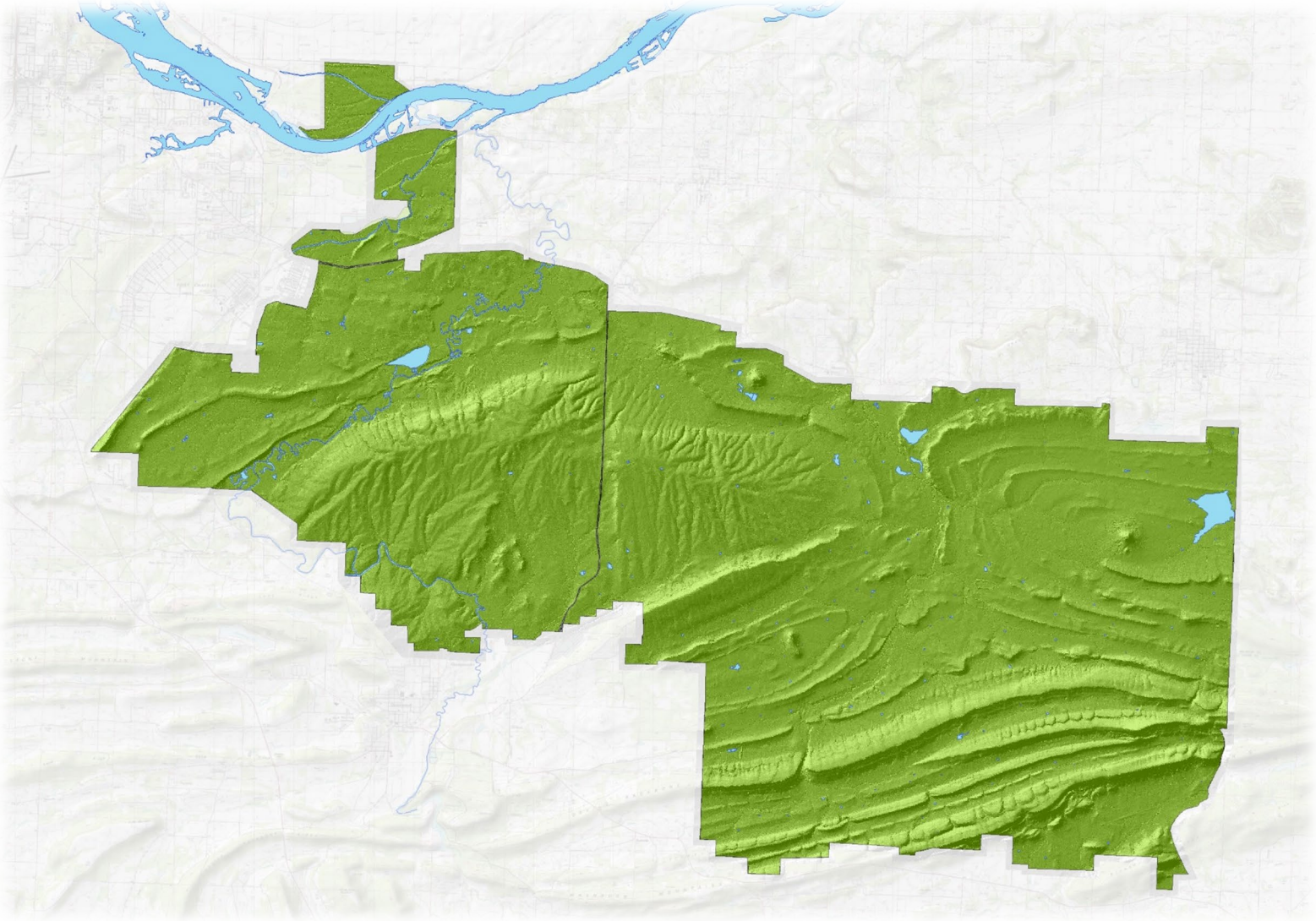
INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

FOR FORT CHAFFEE MANEUVER TRAINING CENTER
FORT CHAFFEE, ARKANSAS



2019-2023

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INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN FOR FORT CHAFFEE JOINT MANEUVER TRAINING CENTER IN FORT CHAFFEE, ARKANSAS

This 2019-2023 Integrated Natural Resources Management Plan (INRMP) for Fort Chaffee Joint Maneuver Training Center (FCJMTC) was prepared by the FCJMTC – Environmental Branch. This INRMP has been prepared in accordance with regulations, standards and procedures of the Department of Defense, the Arkansas Army National Guard (ARARNG) the Sikes Act, (16 United States Code [U.S.C.] §670a, as amended) and Army Regulation (AR) 200-1, Environmental Protection and Enhancement, paragraph 4-3d1(a), in cooperation with the United States Fish and Wildlife Service (USFWS) and the Arkansas Game and Fish Commission (AGFC).

This Integrated Natural Resources Management Plan is consistent with the use of military installations to ensure the preparedness of the Armed Forces and fulfills the requirements of the Sikes Act (16 United States Code Section 670a, *et seq.*) as amended, for FCJMTC.

Signature on this INRMP indicates the mutual agreement of the parties concerning the conservation, protection and management of the installation's natural resources as presented within this plan.

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FORMAT PAGE

ACRONYMS

ABB	American Burying Beetle
ACUB	Army Compatible Use Buffer
AEDB-EQ	Army Environmental Database-Environmental Quality
AFRC	Armed Forces Reserve Center
AGFC	Arkansas Game and Fish Commission
AHA	Ammunition Holding Area
AMP	Agricultural Management Plan
AR	Army Regulation
AR 10	Arkansas State Highway 10
AR 22	Arkansas State Highway 22
AR 96	Arkansas State Highway 96
ARARNG	Arkansas Army National Guard
ARNG	Army National Guard
ASP	Ammunition Supply Point
ASPB	Arkansas State Plant Board
AVLB	Armored Vehicle Launch Bridge
AWAP	Arkansas Wildlife Action Plan
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	Best Management Practices
BO	Biological Opinion
CACTF	Combined Arms Collective Training Facility
CLF	Convoy Live Fire
CMI	Conservation Management Institute
CWD	Chronic Wasting Disease
CX	Categorical Exclusion
DODI	Department of Defense Instruction
DOE	Department of Energy
DZ	Drop Zone
EA	Environmental Assessment
EAB	Emerald Ash Borer
ECP	Entry Control Point
EIS	Environmental Impact Assessment
EPA	Environmental Protection Agency
EPAS	Environmental Performance Assessment System
EQR	Environmental Quality Report
ESA	Endangered Species Act
ESMP	Endangered Species Management Plan
FCJMTC	Fort Chaffee Joint Maneuver Training Center
FDGC	Federal Geographic Data Committee

FLS	Forward Landing Strip
FMS	Field Maintenance Shop
FOB	Forward Operating Base
FONSI	Finding of No Significant Impact
GIS	Geographic Information System
HQDA	Headquarters, Department of the Army
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPBC	Infantry Platoon Battle Course
IPMP	Integrated Pest Management Plan
ITAM	Integrated Training Area Management
IWFMP	Integrated Wildland Fire Management Plan
JIEDDL	Joint Improvised Explosive Device Defeat Lane
JRTC	Joint Readiness Training Center
LCTA	Land Condition Trend Analysis
LRAM	Land Rehabilitation and Maintenance
LTA	Landuse Trend Analysis
LZ	Landing Zone
MAWS	Monitoring Avian Winter Survival
MBTA	Migratory Bird Treaty Act
MFH	Military Funeral Honors
MICLIC	Mine Clearing Line Charge
MLRS	Multiple Launch Rocket System
MOUT	Military Operations in Urban Terrain
MTC	Mission Training Center
MWR	Moral, Welfare and Recreation
NAF	Non-Appropriated Fund
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGVD	National Geodetic Vertical Datum
NLEB	Northern Long-Eared Bat
NRHP	National Register of Historic Places
NSWG	Navy Special Warfare Group
ORTC	Operational Readiness Training Complex
POL	Petroleum, Oil and Lubricants
POW	Prisoner of War
PX	Post Exchange

RCMP	Range Complex Master Plan
RCTC	Regional Collective Training Center
REC	Record of Environmental Consideration
ROCA	Range Operations and Control Area
RPM	Reasonable and Prudent Measures
RSP	Recruiting and Retention Program
RTI	Regional Training Institute
RTLA	Range Training Land Assessment
RTLP	Range Training Land Program
SDSFIE	Spatial Data Standards Facility Infrastructure Environment
SGCN	Species of Greatest Conservation Need
SHPO	State Historic Preservation Office
SOCOM	Special Operations Command
SOP	Standard Operating Procedure
SRA	Sustainable Range Awareness
SRP	Sustainable Range Program
SSO	State Safety Office
STEP	Status Tool for the Environmental Program
TA	Training Area
TNC	The Nature Conservancy
TOW	Tube Launched, Optically Tracked, Wire Guided Missile
TRI	Training Requirements Integration
TSC	Training Support Center
TSM	Training Site Manager
TTB	Tactical Training Base
TUAS	Tactical Unmanned Aircraft System
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UTM	Universal Transverse Mercator
WMA	Wildlife Management Area
WNS	White Nose Syndrome
WSI	Wildlife Stand Improvement

FORMAT PAGE

TABLE OF CONTENTS

EXECUTIVE SUMMARY

CHAPTER 1 - OVERVIEW

1.1 Purpose 1-1
1.2 Support of the Installation Mission 1-2
1.3 Authority 1-3
1.3.1 Army Regulation (AR) 200-1 1-3
1.3.2 Department of Defense Instruction (DODI) 4715.03, Natural Resources Conservation Program (February 14, 2011) 1-3
1.3.3 Sikes Act 1-3
1.4 Responsible and Interested Parties 1-4
1.5 Integration of this INRMP with Other Plans 1-5
1.5.1 Installation Plans 1-5
1.5.2 Threatened and Endangered Species Plans 1-6
1.5.3 Statewide Plans 1-7
1.6 Management Philosophy 1-8
1.6.1 Biodiversity Conservation 1-8
1.6.2 Ecosystem Management 1-8
1.6.3 Adaptive Management 1-9
1.7 Sustainable Range Program (SRP) 1-10
1.7.1 Range and Training Lands Program (RTLP) 1-11
1.7.2 Integrated Training Area Management (ITAM) 1-11
1.8 INRMP Implementation Review and Mutual Agreement 1-14
1.8.1 Annual Review 1-14
1.8.2 Five-Year Review for Operation and Effect 1-14
1.9 NEPA Compliance and Integration 1-15

CHAPTER 2 - CURRENT INSTALLATION CONDITIONS, LAND USE AND MISSION

2.1 Installation Overview 2-1
2.1.1 Location 2-1
2.1.2 Acreage and Acquisition 2-2
2.1.3 Installation History 2-2
2.2 Land Use and Management Units 2-3
2.2.1 Land Use Categories 2-3
2.2.2 Training Areas 2-3
2.2.3 Burn Units 2-7
2.3 Operations and Infrastructure 2-8
2.3.1 Population 2-8
2.3.2 Cantonment Area Facilities 2-9
2.3.3 Training Area Facilities 2-9
2.3.4 Projected Changes in Facilities 2-11
2.3.5 Transportation System 2-12

Municipal 2-13
2.3.6 Water Management 2-13
2.3.7 Cemeteries 2-13
2.4 Natural Environment 2-14
2.4.1 Topography and Physiography 2-14
2.4.2 Geology 2-15
2.4.3 Geomorphical Analysis 2-17
2.4.4 Soils 2-18
2.4.5 Water Resources 2-20
2.4.6 Climate 2-24
2.4.7 Climate Change 2-25
2.4.8 Federally Listed Threatened and Endangered Species, Rare Species and Special Status Species 2-26
2.4.9 Fauna 2-37
2.4.10 Flora and Vegetative Communities 2-44

CHAPTER 3 - NATURAL AND CULTURAL RESOURCES MANAGEMENT AND MISSION SUSTAINABILITY

3.1 Military Mission 3-1
3.2 Vision 3-2
3.3 Military Operations and Activities 3-2
3.3.1 Current and/or Potential Military Impacts on the Environment 3-2
3.3.2 Natural Resources Management Impacts on the Military Mission 3-4
3.3.3 Future and/or Potential Military Impacts on the Environment 3-5
3.3.4 Training Constraints 3-5
3.3.5 Training Opportunities 3-7
3.4 Cultural Resources 3-9
3.4.1 Cultural Resources Inventory 3-9
3.4.2 Native American Consultation and Coordination 3-10
3.4.3 Natural Resources Management Implications 3-11
3.5 National Environmental Policy Act (NEPA) Implementation 3-11
3.5.1 Responsibility 3-11
3.5.2 Levels of Documentation 3-12
3.5.3 NEPA and Natural Resources Management 3-15

CHAPTER 4 - GOALS, OBJECTIVES AND MANAGEMENT ACTIONS

4.1 NEPA Implementation 4-2
4.2 Rare, Threatened and Endangered Species Management 4-2
4.2.1 American Burying Beetle (Nicrophorus americanus; ABB) 4-3
4.2.2 Bald Eagle (Haliaeetus leucocephalus) 4-16
4.2.3 Geocarpon (Geocarpon minimum) 4-18
4.2.4 Northern Long-Eared Bat (Myotis septentrionalis; NLEB) 4-19
4.2.5 Rattlesnake-Master Borer Moth (Papaipema eryngii) 4-28
4.2.6 Rare Species and Species of Concern 4-28
4.2.7 Migratory Bird and Upland Game Bird Management 4-29

4.3 Fish and Wildlife Management 4-30
4.4 Vegetation Management 4-31
4.5 Forest Management 4-34
4.6 Agricultural Outlease Management 4-36
4.7 Pest Management 4-37
4.8 Invasive Species Management....4-38
4.9 Wildland Fire Management....4-39
4.10 Water Resources Management....4-41
4.11 Soil and Erosion Control Management....4-43
4.12 Climate Change....4-45
4.13 Cultural Resources Management 4-46
4.14 GIS Management 4-47
4.15 Outdoor Recreation Management 4-48
4.16 Natural Resources Law Enforcement Management 4-50
4.17 Cantonment Area Natural Resources Management....4-51
4.18 Gas Lease Management 4-51

CHAPTER 5 - INRMP IMPLEMENTATION

5.1 Funding 5-2
5.1.1 Operations and Maintenance (O&M) Environmental Funds 5-2
5.1.2 Fish and Wildlife Conservation Funds 5-3
5.1.3 Forestry Reimbursable Funds 5-3
5.1.4 Agricultural Funds 5-3
5.1.5 Legacy Funds....5-3
5.2 Natural Resources Management Staffing....5-3
5.3 Training 5-3
5.4 Goals, Objectives and Management Actions....5-3

TABLES

Table ES.1 Critical Elements for FCJMTC

Table 2.1 Training Areas 2-4
Table 2.2. Public Use Compartments 2-6
Table 2.3. Burn Units 2-7
Table 2.4. FCJMTC Live Fire Ranges 2-10
Table 2.5. FCJMTC Threatened, Endangered and Candidate Species 2-27
Table 2.6. ABBs Trapped at FCJMTC during the ABB Annual Monitoring Survey 2-29
Table 2.7. ABBs Trapped at FCJMTC during the Impact Area and Surface Cleared Area Survey 2-31
Table 2.8. Total Deer Taken during the Modern Gun and Muzzleloader Deer Permit Hunts from 1997-2017 2-37
Table 2.9. Summary of Vegetation Community Acreages 2-47

FIGURES

Figure 2.1 Regional Roads Map 2-1
Figure 2.2 Training Areas Map 2-5
Figure 2.3 Sportsman Map 2-6
Figure 2.4 Prescribed Burn Units Map 2-8
Figure 2.5 Road Network Map 2-12
Figure 2.6 Elevation Map 2-15
Figure 2.7 Natural Gas Wells Map 2-17
Figure 2.8 Soil Map 2-19
Figure 2.9 Surface Water Map 2-22
Figure 2.10 Observed and Projected Temperature Change 2-26
Figure 2.11 ABBs Trapped during the ABB Annual Monitoring Survey 2-30
Figure 2.12 ABBs Trapped during the ABB Impact Area and Surface Cleared Area Survey . 2-31
Figure 2.13 Timber Harvests Map 2-45
Figure 2.14 Young Pine Plantations (<15 years old) Map 2-46
Figure 2.15 Vegetation Map 2-48

Figure 3.1 Planning Timeline for the ABB and the NLEB 3-6
Figure 3.2 Summary of NEPA Process Levels and Associated Documents 3-13

Figure 4.1 NLEB Consultation Area and Final 4(d) Rule Guidance Flowchart for Arkansas . 21

APPENDICES

A	Goals, Objectives and Management Actions
B	List and summaries of federal laws, executive orders, presidential memoranda, DOD directives/instructions, regulations, policy, guidance and state laws.
C	Roles and Responsibilities
D	Executive Level Master Plan dated October 1, 2017
E	Integrated Contingency Plan dated September 2015
F	Integrated Cultural Resources Management Plan (ICRMP) 2016-2020
G	Integrated Wildland Fire Management Plan (IWFMP) 2019-2023
H	Integrated Pest Management Plan (IPMP) dated December 2015
I	Range Complex Master Plan (RCMP)
J	Biological Opinion (BO) for the ABB dated February 3, 2011
K	Conservation Plan for the ABB dated May 27, 2010
L	Programmatic BO on Final 4(d) Rule for the NLEB and Activities Excepted from Take Prohibitions dated 2016-2022
M	Arkansas Wildlife Action Plan (AWAP) dated 2015-2025
N	Hazardous Chemical and Waste Management SOP
O	NEPA Documentation and Correspondence
P	ANHC list of rare, threatened and endangered species found in Crawford, Franklin and Sebastian County, Arkansas
Q	Bald Eagle Guidelines
R	Mammal Species at FCJMTC
S	Bird Species at FCJMTC
T	Reptile and Amphibian Species at FCJMTC
U	Fish Species at FCJMTC
V	Invertebrate Species at FCJMTC
W	Plant Species at FCJMTC
X	Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States, Technical Publication HMG-2 dated 2006
Y	WMA Policy Statement
Z	Oil and Gas Lease Stipulations
AA	Full Size Maps

FORMAT PAGE

EXECUTIVE SUMMARY

This Integrated Natural Resources Management Plan (INRMP) will provide comprehensive, strategic guidance for the management of all natural resources on the 65,059 acre Arkansas Army National Guard (ARARNG) installation at Fort Chaffee, Arkansas from fiscal year (FY) 2019-2023. The garrison commander will be able to utilize this INRMP is to provide the basis and criteria for protecting and enhancing natural resources using landscape and ecosystem perspectives, consistent with the military mission. The layout of this INRMP consist of:

- **Chapter 1 (Overview)** provides the purpose of this INRMP, support of the installation mission, authority, responsible and interested parties, integration of this INRMP with other plans, management philosophy, the sustainable range program (SRP), INRMP implementation review and mutual agreement and National Environmental Policy Act (NEPA) compliance and integration.
- **Chapter 2 (Current Installation Conditions, Land Use and Mission)** provides the installation overview, land use and management units, operations and infrastructure and the natural environment.
- **Chapter 3 (Natural Resources Management and Mission Sustainability)** provides the military mission, vision, specific military operations and activities, cultural resources management overview and NEPA implementation.
- **Chapter 4 (Goals, Objectives and Management Actions)** provides the management actions for the following components: rare, threatened and endangered species, fish and wildlife, vegetation, erosion, wildland fire, forest, agricultural outlease, climate change, geographic information systems (GIS), water resource, pest and invasive species, outdoor recreation, natural resources law enforcement, cantonment area natural resources and gas lease.
- **Chapter 5 (INRMP Implementation)** provides the funding of natural resources programs, natural resources management staffing, training and goals, objectives and management actions pertaining to INRMP implementation.

This INRMP contains the associated documentation required to be in compliance with the NEPA, which requires federal agencies to consider the environmental consequences of proposed actions. An Environmental Assessment (EA) was completed in 2001 and was embedded within the 2002-2006 INRMP. Thereafter, all INMRP updates tiered off of the original EA using a Record of Environmental Consideration (REC). This afforded natural resources staff to focus solely on the INRMP and eliminate the duplication of information. This INRMP is a routine update of the 2014 Fort Chaffee Joint Maneuver Training Center (FCJMTC) INRMP.

Preparation and implementation of this INRMP is required by Army Regulation (AR) 200-1, *Environmental Protection and Enhancement* dated December 2007; Department of Defense Instruction (DODI) 4715.03, *Natural Resources Conservation Program* dated February 14, 2011; and the Sikes Act Improvement Act of 1997, as amended (16 U.S.C. 670 *et seq*.). The Sikes Act is one of the primary drivers behind the natural resources management program and the INRMP. The Sikes Act requires the preparation and implementation of an INRMP to facilitate the conservation program. The Sikes Act states that “the Secretary of each military department shall prepare and implement an INRMP for each military installation in the U.S. under the jurisdiction of the Secretary, unless the Secretary determines that the absence of

significant natural resources on a particular installation makes preparation of such a plan inappropriate." The Sikes Act further requires that this INRMP reflects the mutual agreement of the U.S. Fish and Wildlife Service (USFWS) and the Arkansas Game and Fish Commission (AGFC), concerning conservation, protection, and management of fish and wildlife resources. The table below lists the critical elements for this INRMP and their location within the INRMP.

Table ES.1. Critical Elements for FCJMTC

Required Sikes Act Criteria	Location in the INRMP
1. No net loss in the capability of military installation lands to support the military mission of the installation.	Chapter 1
2. Fish and wildlife management, land management, forest management, and fish and wildlife-oriented recreation.	Chapter 4
3. Fish and wildlife habitat enhancement or modifications.	Section 4.4
4. Wetland protection, enhancement and restoration, where necessary for support of fish, wildlife or plants.	Section 4.10
5. Integration of, and consistency among, the various activities conducted under the plan.	Throughout INRMP
6. Establishment of specific natural resource management goals and objectives and time frames for proposed action.	Chapter 4 and Appendix A
7. Sustained use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources.	Section 4.15
8. Public access to the military installation that is necessary or appropriate subject to requirements necessary to ensure safety and military security.	Section 4.15
9. Enforcement of applicable natural resource laws and regulations.	Section 4.16
10. Such other activities as the Secretary of the military department determines appropriate.	Throughout INRMP
11. Protection and management of threatened and endangered species and species of concern.	Section 4.2

This INRMP also outlines the conservation and protection programs utilized by FCJMTC to ensure conservation and recovery of threatened and endangered species, specifically the federally endangered American burying beetle (*Nicrophorus americanus;* ABB), the federally threatened Northern Long-eared Bat (*Myotis septentrionalis;* NLEB) and the federally threatened Geocarpon (*Geocarpon minimum*) as required by the Endangered Species Act (ESA) (PL 95-632, 16 U.S. Code [USC] 1531 *et seq*.), as amended.

Goals, objectives and management actions were updated during the annual reviews of the 2014-2018 FCJMTC INRMP, which all reflected mutual agreement by the training site manager (TSM), the USFWS and the AGFC. These annual reviews included, but was not limited to:

- addition of the NLEB species information and management actions;
- addition of Geocarpon species information and management actions;
- update of the Wildland Fire Management Section 4.9 to reflect the current Integrated Wildland Fire Management Plan (IWFMP) (Appendix G);
- update of project information and survey results, specifically the bird and mammal surveys;
- update feral hog information; and
- addition of the positive finding of the rattlesnake-master borer moth (*Papaipema eryngii*).

FORMAT PAGE

1 OVERVIEW

This INRMP is a long-term planning document designed to guide the garrison commander in the management of natural resources at FCJMTC. This INRMP will support an installation's mission while protecting and enhancing installation resources for multiple use, sustainable yield and biological integrity. Stewardship of the land and the natural resources it possesses is essential to ensure that these resources are properly conserved and protected through the foreseeable future.

This INRMP was developed in accordance with AR 200-1, DODI 4715.03 and the Sikes Act. The Sikes Act requires the preparation, implementation, update and review of an INRMP for each military installation in the U.S. and its territories with significant natural resources. Further the Sikes Act directs the FCJMTC garrison commander or service-equivalent designee (i.e., TSM); the USFWS and the AGFC to prepare, endorse and implement this INRMP.

This INRMP summarizes the natural resources present on the installation and outlines goals, objectives and management actions necessary to (1) sustain "no net loss" in the capability of military lands to support mission requirements, (2) support stewardship of natural resources, (3) ensure compliance with applicable environmental laws and (4) maximize public access within the constraints of the military mission while protecting public safety and conserving the environment. This INRMP is intended for use by all installation stakeholders.

Further, in conjunction with specific species management plans, it provides benefits to threatened and endangered species under the ESA (16 U.S.C. 1531, et seq.), specifically the federally endangered ABB, the federally threatened NLEB and the federally threatened Geocarpon.

1.1 Purpose

The purpose of this INRMP is to ensure that natural resources, conservation measures and military activities on mission land are integrated and consistent with federal stewardship requirements. The INRMP is the primary tool for implementing the goals of the U.S. Army environmental vision statement: "The U.S. Army will be a national leader in environmental and natural resource stewardship for present and future generations as an integral part of our mission."

This INRMP will provide comprehensive, strategic guidance for the management of all natural resources on the 65,059 acre ARARNG installation at Fort Chaffee, Arkansas from fiscal year (FY) 2019-2023. The garrison commander will be able to utilize this INRMP is to provide the basis and criteria for protecting and enhancing natural resources using landscape and ecosystem perspectives, consistent with the military mission.

This INRMP contains the associated documentation required to be in compliance with the NEPA, which requires federal agencies to consider the environmental consequences of proposed actions. An EA was completed in 2001 and was embedded within the 2002-2006

INRMP. Thereafter, all INMRP updates tiered off of the original EA using a REC. This afforded natural resources staff to focus solely on the INRMP and eliminate the duplication of information. This INRMP is a routine update of the 2014 FCJMTC INRMP.

Goals, objectives and management actions were updated during the annual reviews of the 2014-2018 FCJMTC INRMP, which all reflected mutual agreement by the TSM, the USFWS and the AGFC. These annual reviews included, but was not limited to:

- addition of the NLEB species information and management actions;
- addition of Geocarpon species information and management actions;
- update of the Wildland Fire Management Section 4.9 to reflect the current IWFMP (Appendix G);
- update of project information and survey results, specifically the bird and mammal surveys;
- update feral hog information; and
- addition of the positive finding of the rattlesnake-master borer moth (*Papaipema eryngii*).

1.2 Support of the Installation Mission

Since 1941 FCJMTC has been used to conduct military missions. FCJMTC is one of nine National Guard installations designated as a Regional Collective Training Center (RCTC), meaning it serves as a regional hub for large-scale training exercises. In addition, it also is one of only two installations nationwide that has a major river with property on both sides. This is key for some training used by Department of Defense (DOD) components such as special operations and warfare units from all services, such as the Marines, Navy, DOD civilians, non-DOD civilians, US Army Reserve and DOD civilian training.

The mission of FCJMTC is to provide personnel, equipment, training, logistical and administrative support to enhance the combat readiness of using organizations supporting the Global War on Terror and, on order, to conduct operations in support of federal and state declared emergencies. First and foremost, the FCJMTC military mission must not be compromised. Therefore, options such as removing large areas from maneuver training that would inhibit the installation from performing its mission will not be considered. The exception would be the adoption of restrictions or alterations to standard operating procedures (SOP) to comply with laws (i.e., ESA). Second, the issues of safety and security must not be compromised. Safety and security are high priorities at FCJMTC and are directly related to maintaining the military mission. Therefore, management options that create significant safety and/or security risks (i.e., allowing uninhibited access to training areas for recreational purposes during active training periods) will not be considered.

Implementation of this INRMP will support the mission of FCJMTC. In accordance with DODI 4715.03 “each DOD component will ensure that its INRMPs will, to the extent appropriate, applicable and consistent with the use of the installation, enable the preparedness of the military services to provide for no net loss in the capability of military installation lands to support the military mission of the installation pursuant to Section 670a (b)(1)(1) of the Sikes Act.” Military mission requirements and priorities that aim to maintain natural resources in the

best ecological condition possible will be identified in this INRMP. Furthermore, the Environmental Branch staff at FCJMTC is committed to supporting the military mission, providing stewardship of resources entrusted to the Army, enhancing the quality of life of the FCJMTC and surrounding communities, and being a valued member of the overall FCJMTC team. Implementation of this INRMP will demonstrate those qualities.

Implementation of this INRMP will also maintain the overall quality of training land. It will enhance mission realism through the perpetuation of more realistic training lands and reduce maintenance costs and improve the capability for long-range planning at FCJMTC. This INRMP provides the basis for the conservation and protection of natural resources and will help reduce vegetation loss and soil erosion due to military activities, reduce the potential for environmental pollution and provide biodiversity conservation.

1.3 Authority

This INRMP was developed in accordance with AR 200-1, DODI 4715.03, the Sikes Act and INRMP guidance memoranda. Appendix B provides a complete list and summaries of federal laws, executive orders, presidential memoranda, DOD directives/instructions, regulations, policy, guidance and state laws. The INRMP is prepared to assure compliance with these regulatory authorities.

1.3.1 Army Regulation (AR) 200-1

AR 200-1 outlines policy, procedures and responsibilities for the conservation, management and restoration of land and the natural resources thereon consistent with the military mission and other applicable national policies. AR 200-1 requires installations to develop and implement an INRMP in accordance with 16 U.S.C. 670a and assure NEPA requirements are satisfied when preparing the INRMP.

1.3.2 Department of Defense Instruction (DODI) 4715.03, Natural Resources Conservation Program (February 14, 2011)

DODI 4715.03 prescribes procedures for integrated management of natural resources, including preparing an INRMP as required by the Sikes Act. DODI 4715.03 also states that “installations are required to prepare, maintain and implement INRMPs in coordination with the USFWS and the appropriate state fish and wildlife management agency(s) and ensure that those plans are fully coordinated with appropriate installation offices responsible for preparing, maintaining and implementing other programs and plans that may affect land use or be affected by land use decisions, to include but not be limited to, operation and training plans, range sustainment plans, installation master plans, outdoor recreation plans, integrated cultural resources management plans, pest management plans and other installation plans as appropriate.”

1.3.3 Sikes Act

The Sikes Act is one of the primary drivers behind the natural resources management program and the INRMP. The Sikes Act requires the preparation and implementation of an INRMP to facilitate the conservation program. The Sikes Act states that “the Secretary of

each military department shall prepare and implement an INRMP for each military installation in the U.S. under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate." The Sikes Act further requires that this INRMP reflects the mutual agreement of the USFWS and the AGFC, concerning conservation, protection and management of fish and wildlife resources. The resulting INMRP reflects mutual agreement.

The Sikes Act defines the purposes of natural resources management on military lands using three key objectives:

- the conservation and rehabilitation of natural resources on military installations;
- the sustainable multipurpose use of the resources, which are to include hunting, fishing and other non-consumptive uses; and
- public access to military installations to facilitate the public use (of these resources), subject to safety requirements and military security considerations.

Further, the Sikes Act states that, "consistent with the use of military installations to ensure the preparedness of the Armed Forces, each INRMP shall, to the extent appropriate and applicable, provide for:

- 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 support of fish, wildlife or plants;
- integration of, and consistency among, the various activities conducted under the plan;
- establishment of specific natural resources management goals and objectives and time frames for proposed action;
- 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;
- public access to the military installation that is necessary or appropriate subject to requirements necessary to ensure safety and military security;
- enforcement of applicable natural resource laws and regulations;
- no net loss in the capability of military installation lands to support the military mission of the installation; and
- such other activities as the Secretary of the military department determines appropriate.

1.4 Responsible and Interested Parties

Implementation of an operational INRMP requires the support of multiple internal and external stakeholders. The Environmental Branch facilitated this INRMP update, in coordination with the USFWS and the AGFC. In addition to these stakeholders, this INRMP was reviewed by, and will receive support for, implementation from multiple entities. These entities and their specific natural resources management-related roles and responsibilities are described in Appendix C. Refer to the individual installation plans, located in Section 1.5.1, for additional, more specific job duties. Jointly, all stakeholders will:

- Comply with applicable federal, state and local environmental laws, regulations, executive orders, presidential memoranda, DOD directives/instructions, policy, guidance, internal directives and goals, objectives and management actions of this INRMP.
- Ensure that base support activities support military training and readiness operations, enhance mission accomplishment and are conducted in a manner conducive to environmental stewardship.

1.5 Integration of this INRMP with Other Plans

Integration of this INRMP not only requires coordination of efforts among the natural resources management programs, it also involves integration with other installation planning documents. This INRMP is not intended to replace existing orders, policy, range and training operations guidance or other military management plans, it is to document and assist in the development, integration and coordination of natural resources management with other plans and programs. This INRMP is intended to facilitate the integration of natural resources management actions with the primary military training and support mission at FCJMTC. This INRMP is the primary reference, guidance and policy document for all natural resource related issues at FCJMTC. The plans listed below contain installation planning documents, threatened and endangered species plans and statewide plans.

1.5.1 Installation Plans

1.5.1.1 Executive Level Master Plan dated October 1, 2017 (Appendix D). This plan is a FCJMTC specific document that is designed to provide direction and guidance toward future development at FCJMTC. The final outcome of this master planning effort is to identify the size and location of all existing facilities and future improvements planned and anticipated. This plan will identify and discuss the best use of the current properties, as to how they can accommodate future growth and be realigned as necessary to provide the highest and best functional arrangement of facilities.

1.5.1.2 Integrated Contingency Plan dated September 2015 (Appendix E). This plan is intended to provide straightforward directions to facility staff and emergency response personnel in responding to incidents involving petroleum, oil and lubricants (POLs) or hazardous chemicals. Incidents may be spills, fires, power outages or natural or manmade disasters. It also describes specific practices, procedures and equipment in place at FCJMTC that eliminate or reduce harmful effects to human health and the environment due to incidents involving such hazardous chemicals. This plan document follows the guidelines and format established by the national response team.

1.5.1.3 Integrated Cultural Resources Management Plan (ICRMP) 2016-2020 (Appendix F). This plan is an ARARNG five-year plan that is required by internal military statutes and regulations, which include AR 200-1, DODI 4715.3 and DOD Measures of Merit. This plan supports the military training mission through identification of compliance actions required by applicable federal laws and regulations concerning cultural resources management.

1.5.1.4 Integrated Wildland Fire Management Plan (IWFMP) 2019-2023 (Appendix G). This plan is a FCJMTC specific, five-year plan that provides a comprehensive approach to ensure safety of personnel, visitors and neighboring communities from wildland fires; protect facilities and preserve natural and cultural landscapes. This plan provides specific guidance, procedures and protocols essential to the prevention and suppression of wildland fires.

1.5.1.5 Integrated Pest Management Plan (IPMP) dated December 2015 (Appendix H). This plan is an ARARNG five-year plan that describes the pest management requirements; outlines the resources necessary for surveillance and controls and describes the administrative, safety and environmental requirements of the program. The purpose of an IPMP is (1) to support the military mission by protecting the health and welfare of military personnel; (2) to maximize the service life of structures and other types of real property; (3) to reduce reliance on pesticides to solve pest problems and (4) to implement environmental protection measures at every opportunity. The program uses State and DOD certified Pesticide Applicators and other manpower (i.e., contractors, local city or county personnel, armory personnel, etc.) as necessary to control pests. Pests included in the plan are weeds and other unwanted vegetation; mosquitoes; vertebrate pests such as birds, mice, rats and snakes; flying insects; crawling insects and spiders. These pests can interfere with the military mission, damage real property and the environment, increase maintenance costs and expose personnel to diseases unless properly controlled.

1.5.1.6 Range Complex Master Plan (RCMP) (Appendix I). This plan is a FCJMTC specific plan that serves as the foundation for planning efforts required by AR 350-19, AR 210-20, Army Strategic Planning Guidance; U.S. Army Sustainability (SRP and Environmental Management System [EMS]), DFAS-IN Manual 37-100 FY, Army Training Land Strategy and AR 200-1. This plan synchronizes the multiple (and sometimes conflicting) management activities affecting all resources and facilities outside the Cantonment Area (i.e., the range complex) on U.S. Army Installations. Creating and annually reviewing/updating the RCMP ensures that all facility modernization and land management activities are complementary and focus on supporting the installation's training mission.

1.5.2 Threatened and Endangered Species Plans

1.5.2.1 Biological Opinion (BO) for the ABB dated February 3, 2011 (Appendix J). This BO contains current military training activities and forestry and wildlife management activities undertaken by FCJMTC and potential effects to the ABB from these activities. This BO is the result of reinitiating consultation which concluded July 16, 2007. The purpose of this reinitiated consultation was concerning implementation of the final ABB Conservation Plan. This plan was prepared pursuant to Section 7 of the ESA (16 U.S.C. 1531 et seq.) and 50 CFR §402 of our interagency regulations governing Section 7 of the ESA.

1.5.2.2 Conservation Plan for the ABB dated May 27, 2010 (Appendix K). This plan provides a brief overview of the species' ecology and status, identify important conservation areas at FCJMTC inhabited by the species, major conservation threats and describes conservation actions needed at FCJMTC. This plan contains management strategies that have been adapted to protect the ABB through the foreseeable future while allowing the military to accomplish its mission. This plan was reviewed and approved by the USFWS's Arkansas Field Office and National Guard Bureau (NGB). It was prepared, reviewed and approved by FCJMTC personnel, NGB and the USFWS.

1.5.2.3 Programmatic BO on Final 4(d) Rule for the NLEB and Activities Excepted from Take Prohibitions dated 2016-2022 (Appendix L). This BO addresses the effects to the NLEB resulting from the USFWS's finalization of a special rule under the authority of Section 4(d) of the ESA. It also evaluates activities that the USFWS proposes to prohibit and except from take prohibitions under the final 4(d) rule. Further, this BO also provides exemptions from purposeful and incidental take of the NLEB. In the request for intra-USFWS consultation, the USFWS proposes a framework for streamlined Section 7 consultation for other federal actions that may affect the NLEB and are consistent with the provisions of the 4(d) rule. This is a programmatic intra-USFWS consultation, because it addresses multiple actions on a program basis conducted under the umbrella of the final 4(d) rule. The USFWS has not designated or proposed critical habitat for the NLEB; therefore, this BO does not address effects to critical habitat. Because we anticipate continued NLEB declines are anticipated as white-nose syndrome (WNS) spreads, this BO will cover the next seven years that the disease is minimally expected to spread and impact the NLEB throughout its entire range. The USFWS will reinitiate consultation by the end of 2022 or earlier if the standard reinitiation criteria are triggered.

1.5.3 Statewide Plans

1.5.3.1 Arkansas Wildlife Action Plan (AWAP) dated 2015-2025 (Appendix M). This plan is a dynamic compendium of knowledge that is used to prioritize the research, monitoring and conservation actions required to address the conservation needs of 369 species of greatest conservation need (SGCN) in the context of 45 terrestrial habitats and 18 aquatic habitats in 7 ecoregions in Arkansas. This plan provides the essential scientific foundation and direction for actions and decisions to benefit wildlife conservation and an opportunity for state agencies, federal agencies and other conservation partners to fit together individual and coordinated roles in conservation efforts across the state. The AGFC is responsible for requesting and administering State Wildlife Grants to support the implementation of the AWAP.

1.5.3.2 Hazardous Chemical and Waste Management (Appendix N). This SOP prescribes responsibilities, policies and procedures for storing and managing hazardous chemicals and wastes within the ARARNG. Required by AR 200-1, this SOP is written to ensure that ARARNG maintains compliance with applicable federal, state and local laws and regulations.

1.6 Management Philosophy

1.6.1 Biodiversity Conservation

Biodiversity refers to the variety and variability among living organisms and the environment in which they occur. Biodiversity has meaning at various levels including ecosystem diversity, species diversity and genetic diversity. The DOD has developed A DOD Biodiversity Management Strategy (The Keystone Center 1996). This Strategy identifies five reasons to conserve biodiversity on military lands, which includes (1) maintain natural landscapes required for the training and testing necessary to maintain military readiness; (2) provide the greatest return on the Defense investment to preserve and protect the environment; (3) expedite the compliance process and help avoid conflicts; (4) create public support for the military mission and (5) improve the quality of life for military personnel.

The Keystone Center report (1996) notes that the challenge is "to manage for biodiversity in a way that supports the military mission". This strategy identifies the INRMP as the primary vehicle to implement biodiversity protection on military installations. The model process developed within the strategy includes the following principles:

- support the military mission;
- use joint planning between natural resources managers and military operations personnel;
- integrate biodiversity conservation into INRMP and other planning protocols;
- involve internal and external stakeholders up front;
- emphasize the regional (ecosystem) context;
- use adaptive management;
- involve scientists and use the best science available; and
- concentrate on results.

Biodiversity conservation on DOD lands and waters should be followed whenever practicable to:

- maintain or restore remaining native ecosystem types across their natural range of variation;
- maintain or reestablish viable populations of native species on an installation's areas of natural habitat, when practical;
- maintain ecological processes, such as disturbance regimes, hydrological processes and nutrient cycles, to the extent practicable; and
- manage resources over sufficiently longtime periods for changing system dynamics (i.e., incorporate a monitoring component to management plans).

1.6.2 Ecosystem Management

An ecosystem is defined as a biological community of interacting organisms and their physical environment. DODI 4715.03 defines ecosystem management as "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 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."

The goal of ecosystem management, as established by the DOD, is to ensure that military lands support present and future training requirements while preserving, improving and enhancing ecosystem integrity. Over the long term, this approach maintains and improves the sustainability and biological diversity of terrestrial and aquatic ecosystems while supporting sustainable economies, human use and the environment required for realistic training operations. DODM 4715.03 incorporates ecosystem-based management by:

- maintain and improve the sustainability and native biological diversity of ecosystems,
- consider ecological units and timeframes,
- support sustainable human activities,
- develop a vision of ecosystem health,
- develop priorities and reconcile conflicts,
- develop coordinated approaches to work toward ecosystem health,
- rely on best science and data available,
- use goals and objectives to monitor and evaluate outcomes,
- use adaptive management and
- implement through installation plans and programs.

The DOD continues to shift its focus to provide for the protection of individual species through management of ecosystems. This approach requires land managers to form partnerships for information exchange, pool resources to conduct mitigation and study natural resources and collaborate to develop a shared vision for ecosystems.

DODI 4715.03 within the context of ecosystem-based management will:

- avoid single-species management and implement an ecosystem-based multiple species management approach, insofar as that is consistent with the requirements of the ESA;
- use an adaptive management approach to manage natural resources;
- evaluate and engage in the information of local or regional partnerships that benefit the goals and objectives of the INRMP;
- use best available scientific information in decision-making and adaptive management techniques in natural resource management; and
- foster long-term sustainability of ecosystem services.

1.6.3 Adaptive Management

Adaptive management is an integral part of the ecosystem management approach and involves the implementation of management practices and policies that may have unpredictable short-term and long-term results. Management decisions are based on

experience, ecological concepts and scientific inquiry, as well as feedback from on-going ecosystem monitoring programs. Applying an adaptive management approach to natural resources management allows the Environmental Branch to stay current on changes in mission requirements, changes in scientific information, changing conditions or successes/failures in project implementation.

Per DODM 4715.03, the systematic procedures in an adaptive management approach include:

- identify and assess military mission operating and facility requirements;
- analyze and assess risk to natural resources;
- complete needs assessment surveys;
- monitor and prepare the needs assessment results;
- update natural resources inventories to ensure information is current;
- reanalyze and reassess risk to natural resources; and
- adjust the overall program, as necessary.

The SRP is the responsibility of the TSM and is implemented primarily through two components, the Range and Training Land Program (RTLP) and Integrated Training Area Management (ITAM). The SRP is the Army's overall approach for improving the way in which it designs, manages and uses its ranges to ensure long-term sustainability. The military mission is supported by the SRP through the integration of facilities management, environmental management, munitions management and safety management to efficiently manage and maximize the capability, availability and accessibility of ranges and training land to support doctrinal requirements, mobilization and deployments under normal and surge conditions (HQ Department of Army 2003 and AR 350-19).

The SRP gives attention to the increasing problem of encroachment on areas surrounding military installations. Encroachment has the potential to affect the accessibility and capability of the Army to dictate the way the military trains. Because Army installations are located in regions that are increasingly urban and agricultural the relatively natural landscapes found on these installations become islands of biodiversity.

