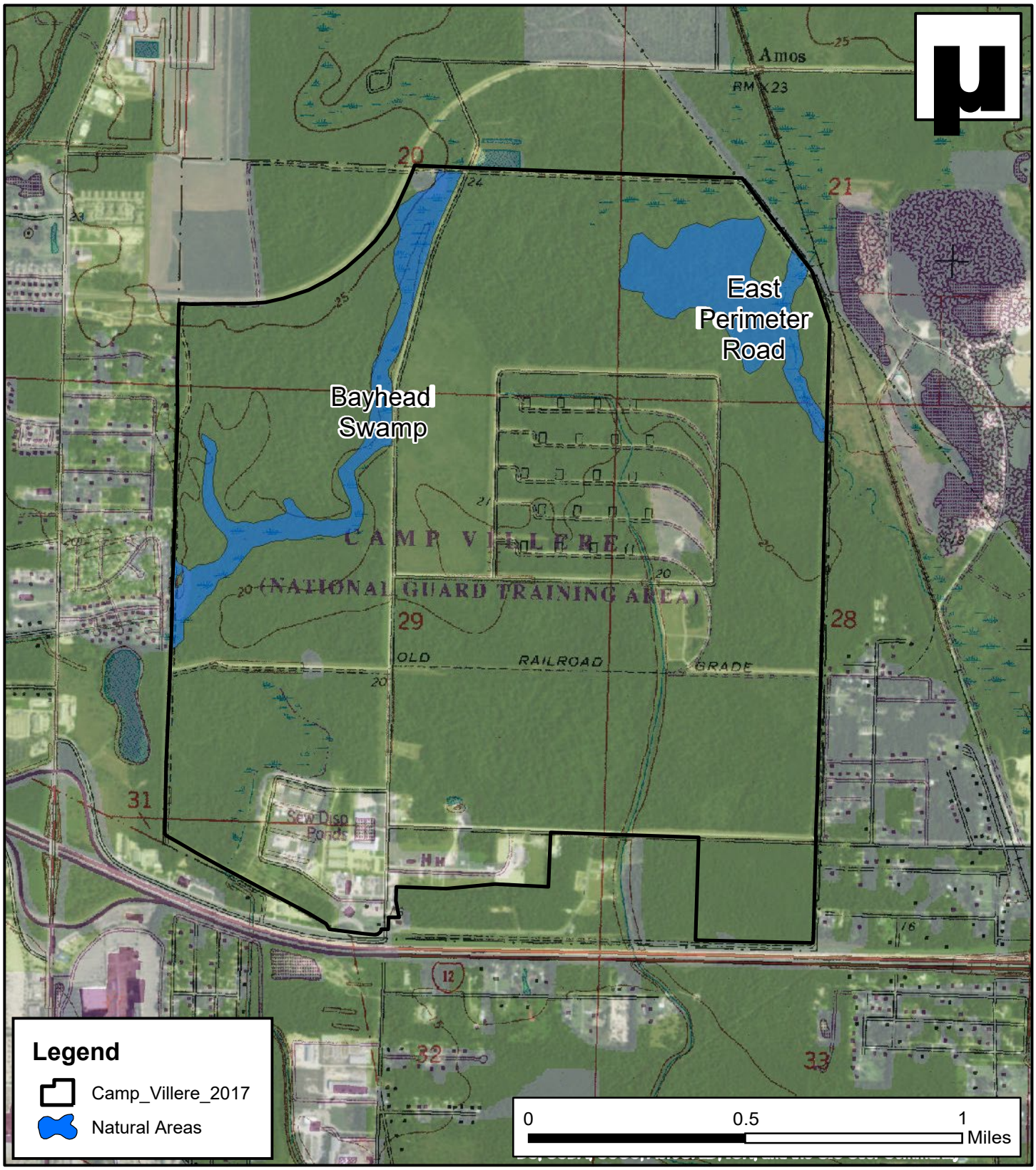
The ridge and swale area remains one of the most significant natural communities at Camp Minden. The ridge and swale topographic pattern is attributed to point-bar accretion from lateral movement of a meandering stream in the distant past. It consists of mixed hardwood/loblolly pine forest (mesic phase) on ridges and slightly higher topographic areas and a narrow band of predominantly cypress in the western-most slough. Approximately 10 acres of the western portion of the natural area is considered old-growth forest, with numerous trees, particularly beech, estimated to be 150 years old and older. Dominants include American beech, sweetbay magnolia, loblolly pine, and bald cypress. Some cypress trees are estimated to be over 300 years old, with some cypress and beech measuring three feet or more in diameter breast height (dbh). Some relatively large older shrubs and vines, characteristic of old-growth forests, also are present. A diversity of shrubs, vines, and herbs are present in the understory. At least 10 species of ferns occur in this area.

C.6.3 Camp Villere

Two areas have been identified on Camp Villere as Natural Areas. The Natural Areas were established jointly between LAARNG environmental and TNC personnel during preparation of the 2001 INRMP and have been modified slightly from that date to reflect current conditions and/or training needs. These areas were designated by the installation. The majority of the acreage of the Natural Areas is also regulated by the CWA as forested wetlands. These areas encompass a total of 108 acres and include East Perimeter Road (57 acres) and Bayhead Swamp (51 acres). The Natural Areas are depicted on **Figure C-12**.

The primary goal of designating these areas as Natural Areas is to provide (ultimately) an old growth component to the local ecosystem, provide refuge for species sensitive to disturbance, and provide areas for environmental education and scientific research. Because these two areas are either predominately steeply sloped or forested wetlands (which receive little use during military training) providing protection to these areas has little, if any, effect on military training.

Figure C-12. Natural Areas on Camp Villere



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East Perimeter Road Natural Area (57 acres)

This Natural Area contains a mosaic of the highest quality mesic longleaf pine flatwoods and wet longleaf pine flatwood savannah currently remaining at Camp Villere. Longleaf pine flatwoods occur in the northern and southern parts of the site, and wet pine savannah occurs mostly in the central and eastern portion of the site. This area supports one of the largest concentrations of longleaf pine at Camp Villere, including several age classes. The relatively open, wet longleaf pine flatwood savannah supports one of the highest known concentrations of state rare plants at the installation. Rare species known to occur in the area include parrot pitcher-plant, night- flowering wild-petunia, myrtle-leaf holly, golden crest, and coastal false-asphodel (as of the 1994- 1995 survey).

Near the northern end of the Natural Area, the longleaf pine grades into a slash pine-pond cypress/hardwood forest and bayhead swamp. The slash pine-pond cypress/hardwood forest area is wet and relatively open, with scattered pond cypress of various ages including some evidently quite old. A thick, tall herbaceous layer is present, with numerous species typical of low wet areas in longleaf pine savannahs. At least five state rare plants are present, including flax-leaf false-foxglove, night-blooming wild-petunia, myrtle holly, and parrot pitcher plant (as of the 1994-1995 survey). The bayhead swamp is dominated by laurel oak, swamp tupelo, pond cypress, Carolina ash, and other hardwoods. It is part of a drainage system that frequently floods after major rain events, and flows a relatively short distance through the extreme northeast portion of Camp Villere.

Bayhead Swamp Natural Area (51 acres)

This mostly linear site consists of a shallow, riparian-like drainage area that extends from just west of Engineer Road near the north perimeter, southwestwardly to West Perimeter Road, just north of Transportation Road. This Natural Area is dominated by mature laurel oak, swamp tupelo, slash pine, sweetbay magnolia, water oak, and red maple. Numerous shrubs, vines, and herbaceous plants contribute to the diversity of the site. The relatively undisturbed mesic site has several downed, rotting logs that provide habitat for numerous salamanders and other organisms. Water levels at this site fluctuate greatly depending on rainfall events.

C.7 References

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Appendix D MISSION IMPACTS ON NATURAL RESOURCES

D.1 Land Use

A four-tiered land classification system was developed by LAARNG environmental and TNC personnel during preparation of the 2001 INRMP to assist the installations in managing areas that need special protection (*i.e.* important habitat, wetlands). This land classification system allows for the protection of valuable natural resources, provides for a sustainable extraction of timber resources, ensures successful training activities, and simplifies the implementation of management strategies. The tiers are based on the extent of historical and recent human impact and habitat quality. LAARNG lands have been designated as follows: Type 1 – Permanently Converted/Restricted Areas; Type 2 – Intensive Management Areas; Type 3 –Demonstration Areas; and Type 4 – Natural Areas.

The primary function of Type 1 lands is to provide opportunities for military training. Type 1 lands are defined as permanently cleared, converted, or restricted, and include buildings, parking lots, mowed roadsides, military ranges, explosive test areas, and igloo areas. These areas allow for administration and housing services, moving and parking heavy equipment, transportation routes through the installation, and engineering and weapons training.

Training needs and natural resources management and protection is integrated on Type 2 lands ensuring that both are achieved. Type 2 lands are disturbed lands with many of the components of the pre-settlement natural community absent. The goal of the LAARNG on Type 2 lands is to improve the ecological function of these areas, while meeting the training needs of the military mission.

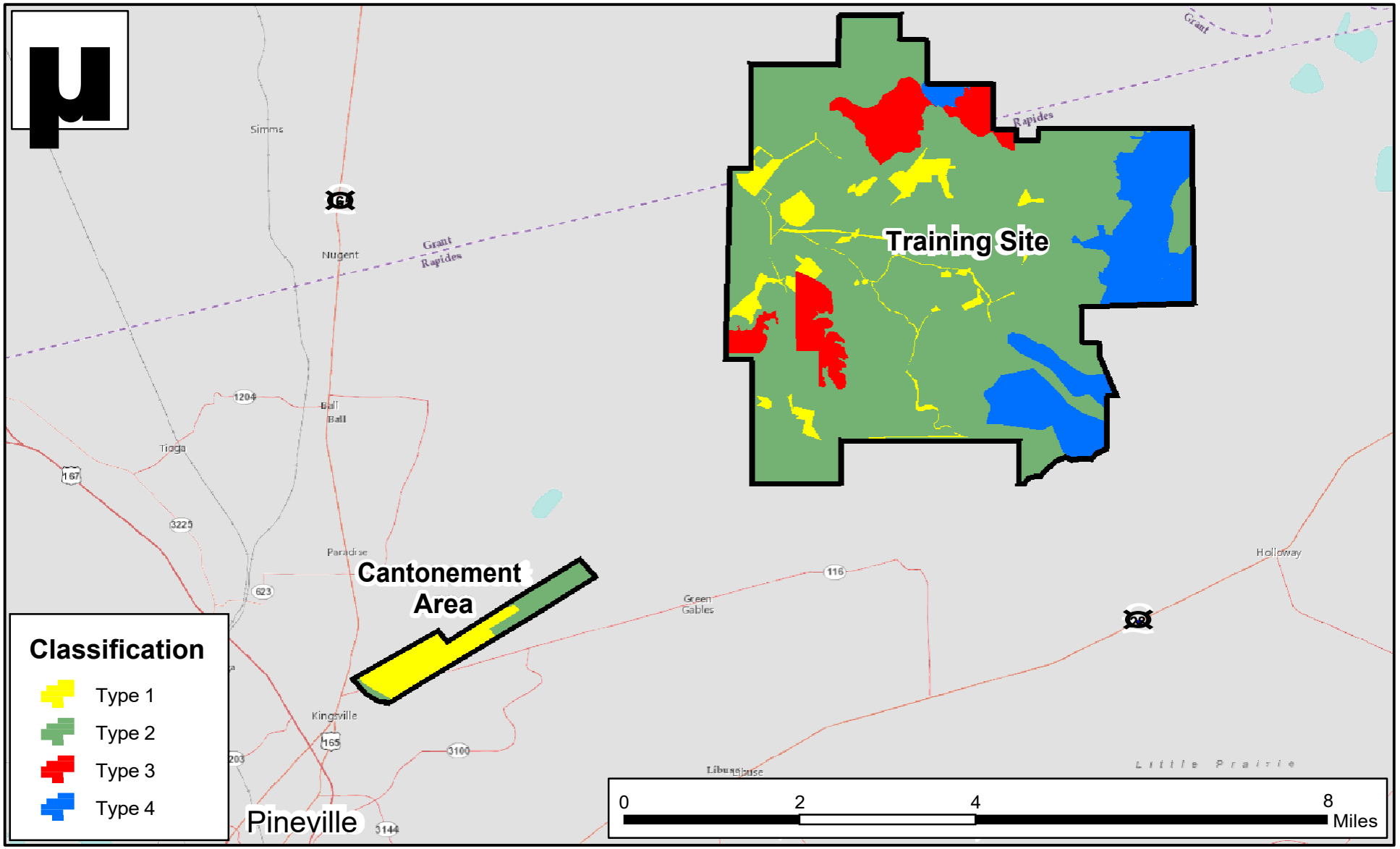
Type 3 lands are moderately disturbed lands that retain most of the components of the estimated pre-settlement natural community and have not been significantly degraded by human activity. Resource extraction is moderate and within the context of maintaining natural community composition and structure.

Type 4 lands are exemplary natural areas that have not been degraded by human activity. Resource extraction is minimal or absent and restricted to those activities related to natural community restoration. Type 4 lands are those areas that contain plant communities that most closely resembled their best estimate of the structure, composition, and function of pre-settlement plant communities.

D.1.1 Camp Beauregard

Figure D-1 illustrates how Camp Beauregard lands are broken down based on this four-tiered classification system. At Camp Beauregard, Type 2 lands account for approximately 75 percent of the training site and all of the areas within the cantonment area not classified as Type 1 lands. The majority of these areas are stocked with loblolly pine. The four Longleaf Pine Demonstration Areas on Camp Beauregard are classified as Type 3 lands. The four Natural Areas on Camp Beauregard (Clinton Branch, Flagon Bayou Tributaries, Flagon Bayou, and Flagon Bayou East) are classified as Type 4 lands.

Figure D-1. Land Use Classifications at Camp Beauregard



Land Management Group, LLC.	Date: August 4, 2017

Table D-1. Breakdown of Land Classifications at Camp Beauregard

Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Type 4 (acres)
575 (training site) 370 (cantonment area)	9,990	914	1,769

D.1.2 Camp Minden

Figure D-2 illustrates how Camp Minden lands are broken down based on this four-tiered classification system. At Camp Minden, Type 2 lands are primarily those sites that were cleared in the past and evidently farmed prior to acquisition by the U.S. Army. Type 2 lands are typically comprised of overstocked stands of loblolly pine or mixed loblolly and hardwood stands. The three Demonstration Areas on Camp Minden are classified as Type 3 lands. The two Natural Areas (Boone Creek and Bayou Dorcheat) on Camp Minden are classified as Type 4 lands.

Table D-2. Breakdown of Land Classifications at Camp Minden

Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Type 4 (acres)
264	11,192	615	1,594

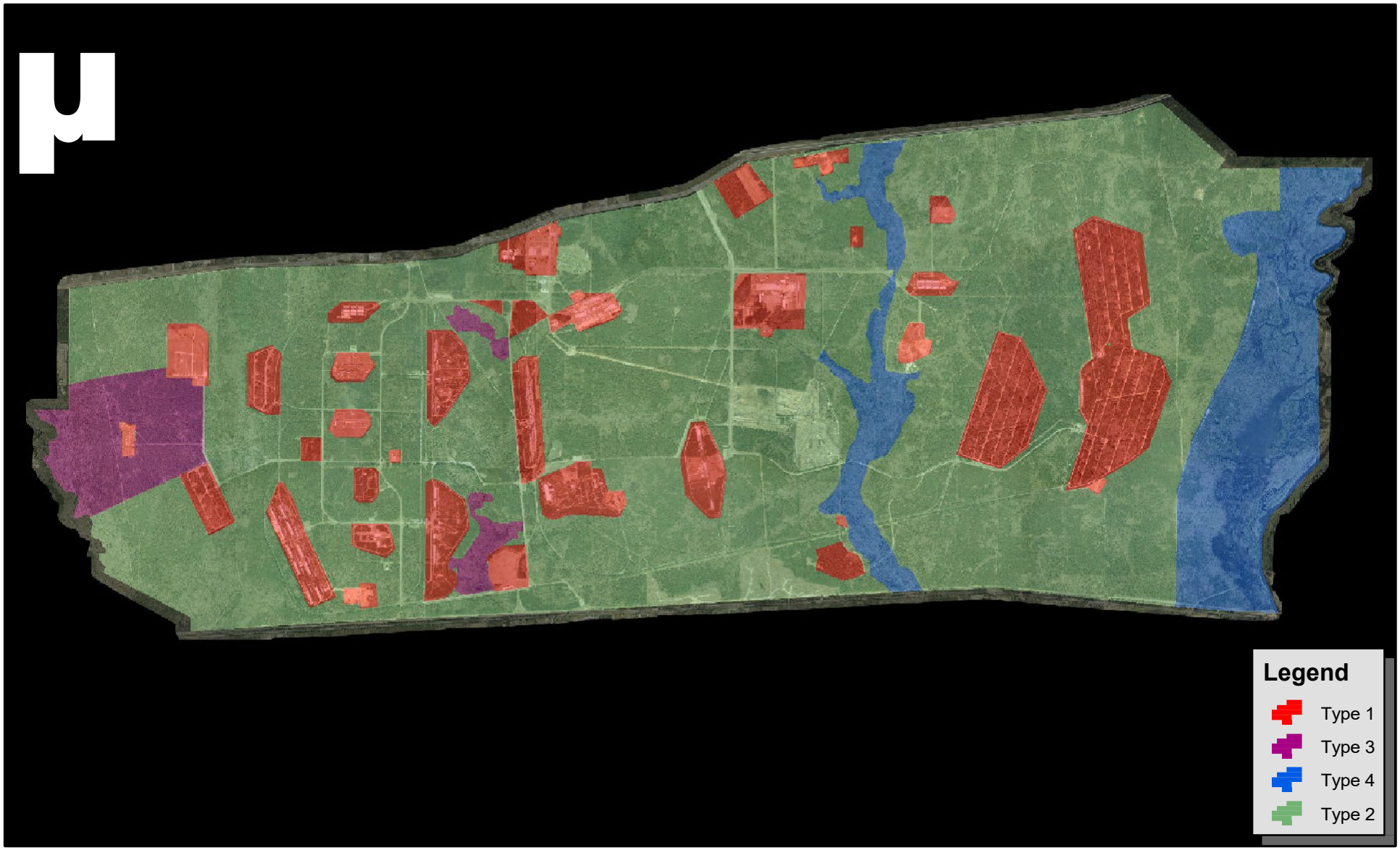
D.1.3 Camp Villere

Figure D-3 illustrates how Camp Villere lands are broken down based on this four-tiered classification system. Camp Villere historically existed under forest management practices that include intensive timber harvesting and the clearing of land. Type 2 lands on Camp Villere are typically comprised of a dense overstory dominated by loblolly pine and slash pine with an equally dense understory of shrubs and vines and sparse herbaceous ground cover. No Type 3 lands currently exist at Camp Villere. The two Natural Areas (East Perimeter Road and Bayhead Swamp) on Camp Villere are classified as Type 4 lands.

Table D-3. Breakdown of Land Classifications at Camp Villere

Type 1 (acres)	Type 2 (acres)	Type 3 (acres)	Type 4 (acres)
300	1,212	0	108

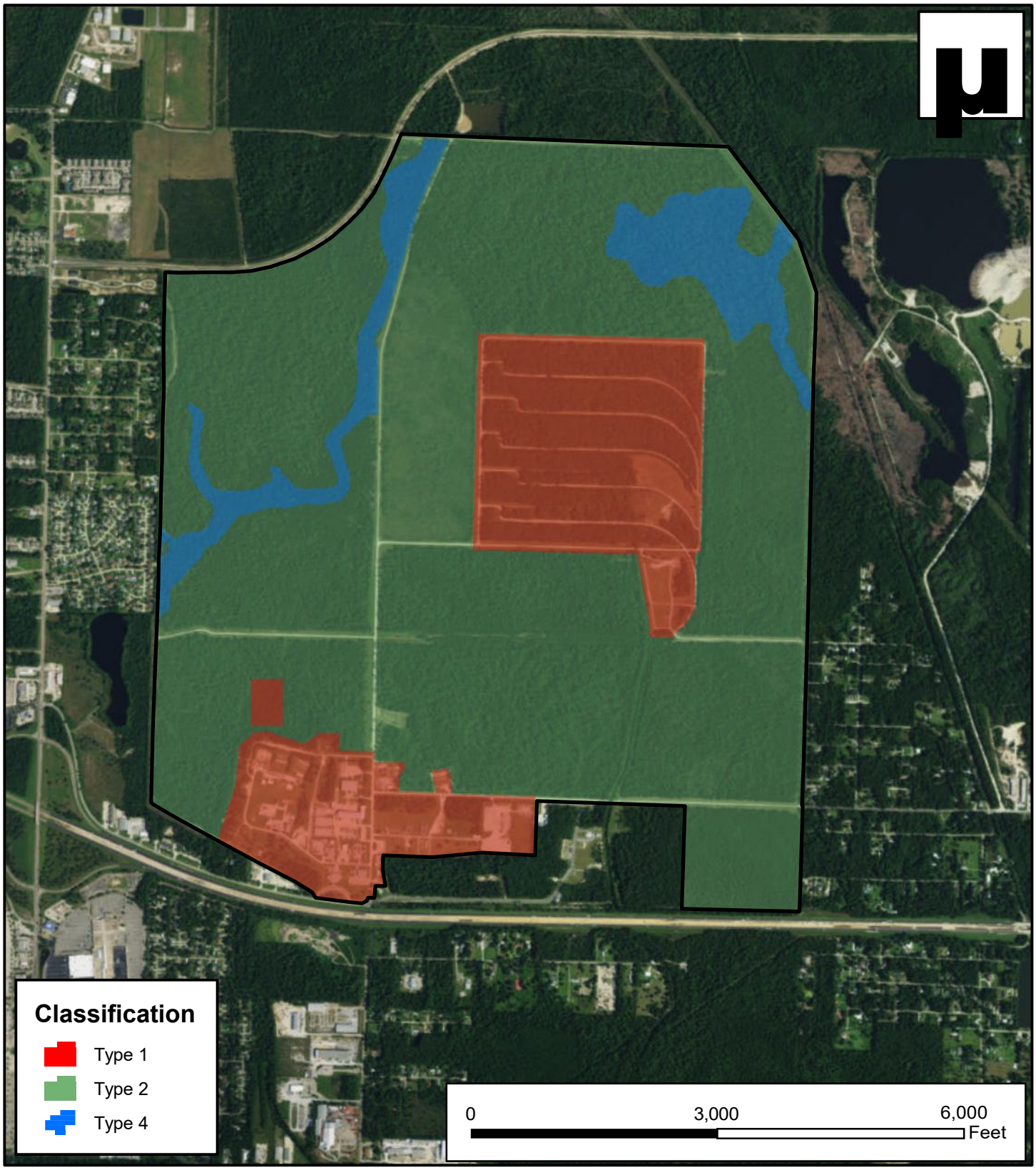
Figure D-2. Land Use Classifications at Camp Minden



Land Management Group, LLC.

Date: August 4, 2017

Figure D-3. Land Use Classifications at Camp Villere



Land Management Group, LLC.

Date: August 4, 2017

D.2 Current Potential Impacts

The LAARNG recognizes that a healthy and viable natural resources base is required to support the military mission. To be effective, the natural conditions of the training areas must be maintained to provide realism. Areas that are obviously degraded by previous training activity detract from the realism of the current training activity. This INRMP helps to ensure that environmental considerations are an integral part of planning activities and that natural resources are protected in accordance with Army regulations and policies.

Ongoing military operations performed at Camps Beauregard, Minden, and Villere in support of the LAARNG's mission alter the environmental setting and condition of the natural resources. The absence of long-term management measures to properly conserve and restore natural resources could impede the LAARNG's ability to continue to adequately train soldiers. Military training has impacts to the environment that are avoided and mitigated to ensure compliance with all environmental laws and regulations and to support sustainment of the military mission. Environmental damage can place other artificial constraints on training, such as the following:

- Loss of training acreage
- Decreased tactical maneuverability
- Increased land and natural resources maintenance costs
- Increased safety hazards
- Civil or criminal liability

Because the primary mission of the LAARNG is to conduct readiness training, promote survivability of soldiers, and provide combat-ready forces for worldwide deployment, any environmental initiatives and plans are generally considered secondary and should be managed so as not to inhibit meeting military requirements. Existing natural resources can influence the manner in which the LAARNG's mission is executed. Although natural resources provide a realistic training environment for meeting mission requirements, their existence also has the potential to limit certain military plans and activities. Therefore, not only is proper management of natural resources and their use by the military a sound environmental practice, but it also directly supports the LAARNG's mission to provide realistic training. This INRMP considers the effects of such natural resources on the mission. Examples of training activities and their effects on the environment, as well as examples of how degradation to natural resources adversely affects the military mission, are provided in **Table D-4.**

Table D-4. Mission Activities and their Potential Effects

Activity/Use	Potential Effect on Natural Resources	Potential Effect on Training/Combat Readiness
Vehicles operated off-road	• Degradation of soil, water, and vegetation • Erosion gullies • Soil compaction • Soil and water contamination from field maintenance	• Loss of training realism • Loss of camouflaging for vehicles and troop locations • Safety hazards in eroded areas • Contamination of soils could limit availability of training areas • Increased maintenance costs
Foxholes	• Soil displacement • Erosion; eroded soils unable to support vegetation	• Loss of training realism • Safety hazards in eroded areas
Bivouac areas	• Soil compaction and/or erosion • Loss of vegetation/forest understory and overstory	• Loss of training realism • Loss of camouflaging for vehicles and troop locations • Limit usable training areas
Cutting of vegetation for camouflage/field fortifications	• Wilting and discoloration of cut vegetation; contrasts with natural background • Eventual loss of vegetation	• Loss of training realism • Exposed fighting position • Dead vegetation is easy target for infrared radar
Field maneuvers/ range firing	• Soil compaction, erosion, and inversion • Loss of vegetation/forest understory and overstory • Wildfires from pyrotechnics, tracer ammunition, or shell detonation • Litter from ammunition brass, plastic paint ball containers, communication wire, concertina wire • Artillery training produces a heavy metals residue • Metal contamination of commercial timber stands	• Accidental fires result in loss of usable training areas • Loss of training realism • Immobilized vehicles mired in mud • Potential administrative restrictions as a result of disturbance to federally protected species or habitat

D.3 Potential Future Impacts

Any changes to training intensity or frequency could adversely impact natural resources and must be properly planned to ensure damage to natural resources is minimized to the extent possible. These effects could range from very minor to major. These changes will influence natural resources and the challenges of managing these resources to meet growing regulatory and stewardship requirements.

Impacts of the future military mission on the installation's natural resources are expected to be similar to those experienced at the installation today, but to a greater extent with perhaps cumulative effects on ecosystem functionality, particularly in areas exposed to maneuver damage. The challenge for natural resources managers is to respond to these impacts with an equally effective environmental awareness program and damage minimization and mitigation program. If

this INRMP cannot accommodate future mission changes, the INRMP will be reconsidered and updated as required to meet increases to the mission.

D.4 Natural Resources Needed to Support the Military Mission

Camps Beauregard, Minden, and Villere provide a variety of training functions ranging from basic training to unit training for armored, infantry, and airborne divisions. The current primary training objective is to ensure that all individuals and units are totally prepared to perform their assigned missions in a combat situation. Emphasis is on crew, squad, platoon, company, and battalion collective training and live-fire exercises.

The installations' training facilities include maneuver/exercise areas, firing ranges, artillery firing points, drop zones, landing/pick-up zones, landing strips, and close-in training areas. All of these facilities are used in varying degrees of intensity in performing the overall mission requirements of the installation.

The forested areas of the installations make them favorable for light infantry maneuver training; tactical field training; and construction and maintenance of armor vehicle trails, fire breaks, roads, and armor maneuver areas. The dense forest cover provides concealment and provides space for light wheeled vehicles and light infantry (troops on foot) activities. The open areas provide plenty of space for firing ranges, construction of support facilities, heavy maneuver activity, bivouac sites, and space for helicopter pick-up zones and landing zones. The numerous creeks and bayous are essential for construction training of temporary bridges and low-water crossings. Direct and indirect fire ranges support weapons qualification, artillery firing, and other live-fire training requirements.

In addition, Camp Beauregard is home to the Army Aviation Support Facility #2 located on Esler Field. Open space is required for helicopter training activities. Helicopter activities at Esler Field include a training program to develop proficiency of the individual pilot and helicopter crew, section, platoon, company, and battalion operations, and activities supporting the infantry brigades. Specific training activities include tactical terrain flight training, touch-and-go operations, hovering, sling load, auto-rotation rappelling operations, heliport gunnery training, heliport test flights, and Nap of the Earth training.

The rapid-deployment mission of the LAARNG requires the highly mobile forces to maintain constant, wartime levels of readiness and proficiency. Being able to respond to a threat anywhere in the world requires realistic and intense training, which places increasing demands on the environment. Such readiness results only from receiving high-quality training that incorporates all mission elements and tasks. Maintaining the integrity of the natural resources on the training lands is essential to ensure that Camps Beauregard, Minden, and Villere can continue to provide high-quality, realistic training to the individuals and units that train there.

D.5 Natural Resources Constraints to Missions and Mission Planning

The SAIA requires that INRMPs provide for, "…no net loss in the capability of military installation lands to support the military mission of the installation" (16 USC §670 *et seq*.). This INRMP enables the installations to meet the requirements of the military mission within the limitations and legal restrictions of the baseline natural resources at Camps Beauregard, Minden, and Villere.

LAARNG personnel are determined to conduct the military training mission successfully and maintain sound environmental stewardship. There are restrictions on military activities due to the installations' legally mandated commitment to protect the environment. Environmental constraints at Camps Beauregard, Minden, and Villere, such as wetlands, dictate where and when certain types of activities can occur to ensure regulatory compliance and the long-term sustainability of natural resources on the installations. Installation personnel will manage environmental constraints to training activities by assigning site users a training site specific to the type of training or activity to be performed; brief them on any known restrictions in the area; and monitor them for compliance. Installation personnel will manage environmental constraints to other activities (*i.e.* facility maintenance, recreation) by briefing site users on any known restrictions in the area, and monitoring them for compliance.

Natural resources at Camps Beauregard, Minden, and Villere that have the ability to limit activity include wetlands/streams, Demonstration Areas, Natural Areas, threatened and endangered species, and cultural resources. Areas where activity should be limited are discussed below:

- Activities in and around streams and wetlands are limited because impacts such as filling, modifying, draining, or construction, could result in CWA violations. Streamside management zones and riparian buffers have been established to minimize wetland impacts. Any new projects or types of training in or around wetlands or streams must be coordinated with the CFMO-EM staff to ensure that actions comply with all applicable laws.

- Activities in and around the Demonstration Areas should be limited to promote ecological objectives and to ensure the growth of the native understory. Development and construction of new roads, trails, firebreaks, buildings, and bivouac sites is allowed after due consideration is given to minimize environmental impacts of activities required for military training purposes. Bivouac sites should be located near existing roads and moved periodically to allow the sites to naturally recover from the disturbance. Intensive military training activities (*i.e.* construction of buildings, paving activities) should be sited outside the Demonstration Areas if possible. Any new projects or types of training in or around the Demonstration Areas should be coordinated with the CFMO-EM staff.

- Activities in and around the Natural Areas should be limited to promote ecological objectives and to ensure the growth of the native understory. Because the majority of the acreage of the Natural Areas is also regulated by the CWA as forested wetlands, activities in these areas could result in CWA violations and carry more stringent restrictions. Only minimum impact training to include small unit infantry tactics, reconnaissance, terrain/map

analysis, escape and evasion, infiltration, land navigation, patrolling, training with simulated agents, engineer reconnaissance, firing range safety fans, and vehicle travel (light and heavy) on existing roads should occur. All motorized vehicles should be limited to existing roads. Any new projects or types of training in or around the Natural Areas should be coordinated with the CFMO-EM staff.

- Any new projects or type of training must be considered for potential threatened and endangered species impacts prior to implementing them.

- When fire danger is high, forest/fire personnel should be stationed near firing ranges to immediately respond to fires when they occur from gunnery activity. Fires that occur anywhere on the installation should be immediately reported to Range Control.

- All activities on the installations having the potential to affect cultural resources must be coordinated with the cultural resources staff to ensure strict compliance with the ICRMP.

D.6 Climate Change

The LAARNG understands that there is a potential for climate change, on a local level, to impact the ability of the military to sustain the training of soldiers. Any adverse change to the vegetation of the training area could impact the training areas, promoting noxious weed infestations, or compromising wildlife habitat, such as loss of roosting sites supporting migratory birds. LAARNG will support the development of a vulnerability assessment to better understand the potential impacts related to a changing climate. However, the abundance and distribution of species and habitats on LAARNG properties is too small in scale to address comprehensive climate change vulnerabilities. Therefore, LAARNG will look at existing regional plans, partnerships, or other reports that other agencies, universities, or non-profits are conducting in Louisiana or nearby states on assessing, developing, and implementing climate change adaptation strategies and incorporate management strategies as appropriate. In general, LAARNG will identify and implement sound natural resources strategies that provide benefits to the ecosystem, regardless of how climate changes occur.

Appendix E NATURAL RESOURCES PROGRAM MANAGEMENT

E.1 Ecosystem Management and Maintenance of Biodiversity

In 1994, the Office of the Under Secretary of Defense for Environmental Security issued a memorandum to all forces in the Department of Defense (DoD) to implement Ecosystem Management on DoD lands. Ecosystem management blends multiple-use needs, provides a consistent framework to manage installations, and ensures that the integrity of the system of DoD lands remains intact. DoD Instruction 4715.03 "Natural Resources Conservation Program" and DoD Manual 4715.03 "INRMP Implementation Manual", implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD control. The INRMP is the tool for implementing ecosystem management.

DoD Instruction 4715.03 defines an ecosystem as "a dynamic and natural complex of living organisms interacting with each other and with their associated physical environment". Ecosystem based management is a goal-driven approach to managing natural and cultural resources that supports present and future mission requirements; preserves ecosystem integrity; is at a scale compatible with natural processes; is cognizant of nature's timeframes; 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-based 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 people and their social and economic needs are a part of the whole.

Ecosystem management is not easily planned or measured. Many functions of an ecosystem take place on scales far larger and longer than most human activity, and the boundaries of an ecosystem are not easily defined. For the purposes of this INRMP, the property lines of Camps Beauregard, Minden, and Villere will function as a permeable border around a series of interconnected systems (forest, developed, wetland) which make up a whole, which is itself a part of a larger system. Management of the training sites must focus on the training sites, but must take into account the activities beyond the fence line, as well.

Camps Beauregard, Minden, and Villere have a variety of community types, including forest, grassland, riparian, and wetland areas, creating a high level of ecosystem diversity. The current patchwork of habitats has been created by the conjunction of past land use patterns, current military land use, and environmental gradients. All of the ecosystems on the installations will be managed, especially via the Forest Management Plan, Integrated Wildland Fire Management Plan, and Invasive Species Management Plan, to maintain or increase native biodiversity and to ensure that those systems continue to function fully.

E.1.1 Management Goals and Objectives

Goals:

- Maintain or improve ecosystem and habitat diversity
- Maintain or improve species diversity

- Protect unique communities

Objective 1a: Characterize the species composition, ecosystem health, and wildlife use of the natural communities.

Project 1: Conduct an installation-wide bird survey.
Project 2: Conduct an installation-wide mammal survey.
Project 3: Develop a monitoring program (database) to track overall ecosystem health, including wildlife and bird, vegetation, water quality, wetland, and invasive species monitoring, and other components deemed significant.

Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality.

Project 1: Continue the RTLA program on an annual basis.
Project 2: Eliminate to the extent practical and feasible invasive species on approximately 10 acres per year.
Project 3: Continue prescribed fire regime on as outlined in the Forest Management Plans (Beauregard and Minden only).

E.2 Fish and Wildlife Management

CFMO-EM personnel have identified the primary needs of the wildlife management program at Camps Beauregard, Minden, and Villere as increasing native species. Wildlife habitat management is targeted toward restoring the ecological health of the installations' lands. The primary goal of wildlife habitat management is the development and maintenance of an early- seccessional community of herbaceous vegetation that is diverse in both structure and composition in the pine dominated stands and adjacent non-forested areas. In hardwood dominated stands, the goal is the development and maintenance of a healthy forest community that provides an abundance of mast and a diverse herbaceous understory. These goals are being accomplished by an integrated approach that involves forest management, prescribed burning, supplemental plantings, unwanted vegetative control techniques, and eradication of invasive species.

Currently, there are no specific wildlife management activities conducted at Camps Beauregard, Minden, or Villere. Ecosystem management focuses on maintaining or improving the system as a whole; therefore, LAARNG policy is to manage animal species through manipulation of their habitat. Appropriate treatment of the ecosystem should benefit the species that utilize those habitats. However, further information about the species that are utilizing the installations will allow further enhancement of this INRMP for the benefit of wildlife species.

Current fish habitat management includes liming ponds, shoreline improvement, aquatic weed management, and spillway repair.

E.2.1 Management Goals and Objectives

The goals of the wildlife management program are to sustain indigenous wildlife species through the use of integrated ecosystem management principles while accommodating military training needs. Furthermore, wildlife resources and habitats for consumptive and nonconsumptive uses are

to be managed in compliance with federal and state laws (Sikes Act, Endangered Species Act, Clean Water Act, state laws), and U.S. Army regulations and guidance.

