

**FINAL**  
**UPDATED INTEGRATED NATURAL**  
**RESOURCES MANAGEMENT PLAN**

**Fort McClellan Army National Guard**  
**Training Center**

**Pelham Range and the Main Enclave**  
**Calhoun County, Alabama**



**Alabama Army National Guard**

2021

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**SIGNATURE PAGE - ARMY NATIONAL GUARD**  
**Updated Integrated Natural Resources Management Plan**  
**Fort McClellan Army National Guard Training Center**  
**Calhoun County, Alabama**  
**May 2021**

This updated Integrated Natural Resources Management Plan (INRMP) meets the requirements for INRMPs as specified in the Sikes Act Improvement Act (SAIA) (16 USC §670a *et seq.*). It has set appropriate and adequate guidelines for conserving and protecting the natural resources of the Fort McClellan Army National Guard Training Center.

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**SIGNATURE PAGE – U.S. FISH AND WILDLIFE SERVICE**

**Updated Integrated Natural Resources Management Plan**

**Fort McClellan Army National Guard Training Center**

**Calhoun County, Alabama**

**May 2021**

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## TABLE OF CONTENTS

<b>1.0</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>2</b>
1.1	INRMP Vision .....	2
1.2	Purpose and Scope of this INRMP.....	3
1.3	Installation Overview .....	4
1.4	Relationship to the Military Mission.....	4
1.5	Partnerships.....	5
1.6	Primary Natural Resource Management Goals.....	5
<b>2.0</b>	<b>GENERAL INFORMATION, COMPLIANCE, INTEGRATION, AND RESPONSIBILITIES ..</b>	<b>7</b>
2.1	Authority .....	7
2.2	Regulatory Drivers.....	7
2.3	Federal and State Compliance.....	8
2.4	National Environmental Policy Act .....	8
<b>3.0</b>	<b>RESPONSIBLE PARTIES AND INRMP IMPLEMENTATION.....</b>	<b>9</b>
3.1	Responsible Parties .....	9
3.2	INRMP Implementation.....	9
3.2.1	Administrative and Technical Support.....	10
3.2.1.1	Personnel .....	10
3.2.1.2	Training .....	11
3.2.1.3	Data Management.....	11
3.2.1.4	Agency Coordination and Technical Assistance .....	11
3.2.2	Funding .....	12
3.2.2.1	Operation and Maintenance Environmental Funds .....	12
3.2.2.2	Hunting Fees.....	13
3.2.2.3	Forestry Funds .....	13
3.2.2.4	Agricultural Funds.....	14
3.2.2.5	Real Property Funds .....	14
3.2.2.6	Training Funds.....	14
3.2.2.7	Other Funding Sources .....	14
3.2.3	Projects and Budgets.....	15
3.2.4	INRMP Approval and Revisions .....	15
<b>4.0</b>	<b>COMPONENT PLANS AND PROGRAMS.....</b>	<b>15</b>
4.1	Stormwater and Wastewater Program.....	15
4.1.1	Spill Prevention, Control and Countermeasure Plan and Installation Spill Contingency Plan .....	16
4.1.2	Soil Erosion Management Plan .....	16
4.1.3	Endangered Species Management Plan .....	16

4.1.4 Integrated Cultural Resources Management Plan ..... 17  
4.1.5 Integrated Pest Management Plan..... 17  
4.1.6 Invasive and Exotic Species Survey and Management Plan..... 18  
4.1.7 Forest Management Plan..... 18  
4.1.8 Integrated Wildland Fire Management Plan ..... 18  
4.1.9 Wetlands and Aquatic Habitat Management Program..... 18  
4.1.10 Natural Resources Planning Level Surveys (PLS) ..... 19

**LIST OF APPENDICES**

**Appendix A: Agency Correspondence**

**Appendix B: Installation Overview and Military Mission**

**Appendix C: Pertinent Laws, Regulations, and Executive Orders**

**Appendix D: Record of Environmental Consideration for Implementation of the FM-ARNGTC Updated INRMP and Finding of No Significant Impact**

**Appendix E: Sustainable Range Program/Integrated Training Area Management**

**Appendix F: Natural Environment**

**Appendix G: Forest and Fire Management**

**Appendix H: Fish and Wildlife Management**

**Appendix I: Land and Water Resources Management**

**Appendix J: Outdoor Recreation Management and Public Access**

**Appendix K: Cultural Resources Management**

**Appendix L: Land Use and Planning, Natural Resources Management**

**Appendix M: Figures**

- Figure 1: Location of FM-ARNGTC
- Figure 2: Pelham Range Land Use and Training Areas
- Figure 3: Main Enclave Land Use
- Figure 4a: Geology of Pelham Range
- Figure 4b: Geology of the Main Enclave
- Figure 5a: Soils of Pelham Range
- Figure 5b: Soils of the Main Enclave
- Figure 6: Erosion on Pelham Range
- Figure 7a: Wetlands and Waterbodies on Pelham Range
- Figure 7b: Wetlands and Waterbodies on the Main Enclave
- Figure 8a: FEMA Floodplains on Pelham Range
- Figure 8b: FEMA Floodplains on the Main Enclave
- Figure 9a: Plant Communities on Pelham Range
- Figure 9b: Plant Communities on the Main Enclave
- Figure 10: Timber Stands on Pelham Range
- Figure 11a: Invasive Species on Pelham Range
- Figure 11b: Invasive Species on Main Enclave

- Figure 12a: Threatened and Endangered Species/SINAS of Pelham Range  
Figure 12b: Threatened and Endangered Species of the Main Enclave  
Figure 13: Wildlife Enhancement Areas

**Appendix N: Species Occurring at FM-ARNGTC**

**Appendix O: Tables**

- Table 1: Summary of Programs and Projects  
Table 2: Degree of Previous INRMP Implementation  
Table 3: Designation of Land Areas at Pelham Range  
Table 4: Designation of Land Areas at Main Enclave  
Table 5: Training Assets Available at the FM-ARNGTC  
Table 6: Average Rainfall/Temperatures for Anniston, Calhoun County, Alabama  
Table 7: National Ambient Air Quality Standards  
Table 8: Geologic Units Underlying the FM-ARNGTC  
Table 9: Acreage and Proportionate Extent of the Soils on Pelham Range  
Table 10: Wetlands and Other Regulated Waters at Pelham Range  
Table 11: Description of Wetlands on Pelham Range  
Table 12: Forest Type and Inventoried Acres  
Table 13: FM-ARNGTC Stand Volumes  
Table 14: Federally-listed Species Occurring or with Potential to Occur on FM-ARNGTC  
Table 15: Timber Cutting Methods  
Table 16: Thinning Timeline for the FM-ARNGTC  
Table 17: General Harvesting Guidelines  
Table 18: Prescribed Burn Timeline for the FM-ARNGTC  
Table 19: Criteria to Prioritize Southern Pine Beetle Infestations  
Table 20: Treatment Method Description  
Table 21: Erosion Potential Factor Descriptions  
Table 22: Soil Erosion Control Practices  
Table 23: ITAM Projects for FY 2020-2025