The SRP is the Army's roadmap for improving the way it designs, manages and uses ranges and ensuring that current and future doctrinal requirements are met. The goal of SRP is to maximize the capability, availability and accessibility of ranges and training land to support training and testing requirements. The SRP is founded on three tenets:

- Information Excellence
- Integrated Management
- Dedicated Outreach

There are eight overall objectives/core areas for the SRP that are designed to ensure the availability and accessibility of army training land (HQ Department of Army 2003), which includes (1) range facilities; (2) range operations; (3) range maintenance; (4) encroachment; (5) environmental responsibilities; (6) outreach; (7) integrated management and (8)

professional development.

1.7.1 Range and Training Lands Program (RTLP)

The RTLP is a subcomponent of the SRP and is responsible for maintaining training land to help the Army meet its training requirements. The RTLP integrates mission support, environmental stewardship and economic feasibility and defines procedures for determining range projects and training land requirements to support live-fire and maneuver training. The RTLP establishes how Army ranges are managed and maintained to support the mission requirements of each installation. The planning process occurs annually.

1.7.2 Integrated Training Area Management (ITAM)

ITAM is a subcomponent of the SRP and is responsible for maintaining training land to help the Army meet its training requirements. ITAM serves as a link between the training community and natural resources management. The intent of ITAM is to recognize the Army's need to train on land and reconcile this with the need to sustain the land for future training and uphold the Army's environmental stewardship responsibility. ITAM conceptually views training land as an asset to be conserved. The overall goal of ITAM is to provide a consistent uniform training land management strategy for the entire Army (AR 350-4).

The ITAM program is a management and decision making process that integrates Army training and other mission requirements for land use with sound natural resources management practices. ITAM has five components, which work in uniform to accomplish the ITAM mission:

- Range and Training Land Assessment[3] (RTLA; formerly LCTA)
- Land Rehabilitation and Maintenance (LRAM)
- Sustainable Range Awareness (SRA)
- Training Resources Integration (TRI)
- GIS

1.7.2.1 Range and Training Land Assessment (RTLA)

RTLA is a subcomponent of the SRP and is responsible for collecting data, inventories, monitoring and analysis of data to determine the condition of training land as it relates to the training mission. RTLA uses a wide array of natural resources data (i.e., soils, canopy cover, disturbance levels, etc.) to determine condition of land and trends in that condition, emphasizing effects of the conduct of the military mission. RTLA is used to inventory and monitor physical and biological resources to meet the multiple-use demands of FCJMTC. RTLA “acquires data and assesses information to maximize the capability and sustainability of the land to support live training and testing activities” (AR 350-19). While RTLA protocols are designed to monitor the effects of military training, RTLA data can sometimes have multiple uses such as determining the ecological effects that prescribed fire has upon plant communities.
The application of RTLA data will:

[3] The RTLA was formerly known as the Land Condition Trend Analysis (LCTA).

- Reduce the need for expensive land rehabilitation programs.
- Reduce some subjectivity from land management decisions.
- Help ensure the sustained availability and productivity of Army lands.
- Provide input for implementing this INRMP and preparing NEPA and other environmental documents.
- Provide long-term tracking of ABB habitat changes and aid in tracking cumulative effects.

1.7.2.2 Land Rehabilitation and Maintenance (LRAM)

LRAM is a subcomponent of the SRP and is the primary program for preventative or corrective LRAM procedure that reduces the long-term impacts of training and testing on the installation. To successfully rehabilitate, repair and maintain the natural resources, LRAM makes use of best management practices (BMPs), training area redesign and reconfiguration and long-term maintenance planning. LRAM projects originate from work orders submitted by range control and other internal stakeholders for maneuver damage repair and preventive maintenance. LRAM provides the following functions:

- Establishes long-term, sustainable land maintenance programs.
- Provides for planning and design of rehabilitation and maintenance projects.
- Provides for execution of projects.
- Provides for redesign, reclamation and modification of training areas.

A major portion of land maintenance involves the repair and maintenance of access roads. Many roads were created with little regard to location, long-term stability or erosion control techniques. In addition, other roads or trails were created as units conducted training exercises, which resulted in a random network of roads and trails. This can cause serious land damage and a reduction of quality training areas. Nevertheless, training does not always permit traffic to use main routes at all times. Thus, the use of upgraded routes must be tailored to support the training scenario. However, this does not mean that upgraded roads are not useful and cannot be integrated with training scenarios. In fact, high quality roads are often used as main corridors of travel in actual combat zones.

Trail closure is an important aspect of land rehabilitation and erosion control. Trails may be closed for any of several reasons:

- duplication of trails
- no military use value
- to discourage civilian recreation trespass
- to allow restoration efforts and erosion control
- trails lead to off-limits areas
- trails hazardous to human safety

Trail closure has more long-term effectiveness if closed trails appear natural. A vehicle-mounted ripper or disc can alleviate compaction to allow seed germination and root growth of native species and to encourage revegetation of closed trails. Erosion management will be

integrated with many other natural resources activities including forest, prescribed fire, endangered species management and ITAM.

1.7.2.3 Sustainable Range Awareness (SRA)

SRA is a subcomponent of ITAM and is responsible for providing a proactive means to develop and distribute educational materials that relate procedures to reduce the potential for inflicting avoidable impacts on range and training land during military training. The Environmental Branch can also provide natural and cultural resources information to as a supplement. Projects using education to protect rare, threatened and endangered species were developed in accordance with ESA and FCJMTC specific management plans. SRA is targeted toward all levels of military personnel using FCJMTC training areas and internal (i.e., DOD civilians, civilian employees, contractors, etc.) and external stakeholders (i.e., sportsman, recreational users, etc.).

1.7.2.4 Training Resources Integration (TRI)

TRI is a subcomponent of ITAM that supports Army requirements for environmentally sustainable training lands by improving coordination and facilitating cooperation, decision-making and training land allocation. TRI facilitates achieving mission goals through decision support and coordinating training needs with other installation plans to provide information and analysis that assist with range and training land planning, scheduling, maintenance and modernization. Information is obtained from various components of the SRP program and appropriate installation offices, and the analysis considers environmental compliance requirements, range facilities requirements and landscape condition requirements in the development of range and training land management decisions. This includes the integration of RCMP mission goals and objectives into the INRMP and its subordinate plans. TRI is a continual collaboration with Range Control, the Environmental Branch and other internal and external stakeholders.

TRI relies on RTLA and other monitoring programs to determine land capabilities. Considering the costs and time involved with rehabilitation of damaged training lands, prevention of damage would be the most cost effective technique to manage natural resources at FCJMTC. Proper land management is essential to improve and sustain military training lands. It is important to identify means by which training can be sustained or improved via land management activities at FCJMTC.

Limitations on training are sometimes necessary for long-term sustainment of training and ecosystem protection. FCJMTC includes environmental regulations that directly impact training in the FCJMTC Range Regulation (ARARNG 385-63-1). Limitations within these documents specific to natural resources protection include NEPA documentation, field operations, water resources protection, wetlands protection, digging directives, firewood cutting, borrow pits, solid waste disposal, cultural resources protection, spill prevention/cleanup, sensitive species protection and risk assessment. Reserve and Active forces use these documents to plan training at FCJMTC, assessing and reducing environmental damage and ensuring compliance with environmental laws and regulations.

It is important to site missions where natural resources can support them on a sustained

basis, which saves rehabilitation money and provides higher quality training for troops. New mission siting is implemented at FCJMTC via a coordinated staffing process that Department of Public Works (DPW) and the work order and proposed construction project review processes. These, in turn, often lead to using NEPA and other environmental documentation. The coordination aspect of NEPA is conducive to obtaining necessary input to site missions on lands best suited for supporting them.

The majority of off-limits areas (i.e., cemeteries, cultural resources sites, hazardous areas, etc.) have been marked with siber stakes to prevent further damage to sensitive areas and avoid injury to military personnel and other individuals utilizing FCJMTC. Siber stakes are readily identifiable markers mounted on posts and marked with both reflective sheeting and thermal tape for 24-hour visibility.

1.7.2.5 SRP Geographical Information System (GIS)

SRP GIS is a subcomponent of ITAM that provides spatial data and application support for all ITAM components to ensure that ITAM provides effective mission support. SRP GIS mission is to create, analyze, manage and distribute authoritative standardized spatial information, products and services for the execution of training strategies and missions on U.S. Army ranges and training lands.

1.8 INRMP Implementation Review and Mutual Agreement

Section 101(b) (2) of the Sikes Act states: “each INRMP must be reviewed as to operation and effect by the parties thereto on a regular basis, but no less often than every 5 years.” Implementation of this INRMP is a coordinated effort between the TSM, the USFWS and the AGFC. This INRMP was developed in conjunction with the Guidelines for Streamlined INMRP Review, Updated Guidance for Implementation of the Sikes Act Improvement Act and USFWS Guidelines for Coordination on INRMPs (Appendix B).

1.8.1 Annual Review

The Sikes Act requires each installation with significant natural resources to report annually on the status of its INRMP implementation. Annual reviews are an informal, recommended tool to keep the INRMP current; keep all parties informed of upcoming natural resources goals, objectives and management actions; verify the implementation of projects and establish any new management requirements. To facilitate a more adaptive management approach FCJMTC has conducted annual reviews during the previous operational period of the 2014-2018 FCJMTC INRMP (Appendix O). These annual reviews have provided assistance for the five-year review for operation and effect and will facilitate a more efficient INRMP review process.

Notably during the 2016 Environmental Performance Assessment System (EPAS) Inspection FCJMTC received a positive finding, further stating that the established INRMP goals, objectives and management actions are implemented. Appendix B contains guidance on EPAS findings for Sikes Act/INRMPs.

1.8.2 Five-Year Review for Operation and Effect

The Sikes Act specifically directs that INRMPs be reviewed "as to operation and effect," emphasizing 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 review for operation and effect of the INRMP concludes that it is (1) meeting the intent of the Sikes Act, in which case it is updated and the prescribed implementation continues or (2) not meeting Sikes Act stipulations and must be revised.

1.8.2.1 INRMP Update

An INRMP update is any change to an INRMP that, if implemented, is not expected to result in consequences materially different from those in the existing INRMP and analyzed in an existing NEPA documentation. Such changes will not result in a significant environmental impact and installations are not required to invite the public to review or to comment on the decision to continue implementing the updated INRMP (DOD Guidelines for Streamlined INRMP Review, July 2015). The review for operation and effect determined that this INRMP will need an update. All proposed changes to this INRMP will be captured using the track changes feature on Microsoft Word.

The existing/operational 2014-2018 FCJMTC INRMP will remain in effect while the update is under review. Once all parties agree to the requested changes, the TSM, the USFWS and the AGFC will sign the update. Once finalized, the updated INRMP will be considered reviewed for operation and effect and will restart the five-year window for being compliant.

1.8.2.2 INRMP Revision

An INRMP revision is a formal process, in which new natural resources management actions alter the military mission, the condition of the land or the status of the species present were not previously considered when the INRMP was last approved. Approval would need to be obtained by all parties of the IRNMP and new or supplemental NEPA analysis would be required.

1.9 NEPA Compliance and Integration

The NEPA requires federal agencies to take into consideration the environmental consequences of proposed major actions. The intent of NEPA is to protect, restore or enhance the environment through well-informed federal decisions. AR 200-1 outlines policy, procedures and responsibilities for the conservation, management and restoration of land and the natural resources thereon consistent with the military mission and other applicable national policies. This regulation requires that installations “assure NEPA requirements are satisfied when preparing the INRMP.” AR 200-1 further states, “It is Army policy to integrate environmental reviews concurrently with other Army planning and decision-making actions to avoid delays in mission accomplishments.” AR 200-2 dictates policies, responsibilities and procedures for integrating environmental considerations into Army planning and decision-making. This regulation further requires that natural resources management plans to be evaluated for environmental impacts.
An EA was prepared concurrent with the INRMP in 200-2 to be in compliance with NEPA, AR

200-1 and AR 200-2. This EA was embedded within the 2002-2006 FCJMTC INRMP. The operational periods that followed, to include the 2014-2018 FCJMTC INRMP had minimal changes, therefore the NEPA review consisted of using a REC (Appendix O) tiered off the existing EA.

The purpose of the REC is to identify and evaluate environmental consequences of implementing the proposed plan, in accordance with NEPA. The REC identifies the proponent, describes the project, the time frame in which the action will take place and affirms that the proposed action qualifies as a Categorical Exclusion (CX), which is exempt from NEPA, or is already covered in an existing EA or EIS. This INRMP and the associated REC document existing natural resources practices and can be used as an effective tool for future planning and decision-making purposes.

FORMAT PAGE

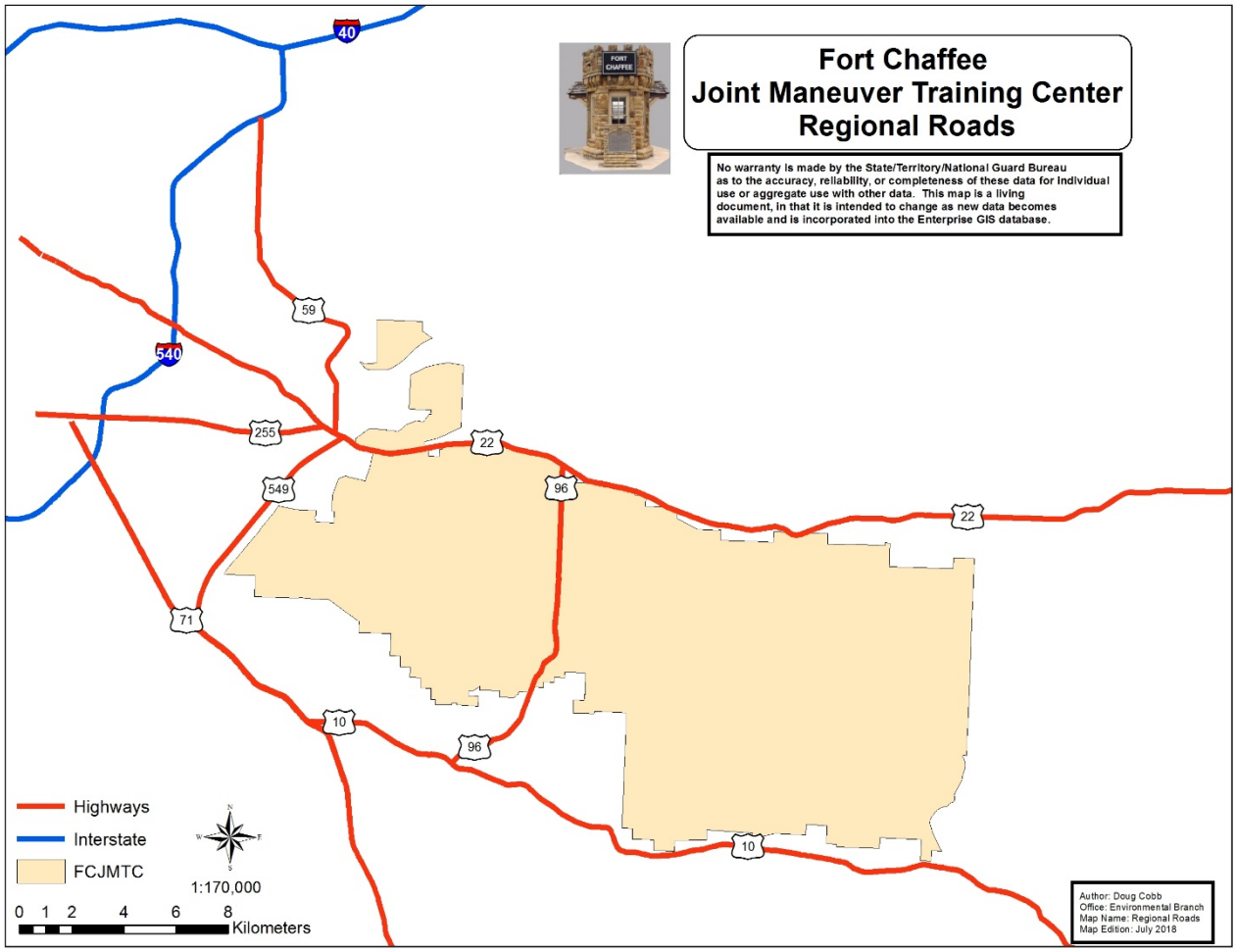
2 CURRENT INSTALLATION CONDITIONS, LAND USE AND MISSION

2.1 Installation Overview

2.1.1 Location

FCJMTC is located in west-central Arkansas, about five miles east of the City of Fort Smith. The installation occupies portions of Sebastian, Franklin and Crawford counties. Fort Smith, Arkansas is the largest city in the local area and numerous small towns occur in close proximity to FCJMTC. Towns near the installation include Barling (one mile west of the main entrance gate on Arkansas State Highway 22 (AR 22)), Greenwood (south of the installation, off Arkansas State Highway 96 (AR 96)) and Charleston (near the northeast corner of FCJMTC, off AR 22) (Figure 2.1).

Figure 2.1 Regional Roads Map



2.1.2 Acreage and Acquisition

The total land acreage of FCJMTC has fluctuated since establishment of the installation. The original acquisition in 1941 included 76,075 acres. Ensuing disposals, corrected surveys and audits reduced installation acreage to 71,758 acres. In 1995 about 7,100 acres in the western portion of the installation, including much of the Cantonment Area, was declared excess due to BRAC actions. Thus, the current acreage of FCJMTC is 65,059 acres. FCJMTC has an east-west orientation, measures about 16 miles in its longest dimension and varies in width from four to eight miles, north to south.

2.1.3 Installation History

FCJMTC has been officially used as a military training site since 1941; however, the military's presence at the site goes back to the mid-1800s. From the early days when the first cavalrymen came to train at the Massard Prairie Training Camp, to a prisoner of war (POW) camp housing German soldiers, to the home of the U.S. Army Training Center, Field Artillery, to the home of the Joint Readiness Training Center (JRTC), to training National Guard and Reserve Forces, FCJMTC has provided quality military training and various other military support missions in unique terrain and climatic conditions. Training troops to win on battlefields around the globe and conserving natural resources, FCJMTC is proving that the two missions are compatible and complement each other.

The area of present day FCJMTC was the site of the Massard Prairie Training Camp where, in 1861, young Confederate cavalrymen trained and later fought in the Battle of Pea Ridge during the Civil War. Lands of FCJMTC had been significantly disturbed by farming practices prior to establishment of Camp Chaffee. Camp Chaffee was established under a directive issued by the Department of Army in 1941. Construction of the Camp as a World War II training facility named in honor of Major General Adna R. Chaffee, first Chief of Armored Forces, began shortly after acquisition. Original plans were to house a division and supporting troops totaling 30,000.

The 6th, 14th and 16th armored divisions trained at Camp Chaffee from 1942 to 1945. Camp Chaffee also served as a POW camp, housing 3,000 German soldiers. Camp Chaffee was placed in inactive status from 1946 to 1948. From 1948 to 1957, Camp Chaffee was home to the 5th Armored Division. The Division's primary mission was as a replacement training center for field artillery. In 1956, Camp Chaffee was redesignated as Fort Chaffee, a permanent Department of Army installation, and from 1957 to 1959, it was home to the U.S. Army Training Center, Field Artillery. The Field Artillery School moved to Fort Sill, Oklahoma in 1959, and Fort Chaffee was placed in caretaker status.

Fort Chaffee was reopened in 1961 as a training center for the U.S. Army Garrison Reserve Unit from Oklahoma and the 100th Infantry Division from Kentucky. In 1962, the 100th Division was deactivated, and Fort Chaffee was assigned a new mission in support of the 3rd Corps Artillery and XIX Corps Reserves. At the end of 1965, Fort Chaffee was again deactivated, but continued to conduct Reserve summer training. Fort Chaffee was redesignated as "U.S. Army Garrison, Fort Chaffee", but in a semi-active status. The following year, the installation was selected as the Refugee Processing Center for Indochinese refugees, and by late 1975, 50,809 Vietnamese refugees were processed through the facility. The Refugee Processing Center was then closed, and Fort Chaffee returned to its mission of supporting National Guard and Army Reserve training. However, with thousands of Cuban refugees arriving in south Florida, Fort Chaffee was again called upon to serve a refugee population. The Cuban Refugee Resettlement Center was established and processed 25,390 refugees through 1982 when the center was closed.

In 1986, Fort Chaffee became the test site for the pilot program of the JRTC. The JRTC supported advanced training for active Army and Reserve Infantry brigades and their associated air units. Training activity at Fort Chaffee increased dramatically with JRTC. JRTC was moved to Fort Polk, Louisiana, with the last rotation occurring on Fort Chaffee in 1993.

The USAR Noncommissioned Officers Academy was established, and the Reserve Training Site-Medical began operation at Fort Chaffee in 1993. In 1995, the BRAC recommended that Fort Chaffee be closed, except for minimum facilities needed for Reserve training. The ARNG assumed control of Fort Chaffee in 1997 and designated the installation as FCJMTC. In 2005, FCJMTC housed more than 9,000 Hurricane Katrina victims. In 2008, FCJMTC housed approximately 4,000 Hurricane Gustav victims. Today, Fort Chaffee is officially known as Fort Chaffee Joint Maneuver Training Center.

2.2 Land Use and Management Units

2.2.1 Land Use Categories

FCJMTC is divided into three major land use categories: improved, semi-improved and unimproved. Improved areas include structures and buildings, primarily in the Cantonment Area and cemeteries. Semi-improved areas include drop zones (DZ), forward landing strips (FLS) and the magazine area (ammunition supply point (ASP)). Unimproved areas are agricultural/hay leases and training areas.

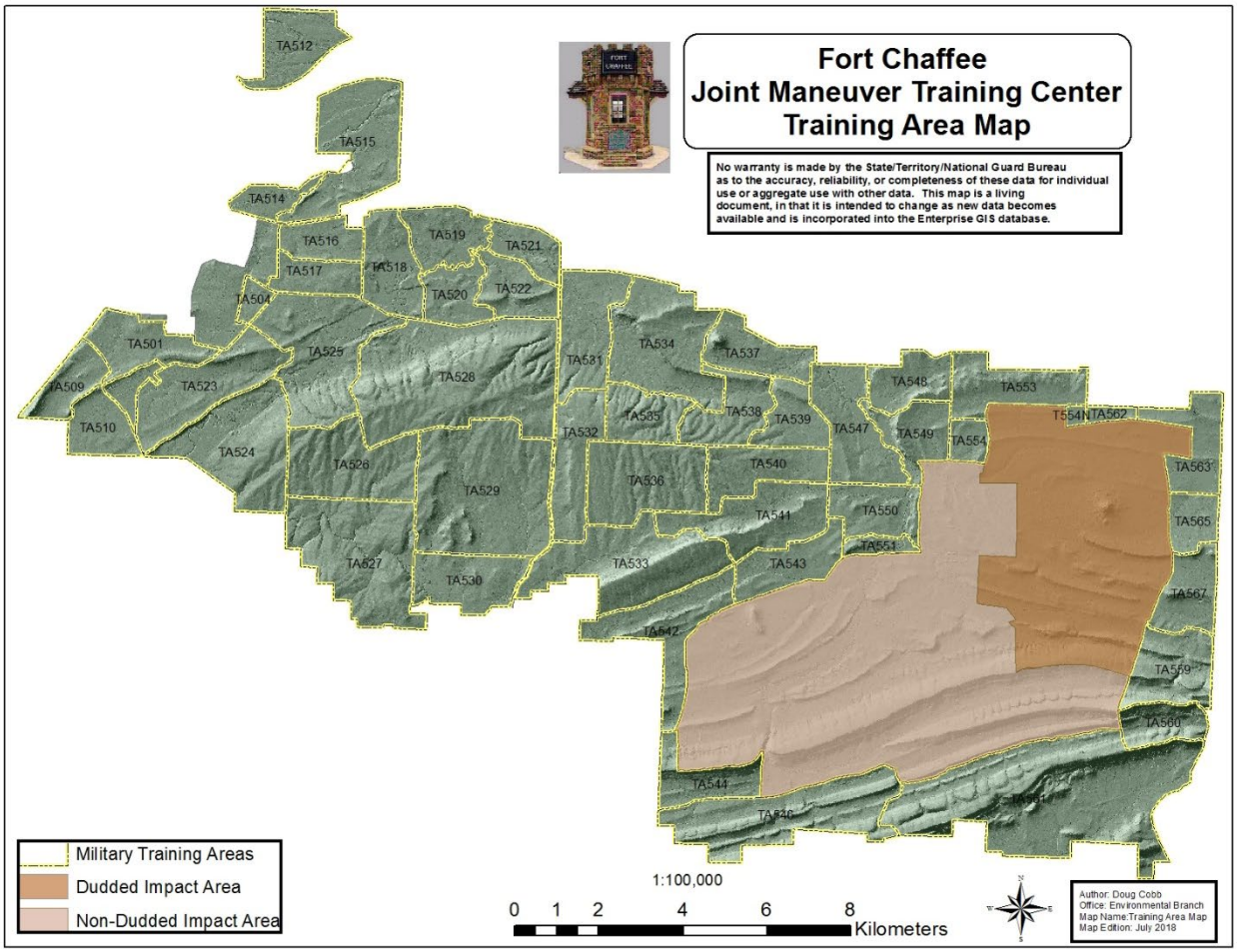
2.2.2 Training Areas

FCJMTC is divided into 53 training areas (Table 2.1 and Figure 2.2), which includes the Surface Cleared Area or Training Area 545 (11,043 acres). The Cantonment Area (1,017 acres) and the Impact Area (5,825 acres) are not included. Training areas are used for maneuvers, bivouacs or other training activities. The Surface Cleared Area may be used for maneuvers. However, bivouacking and digging in the area are not authorized. There are 64,042 acres available for field training outside the Cantonment Area.

Table 2.1 Training Areas

Area	Acres	Area	Acres	Area	Acres	Area	Acres
501	711	523	1,174	537	633	553	835
504	146	524	1,497	538	685	554W	233
509	488	525	1,641	539	525	554N	61
510	517	526	1,255	540	740	559	837
512	716	527	1,863	541	1,107	560	468
514	292	528	3,001	542	1,070	561	3,782
515	1,379	529	2,405	543	674	562	108
516	438	530	809	544	593	563	684
517	437	531	959	546	1,687	565	381
518	757	532	823	547	996	567	624
519	616	533	1,636	548	569	Surface Cleared Area	11,043
520	500	534	1,511	549	688		
521	405	535	578	550	641		
522	563	536	1,263	551	178		

Figure 2.2 Training Areas Map



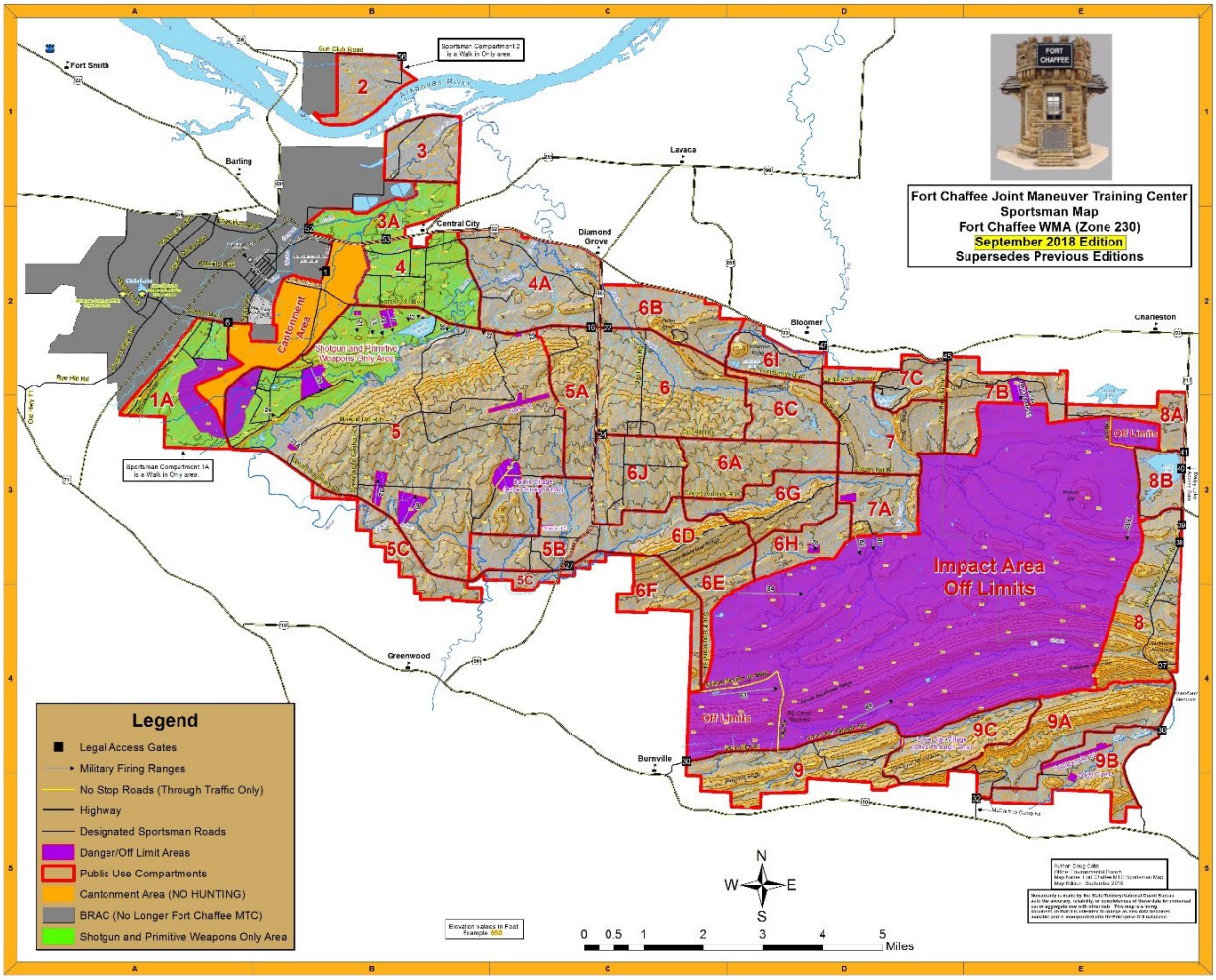
Public Use Compartments

FCJMTC is divided into 32 public use compartments or sportsman's compartments (Table 2.2 and Figure 2.3), the Cantonment Area and the Impact Area, which includes the Surface Cleared Area. The Cantonment Area (1,592 acres) and off-limits areas (i.e., Impact Area, Surface Cleared Area and other off-limits areas, which account for 19,138 acres) are identified as separate management units because public use is respectively limited or restricted in these areas.

Table 2.2. Public Use Compartments

Public Use Compartment	Acres	Public Use Compartment	Acres	Public Use Compartment	Acres
1A	1,014	6A	1,249	7A	798
2	714	6B	1,150	7B	1,049
3	831	6C	972	7C	702
3A	865	6D	1,354	8	1,797
4	1,495	6E	552	8A	513
4A	2,076	6F	796	8B	520
5	10,106	6G	1,106	9	1,690
5A	1,074	6H	651	9A	1,777
5B	778	6I	632	9B	1,090
5C	902	6J	1,247	9C	1,124
6	2,468	7	1,461		

Figure 2.3 Sportsman Map



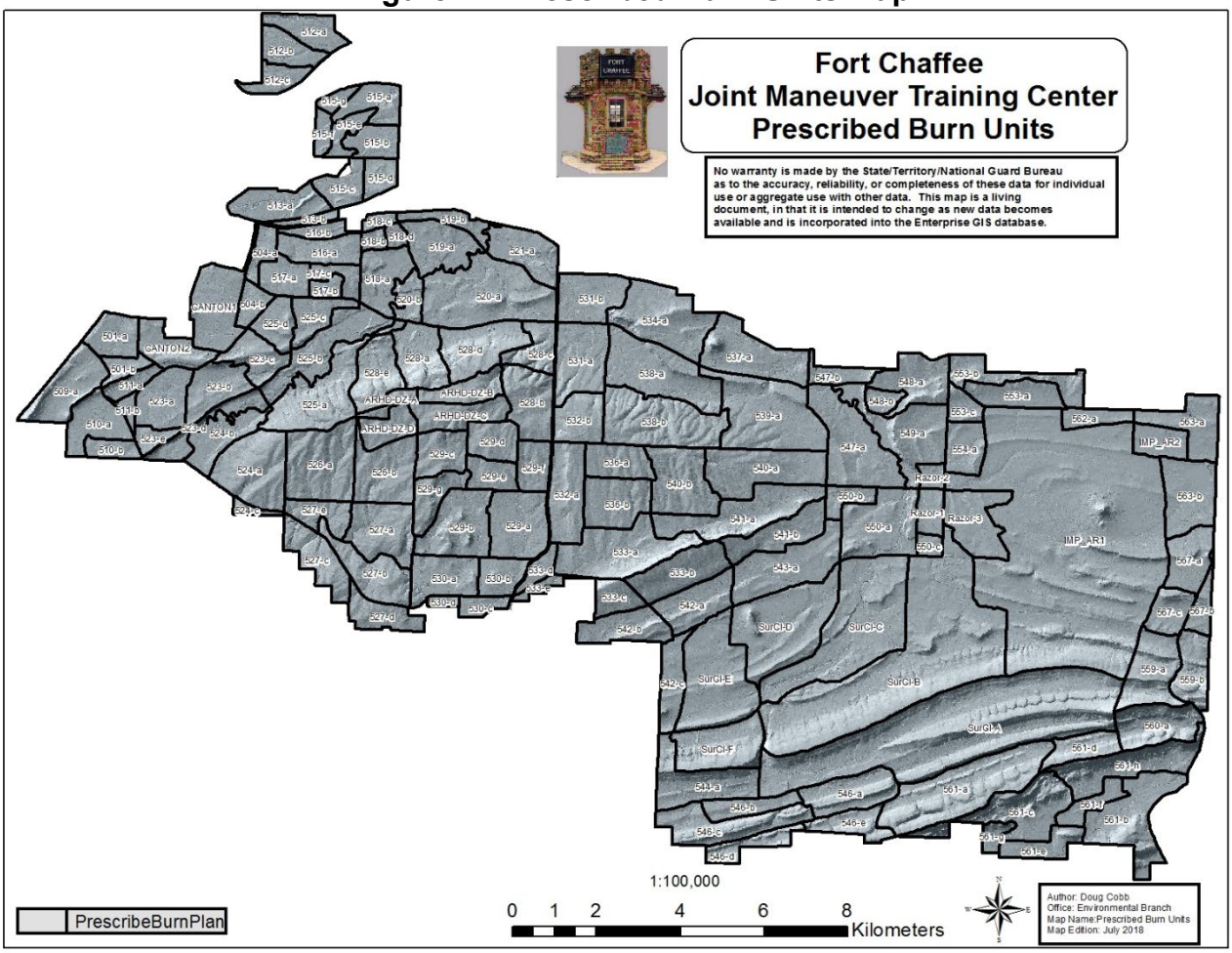
2.2.3 Burn Units

The IWFMP contains 146 burn units (Table 2.3 and Figure 2.4) using natural and man-made (i.e., existing roads and firebreaks) features as boundaries. This allowed for smaller burns that require less manpower. The IWFMP establishes high and normal priorities for burn units and recommends prescribed burning an average of 10,000-15,000 acres annually.

Table 2.3. Burn Units

urn Unit	Acres	Burn Unit	Acres	Burn Unit	Acres	Burn Unit	Acres	Burn Unit	Acres
501-a	282	519-a	437	529-b	569	542-a	406	561-f	187
501-b	124	519-b	183	529-c	309	542-b	362	561-g	91
504-a	153	520-a	1,056	529-d	269	542-c	301	561-h	602
504-b	148	520-b	173	529-e	214	543-a	674	562-a	168
509-a	488	521-a	401	529-f	233	544-a	559	563-a	409
510-a	375	523-a	394	529-g	266	546-a	445	563-b	520
510-b	142	523-b	371	530-a	404	546-b	229	567-a	356
511-a	136	523-c	302	530-b	235	546-c	543	567-b	153
511-b	68	523-d	277	530-c	121	546-d	215	567-c	247
512-a	277	523-e	113	530-d	48	546-e	256	ARHD-DZ-A	100
512-b	249	524-a	660	531-a	527	547-a	792	ARHD-DZ-B	263
512-c	188	524-b	358	531-b	432	547-b	169	ARHD-DZ-C	341
513-a	385	524-c	59	532-a	492	548-a	436	ARHD-DZ-D	239
513-b	74	525-a	735	532-b	331	548-b	108	CANTON1	564
515-a	271	525-b	559	533-a	766	549-a	668	CANTON2	330
515-b	225	525-c	251	533-b	467	550-a	660	IMP_AR1	5888
515-c	241	525-d	239	533-c	200	550-b	161	IMP_AR2	234
515-d	164	526-a	717	533-d	121	550-c	79	Razor-1	172
515-e	147	526-b	537	533-e	82	553-a	329	Razor-2	91
515-f	104	527-a	505	534-a	719	553-b	357	Razor-3	481
515-g	83	527-b	443	536-a	312	553-c	149	SurCl-A	3100
516-a	317	527-c	388	536-b	443	554-a	279	SurCl-B	2947
516-b	121	527-d	284	537-a	621	559-a	509	SurCl-C	1420
517-a	248	527-e	244	538-a	793	559-b	328	SurCl-D	1026
517-b	93	528-a	418	538-b	816	560-a	450	SurCl-E	954
517-c	153	528-b	459	539-a	973	561-a	1058	SurCl-F	559
518-a	383	528-c	258	540-a	679	561-b	713		
518-b	71	528-d	516	540-b	568	561-c	654		
518-c	67	528-e	407	541-a	696	561-d	259		
518-d	68	529-a	545	541-b	411	561-e	239		

Figure 2.4 Prescribed Burn Units Map



2.3 Operations and Infrastructure

2.3.1 Population

The full time staff at FCJMTC includes 12 Active Guard Reserve's, 19 Federal Technicians, 115 state employees and 10 contractors. The AGFC Fort Smith Regional Office has two permanent and one seasonal personnel stationed adjacent to FCJMTC.

The tenant organizations at FCJMTC include:

- Armed Forces Reserve Center (AFRC)
- Field Maintenance Shop (FMS)
- Department of Energy (DOE)
- Military Funeral Honors (MFH)
- Moral, Welfare and Recreation (MWR), which includes a Post Exchange (PX) store, laundry and barber shop
- Mission Training Center (MTC) Chaffee
- Non-Appropriated Fund (NAF) Programs (Billeting/RV Park)

- Navy Special Warfare Group (NSWG)
- Training Support Center (TSC)
- Recruiting and Retention Program (RSP) Command
- State Safety Office (SSO)
- 188th Fighter Wing (Razorback Range), which is an Air Force component of the U.S. Air Force National Guard
- ASP

Internal stakeholders that provide support to this INRMP are:

- 142nd Fires Brigade; 155mm Artillery, MLRS
- Regional Training Institute (RTI) Snipers
- 1-206th FA BN; 105mm Artillery, 155mm Artillery
- 39th IBCT; small arms/crew served weapons

2.3.2 Cantonment Area Facilities

Most improvements are within the Cantonment Area, which occupies about 909 acres in the northwestern portion of the installation. There are 354 buildings in the Cantonment Area including billeting, MWR facilities, unit support buildings and barracks. Training buildings are located throughout the Cantonment Area, and include 220 buildings used as classrooms and for administrative, supply, operations and recreational functions. Troop housing for annual training and inactive duty training consists of 104 buildings with a maximum troop load of 6,000 soldiers.

The ASP is about one mile south of the troop housing area and includes about 94 acres. Twenty-three ammunition storage magazines, constructed of steel with concrete floors, are protected inside a fenced compound. One hardstand rocket storage facility is inside the compound and six are located outside the compound in separate enclosures.

An expansion extended the Cantonment Area an additional 345 acres to the east of the current Cantonment Area. Included in the expansion are a field maintenance facility, public works compound and AFRC and troop support facilities.

2.3.3 Training Area Facilities

2.3.3.1 Live Fire Ranges

FCJMTC range operations include 38 live fire ranges with 10 observation points. Table 2.4 provides a list of the training ranges and the range types.

Table 2.4. FCJMTC Live Fire Ranges

Range	Range Type
11	Multi-Purpose Complex
12	300 mm Grenade Launcher Qual
13	Known Distance
14	Basic 10 Meter/25 Meter Fire
17	Gas Chamber
17A	Breaching Facility (Explosive)
21	Combat Pistol Range
22	Basic 10 Meter/25 Meter Fire
23	Basic 10 Meter/25 Meter Fire
24	Record Fire Range
25	Modified Record Fire
25Z	25 Meter Zero
30	Combat Pistol Qualification Course
33	Hand Grenade Qualification Course
33A	Hand Grenade Familiarization Course
35	Basic 10 Meter/25 Meter Fire
70	Light Demo
71	Light Demo/Live Claymore
77	Helicopter Aerial Gunnery

Range	Range Type
80	Fire and Movement
82	Fire and Movement
83	Scout Reece/Infantry Platoon Battle Course (IPBC) Overlay
84	Multipurpose Machine Gun
87	Aerial Bombing/Strafing
88	Helicopter Aerial Gunnery
90	Automated Multipurpose Machine Gun
90Z	Range 90 Zero
92	Machine Gun Field Fire
99	Nap-of the-Earth Gunnery
100	Combat Engineer Vehicle Range
101	Pinnacle Range
102	Cav Gunnery
104	Known Distance Range
A-141	Sniper Field Fire
A-163	Anti-Armor Tracking and Live Fire
Convoy Live Fire (CLF)/Entry Control point (ECP)	
Live Fire Shoot House	
Navy Seal Infiltration Course	

2.3.3.2 Air Operations

FCJMTC has four live fire aerial gunnery ranges, which includes Ranges 77, 87, 88 and 99.

- Arrowhead DZ may be used for air assault operations and drops. Cole Landing Zone (LZ) FLS is also located within the boundaries of Arrowhead DZ. It can accommodate three C-130 aircraft on the parking ramp at one time. The FLS is 4,600 feet long and 75 feet wide with the long axis lying east to west. The DZ is approximately 3,500 meters long and 1,100 meters wide, with the 50 long axis lying east to west.

- Rattlesnake DZ/LZ is an air assault or flight LZ within the Rattlesnake DZ. It can accommodate three C-130 aircraft on the parking ramp at one time. The LZ is 4,600 feet long and 75 feet wide.
- Herk DZ is 1,100 yards long by 1,000 yards wide and is used for C-130 bundle drops.
- Hopi LZ can accommodate a limited number of rotary-wing aircraft.
- Shawnee DZ is over 1,420 yards long and 0.6 miles wide and can accommodate aircraft up to the C-130 to drop personnel or equipment.
- Tactical Unmanned Aircraft System (TUAS) launch and recover site.
- FCJMTC also has five blocks of special use airspace that can be restricted up to 30,000 feet. FCJMC has ten tactical flight training areas.

2.3.3.3 Training Sites

Training sites at FCJMTC are listed below per Range Regulation dated January 2012.

- Ammunition Holding Areas (AHA's) (10)
- Carnis Village Combined Arms Collective Training Facility (CACTF)
- Land Navigation and Obstacle Course
- Firing points. Cannon artillery firing points (155/105), Multiple Launch Rocket System (MLRS) firing points (19) and mortar firing points (40)
- Inert Mine Clearing Line Charge (MICLIC)
- Joint Improvised Explosive Device Defeat Lane (JIEDDL)
- Laser range areas for class 3 and 4 lasers to be used at multiple training area facilities
- Lonestar Village
- Military Operations in Urban Terrain (MOUT) Site
- River crossing/bridge building sites. FCJMTC has four river crossing/bridge building sites on the Arkansas River. FCJMTC is one of two installations in the US to have land on both sides of a major river system in order to complete a river crossing. The Arkansas River is approximately 300 meters wide at the crossing sites. Engineer Lake is approved for both types of operations. This lake covers approximately 45 acres, with a suitable staging area on the northern bank. The Armored Vehicle Launch Bridge (AVLB) site consists of improved roads on each side with staging areas close by. The abutments are timbers with an approximate 65' span. This site is also suitable for building rope bridges.
- Tactical Training Base (TTB) Auburn
- Tube Launched, Optically Tracked, Wire Guided Missile (TOW) and javelin missiles, live dragon missiles and 40 mm high explosive (6)
- Urban training areas (1 truck stop and 2 villages)

2.3.4 Projected Changes in Facilities

The Executive Level Master Plan identifies the size and location of all existing facilities and future improvements planned and anticipated. For current changes in facilities refer to this document. The following MILCON projects and minor construction projects are listed in the current Executive Level Master Plan dated October 1, 2017. The top two MILCON priorities are the operational readiness training complex (ORTC) and the vehicle wash point, which is also known as a bird bath, for tracked vehicles. The top minor construction requirements are the demolition of building 1683, motor pool 2100, tower, AWT course, administrative building, trade shops, ammunition breakdown/issue, covered bleachers, motor pool 2200, ASP surveillance building, expansion of the cold storage facility and the running track.