The LAARNG's approach to fisheries management places a high priority on habitat restoration aimed at creating ecosystems capable of producing self-sustainable populations of fish. Long- term increases in fishery quality at relatively low costs are achieved more effectively by implementing habitat improvement and protection measures. Costs for enhancing or rehabilitating fish stocks are controlled by implementing self-sustaining habitat and water quality protection measures. The goal of fisheries management is to provide quality fishing opportunities while maintaining a balanced and diverse aquatic ecosystem. The best long-term approach, as well as the most efficient use of resources for achieving this goal, is to establish and maintain the biological integrity of the water bodies (*i.e.* Flagon Bayou, Bayou Dorcheat). The inability of water bodies to provide sustainable populations is often the result of habitat degradation and poor water quality.

Goals:

- Restore and maintain indigenous wildlife and fish species through the use of integrated ecosystem management principles while accommodating military training needs.
- Improve wildlife habitat where possible through management of native communities and use of native species.
- Limit negative impacts on wildlife and fish or wildlife and fisheries management by training activities or land management.

Objective 2a: Collect and maintain updated and complete data on wildlife use.

See Section E.1.1, Objective 1a for planning level surveys.

Objective 2b: Manage habitats for all native species, not just game.

Project 1: Maintain native species vegetative buffers around water sources.

E.3 Hunting and Fishing Program

E.3.1 Camp Beauregard Management Goals and Objectives

Because the CBTS is designated as a WMA, the LDWF regulates its recreational use, primarily hunting. Wild turkey, white-tailed deer, northern bobwhite quail, mourning dove, wood duck, woodcock, squirrel, and eastern cottontail are hunted during restricted seasons. The LDWF has established special restrictions for use of the Camp Beauregard WMA. An annual permit is required as is checking in and out of self-clearing stations on a daily basis. Hunters must possess a photo identification, Hunter Certification (if applicable), and all required hunting licenses, including a WMA permit. Bag limits for all species are in accordance with the LDWF's Louisiana Hunting Regulations. Open hunting seasons are controlled by state and federal regulations and are coordinated with LAARNG programs and policy regulations.

Intensive surveys for wild turkey have not been conducted; however, the LDWF conducts a yearly polt count on the Camp Beauregard WMA. This is achieved using a voluntary reporting system based on public sightings.

Intensive surveys for white-tailed deer have not been conducted; however, the LDWF conducts an annual managed deer hunt on the Camp Beauregard WMA. Hunters are required to check inprior to hunting, and before exiting the WMA all hunters are required, at the check-in/out station, to record data on deer (weight, sex and date) and small game (species, sex, and date) harvested.

The LDWF has an ongoing northern bobwhite survey program at Camp Beauregard. Fall calling surveys for the northern bobwhite have been conducted annually by LDWF personnel since 1990. In addition, a six-week survey was conducted by LDWF personnel in the summer of 2001 and a four-week survey was conducted in the summer of 2007.

Because it is not part of the WMA, CFMO-EM personnel have developed a hunting program document for Esler Field, which outlines the rules, requirements, check in/out procedures, fees, hunting areas, schedule, etc. for use by hunters on the airfield. The Esler Field Hunting Program is overseen by the MWR Hunting Committee. The Esler Field Hunting Program permits hunting of white-tailed deer, dove, squirrel, raccoons, rabbits, hogs, and duck in accordance with season dates, laws, rules and regulations established by the LDWF. The only persons eligible/authorized to hunt on Esler Field are primary hunters who have applied for the lottery and have been selected for that hunting season. Primary hunters are defined as LAARNG members and LMD employees with a valid military/LMD identification card. One child under the age of 13 is allowed per primary hunter.

Specific bag limits for deer at Esler Field have been established. No hunter may harvest more than 3 bucks and 3 does in the hunting season. Bag limits for dove, squirrel, raccoon, rabbits, hogs, and ducks are in accordance with the LDWF's Louisiana Hunting Regulations.

The public is welcome to fish in the many waters of Camp Beauregard. At the current time, there are no planned activities to modify the fishing program on Camp Beauregard. No goals and objectives for the fishing program have been established at the time of this INRMP.

Goal:

- Provide quality and sustainable hunting opportunities by monitoring and managing populations of game species.

Objective 3a: Collect and maintain updated and complete data on game species on Camp Beauregard.

Project 1. Collect and analyze data from harvested game animals annually. Data for Camp Beauregard will be obtained from the LDWF.
Project 2. Collect and analyze data from LDWF's annual wild turkey polt count.
Project 3. Collect and analyze data from LDWF's annual northern bobwhite quail survey.

E.3.2 Camp Minden Management Goals and Objectives

CFMO-EM personnel have developed a hunting program document for Camp Minden, which outlines the rules, requirements, check in/out procedures, fees, hunting areas, schedule, etc. for use by hunters on the installation. The Camp Minden Hunting Program permits hunting of white- tailed deer, dove, squirrel, duck, and rabbit in accordance with season dates, laws, rules and

regulations established by the LDWF. The only persons eligible/authorized to hunt on Camp Minden are primary hunters and their guests. Primary hunters are defined as LAARNG members, GOCO retirees, and LMD employees (including LAARNG retirees), immediate dependents of primary hunters, and tenants. Primary hunters are allowed to bring one guest per hunt. Open hunting seasons are controlled by state and federal regulations and are coordinated with LAARNG programs and policy regulations.

Specific bag limits for deer at Camp Minden have been established. No hunter may harvest more than 2 bucks during the hunting season. At least one buck must have four points on one side. Camp Minden Primary/Guest hunters will be allowed to harvest 3 does during the hunting season. Bag limits for squirrel, dove, rabbits, and ducks are in accordance with the LDWF's Louisiana Hunting Regulations.

Camp Minden's hunting program focuses on a variety of species including upland game birds, small game, big game, furbearers and migratory waterfowl.

At the current time, there are no "open-to-the-public" fishing areas at Camp Minden, and none are proposed. Fishing on the installation for personnel and tenants is permitted year round. Camp Minden pond daily limits are as follows: 10 bass, only one of which may be over 16 inches; 15 pan fish; and 10 catfish per person. Bayou Dorcheat limits are in accordance with Louisiana Fishing Regulations. All fishermen are required to possess a Camp Minden hunting/fishing badge and are required to check in/out through LAARNG Wildlife Agents.

At the current time, there are no planned activities to modify the fishing program on Camp Minden. No goals and objectives for the fishing program have been established at the time of this INRMP.

Goal:

- Provide quality and sustainable hunting opportunities by monitoring and managing populations of game species.

Objective 3a: Collect and maintain updated and complete data on game species on Camp Minden.

Project 1. Collect and analyze data from harvested game animals annually.

E.2.3 Camp Villere Management Goals and Objectives

Because of the small size of the installation and the surrounding development, Camp Villere's hunting program focuses on white-tailed deer only. CFMO-EM personnel have developed a hunting program document for Camp Villere, which outlines the rules, requirements, check in/out procedures, fees, hunting areas, schedule, etc. for use by hunters on the installation. The Camp Villere Hunting Program permits hunting of white-tailed deer only in accordance with season dates, laws, rules and regulations established by the LDWF. The only persons eligible/authorized to hunt on Camp Villere are primary hunters and their guests. Primary hunters are defined as LAARNG members and LMD employees (including LAARNG retires). Primary hunters are allowed to bring one guest per hunt. Open hunting seasons are controlled by state and federal regulations and are coordinated with LAARNG programs and policy regulations.

Specific bag limits for deer at Camp Villere have been established. Primary hunters and guest hunters may harvest 5 deer during the hunting season. Hunters will be allowed 2 bucks and 3 does. No hunter will be allowed to harvest more than 3 does and 2 bucks during the hunting season.

There are no open "open-to-the-public" fishing areas on Camp Villere. At the current time, there are no planned activities to modify the fishing program on Camp Villere. No goals and objectives for the fishing program have been established at the time of this INRMP.

Goal:

- Provide quality and sustainable hunting opportunities by monitoring and managing populations of white-tailed deer.

Objective 3a: Collect and maintain updated and complete data on game species on Camp Villere.

Project 1. Collect and analyze data from harvested deer annually.

E.4 Water Resources Protection

The ecological and human health importance of maintaining healthy water bodies at Camps Beauregard, Minden, and Villere is reinforced by several federal and state laws and regulations. In addition, AR 200-1 (*Environmental Protection and Enhancement*) promotes the importance of maintaining healthy water resource systems on the installation.

The riparian ecosystem – the land adjacent to the streams and wetlands – is extensive on Camps Beauregard, Minden, and Villere. They include Flagon Bayou and Clinton Branch on Camp Beauregard, Bayou Dorcheat and Clark Bayou on Camp Minden. These ecosystems consists primarily of mixed bottomland hardwood forests. Riparian areas serve as the interface between aquatic and terrestrial ecosystems. They serve as valuable wildlife habitat and corridors, promote streambank stabilization, trap sediments and nutrients, filter runoff water, and help to moderate flooding.

The primary goal of water resources management is to protect the water quality of the installations' waters and wetlands. Activities that disturb soil, including natural resources management activities, have the potential to negatively affect water quality. However, general best management practices (BMPs) are used during natural resource management and other activities that could potentially affect water resources to prevent the introduction of contaminants to the waters.

E.4.1 Management Goals and Objectives

Limited military training activities occur within riparian areas. For much of the year, the natural water table level makes the areas too wet for vehicle or troop movement. Stream crossings by vehicles and troops on foot are only permitted at designated bridged or culverted sites.

The LAARNG will maintain riparian habitats along streams by implementing at minimum a 100 foot riparian buffer zone on either side of every creek (also called a Streamside Management Zone [SMZ]) in which vegetation and soil disturbance will be avoided. Authorization must be obtained

before conducting maintenance or construction activities within an SMZ. Foot traffic through riparian areas is not regulated, but vehicles will be kept to established roads and trails.

The riparian habitat is variable in size. While the restricted-activity SMZ is 100-foot on either side of the waterway, the actual riparian area typically extends much further beyond the streambank. All areas of bottomland hardwood forest should be considered to be within the riparian zone, and care should be taken to minimize impacts on water and habitat quality.

Protecting and improving the water quality in the surface waters of Camp Minden is especially important because Bayou Dorcheat is designated as a Louisiana Natural and Scenic River. This river system provides important fish, wildlife, and floral habitat unlike any other in Webster Parish in addition to providing aesthetic, scenic, and recreational opportunities to the local community.

Goals:

- Protect and rehabilitate vegetative buffers on waterways.
- Minimize nutrient and sediment inputs from watersheds.
- Minimize non-point source pollution in watersheds through use of BMPs.
- Incorporate watershed management concerns into training and land management planning.

Objective 4a: Improve knowledge of existing riparian areas and their conditions.

Project 1: Establish regular surveys of streams to identify and prioritize degraded or eroded areas requiring rehabilitation as part of installation-wide erosion surveys (see **Section E.6**).

Objective 4b: Implement and enforce effective buffers in riparian areas.

Project 1: Educate troops, management staff, and others on the importance of SMZs, the limitations to their use, and any regulatory or permitting issues involved with activities within riparian corridors.

E.5 Wetland Protection

The overall management goal for wetlands is to have no net loss of wetland acreage, function, or value. This includes avoiding impacts insofar as possible and mitigating impacts through replacement, restoration, and/or recreation of proximate wetland systems when impacts are unavoidable.

Vegetative buffers around wetlands provide protection from erosion and sedimentation. In order to reduce the risk to wetlands, activity-free buffer zones have been established. At a minimum, buffers will be 100 feet wide to provide protection. Only limited training activities shall occur in these buffer zones, to include dismounted foot traffic. No vehicle traffic or construction is permitted. Vehicles will only cross at bridges or established, permitted, and designated hardened crossing areas. If additional crossings are needed or training needs cannot be met while avoiding the wetland buffer zones, CFMO-EM personnel will propose a solution or alternative prior to any buffer zone disturbance.

Installation personnel must contact CFMO-EM personnel prior to dredging, filling or earth moving activities near wetlands. CFMO-EM personnel will assess whether a wetland could be impacted, whether a jurisdictional wetland delineation is required, and what permits need to be obtained to comply with all federal and state regulations. Non-permitted impacts to wetlands and/or floodplains may result in CWA violations, potentially resulting in fines and other penalties, which may ultimately compromise the integrity of the LAARNG.

E.5.1 Management Goals and Objectives

Camps Beauregard, Minden, and Villere have extensive wetland areas. Wetlands are of extreme importance for their chemical and sediment filtration functions as well as providing habitat for many species. A 100-foot buffer zone will be established surrounding wetland areas. Limitations for use of the buffer zone will be the same as those for an SMZ: foot traffic unrestricted; vehicles restricted to existing roads; authorization required for soil-disturbing maintenance or construction efforts.

Activities occurring in or adjacent to wetlands that would result in negative impacts will be avoided, when possible, in a manner consistent with mission objectives. Where impacts on wetlands are not avoidable, impacts will be minimized as much as possible and/or mitigation of the impacts will be implemented. The USACE Vicksburg District (Beauregard and Minden) or the USACE New Orleans District (Villere) is the regulatory authority over all waters of the U.S., including wetlands. Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits for the discharge of dredged or fill material into Waters of the United States, including wetlands. These permits require that activities be undertaken in such a way that impacts to streams or wetlands are avoided or mitigated.

Goals:

- Minimize operational impact of the military mission on wetlands.
- Maintain functional, healthy wetlands that are resilient to minor, inadvertent encroachments and impacts.
- Manage for no net loss of wetland acreage, function, or value.

Objective 5a: Implement and enforce effective buffers around wetlands areas.

Project 1: Identify areas surrounding wetlands that require a vegetative buffer or filterstrip (or repair thereof) for protection.

Project 2: Educate troops, management staff, and others on the importance of buffers, the limitations to their use, and any regulatory or permitting issues involved with activities in the vicinity of wetlands.

E.6 Soil Erosion Control Management

Erosion and sedimentation can negatively impact waterways and delay or obstruct training maneuvers. Common erosion problems include sheet, rill, and gully erosion on roads, training ranges, tank trails, and firebreaks. Of particular concern are areas where sediment is reaching larger waterbodies and where culverts have been removed and water is passing over dirt roads during and after rain events.

The most recent Erosion Control and Site Restoration Plan for Camp Beauregard was developed in 2000 to provide solutions to resource concerns associated with soil erosion and sedimentation. Identified in the Plan were 21 sites that were in need of rehabilitation in order to reduce the amount of soil movement that was currently occurring. The Plan identified specific areas of erosion concern, prioritized the areas according to the level of erosion correction and prevention effort needed, and provided methods for reducing erosion and sediment runoff. All 21 sites have been rehabilitated. A new plan has not been completed.

The current Soil Erosion Control and Site Restoration Plan for the Camp Minden was developed in 2000 to provide solutions to resource concerns associated with soil erosion and sedimentation. Identified in the Plan were 44 sites that were in need of rehabilitation in order to reduce the amount of soil movement that was currently occurring. The Plan identified specific areas of erosion concern, prioritized the areas according to the level of erosion correction and prevention effort needed, and provided methods for reducing erosion and sediment runoff. All 44 sites have been rehabilitated. A new plan has not been completed.

Camp Villere currently lacks a Soil Erosion Control and Site Restoration Plan. Development of a plan is a goal for the LAARNG. The plan would identify specific areas of erosion concern, prioritize the areas according to the level of erosion correction and prevention effort needed, and provide methods for reducing erosion and sediment runoff.

E.6.1 Management Goals and Objectives

Soil erosion represents a threat to the long-term sustainability of the training lands. Impacts from training and neglect can reduce and in some cases eliminate the vegetative cover. Most of the problems associated with soil erosion on the installations occur in areas where vegetation has been removed or disturbed on steep slopes, or on long, moderately steep slopes, primarily associated with timber harvesting activities. Objectives of soil conservation and management are to avoid disturbance of soils that are considered to be moderately or severely susceptible to erosion. Where these areas are disturbed, they will be stabilized and repaired in a timely manner to avoid the development of excessively eroded sites. Installation sources of erosion and sedimentation, runoff, and dust will also be controlled to prevent damage to land, water resources, equipment, and facilities on both the installation and adjacent properties.

Goals:

- Identify areas of eroded soils and rehabilitate existing erosion problems.
- Minimize the development of erosion and sedimentation problems on the training land.
- Prevent soil erosion and its potential impacts on water quality, habitat, and mission objectives

Objective 6a: Identify and rehabilitate degraded and eroding training land.

Project 1: Conduct annual installation-wide surveys to identify areas that are in need of rehabilitation in order to reduce the amount of soil movement that is currently occurring and prioritize degraded or eroded areas requiring rehabilitation.

Project 2: Update the Camp Beauregard and Camp Minden Soil Erosion Control & Restoration Plan based on surveys and past remedial activities. Develop a Camp

Villere Soil Erosion Control & Restoration Plan based on surveys and past remedial activities.

Project 3: Repair erosion problems as identified. Areas degraded by military training and/or other land use will be returned to pre-training conditions where at all possible. The rehabilitation effort will use locally native species and will identify and eliminate the underlying cause of the erosion where possible.

Project 4: Develop training for soldiers, commanders, and planners in BMPs and their applicability to LAARNG actions to diminish the risk of erosion problems developing from future activities.

E.7 Outdoor Recreation

Camp Beauregard

Because the CBTS is designated as a WMA, the area is generally open to the public. The training area is open to public recreation provided those activities do not conflict with the military mission. Camp Beauregard Range Control and LDWF controls recreational access to all training areas and may close training areas to public recreation at any time for safety or training purposes. The live-fire training area may be accessed only after authorization is received from Range Control.

Although much of the demand for outdoor recreation by local residents and citizens of Pineville and Alexandria is satisfied by the proximity of the Catahoula Ranger District of Kisatchie National Forest, several thousand hunter-days are spent each year on Camp Beauregard. The Camp Beauregard WMA encompasses over 12,000 acres; however, all or portions of the WMA may be closed daily due to military activity. In spite of the constraints placed upon potential users of the Camp Beauregard WMA and the relatively low population levels of the most highly prized game species, Camp Beauregard WMA is considered an important recreational outlet for local residents.

Camp Beauregard's primary goal for supporting recreational opportunities is to ensure that the natural resources maintain their ecological integrity and that the recreational pursuits do not adversely affect the military mission or natural resources. No goals and objectives for outdoor recreation at Camp Beauregard have been established at the time of this INRMP.

Camp Minden

At Camp Minden, public recreation is regulated and limited in scope. Additional limitations on public access have been established due to hazards related to training activities, sensitive materials in use by tenants of LAAAP (*i.e*. black powder manufacturers), and past munition production at the LAAAP. All of these are potential hazards to outdoor recreationists on foot or in a vehicle. For this reason, public access to the training site is controlled by secured gates.

At the current time, there are no "open-to-the-public" outdoor recreation opportunities, and none are proposed. Outdoor recreation on Camp Minden is currently limited to fishing and hunting (personnel and tenants only); however, proposed future development includes an RV park, Bayou Dorcheat Boat Launch and Pavilion, and baseball/softball field.

Camp Minden's primary goal for supporting recreational opportunities is to ensure that the natural resources maintain their ecological integrity and that the recreational pursuits do not adversely

affect the military mission or natural resources. No goals and objectives for outdoor recreation at Camp Minden have been established at the time of this INRMP.

Camp Villere

At the current time, there are no "open-to-the-public" outdoor recreation opportunities at Camp Villere, and none are proposed. Outdoor recreation on Camp Villere is currently limited to fishing and hunting (personnel only).

Camp Villere's primary goal for supporting recreational opportunities is to ensure that the natural resources maintain their ecological integrity and that the recreational pursuits do not adversely affect the military mission or natural resources. No goals and objectives for outdoor recreation at Camp Villere have been established at the time of this INRMP.

E.8 Off-Road Vehicle Use

All-terrain vehicles (ATVs) are permitted on improved roads, logging roads, cleared rights-of-way, and marked ATV trails. ATVs must have at least 3 wheels. Operation of ATVs on paved roads/streets is prohibited. All other off-road, public vehicle use is prohibited.

At the current time, there are no planned activities to modify ATV use on the installations. No goals and objectives for off-road vehicle use have been established at the time of this INRMP.

E.9 Enforcement

Camp Beauregard

LDWF Game Wardens are responsible for the enforcement of the laws and regulations pertaining to natural resources on the Camp Beauregard WMA, including enforcement of threatened and endangered species, fish and wildlife laws, and established harvest quotas. Game Wardens also enforce requirements related to access to the training lands. Camp Beauregard Military Police routinely patrol the CBTS but are primarily responsible for enforcing the laws within the cantonment area and Esler Field.

The LDWF is responsible for the enforcement of the laws and regulations pertaining to natural resources on the Camp Beauregard WMA, including enforcement of hunting, fishing, and environmental statutes and regulations. No changes in enforcement are proposed at Camp Beauregard, and no goals and objectives have been established at the time of this INRMP.

Camp Minden

Camp Minden Military Police and government contracted security personnel patrol the installation and are solely responsible for the enforcement of the laws and regulations pertaining to natural resources on the Camp Minden, including enforcement of hunting, fishing, and environmental statutes and regulations. No changes in enforcement are proposed at Camp Minden, and no goals and objectives have been established at the time of this INRMP.

Camp Villere

Camp Villere Military Police routinely patrol the installation and are solely responsible for the enforcement of the laws and regulations pertaining to natural resources on the Camp Villere, including enforcement of hunting, fishing, and environmental statutes and regulations. No changes in enforcement are proposed at Camp Villere, and no goals and objectives have been established at the time of this INRMP.

Appendix F MANAGEMENT OF THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) requires all federal agencies to conserve listed species. Conservation, as defined by the ESA, means the use of all methods and procedures necessary to bring any listed species to the point where protections pursuant to the ESA are no longer necessary.

Army policy on listed species includes the following elements: balancing mission requirements with endangered species protection, cooperating with regulatory agencies, and conserving biological diversity within the context of the military mission. As required by AR 200-1, the Army must ensure that it carries out mission requirements in harmony with the requirements of the ESA. All Army land uses, including military training and testing, recreation, and grazing, are subject to ESA requirements for the protection of listed species and critical habitat. In fulfilling its conservation responsibilities, the Army is required to work closely and cooperatively with the USFWS and National Marine Fisheries Service (NMFS), the two federal agencies responsible for enforcing the act. Installations are encouraged to engage in informal consultation with the USFWS and NMFS during the planning of projects or activities to ensure ESA compliance. In conserving biological diversity, installation commanders and Army natural resource managers are required to develop and implement policies and strategies to maintain viable populations of native plants and animals, maintain natural genetic variability within and among populations, maintain functioning representations of the full spectrum of ecosystems and biological communities, and integrate human activities with the conservation of biological diversity.

The Army requires installations to prepare ESMPs for each listed species and species proposed for listing and the critical habitat present on the installation, including areas used by tenant organizations.

Identifying and documenting the location of listed, proposed, and candidate species on an installation is crucial to effectively balancing mission and conservation requirements. Failure to properly inventory listed and proposed species can lead to violation of the ESA and costly disruption of military operations and construction activities upon discovery of such species.

Information regarding threatened and endangered species on Camps Beauregard, Minden, and Villere was compiled from several years of natural resource and endangered species inventories and research. Personnel from the LAARNG, USFWS Lafayette Field Office, LDWF, and TNC provided published and unpublished documents regarding the distribution and abundance of threatened and endangered species on the installations.

The primary goals of the endangered species program at Camps Beauregard, Minden, and Villere are to conduct installation-wide surveys every 10 years and update the ESMP and this INRMP with the survey data. Should any listed threatened or endangered species be found, this INRMP will be updated to include management, and the USFWS will be notified immediately.

F.1 Camp Beauregard

The current Endangered Species Management Plan (ESMP) for Camp Beauregard was updated and finalized in January 2012. The ESMP was prepared for all federally listed threatened and endangered species of potential occurrence on Camp Beauregard as required by AR 200-1. A copy of the ESMP can be obtained from the LAARNG's Natural Resource Specialist.

As of May 2016, the USFWS lists three species which could potentially occur on Camp Beauregard based on habitat requirements.

Table F-1. Federally Listed Species of Potential Occurrence on Camp Beauregard

Common Name	Scientific Name	Federal Status	Potential for Occurrence on CBTS/Esler Field
Red-cockaded woodpecker	*Picoides borealis*	E	Moderate
Louisiana Pearlshell Mussel	*Margaritifera hembeli*	T	Moderate
Northern long-eared Bat	*Myotis septentrionalis*	T	Moderate

Legend: E – Endangered; T – Threatened
Source: USFWS 2016.

Red-cockaded Woodpecker (RCW)

No documentation exists for the historical occurrence of RCWs on Camp Beauregard, and there are no active RCW cluster sites on Camp Beauregard at present. Four inactive cavity trees were identified by TNC during surveys in 1999 and in subsequent annual surveys within the Longleaf Glade Demonstration Area (see **Appendix C.5**). Based on the condition of the cavity trees, TNC determined that the trees have not been active since at least 1985. Only three of the four trees were located during surveys conducted in 2004, and only two of the four trees were located during annual surveys conducted from 2006 to 2016. It is reasonable to assume that the trees either fell as a result of death, from the effects of Hurricane Rita in 2005, or a combination of both. During the 2010 surveys, it was determined that one of the remaining trees is also dying.

As a result of the potential dispersal of RCWs from the adjacent Catahoula Ranger District, Camp Beauregard personnel, in conjunction with the USFWS and TNC, established four Longleaf Pine Demonstration Areas (see **Appendix C.5**) that are actively being managed for RCW. By managing these areas, the likelihood of reestablishing RCWs on Camp Beauregard increases. Because the establishment of RCWs on Camp Beauregard may affect military training in the future, the USFWS and the LMD entered into a "Section 7/Safe Harbor Agreement", which relieves the LMD of any management responsibility should RCWs become reestablished on Camp Beauregard, with the stipulation that the Longleaf Pine Demonstration Areas be managed as per USFWS guidelines. A copy of the Safe Harbor Agreement and subsequent USFWS Biological Opinion can be obtained from CFMO-EM personnel. Because there are no RCWs on Camp Beauregard, no numbers of incidental take have been established; therefore, the level of take authorized by the Safe Harbor Agreement is all RCWs within the boundaries of Camp Beauregard.

Per requirements outlined in the Section 7/Safe Harbor Agreement, the LAARNG conducts annual surveys within the Longleaf Pine Demonstration Areas and provides the USFWS with annual survey reports. These areas are surveyed according to the methods outlined by Henry (1989) which

include running line transects to look for cavity trees and the collection of detailed stand data. No active cavity trees or individual specimens have been found during field surveys. The Longleaf Pine Demonstration Areas are the only areas suitable for RCWs on Camp Beauregard.

Louisiana Pearshell

There is no documentation to support the known occurrence of the Louisiana pearlshell on Camp Beauregard. The Louisiana pearlshell is found mostly in free flowing waters at a depth ranging from 12 to 20 inches on sand and gravel substrates. This species requires clear, moderately-swift flowing, perennial streams having a stable mineral substrate, such as sandy bottoms with rocky outcrops (USFWS 2006). The surrounding forest is mixed hardwood-loblolly pine with a typical canopy closure of 75 to 100 percent (LNHP 1985). All known locations of this species are from the Evangeline and Catahoula Ranger Districts of Kisatchie National Forest. The nearest known population of the Louisiana pearlshell to Camp Beauregard is approximately six miles east of Camp Beauregard.

The LAARNG conducted installation-wide surveys at Camp Beauregard for Louisiana pearlshell in 2002, 2011, and most recently in 2015 in all streams with potentially suitable habitat, and no Louisiana pearlshells were found on Camp Beauregard. Therefore, no ongoing management activities occur or are proposed for this species.

Northern Long-Eared Bat

The northern long-eared bat was listed as threatened in April 2015 (80 FR 17974), and as a result, was not included in the 2012 ESMP. As a result of ongoing consultation with the USFWS Lafayette Field Office, the LAARNG is in the process of performing acoustic surveys on Camp Beauregard. The USFWS has recommended that the LAARNG monitor for the northern long-eared bat and perform acoustic surveys to record baseline data regarding species presence. The purposes of this survey is to examine overall bat species composition, relative abundance of individuals and activity with an emphasis on the northern long-eared bat and to identify northern long-eared bat foraging and roosting habitats. Results of these surveys are pending.

Designated Critical Habitat

There is no USFWS designated critical habitat on Camp Beauregard.

State Rare Species

The LNHP maintains lists of rare species within the State. This list includes species whose occurrence in Louisiana is or may be in jeopardy, or with known or perceived threats or population declines. Currently there are 31 animal species and 33 plant species listed in Grant and Rapides Parishes. The following table provides a complete list.

Table F-2. Rare Species of Grant and Rapides Parishes

Scientific Name	Common Name	State Rank	Parish(es)
Rare Animal Species			
Accipiter cooperii	Cooper's Hawk	S2B,S3N	Grant
Aimophila aestivalis	Bachman's Sparrow	S3	Grant, Rapides
Canis rufus	Red Wolf	SX	Grant
Chaetodipus hispidus	Hispid Pocket Mouse	S2	Rapides
Cycleptus elongatus	Blue Sucker	S3	Rapides

Scientific Name	Common Name	State Rank	Parish(es)
Faxonella creaseri	Ouachita Fencing Crawfish	S2	Rapides
Grus canadensis	Sandhill Crane	S2N	Rapides
Haliaeetus leucocephalus	Bald Eagle	S3	Rapides
Helmitheros vermivorus	Worm-eating Warbler	S3B	Rapides
Lampsilis satura	Sandbank Pocketbook	S2	Rapides
Leuctra szczytkoi	Schoolhouse Springs Leuctran Stonefly	S1	Grant, Rapides
Macrochelys temminckii	Alligator Snapping Turtle	S3	Grant, Rapides
Margaritifera hembeli	Louisiana Pearlshell	S1	Grant, Rapides
Mustela frenata	Long-tailed Weasel	S3	Rapides
Obovaria jacksoniana	Southern Hickorynut	S1S2	Rapides
Orconectes blacki	Calcasieu Painted Crawfish	S1	Rapides
Orconectes hathawayi	Teche Painted Crawfish	S3	Rapides
Orconectes maletae	Kisatchie Painted Crawfish	S2	Rapides
Pandion haliaetus	Osprey	S3	Grant, Rapides
Picoides borealis	Red-cockaded Woodpecker	S2	Grant, Rapides
Pituophis ruthveni	Louisiana Pine Snake	S2	Grant, Rapides
Plethodon kisatchie	Louisiana Slimy Salamander	S1	Grant, Rapides
Plethodon serratus	Southern Red-Backed Salamander	S1	Rapides
Pleurobema riddellii	Louisiana Pigtoe	S1S2	Rapides
Polyodon spathula	Paddlefish	S4	Rapides
Procambarus jaculus	Javelin Crawfish	S1	Rapides
Pteronotropis hubbsi	Bluehead Shiner	S2	Rapides
Sitta carolinensis	White-breasted Nuthatch	S2	Grant
Sterna antillarum athalossos	Interior Least Tern	S4BT1	Grant, Rapides
Strophitus subvexus	Southern Creekmussel	S1	Rapides
Strophitus undulatus	Squawfoot	S2	Rapides
Rare Plant Species			
Agalinis skinneriana	Skinner's purple false foxglove	S1S2	Grant
Amsonia ludoviciana	Louisiana Blue Star	S3	Grant, Rapides
Burmannia biflora	Northern Burmannia	S3	Grant, Rapides
Calopogon oklahomensis	Oklahoma Grass-pink	S1	Grant
Camassia scilloides	Atlantic Camas	S3	Rapides
Carex decomposita	Cypress-knee Sedge	S3	Grant
Carex meadii	Mead's Sedge	S3	Grant, Rapides
Carex microdonta	Little Tooth Sedge	S3	Grant, Rapides
Carex stricta	Tussock Sedge	SH	Grant
Cypripedium kentuckiense	Southern Lady's-slipper	S1	Grant, Rapides
Dichanthelium strigosum var. glabrescens	Roughhair Witchgrass	S1	Grant, Rapides
Dichanthelium strigosum var. leucoblepharis	Roughhair Witchgrass	SH	Grant
Dryopteris ludoviciana	Southern Shield Wood-fern	S2	Grant, Rapides
Dulichium arundinaceum	Three-way Sedge	S2	Rapides
Euphorbia discoidalis	Summer Spurge	S1	Rapides
Fuirena simplex var. aristulata	Western Umbrella Sedge	S1	Rapides
Heliotropium tenellum	Slender Heliotrope	S2	Grant
Houstonia purpurea var. calycosa	Purple Bluet	S2	Grant
Hexalectris spicata	Crested Coral-root	S2	Rapides
Lobelia flaccidifolia	Coastal Plain Lobelia	S2?	Grant, Rapides

Scientific Name	Common Name	State Rank	Parish(es)
Mayaca fluviatilis	Bog Moss	S2	Rapides
Melanthera nivea	Snow Melanthera	S2	Rapides
Oenothera pilosella ssp. sessilis	Meadow Evening Primrose	S1?	Rapides
Orobanche uniflora	Broomrape	S1	Rapides
Panicum flexile	Wiry Witchgrass	S2	Grant
Pteroglossaspis ecristata	A Wild Coco	S2	Grant
Quercus rubra	Red Oak	S1S3	Rapides
Rhynchospora miliacea	Millet Beakrush	S2	Rapides
Schisandra glabra	Scarlet Woodbine	S3	Rapides
Schoenoplectus etuberculatus	Bulrush	S1	Rapides
Stewartia malacodendron	Silky Camellia	S2S3	Grant
Triphora trianthophora	Nodding Pogonia	S2	Rapides
Uvularia sessilifolia	Sessile-leaved Bellwort	S2	Grant

Legend:
S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation
S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation
S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding
SH = of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting
SX = believed to be extirpated from Louisiana
Source: LDWF 2017.

The extent of these species on Camp Beauregard is unknown. The last state species surveys conducted on Camp Beauregard were by TNC in 1994-1995. At that time, Bachman's sparrow, worm-eating warbler, and Louisiana slimy salamander were identified. Although not identified, TNC concluded that there was a high probability that Louisiana pine snake could occur at Camp Beauregard because the species is known to occur in the vicinity (*i.e.* Kisatchie National Forest) and suitable habitat is available.

F.1.1 Management Goals and Objectives

To date, no federally listed threatened or endangered species have been found on Camp Beauregard. The extent of state rare species on Camp Beauregard is unknown since the last surveys were conducted in 1994-1995. If any protected species are identified on Camp Beauregard, a management program will be developed in cooperation with the USFWS and the LAARNG.

Goals:

- Maintain accurate information about threatened and endangered species status on Camp Beauregard
- Maintain native plant communities that might support state and federal rare, threatened, or endangered species
- Cooperate with the USFWS and the LDWF
- Ensure that Camp Beauregard remains in compliance with the Endangered Species Act

Objective 7a: Monitor communities that could support threatened and endangered species on Camp Beauregard.

Project 1: Complete ongoing installation-wide survey of northern long-eared bat.

Project 2: Perform an installation-wide survey for federal threatened and endangered species every 10 years. Surveys were completed in 2015; re-survey is scheduled for 2025. Should any listed species be identified, the ESMP and INRMP will promptly be updated to incorporate protection guidelines, restrictions, and species monitoring criteria. The USFWS and LDWF will immediately be contacted.

Project 3: Perform RCW surveys within the Longleaf Pine Demonstration Areas annually per requirements outlined in the Section 7/Safe Harbor. Provide the USFWS and LDWF an annual survey report.

Project 4: Request annual updates and monitor population trends and distribution patterns of RCW clusters within the adjacent lands of the Catahoula Ranger District of Kisatchie National Forest.

Project 5: Conduct surveys for state rare species in areas of potential habitat. Incorporate survey results into the ESMP and INRMP.

Project 6: Educate troops, management staff, and others on potential state and federal threatened and endangered species and their habitats on Camp Beauregard.

F.2 Camp Minden

The current ESMP for Camp Minden was updated and finalized in January 2012. The ESMP was prepared for all federally listed threatened and endangered species of potential occurrence on Camp Minden as required by AR 200-1. A copy of the ESMP can be obtained from the LAARNG's Natural Resource Specialist.

As of May 2016, the USFWS lists two species which could potentially occur on Camp Minden based on habitat requirements.

Table F-3. Federally Listed Species of Potential Occurrence on Camp Minden

Common Name	Scientific Name	Federal Status	Potential for Occurrence on Camp Minden
Red-cockaded woodpecker	*Picoides borealis*	E	Low
Northern long-eared Bat	*Myotis septentrionalis*	T	Moderate

Legend: E – Endangered; T – Threatened; C –Candidate
Source: USFWS 2016.

Red-cockaded Woodpecker (RCW)

No documentation exists for the historical occurrence of RCWs on Camp Minden, and there are no active RCW cluster sites on Camp Minden. However, surveys conducted by TNC in 1990, 1993, and 1994 revealed the presence of inactive cavity trees at one location of the installation. Based on the condition of these cavity trees, it was estimated that they have not been active since the mid-1980's. None of these cavity trees exhibit any signs of recent RCW activity, and many are being used by other species of woodpecker. This area has been designated as the Flatwoods Demonstration Area (see **Appendix C.5**).

The majority of the pine stands on the installation are either too heavily stocked, too young, or contain too great a hardwood component in the midstory to provide potential nesting habitat. Currently, the only potential nesting habitat is restricted to the thinned and burned stands of the Flatwoods Demonstration Area. No active RCW colonies are known within the immediate vicinity of Camp Minden.

The LAARNG conducted installation-wide surveys in 2002, 2011, and 2015, and no active RCW colonies or individuals were observed on Camp Minden. Therefore, no ongoing management activities occur or are proposed for this species.