**Appendix P: Relevant Websites and Additional Information**

**Appendix Q: References**

**Appendix R: Glossary**

**Appendix S: Component Plans**

**Appendix T: Planned Projects**

- Table 24: Planned Projects

**Appendix U: Annual Reviews and Updates**



## LIST OF ACRONYMS AND ABBREVIATIONS

ADEM	Alabama Department of Environmental Management
AFC	Alabama Forestry Commission
AHC	Alabama Historical Commission
AL ARNG	Alabama Army National Guard
ADCNR	Alabama Department of Conservation and Natural Resources
ALDOT	Alabama Department of Transportation
ALNHP	Alabama Natural Heritage Program
AMEC	AMEC Earth & Environmental, Inc.
amsl	Above mean sea level
ANAD	Anniston Army Depot
ANCDF	Anniston Chemical Agent Disposal Facility
ANG	Air National Guard
AR	Army Regulation
ARNG	Army National Guard
ASP	Ammunition Supply Point
ATTACC	Army Training and Testing Area Carrying Capacity
BLM	Bureau of Land Management
BMP	Best Management Practice
BRAC	Base Realignment and Closure (Commission)
BCC	Birds of Conservation Concern
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRM	Cultural Resources Manager
CSEPP	Chemical Stockpile Emergency Preparedness Program
CWA	Clean Water Act
CWCS	Comprehensive Wildlife Conservation Strategy
CY	Calendar Year
DA	Department of the Army
DAMO-TRS	Directorate, Training Simulations Division
dbh	Diameter at Breast Height
DCSOPS	Deputy Chief of Staff for Operations
DENIX	Defense Environmental Network Information Exchange
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DPW	Directorate of Public Works
EA	Environmental Assessment
EIS	Environmental Impact Statement

EMA	Emergency Management Agency
EMS	Environmental Management Systems
EO	Executive Order
EOD	Explosive Ordnance Detachment
EPA	Environmental Protection Agency
EQCC	Environmental Quality Control Committee
EQR	Environmental Quality Reports
ERDC	Engineer Research and Development Center
ESA	Endangered Species Act of 1973
ESMD	Endangered Species Monitoring Database
ESMC	Endangered Species Management Component
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FM-ARNGTC	Fort McClellan Army National Guard Training Center
FMP	Forest Management Plan
FONSI	Finding of No Significant Impact
FR	Federal Register
FY	Fiscal Year
GB	Grey Bat
GIS	Geographic Information System
GMO	Game Management Office
HAIID	Headquarters Army Installations Directorate, G-9
HQDA	Headquarters Department of the Army
IAW	In Accordance With
IB	Indiana Bat
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management (Plan)
ISCP	Installation Spill Contingency Plan
ISR	Installation Status Report
ITAM	Integrated Training Area Management (program)
IWFMP	Integrated Wildland Fire Management Plan
km	Kilometer
LCM	Land Condition Module
LIA	Large Impact Area
LRAM	Land Rehabilitation and Maintenance
M-day	Mobilization Day
MBB	Mohr's Barbara's Buttons
MBTA	Migratory Bird Treaty Act
MFTB	Mexican Free Tailed Bat
MOA	Memorandum of Agreement

MOU	Memorandum of Understanding
MP	Military Police
NAAQS	National Ambient Air Quality Standards
NBC	Nuclear, Biological, and Chemical
NCO	Non-commissioned Officer
NEPA	National Environmental Policy Act of 1969
NGB	National Guard Bureau
NHPA	National Historic Preservation Act
NLEB	Northern Long Eared Bat
NO <sub>2</sub>	Nitrous Oxide
NPDES	National Pollutant Discharge Elimination System
NPLD	National Public Lands Day
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O <sub>3</sub>	Ozone
O&M	Operations & Maintenance
ODCSOPS	Office of the Deputy Chief of Staff for Operations
PAO	Public Affairs Office
P2	Pollution Prevention
PAM	Pamphlet
Pb	Lead
PCB	Polychlorinated biphenyls
PEM	Palustrine Emergent (wetland)
PFO	Palustrine Forested (wetland)
PL	Public Law
PLS	Planning Level Survey
PMP	Pest Management Plan
POL	Petroleum, Oil, and Lubricants
PSS	Palustrine Scrub-shrub (wetland)
PIF	Partners in Flight
RCMP	Range Control Master Plan
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker
REC	Record of Environmental Consideration

RFMSS	Range Facility Management Support System
RTLA	Range and Training Land Analysis
RTLTP	Range and Training Land Program
SAIA	Sikes Act Improvement Act
SEMP	Soil Erosion Management Plan
SFG (A)	Special Forces Group (Airborne)
SHPO	(Alabama) State Historic Preservation Office
SINA	Special Interest Natural Area
SO <sub>2</sub>	Sulfur dioxide
SOP	Standard Operating Procedure
SPCCP	Spill Prevention Control and Countermeasures Plan
SRA	Sustainable Range Awareness
SRP	Sustainable Range Program
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered
TA	Training Area
TB	Tricolored Bat
TM	Training Manual
TNC	The Nature Conservancy
TRI	Training Requirements Integration
TSC	Training Site Commander
TSCA	Toxic Substances Control Act
TYG	Tennessee Yellow-eyed Grass
USACE	U.S. Army Corps of Engineers
UFC	Unified Facilities Criteria
USAR	U.S Army Reserve
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTES	Unit Training Equipment Site
WAC	Women's Army Corps
WNS	White-nose Syndrome

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## 1.0 EXECUTIVE SUMMARY

### 1.1 INRMP Vision

An Integrated Natural Resources Management Plan (INRMP), is required by the Sikes Act Improvement Act [SAIA, 16 U.S. Code (USC) §670a *et seq.*], and has been developed for use by the Alabama Army National Guard (AL ARNG) as the primary tool for the assessment and revision of the management of natural resources at the Fort McClellan Army National Guard Training Center (FM-ARNGTC). The initial INRMP was developed in 2001. This 2021 updated version fulfills the requirements as stated within the SAIA, for assessment and evaluation of the natural resources programs and policies as identified in the 2001 INRMP and subsequent update in 2011.

This INRMP has been prepared pursuant to the SAIA, 21 Mar 97 US Army policy entitled Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*; 32 Code of Federal Regulations (CFR) 651; and Department of Defense Instruction (DoDI) 4715.03, *Environmental Conservation Program*; and National Guard Bureau (NGB) policy, Army National Guard Installations & Environment (I&E) Directorate Policy for Integrated Natural Resource Management Plans (2019).

DoD policy emphasizes that INRMP review is intended to determine whether existing INRMPs are being implemented to meet the requirements of the SAIA and contribute to the conservation and rehabilitation of natural resources on military installations. DoD policy also requires installations to review INRMPs annually in cooperation with the other parties to the INRMP. As required by the SAIA, this INRMP has been developed in cooperation with the United States Fish and Wildlife Service (USFWS) and the Alabama Department of Conservation and Natural Resources (ADCNR). No less frequently than every five (5) years, all parties (AL ARNG, NGB, USFWS, and ADCNR) must complete a review for operation and effect.