Additional projects include construction of a PX facility, which should be completed in August 2018; sewer and waterline replacement; construction of a new Scout Reconnaissance Qualification Range and IPBC; Upgrades to Range 22, 35, 90 and 92 Range Operations and Control Area (ROCA) facilities; Rattlesnake road project; expansion of shale pits; Training Support Building (70' x 150'); Range 11 upgrade; Range 104 construction; building repairs and barracks renovations.

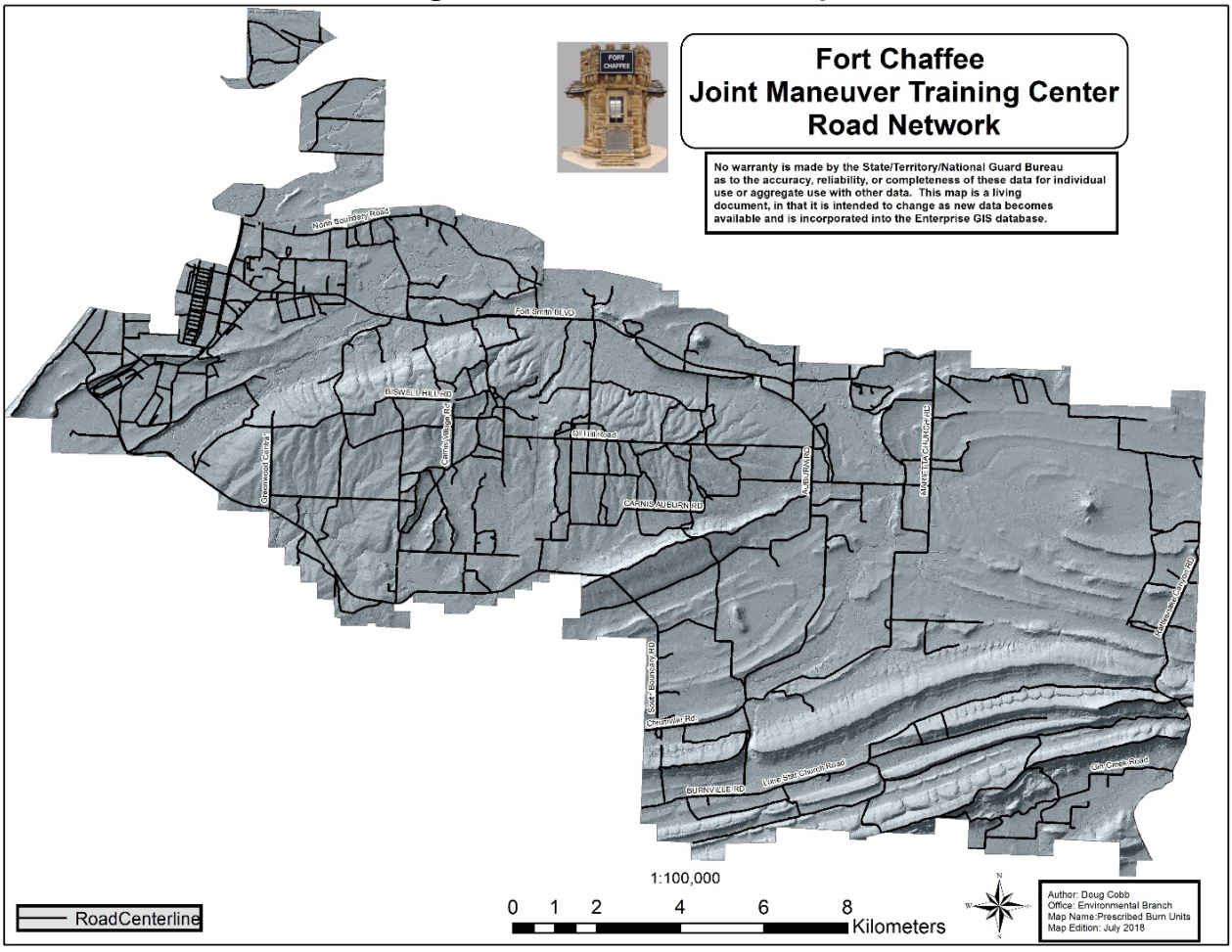
2.3.5 Transportation System

2.3.5.1 Regional Access and Roadways

The FCJMTC northern boundary roughly parallels AR 22, the major arterial for the installation, and the southern boundary roughly parallels Arkansas State Highway 10 (AR 10). AR 96 centrally bisects the installation, running north/south. The State of Arkansas retains the right-of-way for AR 96, which is open to the public. Interstate 540 extends around the east side of Fort Smith about three miles from the installation's main gate. Interstate 540 intersects Interstate 40, which connects Little Rock, Arkansas and Oklahoma City, Oklahoma (Figure 2.1).

FCJMTC can be accessed through 19 legal access gates (Figure 2.3). FCJMTC has 246 miles of maintained roads and 77 miles of tank trails, 50 miles of paved roads and 245 miles of firebreaks, including a 40 to 60 foot wide firebreak that circles the perimeter of the installation and a perimeter fire line around the Impact Area. Figure 2.5 shows the road map of the installation. It should also be noted that a rail system is located along the northern side of AR 22 and FCJMTC also has tactical landing strips capable of supporting up to C-17 aircraft.

Figure 2.5 Road Network Map



2.3.5.2 Airports

The Fort Smith Regional Airport is located about six miles west of FCJMTC and is served by commuter airlines with daily flights to major cities in the south-central United States. The FCJMTC Airfield can accommodate multiple rotary wing aircraft. The installation has 13 helipads available for emergencies. FCJMTC also has two air assault or flight landing strips; Cole LZ, within Arrowhead DZ) and Rattlesnake LZ, within Rattlesnake DZ. These landing strips can accommodate aircraft up to and including C141s. Refer to Section 2.3.3.2 Air Operations for more specific information.

2.3.6 Municipal Water Management

FCJMTC obtains its water from the City of Fort Smith. Water is delivered to the installation through an 18-inch supply main. Water consumption varies significantly throughout the year with the highest use in June (667,000 cubic feet) and the least use in January (200,000 cubic feet). Annual average water use at FCJMTC is 3,538,500 cubic feet.
The town of Charleston uses Darby Lake at FCJMTC as a backup water supply.

FCJMTC is connected to the town of Barling sanitary sewage system. The Barling filtration system consists of four lagoons on the excised portion of the Cantonment Area. FCJMTC has one pump station and is connected to the Barling sanitary sewage system via lateral lines.

Stormwater flow is primarily through open ditches to low lying areas, streams and rivers. Some stormwater does infiltrate the sanitary sewage system, due to the age of the system.

2.3.7 Cemeteries

There are 26 cemeteries at FCJMTC, all obtained during a World War II land purchase. Public access to cemeteries on the installation is uninhibited; however, anyone wishing to visit a cemetery or hold a funeral must coordinate with, and get approval from, DPW. Ten cemeteries are active and 16 are inactive. Most inactive cemeteries are individual or family plots. All cemeteries are fenced with permanent fences and steel gates. There are no military cemeteries at FCJMTC. The cemeteries at FCJMTC are listed below.

- Carnis Auburn
- Carter
- Center Valley
- Coleman
- Hermit's Grave
- Hill
- Indian
- Jones
- Langston
- Laura A. Nolan
- Lone Star
- McConnell
- McCoy
- Morris (2)
- Morrow
- Oak Valley
- Pleasant Ridge
- Rebecca Lewis
- Speigle
- Spencer
- Steel
- Stone
- Ward
- White or Shelby
- William Teague
- Wisley

2.4 Natural Environment

2.4.1 Topography and Physiography

Most of FCJMTC lies within the Arkansas Valley, which is a section of the greater Ouachita Mountain Province. Much of the installation is characterized by gently to moderately rolling hills, but in the southeastern portion, steep and rugged ridges cross FCJMTC in a southwesterly to northeasterly direction. Elevations of FCJMTC range from 116 meters (380 feet) National Geodetic Vertical Datum (NGVD) along the Arkansas River to 370 meters (1,214 feet) NGVD at Pinnacle Mountain in the southeastern corner of the installation (Figure 2.6).

The FCJMTC area is characterized by five physiographic areas: (1) the riparian area to the north; (2) the Cantonment Area to the west; (3) the well-drained central hills; (4) the poorly drained Massard Prairie of the northeast and (5) the well-drained Washburn Mountains in the southeast. Vegetation within these areas can be classified into four basic groups: (1) mixed vegetation of riparian and Cantonment Areas; (2) mixed hardwoods of the central hills; (3) grasses of the Massard Prairie and (4) the oak-hickory-pine forest of the Washburn Mountains (Cox et al. 1975).

The riparian area lies to the north of FCJMTC and is adjacent to the Arkansas River. It consists of the lowest and most level terrain on the installation and is prone to flooding from the river. Soils are deep and fertile and some areas are used for agriculture. Vegetation consists of numerous fields interspersed with bottomland hardwoods.

The Cantonment Area lies to the west of FCJMTC. It contains gentle slopes ranging from 0 to 8%. Elevations range from 110 to 137 meters (360 to 450 feet) NGVD. Major streams draining the Cantonment Area include Massard, Little Vache Grasse and Grayson creeks.

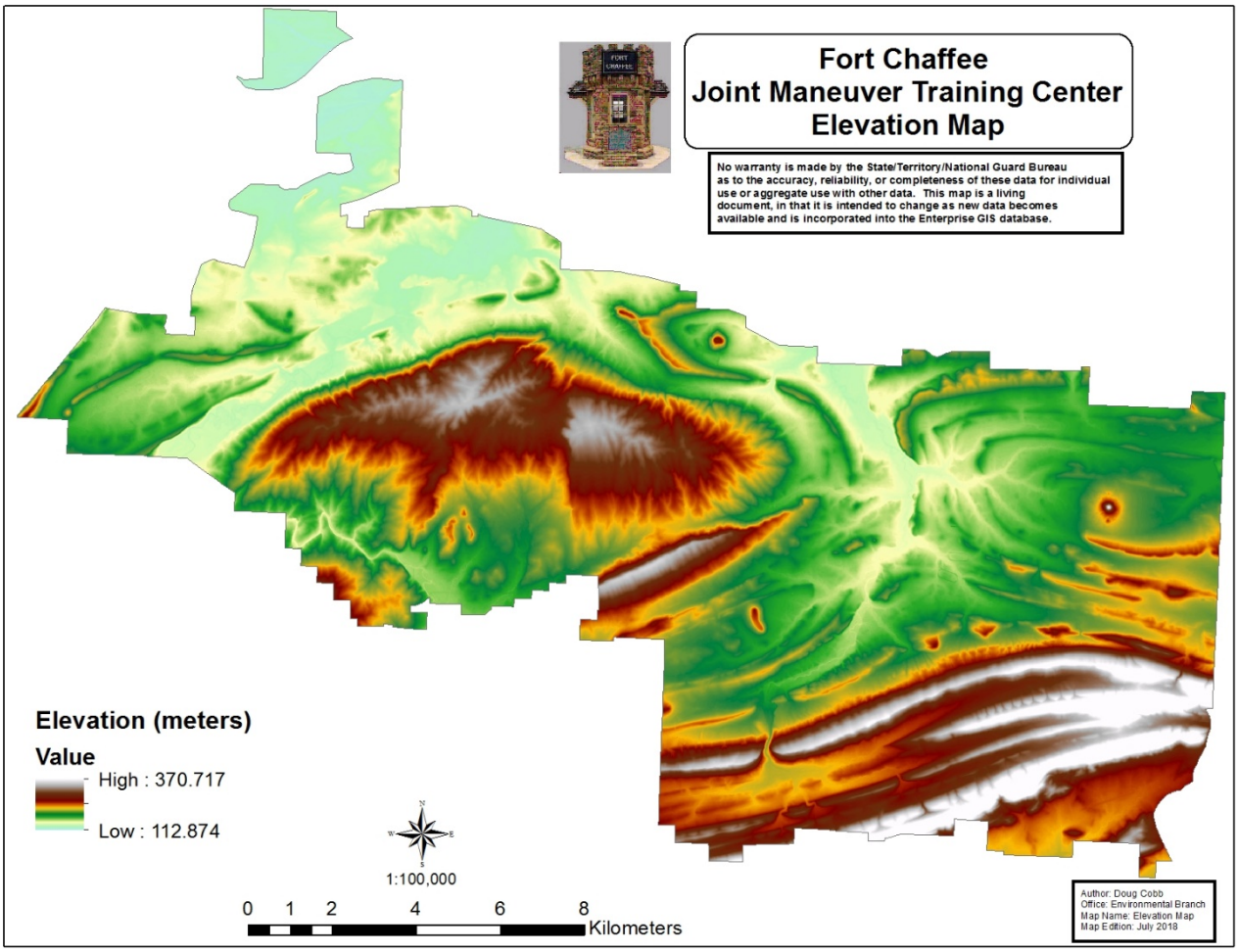
The central hills comprise about one-half of the land area of the installation. It contains steeper slopes ranging from 10 to 45%. It characterizes the central hills with natural ridges, such as Little White Oak Ridge and Butlers Ridge. Elevations range from 146 to 219 meters (480 to 720 feet) NGVD. The major drainage system is Vache Grasse Creek, which drains the western segment of the central hills. Big Creek drains most of the eastern portion of the central hills.

The Massard Prairie lies to the northeast of FCJMTC, which extends far outside of the installation boundary to the north and east. It contains primarily flat ranging slopes ranging from 0 to 3% and is poorly drained. Elevations range from 137 to 155 meters (450 to 510 feet) NGVD with the exception of Potato Hill, which lies in the middle of the area and has an elevation of 230 meters (756 feet) NGVD with slopes in excess of 30%. Primary streams of this area are Doctors Creek and Prairie Creek.

The Washburn Mountatins lies to the southeast of FCJMTC and is characterized by long east-west, horseshoe ridges and curving valleys. These ridges, where resistant sandstone forms a cap, form extensive mesa-like hills. Where the resistant cap is removed, sharp peaks or ridges are formed. Slopes in this area are steep and in many cases exceed 45%,

especially on south-facing slopes. North-facing slopes tend to be longer and gentler but still range from 30 to 45%. Elevations range from 137 meters (450 feet) NGVD in valleys to 320 meters (1,050 feet) NGVD along ridges. Pinnacle Mountain is the highest point at 370 meters (1,214 feet) NGVD. Washburn, Gin and Pigeon creeks drain the area into the Petit Jean River.

Figure 2.6 Elevation Map



2.4.2 Geology

FCJMTC exhibits exposed rocks from the Middle Pennsylvanian age in upland areas, which are mostly composed of alternating layers of shale and sandstone of the Atoka, Hartshorne, McAlester and Savanna formations (Muir and Associates 1978). Larger creek valleys and areas near the Arkansas River are covered by deep layers of unconsolidated alluvium consisting of gravel, sand, silt and clay.

Portions of three major coalfields underlie FCJMTC. The three beds that underlie the installation and estimates of their total production capacity are: the Lower Hartshorne Coal Bed (42,270,000 short tons), the Charleston Coal Bed (10,368,000 short tons) and the Paris Coal Bed (5,558,000 short tons).

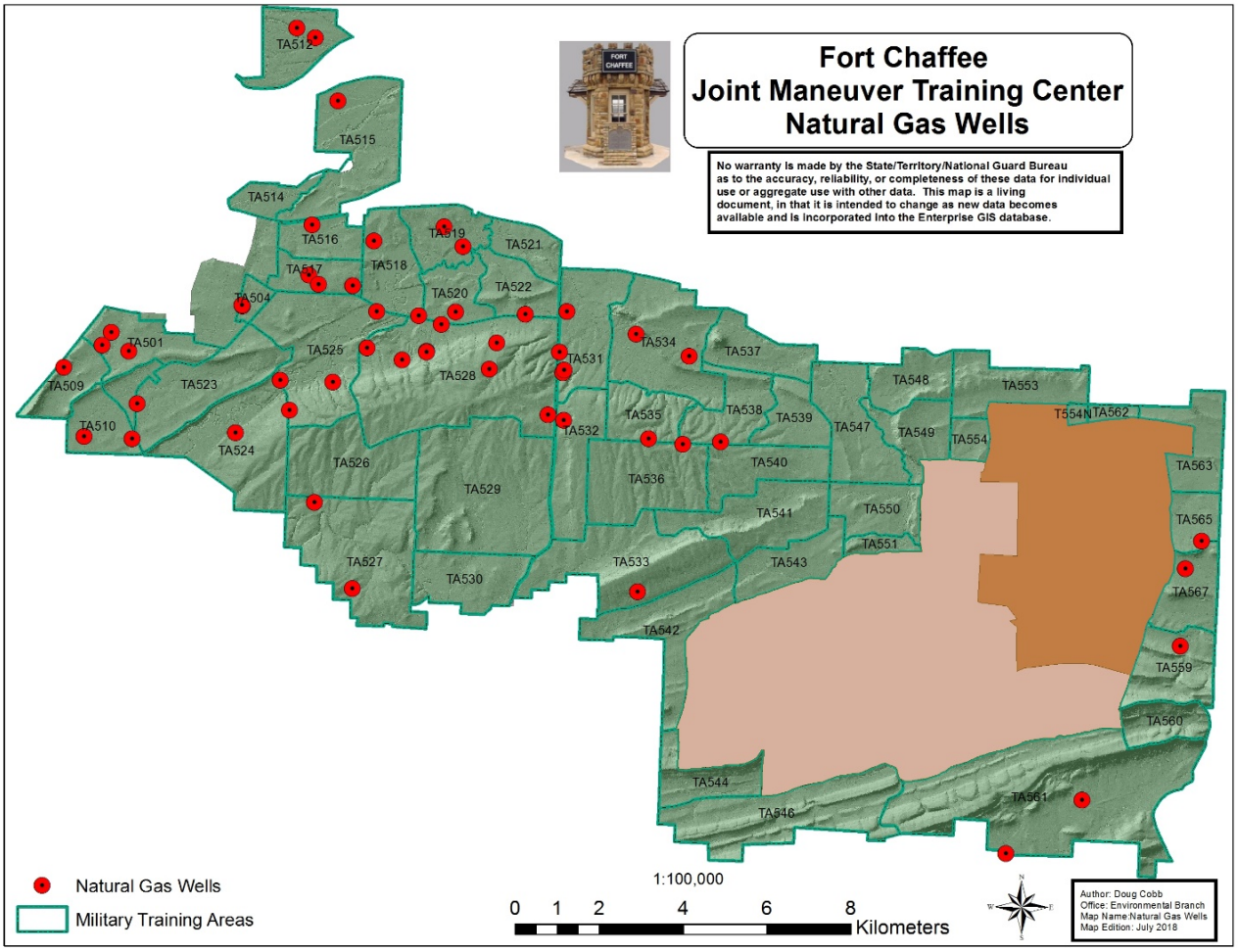
In addition to coalfields, there are three major mineral formations on the installation that can be mined for construction materials, these include: alluvial deposits along the Arkansas River, sandstone from the Hartshorne Formation and shale from the McAlester Formation.

- Alluvial deposits along the Arkansas River covers about 6.4 square miles of surface area of the installation to a depth of approximately 40 feet and contains sand, silt, clay and occasional gravel. About 50% of this deposit is estimated to be coarse enough to be profitably mined as construction material.
- The Hartshorne Formation covers nearly 25.5 square miles of surface area of the installation to an average depth of about 50 feet and contains sandstone deposits that can be used as crushed stone for surfaced and unsurfaced roads, rip-rap, flagstone and building stones.
- The McAlester Formation is comprised predominantly of shale and yields a quality grade that has been quarried for the production of bricks and tiles.

Large-scale coal mining in the region began in 1870 and increased concurrently with the construction of several railroads between 1870 and 1880. Mining operations peaked in 1907 and remained stable through the early 1950s until the market for local coal began to deteriorate. Strip mining occurred at FCJMTC in the early years, but was later discontinued.

FCJMTC has 53 established gas wells. These include 121,643 linear feet of gas line. Figure 2.7 shows the gas wells located on the installation.

Figure 2.7 Natural Gas Wells Map



2.4.3 Geomorphical Analysis

FCJMTC completed a geomorphological analysis in 2000, a Legacy project to draw together natural and cultural resources data into a single, integrated GIS data set. The purpose of this landscape analysis was to identify, describe and delineate characteristics of the physical landscape of FCJMTC that provide key information for comprehensive management of natural and cultural resources of the installation. The overarching goal was to provide critical information about the properties and processes of the landscape that may be used in the development of this INRMP (Smith 2000).

Information from geomorphological analysis, especially in the GIS context, has potential as a powerful tool for natural resource planning of the restoration of prairie habitats.

2.4.4 Soils

The USDA Soil Conservation Service (Cox et al. 1975) identified five major soil associations on the installation: the Leadvale-Taft, Mountainburg-Linker, Enders-Mountainburg, Allen-Mountainburg-Enders and Falkner.

In 2001 the NRCS completed soil planning surveys at FCJMTC. This survey identified several new soil types specific to the local region. Soil associations at FCJMTC are Leadvale-Stigler, which is found in the valleys; Cowton-Linker-Steprock, which is found on low rolling ridges and hillsides within the valleys and Enders-Mountainburg-Steprock, which is found in the steep ridges and hillsides (NRCS 2001). Figure 2.8 shows soils at FCJMTC.

- The Leadvale-Stigler association is characterized by moderately well drained to somewhat poorly drained, level to gently sloping, deep to very deep, loamy and clayey soils that are developed in valley fill material. Leadvale soils have a fragipan, while the Stigler soil has a clayey subsoil. The slopes range from 0 to 8%. Leadvale soils are on toeslopes of hills and the upper portion of the valley floors. Stigler soils are on the lower part of valley floors and the heads of drainage ways. In Leadvale soils, the depth to the fragipan is 18 to 30 inches and depth to shale bedrock is 5 to >10 feet. Shale bedrock is more than feet below the surface of Stigler soils. These soils are acidic, low in natural fertility, have slow permeability moderate water holding capacity and a subsoil that resists penetration by roots. Included in this association are areas of Wister soils, which are high in sodium and are 40 to 60 inches deep to shale bedrock. Leadvale-Stigler soils are used for primarily pasture and hay.
- The Cowton-Linker Steprock association is well drained, gently to moderately sloping (1 to 15%), moderately deep, clayey and loamy soils. The shale bedrock is 20 to 40 inches below the surface of the Cowton soils. The sandstone bedrock is 20 to 40 inches below the surface of the Linker and Steprock soils, except where sandstone outcrops break the surface. Steprock soils contain greater than 35% sandstone fragments in the subsoil. These acidic to moderately acidic soils are low in natural fertility, have moderate permeability and low to moderate water holing capacity. The Cowton-Linker-Steprock soils are generally too droughty and stony to cultivate, so they are commonly used as pasture or forest.
- The Enders-Mountainburg-Steprock association is well drained, moderately sloping to very steep (15 to 60%), shallow to deep soils, developed from sandstone and shale. The Enders soil is 40 to 60 inches to shale bedrock with clayey subsoil. The Mountainburg soil is 12 to 20 inches loamy soil to sandstone bedrock. The Steprock soil is 20 to 40 inches loamy soil to sandstone bedrock. Both the Mountainburg and Steprock soils have greater than 35% sandstone fragments within the subsoil. These soils are acid to moderately acid, are low in natural fertility and are used for forest.

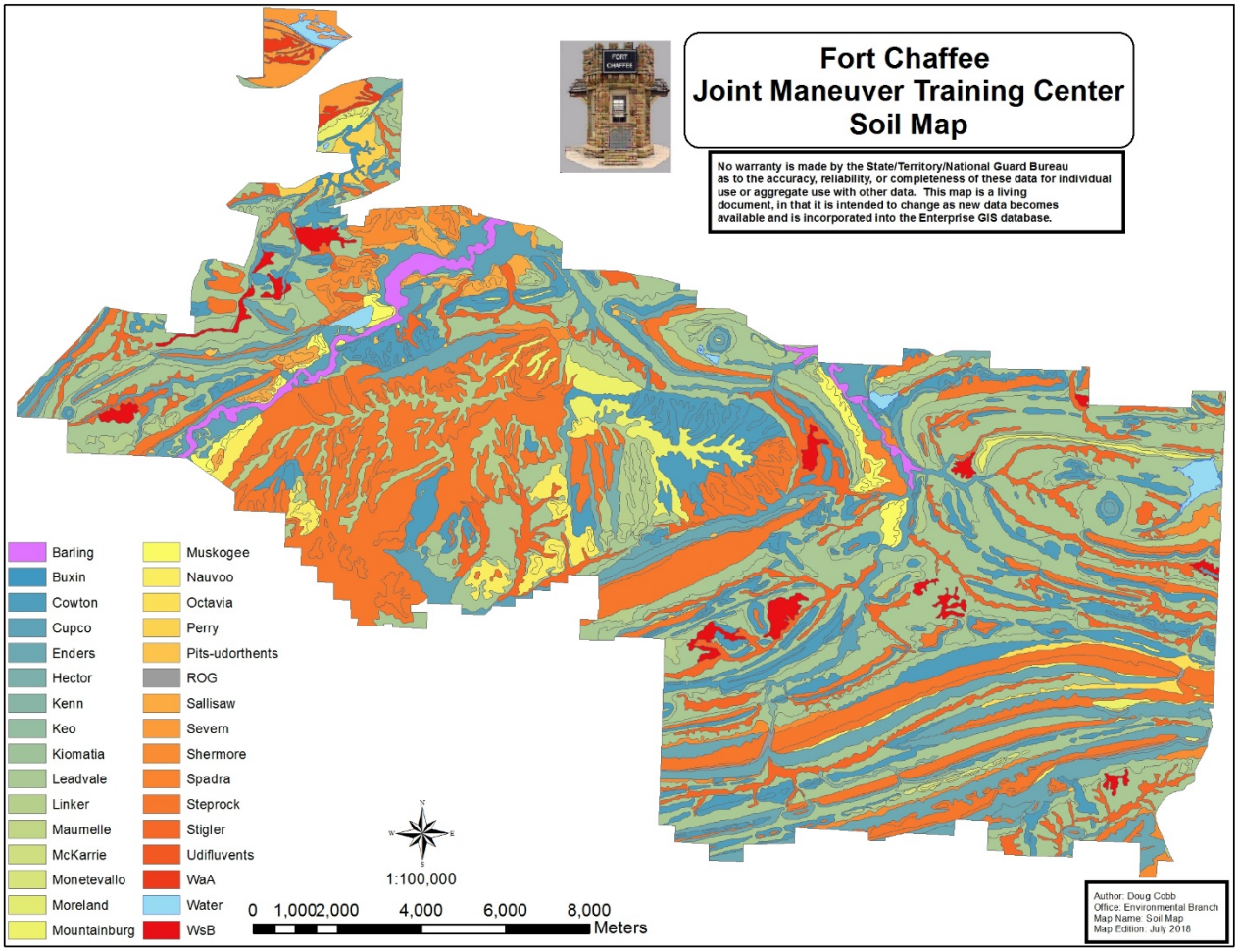
Minor soil associations include the Barling-Cupco-Maumelle and the Moreland-Severn-Perry.

- The Barling-Cupco-Maumelle soils include moderately well drained to poorly drained, very deep, loamy soils that occur along major drainageways flood plains that flow through FCJMTC. Included in this area are terrace soils along the flood plains, such as Muskogee and Sallisaw, which are moderately acid, deep loamy soils. These soils are

moderate to high in fertility, but flooding and wetness cause these soils to be used for forest.

- The Moreland-Severn-Perry association occurs along the Arkansas River and includes floodplains and terraces. The Moreland and Perry soils are clayey soils that are somewhat poorly to poorly drained, with high shrink swell that occur on terraces. These soils are high in natural fertility and are used for cultivated crops, pasture and forest. The Severn soil occurs along the flood plain of the Arkansas River. These soils are very deep, coarse silty soils that are high in natural fertility. This soil is well drained and can be used for cultivated crops, pasture and forest. Included in these areas are the Buxin, Kiomatia and Wabbeseka soils, which are clayey and sandy soils that occur on flood plains and drainage ways along the Arkansas River.

Figure 2.8 Soil Map



Soil Survey at FCJMTC dated 2001. The soil survey was conducted in 2001 by NRCS. The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family and series. A series is a group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in color, texture, structure, reaction, consistence,

mineral and chemical composition and arrangement in the profile. FCJMTC has the following soil associations:

- Barling Series
- Buxin Series
- Cowton Series
- Cupco Series
- Enders Series
- Hector Series
- Kenn Series
- Keo Series
- Kiomatia Series
- Leadvale Series
- Linker Series
- Maumelle Series
- McKamie Series
- Montevallo Series
- Moreland Series
- Mountainburg Series
- Muskogee Series
- Nauvoo Series
- Octavia Series
- Perry Series
- Sallisaw Series
- Severn Series
- Shermore Series
- Spadra Series
- Steprock Series
- Stigler Series
- Wabbaseka Series
- Wister Series

2.4.5 Water Resources

Water quality monitoring is important to measuring ecosystem health at FCJMTC. Land-based environmental degradation eventually affects water quality and aquatic ecosystems dependent upon good water quality. It is essential to collect further physical, chemical and biological data at FCJMTC lakes, ponds and streams to make sound water quality and fisheries management decisions. This includes the continued investigation of physical, chemical and biological properties and associated aquatic organisms in FCJMTC surface waters.

Groundwater and surface water quality are compliance programs, particularly regarding the CWA. FCJMTC must monitor its groundwater and surface water resources to maintain compliance, however these programs are not natural resources responsibilities within the Army and thus are not a required part of this INRMP. The current level of groundwater monitoring is adequate. Surface water quality monitoring, beyond those aspects that may affect the fisheries management program are not natural resources responsibilities.

2.4.5.1 Ground Water

Ground water can be obtained from wells between 50 to 200 feet below ground surface. However, flows will not exceed 60 gallons per minute, and availability is dependent on water-bearing openings intercepted by the well and not by the rock unit. Mineralized water, often salt, may be encountered between depths of 500 to 2,000 feet; however, it is usually found at about 1,000 feet. Chemical analysis of well water from consolidated rocks indicates that sodium and bicarbonate ions predominate. Dissolved solids are less than 2.0 parts per million (ppm); iron content is less than 2.0 ppm and hardness is less than 200 ppm (BLM 1988).

Eleven artesian wells were created during gas and oil seismic drilling operations in 1989. Water quality tests and flow measurements have not occurred. Artesian wells are located at the following Universal Transverse Mercator (UTM) coordinates: Artesian Well 1 (942001), Artesian Well 2 (937026), Artesian Well 3 (939026), Artesian Well 4 (958020), Artesian Well 5 (958021), Artesian Well 6 (963023), Artesian Well 7 (964024), Artesian Well 8 (964025),

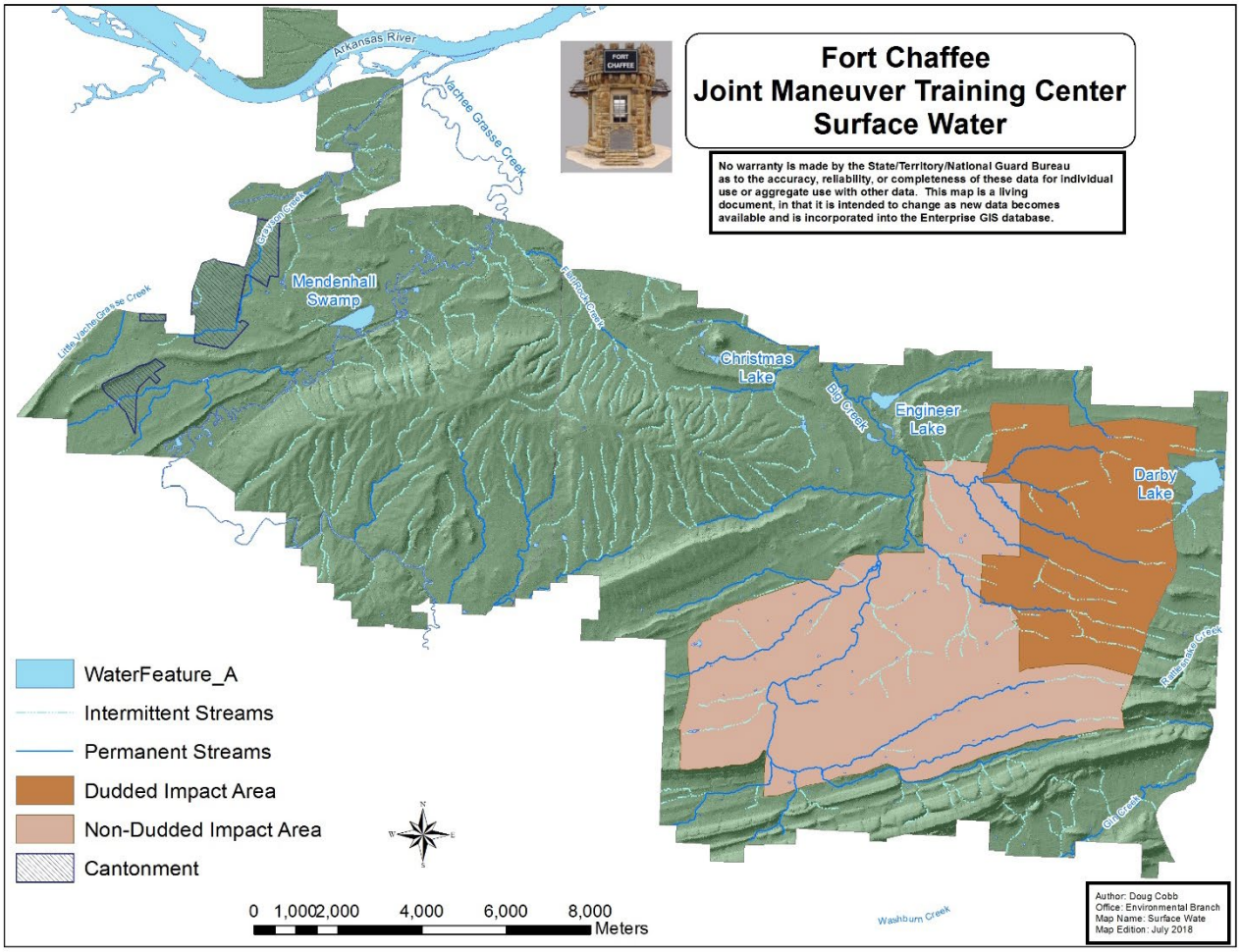
Artesian Well 9 (965025), Artesian Well 10 (965025) and Artesian Well 11 (986037).

2.4.5.2 Surface Water

The U.S. Congress enacted the CWA in 1972 to “restore and maintain the chemical, physical and biological integrity of the Nation’s waters.” Section 404 of the CWA delegates jurisdictional authority over wetlands to the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA). Waters of the U.S. protected by the CWA include rivers, streams, estuaries and most ponds, lakes and wetlands.

FCJMTC has abundant, well distributed surface water resources (Figure 2.9). Lakes range from about 8 acres (Christmas Lake) to 157 acres (Darby Lake). Other major lakes and surface water areas include Engineer Lake (37 acres) and Mendenhall Swamp (Snake Pit) (75 acres). Mendenhall Swamp and the Moist Soil Unit (35 acres) are waterfowl impoundments. Mendenhall Swamp is an 80 acre watershed with an 18 inch gated pipe and about 1,800 feet of levee. Mendenhall Swamp is flooded by runoff. The Moist Soil Unit, in public use compartment 3, is seasonally flooded by Arkansas River overflow and the pumping of water from Little Vache Grasse Creek. The area has about 8,000 feet of levee and a 12 inch water control structure (FCJMTC 1998). Seven oxbow lakes (18 acres) occur on the installation. Major surface water resources on the installation total about 257 acres.

Figure 2.9 Surface Water Map



FCJMTC has about 90 ponds. From 1969 to 1972, the Soil Conservation Service built numerous ponds on the installation with an average volume of 2,500 cubic yards and surface areas of about ¾ acre each. They were constructed to encourage more uniform grazing of the entire installation when cattle leases were in effect.

There are 44 miles of rivers and creeks flowing through FCJMTC. However, only the Arkansas River and Big and Little Vache Grasse Creeks provide permanent flow. The length of each river and creek occurring at FCJMTC is as follows: Arkansas River (1 miles), Big Creek (14 miles), Gin Creek (4 miles), Little Vache Grasse Creek (9 miles), Massard Creek (1 miles), Prairie Creek (3 miles) and Vache Grasse Creek (12 miles).

Numerous springs at FCJMTC need to be evaluated for the feasibility of future improvements and development. There are five developed springs that were created at FCJMTC during gas and oil seismic drilling operations in 1989. Water quality tests and flow measurements have not been taken for these wells, which do have the potential to be developed either for waterfowl or fisheries programs. Several springs have been developed in the past, but have fallen into disrepair. The five developed springs on the installation are located at the following

UTM coordinates: Spring 1 (809043), Spring 2 (857047), Spring 3 (909046), Spring 4 (946002) and Spring 5 (874073).

2.4.5.3 Wetlands

Wetlands provide many critical functions and services such as flood control, water storage and pollution control. In addition, wetlands provide ample habitat for many game and non-game species. Executive order 11990 required that federal agencies, including DOD, minimize actions that adversely affect wetlands (Appendix B). Furthermore, agencies are required to enhance the natural values that wetlands provide and ensure that no net loss occurs. Army actions affecting wetlands require an environmental analysis of the proposed action through the NEPA process. Section 404 of the CWA (333 U.S.C. 1344) requires the USACE to issue a permit for the discharge of dredge or fill material within waters of the U.S., which includes wetlands.

There are many definitions of wetlands. For example, while a bog or swamp is readily recognizable as a wetland, some areas that are defined as wetlands are only wet for part of the year and may not be recognizable during dry months. The following is the official USACE/EPA definition of a wetland. Wetlands are: “Those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs and similar areas.”

The USFWS definition of a wetland falls into one of five categories.

- Areas with hydrophytes and hydric soils, such as those commonly known as marshes, swamps and bogs.
- Areas without hydrophytes but with hydric soils, such as flats where drastic fluctuation in water levels, wave action, turbidity or high concentration of salts may prevent the growth of hydrophytes.
- Areas with hydrophytes but nonhydric soils, such as margins of impoundments or excavations where hydrophytes have become established but hydric soils have not yet developed.
- Areas without soils but with hydrophytes, such as the seaweed-covered portion of rocky shores.
- Wetlands without soils and without hydrophytes, such as gravel beaches or rocky shores without vegetation.

Wetland Survey dated January 1994. The original wetland delineation was performed by Proctor el al. The results concluded that wetlands occupy 5,423 acres or 7.4% of the land surface of FCJMTC.

Wetland Investigative Report dated October 14, 2004. URS Corporation conducted an update of the installation's jurisdictional wetlands in March 2004. Wetlands at FCJMTC (Figure 2.9) occupy 809 acres or approximately 1.2% of installation land. Approximately 119 acres of palustrine forested wetlands, 60 acres of palustrine scrub/shrub wetlands, 115 acres of palustrine emergent wetlands and 515 acres of palustrine open water wetlands were identified. Areas were identified in accordance to guidelines established in the USACE Wetland Delineation Manual, Technical Report Y-87-1 (USACE 1987) and classified by using the Cowardian classification system. Wetland descriptions, plant species identified, photographs of wetland locations and GIS data are located in this report.

2.4.6 Climate

The Arkansas Valley and surrounding mountains influence the area climate. The city of Fort Smith, located at the confluence of the Poteau and Arkansas Rivers, is surrounded by the Cookson Hills on the northwest, which rise to about 457 meters (1,500 feet) NGVD, and by broken hills separated by creeks and river bottomland to the west, south and east.

FCJMTC is situated on the northern edge of the humid subtropical zone, with hot, humid summers and cool to chilly winters. Temperatures in the region range from a mean high of 49.9°F in January to a mean high of 93.4°F in August.

Precipitation is plentiful due to the area's close proximity to the humid sub-tropical belt. Dry periods of several weeks up to a month may occur in late summer or early autumn. Heavy thunderstorms accompanied by high winds are frequently recorded during summer. Occasional winter snowstorms occur in measurable amounts. They are generally limited to the months of December and January. Ice storms are not uncommon during winter and are more of a climatic factor than are

Fort Smith, AR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average High Temperature	49.9	55.4	64.7	73.7	80.5	88.1	93.0	93.4	85.4	74.8	62.8	51.5	72.8
Average Low Temperature	29.0	33.1	41.1	49.5	59.2	67.5	71.6	70.8	62.3	50.7	40.3	31.2	50.6
Average Mean Temperature	39.4	44.2	52.9	61.6	69.9	77.8	82.3	82.1	73.9	62.8	51.6	41.3	61.7
Record High Temperature	81 1952	88 2017	94 1974	96 2006	99 1934	106 2012	111 1954	115 2011	109 1998	96 1938	87 2017	82 1951	115 Aug 2011
Record Low Temperature	-11 1918	-15 1899	7 1948	22 1975	34 1903	47 1964	50 1972	45 1891	33 1967	22 1917	8 1976	-5 1989	-15 Feb 1899
Average Days At or Above 100 Degrees	0	0	0	0	0	0.3	3.0	4.8	0.6	0	0	0	8.7
Average Days At or Above 90 Degrees	0	0	0	0.5	2.2	11.9	22.8	21.9	9.0	0.6	0	0	68.9
Average Days At or Below 32 Degrees	20.5	12.7	4.8	0.6	0	0	0	0	0	0.4	6.4	17.4	62.8
Average Rainfall	2.81	2.76	3.85	4.30	5.47	4.28	3.30	2.59	4.05	4.32	4.44	3.29	45.46
Record Rainfall	11.33 1949	10.72 1884	13.03 1945	10.32 1957	19.85 2015	15.02 1945	14.99 1895	10.89 1890	10.49 1934	12.05 1951	14.01 1946	10.81 2015	73.93 2015
* Record Rainfall in 24 Hours	5.63	4.45	4.88	5.12	5.56	5.41	7.13	5.09	5.20	5.90	6.91	5.78	7.13
Record Least Rainfall	0.20 1986	0.14 1947	0.50 2007	0.36 1903	0.38 1886	0.38 1954	0.07 2001	T 2000	T 2017	T 1964	0.26 1904	0.09 1908	19.89 1917
Average Number of Rain Days	7.5	7.8	9.7	9.1	10.7	9.3	6.5	6.3	7.7	8.4	7.5	7.7	98.2
**Average Number of Thunderstorm Days	1	2	5	7	8	8	7	7	5	3	3	2	57
Average Snowfall	2.4	1.1	0.6	0	0	0	0	0	0	0	T	0.8	4.9
Record Snowfall	13.6 1918	18.3 1921	7.5 2010	0.7 1933	0	0	0	0	0	T 1993	4.7 1976	8.3 1916	22.6 1921
Measurable Snowfall:	Latest / April 15 (0.7" in 1933)						Earliest / November 2 (2.0" in 1951)						
Trace of Snowfall:	Latest / April 24 (in 1910)						Earliest / October 29 (in 1993)						
**Average Sunshine (%)	49	55	56	61	62	69	73	72	66	65	55	50	61
**Average Wind Speed (mph)	8.4	8.6	9.5	9.1	7.7	6.8	6.4	6.3	6.6	6.9	7.9	8.2	7.7
Average Heating Degree Days	792	582	386	156	27	1	0	0	17	137	411	734	3244
Average Cooling Degree Days	0	1	11	54	178	385	536	530	283	68	8	1	2053
Average Date Of 32 Degrees***:	Last: March 22						First: November 9						
Freezing Temperature:	Latest Recorded: April 17						Earliest Recorded: October 8						
Station Information	Elevation: 447 ft / Latitude: 35 20N / Longitude: 94 22W												

Temperatures are reported in Fahrenheit and rainfall/snowfall totals are reported in inches.
Rain day is defined as a day with 0.01 inches or more of rain.
Temperature and rainfall records are for the period June 1882-Present.
Snowfall records are for the period October 1883-Present.
**Record Rainfall in 24 Hours for the period 1944-Present.*
***Averages are for the period 1961-1990.*
****Averages are for the period 1971-2000.*
All other averages are for the period 1981-2010.
(Annual totals may be slightly different than monthly totals due to rounding)

Fort Smith, Arkansas Climatology (NOAA)
Updated: July 2, 2018

snowstorms. Precipitation averages approximately 45.46 inches per year (including about 4.9 inches of snowfall). Spring is the wettest season, with May generally receiving the most rainfall. Winter normally is the driest season, although August is commonly the driest month.