Northern Long-Eared Bat

The northern long-eared bat was listed as threatened in April 2015 (80 FR 17974), and as a result, was not included in the 2012 ESMP. As at Camp Beauregard, the LAARNG is in the process of performing acoustic surveys on Camp Minden. Results of these surveys are pending.

Designated Critical Habitat

There is no USFWS designated critical habitat on Camp Minden.

State Rare Species

Currently there are 19 animal species and 41 plant species listed in Bossier and Webster Parishes. The following table provides a complete list.

Table F-4. Rare Species of Bossier and Webster Parishes

Scientific Name	Common Name	State Rank	Parish(es)
Rare Animal Species			
Aimophila aestivalis	Bachman's Sparrow	S3	Bossier
Ammocrypta clara	Western Sand Darter	S2	Bossier
Crystallaria asprella	Crystal Darter	S2	Bossier
Haliaeetus leucocephalus	Bald Eagle	S3	Bossier
Mustela frenata	Long-tailed Weasel	S3	Bossier
Picoides borealis	Red-cockaded Woodpecker	S2	Bossier, Webster
Pogonomyrmex comanche	Comanche Harvester Ant	S2	Bossier
Procambarus geminus	A Crawfish	S2	Webster
Sternula antillarum athalassos	Interior Least Tern	S4BT1	Bossier
Vireo gilvus	Warbling Vireo	S1B	Bossier
Rare Plant Species			
Anemone berlandieri	Ten Petal Thimbleweed	S2	Bossier
Burmannia biflora	Northern Burmannia	S3	Webster
Camassia scilloides	Atlantic Camas	S3	Bossier, Webster
Carex decomposita	Cypress-knee Sedge	S3	Bossier
Carex meadii	Mead's Sedge	S3	Bossier
Cirsium engelmannii	Cirsium Terraenigrae	SU	Bossier
Coreopsis palmata	Stiff Tickseed	S2	Bossier
Cypripedium kentuckiense	Southern Lady's-slipper	S1	Bossier
Dodecatheon meadia	Common Shooting-star	S2	Bossier
Dryopteris celsa	Log Fern	S1	Webster
Eleocharis wolfii	Wolf Spikerush	S3	Bossier
Eriogonum multiflorum	Many-flowered Wild-buckwheat	S3	Webster

Scientific Name	Common Name	State Rank	Parish(es)
Erythronium albidum	White Trout-lily	S2	Bossier
Forestiera ligustrina	Upland Swamp Privet	S3	Bossier, Webster
Glyceria septentrionalis	Eastern Managrass	S1	Bossier
Helenium campestre	Old Field Sneezeweed	S1	Bossier, Webster
Hexalectris spicata	Crested Coral-root	S2	Webster
Houstonia purpurea var. calycosa	Purple Bluet	S2	Bossier
Koeleria macrantha	June Grass	S1	Bossier
Lindheimera texana	Texas Yellow-star	S1	Bossier
Marshallia caespitosa var. signata	Barbara's Buttons	S1	Bossier
Mirabilis albida	Pale Umbrella-wort	S2	Bossier
Monotropa hypopithys	American Pinesap	S2	Bossier
Nemastylis geminiflora	Prairie Pleat-leaf	S2S3	Bossier
Oenothera pilosella ssp. sessilis	Meadow Evening Primrose	S1?	Bossier
Oenothera rhombipetala	Four-point Evening Primrose	S1?	Bossier
Phlox pilosa ssp. ozarkana	Downy Phlox	S2?	Bossier
Prenanthes barbata	Barbed Rattlesnake-root	S2	Webster
Quercus arkansana	Arkansas Oak	S2	Bossier, Webster
Quercus macrocarpa	Burr Oak	S1	Bossier
Rudbeckia triloba	Three-lobed Coneflower	S3	Bossier
Sanguinaria canadensis	Bloodroot	S2	Bossier
Silene stellate	Starry Campion	S2	Bossier
Solanum dimidiatum	Western Horse-nettle	S2S3	Bossier
Taenidia integerrima	Yellow Pimpernell	S2	Bossier
Thalictrum revolutum	Windflower	S1	Bossier
Trillium recurvatum	Reflexed Trillium	S2	Bossier
Triosteum angustifolium	Yellowleaf Tinker'sweed	S2	Bossier
Uvularia sessilifolia	Sessile-leaved Bellwort	S2	Webster
Viola pubescens	Downy Yellow Violet	S1	Bossier
Zigadenus nuttallii	Nuttall Death Camas	S1	Bossier

Legend:
S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation
S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation
S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding
SU = possibly in peril in Louisiana, but status uncertain; need more information
Source: LDWF 2017.

The extent of these species on Camp Minden is unknown. The last state species surveys conducted on Camp Minden were by TNC in 1995. At that time, northern burmannia was the only state rare species identified.

F.2.1 Management Goals and Objectives

To date, no federally listed threatened or endangered species have been found on Camp Minden. The extent of state rare species on Camp Minden is unknown since the last surveys were conducted in 1995. If any protected species are identified on Camp Minden, a management program will be developed in cooperation with the USFWS and the LAARNG.

Goals:

- Maintain accurate information about threatened and endangered species status on Camp Minden
- Maintain native plant communities that might support state and federal rare, threatened, or endangered species
- Cooperate with the USFWS and the LDWF
- Ensure that Camp Minden remains in compliance with the Endangered Species Act

Objective 7a: Monitor communities that could support threatened and endangered species on Camp Minden.

Project 1: Complete ongoing installation-wide survey of northern long-eared bat.

Project 2: Perform an installation-wide survey for federal threatened and endangered species every 10 years. Surveys were completed in 2015; re-survey is scheduled for 2025. Should any listed species be identified, the ESMP and INRMP will promptly be updated to incorporate protection guidelines, restrictions, and species monitoring criteria. The USFWS and LDWF will immediately be contacted.

Project 3: Conduct surveys for state rare species in areas of potential habitat. Incorporate survey results into the ESMP and INRMP.

Project 4: Educate troops, management staff, and others on potential state and federal threatened and endangered species and their habitats on Camp Minden.

F.3 Camp Villere

The current ESMP for Camp Villere was updated and finalized in January 2012. The ESMP was prepared for all federally listed and endangered species of potential occurrence on Camp Villere as required by AR 200-1. A copy of the ESMP can be obtained from the LAARNG's Natural Resource Specialist.

As of May 2016, the USFWS lists two species which could potentially occur on Camp Villere based on habitat requirements.

Table F-5. Federally Listed Species of Potential Occurrence on Camp Villere

Common Name	Scientific Name	Federal Status	Potential for Occurrence on Camp Villere
Red-cockaded woodpecker	*Picoides borealis*	E	Low
Gopher tortoise	*Gopherus polyphemus*	T	Low
Louisiana quillwort	*Isoetes louisianensis*	E	Low
Dusky Gopher Frog	*Rana sevosa*	E, CH	Low

Legend: E – Endangered; T – Threatened; C –Candidate; CH – Critical Habitat
Source: USFWS 2016.

Red-cockaded Woodpecker (RCW)

No documentation exists for the historical occurrence of RCWs on Camp Villere, and there are no active RCW cluster sites on Camp Villere at present. No suitable breeding habitat for RCWs exists on Camp Villere, and the majority of the older pines occur in thickly stocked stands with dense midstory and understory layers.

The LAARNG conducted installation-wide surveys in 2002, 2011, and 2015, and no signs of active or abandoned cavity trees were observed on Camp Villere. Therefore, no ongoing management activities occur or are proposed for this species.

Gopher Tortoise

There is no documentation to support the historical presence of gopher tortoise on Camp Villere; however, potential habitat does exist. Suitable habitat for gopher tortoise is defined as 1) the presence of well-drained, sandy soils, which allow for easy burrowing; 2) the abundance of herbaceous ground cover; and 3) an open canopy and sparse shrub cover, which allow sunlight to reach the forest floor. Although the Eastern Upland Longleaf Pine Forest should provide habitat for this species, the exclusion of fire at Camp Villere has resulted in too dense of a mid and understory to support gopher tortoise. However, the areas classified as Disturbed Areas/Open Fields (*i.e.* maintained roadsides, fences, and utility right-of-ways) with correct soil type could potentially support gopher tortoise populations.

The LAARNG conducted installation-wide surveys in 2002, 2011, and 2015, and no gopher tortoises or burrows were identified on Camp Villere. Therefore, no ongoing management activities occur or are proposed for this species.

Louisiana Quillwort

Louisiana quillwort is known to only occur in several areas of St. Tammany and Washington Parishes. Louisiana quillwort is semi-aquatic and typically found in moist overflow channels and on sand and gravel bars on sides of small to medium-sized shallow streams with clear or tannin-colored water running through riparian forest communities. An unnamed tributary of Bayou Bonfouca transects the installation on the eastern side, and an unnamed tributary of Liberty Bayou enters Camp Villere on the western side of the installation. These tributaries, if not significantly disturbed, could potentially support the Louisiana quillwort.

The LAARNG conducted installation-wide surveys in 2002, 2011, and 2015, and no specimens were identified on Camp Villere. Therefore, no ongoing management activities occur or are proposed for this species.

Dusky Gopher Frog

The dusky gopher frog has not been identified in Louisiana since 1965; however, the USFWS has designated critical habitat for this species in St. Tammany Parish, approximately 5 miles north of Camp Villere. The dusky gopher frog and gopher tortoise have similar habitat characteristics. In addition, there are three ponds on the installation; however, because these ponds are permanently flooded, they are not considered prime habitat. The likelihood of dusky gopher frog occurring on Camp Villere is low because prime habitat (upland longleaf combined with isolated, temporary, wetland breeding sites) is not present on the installation.

The LAARNG conducted installation-wide surveys in 2015, and no specimens were identified on Camp Villere. Therefore, no ongoing management activities occur or are proposed for this species.

Designated Critical Habitat

There is no USFWS designated critical habitat on Camp Villere.

State Rare Species

Currently there are 45 animal species and 93 plant species listed in St. Tammany Parish. The following table provides a complete list.

Table F-6. Rare Species of St. Tammany Parish

Scientific Name	Common Name	State Rank
Rare Animal Species		
Acipenser oxyrinchus desotoi	Gulf Sturgeon	S1
Aimophila aestivalis	Bachman's Sparrow	S3
Alosa alabamae	Alabama Shad	S1
Ambystoma tigrinum	Eastern Tiger Salamander	S1
Crystallaria asprella	Crystal Darter	S2
Cycleptus meridionalis	Southeastern Blue Sucker	S1
Elanoides forficatus	American Swallow-tailed Kite	S1S2B
Elliptio crassidens	Elephant-ear	S3
Fallicambarus oryktes	Flatwoods Digger	S2
Farancia erytrogramma	Rainbow Snake	S2
Fusconaia ebena	Ebonyshell	S3
Gopherus Polyphemus	Gopher Tortoise	S1
Graptemys gibbonsi	Pascagoula Map Turtle	S3
Graptemys oculifera	Ringed Map Turtle	S2
Haliaeetus leucocephalus	Bald Eagle	S3
Hemidactylium scutatum	Four-toed Salamander	S1
Lampropeltis calligaster rhombomaculata	Mole Kingsnake	S1S2
Lampsilis ornate	Southern Pocketbook	S3
Macrochelys temminckii	Alligator Snapping Turtle	S3
Malaclemys terrapin	Diamondback Terrapin	S3
Micrurus fulvius	Harlequin Coral Snake	S2
Moxostoma carinatum	River Redhorse	S1
Mustela frenata	Long-tailed Weasel	S3
Noturus munitus	Frecklebelly Madtom	S1
Obovaria jacksoniana	Southern Hickorynut	S1S2
Obovaria unicolor	Alabama Hickorynut	S1
Ophisaurus ventralis	Eastern Glass Lizard	S3
Pandion haliaetus	Osprey	S3
Percina aurora	Pearl Darter	SH
Percina lenticular	Freckled Darter	S1
Picoides borealis	Red-cockaded Woodpecker	S2
Polyodon spathula	Paddlefish	S4
Potamilus inflatus	Inflated Heelsplitter	S1
Procambarus bivittatus	Ribbon Crawfish	S2
Procambarus shermani	Plain Brown Crawfish	S2
Pseudacris ornate	Ornate Chorus Frog	SH
Pseudotriton montanus	Gulf Coast Mud Salamander	S1
Pteronotropis signipinnis	Flagfin Shiner	S2
Pteronotropis welaka	Bluenose Shiner	S2
Rana sevosa	Dusky Gopher Frog	SH
Reithrodontomys humulis	Eastern Harvest Mouse	S3
Rhadinaea flavilata	Pine Woods Snake	S1
Trichechus manatus	Manatee	S1N

Scientific Name	Common Name	State Rank
Ursus americanus luteolus	Louisiana Black Bear	S3
Villosa vibex	Southern Rainbow	S2
Rare Plant Species		
Agalinis aphylla	Coastal Plain False-foxglove	S1
Agalinis filicaulis	Purple False-foxglove	S2
Agalinis linifolia	Flax-leaf False-foxglove	S2
Asclepias michauxii	Michaux Milkweed	S2
Burmannia biflora	Northern Burmannia	S3
Calopogon barbatus	Bearded Grass-pink	S1
Calopogon multiflorus	Many-flowered Grass-pink	S1
Calopogon pallidus	Pale Grass-pink	S2
Carex decomposita	Cypress-knee Sedge	S3
Carex venusta	Caric Sedge	S1
Chamaelirium luteum	Fairy Wand	S2S3
Chasmanthium ornithorhynchum	Bird-bill Spikegrass	S2
Chrysopsis gossypina ssp. hyssopifolia	A Golden Aster	S1
Cirsium lecontei	Lecont's Thistle	S2
Cleistes bifaria	Spreading Pogonia	S1
Cliftonia monophylla	Buckwheat-tree	S1
Collinsonia canadensis	Richweed	S2?
Collinsonia serotina	Southern horse-balm	S1
Coreopsis nudata	Georgia Tickseed	S2
Deparia acrostichoides	Silvery Glade Fern	S2
Dichanthelium strigosum var. glabrescens	Roughhair Witchgrass	S1
Drosera intermedia	Spoon-leaved Sundew	S2
Dulichium arundinaceum	Three-way Sedge	S2
Eleocharis elongata	Slim Spike-rush	S3
Eleocharis fallax	Creeping Spike-rush	S1?
Fuirena scirpoidea	Southern Umbrella-sedge	S1
Fuirena simplex var. aristulata	Western Umbrella Sedge	S1
Gratiola ramosa	Hedgehyssop	S1S2
Helenium brevifolium	Shortleaf Sneezeweed	S1
Ilex amelanchier	Sarvis Holly	S2
Ilex myrtifolia	Myrtle Holly	S2
Isoetes louisianensis	Louisiana Quillwort	S2
Lachnocaulon digynum	Pineland Bog Button	S3
Lechea pulchella	A Pinweed	S1S2
Liatris tenuis	Slender Gay-feather	S1
Lilium catesbaei	Southern Red Lily	S1
Lilium superbum	Turk's Cap Lily	S1
Linum macrocarpum	Gig Fruit Flax	S1
Lophiola aurea	Golden Crest	S2S3
Ludwigia alata	Winged Primrose Willow	S1
Lupinus villosus	Lady Lupine	S2
Lycopodiella cernua var. cernua	Staghorn Clubmoss	S2
Macranthera flammea	Flame Flower	S2
Mayaca fluviatilis	Bog Moss	S2
Myrica inodora	Odorless Bayberry	S2
Panicum rigidulum var. combsii	Redtop Panicum	S1

Scientific Name	Common Name	State Rank
Paronychia erecta var. corymbosa	Squareflower	S1
Physalis carpenteri	Carpenter's Ground-cherry	S1
Physostegia correllii	Correll's False Dragon-head	S1
Pinguicula lutea	Yellow Butterwort	S2
Platanthera blephariglottis var. conspicua	White-fringe Orchis	S1
Platanthera integra	Yellow Fringeless Orchid	S3
Podostemum ceratophyllum	Riverweed	S1
Polygala chapmanii	Chapman's milkwort	S1
Polygala crenata	Scalloped Milkwort	S2
Polygala hookeri	Hooker Milkwort	S1
Potamogeton perfoliatus	Clasping-leaf Pondweed	SH
Pteroglossaspis ecristata	A Wild Coco	S2
Quercus arkansana	Arkansas Oak	S2
Quercus rubra	Red Oak	S1S3
Rhynchospora chapmanii	Chapman Beakrush	S3
Rhynchospora ciliaris	Ciliate Beakrush	S3
Rhynchospora compressa	Flat-fruit Beakrush	S3
Rhynchospora debilis	Savannah Beakrush	S3
Rhynchospora decurrens	Swamp-forest Beakrush	SH
Rhynchospora divergens	Spreading Beakrush	S1
Rhynchospora miliacea	Millet Beakrush	S2
Ruellia noctiflora	Night-flowering Wild-petunia	S1
Sabatia arenicola	Sand Rose-gentian	S1
Saccharum brevibarbe var. brevibarbe	Short-beard Plumegrass	S1
Salix caroliniana	Coastal Plain Willow	S1
Sanicula marilandica	Maryland's Black Snake-root	SH
Sarracenia psittacina	Parrot Pitcherplant	S3
Schoenoplectus etuberculatus	Bulrush	S1
Scleria verticillata	Low Nutrush	S1
Sclerolepis uniflora	Pink Bob Button	S1
Selaginella ludoviciana	Louisiana Spikemoss	S1
Serenoa repens	Saw Palmetto	S1
Sericocarpus linifolius	Narrowleaf Aster	S2
Sida elliottii	Elliott Sida	SH
Sium suave	Hemlock Water-parsnip	S1S2
Smilax auriculata	Eared Greenbrier	S2
Stewartia malacodendron	Silky Camellia	S2S3
Stipulicida setacea	Pineland Scaly-pink	S1
Tephrosia hispidula	Hoary Pea	S2?
Tofieldia racemosa	Coastal False-asphodel	S2S3
Trichomanes petersii	Dwarf Filmy-fern	S2
Tridens carolinianus	Carolina Fluff Grass	S2
Uniola paniculata	Sea Oats	S2
Xyris scabrifolia	Harper's Yellow-eyed Grass	S2
Xyris serotina	Yellow-eyed Grass	S1
Xyris stricta	Pineland Yellow-eyed Grass	S2
Zigadenus leimanthoides	Death Camus	S1

Legend:

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation

S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation
S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding
SH = of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting
Source: LDWF 2017.

The extent of these species on Camp Villere is unknown. The last state species surveys conducted on Camp Villere were by TNC from 1994 to 1995. At that time, pine woods snake, flax-leaf false-foxglove, bird-bill spikegrass, Leconte's thistle, myrtle holly, golden crest staghorn clubmoss, Chapman beakrush, night-flowering wild-petunia, parrot pitcherplant, and coastal false-asphodel were identified on the installation.

F.3.1 Management Goals and Objectives

To date, no federally listed threatened or endangered species have been found on Camp Villere. The extent of state rare species on Camp Villere is unknown since the last surveys were conducted in 1994-1995. If any protected species are identified on Camp Villere, a management program will be developed in cooperation with the USFWS and the LAARNG.

Goals:

- Maintain accurate information about threatened and endangered species status on Camp Villere
- Maintain native plant communities that might support state and federal rare, threatened, or endangered species
- Cooperate with the USFWS and the LDWF
- Ensure that Camp Villere remains in compliance with the Endangered Species Act

Objective 7a: Monitor communities that could support threatened and endangered species on Camp Villere.

Project 1: Perform an installation-wide survey for federal threatened and endangered species every 10 years. Surveys were completed in 2015; re-survey is scheduled for 2025. Should any listed species be identified, the ESMP and INRMP will promptly be updated to incorporate protection guidelines, restrictions, and species monitoring criteria. The USFWS and LDWF will immediately be contacted.

Project 2: Conduct surveys for state rare species in areas of potential habitat. Incorporate survey results into the ESMP and INRMP.

Project 3: Educate troops, management staff, and others on potential state and federal threatened and endangered species and their habitats on Camp Villere.

F.4 References

Louisiana Department of Wildlife and Fisheries (LDWF). 2017. Elements Tracked by the Louisiana Natural Heritage Program: Bossier, Grant, Rapides, St. Tammany, and Webster Parishes. Internet Website: http://www.wlf.louisiana.gov/wildlife/species-parish-list. Accessed July 5, 2017.

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U.S. Fish and Wildlife Service (USFWS). 2006. Louisiana Pearlshell Mussel 5-Year Review. USFWS, Lafayette, Louisiana.

USFWS. 2016. Endangered, Threatened, and Candidate Species of Louisiana. Internet Website: https://www.fws.gov/lafayette/pdf/LA_T&E_Species_List.pdf. Accessed 23 June 2016.

Appendix G FOREST AND FIRE MANAGEMENT

G.1 Camp Beauregard

The current Forest Management Plan for Camp Beauregard/Esler Field was finalized in 2014 and provides forest management recommendations from 2015-2019. A copy of the Forest Management Plan can be obtained from the LAARNG's Statewide Forester.

The mission of the forestry program is management of the CBTS and Esler Field forest resources in an ecologically sound manner that supports the requirements for maintaining ecosystem viability and forest productivity, health, and vigor. The Forest Management Plan was developed by utilizing detailed data including digital data sets, GIS/GPS technology, and the current timber inventory to provide an integrated approach to managing the forest resources on the installation. Provisions were made to protect and enhance the designated natural areas, demonstration areas, flood zones, and SMZs. The Plan presents specific recommendations for making timber sales over the 2015-2019 time period.

The primary goal of the forest management program at Camp Beauregard is to develop a forest that is more balanced and represents all ages, a movement toward an uneven age based forest to promote diversity, health, and stand vigor. The Plan utilizes the concept of sustainable forestry, based on a 50 year rotation age for loblolly pines and 60 years rotation age for longleaf pines. Sustainable forestry is a method of management that provides a constant supply of forest products throughout the landscape, with future timber yields unaffected or improved by current harvesting methods. An average of 110 acres will be regenerated each year, followed by appropriate site preparation and planting. This will facilitate the continued effort to convert the CBTS forests from even aged to uneven aged. An average of 775 acres per year will be thinned to reduce current stocking levels and promote health and vigor. Approximately 2,250 MBF (1,000 board feet units) of pine sawtimber will be harvested annually for the next five years. This is approximately 60% of annual growth. Therefore, the forest will gain in timber volume and age over the next five year period. Diversity will be improved through consistently regenerating and planting a portion of the forest each year.

Current Timber Inventory

A timber inventory of the CBTS and Esler Field was completed in 2013 by Forest Management Services, LLC. The timber inventory was based on the measuring and tallying of all merchantable timber located on a total of 5,522 variable radius plots utilizing a 10 basal area factor (BAF) prism or angle gauge. Plots were systematically dispersed throughout most compartments on a grid pattern of 4 chains (264 feet) by 5 chains (330 feet) or the equivalent of one sample point per two (2) acres. Sample plots were taken to collect the physical data needed to calculate timber volumes. All timber volumes and timber stand tables were generated with the software program T-Cruise.

The complete data for all forest compartments can be found in the Forest Management Plan for Camp Beauregard/Esler Field and includes sawtimber and pulpwood volumes (apportioned by species/species groups), dominant and co-dominant species, average basal area and DBH, average number of snags per acre, minimum and maximum tree ages, general health assessment, and current condition of the stand.

Table G-1 summarizes the estimated volume of merchantable timber and the estimated number of merchantable trees located on CBTS and Esler Field by product class. Both pine (P) and hardwood (H) sawtimber (ST) volumes, based on Doyle Scale, are expressed in MBF. Pulpwood (PW) volumes for both pine and hardwood are expressed in tons.

Table G-1. Camp Beauregard and Esler Field Total Volumes and Trees

Total Volumes				Total Trees			
PST (MBF)	HST (MBF)	PPW (Tons)	HPW (Tons)	PST	HST	PPW	HPW
87,668	10,048	105,675	155,539	480,060	72,927	482,431	454,542

The forest on the CBTS can be characterized as being a mature, even aged loblolly and longleaf pine forest, with various hardwoods mixed with the pines and with hardwood becoming dominant in the lower, wetter elevations. The natural pine stands are mostly even-aged stands of loblolly and longleaf pine that resulted from natural regeneration by seed-trees or artificially by planted seedlings. Loblolly pine is the dominant pine species. The natural pine stands are exceptionally well stocked with mature to over-mature pine sawtimber and include an understory of scattered pine and hardwood pulpwood. The average age of the forest is estimated to be 50 years old with an average pine sawtimber DBH of 15.1 inches.

Fire Management

The suppression of fire in pine forests increases the presence of hazardous fuels, which can lead to destructive wildfires, and allows for the growth of hardwoods that threaten to dominate the site. Prescribed burning has been utilized at Camp Beauregard for many years as a management tool. Prescribed burning reduces unwanted brush, reduces fuel loads, improves wildlife habitat for deer, turkey, and quail, and improves the general esthetics of the forests.

The current Forest Management Plan for Camp Beauregard/Esler Field addresses the need and outlines the recommendations for prescribed burning on the installation. Detailed burn schedules, areas, and acreages can be found in the Plan.

The Plan recommends that an average of 2,500 acres per year should be burned using a three year cycle, with some tracts receiving prescribed burns annually. Prescribed burns should be performed during the winter and early spring months. Winter burning treatments provide cooler fires and are best suited in areas having heavy fuel loads. Spring burning better controls undesirable woody vegetation such as unwanted hardwood brush and saplings. Recently thinned tracts should not be prescribed burned for two years after harvesting operations due to an increase in fuel loads from logging debris.

Because of the ongoing prescribed burning program, catastrophic wildfire is not a common threat on Camp Beauregard; however, it must be planned for. The LAARNG's Integrated Wildland Fire Management Plan (IWFMP) was implemented in 2009 and updated in 2013 and complies with Army Wildland Fire Policy (Memorandum DAIM-ZA, 4 September 2002, subject: Army Wildland Fire Policy Guidance). The IWFMP established guidelines for interagency coordination, smoke management and air quality, safety and emergency operations, risk assessment, monitoring, and personnel training and certification; and provides a detailed analysis of natural and cultural

resource considerations, mission considerations, wildland fuel factors, and the existing burn plan. A copy of the IWFMP can be obtained from the LAARNG's Statewide Forester.

G.1.1 Forest Management Goals and Objectives

Forest ecosystems occur on roughly 90% of the installation. The primary goal of the forest management program at Camp Beauregard is to develop a forest that is more balanced and represents all ages, a movement toward an uneven age based forest to promote diversity, health, and stand vigor. The desired future condition of the forest at Camp Beauregard is a range of forest types and ages, approximating natural habitat conditions and providing needed training opportunities. Active timber harvesting and prescribed burning will be the management tools employed to achieve the ecosystem management goals and objectives of the forest program. Although Camp Beauregard has the potential to produce significant revenue from intensively managing forest lands, economic return will not be the sole controlling factor in developing land management decisions.

Currently, many of the stands on Camp Beauregard are over mature in terms of timber production, and many of the trees are at or beyond the maximum size many mills will accept. Areas of the installation are too dense for effective training use. In other areas, the mature forest should be protected to maintain riparian and wetland quality.

Goals:

- Provide optimum forestland training opportunities.
- Improve forest health and wildlife habitat through appropriate forest management techniques.
- Manage for native forest species appropriate to the region.
- Derive income through appropriate timber sales.

Objective 8a: Maintain forest inventory and other information needed for forest management planning.

Project 1: Perform an installation-wide forest inventory every 5 years.

Objective 8b: Improve forest health and habitat quality by selected timber harvesting.

Project 1: Conduct timber harvesting activities as outlined in the Forest Management Plan annually.

G.1.2 Fire Management Goals and Objectives

Prescribed fire is a recognized land management practice for natural resources management and fire protection and is an effective and efficient means to reduce or prevent the accumulation of hazardous fuels. Prescribed fire has been historically used as a management tool at Camp Beauregard. The decision to use prescribed fire at Camp Beauregard will be based on the safety hazard involved, the hazard that will develop if burning is not accomplished, the type of natural habitat involved, the impact on the area's total ecosystem, applicable state and local regulations, and coordination with installation fire departments.

The ultimate use of fire on Camp Beauregard is to create a range of forest conditions that emulates the results of the historic fire regime. Management activities will not be designed to achieve some discrete past condition. Instead, the goal is to generally replicate the size, pattern, and intensity of historic disturbances and therefore maintain an ecological system at lower risk to biotic agents and catastrophic fire that at the same time maintains biodiversity and can provide areas for troop training.

All prescribed fires at Camp Beauregard are limited to the CBTS and Esler Field. No prescribed fires are conducted within the cantonment area. The Louisiana Department of Agriculture and Forestry (LDAF) oversees prescribed burning at Camp Beauregard and is responsible for fire protection and suppression of wildfire and non-structural fires with LAARNG support as necessary.

Goals:

- Reduce heavy fuel loads.
- Minimize damage from a catastrophic wildfire event.

Objective 9a: Suppress or prevent damage to land and natural resources caused by wildfire.

Project 1: Purchase fire suppression equipment and train personnel as needed.
Project 2: Suppress wildfires that threaten natural areas, prime habitat, and installation facilities.
Project 3: Maintain firebreaks and construct new ones as needed to contain fires and reduce the risk of fire damage to critical facilities, training activities, and natural areas.

Objective 9b: Prescribe burn to control undesirable shrubs and trees, increase availability of forage and improve wildlife habitat, improve open space for military training, and reduce fuel loads to reduce the risk of wildfire.

Project 1: Conduct prescribed burning on an average of 2,500 acres per year to reduce fire hazards and improve pine stand health and vigor.

G.2 Camp Minden

The current Forest Management Plan for Camp Minden was finalized in 2014 and provides forest management recommendations from 2015-2019. A copy of the Forest Management Plan be obtained from the LAARNG's Statewide Forester.

The mission of the forestry program is management of the Camp Minden forest resources in an ecologically sound manner that supports the requirements for maintaining ecosystem viability and forest productivity, health, and vigor. The Forest Management Plan was developed by utilizing detailed data including digital data sets, GIS/GPS technology, and the current timber inventory to provide an integrated approach to managing the forest resources on the installation. Provisions were made to protect and enhance the designated natural areas, demonstration areas, flood zones, and SMZs. The Plan presents specific recommendations for making timber sales over the 2015-2019 time period.

The primary goal of the forest management program at Camp Minden is to develop a forest that is more balanced and represents all ages, a movement toward an uneven age based forest to promote diversity, health, and stand vigor. The Plan utilizes the concept of sustainable forestry, based on a 50 year rotation age for loblolly and shortleaf pines. Sustainable forestry is a method of management that provides a constant supply of forest products throughout the landscape, with future timber yields unaffected or improved by current harvesting methods. An average of 106 acres will be regenerated each year, followed by appropriate site preparation and planting. This will facilitate the continued effort to convert the Camp Minden forests from even aged to uneven aged. An average of 750 acres per year will be thinned to reduce current stocking levels and promote health and vigor. Approximately 2,250 MBF (1,000 board feet units) of pine sawtimber will be harvested annually for the next five years. This is approximately 70% of annual growth. Therefore, the forest will gain in timber volume and age over the next five year period. Diversity will be improved through consistently regenerating and planting a portion of the forest each year.

Current Timber Inventory

A timber inventory of Camp Minden was completed in 2013 by Forest Management Services, LLC. The timber inventory was based on the measuring and tallying of all merchantable timber located on a total of 4,294 variable radius plots utilizing a 10 BAF prism or angle gauge. Plots were systematically dispersed throughout most compartments on a grid pattern of 4 chains (264 feet) by 5 chains (330 feet) or the equivalent of one sample point per two (2) acres. Sample plots were taken to collect the physical data needed to calculate timber volumes. All timber volumes and timber stand tables were generated with the software program T-Cruise.

The complete data for all forest compartments can be found in the Forest Management Plan for Camp Minden and includes sawtimber and pulpwood volumes (apportioned by species/species groups), dominant and co-dominant species, average basal area and DBH, average number of snags per acre, minimum and maximum tree ages, general health assessment, and current condition of the stand.

Table G-2 summarizes the estimated volume of merchantable timber and the estimated number of merchantable trees located on Camp Minden by product class. Both pine (P) and hardwood (H) sawtimber (ST) volumes, based on Doyle Scale, are expressed in MBF. Pulpwood (PW) volumes for both pine and hardwood are expressed in tons.

Table G-2. Camp Minden Total Volumes and Trees

Total Volumes				Total Trees			
PST (MBF)	HST (MBF)	PPW (Tons)	HPW (Tons)	PST	HST	PPW	HPW
71,138	10,773	21,640	82,733	232,625	62,428	76,727	265,049

The forest on Camp Minden can be characterized as being a mature, even aged loblolly and shortleaf pine forest, with various hardwoods mixed with the pines and with hardwood becoming dominant in the lower, wetter elevations. The natural pine stands are mostly even-aged stands of loblolly and shortleaf pine that resulted from row crops and pasture fields being regenerated naturally by adjacent seed-trees or artificially by planted seedlings. Loblolly pine is the dominant pine species. The natural pine stands are well stocked with large, mature to over-mature pine

sawtimber and include an understory of very scattered pine and hardwood pulpwood The average age of the forest is estimated to be 60 years old with an average pine sawtimber DBH of 18.2 inches.

Fire Management

The suppression of fire in pine forests increases the presence of hazardous fuels, which can lead to destructive wildfires, and allows for the growth of hardwoods that threaten to dominate the site. Prescribed burning has been utilized at Camp Minden for many years as a management tool. Prescribed burning reduces unwanted brush, reduces fuel loads, improves wildlife habitat for deer, turkey, and quail, and improves the general esthetics of the forests.

The current Forest Management Plan for Camp Minden addresses the need and outlines the recommendations for prescribed burning on the installation. Detailed burn schedules, areas, and acreages can be found in the Plan.

The Plan recommends that an average of 2,500 acres per year should be burned using a three year cycle, with some tracts receiving prescribed burns annually. Prescribed burns should be performed during the winter and early spring months. Winter burning treatments provide cooler fires and are best suited in areas having heavy fuel loads. Spring burning better controls undesirable woody vegetation such as unwanted hardwood brush and saplings. Recently thinned tracts should not be prescribed burned for two years after harvesting operations due to an increase in fuel loads from logging debris.

Because of the ongoing prescribed burning program, catastrophic wildfire is not a common threat on Camp Minden; however, it must be planned for. The LAARNG's IWFMP was implemented in 2009 and updated in 2013 and complies with Army Wildland Fire Policy (Memorandum DAIM-ZA, 4 September 2002, subject: Army Wildland Fire Policy Guidance). The IWFMP established guidelines for interagency coordination, smoke management and air quality, safety and emergency operations, risk assessment, monitoring, and personnel training and certification; and provides a detailed analysis of natural and cultural resource considerations, mission considerations, wildland fuel factors, and the existing burn plan. A copy of the IWFMP can be obtained from the LAARNG's Conservation Manager or by contacting the LAARNG's Statewide Forester.

G.2.1 Forest Management Goals and Objectives

Forest ecosystems occur on roughly 80% of the installation. The primary goal of the forest management program at Camp Minden is to develop a forest that is more balanced and represents all ages, a movement toward an uneven age based forest to promote diversity, health, and stand vigor. The desired future condition of the forest at Camp Minden is a range of forest types and ages, approximating natural habitat conditions and providing needed training opportunities. Active timber harvesting and prescribed burning will be the management tools employed to achieve the ecosystem management goals and objectives of the forest program. Although Camp Minden has the potential to produce significant revenue from intensively managing forest lands, economic return will not be the sole controlling factor in developing land management decisions.

Currently, many of the stands on Camp Minden are overmature in terms of timber production, and many of the trees are at or beyond the maximum size many mills will accept. Areas of the

installation are too dense for effective training use. In other areas, the mature forest should be protected to maintain riparian and wetland quality. A forest inventory and a timber management plan were completed in 2013. This information was used to develop the overall management plan for forest resources found in the Forest Management Plan for Camp Minden.

Goals:

- Provide optimum forestland training opportunities.
- Improve forest health and wildlife habitat through appropriate forest management techniques.
- Manage for native forest species appropriate to the region.
- Derive income through appropriate timber sales.

Objective 8a: Maintain forest inventory and other information needed for forest management planning.

Project 1: Perform an installation-wide forest inventory every 5 years.

Objective 8b: Improve forest health and habitat quality by selected timber harvesting.

Project 1: Conduct timber harvesting activities as outlined in the Forest Management Plan annually.

G.2.2 Fire Management Goals and Objectives

Prescribed fire is a recognized land management practice for natural resources management and fire protection and is an effective and efficient means to reduce or prevent the accumulation of hazardous fuels. Prescribed fire has been historically used as a management tool at Camp Minden. The decision to use prescribed fire at Camp Minden will be based on the safety hazard involved, the hazard that will develop if burning is not accomplished, the type of natural habitat involved, the impact on the area's total ecosystem, applicable state and local regulations, and coordination with installation fire departments.

The ultimate use of fire on Camp Minden is to create a range of forest conditions that emulates the results of the historic fire regime. Management activities will not be designed to achieve some discrete past condition. Instead, the goal is to generally replicate the size, pattern, and intensity of historic disturbances and therefore maintain an ecological system at lower risk to biotic agents and catastrophic fire that at the same time maintains biodiversity and can provide areas for troop training.

The Louisiana Department of Agriculture and Forestry (LDAF) oversees prescribed burning at Camp Minden and is responsible for fire protection and suppression of wildfire and non-structural fires with LAARNG support as necessary.