Currently, the following natural resources programs are being implemented at the FM-ARNGTC:

- Forest and Fire Management;
- Fish and Wildlife Management;
- Land and Water Management including Storm Water and Water Quality Control; Floodplain and Riparian Zone Management; Wetland and Aquatic Habitat Management; Invasive and Exotic Species and Noxious Weeds; Integrated Pest Management; Threatened and Endangered Species; Grounds Maintenance, Landscaping, and Urban Forestry; and Erosion Control and Soil Conservation;
- Outdoor Recreation and Public Access; and
- Land Use, Land Planning, and Natural Resources Management.

This updated version of the INRMP addresses the effectiveness of the natural resource programs as proposed in the 2011 INRMP and describes how to maintain the current ongoing programs, funding, and requirements for programs that have not been implemented to date. The AL ARNG continues to manage its natural resources in accordance with strategies presented in Appendices G, H, and L. These are similar to the strategies presented in the 2011 INRMP; however, many projects identified in the 2011 INRMP have been completed and new projects have been identified to help fulfill current goals and objectives. Please refer to Appendix O: Table 1 for the status of programs and projects identified in the previous INRMP as well as new projects.

This updated INRMP includes, as Appendix D, a Finding of No Significant Impact (FNSI) from the original INRMP EA, a 2018 Environmental Assessment (EA), and a 2021 Record of Environmental Consideration (REC). The 2018 Final Environmental Assessment for Enhanced Mission Training and Operations at the Fort McClellan Army National Guard Training Center was written pursuant to the National Environmental Policy Act of 1969, as amended (NEPA, 42 USC §4321); Council on Environmental Quality (CEQ)

regulations (40 CFR Parts 1500-1508); Army Regulation (32 CFR Part 651, Environmental Effects of Army Actions); and DoDIs 4715.03 and 4715.9.

Since no significant changes to management strategies or natural resources have occurred since the original INRMP EA, and the 2018 EA, a REC for the implementation of the updated INRMP was completed. This REC satisfies the NEPA requirement found in 32 CFR Part 651, *Environmental Effects of Army Actions*. The REC indicates that the implementation of the updated INRMP is covered in the original EA and the 2018 EA and that this action has been evaluated in accordance with NEPA. Implementing this updated INRMP will not result in significant adverse environmental effects.

## 1.2 Purpose and Scope of this INRMP

An INRMP describes the baseline conditions of natural resources at a military installation and provides management programs and guidance allowing for the performance of successful military training, while providing for the conservation of renewable natural resources, preservation of rare and unique resources, and long-term sustainability of ecosystem-oriented resources. The management programs addressed in an INRMP include training area management, land management, forest management, aquatic and terrestrial habitat management, special interest natural area management, fish and wildlife management, rare and endangered species management, pest management, fire management, recreational resource and activity management, and agricultural program management. The FM-ARNGTC INRMP update is a training-driven plan, created with a dual goal:

- To allow for the conduct of appropriate military training at levels necessary to maintain a full readiness posture for national defense and civil missions; and
- To provide for management of natural resources in an ecosystem-oriented, sustainable manner, consistent with national, State, and local regulations.

The overall policies and philosophy of land management at the FM-ARNGTC are derived from AR 200-1, and the Army's Sustainable Range Program (SRP). 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, encompassing two core programs, the Range and Training Land Program (RTLTP) and the ITAM Program, which focus on the doctrinal capability of the Army's ranges and training land].

These policies, regulations and programs are based on the concept that natural resources management is an integral component of the primary mission of military use. The AL ARNG must train; therefore, the AL ARNG will manage the FM-ARNGTC to preserve valuable training resources, including the natural environment. SRP, as well as the management of natural resources on an ecosystem basis, ensure the sustainable use of training lands while considering the effects on the surrounding environment and public concern.

This INRMP has been updated using an interdisciplinary approach, with information gathered from various AL ARNG organizations, as well as other Federal, State and local agencies and special interest groups with an interest in the management of natural resources at the FM-ARNGTC. The Agency and Public Coordination letters distributed as part of the INRMP development, as well as the letter distribution list, have been included in Appendix A. Input from AL ARNG and FM-ARNGTC personnel and outside cooperating agencies ensures that information concerning the existing natural resources at the FM-ARNGTC is accurate and acknowledges current management strategies at the installation, local and regional levels.

This INRMP update integrates all aspects of natural resources management into the military mission. As such, it becomes the primary tool for ecosystem management at the FM-ARNGTC while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use approach will be implemented through use of the INRMP update to accommodate the presence of

mission-oriented activities and provide for good stewardship, thereby maintaining, protecting and improving the quality, aesthetic values and ecological relationships of the environment.

The implementation of the updated INRMP at the FM-ARNGTC will continue to successfully promote adaptive stewardship practices that protect and enhance natural resources for multiple use, sustainable yield and biological integrity, while supporting the military mission. Concurrently, this INRMP update complies with all applicable Army and DoD policies, as well as all applicable Federal, State and local mandates.

### 1.3 Installation Overview

The FM-ARNGTC consists of an approximately 22,246-acre tract known as Pelham Range and an additional 290 acres known as the Main Enclave as depicted in Figure 1, Appendix M. The installation lies within Calhoun County, Alabama and is directly north and northwest of the City of Anniston. In 1995, the Base Realignment and Closure (BRAC) Commission targeted Fort McClellan for closure. In 1999, Pelham Range (22,246 acres) and the Main Enclave (approximately 282 acres within the former Fort McClellan Main Post) were licensed to the AL ARNG for the FM-ARNGTC. A new parcel of approximately 148 acres was acquired in 2017 along the northern and eastern boundaries of the Main Enclave. While the majority of the FM-ARNGTC property is Federally owned, this new parcel is owned by the State. Additional information about the installation and its history can be found in Appendix B: Installation Overview and Military Mission.

### 1.4 Relationship to the Military Mission

The primary purpose of natural resources management at the FM-ARNGTC is to support the military training mission. Proposed improvements and new assets for the FM-ARNGTC are identified in the Environmental Assessment for Enhanced Training and Operations at the Fort McClellan Army National Guard Training Center (Thompson Engineering 2018). Possible natural resource disturbances associated with these proposed actions are disturbance of surface water, wetlands, loss of faunal habitat and fragmentation of forested and vegetative communities.

With regard to accomplishment of the military mission, the overall goal is *to provide quality natural resources as a critical training asset* upon which to accomplish the mission of the AL ARNG at the FM-ARNGTC. Components of this overall goal adhere to resource management practices as identified within the Alabama Wildlife Action Plan (AWAP 2015). As Alabama's state wildlife action plan, the AWAP provides direction for and coordination of wildlife conservation efforts in Alabama.

These goals include:

- Ensure no net loss in the capability of installation lands to support existing and projected military training and operations at the FM-ARNGTC; and
- Maintain quality training lands through range monitoring and damage minimization, mitigation, and rehabilitation.