Surface winds are normally strong enough to provide adequate ventilation but are seldom intense enough that they become unpleasant or damaging. During colder parts of the year, westerly or southwesterly winds produce the most unpleasant weather that occurs in the area, and during warmer months, winds are predominantly from the east or northeast accompanied by high humidity. Between 6:00 am and noon, the relative humidity ranges from an average low of 36% in April and October to an average high of 84% during July through September.

The growing season in the FCJMTC area typically lasts for 7.5 months (230 days), from around March 24th to around November 9th. The average date of the last killing frost is February 26th, while the average date of the first killing frost in the fall is December 1st.

2.4.7 Climate Change

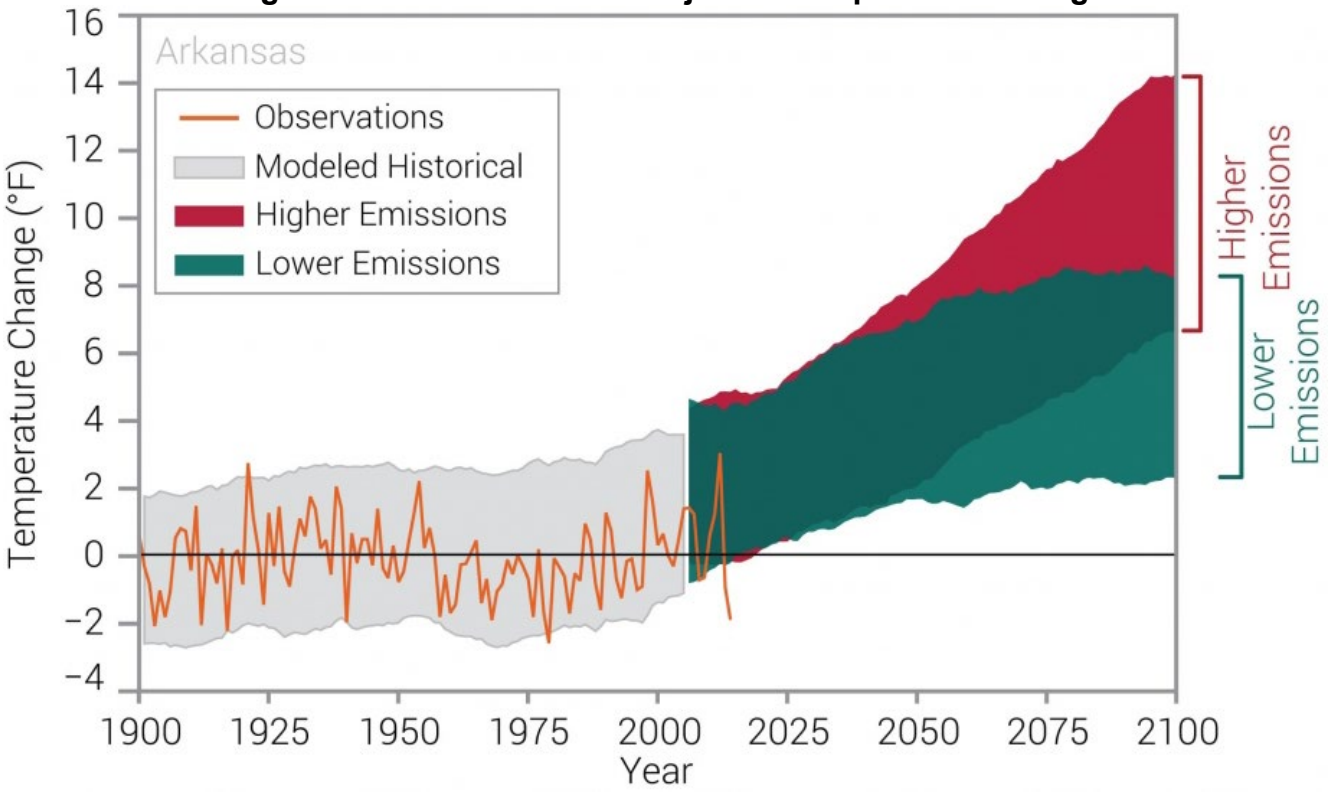
Climate change has the potential to impact the military mission; the natural landscape; the flora and fauna that depend on the landscape and built infrastructure. Potential impacts resulting from climate change can include, but are not limited to, rising temperatures (Figure 2.10), changes in precipitation patterns, increase in storm frequency and intensity, rising sea levels and the associated storm surge, increased frequency and severity of wildfires and soil loss.

Presidential EO's 13514 and 13653 require federal agencies "to evaluate climate change risks and vulnerabilities to manage both short- and long-term effects of climate change" on the mission and operation of the federal agency. In addition, EO 13653 requires "each agency to develop or continue to develop, implement and update comprehensive plans that integrate climate change into agency operations" (U.S. DOD 2014).

The NOAA state climatic summary for Arkansas (https://statesummaries.ncics.org/ar) has three key messages, which includes:

- Arkansas has exhibited little overall warming since the early 20th century, but temperatures in the 21st century have been about as warm as the previous record levels of the 1930s and 1950s. Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century.
- The intensity of future naturally occurring droughts is projected to increase because higher temperatures will increase the rate of loss of soil moisture during dry spells.
- The number and intensity of extreme heat and extreme precipitation events are projected to increase in the future while the intensity of extreme cold events is projected to decrease.

Figure 2.10 Observed and Projected Temperature Change



2.4.8 Federally Listed Threatened and Endangered Species, Rare Species and Special Status Species

Management of species of conservation concern will provide benefits to FCJMTC by reducing the likelihood that the presence of these species or their habitat could limit military training. Species of conservation concern include: (1) federal listed, proposed, candidate and petitioned species and critical habitat; (2) Army species at risk; (3) state listed species; (4) USFWS birds of conservation concern and (5) ANHC species of special concern.

2.4.8.1 Federally Listed Endangered and Threatened Species, Proposed, Candidate and Petitioned Species and Critical Habitat

The USFWS definitions for these categories are listed below.

- Endangered – Any species that is in danger of becoming extinct throughout all or a significant portion of its range.
- Threatened – Any species that is likely to become an endangered species with the foreseeable future through all or a significant portion of its range.
- Candidate Species – Species for which there is sufficient information on biological vulnerability and threats to support proposals to list them as threatened or endangered.
- Petitioned Species – A formal request, with the support of adequate biological data,

suggesting that a species, with the support of adequate biological data, be listed, reclassified, or delisted, or that critical habitat be revised for a listed species.

- Critical Habitat – Habitat that contains features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat may also include areas that are not currently occupied by the species but will be needed for its recovery.

The ESA directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the USFWS, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. The ESA sets forth requirements for consultation to determine if a proposed action could potentially affect a federally threatened or endangered species.

The USFWS Ecological Services Field Office's Information, Planning and Conservation (IPaC) system website (http://ecos.fws.gov.ipac/) provides an up to date on-line listing of endangered, threatened, proposed and candidate species and their designated critical habitat that occur in or may be affected by actions associated with proposed projects. This species list fulfills the requirements of the USFWS under Section 7(c) of the ESA (16 U.S.C. 1531 et seq.).

One federally endangered species, two federally threatened species and one candidate species are listed at FCJMTC (Table 2.5). Additionally, the bald eagle occurs at FCJMTC and is protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). There is no federally listed critical habitat at FCJMTC. These species are further described in the subsequent sections. Specific goals, objectives and management actions are located in Section 4.2. The ANHC list of rare, threatened and endangered species found in Crawford, Franklin and Sebastian County, Arkansas is located in Appendix P.

Table 2.5. FCJMTC Threatened, Endangered and Candidate Species

Common Name	Species	Federal Status	Date Listed
American burying beetle	*Nicrophorus americanus*	Endangered	July 13, 1989
Bald eagle	*Haliaeetus leucocephalus*	BGEPA, MBTA	Delisted
Geocarpon	*Geocarpon minimum*	Threatened	June 16, 1987
Northern long-eared bat	*Myotis septentrionalis*	Threatened with 4(d) Rule	April 2, 2015
Rattlesnake master borer moth	*Papaipema eryngii*	Candidate	N/A
Tricolored bat	*Perimyotis subflavus*	Petitioned	N/A

2.4.8.2 American Burying Beetle (*Nicrophorus americanus*; ABB)

The ABB is a federally listed endangered species that was first discovered at FCJMTC in 1992 during the Rare and Endangered Plant and Animal Survey of Fort Chaffee, Arkansas (Caldwell et al. 1993). FCJMTC has one of largest known populations of ABBs.

American Burying Beetle

The ABB measures 25 to 30 mm in length and is the largest *Nicrophorus* beetle in North America. The ABB is characterized by a shiny black body; smooth, shiny black elytra with two orange-red spots on each; a shield-shaped, flattened, black pronotum with an orange star-shaped marking and large antennae that are clubbed and orange at the ends. Males have a rectangular orange facial marking and females have a triangular facial marking.

The ABB has declined or disappeared from most of its historical range, which included at least 150 counties in 35 states (Raithel 1991). They are now found only at the margins of the original range in nine states: Block Island, Rhode Island; Nantucket Island, Massachusetts; eastern Oklahoma; western Arkansas; Loess Hills and Sandhills regions, central Nebraska; Chautauqua Hills region, southeast Kansas; south-central South Dakota; northeast Texas and Missouri (a designated non-essential, experimental population). They are found in open woodlands and grasslands, although the formerly broad geographic range of this species suggests that carrion availability is more limiting than vegetation or soil type. Suitable habitat includes well-drained soils, a well-formed detritus layer at the ground surface, relatively level topography and available carrion. Soil types that are conducive to excavation are important to the ABB. They generally seem to prefer soils with higher percentages of sand than silt or clay.

The ABB is known to or is believed to occur in seven Arkansas counties: Crawford, Franklin, Johnson, Logan, Scott, Sebastian and Yell. FCJMTC is the largest remaining concentrations. National forests have very low density or may be extirpated.

Adults are nocturnal and peak activity occurs primarily from May through September when nighttime temperatures exceed 59° F. Reproductive activity occurs primarily in June and July, but ABBs have been observed reproducing in May and August. Reproduction depends on the availability of appropriate-sized carrion of 1.2 to 8.8 ounces.

The ABB is attracted to carrion at night by odor. Males may use chemoreceptors to attract females once carrion has been located. A pair of beetles will bury carrion, usually before dawn, and then form a burial chamber. The carcass is cleaned of fur or feathers. Anal and oral secretions of the beetle are spread across the cleaned carcass, which probably retard decay. Eggs are laid in a tunnel adjacent to the carcass. Both parents stay with the eggs until hatching and with the larvae until development is complete. Both parents feed and protect the offspring until larvae disperse from the carcass in about 10 to 15 days. The larvae emerge as

adults about 44 to 60 days later. ABBs apparently have one brood per year but may produce two in some regions. Adults probably emerge in late summer, overwinter and do not reproduce until the following year. It is believed that adults die after one breeding season (Raithel 1991).

ABB Annual Monitoring Survey dated 1992-present. Extensive monitoring surveys have been completed at FCJMTC since the discovery of the ABB in 1992. Surveys are conducted using the most current USFWS survey protocols. Surveys have been conducted to determine the location, density in different areas and stability of ABB populations on the installation. Currently there are 59 survey sites within this survey. The number of ABB captured per trapping period is shown in Table 2.6 and Figure 2.11.

Table 2.6. ABBs Trapped at FCJMTC during the ABB Annual Monitoring Survey

Year	Males	Females	Unknown	Total trapped
1992	88	108	9	205
1993	86	86	10	182
1994	124	145	1	270
1995	53	61	2	116
1996	248	265	8	521
1997	343	361	24	728
1998	198	236	19	453
1999	107	102	2	211
2000	137	186	3	326
2001	36	71	1	108
2002	68	102	1	171
2003	209	275	6	491
2004	105	130	0	235
2005	360	484	5	849
2006	309	385	20	714
2007	312	471	3	769
2008	135	232	0	367
2009	374	442	35	851
2010	184	224	7	388
2011	65	84	4	153
2012	16	33	2	51
2013	162	190	1	353
2014	196	244	6	393
2015	261	403	7	671
2016	82	132	0	214
2017	102	149	1	252
2018	89	109	2	200

Figure 2.11 ABBs Trapped at FCJMTC during the ABB Annual Monitoring Survey

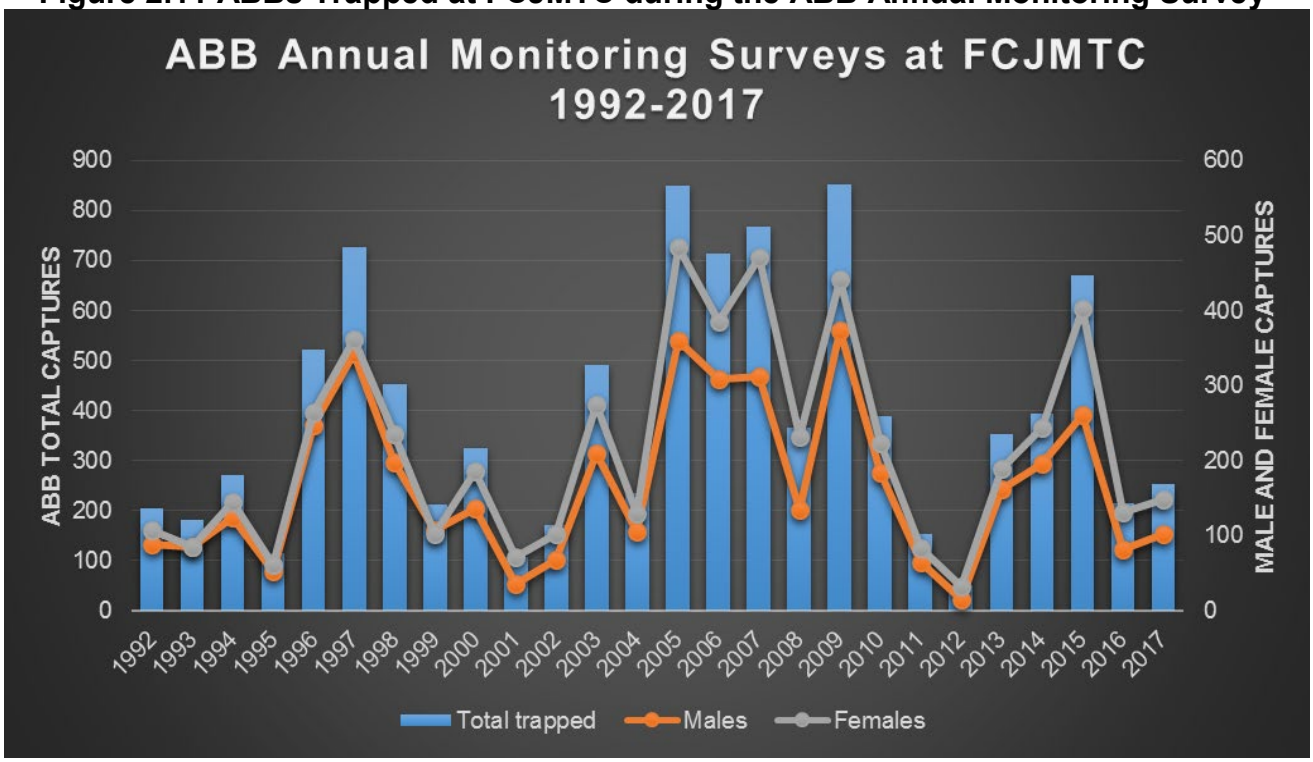


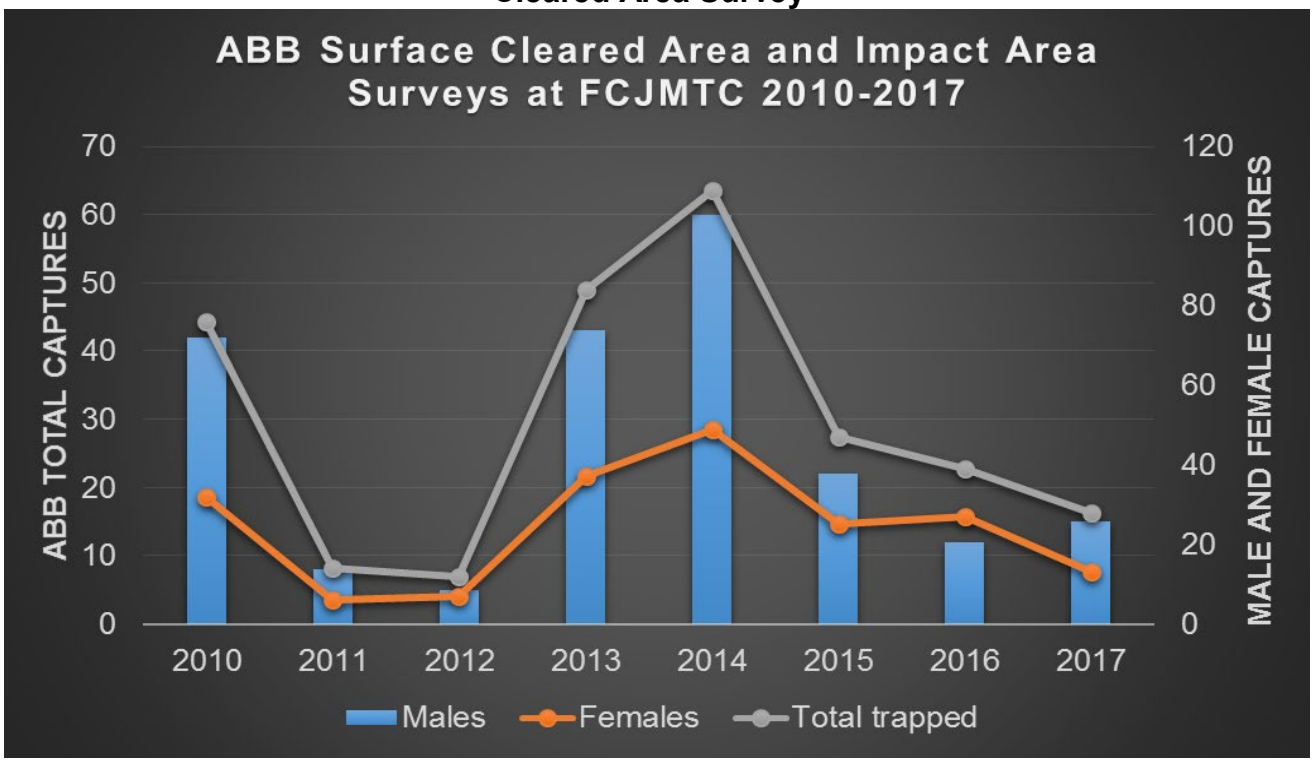
ABB Overwintering Survey dated March 2005. A study conducted by Schnell et al. (2005) evaluated the effect of food availability and habitat on overwintering survival on the burying beetle, specifically the roundneck sexton beetle (*N. orbicollis)* overwintering as adults. Burying beetles go through four life-history stages: egg, larvae, pupae and adult. Some species of burying beetles overwinter in the larval stage and others in the adult stage. Burying beetles that overwinter as larva are dependent on where their parents locate a suitable carcass for reproduction. However, burying beetle species that overwinter as adults have greater control over where they spend the winter. Thus, habitat choice may have an important role in overwinter survival for these species. Additionally, anecdotal field observations suggest that burying beetles may overwinter in association with carrion; thus, food may be an important parameter (Creighton personal observation). Experimental results indicate that one can enhance overwinter survival by provisioning American burying beetles with carrion (Schnell et al. 2008, entire). Schnell et al. (2008, p. 483) found that ABBs that were provided a carcass had a higher survival rate (77.1% and 44.6% survival in provisioned and nonprovisioned buckets, respectively) in an over-wintering study in Arkansas (no frostline), that indicates access to food could be important when winter temperatures are above freezing.

ABB Impact Area and Surface Cleared Area Survey dated 2010-present. To facilitate implementation of the Conservation Plan for the ABB (FCJMTC 2010) additional surveys have been conducted in the Impact Area and on the border of the Surface Cleared Area. The Environmental Branch conducts these surveys using the most current USFWS survey protocols. Surveys have been conducted to determine the location, density in different areas and stability of ABB populations. The number of ABB captured per trapping period is shown in Table 2.7 and Figure 2.12.

Table 2.7. ABBs Trapped at FCJMTC during the Impact Area and Surface Cleared Area Survey

Year	Males	Females	Unknown	Total trapped
2010	42	32	2	76
2011	8	6	0	14
2012	5	7	0	12
2013	43	37	0	84
2014	60	49	0	109
2015	22	25	0	47
2016	12	27	0	39
2017	15	13	0	28
2018	24	41	0	65

Figure 2.12 ABBs Trapped at FCJMTC during the ABB Impact Area and Surface Cleared Area Survey



Phenology Study during the ABB Annual Monitoring Survey in 2013. A phenology study was conducted to determine peaks in ABB population density throughout the active season, and, in part, whether density was related to climate conditions. The results of this study found that July supported the largest numbers of ABBs, supporting a mix of tenerals and older adults. No conclusions were able to be drawn from climate data vs. ABB captures as the weather conditions were rather uniform during the survey year, however it is likely that low soil moisture combined with hot/dry conditions limit ABB survey patterns.

Small Mammal Survey during the ABB Annual Monitoring Survey in 2017. A small mammal survey was conducted during the ABB annual monitoring survey to determine if there are associations among ABBs. Results of this survey determined that there was a positive association among deer mice (*Peromyscus maniculatus*) and the ABB. Further study of this association would be beneficial.

2.4.8.3 Bald Eagle (*Haliaeetus leucocephalus*)

Bald Eagle

The bald eagle was delisted from the federal ESA in 2007, however it still remains federally protected under the BGEPA and the MBTA. The adult bald eagle is easily identified by the white head and tail. Immature bald eagles are dark with blotchy white on their underwings, belly and tail (Sibley 2000). Bald eagles are frequently found near water, but during migration can be found almost anywhere. The nest is a massive platform of sticks and vegetation that is lined with moss and grasses and positioned on a cliff ledge or in a fork of a tree, 3 to 55 meters high (Stokes and Stokes 1996). Breeding pairs usually return to the nest structure annually and usually begin nest building and maintenance in December and January. Eggs are usually laid between mid-January and mid-March and young fledge by the end of June or early July. It takes bald eagles four to five years to reach maturity and full adult plumage. Grubb and King (1991) found that bald eagles were most easily disturbed while foraging and that pedestrian traffic is the most disturbing, while boat traffic is the least. Bald eagles living on military bases have been found to tolerate the sound of distant artillery, but are most affected by noise early in the breeding season.

Bald Eagle Annual Monitoring Surveys from 2005-2015. Annual monitoring of one site was conducted by the Environmental Branch to determine activity in the nest, per the FCJMTC Bald Eagle Management Guidelines. In 2016, the USFWS amended the 2007 guidelines to not require monitoring unless human activity (i.e., training exercises, maneuvers, vehicular movement) was to occur within 660 feet of the nest by June 30 or before when young had successfully fledged the nest. Typically, the human activities described above occur after June 30 and would likely not have the potential to impact bald eagles. Appendix Q contains the complete 2016 Bald Eagle Management Guidelines.

Although it is not required to conduct annual monitoring surveys for the bald eagle, unless as outlined in the Bald Eagle Management Guidelines, the Environmental Branch periodically monitors the single nest and the pair of bald eagles that have been observed nesting on the north side of the Arkansas River. No other nests have been observed on the installation.

2.4.8.4 Geocarpon (*Geocarpon minimum*)

Geocarpon

Geocarpon is a federally listed threatened species that was first discovered at FCJMTC in 2014. This was the first time a new site for this rare plant had been found in Arkansas since the 1980s and the first time it had ever been found in Sebastian County. Geocarpon is a tiny inconspicuous plant, ranging in size from 0.4 to 1.6 inches. It prefers the edge of saline (salt) barrens in grasslands called “slicks” or “slickspots.” These areas have naturally occurring sodium and/or magnesium salts that are so concentrated that few plant species can survive in them. Vegetation encroachment, cattle grazing and landscape alteration are the main threats to this species.

Geocarpon Annual Monitoring Surveys from 2014-present. Annual monitoring occurs from late May to early April. Positive survey results were obtained in 2014, 2015 and 2018. Damage by feral hogs appeared to be the cause of negative finding in 2016.

2.4.8.5 Northern Long-Eared Bat *(Myotis septrionalis;* NLEB*)*

Northern Long-Eared Bat

The NLEB is a federally threatened bat species documented to utilize FCJMTC during its active period. The NLEB is a medium-sized bat that is about 3 to 3.7 inches in length, but with a wingspan of 9 to 10 inches. The NLEB is distinguished by its long ears. The NLEB is located in 37 states.

During the summer months, the NLEB roosts singly or in colonies underneath bark, in cavities or in crevices of live and dead trees. During the winter months, the NLEB hibernates in caves and mines, called hibernacula. At dusk, the NLEB feeds on moths, flies, leafhoppers, caddisflies and beetles. Breeding occurs in the late summer to early fall. Males swarm near the hibernacula and breed. Females store sperm during hibernacula until spring, by a process called delayed fertilization. Females roost in small colonies in the summer and typically give birth to a single pup from late May to late July. Adult NLEBs can live up to 19 years.

Bat Survey in 2001 and 2002. Arkansas State University conducted bat surveys at FCJMTC. Over the course of sampling, 5 species of bats were captured, including red bat (*Lasiurus borealis*), evening bat (*Nycticeius humeralis*), little brown bat (*Myotis lucifugus*), NLEB and eastern pipistrellus (*Pipistrellus subflavus*).

Bat Survey in 2005. Conservation Management Institute (CMI) conducted a bat survey at FCJMTC (St. Germain et. al. 2005). Seven species (two probable) were confirmed during this survey. The NLEB was positively identified through acoustical monitoring. Additionally, a few fragmented calls of the Ozark big-eared bat (*Corynorhinus townsendii ingens*), a federally endangered species, were recorded, but further work remains to confirm this species' presence at FCJMTC. These fragmented calls were collected at site on August 9, 2005, at a stock pond in the Post-Oak woodlands and on September 15, 2005, in the bottomland hardwood forest edges along the flood ponds of the Arkansas River. With the calls being fragmented, there leaves some doubt to positive identification because of structural overlap with other species. For this reason we designated this species as probable.

Bat Survey in 2015. Mitigation Surveying Services, LLC (2015) conducted an endangered bat survey on 775 acres on the base. The study area lies within the known range of four federally listed bat species, the Ozark Big-eared bat, gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*) and NLEB. Mist net and acoustic surveys were conducted in 2015. Sixty individuals were captured of three species (none of which were threatened or endangered): red bat, evening bat and tri-colored bat (*Perimyotis subflavus*). Of the twelve species of bat calls detected acoustically, two were federally listed: gray bat and NLEB.

2.4.8.6 Rattlesnake-Master Borer Moth (*Papaipema eryngii*)

(a) Rattlesnake Master, (b) Rattlesnake-Master Borer Moth Larvae, (c) Rattlesnake-Master Borer Moth Adult

The rattlesnake-master borer moth is a candidate species that has been confirmed to be at FCJMTC. The rattlesnake-master borer moth is a dark reddish-purplish brown moth with prominent white spots. Adults are active at night from September through October, but infrequently travel very far from their host plant (<2km). Eggs are laid and overwinter in leaf litter or on old stems. The larvae of this species bore only into stems and roots of the rattlesnake master (*Eryngium yuccafolium*). Larvae pupate within the host plant.

Rattlesnake-Master Borer Moth Survey dated July 26, 2017. AGFC, ANHC, Jim Wiker, a Papaipema genus expert and the Environmental Branch, conducted the rattlesnake-master borer moth survey on July 26, 2017. Jim Wiker collected three larvae, in which two were confirmed to be rattlesnake-master borer moth.

2.4.8.7 Tricolored bat *(Perimyotis subflavus)*

The tricolored bat, formerly known as the eastern pipistrelle, is a petitioned bat species documented to utilize FCJMTC during its active period. The tricolored bat is characterized by distinct tricoloration of each hair (black, yellow and brown). The tricolored bat is one of the smallest bats in eastern North America that is about 2.9 to 3.5 inches in length, but with a wingspan of 8 to 10 inches.

Tricolored Bat

Refer to 2.4.8.5 Northern Long-Eared Bat (*Myotis septrionalis*; NLEB) section for additional information on bat surveys conducted at FCJMTC.

2.4.8.8 Rare Species and Special Status Species

FCJMTC is not legally required to specifically manage state-listed species. However, many actions for state-listed species are coincidental with actions for game and federally listed species. FCJMTC understands the importance of sensitive species that may not be federally listed, particularly since these species have the potential to become federally listed, potentially affecting the military mission on the installation. Thus, even though it is more difficult to justify funding specifically for the management of these species, FCJMTC will give a secondary priority to state-listed species. To conserve species prior to federal listing, FCJMTC will follow guidance outlined in the Army Species at Risk Policy for any species at risk identified on the installation (Appendix B). The AWAP in its entirety is located at http://www.wildlifearkansas.com/strategy.html. It provides management guidelines to benefit species of greatest conservation need.

The Rare and Endangered Plant and Animal Survey of Fort Chaffee, Arkansas (Caldwell et al. 1993) in 1991 and 1992. The survey targeted 23 rare, threatened and endangered plants potentially occurring on the installation. Suitable habitats were examined throughout each species' flowering period. No rare, threatened or endangered plant species were found, and the probability of occurrence of these species is low due to unique habitat requirements. However, Caldwell et al. (1993) observed several uncommon plant species, including jewelweed *(Impatiens capensis)*, grassy arrowhead *(Sagittaria graminea)* and lizard's tail *(Saururus cernuus)*. No federal or state-listed species of fish or amphibians have been found on the installation. Two state-listed reptiles, the ornate box turtle (*Terrapene ornata ornata*) and the northern scarlet snake (*Cemophora coccinea copei*) have been found at FCJMTC. Both are state-listed as inventory species of concern. No rare or endangered mollusks and crustaceans that occur in counties surrounding the installation should occur at FCJMTC due primarily to range limitations and habitat parameters.

Scaleshell Mussel Survey in 2004. FCJMTC is within the range of the scaleshell mussel (*Leptodea leptodon*), a federally listed endangered species and state species of concern. However, during a survey in 2004, no scaleshell mussels were identified (Farris 2004).

Summer Rare Bird Survey dated 2005. The purpose of this survey (St. Germain et. al. 2006) was to determine the presence of three species at FCJMTC, the cerulean warbler (*Dendroica cerulea*), Bewick's wren (*Thryomanes bewickii*) and least tern (*Sterna antillarum*). All three species are experiencing declines throughout their range and have been previously detected at FCJMTC. The American woodcock (*Scolopax minor*) was a species of interest, however due to logistical constraints no formal surveys for this species were conducted, though incidental observations were noted. The Bewick's wren was not detected. The cerulean warbler was not detected during this survey, however two individuals were identified at FCJMTC during the first year of the avian atlas in 2003. Cerulean warblers may only utilize FCJMTC during migration. The least tern was observed foraging over the Arkansas River portion of FCJMTC in 2004, no breeding activity has been documented at this portion of the Arkansas River. The Arkansas River corridor is potentially the only suitable habitat for the Least Tern.

Greater Prairie Chicken Survey in 2006. Between 2003 and 2004, three sightings of the Greater Prairie Chicken were reported at FCJMTC. Each of the three sightings occurred on two grassland areas (Rattlesnake Arrowhead DZs) during winter (December and January). The Greater Prairie Chicken is not known to occur in Arkansas and currently there is no state status listing. In response to these sightings, a rare bird survey was conducted by the CMI at Virginia Tech in 2005 (St. Germain et al. 2006). Species targeted during this survey were: greater prairie chicken *(Tympanuchus cupido pinnatus*), cerulean warbler, least tern and Bewick's wren. No individuals of these species were detected during the survey, however it cannot be concluded that these species are absent from FCJMTC.

2.4.8.9 Migratory Birds

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Under the MBTA, taking, killing or possessing migratory birds is unlawful. In accordance with Executive Order 13186 and the associated Memorandum of Understanding between the DOD and the USFWS to Promote the Conservation of Migratory Birds, FCJMTC will, to the extent feasible and practical, conduct non-military readiness activities in a manner that will minimize or avoid their impacts on migratory birds, with special emphasis on migratory bird species of concern.

Further, Executive Order 13186 provides guidance to federal Agencies with the purpose to, "minimize the potential adverse effects of migratory bird take, with the goal of striving to eliminate take, while implementing the mission." A "migratory bird" is defined as any of the species covered by the four bilateral treaties on the conservation of migratory birds. This includes all native birds in the U.S., except those non-migratory species such as northern bobwhite and wild turkey that are managed by the states. However, the military would not be penalized for "inadvertent take" of migratory birds during training activities, only those intentionally taken during or outside of training activities on the installation.

2.4.9 Fauna

FCJMTC has rich and diverse fauna in a wide variety of habitats. Planning level surveys have confirmed the occurrence of 50 mammal, 206 bird, 36 reptile, 18 amphibian, 44 fish and over 613 invertebrate species at FCJMTC. The complete species list includes all faunal species occurring on the installation (Appendices R-V). The following sections summarize the biological diversity at FCJMTC. Chapter 4 provides goals, objectives and management actions.

2.4.9.1 Mammals

Species of mammals known to occur at FCJMTC are included in Appendix R. Section 4.3 provides management actions.

Modern Gun and Muzzleloader Deer Permit Hunts dated 1997-present. Data has been collected by the AGFC and the Environmental Branch during the permit hunts since 1997. The permit hunts typically occurs the weekend prior to thanksgiving (modern gun) and thanksgiving weekend (muzzleloader). In 2016, the permit hunts were condensed to the weekend prior to thanksgiving. Data collected during the permit hunts include: weight, age, antler measurements, lactation rates and location. In addition, cementum analysis, tick collection and chronic wasting disease surveys have been performed. Table 2.8 shows the total deer taken during the permit hunts from 1997-2017.

Table 2.8. Total Deer Taken during the Modern Gun and Muzzleloader Deer Permit Hunts from 1997-2017

Year	Total Deer	Year	Total Deer	Year	Total Deer
1997	354	2004	276	2011	382
1998	557	2005	304	2012	287
1999	320	2006	285	2013	237
2000	344	2007	Hunts cancelled	2014	193
2001	236	2008	398	2015	173
2002	260	2009	293	2016	181
2003	232	2010	336	2017	107

Mammal Survey dated 1999. During this 1999 survey (Schnell et. al. 1999), 187 animals of 14 species of small mammals were captured. Overall trap success was 1.2%. The most commonly captured species were: white-footed mouse (59 captured); deer mouse (44 captured) and hispid cotton mouse (35 captured). The number of individual small mammals captured per site varied from 0 to 11. An additional four species of medium to large mammals were observed but not trapped. Evidence of seven other species of medium and large mammals was also noted. In addition, 36 non-mammal animals, consisting of eight species, were caught.

Aerial Infrared Deer and Hog Count dated September 26, 2005. Vision Air Research Inc. conducted an infrared imaging survey on May 6-11, 2005 for white-tailed deer and hogs. A total of 3,429 deer and 21 hogs were detected (Bernatas 2005).

Small Mammal Survey dated May-June 2007. Fifteen species of small- and medium-sized mammals were captured during this survey (Nupp 2007). Overall capture rate was 9.05 captures/100 trap nights. The most commonly captured species were the white-footed mouse (*Peromyscus leucopus*) (122 captures; 40% of total captures), followed by the hispid cotton rat (*Sigmodon hispidis*) (86 captures; 28% of total captures). Three other species were also commonly captured including the eastern woodrat (*Neotoma floridana*) (30 captures; 10% of total captures), the deer mouse (24 captures; 8% of total captures) and the Texas mouse (*P. attwateri*) (18 captures; 6% of total captures). In addition to the count of mammals captured, observations of six other medium-sized species were recorded bringing the total small/medium mammal species richness to 21 for this study.

Small Mammal Survey dated September 12, 2017. This small mammal survey was conducted from May 29 to June 10, 2017 and resulted in the capture of 125 small mammals, representing a total of eight species. Bottomland hardwoods appeared to support a much higher number of small mammals than expected whereas oak woodlands and upland forests supported far fewer small mammals than expected. Deer mice were positively associated with ABB capture rates.

Deer and Hog Abundance Surveys dated winter 2017. Three surveys (LeBeau et. at. 2017) occurred on successive nights between February 21 and February 23, 2017. The surveys occurred during the night between the hours of 21:00 to 05:00. There is estimated to be 1,185 (90% CI: 920 to 1,450) deer and 178 hogs (90% CI: 135 to 222) during the 2017 winter within the project. The Impact Area had the largest estimate number of deer and hogs. The density of deer appears to be higher in the eastern portion of the project and near the perimeter of the project. There was a concentration of groups of hogs in the western and the eastern portion of the project and density appears to be isolated in three areas of the project.

2.4.9.2 Birds

Species of birds known to occur at FCJMTC are included in Appendix S.

Wild turkey and northern bobwhite quail survey. The AGFC annually performs summer surveys for wild turkey (*Meleagris gallopavo*) and spring call counts for northern bobwhite quail (*Colinus virginianus*) at FCJMTC. Results of these surveys are on file at the AGFC Fort Smith Regional Office.

Avian Atlas Year One dated September 2003. Overall, more than 37,500 individuals of 186 species were documented during the first year avian atlas survey (Murray 2004). In the fall, large flocks of blackbirds, common grackles (*Quiscalus quiscula*), snow geese (*Chen caerulescens*), European starlings (*Sturnus vulgaris*) and American robins (*Turdus migratorius*) were observed. In the winter, the most abundant species for the winter survey were: dark-eyed juncos (*Junco hyemalis*), American robin, white-throated sparrow (*Zonotrichia albicollis*) and Carolina chickadee (*Poecile carolinensis*). In the spring the most abundant species was the blue-gray gnatcatcher (*Polioptila caerulea*). In the summer, the five most abundant species for this survey were blue-gray gnatcatcher, indigo bunting (*Passerina cyanea*), eastern tufted titmouse (*Baeolophus bicolor*), northern cardinal (*Cardinalis cardinalis*) and field sparrow (*Spizella pusilla*).

Modeling Overwintering Survival of Declining Landbirds: the 2003-04, 2004-05 and 2005-06 Annual Report of the Monitoring Avian Winter Survival (MAWS) Program on four DOD Installations in Southeastern United States. At FCJMTC, a total of 1,643 captures of 37 species were recorded at the six MAWS stations during the winter of 2004 to 2005, 1,027 of which were newly banded individuals, 529 were recaptures of some of those individuals, and 87 were individuals that were captured but, because of exceptionally large numbers of birds being captured at once or the sudden onset of adverse weather conditions, were released unbanded (DeSante et. al. 2004). This represents a 20.6% decrease in the total number of captures (but a 5.7% increase in the number of species captured) during the winter of 2004 to 2005 as compared to the winter of 2003 to 2004, despite a 38.0% increase in the total number of net-hours accumulated at FCJMTC during 2004 to 2005 compared to 2003 to 2004; thus, a substantial 42.5% decrease between the two winters in birds captured per 100 net-hours (b/100nh) from 45.9 to 26.4. Additional surveys were conducted December 2005-March 2006 and December 2006-March 2007.

Avian Atlas Year Two dated December 2004. Overall, more than 12,000 individuals representing 166 species were documented during the second year avian atlas survey (Murray 2004). In the fall, eleven new species were detected this survey period that were not detected during the first year survey periods: common loon (*Gavia immer*), peregrine falcon (*Falco peregrinus*), sora (*Porzana carolina*), greater yellowlegs (*Tringa melanoleuca*), semipalmated sandpiper (*Calidris pusilla*), pectoral sandpiper (*C. melanotos*), stilt sandpiper (*C. himantopus*), Caspian tern (*Hydroprogne caspia*), least flycatcher (*Empidonax minimus*), palm warbler (*Setophaga palmarum*) and Canada warbler (*Cardellina canadensis*). In the winter, three new species for the installation were detected this survey period that were not detected during previous survey periods: least sandpiper (*C. minutilla*), rusty blackbird (*Euphagus carolinus*) and Smith's longspur (*Calcarius pictus*). In the spring, two new species for the installation were detected this survey period that were not detected during previous survey periods: Mississippi kite (*Ictinia mississippiensis*) and golden eagle (*Aquila chrysaetos*). In the summer, two least terns were detected this survey period and were not detected during previous survey periods.

2.4.9.3 Reptiles and Amphibians

Reptiles and amphibians are found in all habitats at FCJMTC, ranging from arid, rocky hills to moist bottomlands (Sturdy et al. 1991). Considering the worldwide decline of amphibians and, to a lesser extent, reptiles, their potential as ecological indicator species and the probability that some may become "listed," obtaining an inventory of reptile and amphibian would be prudent. Species of reptiles and amphibians known to occur at FCJMTC are included in Appendix T.

The Rare and Endangered Plant and Animal Survey of Fort Chaffee, Arkansas (Caldwell et al. 1993) in 1991 and 1992. Caldwell et al. (1993) included surveys for rare and endangered reptiles and amphibians. During these surveys three species of salamanders, 15 species of frogs, 8 species of lizards, 19 species of snakes and 8 species of turtles were observed.

Herpetofaunal Inventory dated December 16, 2003. ASU performed a comprehensive survey of reptiles and amphibians in 2002-2003 (Trauth et. al. 2003). A total of 46 species of amphibians and reptiles (2 salamanders, 14 anurans, 7 turtles, 7 lizards and 16 snakes) was collected from July 2002 to June 2003 at FCJMTC. This number is nearly identical to the total herp species (n = 45) reported by Vitt and Caldwell (1993) during an intensive spring herp inventory at FCJMTC in 1992.

Herpetofaunal Inventory dated February 10, 2005. ASU performed a comprehensive survey of reptiles and amphibians in 2002-2004 (Trauth et. al. 2005). A total of 50 species of amphibians and reptiles (3 salamanders, 15 anurans, 7 turtles, 8 lizards and 17 snakes) was recorded from July 2002 to September 2004 at FCJMTC. This number is larger than the total number of herp species (n = 45) reported by Vitt and Caldwell (1993) during their intensive spring (May-June) inventory at FCJMTC in 1992. Two uncommon species, the diamondback water snake (*Nerodia rhombifer*), the eastern collared lizard (*Crotaphytus collaris*), the Great Plains rat snake (*Elaphe guttata emoryi*), the Missouri river cooter (*Pseudemys concinna*), the northern spring peeper (*Pseudacris crucifer*), the prairie kingsnake (*Lampropeltis calligaster*), the southern prairie skink (*Eumeces septrentrionalis*), the speckled kingsnake (*Lampropeltis getula*), the Strecker's chorus frog (*Pseudacris streckeri*) and the western slender glass lizard (*Ophisaurus attenuatus attenuatus*) were collected.

Distribution, occupancy and habitat associations of prairie-associated reptile and amphibian species of greatest conservation need in Northwest Arkansas. This survey is currently being conducted to determine the status of prairie-associated herpetofauna in Northwest Arkansas. The objectives of the proposed research are to: (1) Establish the current distribution of prairie-associated reptile and amphibian SGCN within historic prairies of Northwest Arkansas; (2) Determine landscape and habitat covariates that best predict occurrence and abundance of these species. Data on species' distributions and habitat associations will help guide future habitat protection, restoration and management for SGCN.

2.4.9.4 Fish

Fish habitat at FCJMTC includes streams, ponds and small lakes. More than 20 of the 193 fish species known to Arkansas are endemic to drainages of the Ozark and Ouachita mountains in Arkansas and neighboring states. Major species of fish occurring at FCJMTC include the shovelnose sturgeon (*Scaphyrhynchos platorynchos*), gar (*Lepisosteus* spp.), shad (*Dorosoma* spp.), pickerel (*Esox* spp.), shiners (*Notropis* spp.), buffalo (*Ictiobus* spp.), channel catfish (*Ictalurus punctatus*), blue catfish (*I. niger*), bass (*Morone* spp.), largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellis*), bluegill sunfish (*L. macrochirus*), redear sunfish (*L. microlophus*) and crappie (*Pomoxis* spp.) (Buchanan 1998; Sturdy et al. 1991). Species of fish known to occur at FCJMTC are included in Appendix U. FCJMTC and AGFC cooperatively manage the installation fishery. An aggressive monitoring, inventory, management and stocking program is used at FCJMTC. Primary fish species managed are bass, catfish, crappie and sunfish. Forage species (small sunfish, minnows and shad) have either been increased or made more available from properly managed sport fish populations, drawdowns and partial fish kills.