Goals:

- Reduce heavy fuel loads.
- Minimize damage from a catastrophic wildfire event.

Objective 9a: Suppress or prevent damage to land and natural resources caused by wildfire.

Project 1: Purchase fire suppression equipment and train personnel as needed.
Project 2: Suppress wildfires that threaten natural areas, prime habitat, and installation facilities.
Project 3: Maintain firebreaks and construct new ones as needed to contain fires and reduce the risk of fire damage to critical facilities, training activities, and natural areas.

Objective 9b: Prescribe burn to control undesirable shrubs and trees, increase availability of forage and improve wildlife habitat, improve open space for military training, and reduce fuel loads to reduce the risk of wildfire.

Project 1: Conduct prescribed burning on an average of 2,500 acres per year to reduce fire hazards and improve pine stand health and vigor.

G.3 Camp Villere

The current Forest Management Plan for Camp Villere was implemented in 2007 and provides forest management recommendations from 2007-2012. In 2013, CFMO-EM determined that an updated plan was unnecessary due to the lack of activity on the installation. A copy of the Forest Management Plan be obtained from the LAARNG's Conservation Manager or by contacting the LAARNG's Statewide Forester.

The Forest Management Plan utilized detailed data from a variety of sources to provide an integrated approach to managing the natural resources on the property. Provisions were made to protect the designated natural areas, and other sensitive areas by virtue of their soil types. Because the soils on the property are very wet-natured, timber harvesting should be done only under dry soil conditions.

According to the Plan, the forest of Camp Villere needs time to recover from the damages incurred by the high winds associated with Hurricane Katrina. The openings and reduced stocking levels of trees in the forest have created opportunities to manage the vegetation on designated areas for improved training and quail habitat.

Fire Management

Prescribed burning is not conducted at Camp Villere due to its location adjacent to Interstate 12, Slidell Airport, and residential and commercial areas.

Because of the ongoing prescribed burning program, catastrophic wildfire is not a common threat on Camp Villere; however, it must be planned for. The LAARNG's IWFMP was implemented in 2009 and updated in 2013 and complies with Army Wildland Fire Policy (Memorandum DAIM-ZA, 4 September 2002, subject: Army Wildland Fire Policy Guidance). The IWFMP established guidelines for interagency coordination, smoke management and air quality, safety and emergency operations, risk assessment, monitoring, and personnel training and certification; and provided a detailed analysis of natural and cultural resource considerations, mission considerations, wildland fuel factors, and the existing burn plan. A copy of the IWFMP can be obtained from the LAARNG's Conservation Manager or by contacting the LAARNG's Statewide Forester.

G.3.1 Forest Management Goals and Objectives

Because Hurricane Katrina caused extensive damage to the forests of Camp Villere, very little timber harvesting is recommended until the forest can recover. No goals and objectives for forest management at Camp Villere have been established at the time of this INRMP.

G.3.2 Fire Management Goals and Objectives

Prescribed burning is not conducted at Camp Villere, and the LDAF is responsible for fire protection and suppression of wildfire and non-structural fires on Camp Villere with LAARNG support as necessary. No goals and objectives for forest management at Camp Villere have been established at the time of this INRMP.

Appendix H CULTURAL RESOURCES PROTECTION

Prior to any new projects, building alterations, or ground disturbing activities on any LAARNG installation, the Cultural Resource Manager (CRM) in the CFMO-EM office must be contacted. The CRM will assess whether an architectural or archaeological survey is required and what permits need to be obtained to comply with all federal and state regulations pertaining to cultural resources.

Cultural resources include sites, buildings, structures, or objects that may have significant archaeological and historic values, or properties that may play a significant traditional role in a community's history, beliefs, customs, and practices. Cultural resources, thus, encompass a wide range of sites and buildings from prehistoric Native American campsites to military buildings constructed during World War II. From a tribal perspective, natural resources also constitute cultural resources. Therefore, natural resources must also be considered in the review of cultural resources.

The LAARNG completed its five year revision of the ICRMP in 2014. An ICRMP is a five year plan required by AR 200-1 and DoD 4715.03 for compliance with applicable federal laws and regulations concerning cultural resources. The ICRMP functions as a decision document for cultural resources management actions and specific compliance procedures. The Plan's purpose is to integrate cultural resources requirements with ongoing mission activities so that the availability of mission-essential properties and acreage is maintained and compliance with requirements is achieved.

H.1 Camp Beauregard

The majority of accessible acreage on Camp Beauregard and Esler Field, to include the training site and the cantonment area, has been surveyed for archaeological resources as part of the LAARNG's continuing cultural resources inventory of all LAARNG properties. Most of the standing structures over 50 years of age – the minimum age for National Register of Historic Places (NRHP) eligibility consideration – have been evaluated on Camp Beauregard and Esler Field. A complete inventory of cultural resources on Camp Beauregard and Esler Field is included in the ICRMP, which can be obtained from the LAARNG's CRM. **Table H-1** summarizes the cultural resource inventory, as outlined in the ICRMP.

Table H-1. Camp Beauregard and Esler Field Cultural Resource Summary

Number of...	Camp Beauregard	Esler Field
Acres Owned/Used	13,361	2,136
Acres Surveyed	12,927	2,136
Identified Archaeological Sites	514	31
Archaeological Sites Potentially Eligible for NRHP	77	4
Sites Eligible for NRHP	1	0
Total Buildings and Structures	675	82
Buildings and Structures 50 years or older	89	6
Buildings Evaluated	68	4
NRHP eligible buildings	53	3
Buildings already NRHP-listed	0	0

H.1.1 Goals and Objectives

The LAARNG has an approved statewide ICRMP and conducts ongoing consultation with the SHPO and the state recognized Native American tribes. The ICRMP addresses cultural resources management in more detail and provides procedures to consider the effects that natural resources activities might have on cultural resources.

Natural resources management activities proposed in the INRMP that may require Section 106, Section 110, or tribal consultation include ground-disturbing activities associated with land rehabilitation and maintenance (erosion control and rehabilitation of eroded areas or trails). Some military training activities, e.g., engineering training and other ground-disturbing activities, are considered "undertakings" that are required to be conducted in accordance with the ICRMP. Each activity conducted in accordance with the INRMP must be coordinated through the CFMO-EM CRM and the ICRMP to ensure that they will comply with all applicable federal and state cultural resources requirements.

Since the statewide ICRMP was approved in 2014, additional surveys have been completed throughout the State. One of the projects proposed is to update the ICRMP with the new survey data.

Goals:

- Manage cultural resources in support of the military training mission.
- Avoid impacts to historic, prehistoric, and archaeological resources on Camp Beauregard in accordance with cultural resources laws and regulations.
- Maintain good relations with the Native American tribes that have interest in Camp Beauregard lands.

Objective 10a: Continue cultural resource surveys in areas not previously surveyed.

Project 1: Update ICRMP with new survey data.

Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP.

Objective 10c: Ensure that potential cultural resources sites are identified and are avoided during all natural resources management activities.

Objective 10d: Ensure that sites of prehistoric or historic significance which are encountered during natural resources management activities are properly reported, protected, and evaluated as required by state and federal regulations.

H.2 Camp Minden

The majority of accessible acreage on Camp Minden has been surveyed for archaeological resources as part of the LAARNG's continuing cultural resources inventory of all LAARNG properties. All of the standing structures over 50 years of age – the minimum age for NRHP eligibility consideration – has been evaluated on Camp Minden. A complete inventory of cultural resources on Camp Minden is included in the ICRMP, which can be obtained from the LAARNG's CRM. **Table H-2** summarizes the cultural resource inventory of Camp Minden, as outlined in the ICRMP.

Table H-2. Camp Minden Cultural Resource Summary

Number of...	Camp Minden
Acres Owned/Used	14,993
Acres Surveyed	13,275
Identified Archaeological Sites	150
Archaeological Sites Potentially Eligible for NRHP	31
Sites Eligible for NRHP	8
Total Buildings and Structures	958
Buildings and Structures 50 years or older	242
Buildings Evaluated	362
NRHP eligible buildings	258
Buildings already NRHP-listed	0

H.2.1 Goals and Objectives

The LAARNG has an approved statewide ICRMP and conducts ongoing consultation with the SHPO and the state recognized Native American tribes. The ICRMP addresses cultural resources management in more detail and provides procedures to consider the effects that natural resources activities might have on cultural resources.

Natural resources management activities proposed in the INRMP that may require Section 106, Section 110, or tribal consultation include ground-disturbing activities associated with land rehabilitation and maintenance (erosion control and rehabilitation of eroded areas or trails). Some military training activities, e.g., engineering training and other ground-disturbing activities, are considered "undertakings" that are required to be conducted in accordance with the ICRMP. Each activity conducted in accordance with the INRMP must be coordinated through the CFMO-EM CRM and the ICRMP to ensure that they will comply with all applicable federal and state cultural resources requirements.

Since the statewide ICRMP was approved in 2014, additional surveys have been completed throughout the State. One of the projects proposed is to update the ICRMP with the new survey data.

Goals:

- Manage cultural resources in support of the military training mission.
- Avoid impacts to historic, prehistoric, and archaeological resources on Camp Minden in accordance with cultural resources laws and regulations.
- Maintain good relations with the Native American tribes that have interest in Camp Minden lands.

Objective 10a: Continue cultural resource surveys in areas not previously surveyed.

Project 1: Update ICRMP with new survey data.

Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP.

Objective 10c: Ensure that potential cultural resources sites are identified and are avoided during all natural resources management activities.

Objective 10d: Ensure that sites of prehistoric or historic significance which are encountered during natural resources management activities are properly reported, protected, and evaluated as required by state and federal regulations.

H.3 Camp Villere

The majority of accessible acreage on Camp Villere has been surveyed for archaeological resources as part of the LAARNG's continuing cultural resources inventory of all LAARNG properties. Some of the standing structures over 50 years of age – the minimum age for NRHP eligibility consideration – have been evaluated on Camp Villere. A complete inventory of cultural resources on Camp Villere is included in the ICRMP, which can be obtained from the LAARNG's CRM. **Table H-3** summarizes the cultural resource inventory of Camp Villere, as outlined in the ICRMP.

Table H-3. Camp Villere Cultural Resource Summary

Number of...	Camp Villere
Acres Owned/Used	1,480
Acres Surveyed	1,480
Identified Archaeological Sites	9
Archaeological Sites Potentially Eligible for NRHP	2
Sites Eligible for NRHP	0
Total Buildings and Structures	142
Buildings and Structures 50 years or older	24
Buildings Evaluated	3
NRHP eligible buildings	0
Buildings already NRHP-listed	0

H.3.1 Goals and Objectives

The LAARNG has an approved statewide ICRMP and conducts ongoing consultation with the SHPO and the state recognized Native American tribes. The ICRMP addresses cultural resources management in more detail and provides procedures to consider the effects that natural resources activities might have on cultural resources.

Natural resources management activities proposed in the INRMP that may require Section 106, Section 110, or tribal consultation include ground-disturbing activities associated with land rehabilitation and maintenance (erosion control and rehabilitation of eroded areas or trails). Some military training activities, e.g., engineering training and other ground-disturbing activities, are considered "undertakings" that are required to be conducted in accordance with the ICRMP. Each activity conducted in accordance with the INRMP must be coordinated through the CFMO-EM CRM and the ICRMP to ensure that they will comply with all applicable federal and state cultural resources requirements.

Since the statewide ICRMP was approved in 2014, additional surveys have been completed throughout the State. One of the projects proposed is to update the ICRMP with the new survey data.

Goals:

- Manage cultural resources in support of the military training mission.
- Avoid impacts to historic, prehistoric, and archaeological resources on Camp Villere in accordance with cultural resources laws and regulations.
- Maintain good relations with the Native American tribes that have interest in Camp Villere lands.

Objective 10a: Continue cultural resource surveys in areas not previously surveyed.

Project 1: Update ICRMP with new survey data.

Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP.

Objective 10c: Ensure that potential cultural resources sites are identified and are avoided during all natural resources management activities.

Objective 10d: Ensure that sites of prehistoric or historic significance which are encountered during natural resources management activities are properly reported, protected, and evaluated as required by state and federal regulations.

Appendix I INTEGRATED PEST MANAGEMENT

Per AR 200-1, Environmental Protection and Enhancement, 13 December 2007, DODI 4150.07, DoD Pest Management Program, 29 May 2008., the LAARNG's statewide Integrated Pest Management Plan (IPMP) defines and describes essential elements of the pest management program, such as the installation's pest management requirements; health and environmental safety; pest identification; and pesticide storage, transportation, use, and disposal. The Plan is used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of integrated pest management techniques. In addition, the Plan provides guidance for the judicious use of both chemical and nonchemical control techniques to achieve effective pest management with minimal environmental contamination. Adherence to the Plan ensures effective, economical, and environmentally acceptable pest management and compliance with pertinent laws and regulations.

The LAARNG's IPMP was last updated in April 2012. A copy of this plan can be obtained from the LAARNG's Pest Management Coordinator.

The statewide plan addresses issues specific to Camp Beauregard and Esler Field, Camp Minden, and Camp Villere. The Plan outlines a list of pests that are of concern on each installation and how they will be managed. Specific pests include, but are not limited to, rodents, invasive plants, and insects. The control of pests (e.g., flies in buildings, nuisance birds and rodents, mosquitoes, wasps and bees, and other insects) and invasive vegetation is carried out by licensed CFMO personnel and/or contracted pest control companies.

I.1 Goals and Objectives

The LAARNG's IPMP is used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of integrated pest management techniques to eliminate, suppress, or control pests using the judicious use of both chemical and nonchemical control techniques. The primary goal of the pest management program is to protect human health and suppress or prevent damage to real estate and natural resources caused by pests.

Objective 11a: Adhere to the guidelines presented in the statewide IPMP.

Objective 11b: Continue to use integrated pest management techniques to eliminate, suppress, or control pests with the judicious use of both chemical and nonchemical control techniques.

Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP.

Appendix J INVASIVE SPECIES PROGRAM

Executive Order 13112, *Invasive Species*, was signed in February 1999 to prevent the introduction of invasive species; provide for their control; and minimize the economic, ecological, and human health impacts from such species. Invasive species are defined by Executive Order 13112 as alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health. Per Executive Order 13112, each federal agency whose actions might affect the status of invasive species must, to the extent practicable and permitted by law, use relevant programs and authorities to

- Prevent the introduction of invasive species
- Detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner
- Monitor invasive species populations accurately and reliably
- Provide for restoration of native species and habitat conditions in ecosystems that have been invaded
- Conduct research on invasive species and develop technologies to prevent their introduction and to provide for their environmentally sound control
- Promote public education on invasive species and the means to address them

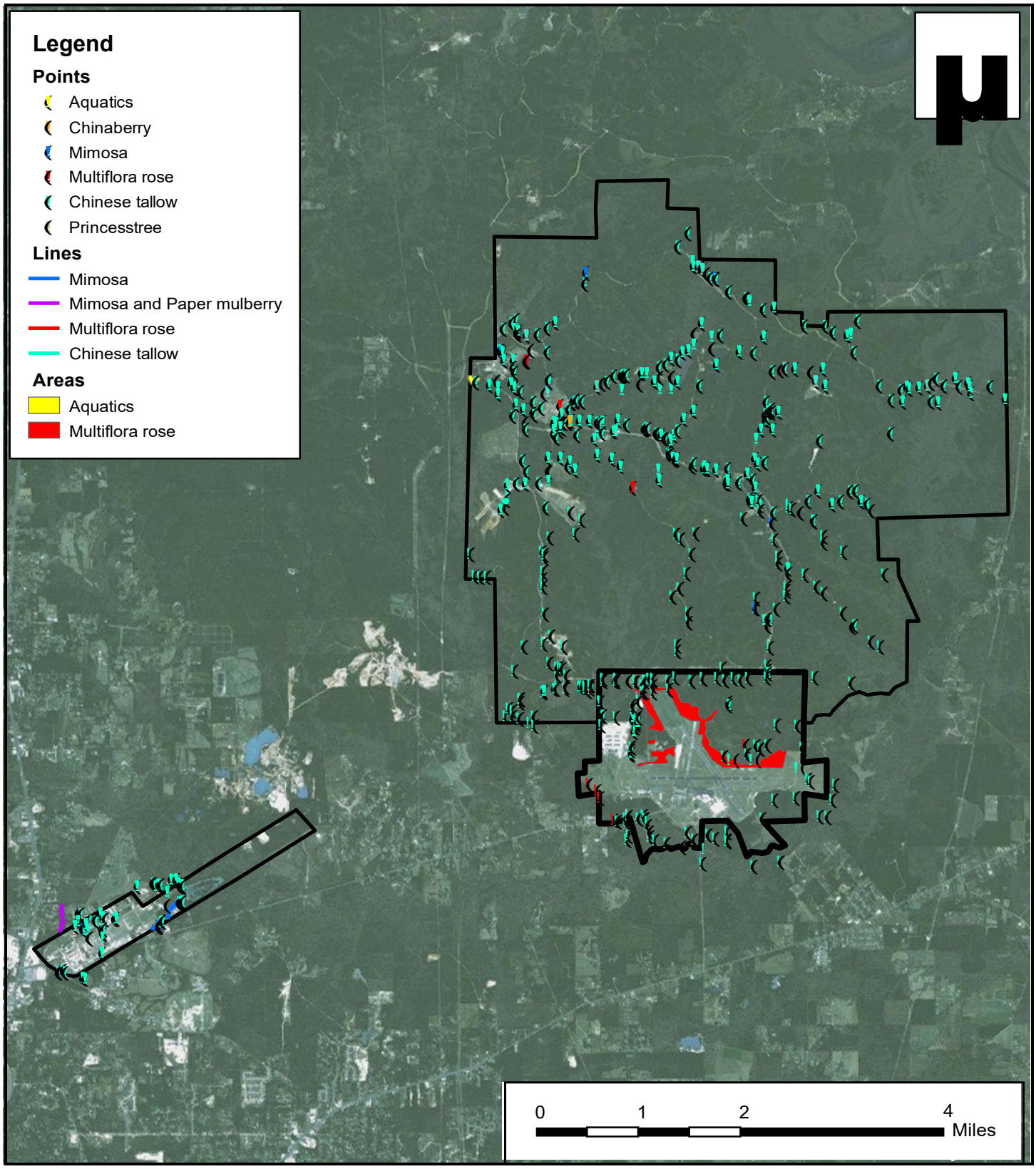
J.1 Camp Beauregard

Camp Beauregard's Invasive Species Management Plan was last updated in January 2013. A copy of this plan can be obtained from the LAARNG's Natural Resource Specialist.

Field surveys for invasive species on Camp Beauregard and Esler Field were last conducted in 2015. During these surveys, numerous invasive species were found and recorded using a GPS. Locations of these invasive species are identified on **Figure J-1**. **Table J-1** identifies all of the invasive species that were found on Camp Beauregard and Esler Field.

Control measures for invasive animals and plants are covered in detail in the Camp Beauregard Invasive Species Management Plan. Base-wide surveys are recommended every 10 years to identify the locations of any new species and to monitor the locations of known species.

Figure J-1. Invasive Species at Camp Beauregard



Land Management Group, LLC.

Date: July 31, 2017

Table J-1. Invasive Species Located on Camp Beauregard and Esler Field

Common Name	Scientific Name
TREES	
Chinaberry	*Milia azedarach*
Chinese tallow	*Sapium sebiferum*
Mimosa	*Albizia julibrissin*
paper mulberry	*Broussonetia papyrifera*
princesstree	*Paulownia tomentosa*
SHRUBS	
Chinese privet	*Ligustrum sinense*
multiflora rose	*Rosa multiflora*
VINES	
Chinese wisteria	*Wisteria sinensis*
Japanese climbing fern	*Lygodium japonica*
Japanese honeysuckle	*Lonicera japonica*
GRASSES	
Bahiagrass	*Paspalum notatum*
Bermudagrass	*Cynodon dactylon*
Johnsongrass	*Sorghum halepense*
Vaseygrass	*Paspalum urvillei*
AQUATICS	
Alligator weed	*Alternanthera philoxeroides*
WILDLIFE AND INSECTS	
red imported fire ants	*Solenopsis sp.*
Asian tiger mosquito	*Aedes albopictus*

The installation supports the National Strategy for Invasive Plant Management and its three goals – prevention, control, and restoration. In the event that additional invasive species are found on the installation, a high priority for control will be established and control efforts will be maximized in accordance with the Invasive Species Management Plan and the LAARNG IPMP.

J.1.1 Goals and Objectives

Management actions for the invasive species program are provided in the 2013 Invasive Species Management Plan and the 2012 IPMP. The control of invasive species is a priority for the CFMO-EM. Nonnative species have the potential to degrade training land at Camp Beauregard and impact the usability of the land for LAARNG purposes. A variety of invasive pest plants are of concern at Camp Beauregard; Chinese tallow, Chinese privet, Japanese climbing fern, multiflora rose, and mimosa are the most prevalent. These plants can out-compete native plant species; reduce the diversity and quantity of native species; render habitat unsuitable for native animals by altering forage and shelter requirements; cause increased rates of erosion and stream sedimentation; create a system that is more susceptible to wildfires; and impair general ecosystem functions.

In addition, Camp Beauregard has a growing infestation of the red imported fire ant, and fire ant mounds are located throughout the installation. This is a highly aggressive ant, dominating the

areas it infests and generally causing a decrease in insect species diversity. It has a fierce sting which is painful and can cause anaphylaxis in sensitive individuals.
Goals:

- Implement invasive species management according to the Camp Beauregard Invasive Species Management Plan
- Control and/or eradicate invasive species on the installation.
- Ensure compliance with all legislation, regulations, and guidelines for invasive species management.

Objective 12a: Adhere to the guidelines and projects presented in the Camp Beauregard Invasive Species Management Plan.

Objective 12b: Control invasive species (in accordance with Executive Order 13112) to protect the natural ecosystems of the installation, for improvement of training areas, and for the safety and comfort of training site users.

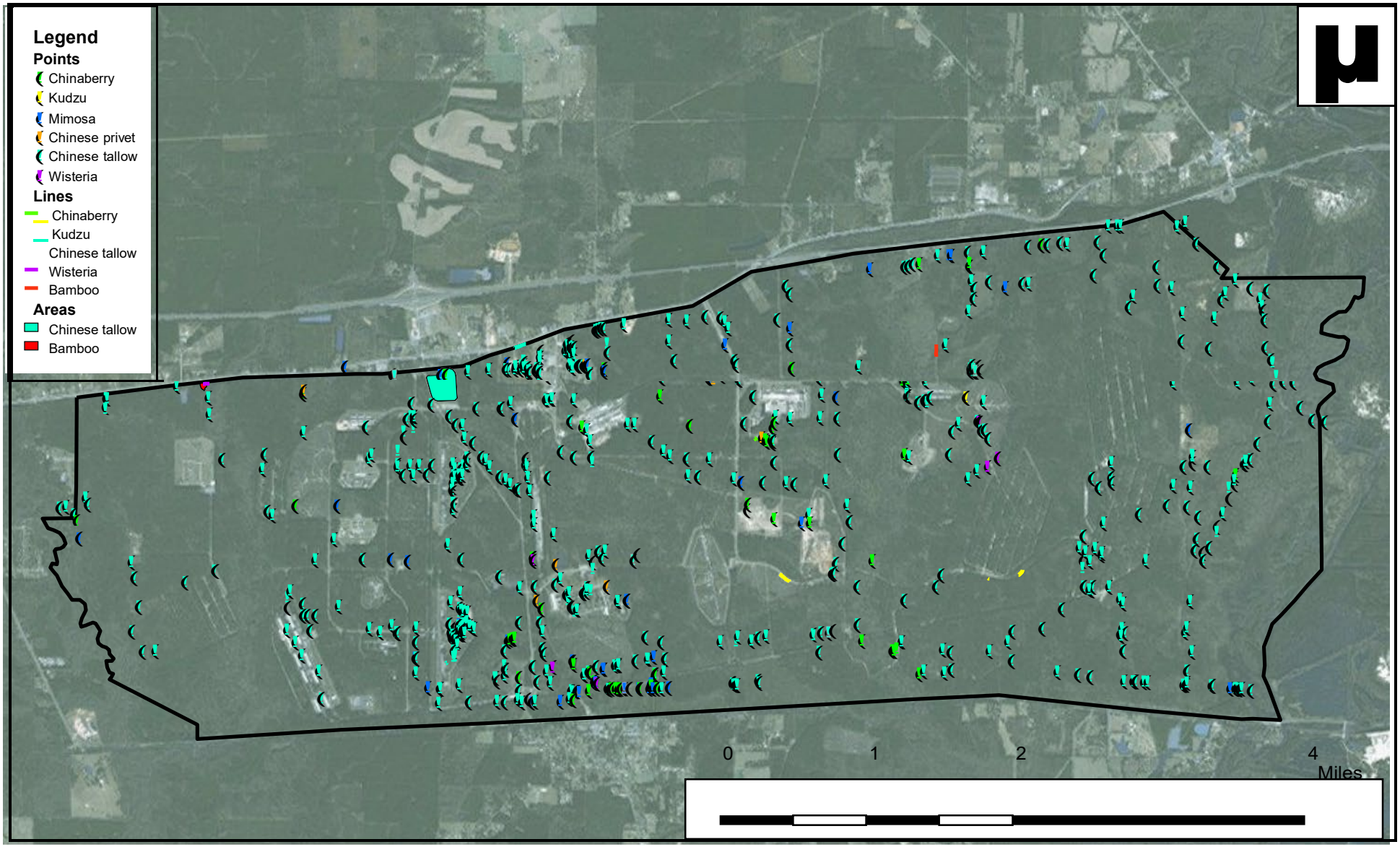
Project 1: Eliminate to the extent practical and feasible invasive species on approximately 10 acres per year.
Project 2: Clean and inspect all vehicles and equipment coming into the installation for the first time to prevent the spread of invasive species.
Project 3: Prohibit the planting of invasive species in ornamental landscaping, in wildlife supplemental food plots, and in revegetation projects.
Project 4: Reseed native grasses in bare soil resulting from mechanical control of invasive plants in accordance with the Invasive Species Management Plan.
Project 5: Conduct installation-wide surveys every 10 years to identify new locations of invasive species and to monitor known locations. Surveys were completed in 2015; re-survey is scheduled for 2025.

J.2 Camp Minden

Camp Minden's Invasive Species Management Plan was last updated in January 2013. A copy of this plan can be obtained from the LAARNG's Natural Resource Specialist.

Field surveys for invasive species on Camp Minden were last conducted in 2015. During these surveys, numerous invasive species were found and recorded using a GPS. Locations of these invasive species are identified on **Figure J-2**. **Table J-2** identifies all of the invasive species that were found on Camp Minden.

Figure J-2. Invasive Species at Camp Minden



Land Management Group, LLC.

Date: July 31, 2017

Table J-2. Invasive Species Located on Camp Minden

Common Name	Scientific Name
TREES	
Chinaberry	*Milia azedarach*
Chinese chestnut	*Castanea mollissima*
Chinese tallow	*Sapium sebiferum*
Mimosa	*Albizia julibrissin*
paper mulberry	*Broussonetia papyrifera*
SHRUBS	
Chinese privet	*Ligustrum sinense*
golden bamboo	*Phyllostachys aurea*
multiflora rose	*Rosa multiflora*
VINES	
Chinese wisteria	*Wisteria sinensis*
Japanese climbing fern	*Lygodium japonica*
Japanese honeysuckle	*Lonicera japonica*
Kudzu	*Pueraria montana*
GRASSES	
Bahiagrass	*Paspalum notatum*
Bermudagrass	*Cynodon dactylon*
Johnsongrass	*Sorghum halepense*
Vaseygrass	*Paspalum urvillei*
WILDLIFE AND INSECTS	
red imported fire ants	*Solenopsis sp.*

Control measures for invasive animals and plants are covered in detail in the Camp Minden Invasive Species Management Plan. Base-wide surveys are recommended every 10 years to identify the locations of any new species and to monitor the locations of known species.

The installation supports the National Strategy for Invasive Plant Management and its three goals–prevention, control, and restoration. In the event that additional invasive species are found on the installation, a high priority for control will be established and control efforts will be maximized in accordance with the Invasive Species Management Plan and the LAARNG IPMP.

J.2.1 Goals and Objectives

Management actions for the invasive species program are provided in the 2013 Invasive Species Management Plan and the 2012 IPMP. The control of invasive species is a priority for the CFMO-EM. Nonnative species have the potential to degrade training land at Camp Minden and impact the usability of the land for LAARNG purposes. A variety of invasive pest plants are of concern at Camp Minden; Chinese tallow, Chinese privet, Japanese climbing fern, and mimosa are the most prevalent. These plants can out-compete native plant species; reduce the diversity and quantity of native species; render habitat unsuitable for native animals by altering forage and shelter requirements; cause increased rates of erosion and stream sedimentation; create a system that is more susceptible to wildfires; and impair general ecosystem functions.

In addition, Camp Minden has a growing infestation of the red imported fire ant, and fire ant mounds are located throughout the installation.

Goals:

- Implement invasive species management according to the Camp Minden Invasive Species Management Plan
- Control and/or eradicate invasive species on the installation.
- Ensure compliance with all legislation, regulations, and guidelines for invasive species management.

Objective 12a: Adhere to the guidelines and projects presented in the Camp Minden Invasive Species Management Plan.

Objective 12b: Control invasive species (in accordance with Executive Order 13112) to protect the natural ecosystems of the installation, for improvement of training areas, and for the safety and comfort of training site users.

Project 1: Eliminate to the extent practical and feasible invasive species on approximately 10 acres per year.

Project 2: Clean and inspect all vehicles and equipment coming into the installation for the first time to prevent the spread of invasive species.

Project 3: Prohibit the planting of invasive species in ornamental landscaping, in wildlife supplemental food plots, and in revegetation projects.

Project 4: Reseed native grasses in bare soil resulting from mechanical control of invasive plants in accordance with the Invasive Species Management Plan.

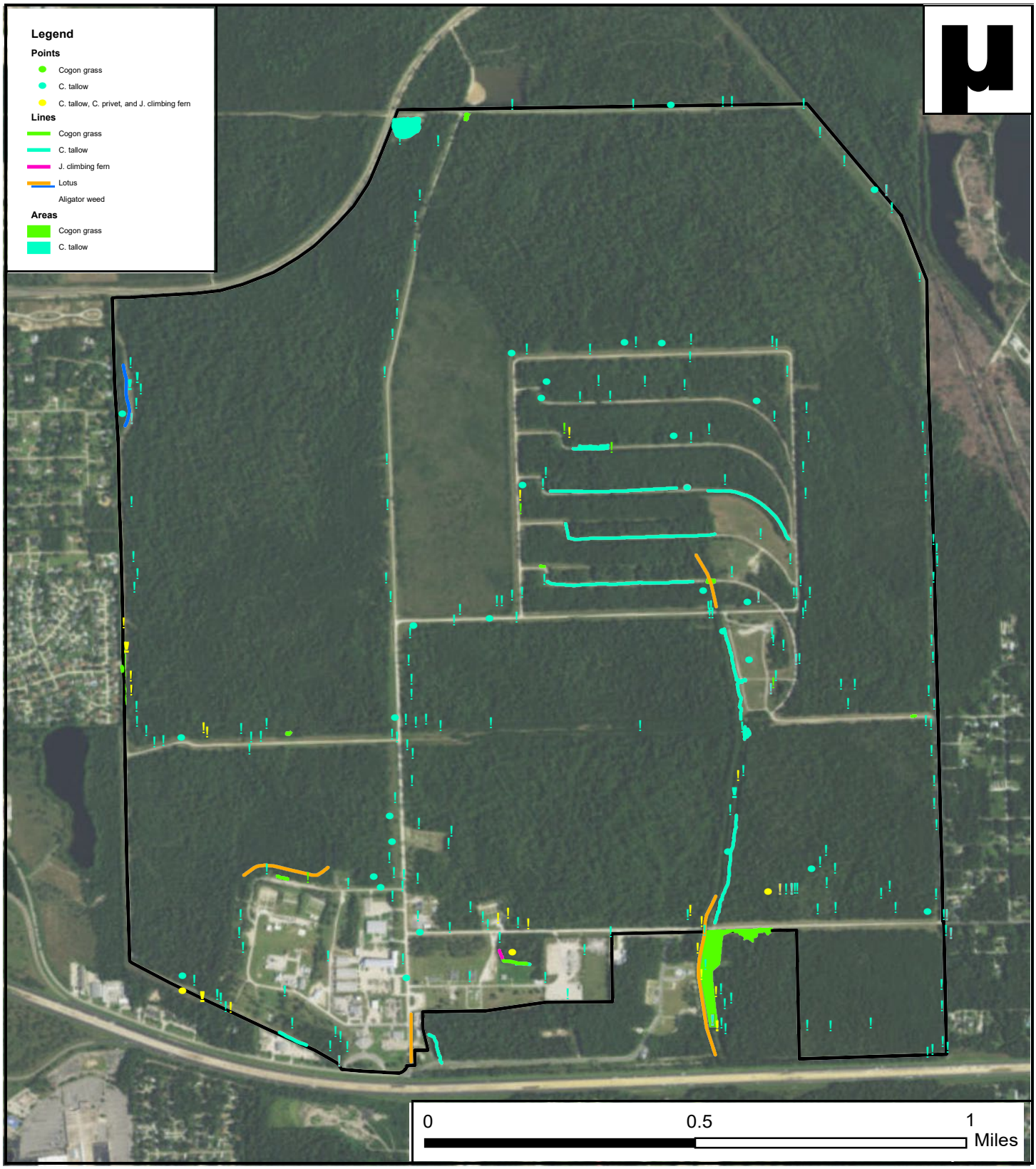
Project 5: Conduct installation-wide surveys every 10 years to identify new locations of invasive species and to monitor known locations. Surveys were completed in 2015; re-survey is scheduled for 2025.

J.3 Camp Villere

Camp Villere's Invasive Species Management Plan was last updated in January 2013. A copy of this plan can be obtained from the LAARNG's Natural Resource Specialist.

Field surveys for invasive species on Camp Villere were last conducted in 2015. During these surveys, numerous invasive species were found and recorded using a GPS. Locations of these invasive species are identified on **Figure J-3**. **Table J-3** identifies all of the invasive species that were found on Camp Villere.

Figure J-3. Invasive Species at Camp Villere



Land Management Group, LLC.

Date: July 31, 2017

Table J-3. Invasive Species Located on Camp Villere

Common Name	Scientific Name
TREES	
Chinaberry	*Milia azedarach*
Chinese tallow	*Sapium sebiferum*
mimosa	*Albizia julibrissin*
SHRUBS	
Chinese privet	*Ligustrum sinense*
multiflora rose	*Rosa multiflora*
VINES	
Japanese climbing fern	*Lygodium japonica*
Japanese honeysuckle	*Lonicera japonica*
GRASSES	
cogon grass	*Imperata cylindrica*
Johnsongrass	*Sorghum halepense*
AQUATICS	
alligator weed	*Alternanthera philoxeroides*
sacred lotus	*Nelumbo nucifera*
WILDLIFE AND INSECTS	
red imported fire ants	*Solenopsis* sp.

Control measures for invasive animals and plants are covered in detail in the Camp Villere Invasive Species Management Plan. Base-wide surveys are recommended every 10 years to identify the locations of any new species and to monitor the locations of known species.

The installation supports the National Strategy for Invasive Plant Management and its three goals–prevention, control, and restoration. In the event that additional invasive species are found on the installation, a high priority for control will be established and control efforts will be maximized in accordance with the Invasive Species Management Plan and the LAARNG IPMP.

J.3.1 Goals and Objectives

Management actions for the invasive species program are provided in the 2013 Invasive Species Management Plan and the 2012 IPMP. The control of invasive species is a priority for the CFMO-EM. Nonnative species have the potential to degrade training land at Camp Villere and impact the usability of the land for LAARNG purposes. A variety of invasive pest plants are of concern at Camp Villere; particularly cogon grass. Cogon grass can out-compete native plant species; reduce the diversity and quantity of native species; render habitat unsuitable for native animals by altering forage and shelter requirements; cause increased rates of erosion and stream sedimentation; create a system that is more susceptible to wildfires; and impair general ecosystem functions.

In addition, Camp Villere has a growing infestation of the red imported fire ant, and fire ant mounds are located throughout the installation.

Goals:

- Implement invasive species management according to the Camp Villere Invasive Species Management Plan
- Control and/or eradicate invasive species on the installation.
- Ensure compliance with all legislation, regulations, and guidelines for invasive species management.

Objective 12a: Adhere to the guidelines and projects presented in the Camp Villere Invasive Species Management Plan.

Objective 12b: Control invasive species (in accordance with Executive Order 13112) to protect the natural ecosystems of the installation, for improvement of training areas, and for the safety and comfort of training site users.

Project 1: Eliminate to the extent practical and feasible invasive species on approximately 10 acres per year.

Project 2: Clean and inspect all vehicles and equipment coming into the installation for the first time to prevent the spread of invasive species.

Project 3: Prohibit the planting of invasive species in ornamental landscaping, in wildlife supplemental food plots, and in revegetation projects.

Project 4: Reseed native grasses in bare soil resulting from mechanical control of invasive plants in accordance with the Invasive Species Management Plan.

Project 5: Conduct installation-wide surveys every 10 years to identify new locations of invasive species and to monitor known locations. Surveys were completed in 2015; re-survey is scheduled for 2025.

Appendix K PROPOSED PROJECTS AND IMPLEMENTATION

Many natural resources and training site improvement projects are planned for the years 2018-2022. **Tables K-1**, **K-2**, and **K-3** lists all of these projects, listed according to management sphere (ecosystem management, endangered species, wetlands, etc.) and objective.