The AL ARNG has federal, state, and local missions. The AL ARNG leadership recognizes that a healthy and viable natural resources base is required to support the military mission. To be effective, the natural conditions of the training areas must be maintained to provide realism. Areas stripped of natural vegetation are no longer representative of the undisturbed lands that might be encountered during real conflicts. Areas degraded by previous training activities detract from the realism. In addition to training benefits (concealment and realism), vegetation also protects soils from erosion. Areas that are subject to erosion could potentially create a stormwater discharge that is not compliant with federal and state water quality guidelines. Erosion may also pose a safety hazard to soldiers. This INRMP helps to ensure that environmental considerations are an integral part of planning activities at FM-ARNGTC and that natural resources are protected in accordance with state and federal laws and Army regulations and policies.

## 1.5 Partnerships

The DoD and subcommand entities have Memorandums of Understanding (MOUs), Memorandums of Agreement (MOAs), and other cooperative agreements with other Federal agencies, interest groups, and various State agencies in order to provide assistance with natural resources management at installations across the U.S. Generally, these agreements allow installations and agencies or interest groups to obtain mutual conservation objectives. Such agreements include:

- MOU between DoD and the USFWS concerning ecosystem-based management of fish, wildlife, and plant resources on military lands;
- Cooperative Agreement between the DoD and The Nature Conservancy (TNC) for assistance in natural resources inventory;
- MOU between the USEPA and the DoD with respect to IPM;
- MOA for Federal Neotropical Migratory Bird Conservation Program and addendum (“Partners in Flight-Aves De Las Americas”) among DoD, through each of the Military Services, and over 110 other Federal and State agencies and non-governmental organizations;
- MOU between the U.S. Army Environmental Center and the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) for Watershed and Environmental Enhancement of U.S. Army Installations;
- MOU between the DoD and Ducks Unlimited, Inc. to provide a foundation for cooperative development of selected wetlands and associated uplands in order to maintain and increase waterfowl populations and to fulfill the objectives of the North American Waterfowl Management Plan, within the context of DoD environmental security and military missions;
- MOU between DoD and USFWS and pursuant to EO 13186, efforts will be implemented that are practicable and reasonable that avoid or minimize impacts on migratory birds for nonreadiness activities;
- MOU for Watchable Wildlife Programs; and
- MOA with AL Forestry Commission for wildland fire management and prescribed fire services.

The AL ARNG maintains functional partnerships with the USFWS Daphne Ecological Services Field Office and the ADCNR. The USFWS Daphne Ecological Services Field Office located in Daphne, AL coordinates with and supports habitat management and restoration activities at FM-ARNGTC. The ADCNR assists with the multiple game management programs at Pelham Range.

## 1.6 Primary Natural Resource Management Goals

### INRMP Goals

The INRMP’s primary purpose is to support the AL ARNG Mission and readiness. This purpose is achieved by protecting, maintaining, and restoring natural resources on FM-ARTNGTC through the application of ecosystem management principles. The following INRMP goals and supporting objectives are identified as critical components to supporting the AL ARNG Mission. Objectives for achieving INRMP goals are further detailed in Appendices G, I, H, J. Projects to support these objectives can be found in Table 24 of Appendix T.

### **Maintain a sustainable, diverse, and productive forest.** *Objectives (Appendices G and I):*

- 8a: Maintain forest inventory (Appendix G)
- 8b: Improve forest health and habitat quality through timber harvesting (Appendix G)
- 9a: Suppress or prevent damage caused by wildfire. (Appendix G)
- 9b: Prescribe burn (Appendix G)

- 10a: Adhere to the guidelines and projects presented in the IPMP (Appendix G)
- 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical techniques (Appendix G)
- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP (Appendix G)
- 11a: Adhere to the guidelines and projects presented in the FM-ARNGTC Invasive and Exotic Species Management Plan (Appendix I)
- 11b: Control invasive exotic species (Appendix I)

**Protect, maintain and restore aquatic ecosystems. Objectives (Appendix I):**

- 4a: Characterize riparian communities
- 4b: Implement riparian buffer zones
- 5a: Characterize wetland communities
- 5b: Implement wetland buffer zones
- 6a: Identify and rehabilitate eroding training lands
- 10a: Adhere to the guidelines and projects present in the IPMP
- 11b: Control invasive exotic species

**Protect threatened and endangered species, species of concern and their habitats. Objectives (Appendix I):**

- 6a: Identify and rehabilitate eroding training lands
- 7a: Monitor communities that could support threatened and endangered species
- 7b: Manage and maintain listed plant habitats
- 7c: Improve/protect unique habitats for listed and at-risk species
- 10a: Adhere to the guidelines and project present in the IPMP
- 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques
- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP
- 11b: Control invasive exotic species

**Provide opportunity for recreational use that is compatible with the AL ARNG Mission and natural resources management. Objectives (Appendices H and J):**

- 2a: Manage habitats for all native species (Appendix H)
- 2b: Assess faunal communities (Appendix H)
- 3a: Collect and maintain data on game species (Appendix J)

**Make natural resources management decisions using the best available scientific and field-tested information. Objectives (Appendices G, H, I, J):**

- 1a: Manage for ecosystem health, wildlife and improved habitat quality (Appendix I)
- 1b: Characterize natural communities (Appendix I)
- 2b: Assess faunal communities (Appendix H)
- 3a: Collect and maintain data on game species (Appendix J)
- 4a: Characterize riparian communities (Appendix I)
- 5a: Characterize wetland communities (Appendix I)
- 6a: Identify and rehabilitate eroding training lands (Appendix I)
- 7a: Monitor communities that could support threatened and endangered species (Appendix I)



8a: Maintain forest inventory (Appendix G)

10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP

## **2.0 GENERAL INFORMATION, COMPLIANCE, INTEGRATION, AND RESPONSIBILITIES**

### **2.1 Authority**

The preparation of this INRMP is in accordance with the provisions of the Sikes Act, as amended according to the Sikes Act Improvement Act of 1997. In addition, Section 3-11 (b) for Army Regulation (AR) 200-1 (Environmental Sustainability and Stewardship) specifies Army policies and legal requirements. This includes statutes, laws, regulations, and other guidance applicable to the Army Natural Resources Management Program.

### **2.2 Regulatory Drivers**

Pertinent laws, regulations and executive orders can be found in Appendix C. This INRMP update and REC have been prepared in accordance with the following:

- SAIA (16 USC §670a *et seq.*);
- National Environmental Policy Act of 1969, as amended (NEPA, 42 USC §4321);
- AR 200-1 - Environmental Protection and Enhancement;
- 32 Code of Federal Regulations (CFR) Part 651- Environmental Effects of Army Actions;
- AR 350-19 - Sustainable Range Program; and
- Department of Defense (DoD) Instruction (DoDI) 4715.03 - Environmental Conservation Program.

The SAIA states “the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate” and for that INRMP to be reviewed on a five year basis for effectiveness (16 USC §670a). INRMPs must provide for:

- The conservation and rehabilitation of natural resources on military installations;
- The sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and non-consumptive uses; and
- Subject to safety requirements and military security, public access to military installations to facilitate the use (16 USC §670a).