Fish Survey dated 2003, 2004 and 2005. A total of 38 species were documented from fish communities of the major stream systems, lakes and ponds in 2005 (Homan et. al. 2005). Similar surveys in 2003 (except ponds) and 2004 documented 32 and 37 species, respectively.

2.4.9.5 Invertebrates

Invertebrates are an essential component of ecosystems, providing food for numerous vertebrate species and acting as pollinators for a large number of plant species. The seasonal reproductive cycle of some insect species results in an “explosion” of the population in a relatively short period of time. This swarming of individuals provides an important prey base for insectivores, such as smaller birds, reptiles, amphibians and bats. Species of invertebrates known to occur at FCJMTC are included in Appendix V.

Scaleshell Mussel Survey dated December 2004. Farris (2004), with Arkansas State University conducted a survey of mollusks and bioassessment of aquatic systems at FCJMTC. Identification of species and their habitats/locations on base allows for consideration during planning phases of proposed activities and following any impact on these aquatic communities from training and maintenance activities. Qualitative and quantitative information on mussels and the possible impact of sediment and water conditions is essential to maintain quality stewardship of the land, to manage the natural resource the best way possible, to limit the impacts of activities on natural ecosystems, and to protect sensitive or valuable animal species. One such sensitive species that historically occurred in both the Arkansas and White River drainages, and that the USFWS determined to be an endangered species, is the Scaleshell mussel (*Leptodea leptodon*). Among the streams surveyed, nine bivalve species were collected in limited abundance, with the Asian clam (*Corbicula fluminea*) still having the greatest prevalence in all systems. However, the Scaleshell mussel was not collected during the 2004 survey at FCJMTC, nor would it be expected to be found in the streams or lakes given the conditions observed during the past three years of survey. Avoidance of introduction of exotic species such as the Zebra mussel (*Dreissena polymorpha*) or the Asian clam into aquatic systems on the facility should continue.

Aquatic Invertebrate Survey dated October 20, 2006. FTN conducted an aquatic invertebrate survey during June 2006 (Rupe 2006). A total of 98 taxa were identified from the twenty-one streams, lakes and ponds that were surveyed. Of the 17 taxonomic orders that were identified at lotic stations at FCJMTC, Coleoptera, Ephemeroptera, Odonata and Trichoptera were the most diverse orders of insects.

Lepidoptera and Odonata Survey dated November 1, 2007. FTN conducted a Lepidoptera (moths and butterflies) and Odonata (dragonflies and damselflies) survey was performed in June, July and August 2007 (Rupe 2007). A total of 192 species of Lepidoptera and 37 species of Odonata were observed and/or collected at 39 sampling sites. Netting and visual observations were used to identify both orders and light trapping was used to identify nocturnal Lepidoptera.

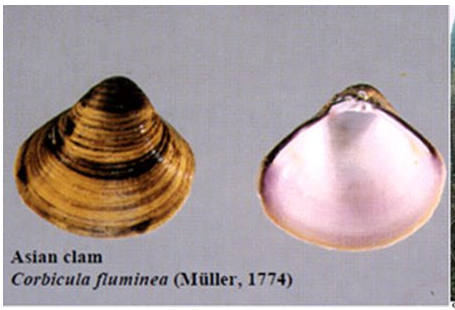
Coleoptera, Blattodea, Mantodea and Phasmatodea Survey dated November 14, 2008. FTN conducted a Coleoptera (beetles), Blattodea (cockroaches), Mantodea (mantids) and Phasmatodea (stick insects) survey was performed at FCJMTC during June, July and August 2008 (Rupe 2008). A total of 109 taxa of Coleoptera, two species of Blattodea, two species of Mantodea and one species of Phasmatodea were observed and/or collected from 96 sampling sites. Sweep net transect stations were sampled twice; ABB pitfall stations were sampled three times; and black light stations were sampled once.

Orthoptera, Hemiptera, Homoptera, Diptera, Hymenoptera, Neuroptera and Mecoptera Survey September 23, 2009. FTN conducted a Orthoptera (grasshoppers and crickets), Hemiptera (true bugs), Homoptera (sucking insects), Diptera (flies, gnats and mosquitoes), Hymenoptera (bees, ants and wasps), Neuroptera (lacewings and antlions) and Mecoptera (scorpionflies) survey was performed at FCJMTC during June, July and August 2009 (Rupe 2009). Sweep net transect stations were sampled twice; malaise trap stations were sampled once; and light stations were sampled once. A total of 30 taxa of Orthoptera, 24 taxa of Hemiptera, 15 taxa of Homoptera, 80 taxa of Hymenoptera, 48 taxa of Diptera, four taxa of Neuroptera and one taxa of Mecoptera (202 total taxa) were observed and/or collected from 32 dedicated sampling stations located within FCJMTC.

2.4.9.6 Invasive and Noxious Fauna

DODI 4715.03 states that invasive species management must comply with DODI 4150.07 and be addressed in this INRMP. Specifically, DODI 4715.03 requires that installations identify, prioritize, monitor and control invasive and noxious species and feral animals on its installations whenever feasible. Although not an all-inclusive list, a few of these species that occur at FCJMTC include:

- Asian clam (*Corbicula fluminea)*
- Feral hogs (*Sus scrofa*)
- Imported fire ants (Solenopsis invicta, Solenopsis richteri and their hybrids)



Asian Clam


Feral Hogs


Imported Fire Ant

The Asian clam had the greatest prevalence in all systems at FCJMTC. The clam, of much more recent establishment in the area, is referred to as an introduced species, while all mussels here listed are considered native. The recent exotic invader is well established throughout the Arkansas River drainage and appeared throughout most basins and in some lakes at Chaffee. It appeared in greatest abundance in tributaries of Vache Grasse Creek (as many as 780/m^2) and in specific zones of Engineer Lake (64/m^2), with all ages and stages

represented. Densities were reduced in Engineer Lake from numbers observed in 2003.

Feral hogs are native to Europe, Asia and North Africa. They are not native and are aggressively invasive to North America. They cause severe disturbance to soil and plant communities that host threatened and endangered species, and are a source of unnatural predation on native bird eggs, nuts and seeds, insects and other small animals. Feral hogs can carry many diseases that pose human health risks to soldiers and the public. Additionally, feral hogs are prolific breeders and a single female can give birth to upwards of 25-30 young per year, depending on habitat and climatic conditions. The feral hog population at FCJMTC is well documented, but not entirely known.

Imported fire ants are common in some regions of Arkansas. Their venomous sting may cause an allergic reaction in hypersensitive individuals and/or lead to secondary infections. Fire ants may also have a detrimental impact on endangered or threatened species. Currently, imported fire ants are treated through chemical measures (predominately baits) on an “as needed” basis but BMPs have been created by the USDA, UACES and the Arkansas State Plant Board (ASPB) to inform public and private landowners on ways to control current infestations and prevent spread through transfer of contaminated soil.

Emerald Ash Borer (***Agrilus planipennis*; EAB) Survey.** The EAB has not been detected at FCJMTC; however, surveys are conducted in close proximity to FCJMTC. The USDA EAB survey uses the purple prism detection tool, or “trap,” to monitor known EAB infestations and locate other unknown EAB populations. The purple trap is a three-dimensional triangle or prism. It’s made out of thin, corrugated purple plastic that has been coated with non-toxic glue on all three exterior sides. The purple traps are about 24 inches long and hang vertically in ash trees (*Fraxinus spp.*). Each trap is baited with a lure on the interior to attract EAB to it. Survey crews service the traps two times: in mid- summer, to replace the lure and collect any suspect beetles stuck on them; and in the fall, to collect any suspects and remove the traps.

Feral Hog Management Program. Efforts to minimize the feral hog population at FCJMTC include all professionally accepted methods of eradication. Methods include, but are not limited to, corral style traps, spring loaded and conventional snares, opportunistic shooting, nighttime thermal shooting, aerial gunning and, when legal and permitted, toxicants and Judas pigs. The Environmental Branch eradicated 1,511 feral hogs from January 1, 2013 through December 31, 2017 using a combination of the above methods. AGFC personnel also participate in feral hog management according to their agency guidelines and priorities. Hunters at FCJMTC may kill feral hogs in accordance with current AGFC Wildlife Management Area regulations. Feral hogs killed at FCJMTC can be taken for processing or left where they were shot. Hunters may not use dogs, bait or traps to hunt feral hogs and hunters may not hunt hogs at night at FCJMTC.

Gypsy Moth Detection Survey. Each year, the Environmental Branch staff participates in the Gypsy Moth Detection Survey. This is a multi-agency state wide survey to detect possible gypsy moth out breaks. Approximately 21 traps are placed throughout the installation. Inside each trap contains a pheromone sex lure. The walls of the trap are adhesive and if a moth flies into the trap it will adhere to the side. Traps are located upwind of areas to be checked, inside the woods edge, in open shade, aligned with the prevailing wind, at least 50 feet

further into wooded cover if road dust is noticed on foliage, and place traps chest-high on trunks of trees. Traps will be set every year before June, checked in mid-July and recovered after August. Traps will then be sent to the ASPB for analysis along with supporting documents and maps. Also, when forest inventories are conducted, either contracted or in-house, insect and disease damage is noted.

2.4.10 Flora and Vegetative Communities

Surveys have confirmed the occurrence of 512 plant species at FCJMTC. The complete species list is located in Appendix W.

Early Surveys. The earliest plant collections from the Fort Smith-Fort Chaffee area were in 1819 (Nuttall 1980). A study was performed in the Massard Creek Prairie, which extends into the western portion of the installation, in 1939 and 1940, which provided a plant species list (Armstrong and Moore 1957). Other studies applicable to FCJMTC include Barber (1979), Dale and Watts (1980), Moore (1965) and Ruby (1953).

Floral Inventory of Fort Chaffee, Arkansas dated 1990. This information was used extensively as the baseline for the RTLA program. The Johnson et al. (1990) survey identified and collected 662 species in 377 genera and 110 families. Seven taxa not recorded by Johnson et al. (1990) were observed by Caldwell et al. (1993): lanceleaf coreopsis (*Coreopsis lanceolata*), mistflower (*Eupatorium coelestinum*), smooth hydrangea (*Hydrangea arborescens*), chinkapin oak (*Quercus muehlenbergii*), moth mullein (*Verbascum blattaria*), Viola palmata var. palmata and three-lobe violet (*Viola palmata var. triloba*). The following tasks were accomplished in that review (Johnson et al. 1990):

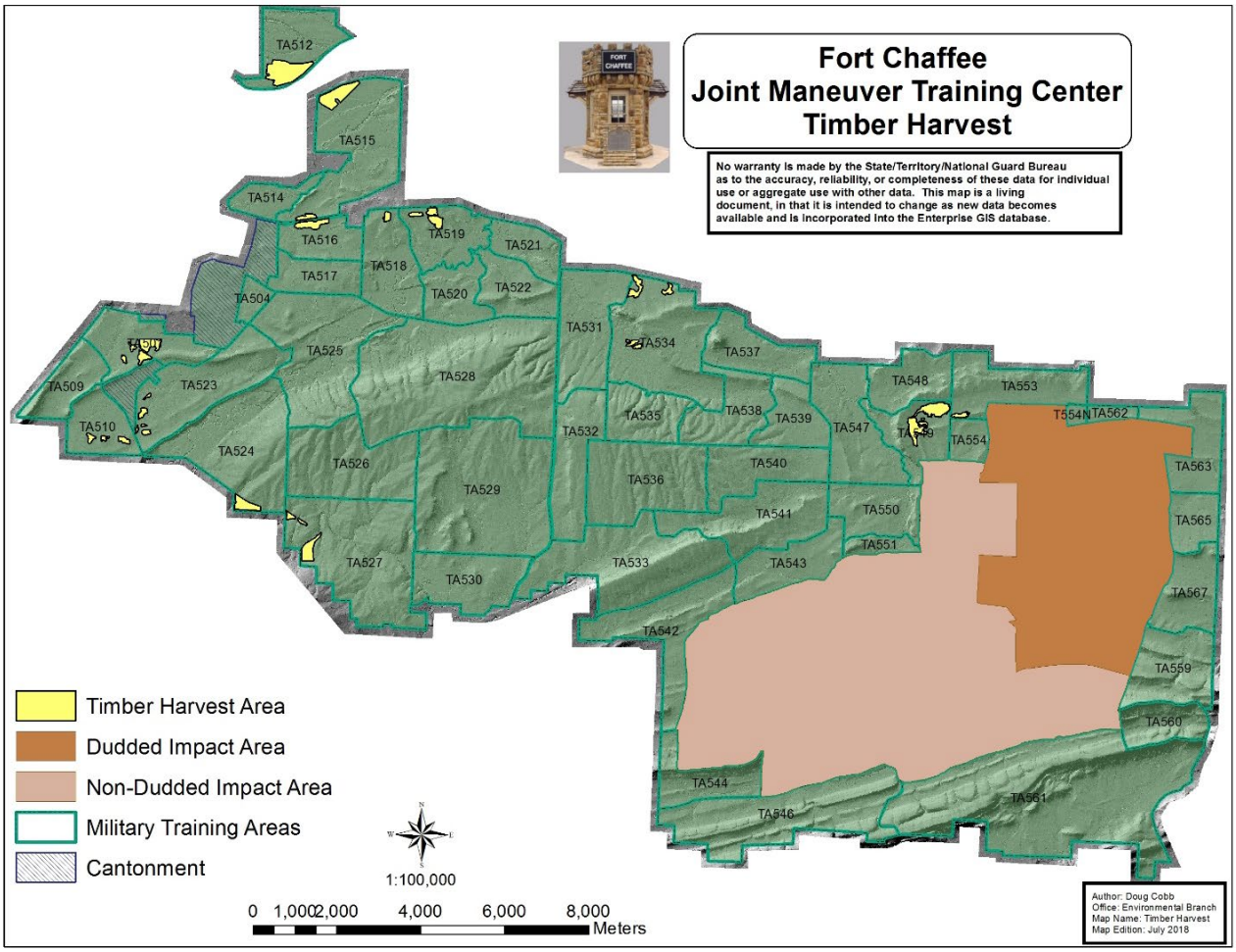
- A background review of the history of vegetation cover was conducted, including a comprehensive literature review and a study of photographic evidence.
- A field survey, consisting of periodic visits to 24 sampling sites for systematic and intensive collection of plant specimens, was conducted in the fall 1988 and in spring and summer 1989.
- Plant specimens collected were identified and location referenced by UTM coordinates, rock type, topography, soil type, major associated plant species, date collected and collectors.
- Plant species were verified with a voucher specimen, which is permanently deposited in the Bebb Herbarium at the University of Oklahoma.
- Two specimens of each plant species were laminated in plastic on herbarium paper; labeled; arranged alphabetically by family, genus and species and delivered to the U.S. Army CERL.
- A checklist of plants at FCJMTC was prepared and delivered to the U.S. Army CERL. The checklist includes scientific name, synonym(s), common name(s), species code, status/habit, habitat and abundance/importance for each plant species found.
- A description was provided for each major habitat type encountered in the study.

Trees, Shrubs and Vines dated 1991. Sturdy et al. (1991) included a list of common trees, shrubs and vines occurring at FCJMTC. Johnson et al. (1990) conducted a systematic, intensive survey at FCJMTC to identify and collect plant specimens during 1988 and 1989.

UTM coordinates referenced plant specimens to place of collection and other pertinent data, such as topography, soil type, etc., were recorded. A herbarium collection was prepared including all specimens collected and a checklist of FCJMTC floral species was prepared. Trees, shrubs and vines commonly occurring at FCJMTC include shortleaf pine (*Pinus echinata*), eastern redcedar (*Juniperus virginiana*), red maple (*Acer rubrum*), white ash (*Fraxinus americana*), southern red oak (*Quercus falcata*), blackjack oak (*Q. marilandica*), post oak (*Q. stellata*), pignut hickory (*Carya glabra*), mockernut hickory (*C. tomentosa*), flowering dogwood (*Cornus florida*), Hawthorn (*Crateagus* spp.), fragrant sumac (*Rhus aromatica*), blackberry (*Rubus* spp.) and greenbrier (*Smilax* spp.).

Timber Harvests from 2003-2018. A selective improvement harvest of eastern red cedar was conducted in training areas 524 and 527 in 2003. A selective improvement harvest of eastern cottonwood was conducted in training areas 512 and 515 in 2004. Pine plantations were thinned in training areas 501, 510, 515, 516, 518, 519, 523, 534, 549 and 553 in 2012. Timber harvests are shown in Figure 2.13.

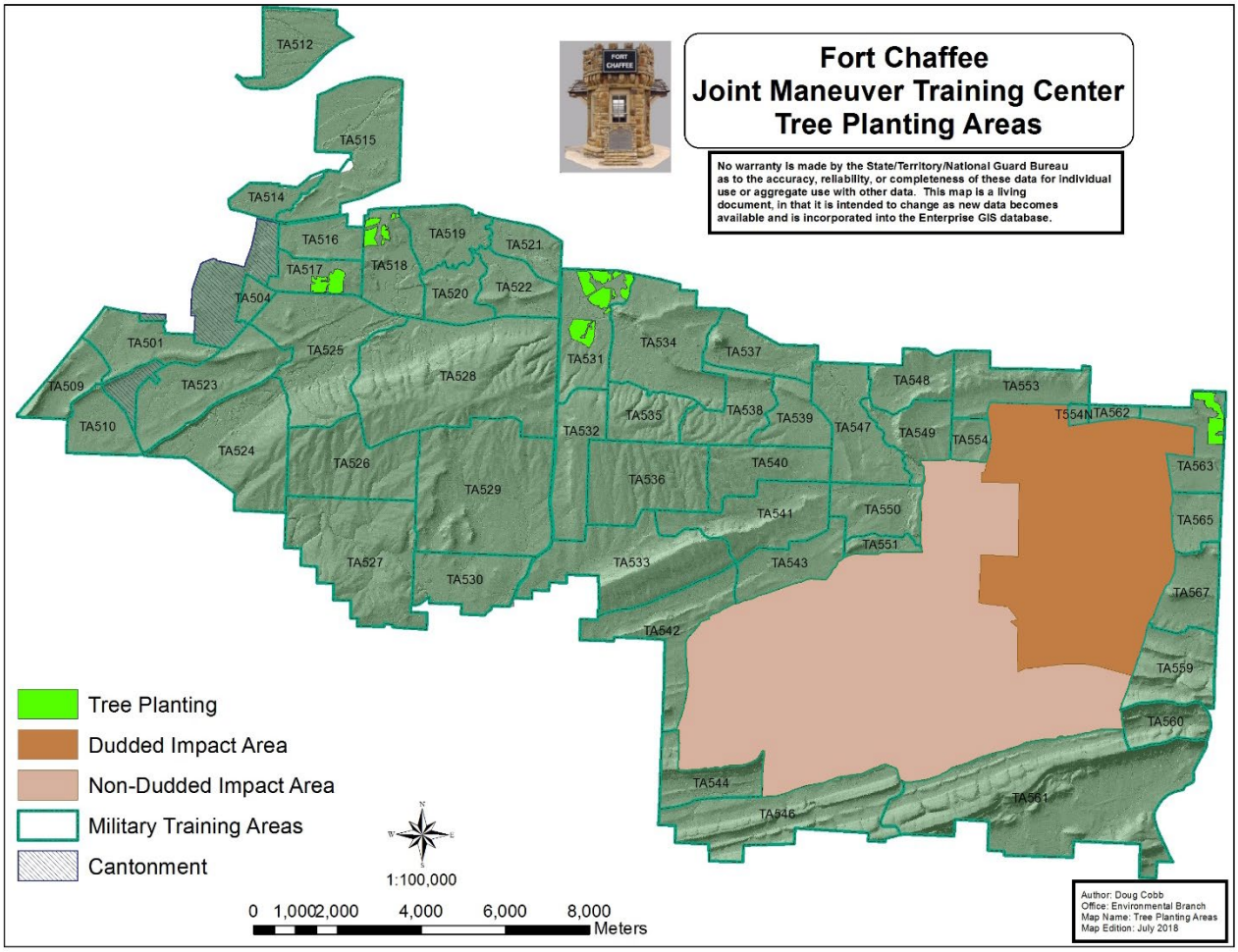
Figure 2.13 Timber Harvests Map



Forestry Inventory dated 2004. FCJMTC completed a forestry inventory of public use compartments 2, 3, 4, 4A and half of 6B in 1998. In 2004, public use compartments 7 and half of 7A were inventoried. Results of this inventory are in the Environmental Branch files. The checklist of plants known to occur at FCJMTC is presented in Appendix W.

Pine Plantations (<15 years old). There are currently 487 acres of young pine plantations. Tree planting areas are shown in Figure 2.14.

Figure 2.14 Young Pine Plantations (<15 years old) Map



Vegetative Communities Map and Vegetation Classification System dated May 2004. Conservation Management Institute (Emrick 2004) developed a vegetative communities map FCJMTC vegetative maps are based on floral and faunal surveys. New data from geomorphological analysis and the IWFMP contain information for an update of this map. Updated vegetation communities mapping should be consistent with the Federal Geographic Data Committee's (FDGC) Vegetation Classification Standard and updated every five years. There is no legal requirement for maintaining an updated vegetation map at FCJMTC. Thus, the option to not update or improve this spatial database is viable. Considering that FCJMTC is using or experimenting with state-of-the-art technology and planning five-year updates, it is difficult to justify more detailed or frequent vegetation mapping updates.

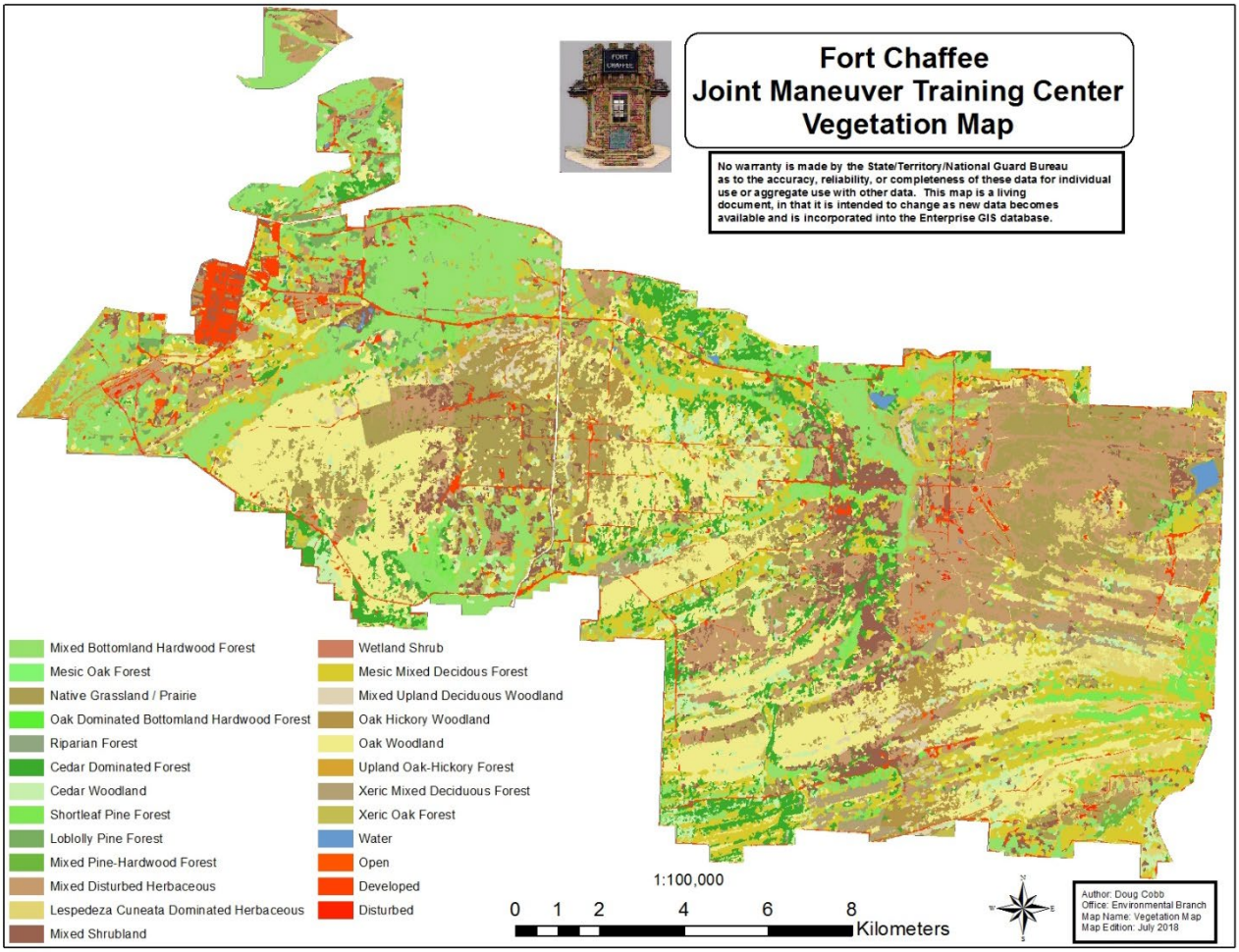
Vegetation Community Classification Study for the ABB dated September 23, 2015. FTN (2015) determined, based on vegetation sampling observations and geospatial analysis, a total of 26 distinct community types (Table 2.9 and Figure 2.15). In addition to vegetation communities, approximately 2,172 acres were developed, approximately 139 acres disturbed/open and approximately 110 acres supported open water resources.

Table 2.9. Summary of Vegetation Community Acreages

Community Type	Approximate Acreage
Native grassland/mixed native prairie	6,614
Lespdeza cuneata-dominated herbaceous	2,414
Mixed disturbed herbaceous	7,973
Wetland herbaceous	<50*
Wet meadow/wet prairie	<50*
Wetland shrubland	33
Mixed shrubland	3,475
Cedar dominated shrubland	NA
Loblolly pine woodland	<25*
Shortleaf pine woodland	<25*
Cedar woodland	2,080
Oak woodland	12,477
Oak-hickory woodland	1,533
Mixed upland deciduous woodland	874
Oak dominated bottomland hardwood forest	4
Mixed bottomland hardwood forest	9,014
Riparian forest	91
Shortleaf pine forest	1,576
Loblolly pine forest	699
Cedar dominated forest	3,379
Mixed pine-hardwood forest	83
Mesic mixed deciduous forest	7,583
Xeric mixed deciduous forest	893
Upland oak-hickory forest	300
Mesic oak forest	53
Xeric oak forest	1,581

*Estimated

Figure 2.15 Vegetation Map



National Vegetation Classification System CEMML Vegetative Survey 2016-2018. Colorado State University's Center for Environmental Management of Military Lands recently completed National Vegetation Classification System alliance level vegetation data sets for numerous ARNG sites. These efforts were extended to FCJMTC from 2016-2018. The draft report is scheduled to be available for review September 2018.

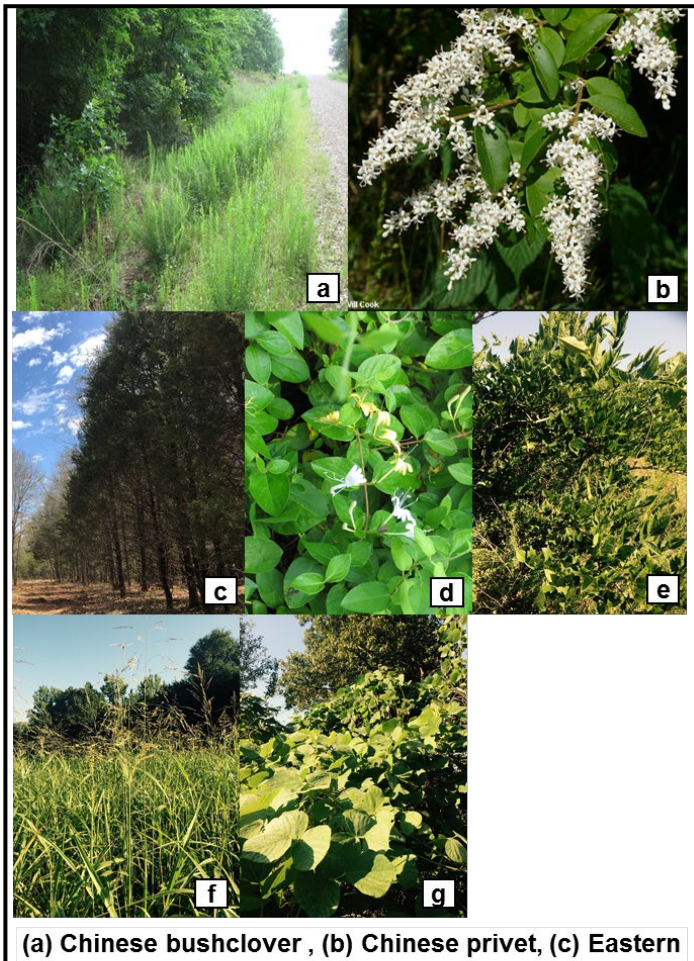
2.4.10.1 Invasive Plants and Noxious Weeds

Several invasive plants and noxious weeds occur throughout FCJMTC, especially within disturbed areas such as roadsides, compacted areas and openings. They invade portions of native grasslands, although it may not occur as dominant vegetation within all the areas they invades. Although not an all-inclusive list, a few of these species that occur at FCJMTC include:

- Chinese bushclover (*Lespedeza cuneate*)
- Chinese privet (*Ligustrum sinense*)
- eastern red cedar (*Juniperus virginiana*)

- Japanese honeysuckle (*Lonicera japonica*)
- Japanese wisteria (*Wisteria floribunda*)
- Johnsongrass (*Sorghum halepense*)
- kudzu (*Pueraria thunbergiana*)

Chinese bushclover (also known as sericea lespedeza) is so common at FCJMTC that a distinct community (*Lespedeza cuneata* dominated herbaceous) was identified. This species tolerates fire and therefore, it is fairly hard to eradicate. Planted originally for wildlife food/cover and erosion control, this species rapidly invades suitable areas and forms a monoculture in ideal conditions. A total of over 2,400 acres were identified as Chinese bushclover dominated herbaceous communities.



(a) Chinese bushclover , (b) Chinese privet, (c) Eastern red cedar, (d) Japanese honeysuckle, (e) Japanese wisteria, (f) Johnsongrass and (g) Kudzu.

Chinese privet was also observed to be very common and widespread at FCJMTC. Unlike Chinese bushclover, however, this community was not identified or mapped as a distinct community because it was typically seen as a dominant member of either the shrub or herbaceous strata in suitable communities and not identified as a monoculture, such as Chinese bushclover. It was observed to be common and often the dominant shrub in a portion of the riparian communities, a portion of mesic deciduous forest communities with a slightly open canopy, and in some shrubland communities. It was rare in well-drained upland sites, although it occurred in virtually all communities to some degree. A figure illustrating this species' occurrence is not provided; however, it can be expected as a common species in many of those communities listed earlier. This species provides some amount of bird nesting habitat and general wildlife cover/food, however, it crowds/replaces native shrubs and vines. Routine burning can help control this species; however, at FCJMTC it occurs most commonly in areas that rarely receive controlled burns and therefore would probably require mechanical or chemical removal.

Eastern red cedar commonly occurs throughout FCJMTC. This native species may have the potential to become invasive if proper control methods (i.e., chemical and mechanical treatments and periodic prescribed burning) are not implemented. Encroachment of eastern red cedar has the potential to degrade native prairie habitat with insufficient fire frequency. A

study in Nebraska showed that eastern red cedar dominated areas can reduce numbers of most silphid species, likely by limiting their ability to forage for carrion, a required resource for feeding and reproduction (Walker and Hoback 2007).

Japanese honeysuckle has been historically and will probably continue to be a serious issue as an invasive plant at FCJMTC and throughout the general area. Similar to Chinese privet, it occurs throughout FCJMTC. Different from Chinese privet, however, Japanese honeysuckle was recognized as a distinct community. It occurred as a dominant vine or herbaceous plant in shrub communities, some of the woodland communities (especially mixed woodlands) and several forested communities (especially bottomland hardwood, loblolly pine forests and mesic forests).This species often chokes out native vegetation and was occasionally observed as the dominant plant within shrubland communities (and often the dominant vine in mesic and pine forests). This species can be controlled by some degree by use of controlled burns (and other means). However, it often occurs in areas protected from intense fire and will eventually spread into suitable habitat again if left unchecked.

Japanese wisteria is a perennial vine that may live for over 50 years. Vegetative reproduction is the primary means of expansion; numerous stolons develop new roots and shoots at short intervals. Wisteria can also produce abundant seeds if conditions are favorable, but flower buds produced in the fall are susceptible to winter kill. In riparian habitats, seeds may be dispersed downstream in water for great distances.

Johnsongrass is a warm-season grass that forms large colonies from stout, finger-sized, much-branched rhizomes. A medium-sized plant can produce up to 60 feet of rhizomes in a single year. The poisonous constituent of Johnsongrass is cyanide, a most lethal toxin that can kill a fully grown cow in an hour if enough forage is consumed. Johnsongrass tends to produce cyanide whenever it is stressed as by drought, insect infestation or frost.

Kudzu is a climbing, coiling and trailing perennial vine that is native to much of eastern Asia, Southeast Asia and some Pacific islands. The plant climbs over trees or shrubs and grows so rapidly that it kills them by heavy shading.

3 NATURAL AND CULTURAL RESOURCES MANAGEMENT AND MISSION SUSTAINABILITY

3.1 Military Mission

The FCJMTC mission is to provide personnel, equipment, training, logistical and administrative support to enhance the combat readiness of using organizations and, on order, to conduct operations in support of federal and state declared emergencies. FCJMTC is one of the largest ARNG training centers facilitating Brigade size training exercises for approximately 6,000 Soldiers at a time. FCJMTC trains multiple branches of the DOD, including ARNG, Air National Guard, active Army, Army Reserve, Special Operations Command (SOCOM) and Navy/Marines. Specific FCJMTC mission requirements include:

- Provide a Joint Maneuver Training Center for National Guard and Reserve Forces including the USARs, U.S. Air Force Reserves, U.S. Marine Corps Reserves, U.S. Navy Reserves and the Reserve Officers Training Corps.
- Provide a Maneuver Training Center, when possible, for Active Component Forces including U.S. Army, U.S. Air Force, U.S. Marine Corps and U.S. Navy.
- Provide assistance for logistical support to units conducting inactive duty for training and annual training periods.
- Provide small arms and crew-served weapons qualification ranges and facilities.
- Provide ranges for field artillery, the MLRS and mortar firing.
- Provide aerial ranges for rotary and fixed winged aircraft.
- Provide maneuver areas suitable for training infantry, ordnance, engineer, field artillery, armor, medical, aviation or transportation conducting mounted or dismounted exercises.
- Provide or coordinate organizational and direct support maintenance facilities for units conducting training at FCJMTC.
- Provide training areas and facilities to local law enforcement agencies, civil defense organizations, Reserve Officers Training Corps departments, public education institutions and other civilian activities, as long as no interference occurs with existing military training activities.
- Remain operational 50 weekends per year, with the majority of annual training activities occurring from April through August.

FCJMTC supports units such as light infantry brigades including mechanized and engineer battalions; wheeled and air units; foreign units, such as Canadian wheeled and mechanized units; and regional and local agencies, such as the National Park Service and state and local law enforcement agencies. FCJMTC can accommodate up to 5,000 troops training at any one time. U.S. Department of Energy, Training and Logistics Command Section make regular use of ranges, roads and access trails, utilizing more than 5,500 training days each year. FCJMTC's river crossing sites on the Arkansas River offer the only large, swift water crossing sites in the Continental U.S. where the Army owns both sides of the river.

3.2 Vision

Per the Executive Level Master Plan, the commander's vision statement for FCJMTC dated March 3, 2017 is, "FCJMTC serves as a Regional National Guard Training Site providing a safe, user friendly environment to conduct realistic and integrated training focused on improving individual Soldier proficiencies and building combat ready teams through collective training up to the Brigade Level. FCJMTC also serves as host to various tenant activities in support of the Arkansas National Guard and other service components. The components are:

- Army/Air National Guard/Reserve Inactive Duty Training
- Army/Air National Guard/Reserve Annual Training
- Pre-Deployment Training
- Training Areas, Ranges and Facilities
- Force Protection Training and Facilities
- Federal/State Disaster Shelter

3.3 Military Operations and Activities

3.3.1 Current and/or Potential Military Impacts on the Environment

3.3.1.1 Maneuvering

Maneuver has perhaps the greatest potential to affect land condition at FCJMTC. Tactical maneuvers reduce vegetative ground cover and may increase bare ground area. As a result, the potential for soil erosion increases due to the loss of vegetation and to soil compaction. Erosion can eventually affect water quality through accelerated sedimentation and alteration of the soil horizons, making subsurface minerals and elements available. Dismounted training seldom affects large acreages, but it can have long-term impacts on regularly used trails. Mounted training is difficult to quantify in terms of its effects on the land. General types of vehicles (tracked or wheeled), vehicle weight and its distribution on the land (i.e., tracked vehicles better distribute weight) and conditions under which a vehicle operates (i.e., wet weather increases the potential for damage) are important. Mounted maneuver can produce objectionable noise, particularly when heavy vehicles move close to boundaries at night. Both mounted and dismounted maneuver have potential to impact soils, vegetation, wildlife and cultural resources through ground disturbance. Mounted maneuver operations have the potential to create pollution from spills of petroleum, oils or lubricants (POL). Normal vegetation monitoring by ITAM's RTLP program, in conjunction with wildlife surveys, cultural resources and soils, provide the data needed to plan for the reseeding work, erosion control projects, etc. needed to maintain FCJMTC in a usable condition for military training through the foreseeable future.

3.3.1.2 Use of Firing Ranges

Live fire can use ammunition having projectiles that are not explosive (e.g. most rifle/pistol, machine gun, inert tank and inert artillery rounds) in which case the impact portion of the

range is not “dudded” with unexploded munitions. These impact areas can be used for other purposes when not in use for firing. Other weapons use ammunition having projectiles that are explosive and can create a “dud” (unexploded round). Access is restricted in these impact area unless they are cleared of unexploded munitions. Most long-range weapon systems (i.e., artillery, tanks and MLRS) use the same impact area for explosive and inert rounds. Thus, these areas are generally not available for maneuver training or other uses.

FCJMTC has ranges and impact areas sufficient to allow firing of almost all weapons in the Army inventory, to include many types of explosive projectiles. Surface danger zones and impact areas (large caliber, small caliber and airburst weapons) occupy a considerable amount of land at FCJMTC. Thus, they reduce options to conduct other types of training. Also, to minimize space used and for safety reasons, live firing must be conducted from relatively close to boundaries, which increases off-post noise impacts. Types of munitions (e.g. high explosive duds virtually exclude other uses) also affect training options within impact areas and within the surface danger zones. Range locations and configurations can also reduce options for training. Range size, location and configuration are often determined by training requirements and safety factors with few options with regard to siting. For example, the Live-Fire Maneuver Range at FCJMTC affects maneuver training opportunities in a large portion of the installation when the range is operational.

Live firing certain munitions (i.e., incendiary, high explosive and tracer rounds) requires careful range management, since they can cause wildland fires with the potential to extend beyond the impact areas. Construction and upgrades of ranges often involves temporary soil disturbance, thus potentially impacting wildlife and vegetation. Ground disturbance and direct destruction from ordnance impact can also impact wildlife resources.

3.3.1.3 Use of Smoke

Many military operations involve using a cloud of smoke that is artificially generated in order to obscure the enemy’s ability to observe friendly activities. Fog oil operations have the potential to create pollution from spills of fog oil or POLs used by vehicles in the operations. Procedures in support of air quality regulations must be followed to avoid smoke drifting off the installation.

3.3.1.4 Bivouac

Bivouac sites can create damage, particularly if the activity is repeated in the same area, or the unit remains in the same bivouac area for an extended period of time. Often, the first steps in land degradation from bivouac activities are soil compaction and the loss of ground cover, which can be followed by localized erosion and possibly increases in down-watershed stream sedimentation. Ground disturbance associated with bivouac can also impact wildlife resources. During the summer months, a suitable alternative to creating new bivouac sites would be to utilize existing food plots maintained annually by the AGFC. These sites are already open and comprised of grass and herbaceous vegetation and would only require brush hogging.

3.3.1.5 Engineer Operations

Engineer activities (i.e., digging fighting positions or tank ditches, obstacle removal, construction of forward operating bases (FOBs)) disturb soil, which can affect various natural resources. Demolition can cause noise and dust. Engineer operations have the potential for pollution from spills of POLs. Other combat engineer activities can be beneficial to natural resources. Combat engineers projects (i.e., training land rehabilitation, erosion control structure construction, site hardening) also can protect the environment from damage in the future. Digging is prohibited in areas where known cultural resources may be disturbed.

3.3.1.6 Aviation

Environmental impacts of aviation activities at FCJMTC, which consist mainly of helicopter flights, include aircraft noise, minor disturbance to landing and drop zones, potential dust issues at some LZs, possible disturbance to nesting birds, and training activities of troops following air arrival. Some aviation operations have the potential to create pollution from spills of POLs. Live fire from helicopters can cause wildfires and wildlife risks. Compared to impacts of heavy units, however, the impacts of aviation operations are very light. Dust issues at LZs can be reduced by using USFWS approved compounds such as magnesium chloride, or various types of soil binding agents. Vegetation damage is usually minimal, since aviation support vehicles mostly travel on existing roads and two-tracks. SOPs require containment berms, etc. at forward area refueling setups, so the risk of water pollution from a spill is very low.

3.3.1.7 Construction

Impacts to the environment from construction depend largely on the location of the construction. In the Cantonment Area, construction generally occurs on previously disturbed soil and in areas in which wildlife have either already departed or accommodated to human activity. There is generally the possibility of temporary dust and runoff during construction periods, and new construction may contribute to storm water runoff. Construction in training areas generally involves a change in the land use and has the potential for greater impacts on wildlife. Erosion may also result temporarily. In both areas, there is a temporary increase in noise during the construction period.

3.3.2 Natural Resources Management Impacts on the Military Mission

The presence of unexploded ordnance in the Impact area restricts or precludes occupation and maneuvers and is closed to public use due to the sensitive nature of the mission. Consequently, FCJMTC has had the effect of preserving resources throughout much of the undeveloped area. On the other hand, the management of natural resources has not had an adverse effect on mission activities. Given guidelines in this INRMP, and since no major expansion of facilities is anticipated outside the current developed areas, impacts to mission are likely to be minimal. However, the exception could be areas within 5 miles of the bat hibernacula. Within such areas, future development requiring cutting of trees could be restricted. In addition, some types of resource management, such as prescribed burning, may

be restricted in certain areas given safety concerns due to current and prior mission activities.

3.3.3 Future and/or Potential Military Impacts on the Environment

FCJMTC has experienced increases in most types of training operations in the past several years. The mission will continue to evolve and increase in scope to meet increasingly complex, worldwide commitments of U.S. military forces. Training areas that are already heavily scheduled or are difficult to access will likely experience only light increases in use. Some training areas could experience significant increases in use depending on training needs and the areas' abilities to accommodate and sustain various training activities. The closing of other training ranges in the U.S. base realignment and closure (BRAC) has resulted in consolidation of training at remaining installations, which could increase the demand for use of FCJMTC. Increases in intensity will affect natural resources and its management challenges.