Most of these projects have been entered into the appropriate budget system; however, implementation is subject to funding availability. The "proponent" is identified in accordance with the Sustainable Range/Installation Environmental Activities Matrix as either the Environmental office, Facilities, or the ITAM program. In certain cases, two entities are identified. For these projects, it is anticipated that funding will be provided by one source, but that the other proponent will provide subject matter expertise. SITE represents work to be done by the training site staff itself, rather than funding.

K.1 Camp Beauregard

Table K-1. Planned Projects (Subject to Funding Availability)

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested game data	Annually	IH	ENV, SITE	Ongoing
		Collect and analyze turkey polt counts	Annually	IH	ENV, SITE	Ongoing
		Collect and analyze bobwhite quail surveys	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Update Soil Erosion Control & Restoration Plan	2018	C	ITAM	
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Complete installation-wide survey of NLEB	2018	C	ENV	Ongoing
		Installation-wide survey for federal species	2025	C	ENV	
		RCW surveys in Longleaf Pine Demo Areas	Annually	C	ENV	Ongoing
		Request updates and monitor populations of RCW on Kisatchie	Annually	IH	ENV	Ongoing
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Forest Management	G	Objective 8a: Maintain forest inventory				
		Installation-wide forest inventory	2018	C	ENV	
		Objective 8b: Improve forest health and habitat quality by timber harvesting				
		Conduct timber harvesting IAW Forest Management Plan	Annually	C	ENV	Ongoing
Fire Management	G	Objective 9a: Suppress or prevent damage caused by wildfire				
		Purchase fire suppression equipment and train personnel	per need	IH	ENV	Ongoing

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
		Suppress wildfires	per need	C, IH	ENV, SITE	Ongoing
		Maintain firebreaks and construct new ones	per need	IH	ENV, SITE	Ongoing
		Objective 9b: Prescribe burn				
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b.: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
Invasive Species Program	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Beauregard Invasive Species Management Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

K.2 Camp Minden

Table K-2. Planned Projects (Subject to Funding Availability)

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested game data	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Update Soil Erosion Control & Restoration Plan	2018	C	ITAM	
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Complete installation-wide survey of NLEB	2018	C	ENV	Ongoing
		Installation-wide survey for federal species	2025	C	ENV	
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Forest Management	G	Objective 8a: Maintain forest inventory				
		Installation-wide forest inventory	2018	C	ENV	
		Objective 8b: Improve forest health and habitat quality by timber harvesting				
		Conduct timber harvesting IAW Forest Management Plan	Annually	C	ENV	Ongoing
Fire Management	G	Objective 9a: Suppress or prevent damage caused by wildfire				
		Purchase fire suppression equipment and train personnel	per need	IH	ENV	Ongoing
		Suppress wildfires	per need	C, IH	ENV, SITE	Ongoing
		Maintain firebreaks and construct new ones	per need	IH	ENV, SITE	Ongoing
		Objective 9b: Prescribe burn				
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
Invasive Species Program	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Minden Invasive Species Management Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

J.3 Camp Villere

Table K-3. Planned Projects (Subject to Funding Availability)

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested deer data	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Develop a Soil Erosion Control & Restoration Plan	2018	C	ITAM	
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Installation-wide survey for federal species	2025	C	ENV	
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
Invasive Species Program	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Villere Invasive Species Management Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

Appendix L RESOURCE PROTECTION GUIDELINES

The projects identified in the previous appendix are intended to improve the management and conservation of the natural resources on Camps Beauregard, Minden, and Villere. In addition to large-scale projects, however, appropriate care is necessary in the day-to-day operations and activities of the installations to ensure excessive damage is not inflicted through misuse or carelessness. The following sections provide guidance for the major activity categories occurring on the installations to ensure that the LAARNG abides by all relevant laws and regulations, the intent of this INRMP, and good stewardship in its use and management of the training sites' resources.

L.1 Training Operations

Camps Beauregard, Minden, and Villere exist for the purpose of training National Guardsmen, and that training does have environmental impacts. The following guidelines should be incorporated into all training activities.

L.1.1 Tactical Concealment

Because it is essential that soldiers train under conditions that approximate wartime, occasional cutting of vegetation is necessary. However, indiscriminate cutting of vegetation has the potential to cause undesirable and long-lasting effects; thus, the following guidelines will be followed:

- Tactical concealment will be focused on Type 2 areas.
- Natural concealment and camouflage netting will be used whenever available.
- Smaller trees and bushes (< 2 inches dbh) will be used whenever possible. Vegetation will be selectively removed.
- Brush and small vegetation may be used for camouflage and training barricades.
- Only branches from the lower third of larger trees will be selected.
- Marked trees will not be cut without prior approval from the CFMO-EM.

L.1.2 Bivouacking

Bivouacking is an essential component of military training and suitable bivouac sites are often in short supply. The landscape requirement for bivouac sites is open forest stands. Increased forest management on the installations (*i.e.* thinning operations, prescribed burning) will be utilized to achieve these open forest areas, which will in-turn increase the availability of potential bivouac sites. Improper placement and rotation of bivouac sites can lead to permanent damage to a site. Adherence to the following guidelines will reduce the potential for significant environmental damage.

- Bivouacking will be focused on Type 2 areas.
- Bivouac sites will be located near/adjacent to existing roads.
- Bivouac sites will be rotated to allow sites to recover from disturbance.
- Bivouac sites will be located on ridges to minimize erosion potential when possible.

- Sites will be cleaned and garbage removed upon termination of training.

L.1.3 Roads and Vehicles

Military vehicles and heavy equipment are a standard component of many training exercises. The following guidelines will help to minimize damage to soil and vegetation.

- Track vehicles are restricted to trails and hardened crossings when authorized to move between training areas.
- Vehicular use of forest stands is limited to roads as much as possible, except for special training areas.
- When required for training or fire-fighting operations, off-road heavy vehicles will be allowed in Type 2 and 3 lands and in Type 4 lands on existing roads and firebreaks only. No new entrances or roads will be made into any training area or range without the approval of Range Control.
- Vehicle use on steep slopes, in stream bottoms, and during wet conditions will be avoided.
- Stream crossings will occur on existing or newly constructed, hard stream crossings.
- Vehicles brought to the installations from off-site should be thoroughly washed upon arrival in the Cantonment Area before entering the training site to minimize the spread of invasive species.

L.1.4 Plants and Animals

- Personnel will comply with Louisiana Game and Fish Laws.
- Interaction with wildlife should be avoided due to health and safety concerns.
- Do not disturb food plots or other wildlife management equipment or facilities.
- Snags will be left undisturbed except when they pose a threat to safety. Snags are standing dead trees that provide essential habitat for wildlife species, including food and cavities for nesting. Many birds that live in snags eat insects, which help prevent insect and disease problems in other living trees.
- Understory and native shrub vegetation will be left intact to provide nesting habitat and cover for birds and small mammals.

L.1.5 Streams and Wetlands

- SMZs shall be identified around all water bodies. Perennial and intermittent streams will have an SMZ extending 100 feet to either side of the stream for a total width of 200 feet. There shall be an SMZ 100 feet wide surrounding all wetland areas.
- Avoid operating vehicles in SMZs.
- Road crossings of riparian zones and streams will only be conducted at designated points.
- Spills will be immediately contained and reported according to the installations' SPCC Plan.
- Foot traffic is allowed in wetlands.
- Vehicular traffic is not allowed in wetlands except on established roads.

- There will be no dredging, filling, or dumping of material within wetland areas. Any exceptions have to be approved by the CFMO-EM and required state and/or federal permits obtained before the activity takes place.

L.1.6 Wildfire Management

- Open burning is not allowed without a permit.
- Avoid spark-producing activities in dry weather.
- The use of tracer rounds will be suspended during periods of very high fire danger.
- Accidental fires in training areas will be combated by the unit occupying the area, or the nearest unit to an unassigned area, immediately upon discovery.
- The discoverer of a fire will immediately notify Range Control and his own immediate superior officer. Range Control will immediately notify the CFMO-EM.
- Each succeeding commander in the chain of command will take action as appropriate to provide forces to extinguish or control fires pending arrival of firefighting specialists.
- Prescribed fires will be initiated by trained LAARNG personnel. If the military mission requires an area of the installation to be burned, this information will be provided to the Conservation Manager so that the area can be integrated into the overall burn plan for the year.

L.2 Land Rehabilitation and Maintenance (LRAM) and Construction

Activities which disturb the vegetation and soil can be particularly damaging to the environment if improper methods lead to erosion and sedimentation problems. Even actions intended to improve conditions, such as LRAM projects, can cause damage if not handled appropriately. LRAM and Construction are the two areas which routinely involve earth moving activities and are both subject to the following guidelines:

- Schedule and perform LRAM projects as soon as possible following disturbance, allowing sufficient time for soils to recover. Seed during optimum seeding periods for individual species. Seeding made in fall for winter cover should be mulched.
- Use temporary erosion control methods (such as cover crops) during rainy periods to protect the soil.
- Include all necessary rehabilitation work, BMPs, and associated costs in project proposals and construction contracts and specifications.
- Only native plant species will be used for landscaping and reclamation work, wherever feasible.
- When planting native grasses, include non-persistent grasses that act as a cover crop for the first two or three years to minimize erosion before native species become established, for example: ryegrass.
- Areas that fail to establish vegetative cover will be reseeded as soon as such areas are identified and weather permits.
- Present all construction or other ground-disturbing project plans to the CFMO-EM for review as far in advance as possible: special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams and will take time to obtain.

L.2.1 Construction Management Measures

- Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.
- Construction must be sequenced to minimize exposure time of cleared surface area. Grading activities must be avoided during periods of highly erosive rainfall.
- Construction must be staged or phased for larger projects. Areas of one phase must be stabilized before another phase can be initiated. Stabilization shall be accomplished by temporarily or permanently protecting the disturbed soil surface from rainfall impacts and runoff.
- Erosion and sediment control measures must be in place and functional before earth moving operations begin and must be properly constructed and maintained throughout the construction period.
- Regular maintenance is vital to the success of erosion and sediment control systems. All control measures shall be checked twice per week, 72 hours apart, before anticipated storm events, and after each rainfall. During prolonged rainfall, daily checking is necessary.
- Construction debris must be kept from entering any stream channel.
- Stockpiled soil shall be located far enough from streams or drainageways that runoff cannot carry sediment downstream.
- A specific individual shall be designated to be responsible for erosion and sediment controls on each project site.
- If the area to be disturbed is one acre or greater, a Louisiana Construction General Permit is required. The Notice of Intent must be submitted to the State at least 30 days prior to any disturbance of the site. Land disturbing activities shall not start until written approval is obtained from the LDEQ.

L.2.2 Vegetative Controls

- A buffer strip of vegetation at least as wide as the stream shall be left along any stream bank. On streams less than 25 feet wide, the buffer zone shall extend at least 50 feet back from the water's edge on both sides.
- Vegetation ground cover shall not be destroyed, removed, or disturbed more than 15 calendar days prior to grading.
- Temporary soil stabilization with appropriate annual vegetation (e.g., annual ryegrass) shall be applied on areas that will remain unfinished for more than 30 calendar days.
- Permanent soil stabilization with perennial vegetation shall be applied as soon as practicable after final grading.
-

L.3 Facilities Management

Maintenance of an attractive, tidy facility is important; however, even activities in a heavily modified cantonment area can impact the environment. Mowing, landscaping, and pesticide use in the managed landscape should be undertaken with consideration for this impact.

- Avoid mowing open grasslands from April to September for the protection of nesting birds. Areas in which taller growth will not impeded training should be mowed in late March and then allowed to grow until November.
- Only native species will be used for landscaping and replanting purposes without clearance from the CFMO-EM. Native plants are better adapted to local conditions and generally require less fertilizer and herbicide/pesticide input. Use of natives also limits the spread of invasive, exotic species.
- Consider seasonal variables (e.g., timing and quantity of average rainfall, appropriate planting season) in planning and scheduling projects.
- Consider erosion factors when choosing sites for training, construction, or management activities.
- Always include appropriate surface restoration, fertilization, and seeding (or other revegetation practice) as the final stage of any project which disturbs the soil or vegetation.
- Apply BMPs to all LAARNG projects.
- Use biological control methods wherever feasible and economical. Only apply pesticides when effective biological or mechanical control methods cannot be found or are prohibitively expensive. See the LAARNG IPMP for more information.
- Pesticides and herbicides can only be applied by certified applicators and must be reported to the Pest Management Coordinator.
- Herbicides will be utilized to control weedy vegetation in the most time- and cost-effective manner.
- A NPDES permit may be required if pesticides (including herbicides) are applied in or near waters of the U.S. or wetlands. NPDES permits are required for any point source discharge to waters of the U.S. from the application of (1) biological pesticides and (2) chemical pesticides that leave a residue. The USEPA identified four pesticide use patterns that generally include the full range of pesticide application activities that meet this condition, including mosquitoes and other flying insect pests, weeds and algae, animal pests, and forest canopy pests.

L.4 Road Construction and Maintenance

Roads can be a significant source of sediment, as well as an on-going drain on funds, if poorly designed. Proper placement, design, and construction can alleviate many of the problems associated with unpaved roads, even when utilized by heavy wheeled and track vehicles.

L.4.1 Access Road Location

Access roads shall be designed and located to prevent sediment from entering the waters of the State. Methods to prevent sedimentation to streams include, but are not limited to, the following:
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- Minimize the amount of road to be constructed using existing roads where practical.
- Locate roads as far from streams and lakes as possible and practical.
- Locate roads as far as practical from SMZs.
- Avoid or minimize stream crossings. If crossings are necessary, roads should cross streams as close to right angles as possible.

- Avoid sensitive areas that could interfere with drainage and cause soil compaction or erosion.

L.4.2 Access Road Construction

Access roads shall be constructed to prevent sediment from entering the waters of the State. Methods to prevent sedimentation include, but are not limited to, the following:

- To the extent possible, construct and revegetate new roads several weeks or longer in advance of logging/use.
- Avoid road construction during periods of wet weather.
- Construct roads on grades of 2 to 12 percent where possible. Runoff from roads should not directly discharge into a stream channel. Runoff from stream crossings should be minimized. Control runoff from roads using techniques such as varying the slope of the road, crowing, outsloping, wing ditches, sediment traps, sediment control structures, broad-based dips, rolling dips, water bars and cross drain culverts and other measures recommended by the Department of Agriculture. Steeper grades are acceptable for short distances provided additional attention is given to water control/drainage structures.
- When possible, trees and brush cleared for road corridors should be pushed to the downhill side of the road to assist in trapping sediment.
- Avoid excessive soil disturbance during road construction.
- Revegetate exposed soil in potential problem areas (*i.e.* culverts, stream crossing, fill areas).

L.4.3 Road Retirement

Access roads shall be retired in such a way as to prevent sediment for entering the waters of the State. Methods to prevent sedimentation include, but are not limited to, the following:

- Water bars or other drainage structures should be constructed immediately after active logging/road use has ceased. If logging will be delayed for a substantial period of time, temporary drainage and erosion control structures should be constructed.
- Upon completion of logging/road use, remove temporary bridges and culverts; remove sediment and debris from dips, ditches, and culverts; and revegetate problem areas.
- Use lime, fertilizer, mulch, and/or seed when needed to prevent soil erosion. Amounts should be based on recommendations from the Department of Agriculture.

L.5 Water Resources

The water resources on Camps Beauregard, Minden, and Villere include several different ecotypes: perennial and intermittent streams, the riparian areas surrounding the streams, and wetlands. While the characteristics of these areas can vary widely, they share the key factor of water and a significant role in the water cycle as well as being important habitats for many creatures. Protection of water resources is of the utmost importance, and they are habitats that can be easily damaged by accident or careless action. One of the simplest BMPs for protection of water resources is the establishment and use of SMZs.

SMZs are buffer strips adjacent to perennial or intermittent streams or other bodies of water within which activities are limited in order to protect water quality. They shall be designated and managed to buffer water temperatures, prevent sediment and other pollutants from entering waters of the State, and provide travel corridors and habitat for wildlife. SMZs should be established along any stream (perennial or intermittent) or water body where the potential exists for the movement of sediment or pollutants into the stream or water body. Methods to prevent sedimentation to streams include, but are not limited to, the following:

- Establish SMZs along any stream (perennial or intermittent) or water body where the potential exists for the movement of sediment into the stream or water body.
- In association with wetlands, establish SMZs at least 100 feet in width surrounding the wetland area.
- There shall be no digging for training purposes, forest management, or construction activities within an SMZ without prior review and permission from the CFMO-EM. Certain activities may require a state or federal permit prior to initiation of activity.
- Do not remove any trees within an SMZ if such removal would result in soil potentially getting into the stream. If trees can be harvested without risk of soil loss, maintain 50 to 75 percent of the vegetation canopy shading a perennial stream.
- Avoid operating any vehicles or other equipment within an SMZ.

In addition to protection of SMZs, other actions and/or limitations are essential to maintain high water quality and habitat quality:

L.5.1 Streams and Riparian areas

- Training is allowed in riparian areas outside of the SMZ in accordance with guidelines for forestlands. Use extra caution to avoid causing sedimentation or other contamination of the associated waterway.
- Spills will be immediately contained and reported according to the installations' SPCC Plan.
- Dumping of any substance on the training site is not allowed.
- Minimize stream crossings. If regular crossing of a creek or seasonal conveyance is necessary, hardened crossings provide more protection. Contact the CFMO-EM prior to making any alterations to any stream crossing.
- Monitor for erosion problems along stream banks. Report any erosion, exposed soil, or stream bank collapse to the CFMO-EM as soon as possible.
- Utilize native species for plantings to stabilize banks. Vegetative structures are preferable to riprap or concrete structures in most situations.
- Use Erosion Control BMPs during all LRAM projects, road construction and relocation, and maintenance.
- Any activity that will impact a stream or wetland must be presented to the CFMO-EM well in advance of the planned action date. Special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams, and these permits take time to obtain.

L.5.2 Wetlands

- Foot traffic is allowed in wetlands.
- Vehicular traffic is not allowed in wetlands except on established roads.
- Any non-foot traffic, training, or land management activity to be conducted within a wetland should be coordinated with the CFMO-EM.
- There will be no dredging, filling, or dumping of any material within wetland areas. Any exceptions will have to be approved by the CFMO-EM and required state and/or federal permits obtained.
- Only herbicides and pesticides labeled for wetland/surface water use will be applied within wetland boundaries (e.g., Rodeo, Aquamaster, Habitat, Accord). Within 50 feet of any wetland boundary, foliar application of herbicides will be limited to those products labeled for application to water because of the risk of drift. All other herbicide applications made within the SMZ area will be made via stem treatments (cut stump, basal bark, or stem injection).
- A NPDES permit may be required if pesticides (including herbicides) are applied in or near waters of the U.S. or wetlands.
- Any ground disturbing activities near wetland areas that might alter the hydrology of the system must be reviewed by the CFMO-EM before any work takes place.
- Implement Erosion and Sediment Controls in construction areas and maneuver areas, streambank stabilization methods, and forestry BMPs to minimize delivery of sediment and chemical pollutants to wetland areas.
- Present all construction plans to the CFMO-EM for review as far in advance as possible. Special permits are required when disturbing federal jurisdictional wetlands or perennial or intermittent streams and will take time to obtain.

L.6 Pest Management

Pest management is an important part of maintaining facilities and protecting the health and safety of personnel, as well as the integrity of natural ecosystems. LAARNG pest management activities are regulated by federal and state law and by DoD regulation. These restrictions and the management goals and guidelines for pest control on LAARNG facilities are presented in the statewide IPMP.

- All applications of herbicide or pesticide on the installations must be by a State- or DOD-certified applicator.
- All applications of herbicide or pesticide must be reported to the LAARNG Pest Management Coordinator.
- Use non-chemical control methods wherever feasible and economical. Only apply pesticides when effective biological or mechanical control methods cannot be found or are prohibitively expensive.
- Pesticides and herbicides should be applied at the time when they will be most effective against the pest in order to achieve maximum control for minimum application. See the IPMP for more information.
- A NPDES permit may be required if pesticides (including herbicides) are applied in or near waters of the U.S. or wetlands.

- Invasive plant species control will follow the methods and guidelines presented in the Invasive Species Management Plans.
- Only native species will be used in landscaping and in reclamation work.

Contractors who apply pesticides on Camps Beauregard, Minden, or Villere must:

- Show proof of liability insurance.
- Have State commercial certification and licensing in the category or categories of work to be performed.
- Use only USEPA registered pesticides or herbicides that are on the "Approved Pesticide List" for use on LAARNG sites (see the IPMP).
- Furnish LAARNG personnel with legible copies of specimen labels and the Material Safety Data Sheets of all pesticides proposed for use.
- Furnish LAARNG personnel with the information required for pest management record keeping (see the IPMP).
- Pesticides must be mixed, stored, and disposed of in accordance with Federal, State, and local regulations and with procedures established by the LAARNG.

L.7 Endangered Species Monitoring and Protection

Currently, there are no known federally threatened or endangered species on Camps Beauregard, Minden, or Villere. Guidance for the protection of any listed species discovered will be developed as needed.

L.8 Cultural Resources Management

The LAARNG Cultural Resources Management Policy is defined in the ICRMP for Louisiana. The following are key points in protection of cultural resources:

- The LAARNG will consult the SHPO so that known historic, archaeological, and Native American sites may be avoided.
- Cemeteries will be protected and maintained through fencing.
- For ground disturbing undertakings
    - Prior to any ground disturbance, contact the CRM office to verify that the site is clear of known cultural resources.
    - The avoidance or mitigation of adverse impacts to NRHP eligible sites shall be proactively incorporated into the design and planning process rather than deferred until archaeological deposits may be discovered during actual construction.
    - All machine aided excavations or other earth moving projects shall be designed to avoid damage to archaeological sites or other historic properties that may be eligible for inclusion to the NRHP.
    - Until the SHPO has determined an archaeological site to be not eligible or has concurred with a recommendation that an archaeological site is not eligible, any newly discovered sites will be treated as potentially eligible and will be avoided whenever possible.

- In the event of Inadvertent Discovery of Archaeological Deposits (ICRMP SOP #5)
    - Contact the CRM immediately. Stop all work at the site.
    - Archaeological deposits which are newly discovered in the construction of any undertaking shall be evaluated for their NRHP eligibility.
    - Until the SHPO has determined an archaeological site to be not eligible or has concurred with a recommendation that an archaeological site is not eligible, any newly discovered sites will be treated as potentially eligible and will be avoided whenever possible.

Appendix M

NEPA Documentation

Preliminary Draft
ENVIRONMENTAL ASSESSMENT

Implementation of the Louisiana Army National Guard's 2018-2022 Integrated Natural Resources Management Plan Camps Beauregard, Minden, and Villere

August 2017

Proponent:
Louisiana Army National Guard
Joint Force Headquarters
420 F Street
Pineville, Louisiana 71360

USACE Contract No. W912BV-16-D-0015
Task Order No. 0003

Lead Agency, Abstract, and Signature Page

LEAD AGENCY: National Guard Bureau

COOPERATING AGENCIES: None

TITLE OF PROPOSED ACTION: Implementation of the Louisiana Army National Guard's 2018-2022 Integrated Natural Resources Management Plan

AFFECTED JURISDICTION: Camps Beauregard, Minden, and Villere

POINT OF CONTACT: CPT Jeremy Futrell, Environmental Program Manager, Joint Forces Headquarters, 420 F Street, Camp Beauregard, Pineville, Louisiana, 71360

PROPONENTS: Louisiana Army National Guard

REVIEWED BY:

CPT Jeremy Futrell Date	Kevin Chapman Date
LAARNG	LAARNG
Environmental Program Manager	Conservation Manager

DOCUMENT DESIGNATION: Environmental Assessment

ABSTRACT: The LAARNG proposes to enhance natural resources management by implementing a revised 2018-2022 INRMP that provides for the conservation and rehabilitation of the natural resources on Camps Beauregard, Minden, and Villere. The purpose of updating and implementing the INRMP is to meet the requirements of the Sikes Act (Title 16, United States Code 670a et seq.) as amended, which provides the primary legal basis for the Secretary of Defense to carry out a program for the conservation and rehabilitation of natural resources on military installations.

This Environmental Assessment evaluates the individual and cumulative effects of the Proposed Action (implementation of the revised INRMP) and the No Action Alternative with respect to the following criteria: location and land use, air quality, noise, soils, water resources, biological resources, cultural resources, socioeconomic environment, infrastructure, and hazardous and toxic materials/wastes.

The evaluation performed within this EA concludes that there would be no significant adverse effects, either individually or cumulatively, to environmental, cultural, or socioeconomic resources as a result of the implementation of the Proposed Action. Overall, beneficial impacts are anticipated.

Executive Summary

The Louisiana Army National Guard (LAARNG) has prepared an Environmental Assessment (EA) to identify and evaluate potential environmental, cultural, and socioeconomic effects from implementing the revised Integrated Natural Resource Management Plan (INRMP) for Camps Beauregard, Minden, and Villere. The INRMP has specified the land management practices and adaptive management strategies that will conserve ecological integrity, Army training, and promote the health of the installations' ecosystems. The LAARNG's approach to natural resource management is embodied in its vision of the relationships between the military mission and the natural resources upon which that mission depends. Together, natural resource professionals and military personnel will strive to promote the long-term ecological sustainability of Camp Beauregard, Minden, and Villere's lands for multiple-use opportunities.

This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) Regulations at 40 Code of Federal Regulations (CFR) Parts 1500-1508, and the Army NEPA Regulation at 32 CFR Part 651 (*Environmental Analysis of Army Actions*).

NEPA and Federal implementing regulations collectively establish a process by which the LAARNG considers the potential environmental impacts of its proposed actions and invites the involvement of interested members of the public prior to deciding on a final course of action. As such, this EA will facilitate the decision-making process regarding the Proposed Action and its reasonable Alternatives. This EA will also provide the basis for determining if a Finding of No Significant Impact (FNSI) is appropriate, or if an Environmental Impact Statement (EIS) is required.

Purpose and Need

The purpose of updating and implementing the INRMP is to meet the requirements of the Sikes Act (Title 16, United States Code 670a et seq.), which provides the primary legal basis for the Secretary of Defense to carry out a program for the conservation and rehabilitation of natural resources on military installations. INRMPs shall be prepared in cooperation with, and reflect the mutual agreement of, the Secretary of the Interior (acting through the Director of the U.S. Fish and Wildlife Service) and the head of each appropriate state fish and wildlife agency for the state(s) where the military installation concerned is located. The LAARNG occupies land in Louisiana.

According to the Sikes Act, the INRMP must address the following:

- The management of land, forests, fish and wildlife, and fish and wildlife-oriented recreation;
- Wetland protection and enhancement;
- Fish and wildlife protection and enhancement or modification;
- Sustainable public use of natural resources and public access for such use (subject to requirements necessary to ensure safety and military security);
- Integration of and consistency among the various activities conducted under the INRMP;
- Natural resource management goals, objectives, and time frames for this Proposed Action;

- Enforcement of applicable natural resource laws (including regulations);
- No net loss of the capability of the installation to support the military mission;
- Other activities as the Secretary of the Army determines appropriate.

The LAARNG has ensured that the 2018-2022 INRMP has met the Sikes Act requirements as listed above. The focus of the INRMP is to be ecosystem based, rather than management for single-species. To ensure that the LAARNG can meet its mission needs now and into the future, the natural resources that provide the training environment must be managed such that they are ecologically sustainable. Updating and implementing the INRMP would ensure that desired future conditions, which envision all aspects of a future ecosystem and include conservation and military mission related needs, are integrated and consistent with applicable Federal and state stewardship requirements. Fundamentally, an INRMP would represent a proactive approach in assuring training over the long-term continues through the sustainability of the natural resources.

Proposed Action

The LAARNG proposes to enhance natural resources management by implementing the revised 2018-2022 INRMP that provides for the conservation and rehabilitation of natural resources and support of the military mission. The INRMP would enhance the LAARNG's ongoing compliance with applicable state and federal environmental laws/regulations, Army regulations, and Department of Defense Instructions.

The Sikes Act specifically directs that INRMPs be reviewed at least every five years to determine whether existing INRMPs are being implemented in accordance with the Sikes Act to contribute to the conservation and rehabilitation of natural resources on military installations.

The LAARNG, through the findings of this EA, will select the alternative that ensures an approach to updating and integrating natural resource management actions and other activities on Camps Beauregard, Minden, and Villere.

The Proposed Action is the preferred alternative and would result in the implementation of the revised 2018-2022 INRMP. This Alternative would meet the purpose and need for the Proposed Action and is considered reasonable as it meets the screening criteria. Specific projects to support the attainment of desired future conditions for ecosystem management, as described in the INRMP, are outlined in more detail in **Tables 1, 2,** and **3** of this EA. Such activities are long-term goals and continuing from previous INRMPs. Updates to the 2018-2022 INRMP include:

- The addition of the northern long-eared bat (*Myotis septentrionalis*) to the endangered species list at Camps Beauregard and Minden.
- Inclusion of updated survey data for endangered and invasive species across all three installations.
- Revised INRMP format to reduce redundancy and focus on important resources and management actions;

Alternatives

NEPA regulations require the development and consideration of the Proposed Action and appropriate alternatives. The LAARNG developed screening criteria to be measured against the

Alternatives in an effort to narrow down alternatives for further analysis. Any alternatives that failed to meet the following criteria were eliminated from further analysis.

- Meets the Purpose and Need as described in **Section 1.2** of this EA.
- Consistent with applicable Federal and state stewardship requirements such as the Endangered Species Act, Clean Air Act, Clean Water Act, National Historic Preservation Act, Native American Grave Protection and Repatriation Act, Executive Orders, etc.
- Results in no net loss to military training capabilities that are currently available to accomplish the mission of the LAARNG.

The 2015 INRMP identified goals, objectives, and projects to sustain military readiness, promote environmental stewardship, and conserve biodiversity. These were reevaluated and some of the goals, objectives, and projects were changed or deleted for the revised INRMP. Some new goals, objectives, and projects were introduced in the revised INRMP. Preparation and full implementation of the INRMP is an Army requirement. As such, other alternatives, including partial implementation of the 2015 or 2018 INRMP, were considered but were dismissed as not feasible, impracticable, or precluded by legal insufficiency.

The alternatives to the Proposed Action carried forward for further study include:

No Action Alternative
The LAARNG would continue natural resource management under the 2015 INRMP.

While the No Action Alternative would not satisfy the purpose or need for the Proposed Action, this alternative was retained to provide a comparative baseline against which to analyze the effects of the Proposed Action, as required by NEPA regulations. The No Action Alternative reflects the status quo and serves as a benchmark against which the effects of the Action Alternative can be evaluated.

Environmental Consequences

The existing condition of the environmental resources at Camps Beauregard, Minden, and Villere potentially affected by both of the analyzed alternatives and consequences of their implementation is presented in **Chapter 4.0** of the EA. Analysis consists of a comparison of each alternative and the potential environmental effects to each environmental resources area. A summation of the environmental resource areas fully analyzed, environmental effects, and mitigation measures for potential adverse effects are identified where applicable and are summarized **Table ES-1**. Concisely, no adverse impacts (only beneficial or no impacts) would occur as a result of the Proposed Action. Cumulative impacts as a result of the Proposed Action were either negligible or beneficial; see **Chapter 5.0** for more details.

Table ES-1. Alternative Comparison Matrix

Technical Resource Area	No Action Alternative	Proposed Action
Land Use	**No effect.**	**No effect.**
Air Quality	**Beneficial Impact:** Minor, short-term adverse effects may result during prescribed burning events. However, overall beneficial impacts to air quality would result from maintaining lower fuel levels.	Same as described under the No Action Alternative.
Noise	**Negligible**	**Negligible**
Geology and Soils	No effect to geology, topography, or seismicity. **Beneficial Impact to Soils:** While silviculture and prescribed burns can in the short-term increase runoff and sedimentation, the use of BMPs and continuation of current natural resource management practices will have long-term beneficial effects.	Same as described under the No Action Alternative.
Water Resources	No effect to groundwater, floodplains, or the Louisiana Coastal Zone. **Beneficial Impact to surface water and wetlands:** While project activities and prescribed burns can in the short-term increase runoff and sedimentation, the use of BMPs and continuation of current natural resource management practices will provide long-term protection against runoff and surface water impairment providing beneficial effects.	Same as described under the No Action Alternative.
Biological Resources	**Beneficial Impact:** The continuation of ecosystem management activities will have beneficial effects on biological resources.	**Beneficial Impact:** Same as described under the No Action Alternative. Additionally, the incorporation of new and revised projects will have additional beneficial effects on biological resources.
Cultural Resources	**Negligible**	**Negligible**
Socioeconomics (including Environmental Justice and Protection of Children)	**No effect.**	**No effect.**
Infrastructure	**No effect.**	**No effect.**
Hazardous and Toxic Materials/Wastes	**No effect.**	**No effect.**

The analysis contained in this EA indicates that for the Proposed Action, beneficial impacts would result to air quality, soils, surface waters and wetlands, and biological resources. Additionally, for the Proposed Action, no impacts to land use, noise, geology, cultural resources, socioeconomics, infrastructure, or hazardous and toxic materials/wastes are expected to result. Thus, no significant adverse impacts to these resources are anticipated either in a long- or short- term basis.

In accordance with NEPA Regulations, the proponent must indicate if any mitigation measures are needed to minimize potential adverse effects. No mitigation measures have been identified in this EA due to the lack of potential adverse impacts from the Proposed Action.

Conclusion

Based on this EA, it is concluded that only the Proposed Action (implementation of the 2018- 2022 INRMP) would meet the purpose and need. Although the impacts (beneficial or negligible) to environmental resource areas are similar between the Proposed Action and No Action Alternative, the Proposed Action would have additional beneficial effects upon Biological Resources as a result of updated plans and components.

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LIST OF ACRONYMS AND ABBREVIATIONS

ARPA	Archaeological Resources Protection Act
BMPs	Best Management Practices
CBTS	Camp Beauregard Training Site
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CRM	Cultural Resource Manager
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EIS	Environmental Impact Statement
FNSI	Finding of No Significant Impact
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
LAARNG	Louisiana Army National Guard
LDAF	Louisiana Department of Agriculture and Forestry
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LNHP	Louisiana Natural Heritage Program
LPDES	Louisiana Pollutant Discharge Elimination System
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
SHPO	State Historic Preservation Officer
SMZ	Streamside Management Zone
SOP	Standard Operating Procedures
SWPPP	Storm Water Pollution Prevention Plan
TNC	The Nature Conservancy
USACE	U.S. Army Corps of Engineers
U.S.C	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WMA	Wildlife Management Area

1.0 Purpose of and Need for the Proposed Action

1.1 Introduction

This Environmental Assessment (EA) is prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 US Code [U.S.C] 4321 *et seq*.), the Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Army NEPA Regulation (*Environmental Analysis of Army Actions*; 32 CFR Part 651, 1 January 2007). The outline and content of the EA has been prepared in accordance with the guidelines provided in the National Guard Bureau (NGB) NEPA Handbook (NGB 2011).

Under NEPA and its implementing regulations, Federal agencies are required to consider the environmental impacts of major proposed actions in the form of an EA or Environmental Impact Statement (EIS). This NEPA analysis records the development process for and evaluates the potential environmental effects of implementing the revised Integrated Natural Resource Management Plan (INRMP) at Camps Beauregard, Minden, and Villere. The INRMP will update the 2015 INRMP and specify the land management practices and adaptive management strategies that will conserve ecological integrity, Army training, and promote the health of the Louisiana Army National Guard's (LAARNG) ecosystems.

NEPA Regulations collectively establishes a process by which the LAARNG considers the potential environmental impacts of its proposed actions and invites the involvement of regulators and interested members of the public prior to deciding on a final course of action. As such, this EA will facilitate the decision-making process regarding the INRMP. This EA will also provide the basis for determining if a Finding of No Significant Impact (FNSI) is appropriate, or if an EIS is required in accordance with the above regulations.

The LAARNG's approach to natural resource management is embodied in its vision of the relationships between its military mission and the natural resources upon which that mission depends. Together, natural resource professionals and military personnel will strive to promote the long-term ecological sustainability of LAARNG lands for multiple-use opportunities.

1.2 Purpose and Need

The purpose of updating and implementing the INRMP is to meet the requirements of the Sikes Act (Title 16, U.S.C 670a et seq.) as amended, which provides the primary legal basis for the Secretary of Defense to carry out a program for the conservation and rehabilitation of natural resources on military installations. To facilitate such a program, the Act requires the Secretary of each military department to prepare and implement an INRMP at appropriate military installations throughout the United States under their respective jurisdictions. Moreover, such plans shall be prepared in cooperation with, and reflect the mutual agreement of, the Secretary of the Interior (acting through the Director of the U.S. Fish and Wildlife Service [USFWS]) and the head of each appropriate state fish and wildlife agency for the state(s) where the military installation is located.

According to the Sikes Act, the INRMPs must address the following:

- The management of land, forests, fish and wildlife, and fish and wildlife-oriented recreation;
- Wetland protection and enhancement;
- Fish and wildlife protection and enhancement or modification;
- Sustainable public use of natural resources and public access for such use (subject to requirements necessary to ensure safety and military security);
- Integration of and consistency among the various activities conducted under the INRMP;
- Natural resource management goals, objectives, and time frames for this Proposed Action;
- Enforcement of applicable natural resource laws (including regulations);
- No net loss of the capability of the installation to support the military mission;
- Other activities as the Secretary of the Army determines appropriate.