In addition, INRMPs must reflect the mutual agreement of the U.S. Fish and Wildlife Service (USFWS) and the appropriate State fish and wildlife agency concerning conservation, protection and management of fish and wildlife resources. In Alabama, this agency is the Alabama Department of Conservation and Natural Resources (ADCNR). Agency correspondence can be found in Appendix A.

NEPA requires Federal agencies to prepare a statement of environmental impact in advance of each major action that may significantly affect the quality of the human environment. The Council on Environmental Quality (CEQ), which was created with the inception of NEPA, provides regulations to implement the procedural provisions of NEPA.

AR 200-1 provides a brief overview of environmental laws and requirements; sets guidelines to supplement Federal, State, and local environmental laws and regulations; and integrates pollution prevention, natural and cultural resources protection, and the NEPA requirements into the Army Environmental Program (AR 200-1).

AR 200-1 also sets forth policy, procedures, and responsibilities for the conservation and management of natural resources consistent with the military mission. A discussion of the installation overview and military mission can be found in Appendix B. Regarding program requirements for integrated natural resources management, AR 200-1 states, “Develop and implement an integrated natural resources management plan in accordance with 16 USC 670a in cooperation with the USFWS and the State fish and wildlife agency unless significant natural resources are absent.” AR 200-1 also provides for the implementation of INRMPs by requiring that “sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP” (AR 200-1).

32 CFR Part 651 sets forth policy, responsibilities, and procedures for integrating environmental considerations into Army planning and decision-making and implementing NEPA. 32 CFR Part 651 states: “Environmental analyses and documentation required by this regulation will be integrated as much as practical with other environmental reviews, laws, and executive orders (40 CFR 1502.25) and... installation management plans, particularly those that deal directly with the environment. These include the Natural Resource Management Plans (Fish and Wildlife Management Plan, Forest Management Plan, and Range Improvement or Maintenance Plan)” (32 CFR Part 651).

Additional laws and regulations pertaining to natural resources management are referenced throughout the Appendices.

### **2.3 Federal and State Compliance**

The actions and practices of the AL ARNG are carried out with the consideration and cooperation of neighboring public and private land owners. Federal and State agencies play a key role in implementation of this INRMP.

#### U.S. Fish and Wildlife Service

The mission of the USFWS is “working with others to conserve, protect, and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. The agency’s responsibilities include enforcing federal wildlife laws, protecting endangered species, managing migratory birds, restoring nationally significant fisheries, conserving and restoring wildlife habitat, and distributing money to states’ fish and wildlife agencies. The USFWS is a cooperative party in the development and implementation of this plan in accordance with the Sikes Act.

#### Alabama Department of Conservation and Natural Resources

The ADCNR is the state agency responsible for the management and conservation of Alabama’s natural resources. The Department also works to acquire land for public use under the Forever Wild Program and provides public education resources. ADCNR promotes wise stewardship and enjoyment of the state’s natural resources through five divisions: Marine Police, Marine Resources, State Lands, State Parks, and Wildlife Freshwater Fisheries. The department is a cooperative party in the development and implementation of this INRMP in accordance with the Sikes Act.

#### Alabama Department of Environmental Management

The mission at ADEM is to assure for all citizens of the state a safe, healthful, and productive environment. ADEM administers all major federal environmental laws, including the Clean Air, Clean Water and Safe Drinking Water acts and federal solid and hazardous waste laws. ADEM has a regulatory role under NEPA. They may be a consulting agency and offer technical assistance for implementation at the request of AL ARNG.

### **2.4 National Environmental Policy Act**

The required documentation for compliance with the National Environmental Policy Act of 1969 (NEPA), which requires federal agencies to consider the environmental consequences of major proposed actions, has been completed. The NEPA documentation is in the form of an Environmental Assessment (EA), which

identifies, documents, and evaluates the effects of implementing the INRMP for the AL ARNG. The EA carries this INRMP's selected management measures forward as the Proposed Action.

### **3.0 RESPONSIBLE PARTIES AND INRMP IMPLEMENTATION**

#### **3.1 Responsible Parties**

The Adjutant General for the State of Alabama is directly responsible for the operation and maintenance of AL ARNG facilities, including implementation of this INRMP. Under the direction of the Adjutant General, the force structure (i.e., types and number of units, types of equipment, training events, etc.), projects, construction and budgets at AL ARNG facilities are determined throughout the 5-year operational period of the INRMP. Under the leadership of the Adjutant General, all AL ARNG personnel and guests are trained in SRA, and as such are explicitly mandated to comply with the policies, procedures, requirements and applicable laws and regulations that accomplish the goals and objectives of the INRMP.

The Army's Deputy Chief of Staff for Operations (DCSOPS) has the primary responsibility for scheduling of military training and ensuring the safety of all personnel during the conduct of training exercises at AL ARNG facilities. The DCSOPS and the TSC determine the training capacity based upon the force structure determined by the Adjutant General.

The DCSOPS has assigned the ITAM Program Management for AL ARNG facilities to the AL ARNG's Plans, Operations, and Training Officer. The DCSOPS defines ITAM program philosophy and guidance, and directs the ITAM Program Manager and the TSC to execute the program in accordance with his guidance. The TSC develops a baseline of current and projected AL ARNG training requirements, troop utilization data, and determines the week-to-week training capacity of the training site through direct coordination with the AL ARNG ITAM Coordinator. The Range Control Officer reviews and approves annual ITAM projects and allocates funds to accomplish the approved ITAM program requirements. A list of ITAM projects can be found in Appendix O: Table 23 – ITAM Projects for FY 2020-2025.

The AL ARNG Environmental Branch is responsible for directing the management of natural resources. The Environmental Branch is also responsible for identifying compliance requirements, and providing guidance to the TSC and other personnel. The Environmental Branch provides technical assistance to the TSC and the training site personnel to develop projects, secure required permits, conduct field studies, provide SRA materials, identify natural and cultural resources, direct the NEPA process, and manage the development and revision/update of the INRMP.

#### **3.2 INRMP Implementation**

This INRMP is a plan for the protection and enhancement of ecosystems while minimizing the impact to the AL ARNG mission(s). Consequently, the implementation of the INRMP prioritizes the training mission. This approach allows for insight into possible adaptations for operations and resource management strategies that result in reduced negative impacts to natural resources and increased operational efficiencies.

This INRMP incorporates the ITAM process at the FM-ARNGTC and proposes actions in accordance with applicable DoD and Army policies, directives and instructions. As such, it is a dynamic or "living" document, subject to annual updates or changes to integrate the adaptive management of natural resources at the FM-ARNGTC and changing mission requirements. Proper utilization of the INRMP is not intended to impair the ability of the AL ARNG to perform its mission. However, the INRMP does identify restrictions that must be placed on Federally protected sensitive attributes such as wetlands, cultural resources, and threatened and endangered species.

Controlled public access to the FM-ARNGTC for authorized personnel is permitted for the purposes of implementing this plan. Access will be granted for the harvest of timber products, hunting, fishing, and other purposes identified in this plan. Access is permitted only when compatible with the military mission and in accordance with AL ARNG safety and security requirements. Access is granted when necessary to

various environmental professionals who are conducting research or biological inventories to support the FM-ARNGTC natural resources management or site cleanup programs. The USFWS, ADCNR, ADEM and other personnel from environmental and conservation organizations would be granted access to assist in carrying out cooperative management efforts as identified in this plan.