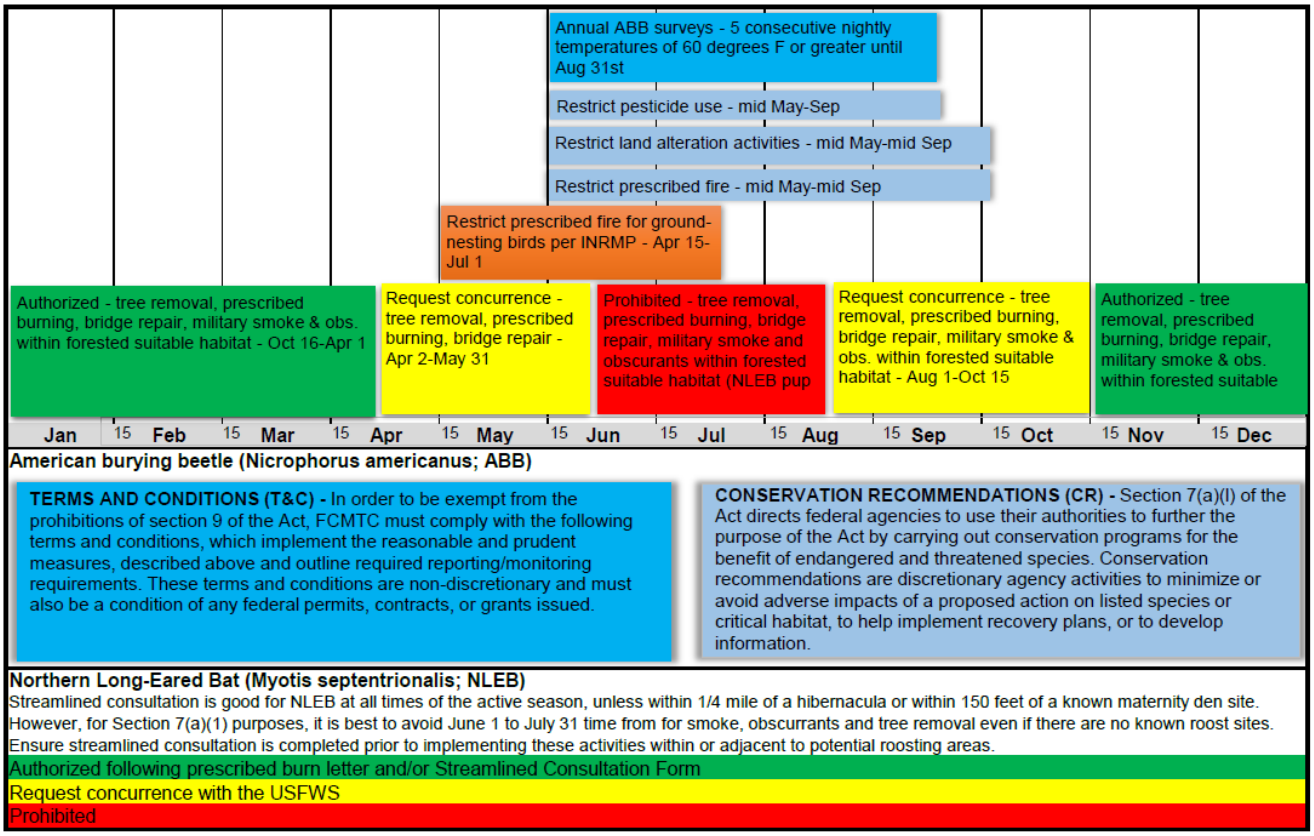
There are no anticipated significant unit changes for the permanent party at FCJMTC. However, inherent to the installation's mission, visiting training units will continue to come from military installations throughout the Armed Forces. In recent years Reserve Component units have played an increasingly important role in America's military strategy. Thus, Reserve Component units are using FCJMTC lands on a more intensive basis than in former years.

FCJMTC will make changes to training exercise scenarios to better prepare soldiers for changing world conditions and threats. Such changes in training scenarios can change impacts of training on the environment, thus appropriate NEPA activities will be conducted.

3.3.4 Training Constraints

There are some restrictions to training as a result of natural resource issues such as limitations on the use of wetlands (i.e., dismounted training only and driving vehicles only on established roads and trails). There are also some naturally-occurring restrictions to training that are related to safety as well such as steep slopes that could erode if used repeatedly by vehicles. However, such steep slopes would be avoided anyway because of danger of rollover. The location of the Geocarpon site makes it an unlikely target of habitat disturbance, however, any habitat disturbance and herbicide application in area(s) occupied by Geocarpon is restricted unless permitted by the USFWS. Temporary restrictions may occur because of nesting bald eagles or during the NLEB pup season (June 1 – July 31). Figure 3.1 shows a planning timeline for the ABB and the NLEB. Other temporary constraints to training may be enacted if there is significant habitat degradation in training lands, in which the natural resources may need time to recover. Other issues, such as conflicts between recreationists and military training, are resolved through coordination between responsible organizations within and outside of the installation. Use of pyrotechnics and tracers may be restricted based on the current fire danger rating system established by the Fire Department. Any decisions that restricted or alter military training will ultimately be made by the TSM.

Figure 3.1 Planning Timeline for the ABB and the NLEB



To meet requirements of Section 7(a)(2) of the ESA, federal agencies are required to consult with the USFWS to ensure actions they take, fund or authorize will not jeopardize the continued existence of listed species or adversely modify critical habitat. The NLEB streamlined consultation form allows agencies to consult with the USFWS (Section 7(a)(2)) in an efficient manner for those projects that may cause incidental take of NLEB, but that take is exempted from the prohibitions of Section 9 of the ESA under the final 4(d) rule for the species. The 4(d) exemption does not apply to projects within 1/2 mi of a hibernacula or 150 feet of a known maternity roost site. Additional conservation measures may rise to the level of Section 7(a)(1) which directs federal agencies to use their authorities to conserve listed species. Figure 3.1 does not contradict these requirements and is not a comprehensive consultation plan, but reflects an overview directed to managers and others who will be planning and implementing projects.

FCJMTC command and staff are determined to complete the military training mission successfully, and an integral part of that mission is good environmental stewardship. However, there are restrictions on military activities at FCJMTC due to the installation's legally-mandated commitment to protect and promote the recovery of the ABB. At FCJMTC, adverse effects from environmental contaminants include accidental spilling of chemicals or petroleum products and unauthorized pesticide/herbicide usage. However, these threats are minimized by educating military units training at FCJMTC through the Environmental Briefing, which discusses pesticide restrictions, spill remediation and ABB conservation. At FCJMTC,

the IPMP follows the USFWS approved pesticide use list to minimize effects to the ABB. No other pesticides are permitted for use at FCJMTC without prior authorization from the USFWS. In addition, military units are only authorized to use personal insect repellents and self-help pest control items while at FCJMTC. The Environmental Branch will dispense self-help items as requested.

Use of pesticides that target beetles or their carrion resources can cause direct and indirect adverse effects to the ABB population. At FCJMTC, use of pesticides has been restricted to chemicals that are not believed to be toxic to the ABB. All rodenticides and avicides are prohibited to prevent a decline in possible carrion resources and to prevent the ABB from being subjected to possible infected carrion. Furthermore, the use of electric insect killers at FCJMTC is prohibited.

Some activities that occur at FCJMTC may result in adverse effects to ABB and its habitat. The adverse effects of each activity can result in long-term or short-term disturbances. Short-term disturbances may develop into long-term disturbances, without the initiation of appropriate management actions. Long-term disturbances are defined as those that result in the loss of biological resources or disturbances that cannot be returned the natural state (topography, topsoil and vegetative composition) within three years. Short-term disturbances are defined as those that can be returned to the natural state within three years, either by natural revegetation or by additional management practices (i.e., ITAM program, prescribed burn program, etc.). Rehabilitation of long-term and short-term disturbances must be completed within three years post disturbance. The Environmental Branch will be responsible for determining the success of the rehabilitation effort. Long-term disturbances and short-term disturbances that fail to meet the three year requirements will require a compensational habitat restoration area to be established (Section 4.2.1, Conservation Plan for the ABB, Strategy 3, Action 3.2 to 3.6).

General natural resources-related restrictions imposed on the military mission include limiting the use of live vegetation for camouflage, limiting vehicle movements to times when such movements do not create excessive environmental damage (i.e., during wet conditions), requiring ruts to be filled by the causing unit and requiring a digging permit for ground disturbance activities. Natural resources also impose natural restrictions on military activities. Topography, terrain, soils, vegetation, etc. affect maneuverability, particularly in effective tactical configurations.

3.3.5 Training Opportunities

Soldiers need to train in the kind of environment that they can expect to see in combat. In order to do that, the training environment must be maintained in as natural condition as possible. There are positive effects of natural resources management on the military mission. Active military areas and less disturbed areas show that military ground disturbance most likely has minimal effect on the ABB population at FCJMTC. As a result, military training activities do not require compensational actions. In addition to military training activities there are additional activities at FCJMTC that do not require compensational actions (Table 3.2) (FCJMTC 2010). Military training activities in the vicinity of the bald eagle nest occur in July,

therefore these activities are unaffected. As a result, FCJMTC is able to meet both its mission and conservation/stewardship requirements. Forest management programs, such as commercial timber production and forest propagation and other management programs, such as erosion control and wildlife food plots, provide a greater degree of diversity to the training environment. Wildlife management activities, such as prescribed burning, roller chopping, forestry mulching, fish stocking and the hunting program provide diversified resources and recreational opportunities and an aesthetic environment for personnel training on, or otherwise using, the installation.

Figure 3.2 Common activities at FCJMTC that do not require compensational actions

Activities under 0.8 hectares (2 acres)
Short-term disturbance
Construction and maintenance activities
Cantonment Area (as defined in 2009) construction and maintenance
Runway maintenance
Firebreak maintenance
Utility right-of-way maintenance
Range maintenance
Existing road maintenance
Military training activities
Live fire
Firing point
Surface to surface munitions
Air to surface munitions
Explosives/Demolitions
Helicopter gunnery
Off-road use of wheeled/tracked tactical vehicles
Troop movements
Short-term TTB
Field training exercises
Shale/Clay pit excavation
Natural gas resource development
Gas well road access maintenance
Gas pipeline maintenance
Wildlife food plots
Forestry and agricultural activities
Pine plantation establishment
Pine plantation maintenance
Prescribed burning
Hay lease rehabilitation
Mowing (maintain maximum height on the mower)
Arrowhead DZ
Hopi DZ
Ranges
Rattlesnake DZ
Razorback Range (Range 87)

Shawnee DZ Military training safety **Prescribed fire** **USFWS approved pesticide usage** **USFWS approved data collection** ABB annual monitoring surveys Floral and faunal baseline surveys

3.4 Cultural Resources

In order to "…provide a comprehensive historic preservation program to achieve the federally mandated objective of effective management and protection of historic properties on lands under the jurisdiction of the U.S. Army…" a statewide ICRMP was first completed in 2001 (Parsons 2001). To meet this objective, the ICRMP enables the integration of historic preservation activities and the INRMP, the Master Plan, military construction plans, troop training and range operation plans and historic property rehabilitation or demolition plans.

3.4.1 Cultural Resources Inventory

Cultural resources management began before the ARARNG assumed responsibility for FCJMTC. Since 1986, six pedestrian surveys have inventoried sites on about 46,640 acres at FCJMTC, or about 65% of the installation (Imhoff et al. 1997). Fieldwork for Phase I of the FCJMTC Archeological Survey was completed in 1990. The entire installation was surveyed at that time, except the Impact Area, public use compartments 2 and 3 north of AR 22 and the Cantonment Area. In 1991, the following actions were completed:

- A Programmatic MOA between FCJMTC and the State Historic Preservation Office (SHPO) was instituted
- A Historic Preservation Plan was prepared
- A historic building survey was performed

In subsequent years, a background study of World War II structures, 25% of the Cantonment Area and all passable roads outside the Cantonment Area were surveyed for native stone architecture.

Actions resulting from the 1993 programmatic agreement are listed below (taken from Imhoff et al. 1997):

- A total of 918 archeological sites have been recorded.
- The National Register of Historic Places (NRHP) eligibility of 149 sites has been assessed through test excavations.
- 50 sites have been determined eligible for inclusion in the NRHP.
- Two sites (3SB578/486 - Indian Cemetery and 3SB596 - The Osborn-McConnell or Cumbie Pottery) have been nominated to the NRHP.
- Mitigative action, in the form of a protective fence, has been taken at 3SB960 (the

Auburn Townsite).

- A monitoring program has been instituted for sites determined eligible for inclusion in the NRHP.
- World War II buildings identified as Category I (unique or best preserved examples) include buildings 540 (Bakery), 671 (Morgue), 1318 (Field House) and 1783 (Officers Quarters).
- World War II buildings identified as Category II (warranting preservation) include buildings 1384 (Officer's Mess with original painted mural), 5199 (the former Maness School) and the McClure Amphitheater.
- A total of 591 stone structures were recorded within the Cantonment Area, and it is estimated that 2,364 exist.
- A total of 398 native stone structures have been recorded along roads outside the Cantonment Area.
- Six native stone structures are identified in the ICRMP for management and protection.

3.4.2 Native American Consultation and Coordination

Various laws and regulations require FCJMTC to consult with Native Americans regarding ARNG activities on sites within the installation. The NHPA requires that federal agencies consult with the Advisory Council on Historic Preservation regarding any proposed action that has the potential to affect a property on, or eligible for, the NRHP. This includes consultation and coordination with the SHPO and interested parties, including, but not limited to, Native Americans.

The Archaeological Resources Protection Act requires that archaeological resources on public and Indian lands be protected. This includes notifying Indian tribes in advance of possible harm to sites with religious or cultural importance.

The Native American Graves Protection and Repatriation Act (NAGPRA) protects the ownership and control of Native American human remains and related cultural items excavated or discovered on federal lands. If human remains are discovered during projects, work must stop and a reasonable effort must be made to protect the discovery. Appropriate Native American groups must be notified, and requirements of Section 106 of NHPA and NAGPRA must be followed, for excavation and disposition of the remains. NAGPRA also requires a 30-day delay period after the discovery of human remains before project work in the area of the discovery can resume. Work may resume earlier if consultation and agreement occur.

The American Indian Religious Freedom Act covers the protection of intangible, ceremonial or traditional values and concerns not tied to specific cultural properties. FCJMTC must establish contact with interested Native American groups during the regular course of the NHPA Section 106 process.

Executive Order 13007 (Indian Sacred Sites) stipulates that if a federally-recognized tribe, or representative of an Indian religion, identifies a sacred site at FCJMTC, TAG must enter into

consultation with that group or individual to provide access to, and ceremonial use of, the site and avoid adversely affecting the physical integrity of such sites.

Native Americans shall have access to DOD sites and resources that are of religious importance or are important to the continuance of their cultures (i.e., areas containing traditionally used plants and traditionally used hunting areas), consistent with the military mission, appropriate laws (42 U.S.C. 1996, reference (d)) and regulations and subject to the same safety, security and resource considerations as the general public.

3.4.3 Natural Resources Management Implications

The State Military Department Archeologist will continue to conduct field surveys, as recommended by the State Archaeological Information Center, to identify historical resources within areas of potential effect. An ICRMP will be updated to properly manage historic and cultural resources at FCJMTC and comply with federal regulations. These actions may affect natural resources management on the installation.

Natural resources management activities will be conducted in a way that ensures cultural resources protection (i.e., marking sites using a 50 meter buffer with flagging prior to ground disturbing activities, using siber stakes to mark protected areas and requiring dig permits for projects that disturb soil six inches or more in the Cantonment Area and 12 inches or more in the training areas.

3.5 National Environmental Policy Act (NEPA) Implementation

The purpose of NEPA review is to ensure that potential environmental consequences of proposed actions are considered before decisions to proceed with those actions are made, and that those decisions include, to the extent practical, measures to avoid, minimize or mitigate adverse environmental impacts.

NEPA requires FCJMTC to consider all foreseeable environmental impacts before acting. Under AR 200-2 (32 CFR, Part 651) FCJMTC must integrate NEPA early in the decision-making process to identify possible adverse environmental impacts and to avoid or minimize their consequences.

3.5.1 Responsibility

DPW, specifically the Environmental Branch, is responsible for ensuring that the appropriate level of NEPA analysis, including public involvement when appropriate, and subsequent documentation is completed before decisions are made to execute all applicable FCJMTC actions (i.e., significant changes in military training, construction projects and real property actions).

Project proponents may conduct their own NEPA analysis, however the Environmental Branch oversight and approval would be required to ensure NEPA compliance. Proponents are expected to fund externally-prepared NEPA documentation. As many projects at

FCJMTC go through DPW, this organization is often used to inform project proponents of NEPA requirements and to establish initial NEPA coordination.

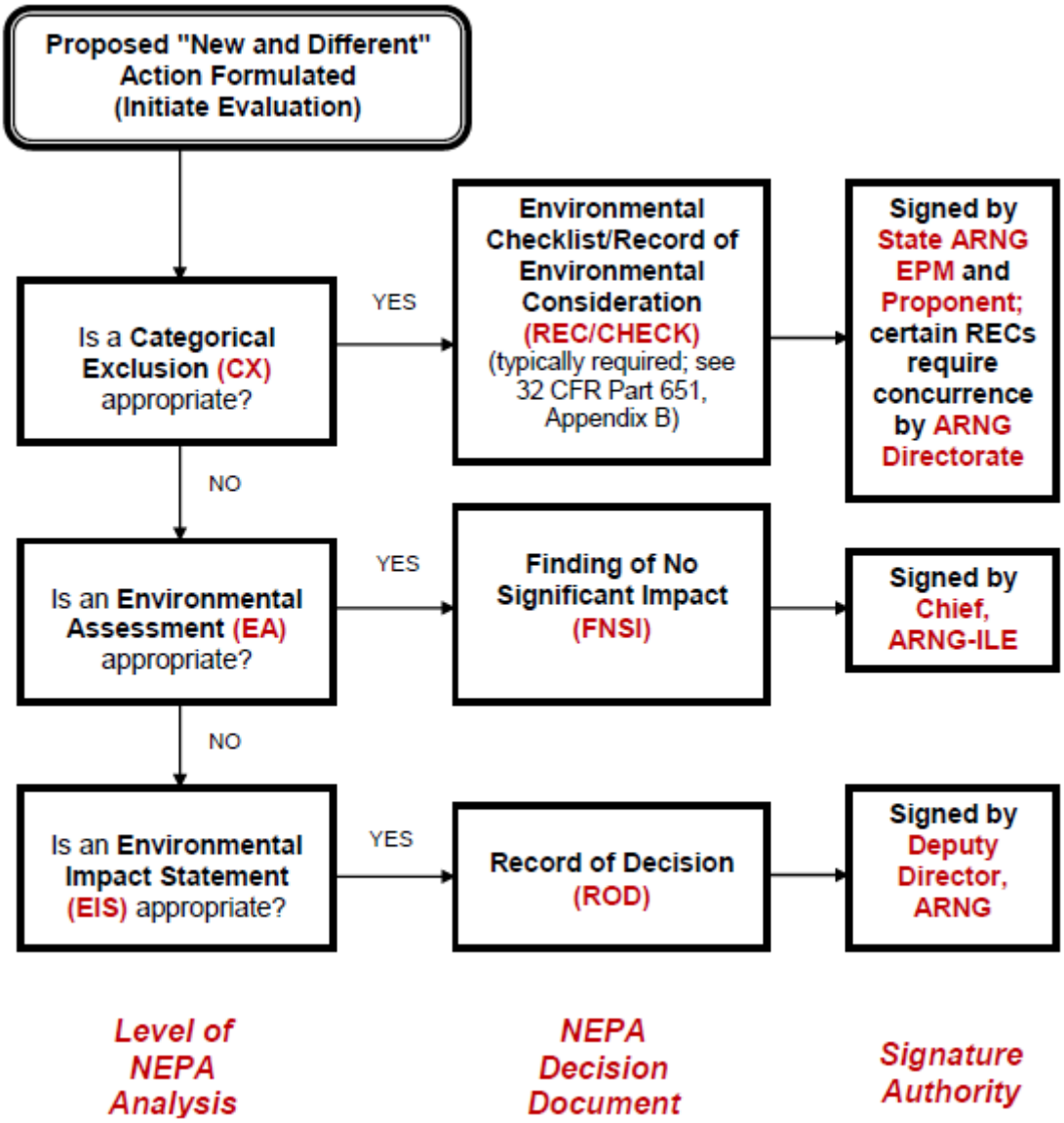
3.5.2 Levels of Documentation

Activities that are considered major federal actions are wide ranging. Fundamentally, any activity that occurs on federal land or is funded through the federal government is potentially subject to analysis under NEPA. Although not all-inclusive, Table 2.11 contains examples of some military and non-military activities affecting natural resources at FCJMTC that require NEPA analysis.

Figure 3.3 Common activities affecting natural resources that may require NEPA analysis

Construction and maintenance activities
Cantonment Area (as defined in 2009) construction and maintenance
Runway construction and maintenance
Firebreak construction and maintenance
Utility right-of-way maintenance
Range construction and maintenance
Road construction and maintenance
Military training activities
Short-term TTB
Shale/Clay pit excavation
Natural gas resource development
Gas well road access construction and maintenance
Gas pipeline construction and maintenance
Wildlife food plots
Forestry and agricultural activities
Pine plantation establishment
Pine plantation maintenance
Hay lease rehabilitation
Bridge construction and maintenance
Ground disturbing activities
LRAM projects
Management plan updates (i.e., ICRMP, INRMP)
Projects affecting wetlands

Figure 3.4 Summary of NEPA Process Levels and Associated Documents (ARNG NEPA Handbook – Volume I, Leadership Guide)



3.5.2.1 Record of Environmental Consideration (REC)

CXs are those actions that have been determined by the federal agency to not have a detrimental impact to human health or the environment and therefore do not require an EA or Environmental Impact Statement (EIS). Each agency within the federal government is required to prepare a list of CXs. AR 200-2 lists all of the actions that are categorically excluded. When applying CXs to a particular action, the proponent must ensure that the project has not been segmented. In addition, a CX does not absolve the proponent from complying with other environmental statutes (i.e., CWA, Clean Air Act and ESA) and the action must meet the following ARNG screening criteria to be categorically excluded (AR 200-2).

- The action is not a major federal action significantly affecting the quality of the human environment.
- There are no, or minimal, individual or cumulative effects on the environment.
- There is no environmentally controversial change to existing environmental conditions.
- There are no extraordinary conditions associated with this project.
- This project does not involve use of unproven technology.
- The project involves no greater scope or size than is normal for this category of action.
- There is no potential of an already poor environment's being further degraded.
- There are no threatened or endangered species, significant archaeological resources, National Register or National Register-eligible historical sites, or statutorily protected resources within the area of consideration.
- This action will not adversely affect prime or unique agricultural lands, wetlands, coastal zones, wilderness areas, aquifers, floodplains, wild and scenic rivers or other areas of critical environmental concern.

If the proposed action meets a CX in AR 200-2, a REC is prepared for the project, and the project may proceed as planned. RECs are the most commonly prepared documents. A REC is a signed statement demonstrating that the environmental effects of the proposed action were considered during the planning process. The REC identifies the proponent, describes the project and the time frame in which it will take place, and explains why the action is exempt from further environmental review. A REC also states that the proposed action qualifies as a CX, is exempt from NEPA, or is already covered in an existing EA or EIS. EAs are required when screening criteria for a CX are not met.

3.5.2.2 Environmental Assessments (EA)

An EA or an EIS is required if the proposed action does not qualify for a CX. Both EAs and EISs are comprehensive documents that described the proposed action and identify the alternatives to the action. An EA is used for actions that will not have a significant environmental effect or where an action’s environmental effects can be mitigated below a level of significance. An EA is often used when extensive new military exercises, major construction or land acquisition is planned; when the planned action involves a large area or when wetlands or endangered species may be involved. A Finding of No Significant Impact (FONSI) is required for the action to proceed as planned. A 30-day review period is provided for public comment.

3.5.2.3 Environmental Impact Statement (EIS)

An EIS is reserved for those actions with significant environmental effects that cannot be mitigated below a level of significance. If more study is needed or a FONSI cannot be prepared, an EIS must be written. These can be lengthy documents that require significant time to prepare.

3.5.3 NEPA and Natural Resources Management

The Environmental Branch uses NEPA to ensure its natural resources activities (as described in this INRMP) are properly planned, coordinated and documented. It also uses NEPA to identify problems associated with internal and external stakeholders' projects that may affect FCJMTC natural resources. Therefore, the Environmental Branch is both a proponent and responsible agent for NEPA.

Siting range-related projects is perhaps the most basic decision which requires input from the Environmental Branch. If this phase is done cooperatively most environmental problems associated with new projects or military missions are generally resolved with relative ease. Decisions, such as specific siting or mission planning, should be cooperatively discussed before preparing actual NEPA draft documents. While it is often the proponent's role to prepare NEPA documentation, this task is greatly facilitated if the proponent is preparing the document based on ongoing discussions with the Environmental Branch.

An important offshoot of proper NEPA implementation is that projects are often enhanced by the effort. Siting is one of the most common examples of such project enhancement. The Environmental Branch understands the mission and project requirements in terms of land features and requirements, therefore they can offer options to mission or project planners to avoid environmental conflicts.

FORMAT PAGE

4 GOALS, OBJECTIVES AND MANAGEMENT ACTIONS

A sustainable, proactive approach towards natural resources management is essential to provide a long-term military training facility that promotes native ecosystems and enhances species diversity. Natural resource management goals, objectives and management actions developed specifically for the FCJMTC are discussed in this chapter. These management actions have been developed and prioritized to sustain the military's operational and support requirements, to achieve overarching natural resources management goals and incorporate the principles of ecosystem management including adaptive strategies.

This 2019-2023 FCJMTC INRMP is based on the principles of ecosystem management identified in DODM 4715.03. Furthermore, ecosystem management can be incorporated into specific management actions by:

- Maintaining and improving the sustainability and native biodiversity of ecosystems.
- Considering ecological units and timeframes.
- Supporting sustainable human activities.
- Developing a vision of ecosystem health.
- Developing priorities and reconciling conflicts.
- Developing coordinated approaches to work toward ecosystem health.
- Relying on the best science and data available.
- Using goals and objectives to monitor and evaluate outcomes.
- Using adaptive management.
- Implementing through installation plans and programs.

Adaptive management is an integral part of the ecosystem management approach and involves the implementation of management practices and policies that may have unpredictable short- and long-term results. Management decisions are based on experience, ecological concepts and scientific inquiry, as well as feedback from on-going ecosystem monitoring programs. Annual reviews will be conducted to facilitate an adaptive management approach. Program areas for natural resources management include:

- NEPA Implementation
- Rare, Threatened and Endangered Species
- Fish and Wildlife
- Vegetation
- Forest
- Agricultural Outlease
- Pest
- Invasive Species
- Wildland Fire
- Water Resource
- Soil and Erosion Control
- Climate Change
- Cultural Resources
- GIS
- Outdoor Recreation
- Natural Resources Law Enforcement
- Cantonment Area Natural Resources
- Gas Lease

4.1 NEPA Implementation

All major federal actions are subject to the NEPA review process that considers the potential environmental impacts on natural resources and reasonable alternatives that would meet the action's purpose and need.

Goal 1. Implement the NEPA at FCJMTC.

Goal 2. Provide training to natural resources personnel implementing this INRMP.

Goal 3. Disseminate knowledge gained at FCJMTC to improve other natural resources programs.

Objective. Utilize NEPA as an effective means to manage the natural resources at FCJMTC.

Management Actions

1. Reference the INRMP/EA in descriptions of affected environment to reduce verbiage in other NEPA documents.

2. Classify mitigation as a "must fund" for budgetary purposes.

3. Develop SOPs to assist proponents with NEPA procedures.

4. Ensure NEPA requirements are completed prior to project/activity implementation.

4.2 Rare, Threatened and Endangered Species Management

The 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. The Sikes Act specifically requires agencies not to "take" or "jeopardize" the continued existence of any endangered or threatened species, or to destroy or adversely modify habitat critical to any threatened or endangered species. Under Section 9 of the ESA, take means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect"; under Section 7, jeopardize means to engage in any action that would be expected to "reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." FCJMTC is required to consult with the USFWS for any action that may affect a listed species or their designated habitat.

Balancing mission requirements with threatened and endangered species protection, cooperating with regulatory agencies and conserving biological diversity within the context of the military mission is essential. 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. Installations are encouraged to engage in informal consultation with the USFWS during the planning of projects or activities to ensure ESA compliance. In conserving biological diversity, the TSM and the Environmental Branch staff are required to develop and implement goals, objectives and management actions 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.

4.2.1 American Burying Beetle (*Nicrophorus americanus*; ABB)

The ABB population at FCJMTC is described by the USFWS as the largest and most sustainable populations in Arkansas. FCJMTC has made significant contributions in the long-term monitoring program for the ABB, which has included conducting annual monitoring surveys for 25 years. FCJMTC has made nationwide contributions towards recovery of the species by providing ABBs to the St. Louis Zoo for their breeding and reintroduction program in Missouri.

Goal 1. Comply with the ESA and the approved FCJMTC management plans for rare, threatened and endangered species.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective 1. Maintain compliance with all applicable ABB BOs and management plans (refer to Appendix J and K for complete plans).

Management Actions

1. Continue to annually monitor the ABB at FCJMTC at the already established sites, to include the Impact Area and the Surface Cleared Area using established survey techniques.

2. Maintain the Research and Recovery Permit and the AGFC state collection permits.

3. Continue to provide ABBs to the St. Louis Zoo upon approval from the USFWS.

4. Report any mortality of ABB to the USFWS.

5. Participate in off-post restoration projects when possible, specifically the Army compatible use buffer (ACUB) program.

Objective 2. Monitor land use trends and habitat conditions.

Management Actions

1. Provide USFWS an annual Habitat Disturbance Report summarizing total acreage disturbed due to construction, prescribed burning, training area and range improvements.

2. Provide a detailed report that includes a landuse trend analysis (LTA) or similar analysis.

3. Monitor the compensation and habitat restoration areas.

4. Perform small mammal and bird surveys in an effort to better understand ABB population trends and habitat preferences.

5. Consider the ABB with all NEPA decisions.

Objective 3. Ensure no changes in habitat (as defined by the USFWS BO) on a wide-scale will take place.

Management Actions

1. Ensure that any land alteration activities are reviewed by the Environmental Branch.

2. Perform compensation and habitat restoration efforts in the USFWS approved site at FCJMTC for any long-term land alteration resulting in greater than 2 acres of disturbance to suitable ABB habitat.

3. Restore areas of temporary disturbance by contouring to natural landscape and revegetating to the greatest extent possible.

4. Use only pesticides and herbicides approved in the USFWS BO.

5. Avoid or minimize contamination of soil from fuel, oil and other chemicals.

Endangered Species Management Plan (ESMP) dated 1993. In 1993, FCJMTC prepared a Biological Assessment analyzing the effects of military and civilian activities on the ABB (Schnell and Hiott 1993) and an ESMP (Hiott and Schnell 1996), which includes management prescriptions and actions and monitoring and survey requirements. The Conservation Plan for the ABB was developed and finalized by the Environmental Branch and the USFWS in 2010 and has replaced the 1996 ABB ESMP.

Biological Opinion (BO) dated February 3, 2011. The February 3, 2011 BO includes provisions for monitoring and management. The USFWS determined that the level of anticipated take at FCJMTC is not likely to result in jeopardy to the species. Only a small amount of the available habitat will be affected in any given year. The species is mobile and transitory on the landscape as it searches for food and carrion for reproduction. Due to the lack of data defining critical habitat for the ABB, no critical habitat has been designated for the species.

The subsequent information is directly from the BO dated February 3, 2011; however, if an update to the BO was completed within the five year period of this INRMP, the most current BO would be followed. It includes non-discriminatory reasonable and prudent measures (RPM), terms and conditions and conservations recommendations. The BO in its entirety is located in Appendix J.

The USFWS believes the following **non-discretionary RPMs** are necessary and appropriate to minimize take of the ABB.

1. Utilize the Conservation Plan for the ABB developed by FCJMTC to minimize the level of incidental take to aid in long term conservation of the ABB and its habitat at FCJMTC (FCJMTC 2010).

2. Disturbance areas should be contoured to natural land topography and revegetated with native grasses and vegetation. This includes clearing of trees, intensive mowing, or water impoundment outside the Cantonment Area. Maintenance of firebreaks will be exempt from removal of vegetation and ground disturbance restrictions.

3. Monitor land use trends and habitat conditions to help track wide scale changes in habitat on the installation.

4. Limit wide scale changes in habitat (especially those activities impacting ground nesting bird and small mammal habitat), not related to scheduled or daily military activity.

In order to be exempt from the prohibitions of Section 9 of the ESA, FCJMTC must comply with the following **terms and conditions**, which implement the RPMs, described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary and must also be a condition of any federal permits, contracts or grants issued.

1. Implementation of the Conservation Plan will be continuous, unless otherwise approved by the Arkansas Field Office, and will remain in effect for perpetuity. All amendments must be coordinated and approved by the USFWS and FCJMTC.

2. Surveys for the ABB should continue annually at the already established sites using established survey techniques. Survey protocols are dynamic and subject to change. It is the responsibility of FCJMTC to ensure current guidance is being used on the installation. Current guidance can be obtained on our website at https://www.fws.gov/arkansas-es/Species/inverts/ABB.html or by calling the Arkansas

Ecological Field Office at 501-513-4470.

3. When contouring ground, top soil should be set aside and redistributed across newly leveled ground to maintain soil integrity.

4. Land use trends and habitat conditions should be monitored annually to help track cumulative effects of land alteration and disturbance. This will allow for appropriate monitoring of habitat to make sure that no wide scale habitat alterations are occurring on the installation that may negatively impact the long term viability of the ABB. These data will help the USFWS track cumulative effects of current and proposed actions that result in permanent land alteration of less than two acres per alteration outside the Cantonment Area at FCJMTC.

- **a.** An annual report should be provided to the USFWS's Arkansas Ecological Services Field Office summarizing the total acreage disturbed (including unit and habitat type, acreage of ground disturbance, date, duration of impact, pre and post conservation measures, cumulative impacts and summary of prior years since last land use analysis report), to the extent reasonably possible, and incorporate a LTA or similar analysis every fifth year.
- **b.** Every fifth year provide a detailed report that includes an LTA or similar analysis.

5. No changes in habitat on a wide scale will take place.

- **a.** No more than 300 acres a year in pines may be planted with a maximum total of 4,000 acres for FCJMTC.
- **b.** Intensive mowing outside the Cantonment Area is limited to twice a year on hay leases under the 2005 Agricultural Management Plan (AMP), once per year in DZs, three times per year on ranges and one time per year on gas line right of ways. Mower height should be set to the maximum height on the mower except on ranges where safety is an issue.
- **c.** No conversion of native grass areas into cultivation or grazing or impounding areas for ponds or green tree reservoirs.
- **d.** FCJMTC will be responsible for implementing measures necessary to maintain suitable habitat for ABB. This will include, but not be limited to, developing and implementing an IWFMP that helps maintain ABB habitat in a suitable condition to provide carrion sources (i.e., ground nesting birds and small mammals) and reproductive habitat.

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purpose of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. **Conservation recommendations** are discretionary agency activities to minimize or avoid adverse impacts of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Conduct research on the ABB coordinated with the USFWS.

2. Host annual meetings between FCJMTC and USFWS to foster better communication, coordination and collaboration.

3. Plan support activities in a manner that limits impacts to the ABB and its habitat.

4. Expansion of improved facilities should be planned for those areas already impacted on the installation.

5. Disturbances and developments such as roads, recreation areas, towers, ditches, utilities, etc., should be designed to avoid fragmenting native habitat.

6. Avoid excessive use of chemicals from mid-May to September. Pesticide (including herbicides, rodenticides, fungicides, etc.) and chemical use should be limited to that necessary to protect the health and safety of personnel and property. All chemicals should be hand applied to limit the area of effect. Exceptions may be made in those cases with potentially severe habitat loss due to pest infestations.

7. Wildlife and forestry management practices should provide habitat that is preferred by the ABB and that provides potential carrion. Areas of hardwoods and native grasslands should be protected and increased whenever possible.

8. The USFWS requests notification of the implementation of any conservation recommendations that either minimize or avoid adverse effects or that benefit the ABB and its habitat.

Conservation Plan for the ABB dated May 27, 2010. The Conservation Plan for the ABB is intended to delineate specific areas of opportunity for management, research, inventory and monitoring and education that should be addressed by the Environmental Branch and internal and external stakeholders at FCJMTC. Appendix K contains the complete text of the Conservation Plan dated May 27, 2010.

The goal of this Conservation Plan is to ensure, at a minimum, the viability of the ABB and to provide mechanisms to manage for populations, while ensuring military mission accomplishment.

Conservation strategies listed herein will allow FCJMTC and the USFWS to address issues that may arise that threaten long-term viability of the ABB at the installation. The strategies will aim to provide a balance among military mission accomplishment and essential conservation requirements for continued sustainability of the ABB at FCJMTC while adhering to all applicable state and federal laws (i.e., NEPA and ESA).

Construction, Development and Maintenance

Strategy 1. Limit long-term and short-term habitat loss, fragmentation and degradation to the greatest extent possible.

Action 1.1. Require planning phase coordination with the Environmental Branch in preparation for new land alteration activities (construction, development, maintenance, natural gas resource development, wildlife food plots, forestry activities and mowing) larger than 0.8 hectares (2 acres) to allow proper site evaluation, alternative site consideration, and appropriate ABB conservation measures (initiation of formal or informal consultation with the USFWS, and/or compensation effort). A Decision Tree for Ground Disturbing Activities is shown in Appendix F of this Conservation Plan. Planning phase coordination will also consist of:

- **a.** Require an environmental representative from the Environmental Branch to be present at all land alteration planning meetings to ensure all persons (FCJMTC personnel and contractors) are aware of the requirements of this Conservation Plan,
- **b.** Develop a list of ABB stipulations for each land alteration activity,
- **c.** Incorporate stipulations into NEPA documentation and other applicable documents, and
- **d.** Mark the total footprint of each area prior to initiation of any land alteration larger than 0.8 hectares (2 acres).

Action 1.2. Continue to record all activities that disturb ABB habitat, including those under 0.8 hectares (2 acres), using work orders, excavation permits, gas well proposals and/or implementation of NEPA requirements (i.e., Records of Environmental Consideration (REC), EAs and in very rare instances EIS). All habitat disturbances will be submitted by the end of each calendar year to the USFWS in the annual ABB habitat disturbance report.

Action 1.3. Prioritize sites to be affected by land alteration activities as follows (1 being the most favorable site for land alteration):

1. Areas with previous long-term habitat loss,
2. Areas with unsuitable soils and unsuitable vegetative communities (Figures 6 and 7 of the Conservation Plan),
3. Areas with preferred vegetative communities, unsuitable soils and no ABB captures,
4. Areas with preferred vegetative communities, preferred soils and no ABB captures,
5. Areas with consistently (i.e., low captures during the annual monitoring survey) low ABB population density, and
6. Areas with consistently high ABB population density (i.e. high capture rate during annual monitoring surveys) should be avoided as land alteration sites.

*This action was updated per letter dated December 12, 2018.

Action 1.4. Continue to utilize the LRAM component of the ITAM program. The ITAM program as a whole provides assistance to the Army by maintaining training lands. The LRAM component of ITAM provides on the ground conservation of military training lands through land restoration and erosion control. The ITAM coordinator at FCJMTC is responsible for choosing sites that are in need of rehabilitation and determining what BMP(s) (listed in

Appendix G of this Conservation Plan) should be applied to each site. An example of a BMP is clearing and thinning, which can include: mowing, hand grubbing, dozer grubbing, burning, herbicide application, etc. The BMP can be applied to heavily forested areas at FCJMTC, which are too dense to maneuver and are also negatively correlated to ABB abundance.

Action 1.5. Maximize the use of preventative measures to minimize soil loss after vegetation removal following natural gas resource development and LRAM projects by reseeding with native herbaceous and grass seed, placement of water bars on slopes, hydroseeding and vegetation mats. Warm season (April 10 thru June 1) planting mixtures may consist of Big bluestem (*Andropogon gerardii*), Little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), Eastern gamagrass (*Tripsacum dactyloides*), Millet (*Pennisetum glaucum*) and Illinois bundleflower (*Desmanthus illinoensis*). Cool season (September 15 thru October 30) planting mixtures may consist of Annual ryegrass (*Lolium* L.), Switchgrass (*Panicum virgatum*), Virginia wildrye (*Elymus virginicus*), White clover (*Trifolium repens*) and Western wheatgrass (*Pascopyrum smithii*). The dates above are optimum seeding dates; therefore every attempt will be made to plant during these times. Areas rehabilitated outside of these times will be protected using mulch until the optimum seeding date is reached. Planting non-native or invasive species will be prohibited at the installation.

Action 1.6. Repair established routes into/out of heavily utilized prevent continued vehicular disturbance as unmaintained routes may become impassable. Vehicles avoiding this section of the road may create additional erosion problems. Sites that are in need of erosion control are identified and prioritized in the Soil Erosion Control and Site Restoration Plan (Coleman and Mathis 2006).

Action 1.7. Utilize funding to purchase native grasses and forbs to serve as reserve seed stock for site rehabilitation and maintenance. Pursuant to the Sikes Act funding will be available through the Army account 21X5095 to defray the costs of fish and wildlife management programs (AR 200-3). Additional funding is provided from requests made through the Status Tool for the Environmental Program (STEP), an online computer program managed by the NGB developed for and accessible only to the ARNG Environmental Program. NGB is the primary source of funding to support the management of natural resources at the installation (i.e., natural resource surveys, environmental monitoring projects, equipment and supplies, vegetation management and pest management).

Action 1.8. Utilize sodium vapor lighting when new lighting is installed throughout the installation (excluding the Cantonment Area). The lowest wattage possible (wattage is dependent on the span of area that needs to be illuminated) will be used in all indoor and outdoor lights. Shades will be placed on all outdoor lights to facilitate a decreased field of view. Indoor and outdoor lights will be deactivated when areas are unoccupied.

Action 1.9. GPS locations of the existing lighting throughout the installation (excluding the Cantonment Area) and obtain the cost to convert this lighting into sodium vapor lighting. Prioritize lighting replacement sites using areas that contain vegetation and soils that are preferred by the ABB. Funding limitations may prolong lighting replacement.

Strategy 2. Manage invasive/non-native/pest species.

Action 2.1. Continue to implement the IPMP. IPMP provides guidance and requirements for operating and maintaining an effective integrated pest management program.

Action 2.2. Provide support for pest management issues. Monitor use of approved chemicals and obtain an annual total of the percentage of active ingredients applied post-wide. This pesticide data is compiled and submitted into ARNG I&E. Headquarters, Department of the Army (HQDA) use this data for submission of metrics related to the army's compliance, conservation and pollution prevention programs. This report, called the Environmental Quality Report (EQR), will be submitted to the USFWS annually.

Action 2.3. Implement an active feral hog eradication program that aims to eliminate soil disturbance and habitat destruction that is associated with feral hogs. This will benefit the ABB by preventing the mortality of adult ABBs and developing larvae due to soil disturbance. FCJMTC's feral hog eradication program also benefits the ABB by reducing direct competition and habitat destruction associated with these non-native species. Feral hogs may be taken during open hunting seasons which can help control the abundance of hogs on the installation. Trapping measures also have been implemented by the AGFC. *As the hunting seasons for feral hogs have changed and are somewhat dynamic, it should be noted that feral hogs may be taken using the most current AGFC hunting regulations. In addition, trapping measures are also implemented by the Environmental Branch.

Action 2.4. Utilize control methods to effectively remove eastern red cedar (*Juniperus virginiana*) thickets. Eastern red cedar thickets have developed in areas that have escaped wildfires or areas that have not been included in the prescribed burn regime. In many areas the basal area averages 90 or greater, limiting the amount of grasses and forbs for wildlife.

- **a.** Eastern red cedar removal will be concentrated on sites with soils preferred by the ABB and could be used as compensation sites. A map of eastern red cedar distribution is represented in Appendix H of this Conservation Plan.
- **b.** Implement forest management in the designated compensation and habitat restoration areas (Appendix K of this Conservation Plan) by thinning eastern red cedar logs and pulpwood through timber harvest, wildlife stand improvement (WSI) treatment, such as cut and leave and prescribed fire. Pre- and post-treatment monitoring (Action 3.4) within the designated areas will be evaluated to determine the effectiveness of the forest management prescriptions.
- **c.** Seek partnerships with other agencies (i.e., The Nature Conservancy (TNC)) to assist with eastern red cedar removal at sites that contain preferred soil for the ABB.
- **d.** Upon approval, participate in the proposed Legacy grant partnership with Camp Gruber, Oklahoma to study the efficiency of available methods for eastern red cedar infestation control on military training lands. This could reduce cedar encroachment and open cedar forests allowing ABB habitat restoration.

Action 2.5. Use approved pest-control measures (USFWS 2011) to control red-imported fire ants that occur within the Cantonment Area to prevent their spread down range. Track and

monitor these occurrences and measures taken to minimize adverse effects of infestation and document effectiveness of control efforts.

Compensation and Habitat Restoration

Strategy 3. Ensure proper compensation for all project plans outside of the Cantonment Area that result in long-term land alteration of more 0.8 hectares (2 acres).

Action 3.1. Determine compensational requirements for long-term land alteration (i.e., construction, development and maintenance) resulting in greater than 0.8 hectares (2 acres) of long-term land alteration. A map showing the compensation effort required for the following land alteration activities is located in Appendix I of this Conservation Plan.

- **a.** Land alteration activities affecting sites containing areas with preferred soil and preferred vegetative communities will be mitigated at a 3:1 ratio (three acres of compensation for every one acre that is affected).
- **b.** Land alteration activities affecting sites containing areas with preferred soil and unsuitable vegetative communities will be mitigated at a 2:1 ratio.
- **c.** Land alteration activities affecting sites containing areas with unsuitable soil and preferred vegetative communities will be mitigated at a 1:1 ratio.
- **d.** As an incentive to avoid affecting preferred ABB habitat, land alteration activities on sites that do not contain preferred soil and preferred vegetative communities will not require compensation.