The LAARNG has ensured that the 2018-2022 INRMP has met the Sikes Act requirement as listed above. The focus of the INRMP is to be ecosystem based, rather than management for single-species. To ensure that the LAARNG can meet its mission needs now and into the future, the natural resources that provide the training environment must be managed such that they are ecologically sustainable. Updating and implementing the INRMP would ensure that desired future conditions, which envision all aspects of a future ecosystem and include conservation and military mission related needs, are integrated and consistent with applicable Federal and state stewardship requirements. Fundamentally, an INRMP would represent a proactive approach in assuring training over the long-term continues through the sustainability of the natural resources.

1.3 Scope of the Environmental Assessment

A detailed description of the Proposed Action is provided in **Chapter 2.0**. Screening criteria for evaluating potential alternatives are provided in **Section 3.1**. This EA provides a detailed comparative analysis of the following alternatives:

> **Proposed Action** – Implement the revised 2018-2022 INRMP defined in **Section 2.0** to fulfill the assigned environmental protection requirements of the LAARNG. This is the LAARNG's preferred alternative.
>
> **No Action Alternative** – Continue natural resource management under the 2015 INRMP.

The following resources, described in **Chapter 4.0** and evaluated in **Chapter 5.0,** were identified and analyzed for the Proposed Action and No Action Alternative: land use, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, environmental justice, infrastructure, and hazardous and toxic materials/wastes. This EA also considers the cumulative effects of the Proposed Action when added to other past, present, and reasonably foreseeable actions within the region.

As specified under NEPA and CEQ Regulations 40 CFR 1500-1508, a monetary cost-benefit analysis is not required as part of the EA. The Proposed Action and its alternatives have been

developed based on Federal and state environmental regulations and mission requirements. As such, no quantitative financial assessment has been performed as part of this EA.

1.4 Decision to be Made

The LAARNG, through the findings of this EA, must select the alternative that ensures an approach to integrating natural resource management actions and activities on Camps Beauregard, Minden, and Villere. Although the Sikes Act and Army Regulation 200-1 specify required components of an INRMP and specific criteria that must be met, the focus of the INRMP is left up to each installation.

2.0 Description of the Proposed Action

The LAARNG proposes to enhance natural resources management by implementing a revised 2018-2022 INRMP that provides for the conservation and rehabilitation of the natural resources on Camps Beauregard, Minden, and Villere. The INRMP not only focuses on the management of the natural resources on training lands, but also addresses natural resource management activities that occur within the cantonment areas. Additionally, the INRMP is one component of Real Property Management, and would be coordinated with the installations' Long Range component of the Real Property Master Plan and the Range and Training Land Program. Furthermore, it would enhance the LAARNG's ongoing compliance with environmental laws, Army regulations, and Department of Defense (DoD) Instructions.

The Sikes Act specifically directs that INRMPs be reviewed "as to operation and effect," highlighting that the review is intended to determine whether existing INRMPs are being implemented to meet the requirements of the Sikes Act and contribute to the conservation and rehabilitation of natural resources on military installations.

The DoD and U.S. Army policy requires all INRMPs to be reviewed annually by the installation in cooperation with involved parties and revised, as necessary, but no less often than every five years. In the event that an installation's mission requirements or its natural resources undergo substantial changes, more frequent or immediate revisions may be warranted (U.S. Army 2007).

The last INRMP was completed in 2015 and although not outdated, LAARNG environmental personal felt a revision was warranted. In the past, the LAARNG has prepared separate INRMPs for each installation. Internal review of the 2015 INRMPs determined that the three documents could be combined into one document that addresses all three installations. In addition, a new species was listed in January 2015 as threatened in the State of Louisiana, requiring its incorporation into the document. These aspects required a revision to the existing INRMP.

Updates to the 2018-2022 INRMP include:

- The addition of the northern long-eared bat (*Myotis septentrionalis*) to the endangered species list at Camps Beauregard and Minden.
- Inclusion of updated survey data for endangered and invasive species across all three installations.
- Revised INRMP format to reduce redundancy and focus on important resources and management actions;

Specific projects to support the attainment of desired future conditions for ecosystem management, as described in the INRMP, are outlined in more detail in **Tables 1, 2,** and **3**. Such activities are long-term goals and some are continuing from previous INRMPs.

Table 1. Camp Beauregard Planned Projects (Subject to Funding Availability)

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested game data	Annually	IH	ENV, SITE	Ongoing
		Collect and analyze turkey polt counts	Annually	IH	ENV, SITE	Ongoing
		Collect and analyze bobwhite quail surveys	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Update Soil Erosion Control & Restoration Plan	2018	C	ITAM	

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Complete installation-wide survey of NLEB	2018	C	ENV	Ongoing
		Installation-wide survey for federal species	2025	C	ENV	
		RCW surveys in Longleaf Pine Demo Areas	Annually	C	ENV	Ongoing
		Request updates and monitor populations of RCW on Kisatchie	Annually	IH	ENV	Ongoing
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Forest Management	G	Objective 8a: Maintain forest inventory				
		Installation-wide forest inventory	2018	C	ENV	
		Objective 8b: Improve forest health and habitat quality by timber harvesting				
		Conduct timber harvesting IAW Forest Management Plan	Annually	C	ENV	Ongoing
Fire Management	G	Objective 9a: Suppress or prevent damage caused by wildfire				
		Purchase fire suppression equipment and train personnel	per need	IH	ENV	Ongoing
		Suppress wildfires	per need	C, IH	ENV, SITE	Ongoing
		Maintain firebreaks and construct new ones	per need	IH	ENV, SITE	Ongoing
		Objective 9b: Prescribe burn				
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b.: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide				

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
		IPMP				
Invasive Species Program	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Beauregard Invasive Species Management Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

Table 2. Camp Minden Planned Projects (Subject to Funding Availability)

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested game data	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Update Soil Erosion Control & Restoration Plan	2018	C	ITAM	

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Complete installation-wide survey of NLEB	2018	C	ENV	Ongoing
		Installation-wide survey for federal species	2025	C	ENV	
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Forest Management	G	Objective 8a: Maintain forest inventory				
		Installation-wide forest inventory	2018	C	ENV	
		Objective 8b: Improve forest health and habitat quality by timber harvesting				
		Conduct timber harvesting IAW Forest Management Plan	Annually	C	ENV	Ongoing
Fire Management	G	Objective 9a: Suppress or prevent damage caused by wildfire				
		Purchase fire suppression equipment and train personnel	per need	IH	ENV	Ongoing
		Suppress wildfires	per need	C, IH	ENV, SITE	Ongoing
		Maintain firebreaks and construct new ones	per need	IH	ENV, SITE	Ongoing
		Objective 9b: Prescribe burn				
		Continue prescribed fire regime (2,500 acres per year)	Annually	C, IH	ENV, SITE	Ongoing
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
Invasive Species	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Minden Invasive Species Management				

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Program		Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

Table 3. Camp Villere Planned Projects (Subject to Funding Availability)

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Ecosystem Management	E	Objective 1a: Characterize natural communities				
		Installation-wide bird survey	2020	C	ENV	
		Installation-wide mammal survey	2021	C	ENV	
		Develop long-term monitoring program (database)	2018	C	ENV	
		Objective 1b: Manage for ecosystem health, wildlife, and improved habitat quality				
		Continue RTLA program	Annually	C, IH	ITAM	Ongoing
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
Fish and Wildlife Management	E	Objective 2b: Manage habitats for all native species				
		Maintain native species vegetative buffers around water sources	Continually	IH	ENV, SITE	Ongoing
Hunting and Fishing Program	E	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested deer data	Annually	IH	ENV, SITE	Ongoing
Water Resources Protection	E	Objective 4a: Improve knowledge of riparian areas and their conditions				
		Conduct stream erosion surveys	Annually	IH	ENV, SITE	
		Objective 4b: Implement and enforce riparian buffers				
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Wetland Protection	E	Objective 5a: Implement and enforce wetland buffers				
		Identify buffer needs	2021	IH	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Soil Erosion Control Management	E	Objective 6a: Identify and rehabilitate eroding training lands				
		Installation-wide survey	Annually	C	ITAM	
		Develop a Soil Erosion Control & Restoration Plan	2018	C	ITAM	
		Repair erosion problems	per need	IH	ITAM, SITE	
		BMP Training for LAARNG personnel	per need	IH	ITAM, SITE	

[1] Probable method of conducting project: C = contract; IH = in-house.

[2] Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; SITE = training site staff.

Management Area	INRMP Appendix	Objectives and Projects to Achieve Objectives	Year	Method[1]	Proponent[2]	Status
Threatened and Endangered Species	F	Objective 7a: Monitor communities that could support threatened and endangered species				
		Installation-wide survey for federal species	2025	C	ENV	
		State rare species survey	2020	C	ENV	
		Training for LAARNG personnel	per need	IH	ENV, SITE	
Cultural Resource Protection	H	Objective 10a: Continue cultural resource surveys in areas not previously surveyed				
		Update ICRMP with new survey data	2018	C, IH	ENV	
		Objective 10b: Adhere to the guidelines and projects presented in the LAARNG's ICRMP				
		Objective 10c: Identify and avoid potential cultural resources sites during all natural resources management activities				
		Objective 10d: Report, protect, and evaluate sites of prehistoric or historic significance encountered during natural resources management activities				
Integrated Pest Management Program	I	Objective 11a: Adhere to the guidelines and projects presented in the LAARNG's IPMP				
		Objective 11b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 11c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
Invasive Species Program	J	Objective 12a: Adhere to the guidelines and projects presented in the Camp Villere Invasive Species Management Plan				
		Objective 12b: Control invasive species				
		Eliminate invasive species (10 acres per year)	Annually	IH	FAC, SITE	Ongoing
		Clean and inspect vehicles and equipment	Continually	IH	FAC, SITE	Ongoing
		Prohibit the planning of invasive species	Continually	IH	FAC, SITE	Ongoing
		Reseed with native grasses	Continually	IH	FAC, SITE	Ongoing
		Installation-wide survey	2025	C	ENV	

3.0 Alternatives Considered

To meet the LAARNG's Sikes Act requirements, as described in **Section 1.2**, the Proposed Action includes the implementation of the LAARNG's 2018-2022 INRMP. The Proposed Action is intended to ensure compliance with current Federal and state environmental regulations. This section further describes the screening criteria for alternative development and evaluation of alternatives.

3.1 Alternative Development (Screening Criteria)

NEPA regulations require the development and consideration of the Proposed Action and appropriate alternatives. The LAARNG developed screening criteria to be measured against the Alternatives in an effort to narrow down alternatives for further analysis. Any alternatives that failed to meet the following criteria were eliminated from further analysis.

- Meets the Purpose and Need as described in **Section 1.2** of this EA.
- Consistent with applicable Federal and state stewardship requirements such as the Endangered Species Act, Clean Air Act, Clean Water Act, National Historic Preservation Act, Native American Grave Protection and Repatriation Act, Executive Orders, etc.
- Results in no net loss to military training capabilities that are currently available to accomplish the mission of the LAARNG.

3.2 Alternatives to the Proposed Action

NEPA, CEQ regulations, and 32 CFR 651 require all reasonable alternatives to be rigorously explored and objectively evaluated. Alternatives eliminated from detailed study must be identified along with a brief discussion of the reasons for eliminating them. For purposes of analysis, an alternative was considered "reasonable" only if it would enable the LAARNG to accomplish the environmental mission of enhancing natural resources at Camps Beauregard, Minden, and Villere to meet the purpose of and need for the Proposed Action. "Unreasonable" alternatives would not enable the LAARNG to meet the purpose of and need for the Proposed Action.

The 2015 INRMP identified goals, objectives, and projects to sustain military readiness, promote environmental stewardship, and conserve biodiversity. These were reevaluated and some of the goals, objectives, and projects were changed or deleted for the revised INRMP. Some new goals, objectives, and projects were introduced in the revised INRMP. Preparation and full implementation of the INRMP is an Army requirement. As such, other alternatives, including partial implementation of the 2015 or 2018 INRMP, were considered but were dismissed as not feasible, impracticable, or precluded by legal insufficiency.

3.3 No Action Alternative

The No Action Alternative would not immediately change management direction or the level of management intensity. Under the No Action Alternative, the LAARNG would continue to operate using existing programs and management practices in accordance with the 2015 INRMP. The No Action Alternative includes the 2015 INRMP that has not been updated and would fail to meet the described purpose and need for the Proposed Action. Natural resource management

actions that would occur under the No Action Alternative are detailed in the 2015 INRMP. The 2015 INRMP is available from the LAARNG's Environmental Management Section.

3.4 Statement of Preferred Alternative

According to 40 CFR Section 1502.14(e), the LAARNG must identify its preferred alternative. This statement serves as identification of the "Proposed Action" as the LAARNG's preferred alternative because it best meets the screening criteria set forth in **Section 3.1**.

4.0 Affected Environment

This section describes the current environmental setting at Camps Beauregard, Minden, and Villere and provides a baseline reference for understanding the intensity of any potential impacts or environmental consequences resulting from the Proposed Action. **Section 5.0**, Environmental Consequences, identifies potential direct, indirect, and cumulative effects of the Proposed Action and No Action Alternative on each of the resource areas presented in this section.

In accordance with Army NEPA Regulation, any resource area that is not potentially affected by the Proposed Action does not need to be evaluated. Of the resource areas considered, eight were dismissed from full analysis due to impacts that are negligible or non-existent, as summarized below.

- **Land Use –** No changes to the present land uses of the installations would occur as a result of the Proposed Action or No Action Alternative.

- **Geology, Topography, and Seismicity** – The Proposed Action would not affect geologic resources or topography. None of the proposed projects in the INRMP would result in seismic hazards and no development of, or extraction of mineral resources would be involved.

- **Groundwater** – There would be no effect to groundwater resources as a result of either the Proposed Action or No Action Alternative.

- **Floodplains** – There is no proposed construction within the floodplains of Camps Beauregard, Minden, or Villere as a result of the Proposed Action or No Action Alternative.

- **Coastal Zone Contingency** – Congress enacted the Coastal Zone Management Act to protect the coastal environment from growing demands associated with residential, recreational, commercial, and industrial uses. According to Louisiana's Coastal Zone management plan, Camps Beauregard, Minden, and Villere are not located in the Louisiana Coastal Zone as defined by Act 361 of the Louisiana Legislature.

- **Socioeconomics, Environmental Justice, and Health and Safety** – The Proposed Action and the No Action Alternative would have no effect on the current socioeconomic environment around Camps Beauregard, Minden, or Villere. Impacts from dollars spent within the communities would be negligible. No environmental justice effects are anticipated. No effects to the health and safety of children would occur as a result of either the Proposed Action or No Action Alternative.

- **Infrastructure** – Impacts to traffic, transportation, and utilities would be considered negligible as management and existing conditions of these resources would remain unaffected and unchanged by the Proposed Action and No Action Alternative.

- **Hazardous and Toxic Materials/Wastes** – Potential adverse impacts would be short- term and localized in nature, to the extent of being considered negligible. These impacts

would be the result of invasive species removal and pesticide use on the installations. All pesticide applications are carried out by licensed LAARNG personnel and/or contracted pest control companies. Adherence to the LAARNG's statewide Integrated Pest Management Plan and Invasive Species management Plan would reduce any potential impacts to negligible amounts.

4.1 Location Description

4.1.1 Camp Beauregard

Camp Beauregard and Esler Field are located in north central Louisiana, northeast of the Cities of Alexandria/Pineville (**Figure 1**), with borders extending into Grant and Rapides parishes. Camp Beauregard encompasses approximately 13,361 acres and is divided into two units, a 12,642 acre training site (CBTS) and a cantonment area of 719 acres. The CBTS is bordered by the Kisatchie National Forest to the north and west, undeveloped timber lands with scattered small residences to the east, and Esler Field to the south. The CBTS is designated as a Wildlife Management Area (WMA) under the limited management of the Louisiana Department of Wildlife and Fisheries (LDWF). Esler Field, which lies immediately south of the CBTS, encompasses a total of 2,136 acres.

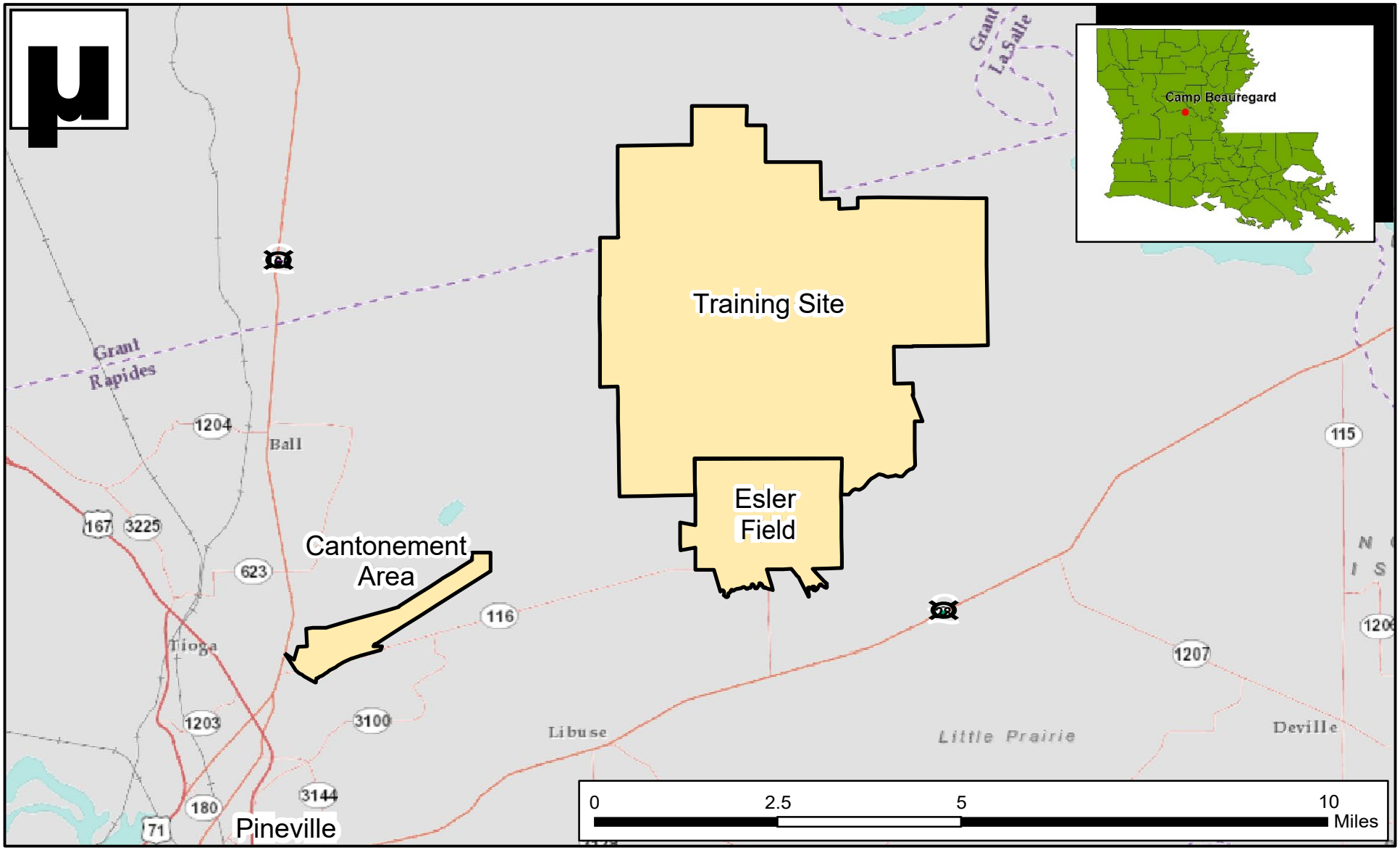
Camp Beauregard provides facilities for annual training, which occurs for a two-week period for each unit. Facilities also support weekend training, which occurs once a month for all assigned and attached units of the LAARNG. The installation is also available to other units and agencies that are not assigned or attached. Camp Beauregard is primarily designed as a regional engineer training site under the Army Readiness Training Evaluation Program and can also accommodate other combat and noncombat units.

In addition to providing military training for LAARNG members, Camp Beauregard provides the following services:

- Military training land and support for the Joint Readiness Training Command, Reserve Officers Training Corps units, Southwest Leadership Brigade, Officers Candidate School Leadership Company, 2nd Noncommissioned Officers Academy Battalion, and several other reserve and active component units;
- Mobilization station as a satellite of Fort Polk;
- Training center for the Special Operations Group of the U.S. Federal Marshall Service;
- Training facility for the Louisiana Youth Challenge Program;
- Training facility for the Louisiana Department of Corrections;
- Branch headquarters for the State Civil Service;
- Branch headquarters for the Louisiana Office of Emergency Preparedness; and
- Recreational opportunities through a cooperative program with the LDWF, which established the Camp Beauregard WMA.

Additionally, Camp Beauregard serves as both a staging base for LAARNG personnel and logistical staging area for various emergency response agencies during times of state and federal emergencies.

Figure 1. Location of LAARNG Camp Beauregard and Esler Field



Land Management Group, LLC.	Date: June 16, 2017

The LAARNG is proposing two projects on the training site within the next five years. These include the construction of a new 3 to 4 lane Multipurpose Machinegun Range and modification and update of the existing Multipurpose Machinegun Range. The completed facilities will reduce training safety issues and make more of the ranges simultaneously operational.

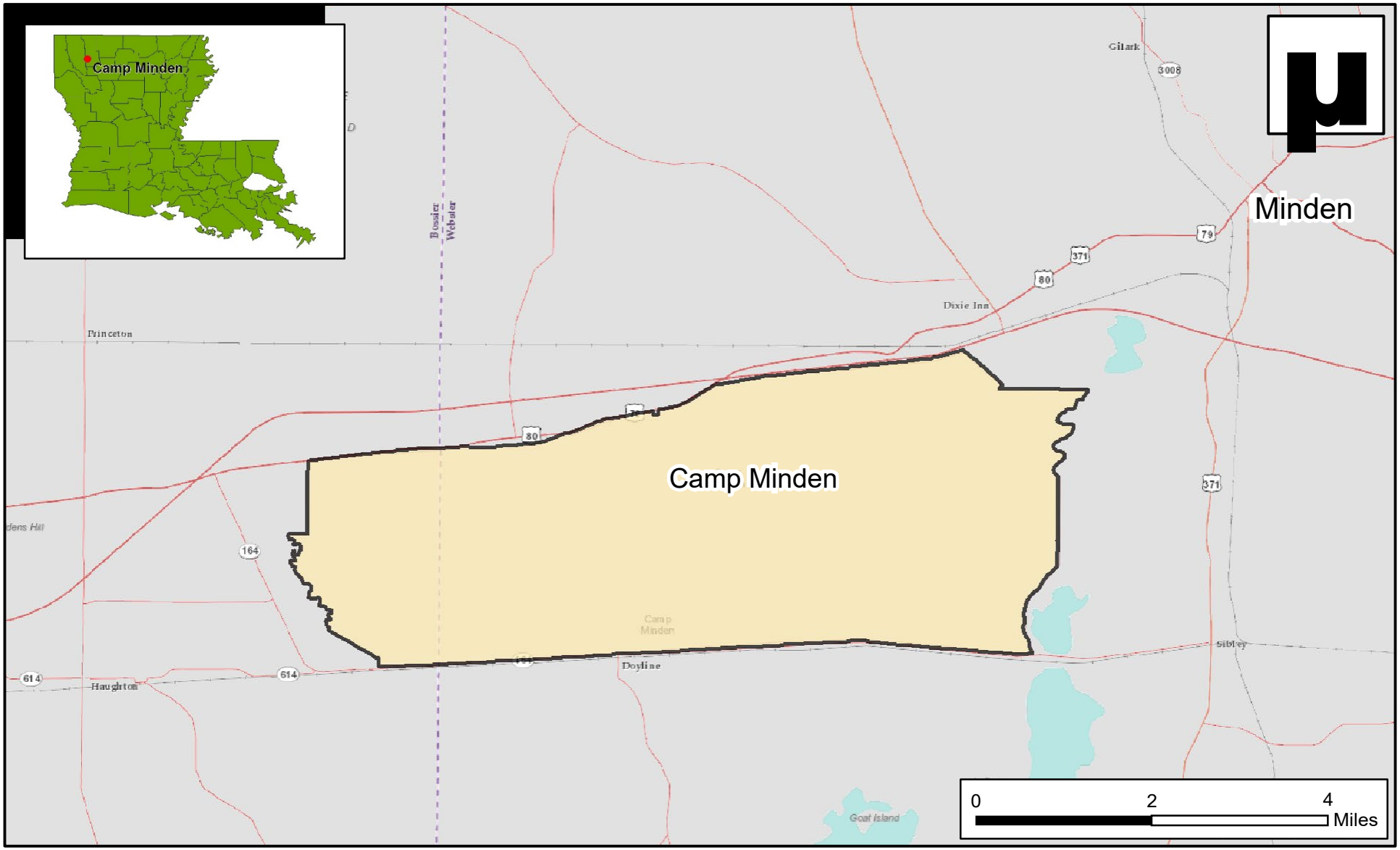
4.1.2 Camp Minden

Camp Minden is located in Webster and Bossier parishes in northwest Louisiana approximately 22 miles east of Shreveport (**Figure 2**). The site is bordered by U.S. Highway 80 to the north, State Highway 164 to the south, Clarke Bayou to the west, and Bayou Dorcheat to the east. Camp Minden occupies 14,993 acres of land within the former boundaries of the Louisiana Army Ammunition Plant.

Camp Minden is the largest LAARNG training site in the State; thus, it is one of the National Guard's premier installations in support of the mission. A full range of mission-related training activities are conducted on Camp Minden, including maneuver exercises such as infantry, reconnaissance, navigation, and concealment tactics; construction activities that include building supply routes, trails, roads, and firebreaks; engineering missions; and bivouacking. Camp Minden is home to four of the highest priority military units in the LAARNG: 1083rd Transportation Company, 39th Military Police Company, 122nd Air Support Operations Squadron, and the 199th Leadership Regiment. Other units stationed at Camp Minden include Company A Recruitment Sustainment Program, Detachment 1/139th Signal Company, and Detachment 1/489th Maintenance.

Camp Minden also serves as the Reception, Staging, and Onward Integration (RSOI) for Emergency Management Assistance Compact (EMAC) units during emergency response events. The LAARNG has spent the last several years creating and/or revising mission requirements throughout the State and has determined that additional facilities and associated infrastructure upgrades are required at Camp Minden. In order to develop the necessary requirements to meet the LAARNG's mission for Camp Minden, a Site Development Plan was developed in 2008 to address those needs. The LAARNG's mission required several new facilities be constructed at Camp Minden in the near future as well as potential facilities in the next 5-20 years. Since then, construction of the Regional Training Institute, Armed Forces Reserve Center and Readiness Center, Bachelor's Enlisted Quarters, Installation Barracks, Forward Operating Base, Unit Equipment Training Site, and two M16 ranges are either completed or are ongoing. Future activities include a Tactical Assembly Area, Urban Assault Training Site, Leadership Reconnaissance Course, Live Fire Shoot House, Live Fire Breach Facility, Light Demolition Range, Convoy Non-Live Fire Range, and Driving Course.

Figure 2. Location of LAARNG Camp Minden



Land Management Group, LLC.

Date: June 21, 2017

4.1.3 Camp Villere

Camp Villere is located on approximately 1,480 acres in St. Tammany Parish in southeast Louisiana approximately three miles northeast of Slidell (**Figure 3**). The installation is bordered by a service road for U.S. Interstate 12 to the south and urban development to the east and west with Slidell Airport being located to the northwest.

The primary function of Camp Villere today remains the same as it was in the 1970's: small arms and rifle training for the regular and reserve components of all military services. A total of approximately 25,000 people are trained annually at Camp Villere. In addition to the military personnel who use the Camp for weekend and annual training, approximately 15,000 local police and firemen attend the Slidell Regional Public Safety Academy located on the facility. Other groups, such as the local sheriff's department and the Federal Bureau of Investigations, also train at Camp Villere.

The overall mission of Camp Villere is not anticipated to change over the next five years. Current activities at Camp Villere consist of use as a maintenance support site and equipment storage facility and training facilities consisting of a rope course, confidence course, bivouac sites, and two small arms ranges. Because of the proximity of residential areas, additional range development would be cost prohibitive given the safety features that would be required. Therefore, there will be few modifications in existing facilities and no expected increase in training demands.

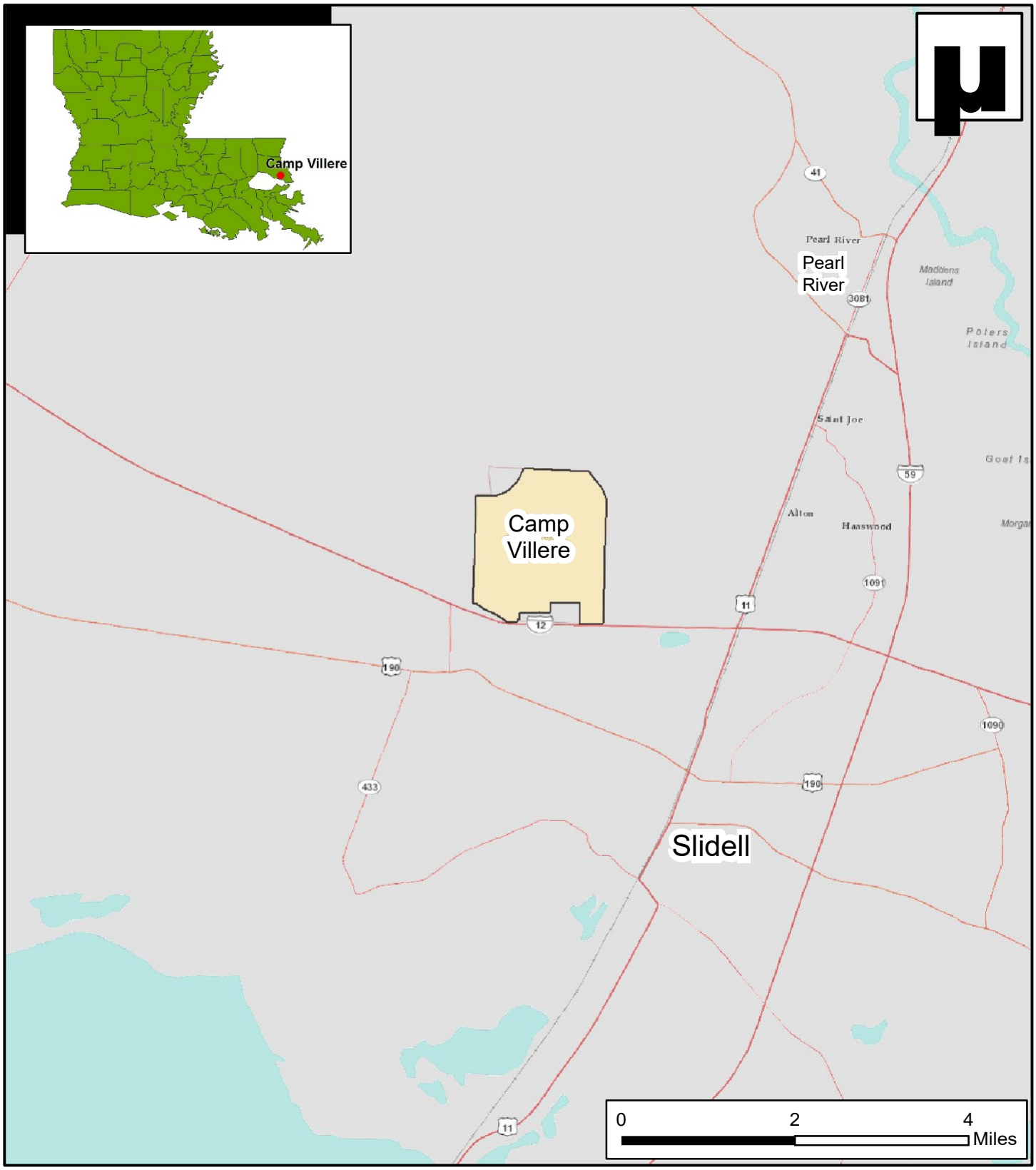
4.2 Air Quality

Ambient Air Quality

The U.S. Environmental Protection Agency (USEPA) Region 6 and the Louisiana Department of Environmental Quality (LDEQ) regulates air quality in Louisiana. The Clean Air Act (42 U.S.C. 7401-7671q), as amended, gives USEPA the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR §50) that set acceptable concentration levels for six criteria pollutants: particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), and lead. Short-term NAAQS (1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term NAAQS (annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards stricter than those established under the Federal program; however, Louisiana accepts the Federal standards.

Areas are designated by the USEPA as "attainment", "nonattainment", "maintenance", or "unclassified" with respect to the NAAQS. Regions in compliance with the standards are designated as "attainment" areas. In areas where the applicable NAAQS are not being met, a "nonattainment" status is designated. Areas that have been classified as "nonattainment" but are now in compliance can be redesignated "maintenance" status if the state completes an air quality planning process for the area. Areas for which no monitoring data is available are designated as "unclassified," and are by default considered to be in attainment of the NAAQS.

Figure 3. Location of LAARNG Camp Villere



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Date: June 21, 2017

The General Conformity Rule (40 CFR Part 51, Subpart W) requires Federal agencies to prepare written Conformity Determinations for Federal actions in or affecting NAAQS in non-attainment areas, except when the action is covered under the Transportation Conformity Rule or when the action is exempted because the total increase in emissions is insignificant, or a *de minimis* amount. The Proposed Action includes activities at Camp Beauregard (Rapides and Grant Parishes), Camp Minden (Bossier and Webster Parishes), and Camp Villere (St. Tammany Parish). Ambient air quality in all of these parishes is in attainment with all six NAAQS criteria pollutants (USEPA 2015a). Therefore, a conformity analysis is not required for this action.

Prescribed Burning, Wildfire and Smoke Management

Prescribed burning is an area source of criteria pollutant emissions on Camps Beauregard and Minden. No prescribed burning is conducted at Camp Villere. Whereas wildfires are unplanned events and the smoke generated cannot be managed for reduced impacts to smoke sensitive areas, prescribed fires reduce the potential for destructive wildfires and contribute to the maintenance of long-term air quality as acknowledged in the USEPA's Interim Air Quality Policy on Wildlands and Prescribed Fires. This policy also recognizes that prescribed fires are an irreplaceable management tool in the process of maintaining biological diversity and balance within fire-dependent natural communities. Furthermore, the USEPA policy is that land managers should coordinate with state air quality managers to "allow fire to function in its natural role in wildlands" while "protecting public health and welfare by minimizing smoke impacts" (USPEA 1998). Moreover, timing of prescribed burns will be based on environmental factors which include air quality considerations.

The LAARNG proposes to burn 2,500 acres per year at Camps Beauregard and Minden while minimizing any impacts to the training mission. The LAARNG Integrated Wildland Fire Management Plan's primary purpose is to ensure that fire management program areas and military activities on LAARNG's lands are integrated and consistent with federal stewardship requirements. The Louisiana Department of Agriculture and Forestry (LDAF) oversees prescribed burning at Camps Beauregard and Minden and is responsible for fire protection and suppression of wildfire and non-structural fires with LAARNG support as necessary. The LDAF utilizes smoke management plans to address procedures to manage smoke and achieve national clean air objectives while improving the quality of wildland ecosystems through the use of prescribed fire.

Greenhouse Gases

In 2010, the CEQ issued guidance on incorporating greenhouse gas considerations into NEPA review of federal actions. Annual carbon dioxide equivalent emissions of more the 25,000 metric tons are the minimum level in assessing impacts on the environment and for reporting emissions under the Clean Air Act. Examples of proposals for federal agency actions that may warrant a detailed analysis and discussion of the greenhouse gas impacts and mitigation include:
1) approval of a large solid waste landfill; 2) approval of energy facilities; or 3) authorization of a methane venting coal mine (CEQ 2010).

4.3 Noise

Noise is described as any sound that is undesirable because it interferes with human activities, damages hearing, or is otherwise intrusive. However, noise is often generated by activities which are essential to a community's quality of life such as vehicular traffic, construction, and even recreational activities. The region of influence for noise encompasses the land within

Camps Beauregard, Minden, and Villere and any communities or neighbors close enough to be reasonably affected by operational noise resulting from projects proposed within the INRMP.

Camps Beauregard, Minden, and Villere train thousands of soldiers annually. Existing noise conditions on the installations include live-fire exercises, maneuvering mechanized/armored vehicles, small arms range firing, and maneuver training. The training areas and the firing ranges are used extensively throughout the year with the heaviest times being between June and August.

The LAARNG's Statewide Operational Noise Management Plan outlines policies and procedures for managing noise impacts to the surrounding communities (LAARNG 2014).

4.4 Soils

Generally, soils on Camps Beauregard, Minden, and Villere are highly susceptible to erosion if vegetation is removed by clearing or other disturbances. The potential for erosion also increases with the degree of slope. Continuous or sustained military training within an area may result in damage to the vegetation and soil. If disturbed continuously or frequently, soils lose the capability to support voluntary reseeding and groundcover reestablishment. Eventually, this can lead to extensive damage, thus making an area unusable for military training. The establishment and maintenance of appropriate vegetation and proper drainage systems is the primary means of addressing such potential issues.

To prevent soil erosion and sedimentation of streams and wetland areas, the LAARNG employs Louisiana Pollutant Discharge Elimination System (LPDES) best management practices (BMPs) as defined by the LDEQ for all construction projects. In Louisiana, projects one acre or greater require a state approved Storm Water Pollution Prevention Plan (SWPPP) for land disturbing activities. The SWPPP prescribes activities to limit erosion and sedimentation from the site and includes a site description, list of BMPs to be used, BMP inspection procedures to be performed by qualified personnel, procedures for timely BMP maintenance, and reporting requirements to the LDEQ.