The Environmental Program Manager is charged with implementing the INRMP. Successful implementation of the INRMP will require:

- Administrative and technical support;
- Agency cooperation and technical assistance;
- Funding;
- Priorities and scheduling;
- Production of project scopes and budgets; and
- The ability to amend and revise this document as necessary.

Where projects identified in the plan are not implemented due to lack of funding, or other compelling circumstances, the installation will review the goals and objectives of this INRMP to determine whether adjustments are necessary.

Where revisions to the planned actions in the INRMP are implemented, having not been previously analyzed within the existing EAs, additional NEPA analysis will need to be completed on a case by case scenario.

### **3.2.1 Administrative and Technical Support**

#### **3.2.1.1 Personnel**

The Natural Resources Program at the FM-ARNGTC is administered by the on-site Environmental Branch Chief and Natural Resources Program Manager, Wildlife Biologists, Forester, and the AL ARNG Environmental Program Manager, based at the AL ARNG headquarters in Montgomery, Alabama. The day-to-day coordination and implementation of the management proposed in the INRMP is the responsibility of the FM-ARNGTC's Environmental Branch Chief and staff. Responsibilities include:

- Implementing this INRMP;
- Managing all phases of the FM-ARNGTC Natural Resources Program with appropriate natural resources management professionals;
- Developing and implementing programs to ensure the inventory, delineation, classification, and management of all applicable natural resources to include: wetlands, special interest natural areas, endangered and threatened species, sensitive and critical habitats, and other natural resource areas of special interest;
- Providing for the training of natural resources personnel;
- Programmatic support for the operation of the GMO;
- Maintaining forestry records (i.e., prescribed burns, timber harvests, fire break maintenance, etc.);
- Reviewing all environmental documents (e.g. environmental impact assessments and remedial action plans) and construction designs and proposals to ensure adequate protection of natural resources, while ensuring that technical guidance as presented in this INRMP is adequately considered;
- Coordinating with local, State, and Federal governmental and civilian conservation organizations relative to FM-ARNGTC natural resources management program;
- Ensuring Compliance with AR 200-1; and
- Assisting the Adjutant General with developing funding priorities for all natural resources program and compliance activities.

The Environmental Branch Chief also receives support from the FM-ARNGTC TSC and Range Control Officer, both of whom have significant duties in addition to natural resources support. Additional labor resources include:

- Federal agencies (i.e., USFWS, NRCS; USACE–CERL, USACE-Engineer Research and Development Center (ERDC), and the U.S. Army Environmental Center);
- State agencies (i.e., ADCNR, ADEM, ANHP);
- Local and regional universities; and
- Special interest groups (i.e., TNC, Audubon Society, and sportsmen’s clubs).

### **3.2.1.2 Training**

Training for AL ARNG personnel (Appendix T, Table 24 - Planned Projects) as well as others participating in the management of natural resources, is practical and job-related. All training programs should involve, at a minimum, a review of legal compliance requirements, applicable DoD/DA regulations, pertinent State and local laws, and current scientific and professional standards as related to the conservation of natural resources.

Personnel will be trained in related environmental fields, as appropriate.

### **3.2.1.3 Data Management**

Natural resources data are maintained by the Geographic Information System (GIS) Manager and natural resources personnel. The FM-ARNGTC’s GIS is a foundational capability of natural resource management. The GIS is a computer-based tool capable of assembling, storing, manipulating, and displaying geographically referenced information, (i.e., data identified according to their locations). The system can be used to analyze and model (manipulate, overlay, measure, compute, and retrieve) the digital spatial data and display the new map products and tabular resources information showing the results of the spatial analysis. GIS technology integrates common database operations such as query and statistical analysis with the unique visualization and geographic analysis benefits offered by maps. Currently, the AL ARNG has electronic data files for a variety of resources on the FM-ARNGTC.

### **3.2.1.4 Agency Coordination and Technical Assistance**

Intra- and inter-agency cooperation, coordination, and communication at the Federal, State and local levels (i.e. USFWS, NRCS, ADCNR, etc.) are requisite to the success of the INRMP. The FM-ARNGTC Environmental Office has a strong relationship with such groups.

Specialized expertise is required to adequately manage natural resources on the FM-ARNGTC. Technical assistance is obtained from Federal and State agencies, universities, and special interest groups (i.e., TNC or others, as appropriate).

**USFWS** - The USFWS has an Ecological Services Office at Daphne, Alabama which provides technical advice to the FM-ARNGTC for management of its natural resources, particularly endangered and threatened species. AR 200-1, Chapter 4-3, provides guidance to be followed by the FM-ARNGTC when coordinating with the USFWS for endangered species management.

**ADCNR** - The ADCNR provides technical advice and assistance for programs relating to natural resources, or more specifically, fish and wildlife, if funds are available and priority warrants. The Division of Wildlife and Freshwater Fisheries provides support to the FM-ARNGTC natural resources management program in the areas of fisheries, game, and law enforcement.

**USGS** - Under a recent Federal organizational change, the USGS operates a Cooperative Fisheries and Wildlife Unit at Auburn University which can provide natural resources management assistance to the FM-

ARNGTC. The USGS has also performed water quality monitoring and soils and geochemical surveys at the FM-ARNGTC.

**NRCS** - The NRCS has conducted soils surveys for Pelham Range and is available to assist with erosion control and ITAM projects.

**USACE** - Coordination with the USACE is required for CWA Section 404 Permits.

**ADEM** - ADEM provides policy clarification and limited technical assistance in the areas of water quality, environmental protection, and pollution control for the FM-ARNGTC. In addition, NPDES construction permits are acquired through ADEM.

**ALNHP** - The ALNHP, funded by TNC, provides support in the areas of natural resources inventory, endangered and sensitive species management, and neotropical migratory bird monitoring.

**PIF** - The Department of Defense (DoD) Partners in Flight (PIF) program consists of a cooperative network of natural resources personnel from military installations across the United States. Established in 1991, DoD PIF works collaboratively with partners throughout the Americas to conserve migratory and resident birds and their habitats on DoD lands. DoD's bird conservation strategy focuses on inventory, on-the-ground management, education, and long-term monitoring to determine changes in bird populations on DoD installations. Specifically, DoD PIF facilitates the development of cooperative agreements for implementing bird conservation programs and projects on military lands, facilitates communication and information sharing across geographic and political boundaries, participates and provides leadership in PIF committees and working groups, and provides military natural resources professionals with the most up-to-date information on bird conservation.

**Universities** - Regional universities have provided specialized expertise to help manage natural resources at the FM-ARNGTC. Auburn University's School of Forestry (Auburn, Alabama) used Fort McClellan (Main Post) as a study site for graduate research on the mountain longleaf pine community (Morgan *et al.*, 2000). Faculty from Auburn University and Jacksonville State University have conducted various surveys and studies of neotropical migratory birds. Auburn University's Deer Laboratory staff has conducted deer surveys to assist the game management program in managing the deer population at FM-ARNGTC.