Action 3.2. Compensation and habitat restoration efforts will be focused on areas that have preferred soils but are lacking the preferred vegetative communities. The structure of the known preferred vegetative communities will be used as a model for restoration goals. These preferred vegetative communities include: post oak woodland, little bluestem mixed grass prairie, post/blackjack oak woodland and mixed disturbed grassland. Although chess (*Bromus racemosus*) mixed grasslands show a positive correlation to ABB abundance, the dominant annual chess is a non-native species, therefore is will not be a consideration for restoration. Species selection will be based on vegetative communities found in the vicinity of the area that have a significant positive correlation to ABB abundance. Appendix C of this Conservation Plan contains descriptions for each of the vegetative communities at FCJMTC. Appendix J of this Conservation Plan contains a map of Potential Compensation Sites for FCJMTC, which focus on areas that contain preferred soils, unsuitable vegetation and high ABB abundance in adjacent areas with unsuitable soils and vegetation. A compensation and habitat restoration plan will be developed and approved by the USFWS for each site selected for habitat restoration.

Action 3.3. Compensation and habitat restoration areas will be maintained indefinitely with fire (approximately three fires per decade), tree cutting/thinning, fallow disking, herbicide application and native grass and forb planting. Plantings will only be implemented if prescribed fire fails to adequately revive the populations of understory species within three years.

Action 3.4. Areas that have been restored as compensation sites will be monitored annually. Characterization of sites, based on canopy cover, dominant canopy species, dominant understory species, abundance of potential carrion resources and results of ABB annual monitoring surveys in the vicinity of the mitigated site will be analyzed. In addition, an ABB annual monitoring site will be placed within the compensation site and incorporated into all future surveys.

Action 3.5. Only training activities that do not result in an alteration of restored habitat conditions (grassland or woodland with suitable soils for ABB reproduction) and exclude firing points and bivouacs will be permitted within the compensation area. Any future long-term land alteration to the compensation site(s) will trigger formal consultation with the USFWS and the associated habitat loss will be compensated for at a 3:1 ratio at another Environmental Branch and USFWS approved site at the installation.

Action 3.6. If habitat is improved on more acres than is required in a particular compensation project, the excess acreage will then be available to be used in future compensation projects as long as it still meets the criteria for preferred habitat or can be managed to attain the desired results.

Strategy 4. Utilize fire as an effective management tool and evaluate the effects that fire has on the ABB population and habitat.

Action 4.1. Continue implementation of the IWFMP to include plans for prescribed fire and wildfire management.

Action 4.2. Continue to conduct prescribed fire in areas that contain preferred soil and/or vegetation on a 3 to 5 year rotation to maintain ABB habitat in a suitable condition to provide carrion sources (i.e., ground nesting birds and small mammals) and reproductive habitat. Unsuitable fire regimes (fire frequencies greater than 3 to 5 years) lead to forest succession that may be unsuitable for ABB use. Prescribed fire primarily will be conducted during the periods when the ABB is not active (late fall/winter/early spring).

Research and Monitoring

Strategy 5. FCJMTC Environmental Branch will continue to produce, encourage and support the best available science regarding the implementation of monitoring methodologies to evaluate long-term population trends of the ABB.

Action 5.1. FCJMTC follows ABB Survey Guidance established by the USFWS. ABB population monitoring has occurred at FCJMTC since 1992 and will continue to be performed on an annual basis as part of this Conservation Plan. Due to the cyclic nature of the ABB, it is important from a management perspective to understand population trends and how these relate to weather, fire, short-term and long-term land alteration activities and overall usage at FCJMTC.

Action 5.2. Utilize the current knowledge of ABB relative abundance at FCJMTC and soil and vegetation preference to prioritize ABB management areas. These high priority management areas can be identified as areas with high ABB abundance (Figures 4, 5 and 6 of this Conservation Plan) and/or areas that have preferred soils (Appendix A and J of this Conservation Plan). Consider military training land use when selecting high priority management areas.

Action 5.3. Minimize mortality during ABB annual monitoring surveys and other research attempts to the greatest extent possible. *Trap/relocate efforts are no longer conducted at FCJMTC. The survey methodologies used within this survey are designed to minimize ABB mortality and include:

a. surveys will cease when mortality exceeds 5% during an annual monitoring survey;
b. no more than six sites per day may be set in areas of historically high densities; and
c. follow current USFWS protocols.

Action 5.4. Expand ABB monitoring to include the Surface Cleared Area and the perimeter of the Impact Area in 2010. The Surface Cleared Area/Impact Area consists of 16,868 acres of land. Disturbance from military training is minimal as excavation and bivouacking are prohibited. ABBs have not been performed in this area due to the excavation restriction and the elevated risk of UXO occurrence. Due to dig restrictions, baited pitfall traps will be stabilized above ground as opposed to the standard methodology that requires excavation. This survey will be conducted as part of the annual monitoring survey. The Surface Cleared Area survey sites will be initially established using a stratified random sampling method and will then be fixed over time. *Surveys have been conducted in these areas since 2010 and no longer use pitfall traps for surveying.

Action 5.5. Reevaluate the current ABB annual monitoring survey sites. Sites located at historically low density areas and sites that overlap or are in close proximity to each other will be relocated to allow more consistent spatial coverage over the installation.

Action 5.6. To date, annual monitoring surveys collect minimum and maximum temperature, wind speed and cloud cover percentage for each trap night at every survey site. Adding additional data to the annual survey report (i.e., precipitation, air pressure, relative humidity, dewpoint and wind direction) will serve to increase our ability to understand ABB habitat requirements and potential climate effects on the population. These variables will be discussed and analyzed in the ABB annual monitoring report to determine climate/weather effects on population status.

Action 5.7. Archived weather data may serve as a valuable tool when evaluating ABB density fluctuations. An analysis of the various weather parameters (i.e., minimum and maximum temperature, wind speed, cloud cover, precipitation, air pressure, relative humidity, dewpoint, cloud cover and wind speed and direction) may offer explanations behind yearly fluctuations in ABB density. In particular, extreme weather events such as prolonged periods of rain or extremely hot weather can negatively affect populations of species that are potential carrion resources. For example, a weather event that results in increased mortality of bird or

small mammal species could provide additional carrion sources for the ABB during that year but may cause following years to produce low yields of carrion resources. These types of trends will be further analyzed using ABB annual monitoring data, small mammal and ground nesting bird data and archived weather data, when applicable.

Action 5.8. Determine genetic diversity (i.e., allelic diversity of microsatellite markers) of the ABB population to assess population stability and utilize genetic markers to estimate population size. The University of Texas-Austin has obtained funding through the Legacy program. Data was collected during the ABB annual monitoring survey in 2009.

Action 5.9. Continue to monitor wildlife populations as a tool to assess general ecosystem stability. Wildlife monitoring has historically included surveys for terrestrial and aquatic invertebrates, birds, small and large mammals, reptiles, amphibians and fish. When practical, surveys will be conducted at ABB annual monitoring survey sites to allow future data correlation among species (i.e., predators, competitors, preferred carrion sources for feeding and reproduction, etc.) that are linked to ABB success or decline.

Action 5.10. Expand periodic ground nesting bird and small mammal survey monitoring to 3 years and ensure that it compliments ABB survey area. The AGFC currently perform bobwhite quail and turkey surveys annually.

Action 5.11. Consult with the USFWS on baseline survey methodologies that may pose a risk to the ABB. For example, targeting different orders in the terrestrial invertebrate survey may require the use of trapping methodologies that may be harmful to the ABB. Consultations with the USFWS will allow all parties (i.e., USFWS, FCJMTC and the Contractor) to be informed of possible risk factors and to make cognizant decisions on the most appropriate trapping methodologies to employ.

Action 5.12. Measure and evaluate, quantitatively and qualitatively, the effectiveness of proposed conservation actions' (i.e., change in relative abundance of the ABB resulting from fire, military training activities, completed compensation efforts, etc.) ability to maintain optimal ABB habitat.

Action 5.13. Support/fund projects to conduct monitoring and habitat management at sites with preferred habitat components.

Action 5.14. Use the adaptive management strategy of this Conservation Plan to change and adapt conservation actions to reflect improved information and ABB requirements at FCJMTC.

Strategy 6. Participate in off-post restoration projects when possible.

Action 6.1. Encroachment of urban development can be addressed through the establishment of buffers on lands adjacent to FCJMTC. Proposed initiatives, such as the ACUB program, create partnerships between the Army, partner organizations and private landowners. The direct result of this coordination supports all entities. The Army achieves

enhanced training maneuverability and sustained environmental stewardship; the partner organization(s) (non-governmental, state or local government) obtains financial support for the overall goal of land conservation; and the private landowner acquires financial incentives and tax benefits.

Action 6.2. Participate in the Project Plan to Reestablish a Viable ABB Population at the OSFNF, Arkansas.

Strategy 7. Raise awareness of ABB conservation needs within the community and the military sector.

Action 7.1. Ensure FCJMTC, NGB, outside organizations (i.e., AGFC and TNC), contractors and other military and civilian personnel at FCJMTC are educated on the requirements of this Conservation Plan.

Action 7.2. In accordance with the Installation training SOP, all military personnel stationed full-time at the installation and units that train at the installation are required to complete the Environmental Briefing power point presentation/video prior to training activities. This training explains the restrictions and permissible environmental activities applicable to FCJMTC, including the status of the ABB, contact restrictions and pesticide restrictions (only personal insect repellents are permitted). Upon completion of the Environmental Briefing the Unit Commander is required to verify that all military personnel have been presented the material.

Action 7.3. Distribute instructional tools and/or provide assistance with rehabilitation and revegetation prior to land alteration activities. The Environmental Briefing provides basic information for military units in reference to land alteration activities. This briefing includes the following requirements: 1) Obtain an approved dig permit prior to excavation; 2) Restore the area back to its natural condition by replacing original topsoil and recontour the natural topography of the area; 3) Revegetate the area with native grass and vegetation, which is performed by LRAM BMPs.

Action 7.4. Provide education on the importance of habitat conservation for the sustainability of the ABB and for training land. Education materials will need to focus on a number of key messages including:

- **a.** identification of the listed species;
- **b.** the current status of ABBs and the need to conserve them;
- **c.** actions necessary to avoid injury to the ABB and their habitat; and
- **d.** the pertinent requirements of the state and federal laws and this Conservation Plan.

Action 7.5. Attend ABB related workshops and give presentations on current ABB research and/or have informational booths.

Action 7.6. Use workshops as an outreach tool to:

- **a.** discuss ABB conservation priorities;
- **b.** discuss incentive programs for ABB conservation; and to
- **c.** provide outreach documents to the public and military units.

Action 7.7. Facilitate implementation of on-the-ground ABB conservation education as funding permits. Public awareness through the sportsman orientation classes, presentations at local AGFC Nature Centers, and presentations for FCJMTC tenants utilize visual aids such as coins, hats, coffee mugs, bookmarks and brochures as outreach tools. Technical service can be provided in the form of survey results (annual monitoring, overwintering and any additional data collection associated with the ABB) made available to state and federal organizations for further research.

Action 7.8. Secure long-term funding for outreach, education and on-the-ground conservation of the ABB at FCJMTC as prescribed in the INRMP, BO and this Conservation Plan.

4.2.2 *Bald Eagle (Haliaeetus leucocephalus)*

Goal 1. Comply with the BGEPA, MBTA and the approved FCJMTC management guidelines for rare, threatened and endangered species.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future (at-risk species).

Objective 1. Maintain compliance with the FCJMTC Bald Eagle Management Guidelines (refer to Appendix Q for complete guidelines).

Objective 2. Maintain, restore and enhance habitats upon which bald eagle populations depend.

Management Actions

1. Participate in bald eagle monitoring surveys as required by the FCJMTC Bald Eagle Management Guidelines. Monitoring is required in the event of any activities occurring prior to June 30.

2. Consult with the USFWS prior to implementation of any activities that cannot adhere to the FCJMTC Bald Eagle Management Guidelines.

3. Avoid or minimize impacts to bald eagles and their habitats.

Bald Eagle Management Guidelines dated March 7, 2007. Currently the Bald Eagle is protected under the BGEPA and MBTA. FCJMTC actions comply with the National Bald Eagle Management Guidelines dated March 7, 2007 and the FCJMTC Bald Eagle

Management Guidelines. The USFWS will continue to work with FCJMTC to protect the bald eagle and its habitat. The overall conservation goal is to maintain current habitat for bald eagles, including nests, nest trees, foraging habitats, flight paths from nesting areas to foraging areas and appropriate buffers around these areas. Appendix Q contains the complete text of these guidelines.

The following amended guidelines (USFWS 2016; Appendix Q) adhere to the National Bald Eagle Management Guidelines (May 2007) and are applicable to military training and maintenance activities.

1. No activity is permitted within the 660 foot buffer zone at any time during the nesting season (December 15 to June 30) without prior confirmation and USFWS concurrence that Bald Eagle nesting was a failure or young have successfully fledged the nest for that nesting season.

2. Once confirmation is received and approved by the USFWS that nesting was a failure or young have successfully fledged the nest for that nesting season, FCJMTC has approval to conduct preparation work and training exercise related to the river crossing sites.

3. Helicopter and fixed-wing aircraft operation within 1,000 feet h01izontal and ve1iical distance from the nest should not occur during the nesting season.

4. Use of explosives and other activities that produce extremely loud noises are prohibited within 0.5 mile upstream and downstream of the nest along the Arkansas River and 0.5 mile inland from both banks of the river along this one mile reach.

5. Use of chemicals toxic to wildlife should not be used within the 660 foot buffer zone. Use of chemicals should be limited to those listed in the February 3, 2011 ABB BO located in Appendix 1, Approved Pesticide List, amended March 14, 2016. Chemicals should only be used in accordance with state and federal laws and labeled instructions for their use.

6. Construction of new buildings and mining should not occur at any time within the 660 foot buffer zone.

7. No buffer is necessary outside the nesting season for off-road vehicle use and human entry. The 660 foot buffer is applicable during nesting season, except environmental staff will be permitted within the buffer zone for nest monitoring purposes, as required.

8. Avoid clear cutting within 330 feet of the nest at any time. Avoid timber harvesting or clearing operations, including road or trail construction, during the nesting season within 660 feet of the nest. Retain mature trees and old growth stands wherever possible within 0.5 mile of the Arkansas River. Preparation work associated with combat trails, access roads and bridge approaches is permitted provided FCJMTC adheres to Guidelines 1 and 2.

9. Avoid potential disruptive activities in the eagle's direct flight path between the nest and foraging areas.

10. Nesting sites should be protected for a minimum of three years following the last nesting activity or if nests are blown from a tree or otherwise destroyed by natural elements.

11. Use approved non-toxic ammunition within 0.5 mile of the Arkansas River and other foraging area. Eagles are poisoned by lead after feeding on fish and waterfowl that have ingested lead or been shot by lead.

12. FCJMTC monitors active and alternate nests beginning in mid-April through the end of June during the period when Bald Eagles chicks are fledging and are very sensitive to human activity. This monitoring is required to determine nesting failure or whether young have successfully fledged.

    If no human activity (e.g., training exercises, maneuvers, vehicular movement) will occur within 660 feet of the nest before June 30 or when the young have successfully fledged the nest, then monito1ing is not required. If any activity may occur prior to June 30 or when the young have fledged, then monitoring should take place from mid-April to the end of June.

13. FCJMTC must consult the USFWS prior to implementation of any activities that may result in take of bald eagles not covered by these guidelines.

4.2.3 Geocarpon (*Geocarpon minimum*)

Goal 1. Comply with the ESA for rare, threatened and endangered species. Currently there are no management plans for the population of Geocarpon at FCJMTC.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective. Monitor, maintain and protect suitable habitat.

Management Actions

1. Continue to annually monitor the Geocarpon population at FCJMTC.

2. Evaluate potential habitat and search for additional populations at sites containing wing soils.

3. Restrict any habitat disturbance and herbicide application in area(s) that occupy Geocarpon unless permitted by the USFWS.

4.2.4 Northern Long-Eared Bat (*Myotis septentrionalis;* NLEB)

Goal 1. Comply with the ESA and the approved FCJMTC management plans for rare, threatened and endangered species.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective 1. Maintain compliance with all applicable NLEB BOs and management plans (refer to Appendix L complete plan).

Management Actions

1. Participate in NLEB monitoring surveys as required by the USFWS.

2. Avoid and/or minimize impacts to the NLEB and their habitat.

3. Continue to notify the USFWS of upcoming prescribed burn activities from October 16 to April 1.

4. Continue to notify the USFWS by submitting streamlined consultation forms for any activity involving military training smoke and obscurants, construction, forest management, single or multiple tree removal, hazard tree removal and pesticide use.

Section 7(a)(1) of the ESA directs federal agencies, in consultation with and with the assistance of the Secretary (a function delegated to the USFWS), to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. USFWS Headquarters provides to federal action agencies who choose to implement the framework described above several conservation recommendations for exercising their 7(a)(1) responsibility in this context. Conservation recommendations are discretionary federal agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. USFWS Headquarters recommends that the following conservation measures to all federal agencies whose actions may affect the NLEB:

1. Perform NLEB surveys according to the most recent Range-wide Indiana Bat/NLEB Summer Survey Guidelines.

2. Apply additional voluntary conservation measures, where appropriate, to reduce the impacts of activities on NLEBs. Conservation measures include:

    a. Conduct tree removal activities outside of the NLEB pup season (June 1 to July 31) and/or the active season (April 1 to October 31). This will minimize impacts to pups at roosts not yet identified.
    b. Avoid clearing suitable spring staging and fall swarming habitat within a 5-mile

radius of known or assumed NLEB hibernacula during the staging and swarming seasons (April 1 to May 15 and August 15 to November 14, respectively).

c. Manage forests to ensure a continual supply of snags and other suitable maternity roost trees.

d. Conduct prescribed burns outside of the pup season (June 1 to July 31) and/or the active season (April 1 to October 31). Avoid high-intensity burns (causing tree scorch higher than NLEB roosting heights) during the summer maternity season to minimize direct impacts to NLEB.

e. Perform any bridge repair, retrofit, maintenance and/or rehabilitation work outside of the NLEB active season (April 1 to October 31) in areas where NLEB are known to roost on bridges or where such use is likely.

f. Do not use military smoke and obscurants within forested suitable NLEB habitat during the pup season (June 1 to July 31) and/or the active season (April 1 to October 31).

g. Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.

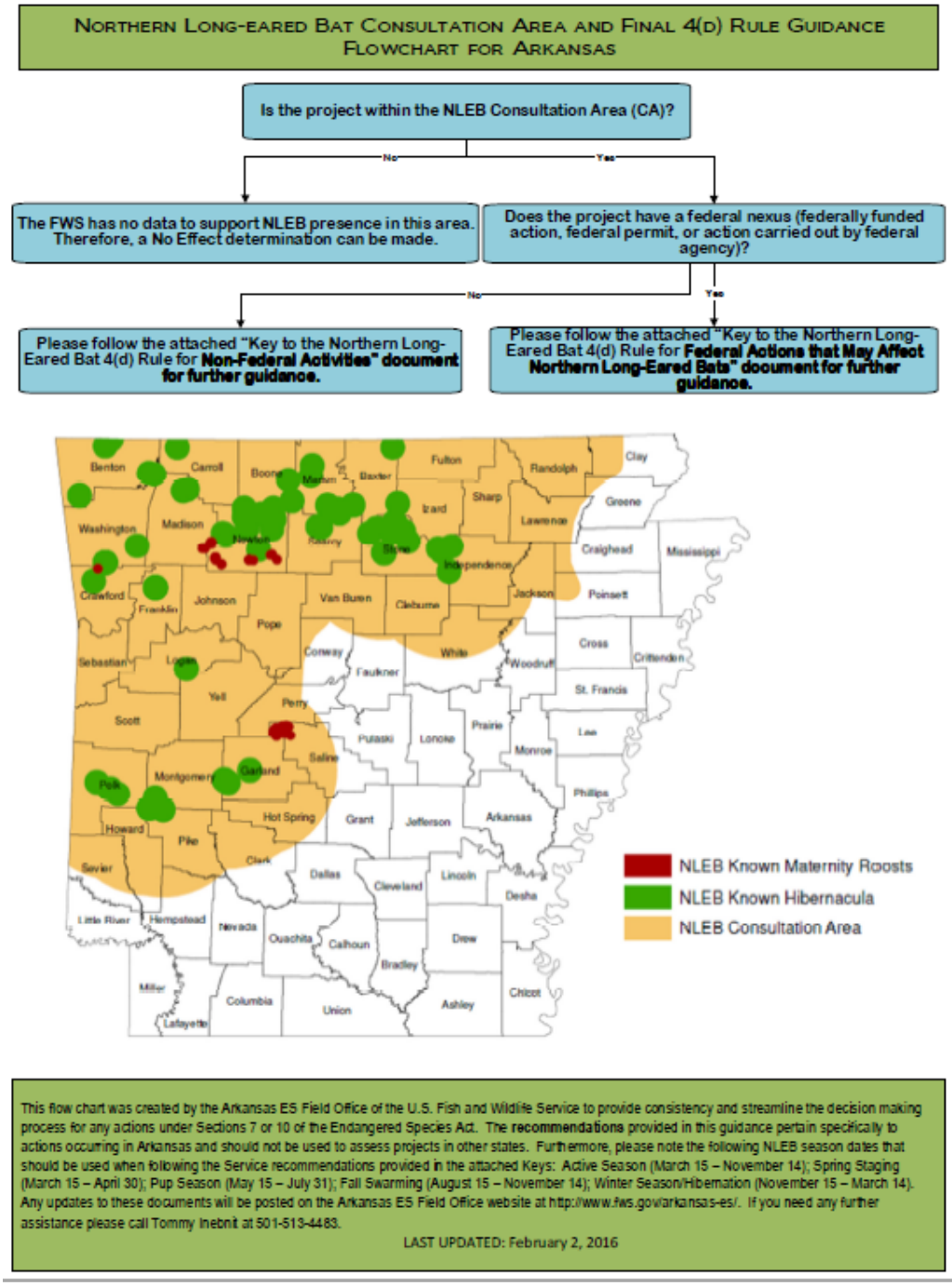
h. Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution by angling lights downward or via other light minimization measures.

i. Participate in actions to manage and reduce the impacts of white-nose syndrome on NLEB. Actions needed to investigate and manage white-nose syndrome are described in a national plan the USFWS developed in coordination with other federal and state agencies (USFWS 2011).

Consultation and coordination with USFWS on projects with potential to affect NLEB will follow the following flowchart and descriptions of effects determinations organized by project type for ease of use. In addition to consultation with USFWS under Section 7(a)(2) of the ESA, FCJMTC management guidelines include the following conservation measures under Section 7(a)(1) of the ESA. Management guidelines relate to military training smoke and obscurants, construction, forest management, prescribed burn, single or multiple tree removal during active season, hazard tree removal, pesticide use, vertebrate pest control and recreational activities. The entire management guideline document is found in Appendix L.

NLEB Consultation Area and Final 4(d) Rule Guidance Flowchart for Arkansas dated February 2, 2016. This flow chart was created by the Arkansas ES Field Office of the USFWS to provide consistency and streamline the decision making process for any actions under Sections 7 or 10 of the ESA. The recommendations provided in this guidance pertain specifically to actions occurring in Arkansas and should not be used to assess projects in other states. Furthermore, please note the following NLEB season dates that should be used when following the USFWS recommendations provided in the attached Keys: Active Season (March 15 – November 14); Spring Staging (March 15 – April 30); Pup Season (May 15 – July 31); Fall Swarming (August 15 – November 14); Winter Season/Hibernation (November 15 – March 14). Any updates to these documents will be posted on the Arkansas ES Field Office website at http://www.fws.gov/arkansas-es/. If you need any further assistance please call Tommy Inebnit at 501-513-4483.

Figure 4.1 NLEB Consultation Area and Final 4(d) Rule Guidance Flowchart for Arkansas



Programmatic BO on Final 4(d) Rule for the NLEB and Activities Expected from Take Prohibitions dated January 5, 2016. This ESA BO addresses the effects to the NLEB resulting from the USFWS's finalization of a special rule under the authority of Section 4(d) of the ESA. It also evaluates activities that the USFWS proposes to prohibit and except from take prohibitions under the final 4(d) rule. In the request for intra-USFWS consultation, the USFWS proposes a framework for streamlined Section 7 consultation for other federal

actions that may affect the NLEB and are consistent with the provisions of the 4(d) rule. This is a programmatic intra-USFWS consultation, because it addresses multiple actions on a program basis conducted under the umbrella of the final 4(d) rule. The USFWS has not designated or proposed critical habitat for the NLEB; therefore, this BO does not address effects to critical habitat. Because we anticipate continued NLEB declines as WNS spreads, this BO will cover the next seven years that the disease is minimally expected to spread and impact the NLEB throughout its entire range. The USFWS will reinitiate consultation by the end of 2022 or earlier if the standard reinitiation criteria are triggered.

Effects Determinations Criteria for NLEB

Military Training Smoke and Obscurants

Conservation Measures in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

1. M18 colored smoke grenades will not be used within 50 meters of suitable roost trees during the NLEB active season.
2. Fog oil will not be released during the NLEB active season without additional consultation.
3. WP will not be released within 200 meters of suitable roosting habitat during the NLEB active season.
4. Other smoke/obscurants will not be employed during the NLEB active season without additional consultation.

In conclusion, with the incorporation of conservation measures, use of smoke and obscurants may affect, but are not likely to adversely affect the NLEB.

Construction

Across the range of the species no effects are anticipated if construction projects:

- Are located entirely (including staging areas, construction footprint) outside of NLEB suitable summer habitat OR
- Involve maintenance, alteration, or demolition of bridges/structures without any signs of bats

Some projects may occur near or within suitable habitat within the range of NLEB, but the project will result in no effects or discountable likelihood of effects even without the implementation of any avoidance or minimization measures. Based on the proposed project description and NLEB, these projects are not likely to adversely affect NLEB and include:

- Activities completely within existing road surfaces (e.g., road line painting)
- Activities within existing ROWs or at existing facilities that contain suitable habitat but that do not remove or alter the habitat (e.g., mowing, brush removal)
- Wetland or stream protection associated with wetland mitigation without any suitable habitat clearing

- Are located in areas with negative NLEB P/A summer surveys

Other projects may occur near or within suitable habitat within the NLEB range, and it will be necessary to implement conservation measures to avoid or minimize impacts to the point that effects may be considered insignificant or discountable. Construction projects that involve any of the features listed below are not likely to adversely affect NLEBs.

- structure maintenance
    - during the active season that does not bother roosting bats in any way (e.g., activity away from roosts inside common rooms in structures, normal cleaning and routine maintenance)
- bridge maintenance
    - during the active season that does not bother roosting bats in any way (e.g., road paving, wing-wall work, work above that does not drill down to the underside of the deck, some abutment, beam end, scour, or pier repair)
- structure or bridge maintenance
    - outside the active season that does not alter roosting potential for bats
- tree removal
    - outside the active season (i.e., winter); AND
        - within 100 feet of existing road surfaces (this would include roads within Cantonment Areas or other state, local roads but does not include trails or other travel corridors in training areas)(no acreage limits); or
        - projects located >100 feet of existing road surfaces of up to 10 acres
    - that do not remove “documented” roosts or foraging habitat; AND
    - include any applicable lighting minimization measures; AND
    - implement standard water quality BMPs

Conservation measures in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

1. Roost Tree Protection. All documented roosts will be protected from construction for the lifespan of the roost tree, unless there is a human health and safety concern. Additionally, a 100-meter buffer will be placed around all maternity roosts to protect the roost from disturbance and to maintain a semblance of a natural environment for NLEB. The size and shape of a buffer will be determined on a case-by-case basis in consultation with the USFWS. Factors considered in buffer determination will include surrounding landscape, habitat connectivity, distance to other roosts, distance to known foraging areas and any other issue important to target species.
2. Construction activities outside of suitable habitat will not occur within 100 meters of any known roost trees without additional site-specific consultation.
3. Time of Year Restriction for Tree Falling. To protect roosting NLEBs during their active season, clearing of trees >3 in DBH will not occur during the active season unless negative presence/probable absence survey results were obtained for the area through appropriate surveys (USFWS 2015b).
4. Construction activities that remove suitable habitat within 0.25 mile of any known roost trees without additional site-specific consultation. Construction activities will also take into

account factors such as the surrounding landscape, habitat connectivity and distance to other roosts, distance to known foraging areas and any other issue important to target species.

5. Flagging or signs will be used to demarcate areas to be cleared vs. not cleared prior to any construction activities for a given project in an applicable area. Flagging will be removed upon completion of the project.
6. Via Scope of Works, Contracts, etc., all personnel responsible for construction activities will be informed about the need to follow design plans, stay within flagging, minimize impacts to wildlife and other environmental concerns.
7. Outdoor Lighting Minimization. For all future projects in known NLEB summer habitat or areas where presence/absence has not been determined (no surveys to date), the State ARNG will evaluate the use of outdoor lighting and seek to minimize light pollution by angling lights downward or via other light minimization measures. By angling the light away from potential foraging and roosting areas, the area will be darker thus providing bats more protection from predators.
8. Demolition. If the building has pre-existing known bat colonies, then the environmental contact of the State ARNG must be contacted before demolition is to occur. If during the course of demolition, bats of any species are discovered, then all work must cease and USFWS must be immediately contacted. If bats are identified as NLEBs, then additional steps will be taken to try and minimize impacts to the species. If the structure is safe to leave as is, then it will be left until after October 15, or until bats have stopped using the structure. If the structure is unsafe and poses a risk to human health and safety, the State ARNG will request the assistance of the USFWS in determining reasonable measures to exclude the bats immediately. If this is not possible, or bats are found to be using the structure during the maternity season when pups are not volant, the State ARNG will contact USFWS to discuss the most appropriate next course of action.
9. Water Quality BMPs

In conclusion, site-specific consultation with the local USFWS field office will often be needed to adequately assess the potential direct and indirect effects associated with construction projects.

Forest Management

Tree removal will:

1. Occur outside the active season; AND
    - within 100 feet of existing road surfaces (this would include roads within cantonment, state, local roads, paved roads and developed hard packed roads, but does not include trails or other travel corridors in training areas)(no acreage limits); or
    - clearcuts or similar harvest treatments located >100 feet of existing road surfaces of up to 10 acres (10 acres is 5% of a 200 acre home range)
    - selective harvest or similar treatments that maintain roosting habitat have no acreage limits

2. Not remove “documented” roosts and their associated foraging habitat.
3. Implement sediment and erosion control measures and promote site regeneration with native vegetation.

By conducting timber harvesting operations during the inactive season and maintaining forest cover, timber harvest operations *may affect, but are not likely to adversely affect* the NLEB.

Conservation measures below will be implemented in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

1. Roost Tree Protection. No documented roost trees, including roosts identified in the future, will be felled for the lifespan of the roost, unless there is a human health and safety concern.
2. Roost Tree Avoidance. Clearcutting will not occur within 0.25 mi (250 m) and overstory roost tree removal within 100 meters of documented maternity roost trees without further consultation with the USFWS.
3. Time of Year Restriction. A time of year restriction for clearing trees (>3 in DBH) has been established to protect roosting bats during non-hibernation seasons. Felling of trees in known summer habitat or suitable habitat where NLEB are assumed present must take place while most NLEBs are at the hibernaculum.
4. Snag Retention. All snags will be left in silvicultural treatments unless there is a safety concern for the contractor or the military units training in the stands (e.g., maneuver corridors), they pose a threat to any nearby structure, or unless the treatment is a salvage harvest or clearcut. As feasible, snags will be distributed and retained throughout the landscape.

Prescribed Burns

ARNG will employ the following conservation measures for all prescribed burns during the active period:

1. IWFMP. Inclusion of protocols to mitigate impacts to the NLEB within the site-specific IWFMP to closely control where, when and how fires are set. This helps to control where flames and smoke occur on the landscape. Because both flames and smoke could negatively impact bats, it is important to try and minimize potential impacts from both. If new maternity roosts are discovered near proposed burn sites, then burn plans may be written to include additional provisions that protect maternity roosts by diverting smoke or flames from the roost, when possible.
2. Time of Year Restriction. No burning near known summer habitat or suitable habitat where NLEB is assumed present will occur from during the active season to prevent smoke and possible fires from penetrating forested areas where bats may be present. Therefore, even if a prescribed fire enters a forested area, there should be no bats present.
3. Wet Lines. Outside of the restriction period, make use of naturally occurring firebreaks or if necessary, establish wet lines around forested areas to preclude fire from entering, to the maximum extent practicable, when a prescribed burn will be within 100 meters of

known summer habitat or areas of suitable habitat where adequate surveys have not yet determined status of NLEB in the area.

4. Time of Day Restriction. Whenever possible, all efforts will be made to have all flames extinguished and smoke generation minimized by sunset to reduce potential direct impacts to foraging bats.

Single or multiple tree removal during active season

Removal of single, multiple, or cluster of trees that are ≥3 inches DBH may be necessary to support maneuver areas, construction sites, or because they may pose a risk to property or human life. During the active season, in areas where there are documented or potential roost trees, an emergence survey will be conducted for signs of bat presence prior to removal of trees that do not pose a risk to human life or property. If no bats exit the tree, removal will occur the following day. If bats are roosting in such tree(s), removal will be delayed until the inactive season or the bats have left. If such tree removal is preferred immediately, coordination and consultation will take place with the local USFWS field office.

In conclusion, removal of a few trees may affect, but is not likely to adversely affect NLEB (with negative survey results) or additional consultation with the local USFWS Field Office will occur.

Hazard Tree Removal

If hazard trees that are considered an imminent threat to human life or loss of property and need to be removed during the active season, tree removal will occur and the USFWS field office informed of the action only if any bats were observed exiting the tree or any dead or injured bats (of any species) located. If by radio telemetry or emergence surveys NLEB are known or suspected of roosting in such tree(s), FCJMTC will initiate emergency consultation per the procedures in accordance with 50 CFR 402.05.

Pesticide use

Conservation measures below will be implemented in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

1. Only pesticides registered by the EPA and applicable State may be applied and only in accordance with their label.
2. Aerial applications will occur between the hours of sunrise and one hour before sunset. This will protect foraging bats in undiscovered foraging areas from direct exposure.
3. Whenever possible, herbicides that have low toxicity to mammals will be utilized with the tow behind power blowers. Herbicides that may be somewhat toxic to mammals will be mixed and applied at a rate, in accordance with the label, that should minimize any potential exposure concerns.
4. Application of pesticides from ground mounted vehicles (i.e., ATVs, tractors) that spray chemicals directly onto the ground and do not result in broad dispersal will be conducted at least 100 feet (30 m) from documented roost trees (including roosts identified in the

future).

5. Application of pesticides that result in broad dispersal (e.g., tow behind power blowers) will be conducted at least 250 feet (76 m) away from documented roost trees (including roosts identified in the future).
6. Pesticides applied from tow behind power blowers will use appropriate nozzles and drift control additives, and will be applied using low pressure to reduce drift and potential swirling motion from the blower. All efforts will be made to only spray 10 feet from ground level or below.
7. Pesticides will not be applied outdoors when the wind speed exceeds 8 mile/hour for all applications except power mist blowers. Pesticides applied via power mist blower will only be applied with wind speeds <5 mile/hour. This is to reduce the risk of pesticide drift, which could impact water quality or non-target areas. Care will be taken to make sure that any spray drift is kept away from non-target areas and individuals.
8. If a bat colony is found roosting in a building, then insecticides will be used sparingly and no foggers will be used. This will minimize impacts to roosting NLEBs if they are found within a building.
9. All pesticide use within forested areas will be targeted, plant-specific applications.
10. No trees >3 inches DBH will be targeted in areas of known or suspected roost trees unless known not to be a roost tree and removal is necessary to maintain range conditions, or they are encroaching on high hazard impact areas.

Vertebrate Pest Control

Conservation measures below will be implemented in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

1. No lethal control methods are permitted for bats unless there is a suspected human health risk for exposure to rabies or other disease. If individual bats are in buildings and there is no evidence of maternity use, then all efforts will be made to safely capture and release individual bats. Or, the bats will be excluded by establishing one-way valves over the roost's exit (if feasible).
2. Time of Year Restriction for Exclusion. The exclusion will only be done during times of the year when pups are not present or when they are volant (i.e., capable of independent flight, typically August - early May). The time of year restriction will minimize the risk of separating mothers from non-volant young, so it will prevent potential pup mortality during exclusion activities. Sealing cracks and crevices in buildings will also be done during the late fall or early spring. Sealing cracks and crevices prevents bats from entering a building and reduces human/bat conflicts.
3. FCJMTC will coordinate with the local USFWS field office prior to any permanent exclusion activities at sites with known bat colonies.
4. Adhesive Trap Restrictions. No adhesive traps used for rodents or insects will be placed in such a manner that they could capture bats—glue traps will not be placed in any crawl space or attic compartment within buildings or in areas where bats are known to occur.

Recreational Activities

Conservation measures below will be implemented in known NLEB summer habitat or suitable habitat with assumed NLEB summer presence.

Hunting hours of operation during the active season will be no earlier than sunrise and no later than sunset.

4.2.5 Rattlesnake-Master Borer Moth (*Papaipema eryngii*)

Goal 1. Comply with the ESA for rare, threatened and endangered species. Currently there are no management plans for the population of rattlesnake-master borer moth at FCJMTC.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective. Maintain compliance with the USFWS, regarding this candidate species.

Management Actions

1. Participate in the Species Status Assessment for the rattlesnake-master borer moth.

2. Participate in rattlesnake-master borer moth monitoring surveys as required by the USFWS.

3. Avoid and/or minimize impacts to the rattlesnake-master borer moth and their habitat.

4. Proactively collect information on locations of rattlesnake master.

5. Investigate the opportunity to conduct prescribed burning during the growing season as a supplement to WSI activities.

4.2.6 Rare Species and Species of Concern

FCJMTC is not legally required to specifically manage state-listed species. However, many actions for state-listed species are coincidental with actions for game and federally listed species. FCJMTC understands the importance of sensitive species that may not be federally listed, particularly since these species have the potential to become federally listed, potentially affecting the military mission on the installation. Thus, even though it is more difficult to justify funding specifically for the management of these species, FCJMTC will give a secondary priority to state-listed species. Several Species of Special Concern are known to exist at FCJMTC to include, but not limited to, Bachman's Sparrow (*Peucaea aestivalis*), ornate box turtle (*Terrapene ornata ornata*) and alligator snapping turtle (*Macrochelys temminckii*). Arkansas regulation 34.09 located in AGFC Code Book prohibits the take,

possession, or killing of alligator snapping turtles, their eggs or any part thereof. Any species that does not have a season date or bag limit is protected from harvest. The AWAP provides management guidelines to benefit such species (Anderson 2006; http://www.wildlifearkansas.com/strategy.html).

Goal 1. Comply with the ESA for rare, threatened and endangered species. Currently there are no management plans for the population of rattlesnake-master borer moth at FCJMTC.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective. Utilize guidelines with the AWAP (Appendix M) to protect and manage special status species.

Management Actions

1. Inventory and monitor special status species to establish a baseline from which conservation and management actions can be devised.

2. Target potential habitat types and seasons to document special status species.

3. Manage the habitat and populations of special status species known to or likely to occur at FCJMTC to reduce conflicts between the military mission and the environment.

4.2.7 Migratory Bird and Upland Game Bird Management

Migratory bird management is mandated by MBTA, Migratory Bird Readiness Rule, EO 13186 and other relevant legislation. The guidance for Addressing Migratory Bird Management in INRMPs dated 2017 (Appendix B) consolidates these mandates and identifies potential migratory bird management actions to include into this INRMP. INRMP's and the NEPA process serve to ensure military mission accomplishment and effective natural resources management. Proper implementation ensures compliance with all applicable natural resources related laws, EOs and regulations and helps avoid or minimize impacts to migratory birds.

Most birds utilizing FCJMTC are protected under the MBTA, with the exception of nonnative species and upland game birds *(i.e.,* northern bobwhite quail and wild turkey). While specific habitat management activities are focused on improving northern bobwhite quail habitat, the creation and maintenance of early successional habitat favored by northern bobwhite quail at FCJMTC provide benefits to multiple migratory bird species, to include those listed in the AWAP as Species of Greatest Conservation Need (Appendix M) and the endangered ABB.

Goal 1. Comply with the MBTA, EO 13186 and the Migratory Bird Readiness Rule.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened

or endangered or those with the potential to be listed in the future.

Objective 1. Maintain compliance with the Guidance for Addressing Migratory Bird Management in INRMPs (Appendix B).

Objective 2. Maintain, restore and enhance habitats upon which resident migratory birds populations depend.

Management Actions

1. Inventory and monitor migratory bird species to establish a baseline from which conservation and management actions can be devised.

2. Ensure that any readiness or non-readiness activity that has the potential to have significant adverse impacts on migratory bird populations is addressed in a NEPA analysis and coordinated with the USFWS.

3. Implement habitat enhancement projects for migratory bird species using the techniques identified in Section 4.4.

4. Avoid or minimize impacts to migratory birds and their habitats by performing activities outside of April 15 to July 1 to avoid peak nesting periods for ground nesting birds to the greatest extent possible.

5. Utilize the IPMP to reduce pesticide usage at FCJMTC.

6. Control invasive species that compete with migratory bird species and their habitats.

4.3 Fish and Wildlife Management

Wildlife management is typically accomplished by managing the habitat on which the wildlife depends. Specific habitat management techniques will be located in Section 4.4. This Section will focus exclusively on wildlife population density surveys and fish habitat management techniques. The AGFC will continue to conduct herd health surveys for white-tailed deer, as needed; continue to conduct gobble count surveys for wild turkey; continue to monitor quail populations by calling quail counts, quail harvest data, wing collection boxes, quail habitat indices, etc.; continue stocking of game species in lakes and ponds at FCJMTC and continue to plant food plots (combined plantings is not to exceed 1% of the total available acreage or 230 acres in spring and 230 acres in fall, per the 2011 BO for the ABB).

Goal 1. Manage all wildlife resources and habitats for consumptive and nonconsumptive uses, in accordance with federal and state laws, U.S. Army regulations, the AWAP and approved FCJMTC management plans.

Goal 2. Manage wildlife harvests to maintain game populations within the carrying capacity.

Objective. Implement various management actions (i.e., inventory, monitoring, assessment, evaluation, etc.)

Management Actions

1. Inventory and monitor distribution and abundance of mammals, birds, reptiles, amphibians, fish and invertebrates.

2. Maintain vegetation that is known to support native wildlife species.

3. Collect biological data (i.e., ticks, blood, cementum, etc.) from white-tailed deer taken during the FCJMTC modern gun and muzzleloader permit deer hunts.

4. Utilize the Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States, Technical Publication HMG-2 (Bailey 2006) dated 2006 (Appendix X) for specific management actions.

5. Install a pump in the moist soil unit in public use compartment 3.

6. Continue to use fertilization in Christmas, Engineer and Darby Lake and Marler Pond to improve habitats for desirable fish species.

7. Apply dolomitic lime to manage bass/bluegill lakes.

8. Use eastern redcedar to improve habitats in Christmas, Engineer and Darby Lakes and Marler Pond to improve habitats for desirable fish species.

9. Monitor water quality (i.e. nutrients, pesticides, dissolved oxygen, sedimentation, etc.).

10. Conduct limnological and aquatic surveys to determine water quality and habitat suitability and to establish a baseline for future monitoring and surveys.

11. Utilize the MOU between DOD and the pollinator partnership dated March 19, 2015 to promote conservation and management of pollinators.

4.4 Vegetation Management

AR 200-1 requires that Army habitat management efforts be accomplished in a manner that conserves and enhances existing flora and fauna consistent with the Army's goal to conserve, protect and sustain biological diversity, while supporting the accomplishment of the military mission. To meet this requirement, activities will be directed toward the maintenance

of healthy ecosystems and restoration of degraded ecosystems. Ecosystem management requires that native species be maintained in areas that can support them. FCJMTC is taking appropriate steps via this INRMP, and numerous studies and reports that have preceded it, to ensure that overall biodiversity is not compromised.