4.5 Surface Water Resources

4.5.1 Camp Beauregard

Camp Beauregard is located within the Ouachita Drainage Basin (LDEQ 2017). The rolling uplands of Camp Beauregard are generally higher and more dissected than the immediately surrounding area in all directions; thus, the installation drains to the east, west, north, and south. Drainages of Camp Beauregard consist primarily of intermittent streams; the only permanent streams on the installation are Flagon Bayou and Clinton Branch. The southern one-half and most of the eastern and western portions of the installation are drained by tributaries to Flagon Bayou, which include Mill Creek and unnamed tributaries of Beaver Creek. Flagon Bayou headwaters drain the uplands of southern Grant Parish and northeastern Rapides Parish. South of the installation, Flagon Bayou flows east, then turns north and flows through the northeastern corner of the installation before turning east again and discharging into Catahoula Lake. The northern portion of Camp Beauregard is drained by Clinton Branch and its tributaries, and the headwaters of unnamed tributaries that flow northeastwardly into the Little River shortly before

it discharges into Catahoula Lake. Two small man-made lakes on Camp Beauregard (Twin Lakes) occur on tributaries to Clinton Branch.

4.5.2 Camp Minden

Camp Minden is located in the Red River Drainage Basin (LDEQ 2017). This hydrologic segment includes most of Webster Parish, southeast Bossier and northwest Claiborne parishes, and portions of Bienville and Red River parishes. The primary streams on Camp Minden are Bayou Dorcheat and Clark Bayou, which create the eastern and western boundaries of the installation, respectively. Bayou Dorcheat originates in southern Arkansas, is impounded within Lake Bistineau just south of Camp Minden, and merges with Red Chute Bayou south of the dam to form Loggy Bayou, which subsequently enters the Red River. Bayou Dorcheat is designated by the LDWF as a Louisiana Natural and Scenic River from the Arkansas state line to its entrance into Lake Bistineau (LDWF 2010). As a result of this designation, channelization, clearing and snagging, channel realignment, reservoir construction, and commercial harvesting or cutting of trees or timber in violation of the provisions of the Louisiana Scenic Rivers Act are strictly prohibited (LDWF 1988).

4.5.3 Camp Villere

Camp Villere is located within the Ponchartrain Drainage Basin (LDEQ 2017). The hydrologic unit encompassing Camp Villere drains much of St. Tammany Parish and extreme southwestern Washington Parish to Lake Pontchartrain. The primary natural drain on Camp Villere is intermittent and enters Camp Villere from the north and flows south while being west of and parallel to Engineer Road. It then turns west, near the intersection of Engineer Road and Igloo Road, and flows off of Camp Villere's western boundary. The only permanent stream on Camp Villere is a channelized drain flowing south out of the "igloo" area, leaving the Camp at the southern boundary.

4.6. Waters of the U.S. and Wetlands

Waters of the United States (Section 328.3[2] of the Clean Water Act) are those waters used in interstate or foreign commerce, subject to the ebb and flow of the tide, and all interstate waters including interstate wetlands. Waters of the United States are further defined as all other waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (U.S. Army Corps of Engineers [USACE] 1987).

Wetlands occur throughout Camps Beauregard, Minden, and Villere and often are related with rivers, streams, lakes, swamps, and similar areas. The installations' wetlands are all non-tidal and generally dominated by trees or shrubs. Wetlands serve many essential ecological functions, including the storage and slow release of surface water, rain, and seasonal floodwaters to surface waters. Accordingly, wetlands are protected under Section 404 of the Clean Water Act, which requires permitting of certain activities such as construction and the placement of structures and/or fill material and confers regulatory authority to the USACE. Delineation of wetlands and coordination with the USACE Vicksburg (Camps Beauregard and Minden) or the USACE New Orleans (Camp Villere) Regulatory Offices is normally required prior to ground disturbance

activities. Any impacts to wetlands require coordination with USACE through the wetland permitting process.

In 2012, the LAARNG finalized a planning level wetland delineation of Camps Beauregard, Minden, and Villere. The purpose of this planning level effort was to approximate the location and extent of wetlands and waters of the U.S. regulated by the USACE under Section 404 of the CWA. Based on GIS analysis and field surveys, it is estimated that the amount of wetlands within the CBTS and Esler Field range from 1,850.52 acres to 2,524.86 acres. Generally, wetlands cover 13% to 17% of the CBTS and Esler Field based on these estimates. Open water areas encompass 81.56 acres. In addition, a total of 46.11 miles of streams are located within the CBTS and Esler Field, including five perennial streams, 13 intermittent streams, and 27 ephemeral streams. **Figures 4** and **5** show potential wetlands and open water areas and potential waters of the U.S. on Camp Beauregard and Esler Field, respectively.

The findings of the 2012 planning level survey estimated that the amount of wetlands on Camp Minden range from 3,440.44 acres to 4,587.25 acres. Generally, wetlands cover 23% to 31% of Camp Minden based on these estimates. Open water areas encompass 35.19 acres. In addition, a total of 49.05 miles of streams are located on Camp Minden, including four perennial streams, 15 intermittent streams, and 23 ephemeral streams. **Figures 6** and **7** show potential wetlands and open water areas and potential waters of the U.S. on Camp Minden, respectively.

The findings of the 2012 planning level survey estimated that the amount of wetlands on Camp Villere range from 562.29 acres to 764.24 acres. Generally, wetlands cover 35% to 48% of Camp Villere based on these estimates. In addition, a total of 2.63 miles of streams are located on Camp Villere, including one perennial stream and two intermittent streams. **Figures 8** and **9** show potential wetlands and potential waters of the U.S. on Camp Villere, respectively.

4.7 Biological Resources

4.7.1 Camp Beauregard

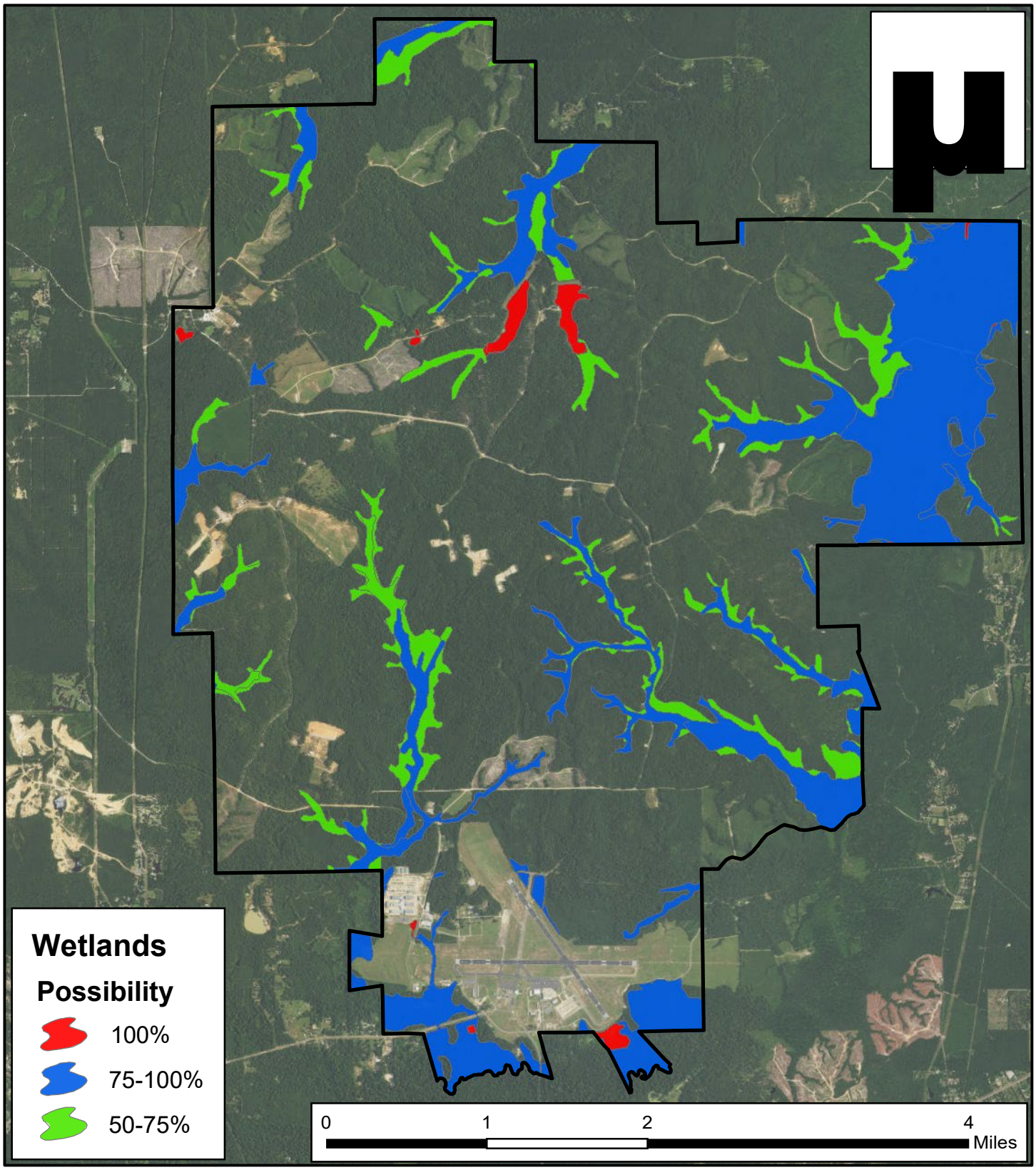
Vegetation

In 2014, the LAARNG completed a project aimed at mapping all natural communities on Camps Beauregard, Minden, and Villere. The focus of the project was to break down installation lands into the vegetation types recognized by the Louisiana Natural Heritage Program (LNHP) in its publication *Natural Communities of Louisiana* (LDWF 2009) utilizing the data collected during past floristic surveys, recent aerial photography, and in-depth field reconnaissance. The project concluded that there were a total of eight different natural communities present on Camp Beauregard and Esler Field. These include Mixed Hardwood/Loblolly Forest, Natural Pine, Bottomland Hardwood Forest, Western Upland Longleaf Pine Forest, Hardwood Slope Forest, Small Stream Forest, Open Water, and Disturbed Areas/Open Field and are depicted on **Figure 10**.

Fish and Wildlife

The majority of the CBTS is suitable for fish and wildlife management. There are approximately 365 surface acres of water, to include Flagon Bayou bottoms, recreational lakes, and beaver ponds.

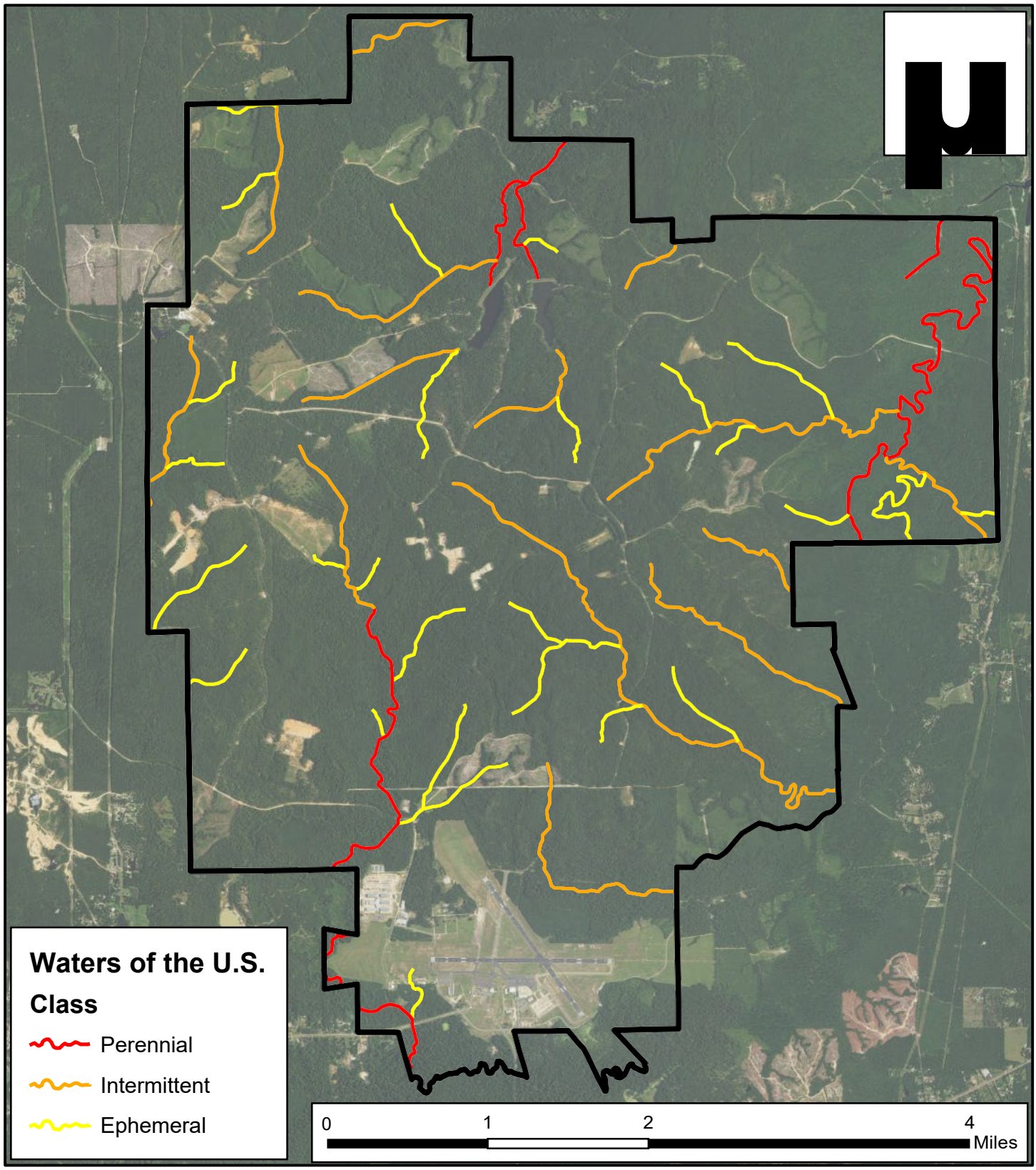
Figure 4. Potential Wetlands and Open Water Areas
on Camp Beauregard and Esler Field



Land Management Group, LLC.

Date: July 31, 2017

Figure 5. Potential Waters of the U.S. on Camp Beauregard and Esler Field



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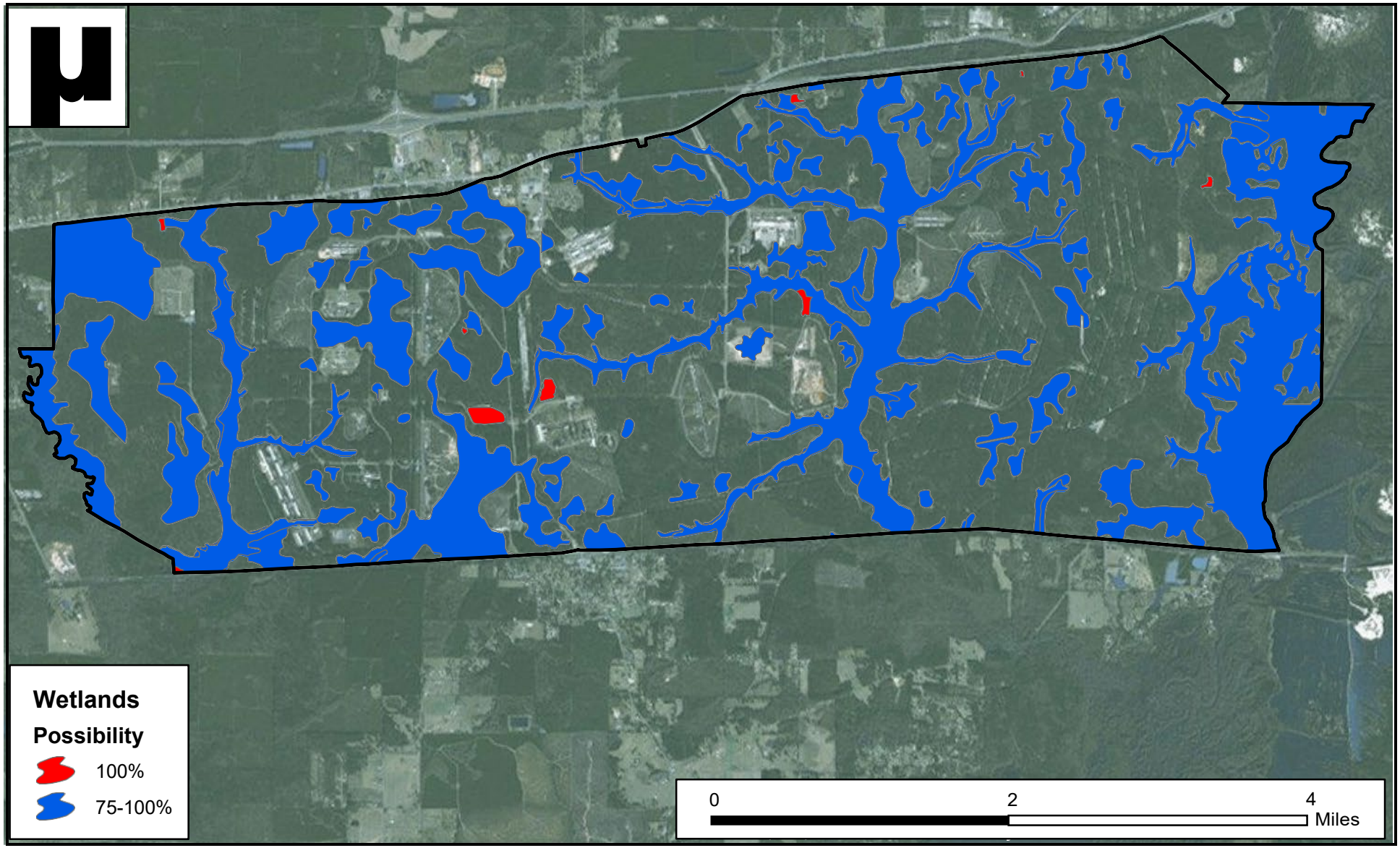
Date: July 31, 2017

Figure 6. Potential Wetlands and Open Water Areas on Camp Minden



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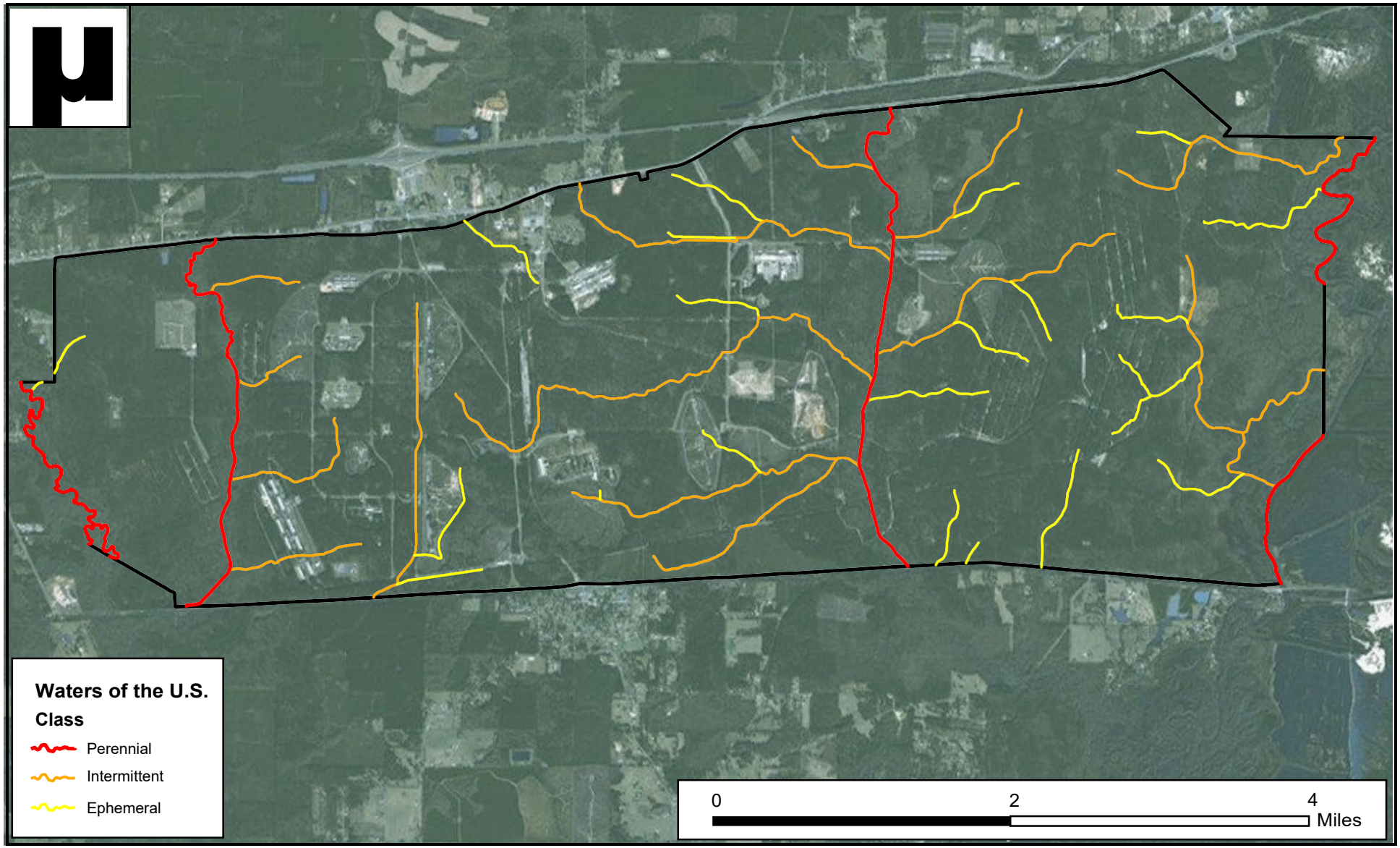
Date: July 31, 2017

Figure 7. Potential Waters of the U.S. on Camp Minden



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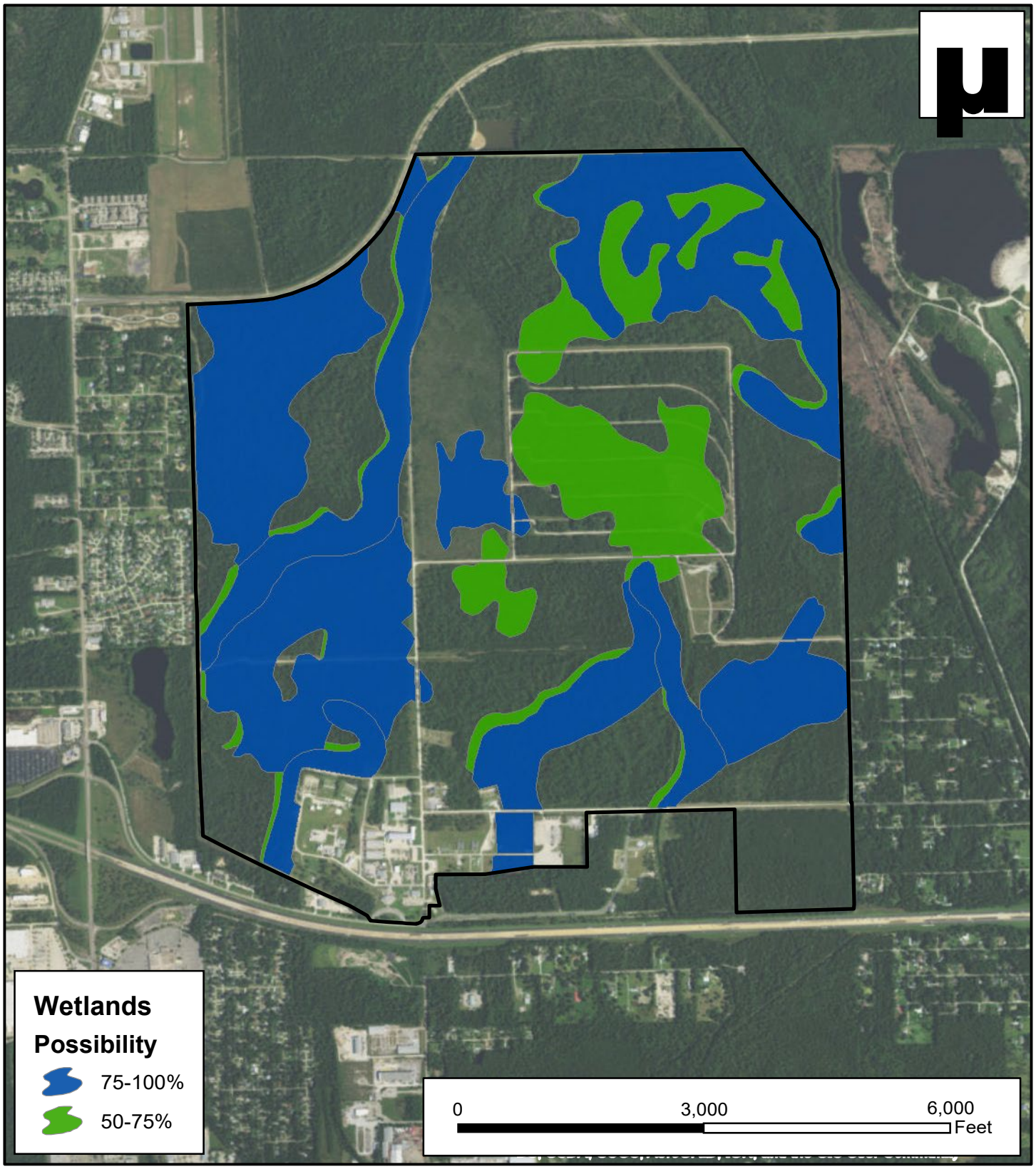
Date: July 31, 2017

Figure 8. Potential Wetlands on Camp Villere



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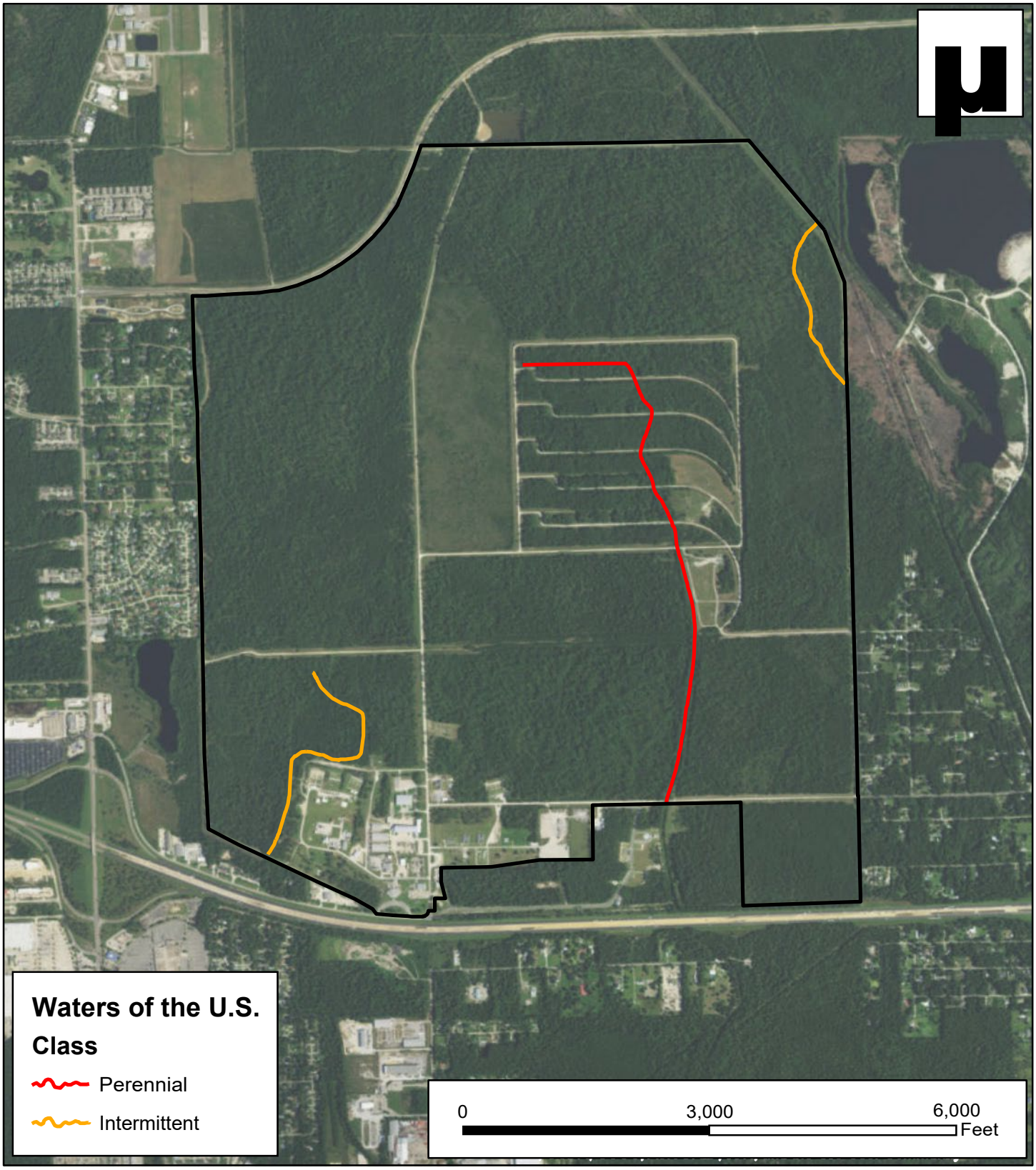
Date: July 31, 2017

Figure 9. Potential Waters of the U.S. on Camp Villere



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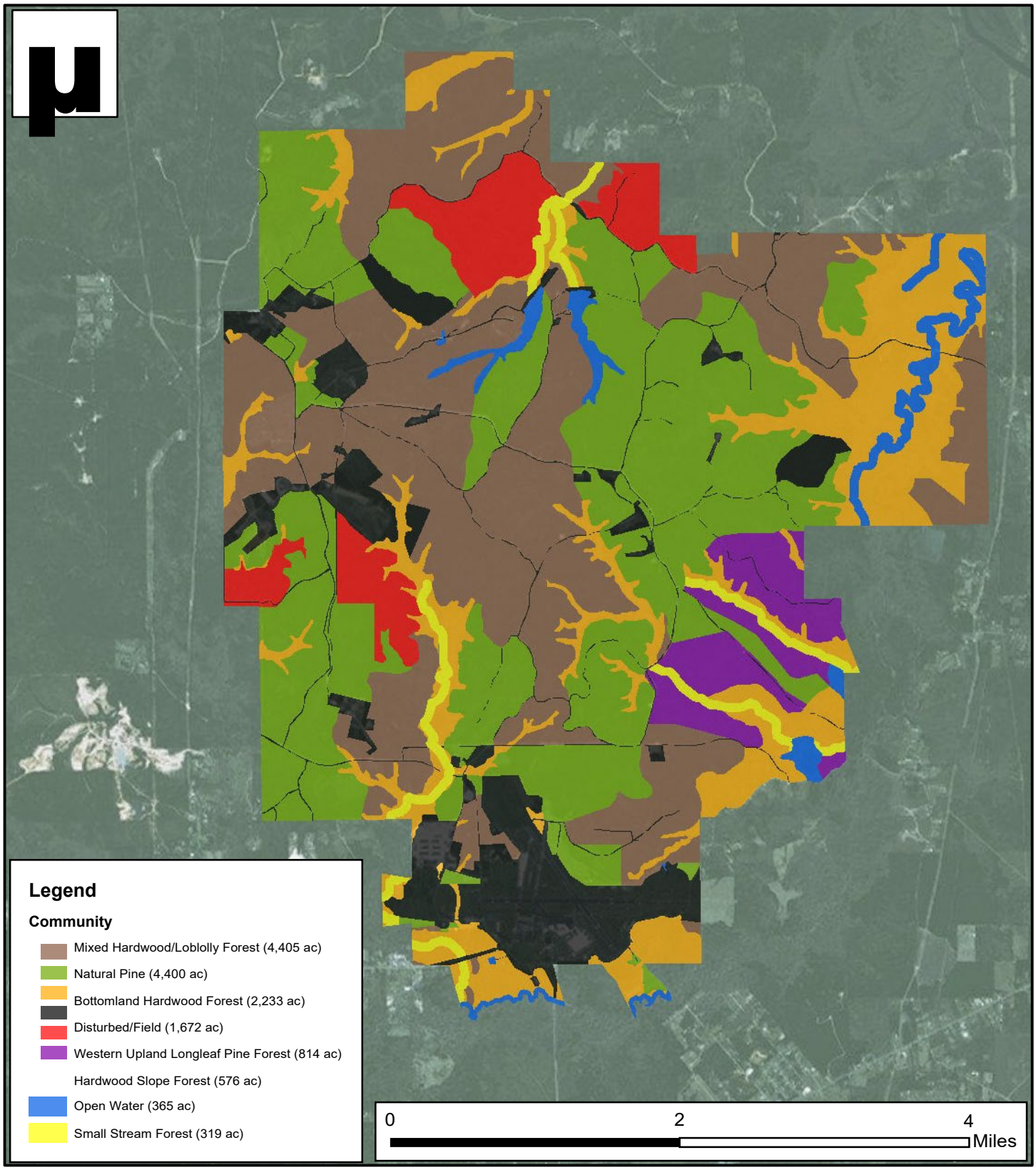
Date: July 31, 2017

Figure 10. Natural Communities at Camp Beauregard and Esler Field



Land Management Group, LLC.

Date: June 16, 2017

Of the 197 species of amphibians, reptiles, birds and mammals considered likely residents or transients at Camp Beauregard, 101 species of birds and 25 species of reptiles or amphibians were recorded during field surveys conducted by The Nature Conservancy (TNC) from 1993 to 1995 (McInnis et al. 1995).

The CBTS supports significant levels of several prized game animals including white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), and squirrels (*Sciurus* sp.), which are the most sought after game species. Additional game species present in huntable numbers include eastern cottontail (*Sylvilagus floridanus*), mourning dove (*Zenadia macroura*), wood duck (*Aix sponsa)* and other waterfowl, and woodcock (*Scolopax minor*) (LDWF 2017). In addition, northern bobwhite quail (*Colinus virginianus*) populations are increasing as a result of ongoing conservation efforts.

The CBTS is designated as a WMA under the limited management of the LDWF. The Statewide Wildlife Management Program is designed to conserve and manage high quality habitats for a variety of wildlife species and to improve public access to these resources. Camp Beauregard WMA has a federal-aid management plan developed by region biologists, and deer are important features of most of these plans. Because Camp Beauregard is an active military reservation, special regulations apply to use of the Camp Beauregard WMA. An annual permit is required as is checking in and out of self-clearing stations on a daily basis. Limited camping is allowed by reservation only, and daily military clearance is required for all recreational users. Camp Beauregard's designation as a WMA does not pose any restrictions or limitations to land use by the LAARNG.

Federally Listed Threatened and Endangered Species

The Endangered Species Act [16 U.S.C. 1531 et. seq.] of 1973, as amended, was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All federal agencies or projects utilizing federal funding are required to implement protection programs for designated species and to use their authorities to further the purposes of the Act. The USFWS is charged with implementing this law and maintaining a list of protected plants and animals and their protection status. The LNHP maintains sighting records of federally protected species and species of state concern.

As of May 2016, the USFWS lists three species which could potentially occur on Camp Beauregard based on habitat requirements.

Table 4. Federally Listed Species of Potential Occurrence on Camp Beauregard

Common Name	Scientific Name	Federal Status	Potential for Occurrence on CBTS/Esler Field
Red-cockaded woodpecker	*Picoides borealis*	E	Moderate
Louisiana Pearlshell Mussel	*Margaritifera hembeli*	T	Moderate
Northern Long-eared Bat	*Myotis septentrionalis*	T	Moderate

Legend: E – Endangered; T – Threatened
Source: USFWS 2016.

To date, no federally listed threatened or endangered species have been found on Camp Beauregard. The last installation-wide surveys red-cockaded woodpecker and Louisiana pearlshell mussel were conducted in 2015. Surveys are currently ongoing for the northern long- eared bat.

4.7.2 Camp Minden

Vegetation

Based on the mapping effort in 2014, there were a total of nine different natural communities present on Camp Minden. These include Natural Pine, Mixed Hardwood/Loblolly Forest, Bottomland Hardwood Forest, Bald Cypress Swamp, Hardwood Slope Forest, Small Stream Forest, Wet Hardwood Flatwoods, Open Water, and Disturbed Areas/Open Field and are depicted on **Figure 11**.

Fish and Wildlife

The majority of Camp Minden is suitable for fish and wildlife management. There are 36 miles of perennial and intermittent streams, and excavated ponds account for 35 acres. There are no naturally occurring lakes or ponds; however, the seasonally flooded forest associated with the Dorcheat bottomlands can retain water for extended periods and provides excellent fish and wildlife habitat.