### **3.2.2 Funding**

Implementation of the INRMP is subject to the availability of annual funding. The installation will make every effort to request funding through appropriate channels. Funding options for natural resources programs are discussed in the following subsections.

#### **3.2.2.1 Operation and Maintenance Environmental Funds**

Environmental funds (VENQ) are a special subcategory of Operations & Maintenance (O&M) funds, and are controlled by the Status Tool for Environmental Programs (STEP) budget process. They are special in that they are restricted by the DoD solely for environmental purposes, but they are still subject to restrictions of O&M funds. Compliance with appropriate laws and regulations is the key to securing environmental funding. The program heavily favors funding high priority projects with a goal of achieving compliance with Federal or State laws, especially if non-compliances are backed by Notices of Violation or other enforcement agency action.

The Environmental Quality Conservation Compliance Classes define funding priority with regard to O&M funds. All projects in Classes 0, I, and II shall be funded consistent with timely execution to meet future deadlines (DoDI 4715.3). A description of each class follows.

CLASS 0: Recurring Natural and Cultural Resources Conservation Management Requirements

Recurring requirements include projects and activities needed to cover the recurring administrative, personnel and other costs that are necessary to meet applicable compliance requirements (Federal and State laws, regulations, Presidential EOs, and DoD policies) or which are in direct support of the military mission.

CLASS I: Current Compliance

Current compliance includes projects and activities needed because an installation is currently or will be out of compliance if projects or activities are not implemented in the current program year. Examples include:

CLASS II: Maintenance Requirements

Maintenance requirements include those projects and activities needed that are not currently out of compliance but shall be out of compliance if projects or activities are not implemented in time to meet an established deadline beyond the current program year. Examples include:

CLASS III: Enhancement actions, beyond compliance

This category includes those projects and activities that enhance conservation resources of the installation mission, or are needed to address overall environmental goals and objectives, but are not specifically required under regulation or EO and are not of an immediate nature. Generally, projects included in this category are funded after all those in the previous three are funded; therefore, funding for Class III projects can be funded from other sources as discussed below. Examples of Class III projects include:

**3.2.2.2 Hunting Fees**

Reimbursables funds are collected via sales of licenses to hunt or fish, as regulated via AR 200-1, Chapter 4. These funds may be used only for fish and wildlife management on the installation where they are collected and cannot be used for recreational aspects of fish and wildlife management. They have no Fiscal Year-end limitations (un-obligated funds carry over on October 1<sup>st</sup>). Fee collection and administration (i.e. printing and issuing the) costs (not to exceed 10% of the annual revenue) are authorized.

Monies accrued from the collection of hunting and fishing fees will be expended in support of the fish and wildlife management at the FM-ARNGTC and for no other purpose. Collections and disbursements will be accounted for in accordance with guidance provided for the appropriation titled "Wildlife Conservation, Military Reservations", Army Account 21X5095 (ARs 37-100 and 37-108). Un-obligated balances shall be accumulated with current fee collections, and the total amount accumulated at the FM-ARNGTC will be available for obligation.

**3.2.2.3 Forestry Funds**

Forestry funds are generated from the sale of forest products. Net proceeds are amounts received from the timber sales less expenses. Forty percent of the net proceeds are provided to the State treasury for county schools and roads, and 60 % of the net proceeds are deposited into the DoD Forestry Reserve Account. Costs for forest management activities on Pelham Range are reimbursed using funds generated from the sale of forest products on the site. Funds can only be used for reimbursing projects directly related to the management of forest ecosystems. Such activities that can be reimbursed 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. AR 200-1 outlines reimbursement procedures.

#### **3.2.2.4 Agricultural Funds**

Agricultural funds are derived from agricultural leases on installations. They are centrally controlled at both DA and Major Command levels with no specific requirements for spending where they were generated. AR 200-1, Chapter 4 outlines procedures for collecting 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. They are exempt from certain limits on the purchase of equipment. However, the FM-ARNGTC maintains no agricultural leases; thus, the major use of such funds, if available, would likely be for implementation of this INRMP.

#### **3.2.2.5 Real Property Funds**

Real property service funds provide for those activities that are of an installation support nature. Real property funds are intended for those support elements and services identified as indirect overhead by Headquarters, Department of Army (HQDA) and grounds maintenance activities. These include invasive species treatment, wildland fire services, erosion control, and abatement and disposal of building hazardous waste resulting from the performance of real property services, in accordance with “Sustainable Range Program Environmental Activity Responsibilities Matrix, DAIM-ZA” dated 30 Jun 05.

#### **3.2.2.6 Training Funds**

Training land management is funded via the Army G3/5/7 through Integrated Training Area Management (ITAM) program funding requests (MDEP TATM). ITAM funding requests are not submitted via the STEP process. Instead, a 5-year ITAM Work Plan is used to channel ITAM funding requests from AL ARNG, through NGB, to the U.S. Army’s Office of the Deputy Chief of Staff for Operations (ODCSOPS). ITAM funding requests will not contain projects which fall within Conservation Compliance (DA 2004). The AL ARNG’s level of ITAM funding will be determined by a funding category established by NGB on the basis of ITAM projects submitted in the 5-year Work Plan and available funding at NGB. A list of projects can be found in Appendix O: Table 23 – ITAM Projects for FY 2020-2025.

#### **3.2.2.7 Other Funding Sources**

The Legacy Resource Management Program provides financial assistance to DoD efforts to preserve natural and cultural resources on Federal lands. Legacy projects could include regional ecosystem management initiatives, habitat preservation efforts, archaeological investigations, invasive species control, and/or flora or fauna surveys. Legacy funds are rewarded based on project proposals submitted to the program.

Cooperative agreements may be entered with States, local governments, non-governmental organizations, and individuals for the improvement of natural resources or to benefit natural and historical research on Federally-owned training sites. Since the FM-ARNGTC is Federally-owned property, funding through the Sikes Act is possible. Sikes Act funding is provided on a cost-matching basis. Upon written concurrence of the FM-ARNGTC INRMP by the USFWS and the ADCNR, these agencies become signatory cooperators of this plan. As such, the potential for access to matching funds programs and services offered by these agencies will be available.

The National Public Lands Day Program coordinates volunteers to improve the public lands they use for recreation, education, and enjoyment. The National Environmental Education Foundation (NEEF) teams with DoD’s Legacy Resource Management Program to manage, coordinate, and generate financial support for National Public Lands Day projects on DoD installations.

Funding for wildlife enhancement projects has been funded by NPLD grants in 2009 and 2010 and by the National Wild Turkey Federation (NWTf) in 2015, 2016, and 2017. The NWTf is dedicated to the



conservation of the wild turkey and has provided matching funds that have been used to manage game food plots at the FM-ARNG for several years.

### **3.2.3 Projects and Budgets**

Implementation of the INRMP will be realized through the accomplishment of specific goals and objectives as measured by the completion of projects described within this INRMP (Appendix T, Table 24 - Planned Projects).