Maintaining and improving usability of training areas, ensuring ESA compliance by adhering to ESMPs, maintaining high quality natural areas while promoting native biodiversity and reducing hazardous fuels accumulation to mitigate the potential for extreme wildfires are the primary drivers of vegetation management at FCJMTC. The absence of fire in certain areas has led to the densification of forests and encroachment of mesophytic and invasive species into historically pyrophytic communities, resulting in a reduction in ecosystem services and an increase in accumulation of flammable fuels at FCJMTC's perimeter. Vegetation management is aimed at enhancing native early successional plant communities, reducing basal area of hardwood forests, eliminating nonnative species, reducing eastern red cedar acreage and securing FCJMTC's perimeter.

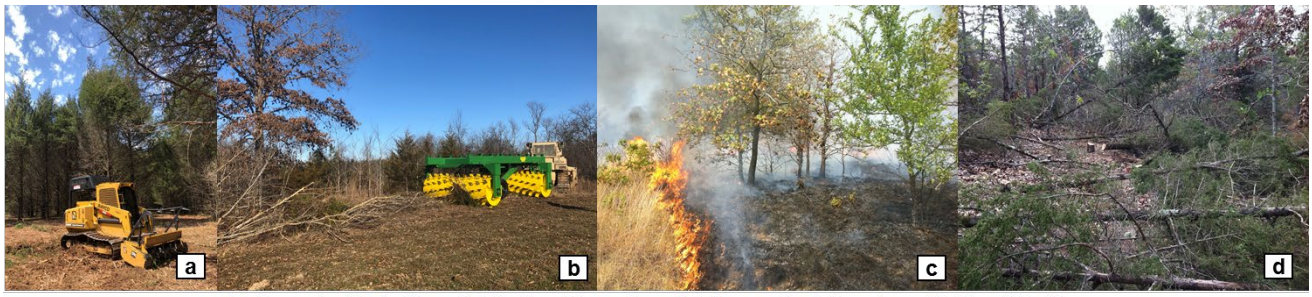
Vegetation management practices will typically be conducted in areas that are succeeding beyond the historical structure and composition of plant species that were on the landscape prior to the European settlement. Restoration of these areas typically require mechanical and/or chemical treatments followed by prescribed burning. FCJMTC will conduct vegetation management selecting from among the following techniques where appropriate.

- **Bull dozing, forestry mulching, hand felling and roller chopping** can be used to prepare sites for prescribed burning and control the growth of woody vegetation between burn rotations. Forestry mulching and roller chopping can facilitate restoration of an area that has been invaded by dense stands of fire intolerant, pioneer species (i.e., black locust, eastern red cedar, winged elm).

- **Disking and plowing** can be used to effectively set back plant succession, establish fire lines when necessary, control woody vegetation, stimulate growth of beneficial plant species, reduce heavy vegetation, create diversity within openings, establish both spring and fall plantings and rehabilitate maneuver-damaged areas.

- **Herbicide applications** can be used to treat isolated populations of invasive plants and noxious weeds to prevent further encroachment. Herbicide applications can also be used to reduce basal area prior to mechanical treatments and/or prescribed burning to achieve more complete control of undesirable vegetation and maximize the response of desirable vegetation. Appropriate herbicide application methods include hack-and-squirt, basal bark spray, cut stump treatment and foliar spray.

- **Prescribed burning** can be used as an effective and economic method to maintain openings, regenerate ground cover, stimulate growth of beneficial plant species and reduce fuel levels. An IWFMP has been developed and describes the existing plant communities, their condition, management techniques to improve or maintain those areas and a five year rotational burn regime.



(a) Forestry Mulching, (b) Roller Chopping, (c) Prescribed Burning, (d) Hand Felling

Goal 1. Manage vegetation to provide a diverse sustainable realistic military training landscape composed of native plant communities.

Goal 2. Protect and enhance the habitat and populations of species listed as rare, threatened or endangered or those with the potential to be listed in the future.

Objective 1. Inventory floral resources and monitor species or communities that are indicators of ecosystem integrity.

Management Actions

1. Maintain and update list of plant species, including invasive plants and noxious weeds that occur at FCJMTC. Current list is located in Appendix W.

2. Revalidate current vegetative communities map to incorporate completed habitat management efforts.

Objective 2. Manage vegetation using the established vegetation management practices.

Management Actions

1. Ensure NEPA analysis has been completed for all vegetation management practices.

2. Consult with the USFWS by submitting a streamlined consultation form prior to any tree removal greater than three inches in diameter.

3. Utilize vegetation management practices for WSI projects.

4. Prioritize funding for equipment and services.

5. Enhance native vegetation community types.

6. Maintain vegetation that is known to support native wildlife species.

7. Eliminate nonnative species to the extent practical and feasible.

4.5 Forest Management

Forest management at FCJMTC will primarily be complimentary to the aforementioned Vegetation Management Section 4.4. Forest management will be designed to enhance training and not to interfere with training activities. The forest ecosystem will be designed to create a balance with the natural environment while attempting to simulate a diversified training environment that might be encountered during military actions. All forestry management practices will implement the BMP Guidelines for Silviculture (Arkansas Forestry Commission).

The Army is permitted to sell forest products under 10 USC 2665 and to outlease property under 10 USC 2667(d). The Army is making progress in moving toward forest management that engages the principles of ecosystem management and focuses on maintaining the landscape for sustainable military use (Clark 2000). Sturdy et al. (1991) included detailed forest management information and provided cutting and planting schedules, which was followed until ARARNG assumed management responsibility for the installation. The forestry program has operated less intensively under ARARNG. There are no current plans for timber harvesting at FCJMTC. However, plans may be developed over the next five years. If harvesting is proposed, the action will be analyzed in a stand-alone NEPA document. The INRMP will be updated to address forestry changes and logging operations as needed on an annual basis.

Forest management practices will typically be conducted in areas where other vegetation management practices are not applicable. Forest management will focus on timber stand improvement, providing wildlife habitat and restoring forest health. Restoration of these areas typically require mechanical and/or chemical treatments followed by prescribed burning. General goals and objectives of forestry management will be based on current stand structure, the comprehensive forest inventory and training needs.

Forest management practices are listed below.

- **Selective improvement harvest** can open up maneuvering corridors and provide concealment islands for military training, increase ecosystem services by producing a mosaic of vegetation across the treatment area and improve the vigor of remaining trees. Hardwood areas will be selectively thinned to improve the health of the stands. Hardwood regeneration will be accomplished naturally by single tree or group selection harvest methods. The existing natural pine stands, and the loblolly and shortleaf pine plantations, will be selectively thinned to improve overall vigor and health of the trees. Pine stands may be naturally regenerated at the end of the stand rotation.

- **Thinning treatments** can open up maneuvering corridors to increase training opportunities, encourage the growth of an herbaceous understory for wildlife benefit and improve the health of forest stands. Many locations have grown up to a point where prescribed fire is no longer an effective option and need mechanically thinned. When these areas are opened by mechanical means, prescribed burning should be

introduced into these areas with a rotation of every three to five years. Areas can be left to regenerate naturally or be planted.

- **Site preparation** can be used to facilitate stand regeneration or establishment. Stands may be regenerated following a timber harvest or established in areas deemed appropriate for planting. Mechanical site preparation methods utilize heavy machinery and chemical site preparation methods utilize herbicides to manipulate the soil and vegetation to accommodate natural regeneration and/or seedling plantings. The determination to use mechanical and/or chemical site preparation methods will be made on a case by case basis depending on the unique ecological considerations of each site.

- **Planting** can be used to remediate sites not heavily utilized for training. Planting will be avoided in the very poorly drained soils (wetlands), dry soils, soils with low fertility and suitable ABB soils. FCJMTC has a comprehensive soils map in GIS format that was completed in 2001. The soils map will be used extensively to select areas best suited to plant. The FCJMTC soil survey will also utilize site limitation data for mechanical site preparation, seedling survival and recommended species to plant. Inadequately stocked areas will be candidates for planting, provided that the areas are not heavily utilized for training. The determination to reforest these areas will be on a case by case basis and will consider ecosystem requirements. A list of native species was compiled from a 1990 study (Johnson et al. 1990). Only native tree species from this list will be planted.

Potential for soil erosion is associated with harvesting activities, site preparation and plantings, but can be kept to a minimum provided that excessive slopes and wetlands are avoided and current BMPs are followed. Harvesting and site preparation have the potential to cause changes in species abundance and composition; therefore, all forest management practices will be examined on a site specific basis as their impact applies to the overall landscape.

Goal. Manage the forest ecosystem to support the military mission and maintain ecosystem integrity.

Objective. Maintain forestry monitoring programs, adequately assessing natural ecosystems and ensuring that standards are kept current.

Management Actions

1. Manage forested areas to reflect historical composition and distribution.

2. Reduce basal area of crowded upland forests to mimic historical woodland conditions.

3. Reduce eastern red cedar acreage.

4. Control the spread of invasive woody vegetation.

5. Incorporate BMPs into all forest product availabilities.

6. Ensure that environmental analyses (i.e., NEPA) of forest management practices address the impacts on biological diversity; species listed as endangered, threatened or proposed under the ESA; wetlands; riparian and riparian buffer areas; soils; air; water and other potentially significant issues.

7. Preserve snags and trees with natural cavities.

8. Manage downed logs by issuing fuelwood permits.

9. Protect desired hardwoods patches and individual trees.

10. Determine areas to be reforested.

11. Complete forest inventory.

12. Continue participating in the gypsy moth detection survey. Send traps to the ASPB for analysis.

4.6 Agricultural Outlease Management

The AMP was developed by the U.S. Department of Agriculture's NRCS to identify and prioritize areas for agricultural activities at FCJMTC lands that could be leased to the public. Contractors and leasees shall have access to FCJMTC hay leases to perform hay lease cutting and rehabilitation activities pending there is no military training or safety issues. Contractors and leasees shall take the most direct route from the boundary gates to the hay lease sites. The leasee or contractor will contact Range Control, either in person or by telephone, each day prior to entering any leasehold or project area.

Currently, there are no plans to conduct agricultural outleasing at FCJMTC during the next five years, however there is potential for such activities. The previous outleases have not been utilized since 2004, therefore reinitiating such outleases would likely require significant investments and efforts to restore them to operable conditions.

Goal. Maximize the use at FCJMTC for present and anticipated military training needs, recreation, forestry, wildlife, environmental protection and agricultural purposes.

Objective. Implement the AMP.

Management Actions

1. Ensure NEPA analysis has been completed for all agricultural outlease decisions.

2. Encourage native species in hay leases.

3. Lease agricultural tract 512A and 512B.

4.7 Pest Management

Pest management at FCJMTC is consistent with a presidential directive (Office of the President 1994) to reduce pesticide use by using integrated pest management (IPM). IPM is a strategy of pest management/prevention that considers pest biology and behavior and environmental factors and includes chemical, physical and biological suppression techniques. IPM is based on the principal that the presence of a pest does not warrant immediate control efforts unless the pest population will adversely impact the military mission; cause economic loss; endanger health or welfare; impact Army morale or become so dense that it can no longer be tolerated. IPM programs emphasize prevention in lieu of corrective measures. The goal of pest management at FCJMTC is to meet these requirements.

Pesticides are used at FCJMTC to control vegetation, insects and disease. Pesticide applications are strictly controlled by trained personnel and applied only by Arkansas state certified pesticide applicators in a manner consistent with label directions. Only pre-approved pesticides that are listed on the ARARNG State Pesticide Use List (SPUL) are allowed to be applied at FCJMTC. Documentation is recorded as required in CFR 171.11, DODI 4150.07, AR 200-1 and the ARNG IPM Program Policy Memo, February 2016.

Pests include weeds and other unwanted vegetation; mosquitoes; vertebrate pests such as birds, mice, rats and snakes; flying insects; crawling insects and spiders. All pesticide usage is pre-approved by the Environmental Branch, and the BO authorizes the use of only specific pesticides outside of the Cantonment Area.

Limited Self-Help pest control pre-approved using pesticides may be performed by all ARARNG personnel in accordance the ARARNG IPMP.

Goal 1. Protect human health and suppress or prevent damage to real estate and natural resources caused by pests.

Goal 2. Provide oversight of pest management at FCJMTC in accordance with the IPMP (Appendix H), threatened and ESMPs, AR 200-1 and DODI 4150.07.

Objective. Implement IPM in accordance with the statewide IPMP.

Management Actions

1. Consider threatened and endangered species with all pest management related actions.

2. Order and distribute self-help pre-approved pest control items (i.e., fire ant bait, insect repellent, rodent traps, etc.) in accordance with the requirements of the

ARARNG IPMP and educate internal stakeholders on their usage.

3. Train personnel and training units on the personal protective measures against harmful flora and fauna.

4. Take action for incidents of nuisance animals (i.e., beaver, coyotes, feral cats, etc.).

5. Report pesticide usage for the IPM data call in October.

6. Coordinate with ARARNG IPMC and the USFWS for inclusion of specific pesticides to the approved pesticide list.

4.8 Invasive Species Management

Per EO 13112, signed February 3, 1999, 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; and
- promote public education on invasive species and the means to address them.

FCJMTC will work to prevent the introduction of invasive species and to control such species already present on the installation. Monitoring the prevalence of invasive species at FCJMTC is mutually beneficial to natural resources management and the military mission. Invasive species can limit training activities by degrading training lands, diverting funding and personnel from other natural resources or operational priorities and contributing to a loss in biodiversity.

Goal. Reduce invasive species through integrated habitat restoration.

Objective. Control those plant and animal species that affect natural resources management or directly affect the military mission.

Management Actions

1. Continue to control and eradicate feral hogs using snares, cage traps, corral traps, night shooting, aerial gunning, opportunistic shooting, capture and GPS

tracking of Judas pigs, use of drones and thermal equipment, etc.

2. Initiate aerial gunning, capture and GPS tracking of Judas pig and toxicants control methods of feral hog management.

3. Continue to partner with APHIS to control feral hog populations (i.e., night shooting, blood and tissue samples for disease testing).

4. Continue to partner with the ASPB to determine presence/absence of gypsy moths.

5. Actively control invasive and noxious flora (i.e., Chinese bushclover, Chinese privet, eastern red cedar, Japanese honeysuckle, Japanese wisteria, Johnsongrass and kudzu) using fire, mechanical and approved chemical means.

6. Continue to utilize the Rayco mulcher to effectively remove eastern red cedar and secure funding for maintenance and upkeep.

4.9 Wildland Fire Management

DODI 4715.03, Natural Resources Conservation Program dated November 25, 2011, Enclosure 7 4.a; AR 200-1, Environmental Protection and Enhancement, 4-3d12(b) and AR 420-1, Chapter 25 Fire and Emergency Services (F&ES) dated September 4, 2002 require that IWFMPs be developed and implemented for applicable DOD and Army lands. These plans are required to comply with federal statutes, executive orders and DOD and Department of the Army regulations. The five-year update of the IWFMP (Appendix G) will be concurrent with the five-year update of the INRMP.

The NEPA requirements for the IWFMP will be satisfied by the Environmental Branch completing a REC tiered off the INRMP EA in accordance with AR 200-2.

Wildland fire, to include both unplanned wildfire and prescribed fire on the landscape, has the potential to significantly impact facilities and mission capabilities at FCJMTC. The purpose of the IWFMP is to provide a comprehensive approach to ensure safety of personnel, visitors and neighboring communities from wildfires; protect and enhance facilities; and manage and preserve natural and cultural resources, respectively. The IWFMP provides specific guidance, procedures and protocols essential to the prevention and suppression of wildfires, as well as the coordination and implementation requirements necessary to conduct prescribed burning activities.

Goal 1. Protect and provide safety for lives and facility resources at FCJMTC and adjacent communities during fire activities.

Goal 2. Maintain and improve the usability of the training sites for military training.

Goal 3. Maintain high quality wildlife habitat while promoting native biodiversity.

Goal 4. Reduce risk associated with wildland fires.

Objective 1. Implement the IWFMP.

Management Actions

1. Implement fire management and protection policies.
2. Update the IWFMP every five years.
3. Provide support in suppressing wildfires that threaten facilities and endangered species habitat.
4. Coordinate with the wildland fire manager on all prescribed burns.
5. Obtain NWCG compliant wildland fire training from AFC for the Environmental Branch and the Fire Department personnel.
6. Maintain and upgrade fire-fighting capabilities and PPE.

Objective 2. Conduct prescribed burns to protect and provide safety for lives and facility resources.

Management Actions

1. Restore and maintain existing firebreaks to enhance the effectiveness of wildfire suppression and wildland fuel reduction activities.
2. Construct temporary firelines as needed to contain fires.
3. Maintain properly qualified and trained wildland fire personnel.
4. Maintain sufficient equipment and prescribed burn personal protective equipment (PPE).
5. Maintain current roads and maneuver trails.
6. Prior to fire management, pre-treat 250-1,000 acres of hazard fuels each year through mechanical removal with minimal ground disturbance.
7. Use SRA to emphasize the prevention of destructive wildfires.

Objective 3. Conduct prescribed burns to maintain training sites.

Management Actions

1. Complete hazard fuel reduction burns on the units identified as hazard fuel areas.

2. Conduct prescribed burns prior to training activities in areas that pose a wildfire risk.

Objective 4. Conduct prescribed burns to maintain high quality wildlife habitat.

Management Actions

1. Burn approximately 10,000-15,000 acres annually.

2. Conduct at least one prescribed burn in all burn units over a five year period.

3. Conduct prescribed burn in the ABB compensation and habitat restoration area.

4. Reduce abundance of aggressive non-native species by 25% over five years.

5. Conduct prescribed burning outside of April 15 to July 31 to avoid peak nesting periods for ground nesting birds and NLEB pup season.

Objective 5. Monitor the effects of prescribed fire and wildfire on wildlife habitat.

Management Actions

1. Maintain database and GIS layer of all prescribed fire and wildfire occurrences.

2. Purchase a drone and associated training to be used for assessing control lines and measuring acreages.

3. Conduct post-burn evaluations after each prescribed burn and wildfire.

4. Evaluate growing season burns for hardwood control.

5. Continue AGFC surveys of bobwhite quail, deer and other game species.

6. Continue endangered species surveys and monitoring.

4.10 Water Resources Management

Wetlands protection is required by EO 11990, Protection of Wetlands (as amended). Protection and maintenance of existing habitat are the primary motivations for wetlands management at FCJMTC. Range Regulation ARARNG 385-63-1 provides protection of wetlands from military training damage at FCJMTC.

The installation has ample, well-distributed water and water is not a limiting factor. Research has shown (Semlitsch & Bodie 2003) that quality terrestrial habitat surrounding aquatic wetland habitat is critical to the complete functionality of a wetland; therefore, streams and wetlands at FCJMTC should have a minimum buffer of 50 meters from the edge of all jurisdictional wetlands. The wetland and riparian management zones were created by using GIS to buffer all known jurisdictional wetlands (Figure 2.9).

Environmental clearance review is the primary means of evaluating threats to wetlands at FCJMTC. The Environmental Branch reviews actions that may affect wetlands. Reviews are initiated from engineer work orders, military training plans, NEPA documentation, major construction plans, excavation permits, etc. If necessary, projects with potential impacts are referred to the USACE (Little Rock District) to determine if jurisdictional wetlands are implicated, establish mitigation procedures and/or obtain permits. Activities in wetlands that require federal permits may include, but are not limited to, placement of fill material, ditching activities when the excavated material is sidecast, mechanized land clearing, land leveling, most road construction and dam construction. The USACE permit process may require coordination with the USFWS and the SHPO to allow for the assessment of potential impacts to protected species and cultural resources. If wetland-affecting actions are less than 0.33 acres and are under a nationwide permit, coordination with the USACE often occurs. Actions affecting threatened and endangered species may require the Environmental Branch to consult with the USFWS. Wetland-affecting projects require NEPA analysis (AR 200-2).

Goal 1. Protect, maintain and enhance water resources in order in order to promote biodiversity of the region, protect water quality and aquatic species and to ensure the long-term use at FCJMTC lands for training.

Goal 2. Protect, maintain and enhance waters of the U.S. and ensure no net loss of wetland habitats.

Objective 1. Maintain and protect surface waters.

Management Actions

1. Maintain 100-foot vegetative buffers around all sides of surface waters, including lakes and ponds, where possible.

2. Maintain 100-foot vegetated riparian buffers around streams at FCJMTC, where possible.

Objective 2. Maintain and protect aquatic habitat.

Management Actions

1. Build hardened crossings where unimproved water crossing exist to protect vehicle damage while crossing streams and protect water quality by minimizing sedimentation and erosion.

2. Use water quality data to make decisions regarding land use, rehabilitation options and fish and wildlife habitat management options.

Objective 3. Maintain and protect riparian areas.

Management Actions

1. Maintain tree canopy over streams.

2. Plan training exercises to minimize shoreline and streambank erosion.

3. Plant native vegetation for riparian stabilization.

4. Restore degraded riparian habitat or mitigate impacts on the habitat when requirements are identified and resources are available.

Objective 4. Maintain and protect wetlands.

Management Actions

1. Update the National Wetlands Inventory Database and the GIS database if new wetlands are defined or delineated.

2. Maintain 100-foot buffers around wetlands.

3. Plan maintenance, development and training activities in an effort to avoid wetlands.

4.11 Soil and Erosion Control Management

Department of the Army Pamphlet 420-7 states that “Army land will be protected from soil movement by wind and water by adoption of appropriate control or stabilization measures. Typical measures include vegetative cover, use of various aggregates, soil binding materials, artificial or live windbreaks, stabilized waterways, diversion terraces, soil laden water retention basins and natural or constructed barriers for beach protection.” The following guidance is taken from DA PAM 420-7:

- Control measures must be applied to prevent the deposit of excessive quantities of silt and erosional debris from installations onto lands and into stream channels adjacent to installations.
- Earth barricades, earth covered ammunition storage magazines and similar earth-covered structures will be protected from erosion by adapted vegetative cover. On any sites where vegetation adequate to control erosion cannot be established, soil surface will be protected by a shallow layer of crushed rock, gravel or other weather-resistant aggregate.

- Firebreaks and security clear zones in most instances need not be free of vegetation. Such areas involving soil types, exposure conditions, or slopes susceptible to wind or water erosion should be stabilized to control erosion. Vegetation buildup can be prevented by proper mowing and by selective use of herbicides.
- Excessive mowing (too frequent or too close to the ground) will be avoided. Scalped areas are unsightly and prone to both wind and water erosion. Mowing heights should be directed by the 2011 BO for the ABB.

Erosion is a naturally occurring process that continually shapes the landscape. However, certain practices and conditions may cause accelerated erosion that may have detrimental impacts on natural resources, as well as infrastructure necessary to fulfill the mission at FCJMTC. Erosion that is directly caused by training is monitored and managed through the ITAM program. Erosion that is not caused by training is monitored and managed by the Roads and Grounds Section. Soils at FCJMTC are described in Section 2.4.4.

Problems associated with water erosion, such as gullies and sedimentation, can generally be traced to upslope areas that have sustained vegetation loss. The erosion of road ditches results in much of the sedimentation occurring at FCJMTC. Vegetative cover protects the soil surface from the impact of precipitation, increases infiltration to decrease runoff, slows downslope flows and stabilizes the soil within the rooting zone. Mechanical means of reducing runoff and decreasing flow rates may be necessary at sites where substantial gullies have already formed. Barriers to downslope movement can inhibit sheet flows. Check dams, composed of various materials placed at intervals along gullies, increase the amount of soil retained.

Goal 1. Protect soil resources and prevent soil erosion and its potential impacts on water quality, habitat and the military mission.

Objective 1. Minimize erosion, reduce the sediment load to streams and other water bodies, protect fertile soils and revegetate bare ground.

Management Actions

1. Comply with ADEQ requirements for construction sites.

2. Re-establish native vegetation in erosion control projects.

3. Utilize spatial data to monitor existing soil resources and use this data to design new erosion control projects.

4. Use site-specific soil testing, as needed, for natural resources programs, such as training land rehabilitation, erosion control and food plots.

5. Repair damaged soils and use soil parameters to manage military activities, protect soil stability, restore training lands and conserve wildlife habitat.

4.12 Climate Change

The DOD 2014 Climate Chaffee Adaptation Roadmap was initiated to address climate change and the impacts on operations, adaptation, mitigation and coordination with internal and external stakeholders. The first step to understanding the role that climate change has on the species is to identify its effects using tangible, specific metrics. This guidance encourages FCJMTC to adapt its management actions by monitoring historical climatic conditions and species survey results to obtain trends.

The Final Guidance for Addressing Climate Resiliency in INRMP dated May 12, 2018 complements DOD Directive (DODD) 4715.21, DODI 4715.03, DODM 4715.03 and AR 200-1. DOD 4715.21 specifically, provides requirements for the Army to assess and manage risks from climate change. To address the mandate in DODI 4715.03 to plan for climate change impacts to natural resources, this Section discusses goals, objective and management actions designed to reduce vulnerability against expected climate changes. Because the science and practice of adaptation is still in early stages of development, FCJMTC will continue to research planning for climate change.

Appendix B contains specific climate change related guidance.

Goal 1. Restore, maintain and protect habitats to support healthy species populations and ecosystem functions.

Objective 1. Identify, monitor and protect high priority habitats, while also ensuring protection of the military mission.

Management Actions

1. Analyze ABB annual monitoring survey data and historical weather data to determine potential climatic effects on the population (Conservation Plan for the ABB, Action 5.6).

2. Monitor the rattlesnake master borer moth population and its obligate host plant (rattlesnake master), as the Wildlife Action Plan indicates that insects with specialized habitat requirements and/or host plants could be negatively impacted if populations of the obligate host plant is reduced.

3. Continue to conduct species surveys, as funding allows.

4. Install and maintain weather stations, to include rain gauges.

Goal 2. Proactively utilize adaptive management to remain current with developing climate change information and tools.

Objective 2. Incorporate climate change considerations into species and habitat management plans, where feasible.

Management Actions

1. Continue to implement monitoring priorities as outlined in the Wildlife Action Plan.

2. Participate in regional and national monitoring programs as they are developed.

4.13 Cultural Resources Management

The ICRMP should be viewed for in-depth discussions and regulations pertaining to cultural resources at FCJMTC (2016-2020). Numerous laws and regulations require federal agencies to consider the effects of proposed projects on cultural resources. These laws and regulations stipulate a process for compliance, define responsibilities of the federal agency proposing the action and prescribe relationships among other involved agencies (i.e., State Office of Historic Preservation and the Advisory Council of Historical Preservation). Compliance with requirements of these laws and regulations involves the identification and assessment of impacts or effects of these actions, evaluation of the significance of potential historic properties within the area and development and implementation of measures to eliminate or reduce adverse impacts.

Cultural resources management at FCJMTC is the responsibility of the state archaeologist, ARARNG and TAG. The primary source of outside assistance is the SHPO, who is also the primary regulator with regard to cultural resources in Arkansas. One of the basic steps of compliance with Section 106 is the identification and consultation with affected Indian Tribes and other consulting parties. The SHPO will provide Section 106 guidance as the INRMP is implemented.

Goal. Implement this INRMP and the ICRMP (Appendix F) in compliance with laws and regulations governing cultural resources at FCJMTC.

Objective 1. Implement the statewide ICRMP.

Management Actions

1. Develop Spatial Data Standards Facility Infrastructure Environment (SDSFIE) compliant geodatabase for cultural resources in partnership with the Arkansas Archeological Survey.

2. Complete documentation of the Rock Art at FCJMTC in partnership with the Arkansas Archeological Survey.

3. There are 448 sites at FCJMTC that need further work, including relocation and eligibility determinations. Sites will be addressed either in-house or in blocks as funding allows.

4. Continue site inspections of sites that have been deemed eligible for the NRHP. Sites will be evaluated on their current integrity and any damage will be noted.

Objective 2. Maintain and protect the native wildlife and vegetation communities, in accordance with cultural resources management goals.

Management Actions

1. Implement provisions of the ICRMP that relate to natural resources management.

2. Avoid or mitigate adverse effects to cultural resources from natural resources through proper review and planning.

3. Maximize use of GIS archeological information in planning and implementing any ground-disturbing projects.

4.14 GIS Management

The GIS program mission is to create, analyze, manage and distribute standardized geospatial information, products and services. A well maintained and easily accessible GIS-based data can improve success and allow for more efficient long-term planning.

GIS allows users to manipulate spatial data (i.e., maps, delineated natural and man-made features, aerial photos, satellite images) in a similar fashion as a data management program allows the analyses and presentation of mathematical data. This spatial database provides managers with an accurate knowledge of where natural resources are and their relative conditions. With a robust GIS the decisions related to natural resource management can be effectively evaluated and various alternatives can be developed and modeled. Data can be purchased and converted into most software formats, or it can either be scanned or digitized directly from maps or aerial photographs. A GIS can analyze different map layers to show the relationship of one map layer to another. For example, if a project involved putting a line-of-sight antenna in a location, a good GIS could map all areas that could be reached by an antenna of a certain height out to a certain distance.

Goal. Collect, enhance, update and maintain natural resources GIS data.

Objective. Continue development, maintenance and analyze geospatial data for FCJMTC.

Management Actions

1. Provide maps and spatial analyses to support natural resources management as well as other missions.

2. Maintain up to date software and data.

3. Develop or obtain databases needed to support FCJMTC.

4. Further enhance and integrate GIS capability to all pertinent Environmental Branch personnel.

5. Make more use of analytical capabilities of GIS to provide natural resources management options. GIS needs to be implemented more in the decision and policy formation processes.

6. Create user-friendly interfaces to enable a wider use of GIS databases specific to needs of installation users.

7. Routinely update/replace hardware and software to maintain the capability to use developing GIS technology.

8. Ensure GIS data is in the latest SDSFIE compliant geodatabase.

9. When possible, ensure that GIS data is included as a deliverable in delivery orders.

4.15 Outdoor Recreation Management

Consistent with the Sikes Act, DOD lands with suitable natural resources are to be managed to allow outdoor recreational opportunities. DODI 4715.03 states, those lands and waters shall be made available to the public for educational or recreational use of natural and cultural resources when such access is compatible with military mission activities, ecosystem sustainability and with other considerations such as security, safety and fiscal soundness.

FCJMTC is designated as a Wildlife Management Area (WMA), Zone 230, and the State of Arkansas General Hunting and Fishing Regulations are applicable at FCJMTC, except as noted in the current FCJMTC WMA Policy Statement #01-2018 (Appendix Y). Rules and regulations applicable to statewide WMA's are available in AGFC's Hunting and Fishing Guidebooks or at agfc.com. Violations of Arkansas' General Hunting, Fishing and/or WMA Regulation provisions set forth in this Policy Statement may result in the loss of hunting and fishing privileges at FCJMTC. All permits issued remain the property of FCJMTC and are subject to forfeiture as a result of, but not limited to, trespass and wildlife violations. Violators may be temporarily or permanently barred from FCJMTC and are subject to civil or military penalties/arrest.

Outdoor recreation can be complementary to the management of game and fish populations at FCJMTC. These outdoor recreational opportunities can be consumptive (i.e., hunting and fishing) or non-consumptive (i.e., running, jogging, bicycling and horseback riding). The military mission has priority over outdoor recreation involving range access.

Public access is generally open with regard to outdoor recreation at FCJMTC. All persons, unless excluded by age, using FCJMTC for outdoor recreation, are required to attend a sportsman orientation class conducted by the Environmental Branch. During this class all persons will be informed of the rules and regulations applicable at FCJMTC, receive a map and copy of the current FCJMTC Policy Statement, sign a hold harmless agreement and obtain a sportsman or recreational permit and vehicle pass.

FCJMTC is divided into 32 public use compartments (Figure 2.3). Not all public use compartments are open to the public on a given day due to military training requirements. Bulletin boards with maps showing the boundaries of the public use compartments and the list of open compartments are located at all legal access gates. Approximately 17,000 acres (Impact Area and the Surface Cleared Area) are closed to the public at all times. Recreationists must check in at legal access gates to determine areas open to recreation each time they enter FCJMTC. Recreationists may only enter FCJMTC at one of the 19 legal access gates. Range Control posts the lists of open compartments on bulletin boards at each legal access gate and the Environmental Branch maintains a phone number/answering machine with current updates of the list of open compartments. The nature of the military mission, with rapidly changing maneuver and firing activities, combined with inherent dangers associated with unexploded munitions, makes public access for outdoor recreation in some training areas an incompatible use. Hunters are not allowed at FCJMTC until 90 minutes before sunrise and must depart no later than 90 minutes after sunset, except when hunting furbearers during the open furbearer season. Night fishing and night hunting for furbearers is permitted, but anglers and hunters must check in and out with the PSD by phone.

Goal. Provide quality consumptive and non-consumptive recreational opportunities while avoiding impacts on training and maintaining a balanced and diverse ecosystem.

Objective. Maintain and improve outdoor recreational facilities and opportunities.

Management Actions

1. Monitor activities for impacts on ecosystem integrity and give special consideration to protection of critical areas from negative impacts due to outdoor recreation.

2. Encourage the development of facilities that improve use and enjoyment of fishing, hunting and other natural resources-based recreation.

3. Continue policies toward public access for outdoor recreation.

4. Continue to administer outdoor recreation fees.

5. Investigate recreational/hunter density usage for potential usage limitations.

4.16 Natural Resources Law Enforcement Management

The Sikes Act included two specific professional natural resources enforcement items:

- required enforcement of applicable natural resource laws (including regulations); and
- an expansion of DOD authority stating that, “All federal laws relating to the management of natural resources on federal land may be enforced by the Secretary of Defense with respect to violations of the laws that occur on military installations within the U.S.”

FCJMTC does not have an enforcement system within the ARARNG specifically aimed at protecting fish and wildlife resources. An agreement between ARARNG, FCJMTC and the AGFC specifies that AGFC is responsible for enforcing all state game and fish regulations at FCJMTC. However, FCJMTC law enforcement personnel also enforce state regulations. Close cooperation between FCJMTC and AGFC personnel is necessary for the prompt and complete exchange of information in matters pertaining to law enforcement. The PSD emphasizes enforcement in the Cantonment Area and other nearby areas; enforcement of training areas is secondary. The PSD does not receive training specific to natural resources protection. They are state employees, enforcing state and installation regulations and they perform limited patrol for natural resources. Range Control calls for assistance from the PSD or conducts most range-related enforcement as part of military training support. This enforcement is usually directed against trespass, operating a motor vehicle off road, littering and arson. Offenders can be escorted off-base, barred from the installation and/or prosecuted. DPTMS prepares the disbarment list for fish, game and natural resources violators for signature by the TSM.

Goal. Protect the natural resources at FCJMTC by enforcing laws and regulations.

Objective. Enforce the natural resource laws and regulations.

Management Actions

1. Continue the agreement with the AGFC to maintain adequate natural resources law enforcement presence to effectively monitor land use, enforce training guidelines and off-road vehicle restrictions.

2. Continue to use the PSD to provide back-up enforcement for military and civilian activities that relates to natural resources protection.

3. Establish and maintain adequate control measures (i.e., signs, gates, siber stakes, etc.) to provide for safety, security and protection of natural and cultural resources.

4.17 Cantonment Area Natural Resources Management

There are no legal requirements to extensively manage and improve grounds in the Cantonment Area. However, there are requirements (the Sikes Act, EO 13112 [Invasive Species], EO 13514 [Federal Energy Management], EO 13423 [Strengthening Federal Environmental, Energy and Transportation Management] and the Presidential Memorandum of April 1994 [Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds]) to use native species, reducing maintenance and water usage for plantings. These requirements direct federal agencies to implement landscaping policies that include the use of native plants, minimize adverse effects to the natural habitat, reduce use of fertilizers and pesticides and implement water-efficient practices. All landscape plans and plants are approved by the Environmental Branch.

Improved and/or landscaped areas are generally restricted to the Cantonment Area. The developed landscape consists of a variety of trees, shrubs and ground covers that require routine maintenance, such as mowing, edging, weeding, fertilizing, insect or pest control, pruning, the replacement of dead plant material and irrigation. The Cantonment Area is primarily maintained by the Roads and Grounds Section, with the exception of the ASP, DOE, Logistics, Miles Warehouse contractors and the PSD/Fire Department.

Goal. Improve effectiveness of grounds maintenance to the overall ecosystem.

Objective. Determine maintenance guidelines and requirements for facilities while minimizing environmental impact.

Management Actions

1. Ensure ESA compliance for the NLEB prior to any limbing, tree removal or pesticide use within the Cantonment Area.

2. Ensure NEPA compliance for all applicable Cantonment Area projects.

3. Ensure landscaping features are kept at least 30 feet from the facility.

4. Reseed exposed soils after ground-disturbing activities, as needed.

4.18 Gas Lease Management

Federal oil and gas leases have been issued at FCJMTC since 1969 with all of the installation under lease. There are 53 active gas wells at FCJMTC, which are administered through the Bureau of Land Management (BLM). The BLM processes lease nominations, conducts field reviews, prepares land use planning analysis and EAs in consultation with the ARARNG and issues leases. The ARARNG determines if drilling can occur without conflicting with military operations. Oil and gas operations include drilling new wells, well re-entry, well

work-over, the laying of pipelines and well plugging. Pads are restricted to 300 feet x 250 feet and the pits are no larger than 100 feet x 160 feet. Applicable stipulations relating to oil or gas lease operations at FCJMTC are listed in Appendix Z.

Goal. Support natural energy initiatives that do not degrade military training or environmental quality.

Objective. Continue oil and gas lease management.

Management Actions

1. Continue to provide input on all oil and gas lease decisions and management practices.

2. Continue to allow gasline maintenance on approximately 203 acres.

3. Perform inspections of the 53 lease areas to ensure compliance.

5 INRMP IMPLEMENTATION

Established goals, objectives and management actions, provided in Chapter 4, lay the groundwork for future funding requirements. Each management action will be accomplished to the maximum extent possible, depending on the availability of funding. Projects may be accomplished by internal (i.e., Environmental Branch, ITAM, Roads and Grounds Section, etc.) and external stakeholders (i.e., AGFC, colleges and universities, contractors, USFWS, volunteers, etc.). Appendix A contains a project table and the current status for each project for tracking purposes. This project table will be updated as these specific projects are completed.

Executing high priority projects and activities within the next five years is an essential way to determine INRMP implementation. Typically, compliance-related projects and ESA projects are consistently funded. An INRMP is considered to be implemented if an installation (DODM 4715.03):

- Actively requests and uses funds for natural resources management projects, activities and other requirements in support of goals and objectives identified in the INRMP.
- Ensures that sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP.
- Invites annual feedback from the appropriate USFWS and state fish and wildlife agency offices on the effectiveness of its INRMP.
- Documents specific INRMP action accomplishments undertaken each year.
- Evaluates the effectiveness of past and current management activities and adapting those activities as needed to implement future actions.

5.1 Funding

Natural resources management relies on a variety of funding mechanisms. Below are general discussions about different sources of funding to implement this INRMP.

5.1.1 Operations and Maintenance (O&M) Environmental Funds

Effective INRMP implementation is dependent upon the availability of funds. Depending on the availability of funds, management actions will be prioritized according to the law or regulations that drives them. Funding for environmental projects, including natural resources, comes primarily from NGB through the Operation and Maintenance (O&M) Master Cooperative Agreement. The Environmental Branch staff will implement many of the INRMP management actions. Larger scale projects will be contracted out using on-call contractors. Projects are prepared and submitted annually by the Environmental Branch staff utilizing the NGB STEP to request federal funding for these projects. These estimates will be adjusted as needed each year depending on the need. Appendix A lists the environmental program funding through this INRMP period.

5.1.2 Fish and Wildlife Conservation Funds

The Army Fish and Wildlife Conservation Fee Collection Program Guidance dated March 5, 2018 (Appendix B) establishes the army regulatory guidance, to include, the functions, roles and responsibilities of key personnel directly involved with the hunting, fishing and trapping program. The hunting, fishing and trapping program is essential to the management of wildlife populations within their carrying capacity, sustainment of a healthy ecosystem and to allow the public to engage in recreational opportunities. Fish and Wildlife Conservation funds are collected via sales of licenses to hunt or fish. They are authorized by the Sikes Act. These funds may be used only for fish and wildlife management at FCJMTC. They cannot be used for recreational aspects of fish and wildlife management.

Monies accrued from the sale of sportsman/recreational permits must be expended to support the wildlife program at FCJMTC. Collections and disbursements are accounted for in accordance with guidance provided for the appropriation titled “Wildlife Conservation, Military Reservations”, Army Account 21X5095 (AR 37-100 and 37-108). Funds generated will be spent, administered and accounted for using the FCJMTC financial accounting system, per Sikes Act amendments of 1997. FCJMTC will generate about $35,000 annually for fish and wildlife management from the sale of permits. Army policy encourages self-sufficiency with regard to managing game populations on military lands. FCJMTC will, from time to time, examine options to increase Sikes Act income to maintain the game base for its quality hunting and fishing program.

5.1.3 Forestry Reimbursable Funds

FCJMTC is reviewing the feasibility of conducting a timber sale of eastern red cedar. Costs to fund certain forest management projects may be reimbursed by proceeds generated by sale of forest products on U.S. Army installations. The account is called the Forest Reserve Account. Funds must be used only for items directly related to management of the forest ecosystem. Such items include timber management, reforestation, timber stand improvement, inventories, fire protection, construction and maintenance of timber area access roads, purchase of forestry equipment, disease and insect control, planning (including compliance with laws), marking, inspections, sales preparations, personnel training and sales.

5.1.4 Agricultural Funds

Agricultural funds are derived from agricultural leases on installations. They are centrally controlled at Department of Army and Major Command levels with no requirements for spending where they were generated. AR 200-1 outlines procedures for collection and spending these funds. They are primarily intended to offset costs of maintaining agricultural leases, but they are also available for preparing and implementing INRMPs. These are the broadest use funds available exclusively to natural resources managers. Currently there are no active agricultural leases at FCJMTC.

5.1.5 Legacy Funds

The DOD Legacy Resources Management Program was instituted by Congress in 1991 to promote stewardship of natural and cultural resources. Legacy is controlled using special Legacy project proposal/reporting procedures. Legacy funds are generally for nonrecurring items that are neither routine operations nor compliance driven. They are normally used for lower priority type projects. Funding levels from Legacy are highly variable and are not reliable from year to year.

5.2 Natural Resources Management Staffing

DOD Components shall ensure that sufficient numbers of professionally trained natural resources management personnel and natural resources law enforcement personnel are available and assigned responsibility to manage their installations' natural resources. Necessary supplemental training to ensure the proper and efficient management of those resources shall be provided in a timely manner. (DODI 4715.03)

The current natural resources management staffing at FCJMTC includes:

- Environmental Program Coordinator
- Compliance Manager
- Natural Resources Manager
- Biologist (2)
- Forester (vacant)
- GIS Analyst
- Environmental Technical Support Specialist
- Fish and Wildlife Assistant (1,000 hour position)
- Interns/Seasonal Employees-Endangered Species (vacant)

5.3 Training

The Sikes Act specifically requires "sufficient numbers of professionally trained natural resources management and natural resources enforcement personnel to be available and assigned responsibility" to implement this INRMP. At FCJMTC, the primary facilitators of this INRMP is the Environmental Branch. Adequate natural resources training, to include, job training activities and professional meetings is vital to the success of military sustainability and overall land management at FCJMTC. A list of conferences, professional meetings and training workshop are listed below.

- GIS/remote sensing training appropriate to the skill level of FCJMTC operators
- National Military Fish and Wildlife Association Conference
- NGB Conservation Workshop
- Society of American Foresters
- The Wildlife Society
- Wildland Fire Training
- Wild Pig Conference

5.4 Goals, Objectives and Management Actions

Goal. Use natural resources management professionals to effectively implement this INRMP at FCJMTC.

Objective. Provide external specialized skills, personnel and resources to support the FCJMTC natural resources program.

Management Actions

1. Provide staffing for the FCJMTC environmental program.

2. Send at least one person to each of the following annual workshops or professional conferences: HQDA, U.S. Army and ARNG training sessions; National Military Fish and Wildlife Association annual workshop; NGB Conservation Workshop; annual Wildlife Society Conference; Annual Society of American Foresters Conference; Army-sponsored SRP annual workshop; Annual North American Wildlife and Natural Resources Conference; GIS/remote sensing training appropriate to the skill level of FCJMTC operators and Wildland fire and prescribed burn training.

3. Encourage wildlife biologists and foresters to pursue certification at the appropriate levels through The Wildlife Society and/or the Society of American Foresters.

4. Ensure that natural resources personnel obtain the one-time or occasional refresher training needed to fulfill job requirements (i.e., GIS user training, ArcView, pesticide applicator certification, NEPA training, endangered species documentation/consultation training).

5. Use contractors and/or universities to assist with research and project accomplishment in implementation of this INRMP as appropriate.

6. Use state and federal agencies to assist with implementation of this INRMP as appropriate.

7. Perform annual review for operation and effect of the INRMP.

FORMAT PAGE

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