A wide variety of wildlife species inhabit Camp Minden, and they are dispersed throughout the various habitats on the installation. It is estimated that 51 species of mammals and 74 species of reptiles and amphibians are known to inhabit the areas in and around the facility. Approximately 80 percent of the 411 species of birds in the State of Louisiana are recorded as having been seen at or near Camp Minden (TNC 1995). This includes prize game species such as white-tailed deer, northern bobwhite quail, wild turkey, squirrels, eastern cottontail, mourning dove, wood duck and other waterfowl, and woodcock. In addition, a variety of fish species have been identified in Bayou Dorcheat, Clarke Bayou, Boone Creek, and Caney Branch, and some of the borrow pits on the facility have been stocked with largemouth bass (*Micropterus salmoides*) and bluegill (*Lepomis macrochirus*).

Federally Listed Threatened and Endangered Species

As of May 2016, the USFWS lists two species which could potentially occur on Camp Minden based on habitat requirements.

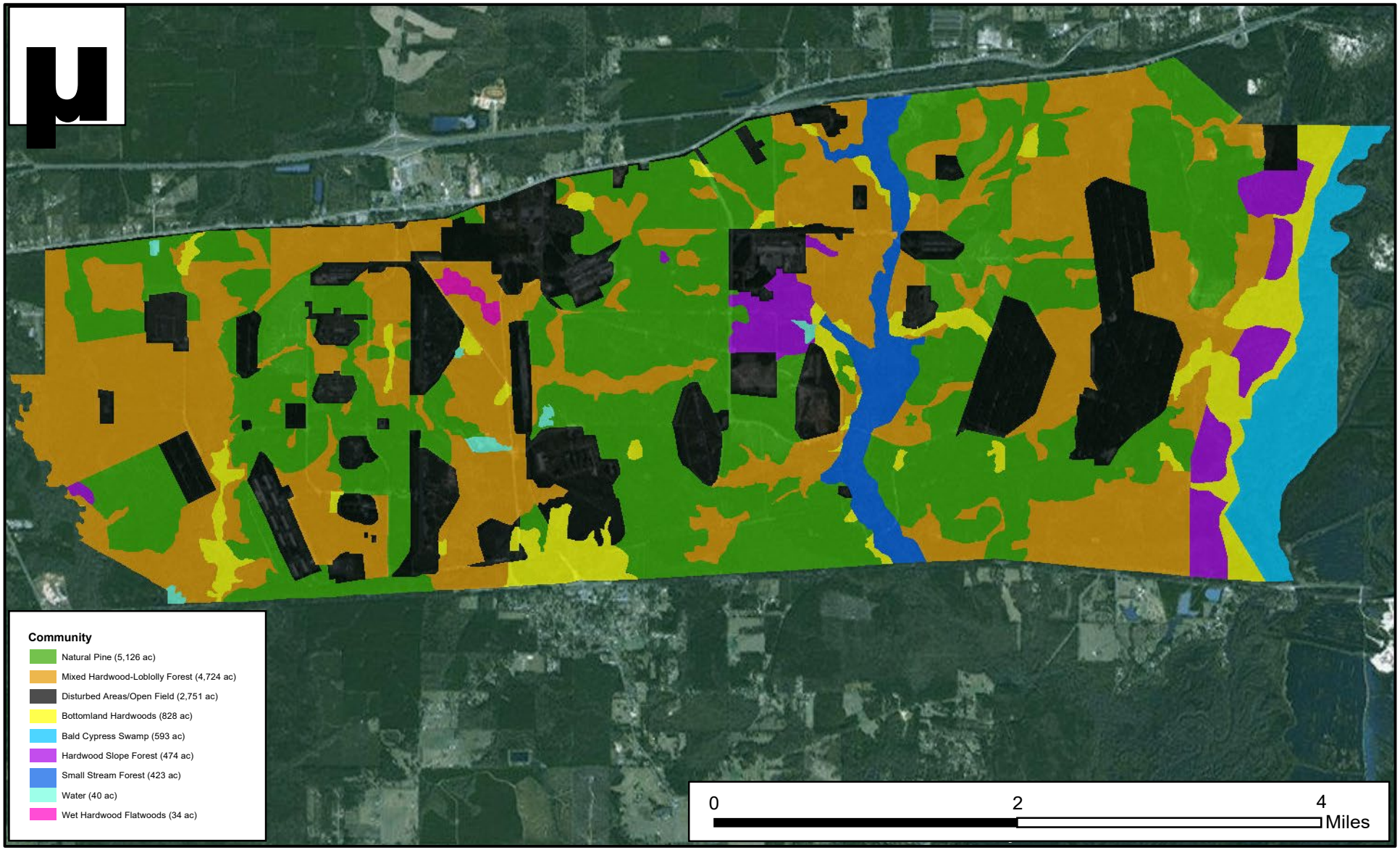
Table 5. Federally Listed Species of Potential Occurrence on Camp Minden

Common Name	Scientific Name	Federal Status	Potential for Occurrence on Camp Minden
Red-cockaded woodpecker	*Picoides borealis*	E	Low
Northern long-eared Bat	*Myotis septentrionalis*	T	Moderate

Legend: E – Endangered; T – Threatened; C –Candidate
Source: USFWS 2016.

To date, no federally listed threatened or endangered species have been found on Camp Minden. The last installation-wide surveys red-cockaded woodpecker were conducted in 2015. Surveys are currently ongoing for the northern long-eared bat.

Figure 11. Natural Communities at Camp Minden



Land Management Group, LLC.

Date: June 21, 2017

4.7.3 Camp Villere

Vegetation

Based on the mapping effort in 2014, there were a total of six different natural communities present on Camp Minden. These include Eastern Upland Longleaf Pine Forest, Pine Flatwoods, Bayhead Swamp, Bottomland Hardwood Forest, Open Water, and Disturbed Areas/Open Field and are depicted on **Figure 12**.

Fish and Wildlife

The majority of Camp Villere is suitable for fish and wildlife management. There are 3 miles of perennial and intermittent streams, and open water accounts for 1 acre. There are no naturally occurring lakes or ponds; however, the seasonally flooded forest associated with the Bayhead Swamps and Bottomland Hardwoods may retain water for extended periods and provides excellent fish and wildlife habitat.

A wide variety of wildlife species inhabit Camp Villere, and they are dispersed throughout the various natural communities on the installation. It is estimated that at least 139 species of mammals, reptiles, amphibians, and birds are known to inhabit the areas in and around the installation.

Federally Listed Threatened and Endangered Species

As of May 2016, the USFWS lists two species which could potentially occur on Camp Villere based on habitat requirements.

Table 6. Federally Listed Species of Potential Occurrence on Camp Villere

Common Name	Scientific Name	Federal Status	Potential for Occurrence on Camp Villere
Red-cockaded woodpecker	*Picoides borealis*	E	Low
Gopher tortoise	*Gopherus polyphemus*	T	Low
Louisiana quillwort	*Isoetes louisianensis*	E	Low
Dusky Gopher Frog	*Rana sevosa*	E, CH	Low

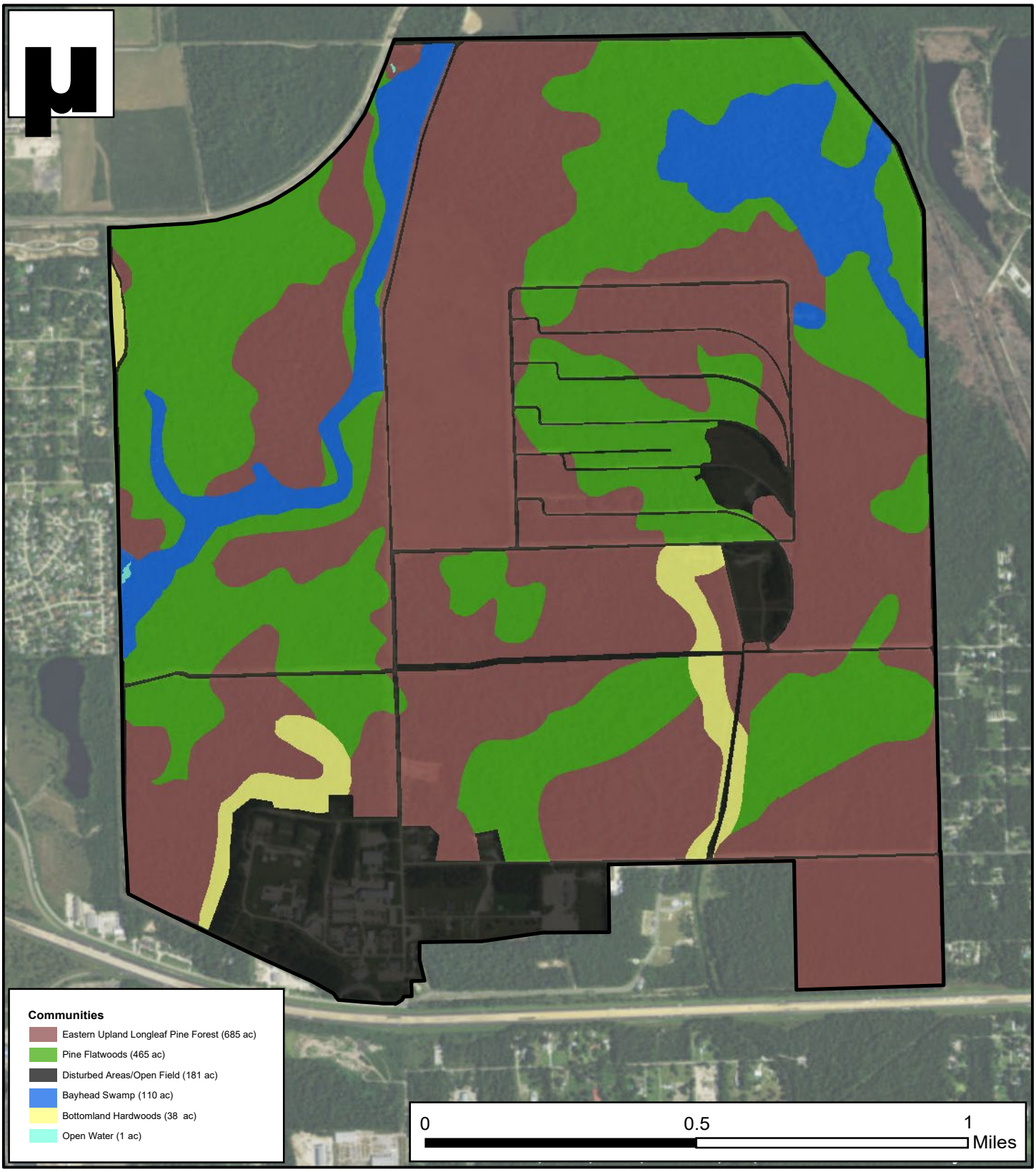
Legend: E – Endangered; T – Threatened; C –Candidate; CH – Critical Habitat
Source: USFWS 2016.

To date, no federally listed threatened or endangered species have been found on Camp Villere. The last installation-wide surveys for all of the above listed species were conducted in 2015.

4.8 Cultural Resources

Cultural resources are historic properties as defined by the National Historic Preservation Act (NHPA), cultural items as defined by the Native American Graves Protection and Repatriation Act (NAGPRA), archaeological resources as defined by the Archaeological Resources Protection Act (ARPA), sacred sites as defined by Executive Order 13007 to which access is afforded under the American Indian Religious Freedom Act, and collections and associated records as defined by 36 CFR 79. NEPA requires consideration of "important historic, cultural, and natural aspects of our natural heritage." Consideration of cultural resources under NEPA includes the necessity to independently comply with the applicable procedures and requirements of other federal and state laws, regulations, Executive Orders, presidential memoranda, and National Guard guidance.

Figure 12. Natural Communities at Camp Villere



Land Management Group, LLC.

Date: June 22, 2017

The principal federal law addressing cultural resources is the NHPA of 1966, as amended (16 U.S.C Section 470), and its implementing regulations (36 CFR 800). The regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties; assessing the effects of federal actions on historic properties; and consulting to avoid, reduce, minimize, or mitigate adverse effects. As part of the Section 106 process, agencies are required to consult with the State Historic Preservation Officer (SHPO). The term "historic properties" refers to cultural resources that meet specific criteria for eligibility for listing on the National Register of Historic Places (NRHP); historic properties need not be formally listed on the NRHP. Section 106 does not require the preservation of historic properties, but ensures that the decisions of federal agencies concerning the treatment of these places result from meaningful considerations of cultural and historic values and of the options available to protect the properties. The Proposed Action is an undertaking as defined by 36 CFR
800.3 and is required to comply with the requirements of Section 106.

Archeological resources on federal lands are protected under the ARPA, Public Law 96-95. Native American human remains, burials, and associated burial goods on federal lands or federally controlled lands are protected under Section 3 (c) of the NAGPRA, Public Law 101- 601, and its implementing regulations (43 CFR Part 10). These regulations also require Federal officials to take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal lands (43 CFR Part 10.3(c)(1)).

The Department of Defense Instruction (DoDI) 4710.02 (*DoD Interactions with Federally Recognized Tribes*) provides guidance for interacting and working with federally recognized American Indian and Alaska Native governments or tribes. This Instruction implements *Annotated DoD American Indian and Alaska Native Policy* (27 October 1999), which governs compliance with EO 13175 (Consultation and Coordination with Indian Tribal Governments) and Presidential Memoranda for *Heads of Executive Departments and Agencies on Government- to-Government Relations with Native American Tribal Governments* (29 April 1994). The DoD policy outlines DoD trust obligations, communication procedures with tribes on a government- to-government basis, consultation protocols, and actions to recognize and respect the significance that tribes ascribe to certain natural resources and properties of traditional cultural or religious importance. The policy requires consultation with federally recognized tribes for proposed activities that could significantly affect tribal resources or interests.

In addition to federal and state regulatory laws and policies, an Integrated Cultural Resources Management Plan (ICRMP) was developed by the LAARNG that forms the basis for cultural resources management on all LAARNG lands, including Camps Beauregard, Minden, and Villere. An ICRMP is required by DoDI 4715.3, *Environmental Conservation Program*, and fulfills the requirements as stipulated within Army Regulation 200-1, *Environmental Protection and Enhancement.* The LAARNG's ICRMP establishes explicit responsibilities, standard operating procedures (SOPs), and long-range goals for managing cultural resources in compliance with all applicable laws and regulations, while ensuring the safety, efficiency, and attainment of federal and state missions. SOP Number 5 of the ICRMP establishes procedures to be followed in case of inadvertent discovery of cultural resources.

4.8.1 Native American Consultation

To achieve compliance with Section 106 of the NHPA and DoD 14710.02, LAARNG is required to 1) identify tribes with whom consultation relationships should be established; 2) establish a consultation plan that identifies issues for consultation; 3) initiate consultation with a certified letter from the installation commander to the head of the tribal government; 4) provide reasonable time for response; 5) furnish the tribe with all information necessary for the tribe to participate meaningfully in the consultation; 6) follow up with the tribe to finalize issues; and 8) document the outcome of the consultation.

The following eight federally recognized tribes were identified as having potential ancestral ties to the Camp Beauregard, Camp Minden, and/or Camp Villere areas:

- Alabama Coushatta Tribe of Texas
- Caddo Nation
- Choctaw Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Jena Band of Choctaw Indians
- Mississippi Band of Choctaw Indians
- Quapaw Tribe of Oklahoma
- Tunica-Biloxi Tribe of Louisiana

These tribes will be invited to participate as Sovereign Nations per Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) in both the EA and the NHPA Section 106 process. Consultations with these tribes will be conducted in accordance with the protocol set forth in the NGB NEPA Handbook (2011).

Copies of letters submitted to these federally recognized Native American tribes and their responses will be included in an appendix to this document. If a tribe at any time indicates they are not interested in consulting at any point, the LAARNG is not required to send subsequent information. A copy of the EA will be provided to the tribes expressing interest in further consultation and those that have not responded to consultation attempts.

5.0 Environmental Consequences

This section identifies the potential effects (direct, indirect, and cumulative), of the Proposed Action on each of the resource areas presented in **Chapter 4.0** and compares and contrasts potential effects to the No Action Alternative. This section also identifies the BMPs and mitigation measures that would reduce the level of identified effects. The LAARNG considers BMPs integral to implementation and are not considered separate from the Proposed Action. Mitigation measures are identified that, when implemented, would reduce the level of identified effects to acceptable, less-than-significant levels.

5.1 Air Quality

5.1.1 Effects of the Proposed Action

Implementation of the revised INRMP will allow for the succession of annual burn plans. While the regularity and overall rotation (one to three years) of burning for specific areas may be modified based on location and ecological needs, the total area burned each year (approximately 2,500 acres) at Camps Beauregard and Minden, will remain the same. The LAARNG will continue to minimize smoke impacts through compliance with guidelines set forth by LDAF and adherence to air quality impact minimization procedures. Prescribed burning will be conducted under favorable weather conditions that allow for the minimization of smoke impacts on sensitive receptors. While minor, short-term adverse effects may result, regular burning will maintain low fuel levels, thus minimizing the amount of smoke that is produced. Fuel reduction will also reduce the potential for wildfires. Overall, beneficial effects on air quality are expected to continue.

Greenhouse gas emissions resulting from the implementation of the INRMP would be *de minimis* based on the current CEQ guidance concerning greenhouse gases.

5.1.2 Effects of the No Action Alternative

The No Action Alternative would not alter existing air quality conditions as a result of forestry management activities or prescribed burning. Prescribed burning will continue on a three-year rotation, with approximately 2,500 acres of Camps Beauregard and Minden burned annually. As described above, while the potential exists for minor, short-term adverse effects to air quality, regular burning will have long-term beneficial effects on air quality by reducing fuel loads and the potential for wildfires. Greenhouse gas emissions resulting from the No Action would be *de minimis* based on the current CEQ guidance.

5.1.3 Mitigation Measures

The potential effects associated with air quality for all alternatives would be beneficial. No mitigation other than compliance with existing regulations, permits, and plans would be required to reduce the level of potential effects.

5.2 Noise

5.2.1 Effects of the Proposed Action

Under the Proposed Action, noise will be generated by heavy machinery used for timber harvest, road and fire break maintenance, and erosion control projects. However, noise emissions at any

given site will be localized, minor, and temporary. Therefore, impacts are expected to be negligible as a result of the Proposed Action.

5.2.2 Effects of the No Action Alternative

The No Action will not alter the frequency or duration of existing sources of noise. Impacts are expected to be negligible as a result of the No Action Alternative.

5.2.3 Mitigation Measures

The Proposed Action would not result in adverse impacts to noise; therefore, no mitigation would be required.

5.3 Soils

5.3.1 Effects of the Proposed Action

Under the Proposed Action, natural resource management projects that have the potential for minor temporary disturbance of soils and groundcover vegetation include timber harvest, site preparation and planting, prescribed burning, erosion control projects, and invasive species removal. Soil and vegetation disturbance have the potential to increase surface water runoff and soil erosion during rainfall events. The use of LPDES BMPs to minimize soil erosion is required during all erosion control projects.

Silvicultural activities are designed to restore the pine ecosystem and follow Louisiana BMPs for forestry. Silvicultural activities are exempt from LPDES requirements. Activities such as pine thinning, midstory removal, and invasive plant species eradication enhance the growth of native groundcover, thus providing long-term protection against soil erosion.

Erosion control projects provide long-term protection against soil erosion by stabilizing eroded soils and re-establishing native groundcover. Prescribed burns can increase runoff and sedimentation in the short-term due to the temporary die-back of vegetation; however, plant species on Camps Beauregard and Minden are adapted to a fire-maintained ecosystem and recover rapidly following prescribed burns. Prescribed burning enhances the growth of native groundcover, providing long-term protection against soil erosion. Overall, the continuation of current natural resource management practices under the Proposed Action will have long-term beneficial effects on soil resources.

5.3.2 Effects of the No Action Alternative

Beneficial effects as described above for the Proposed Action would continue under the No Action Alternative. Overall, the No Action Alternative would have long-term beneficial effects on soil resources.

5.3.3 Mitigation Measures

The effects would be beneficial; therefore, no mitigation would be required.

5.4 Surface Water Resources

5.4.1 Effects of the Proposed Action

Under the Proposed Action, natural resource management projects that have the potential for minor temporary disturbance of soils and groundcover vegetation include timber harvest, site preparation and planting, prescribed burning, erosion control projects, and invasive species removal. Soil and vegetation disturbance have the potential to increase surface water runoff during rainfall events. The LAARNG is required to comply with all LPDES requirements to minimize soil erosion during any land management activities. Activities such as pine thinning, midstory removal, and invasive plant species eradication enhance the growth of native groundcover, thus providing long-term protection against extensive runoff and surface water impairment.

Erosion control projects provide long-term protection against soil erosion by stabilizing eroded soils and re-establishing native groundcover. Prescribed burns can increase runoff and sedimentation due to the temporary die-back of vegetation. However, plant species on Camps Beauregard and Minden are adapted to a fire-maintained ecosystem and recover rapidly following prescribed burns. Prescribed burning also enhances the growth of native groundcover, providing long-term protection against soil erosion.

Other potential impacts to water resources could occur as a result of petroleum, oil and lubricant spills from vehicle and equipment failures and refueling. Compliance with applicable regulations minimizes the risks of such minor spills occurring. In the unlikely event of an accidental fuel spill, LAARNG personnel will follow spill response procedures and an accident response team would be available immediately to minimize any adverse effects.

Overall, implementation of the Proposed Action, would have long-term beneficial effects on surface water resources.

5.4.2 Effects of the No Action Alternative

Beneficial effects as described above for the Proposed Action would continue under the No Action Alternative. Overall, the No Action Alternative would have long-term beneficial effects on surface water resources.

5.4.3 Mitigation Measures

Surface water impacts would primarily be beneficial, and potential adverse impacts would be mitigated by adherence to applicable laws and regulations. Therefore, no additional mitigation would be required.

5.5 Waters of the U.S. and Wetlands

5.5.1 Effects of the Proposed Action

Under the Proposed Action, wetlands and Waters of the U.S. would continue to be protected from damage. As in previous INRMPs, the revised INRMP would provide for vegetative buffers around wetlands and Streamside Management Zones (SMZ) around creeks to provide protection from erosion and sedimentation. These buffers/SMZs, 100 feet wide at a minimum, are activity- free zones and allow for only limited training activities to include dismounted foot traffic. No

vehicle traffic or construction is permitted in these zones. Vehicles would only cross at bridges or established, permitted, and designated hardened crossing areas. If additional crossings are needed or training needs cannot be met while avoiding the wetland buffer zones/SMZs, LAARNG environmental personnel will propose a solution or alternative prior to any disturbance.

The placement of any fill in wetlands as part any proposed projects would be conducted in accordance with Section 404 of the CWA.

Overall, implementation of the Proposed Action, would have long-term beneficial effects on wetlands and Waters of the U.S.

5.5.2 Effects of the No Action Alternative

Beneficial effects as described above for the Proposed Action would continue under the No Action Alternative. Overall, the No Action Alternative would have long-term beneficial effects on wetlands and Waters of the U.S.

5.5.3 Mitigation Measures

Waters of the U.S. and wetland impacts would primarily be beneficial, and potential adverse impacts would be mitigated by adherence to applicable laws and regulations. Therefore, no additional mitigation would be required.

5.6 Biological Resources

5.6.1 Effects of the Proposed Action

The continuation of ecosystem management activities such as timber thinning, prescribed burning, and invasive species removal will have beneficial effects on fish and wildlife resources. Ecosystem restoration will provide important habitat for native species dependent on natural longleaf pine communities. Water quality monitoring and watershed management will enhance habitat for fish and other aquatic organisms. Game species monitoring and habitat management will ensure game species population sustainment.

5.6.2 Effects of the No Action Alternative

Beneficial effects as described above for the Proposed Action would continue under the No Action Alternative. Overall, the No Action Alternative would have long-term beneficial effects on biological resources.

5.6.3 Mitigation Measures

Since only beneficial impacts are expected, no mitigation would be required.

5.7 Cultural Resources

5.7.1 Effects of the Proposed Action

A number of natural resource management activities have the potential to affect cultural resources (e.g., prescribed burning, timber harvesting, site preparation and planting, erosion control projects, and invasive species removal); however, procedures are outlined within the ICRMP (and thus incorporated into the INRMP) to ensure that NRHP-eligible or potentially

eligible cultural resources are avoided or minimally impacted by these activities. Coordination procedures outlined in the ICRMP require project proponents to submit all project plans to the Cultural Resource Manager (CRM) prior to contract award and project implementation. All proposed projects will be reviewed by the CRM for potential adverse effects to cultural resources. The Natural Resources project proponent will coordinate with the CRM to ensure that activities resulting in ground disturbance are minimized within the boundaries of archaeological sites that are eligible or potentially eligible for listing in the NRHP. In regard to protected historic buildings, structures, and cemeteries, coordination and resource protection measures will be implemented as outlined in the ICRMP. The Proposed Action will not alter current procedures for reviewing natural resource projects and protecting cultural resources. Therefore, the Proposed Action will have negligible impacts on cultural resources.

5.7.2 Effects of the No Action Alternative

Under the No Action Alternative, effects to cultural resources and compliance with the ICRMP would be the same as under the Proposed Action; therefore, the No Action Alternative would have negligible impacts on cultural resources.

5.7.3 Mitigation Measures

The Proposed Action would not result in adverse impacts to cultural resources; therefore, no mitigation would be required.

5.8 Cumulative Effects

As defined by CEQ regulations in 40 CFR Part 1508.7, cumulative effects are those which "result from the incremental impact of the Proposed Action when added to other past, present and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions." Cumulative effects analysis captures the effects that result from the Proposed Action(s) in combination with the effects of other actions taken during the duration of the Proposed Action(s) in the same geographic area. Because of extensive influences both within the Proposed Action areas and outside the boundary, cumulative effects are the most difficult to analyze.

NEPA requires the analysis of cumulative environmental effects of a Proposed Action, or set of actions, on resources that may often be manifested only at the cumulative level, such as traffic congestion, air quality, noise, biological resources, cultural resources, socioeconomic conditions, utility system capacities, and others.

5.8.1 Regional Cumulative Effects

The environment surrounding Camps Beauregard, Minden, and Villere is changing, although not at a rapid pace. A need for land to accommodate the areas' populations and economic development, including additional industrial uses, businesses, homes, and related services and infrastructure, will likely produce minor environmental effects. One of the primary missions of the LAARNG is to service the emergency needs of the people of the State of Louisiana. Land and facilities are necessary to accommodate training, which enables the LAARNG to service the community effectively (as well as the entire country, in terms of national defense). As such, the growth of the region, of Louisiana, and of the nation as a whole drives the need for this additional training capability; and these factors produce pressures on the environment within the region in which the installations are located.

Within the installations' boundaries, management of environmental resources would be achieved through ongoing implementation of the INRMP and ICRMP. Within the larger region beyond the installation, management of growth and resources would be controlled through adherence to applicable local and regional long-range plans. However, despite implementation of these measures, the military and civilian needs would result in some cumulative effects. For example, the region surrounding and including the installations is anticipated to experience an ongoing decline in the natural ecosystem, as well as increased demands on utilities, infrastructure, and services. While the ongoing and future activities at Camps Beauregard, Minden, and Villere would individually produce a negligible contribution to adverse effects on area infrastructure, traffic congestion, air quality and other resources, the cumulative effect of the aforementioned combined on-and off-post pressures would increase these effects. These effects would occur whether considering the Proposed Action or the No Action Alternative.

At this time there does not appear to be any regionally stimulating type projects or infrastructure development. Absent any major economic stimuli, it is anticipated that the current economic engine for the areas would continue to driving the local economy, e.g., medical facilities, education, in addition to the timber-related industry of the rural areas throughout the region. Cumulatively, this minimal additional development would slightly reduce the quality of the natural ecosystem. However, the cumulative effects would be expected to be insignificant at the regional level. Close coordination between the LAARNG and local planning authorities and community representatives would serve to control future land use conflicts. Implementation of land use and resource management plans would serve to control the extent of environmental effects, and proper planning would ensure future socioeconomic conditions maintain the quality of life that the areas' residents currently enjoy. Cooperation with the surrounding communities and the continued use of resource management plans should reduce the cumulative degradation on the environment to less than significant.

5.8.2 Effects of the Proposed Action

Air Quality

The Proposed Action would have negligible cumulative impacts on air quality. Short-term cumulative impacts on air quality could occur when prescribed burns are conducted simultaneously on Camps Beauregard or Minden and adjacent privately-owned lands. However, all prescribed burns are coordinated with LDAF to minimize the potential for adverse cumulative effects.

Noise

Since the Proposed Action would create no impacts to the noise environment, no cumulative impacts to noise are expected.

Soils

Regional and local soil resources would not be adversely affected by contributing activities and potentially foreseeable projects. All activities would be implemented on LAARNG lands in which impacts to soil resources are managed through the LPDES permitting process. Other future projects on the installations, such as construction of new training areas, would change military land use. Additional beneficial cumulative effects include the decrease of soil disturbance intensity and erosion on LAARNG lands that are currently utilized for maneuver training. The Proposed Action would provide beneficial cumulative impacts when considering other actions on the installations.

Water Resources

Implementation of the Proposed Action would have only beneficial cumulative effects. There would be long-term beneficial cumulative impacts to water resources from implementation of the 2018-2022 INRMP, when considering the anticipated beneficial impacts of reduced soil erosion. Other past, present, or future activities on the installations may have short-term, localized adverse impacts due to construction or silviculture activities, the Proposed Action would not have incremental impacts. .

Biological Resources

In general, past activities that have caused adverse impacts to biological resources on the installations have been associated with construction and training activities. Although such activities have the potential to cause vegetation loss, habitat loss, and habitat degradation, the LAARNG continues to successfully maintain diverse ecological communities. The INRMP implements management practices that would have long-term beneficial effects on fish and wildlife resources. When considering with the past, present, and future actions, the Proposed Action would have beneficial cumulative effects.

Cultural Resources

The management of Cultural Resources would continue under the revised INRMP, in accordance with the ICRMP. Implementation of the Proposed Action would not be expected to result in any cumulative impacts on cultural resources.

5.8.3 Effects of the No Action Alternative

Under the No Action Alternative, cumulative effects would be the same as those outlined for the Proposed Action.

6.0 Comparison of Alternatives and Conclusions

This EA has evaluated the potential environmental, cultural, and socioeconomic effects from the implementation of the 2018-2022 INRMP. Two alternatives were evaluated:

Proposed Action– Implement the 2018-2022 INRMP as defined in **Chapter 2.0** to fulfill the requirements of the Sikes Act.

No Action Alternative – Continue to operate using existing programs and management practices in accordance with the 2015 INRMP.

6.1 Comparison of the Environmental Consequences of the Alternatives

This section provides a summary matrix of the potential effects of the Proposed Action and the No Action Alternative. By including this matrix, this EA complies with CEQ's 40 Most Frequently Asked Questions (Number 7) and 40 CFR Part 1502.14. This section presents the environmental, cultural, and socioeconomic effects of the alternatives in comparative form, thus sharply defining issues and providing a clear basis for choice among options by the decision- maker and the public (40 CFR Part 1502.14). This matrix is drawn from the Environmental Consequences analysis (**Chapter 5.0**).

Table 7.
Potential Environmental Effects of the Alternatives

Technical Resource Area	No Action Alternative	Proposed Action
Land Use	**No effect.**	**No effect.**
Air Quality	**Beneficial Impact:** Minor, short-term adverse effects may result during prescribed burning events. However, overall beneficial impacts to air quality would result from maintaining lower fuel levels.	Same as described under the No Action Alternative.
Noise	**Negligible**	**Negligible**
Geology and Soils	No effect to geology, topography, or seismicity. **Beneficial Impact to Soils:** While silviculture and prescribed burns can in the short-term increase runoff and sedimentation, the use of BMPs and continuation of current natural resource management practices will have long-term beneficial effects.	Same as described under the No Action Alternative.
Water Resources	No effect to groundwater, floodplains, or the Louisiana Coastal Zone. **Beneficial Impact to surface water and wetlands:** While project activities and prescribed burns can in the short-term increase runoff and sedimentation, the use of BMPs and continuation of current natural resource management practices will provide long-term protection against runoff and surface water impairment providing beneficial effects.	Same as described under the No Action Alternative.

Technical Resource Area	No Action Alternative	Proposed Action
Biological Resources	**Beneficial Impact:** The continuation of ecosystem management activities will have beneficial effects on biological resources.	**Beneficial Impact:** Same as described under the No Action Alternative. Additionally, the incorporation of new and revised projects will have additional beneficial effects on biological resources.
Cultural Resources	**Negligible**	**Negligible**
Socioeconomics (including Environmental Justice and Protection of Children)	**No effect.**	**No effect.**
Infrastructure	**No effect.**	**No effect.**
Hazardous and Toxic Materials/Wastes	**No effect.**	**No effect.**

5.2 Conclusions

The evaluation performed within this EA concludes that there would be no significant adverse effects, either individually or cumulatively, to environmental, cultural, or socioeconomic resources as a result of the implementation of the Proposed Action. Overall, beneficial impacts are anticipated. This EA's analysis determines, therefore, that an EIS is unnecessary for implementation of the Proposed Action, and that a FONSI is appropriate. This EA recommends implementation of the Proposed Action.

7.0 References

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Louisiana Department of Environmental Quality (LDEQ). 2017. LDEQ Interactive Mapping Application. Internet Website: http://map.ldeq.org/Default.aspx. Accessed June 1, 2017.

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U.S. Fish and Wildlife Service (USFWS). 2016. Endangered, Threatened, and Candidate Species of Louisiana. Internet Website: https://www.fws.gov/lafayette/pdf/LA_T&E_Species_List.pdf. Accessed 23 June 2016.

8.0 List of Preparers

The following people were primarily responsible for preparing this Environmental Assessment.

Name	Organization	Discipline/ Expertise	Experience	Role in Preparing EA
Jerry Bolton	Land Management Group, LLC	Biology/Ecology	31 years NEPA and related studies	NEPA guidance and report review
Stephen Smith	Land Management Group, LLC	Biology/Wildlife Management	23 years NEPA and related studies	Figure preparation, GIS analysis, and report review
Tonya Smith	Land Management Group, LLC	Biology/Wildlife Management	18 years NEPA and related studies	Project management and report preparation
Justin LeBlanc	Land Management Group, LLC	GIS	5 years NEPA and related studies	Report review

9.0 Agencies and Individuals Consulted

9.1 Federal and State Agencies

State and Federal resource agency consultation will be initiated via Solicitation of Views letters. These letters will serve to inform the agencies of the Proposed Action and to request any information they deem necessary for inclusion in the EA. Copies of all correspondence will be included in appendices. These agencies will also be provided with a copy of the EA. Agencies consulted are listed below:

Federal Agencies

U.S. Fish & Wildlife Service
Attn: Seth Bordelon
646 Cajundome Boulevard, Suite 400
Lafayette, LA 70506

USACE Vicksburg District
Regulatory Branch
Attn: Jennifer Mallard, Chief
4115 Clay Street
Vicksburg, MS 39183

US Army Corps of Engineers
New Orleans District
CEMVN-OD-S
7400 Leake Avenue
New Orleans, Louisiana 70118

U.S. Forest Service
Attn: District Supervisor
2500 Shreveport Highway
Pineville, Louisiana 71360-2009

USEPA Region 6
Compliance Assurance and Enforcement Division
Office of Planning and Coordination
Attn: John Blevins, Director
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Natural Resources Conservation Service
Attn: Kevin Norton, State Conservationist
3737 Government Street, Building C
Alexandria, LA 71303

State Agencies and Local Entities

Louisiana Department of Environmental Quality
Office of the Secretary
Attn: Linda Hardy
P.O. Box 4301
Baton Rouge, LA 70821-4301

Louisiana Office of Cultural Development
Division of Historic Preservation and Archaeology
Attn: SHPO
P.O. Box 44247
Baton Rouge, LA 70804

Louisiana Department of Wildlife and Fisheries
Pineville Field Office
1995 Shreveport Highway
Pineville, LA 71360

Louisiana Department of Wildlife and Fisheries
Minden Field Office
9961 Hwy. 60
Minden, LA 71055

Louisiana Department of Wildlife and Fisheries
Hammond Field Office
42371 Phyllis Ann Drive
Hammond, LA 70403

Louisiana Department of Ag and Forestry
Office of Forestry
Attn: Wade Dubea, Assistant Commissioner
5825 Florida Blvd., Suite 6000
Baton Rouge, LA 70806

9.2 Native American Consultation

The following lists the eight federally recognized Native American tribes that will be invited to consult. An initial scoping letter will be sent notifying these Native American groups of the project and asking if the Native American groups want to initiate Section 106 consultation. For those tribes for which LAARNG does not receive a response, LAARNG will send a copy of the draft EA to provide an opportunity for comment. All correspondence will be included in an appendix.

Mississippi Band of Choctaw Indians
Attn: Mr. Kenneth Carleton, THPO
P.O. Box 6257
Philadelphia, MS 39350

Tunica-Biloxi Tribe of Louisiana
Attn: Earl J. Barbry, Jr., THPO
P.O. Box 1589
Marksville, LA 71351

Alabama Coushatta Tribe of Texas
Attn: Bryant Celestine
571 State Park Rd. 56
Livingston, TX 77351

Caddo Nation
Attn: Kim Penrod, Acting THPO
P. O. Box 487
Binger, OK 73009

Jena Band of Choctaw Indians
Attn: Alina Shively, Deputy THPO
P.O. Box 14
Jena, LA 71342

Choctaw Nation of Oklahoma
Attn: Ian Thompson, THPO
P.O. Drawer 1210
Durant, OK 74702

Coushatta Tribe of Louisiana
Attn: Dr. Linda Langley, THPO
.O. Box 10
Elton, LA 70352

Quapaw Tribe of Oklahoma
Attn: Everett Bandy, THPO
P.O. Box 765
Quapaw, OK 74363

Attachment 1
Agency Coordination