### **3.2.4 INRMP Approval and Revisions**

Within the AL ARNG, the INRMP must be approved by the Adjutant General; the FM-ARNGTC Commander; the Construction & Facilities Management Officer; the Plans, Operations, Training and Military Support Officer, and the FM-ARNGTC TSC. Additionally, the INRMP must be approved by the Chief of the ARNG Installations & Environment Directorate (ARNG I&E)). Signatures from these approving officials can be found on the signature page of this document. The INRMP must also reflect the mutual agreement of the USFWS and the ADCNR concerning conservation, protection, and management of fish and wildlife resources.

Signatures and/or correspondence from each agency (Appendix A, Agency Correspondence) document mutual agreement of the USFWS and the ADCNR.

This INRMP is effective for five (5) years from the date of approval; however, the AL ARNG operational portion of the plan may be reviewed and changed annually or as necessary to accommodate annual budget reviews. Whenever there is a change in the mission of the FM-ARNGTC or there is a substantial change to the natural or cultural resource base, this INRMP would be amended to reflect such changes, even if such changes occur within the effective dates of the plan. Changes that affect the integrity/objective of the INRMP will be coordinated with the approving authorities/agencies prior to implementation.

In accordance with AR 200-1, the INRMP will be reviewed and updated annually. The review process will take into account mission changes; new laws, regulations, and policies; and information obtained from monitoring programs and surveys. The revision process will be conducted under the direction of the AL ARNG Environmental Program Manager.

## **4.0 COMPONENT PLANS AND PROGRAMS**

### **4.1 Stormwater and Wastewater Program**

The Federal Water Pollution Control Act, Clean Water Act, and the National Pollutant Discharge Elimination System (NPDES) regulate discharges of pollutants in wastewater and stormwater to waters of the United States (40 CFR 122). Certain discharges are prohibited unless authorization is provided by an NPDES permit. The Alabama Department of Environmental Management (ADEM) has authority to enforce the NPDES permitting provisions (ADEM Administrative Code 335-6-6).

The FM-ARNGTC has four outfalls where discharges are covered by NPDES Permit No. AL0073016 issued by ADEM. The permit covers point source wastewater discharges to an unnamed tributary to Cane Creek from three outfalls associated with wash racks located at the UTES #1. The fourth outfall included in the permit is located at a former fog oil storage area in TA 4A and discharges to an unnamed tributary to Alexandria Creek. Before vacating Fort McClellan in 1999, the Army removed the oil and cleaned the oil water separator. Oil products are no longer stored at this location. The permit is effective for five years and must be renewed to allow for continued authorized discharges. The permit was renewed in 2016. There are currently two (2) proposed future outfalls: one is at the Rock-Crusher site in TA-9D and the other is at the Horizontal engineer Training Area. Both locations will discharge to an unnamed tributary of Cane Creek.

The NPDES program requires that construction activities disturbing greater than one acre of land must obtain NPDES permit coverage (40 CFR 122 and ADEM 335-6-12). ADEM requires a Notice of Registration (NOR) application requesting a permit covering these construction activities. A construction BMP plan must be prepared that describes practices necessary to control pollutant discharges associated with construction activity. An NOR may be terminated after completion of construction and confirmation that stormwater discharges have been eliminated, permanent vegetation has been established, or effective reclamation or stormwater quality remediation has been achieved. NPDES registration coverage must be retained until all disturbed areas have been reclaimed and/or effective stormwater quality remediation has been achieved.

#### **4.1.1 Spill Prevention, Control and Countermeasure Plan and Installation Spill Contingency Plan**

Federal Regulation 40 CFR 112 requires facilities with petroleum storage and handling facilities to prepare and implement an Oil Spill Prevention Control and Countermeasures Plan (SPCCP). An updated combined SPCCP and Installation Spill Contingency Plan (ISCP) was prepared for the FM-ARNGTC in 2013 (Environmental Business Partners, LLC 2013). The SPCCP/ISCP fulfills all of the regulatory requirements of an SPCCP.

The combined SPCCP and ISCP establish procedures, methods and equipment and other requirements for equipment to prevent the discharge of oil and hazardous substances from the FM-ARNGTC. The plan identifies potential spill sites and details spill prevention procedures, inspection programs, and required training of personnel. This plan is formatted similar to an Army Technical Manual. The exact location of this plan must be known and easily accessed by all facility personnel who may handle or potentially be involved in handling petroleum, oil, and lubricants (POL) or hazardous substances. In addition to this SPCCP/ISCP, an abbreviated Initial Spill Response Guide has been created. The Initial Spill Response Guide is a small booklet that can be placed in shop areas for quick and easy reference to initial spill response procedures and emergency contact telephone numbers.

The FM-ARNGTC is provided a combined SPCCP/ISCP as there is a reasonable potential for discharging fuel and oil into the waters of the United States, as oil storage capacity at the FM-ARNGTC exceeds 1,320 gallons total aboveground storage, and as there is sufficient storage of a hazardous material on-site that could produce a reportable quantity release. When the SPCCP/ISCP is followed, the potential for spills entering the storm drainage system is greatly reduced.

#### **4.1.2 Soil Erosion Management Plan**

A Soil Erosion Management Plan (SEMP) update was completed for the FM-ARNGTC and Main Enclave in 2014 (Thompson Engineering 2014). The SEMP identifies areas within the FM-ARNGTC and the Main Enclave that are susceptible to erosion based on soil type, vehicle movement, climate and topography. These areas were addressed with recommended remedial actions and preferred materials. This plan outlines soil erosion management goals and soil erosion management practices. Best Management Practices (BMPs) were suggested for the prevention of erosion in areas identified as highly susceptible based on current conditions and training activities. Soil conservation and erosion control management is discussed further in Appendix I. The SEMP is an INRMP component plan and is listed in Appendix S.

#### **4.1.3 Endangered Species Management Plan**

In accordance with AR 200-1, the Endangered Species Management Components (ESMC) was developed for use by the AL ARNG as the primary tool for the management of Federally-threatened and endangered species at the FM-ARNGTC (AMEC 2002a). The purpose of the ESMC is to prescribe area-specific measures necessary to meet installation conservation goals for the threatened and endangered species

occurring within its boundaries. The ESMC update completed in 2003 covers Pelham Range and the Main Enclave. The most recent ESMC update was completed in 2021.

The ESMC includes an inventory of threatened and endangered species that are known to occur within Pelham Range [to include Tennessee yellow-eyed grass (*Xyris tennesseensis*, TYG), Mohr's Barbara's buttons (*Marshallia mohrii*, MBB), and the gray bat (*Myotis grisescens*, GB). The Indiana bat (*Myotis sodalists*, IB) and the northern long-eared bat (*Myotis septentrionalis*, NLEB)] were not included in the ESMC, which is one of the primary reasons for the update. In addition, the 2003 ESMC update petitioned species that are known to occur, or have occurred, on Pelham Range including the tricolored bat (*Perimyotis subflavus*), golden-winged warbler (*Vermivora chrysoptera*), Alabama rainbow (*Villosa nebulosi*), Coosa creekshell (*Villosa umbrans*), and the monarch butterfly (*Danaus plexippus*). No Federally-listed species are known to occur within the Main Enclave; however, gray bat habitat has been documented proximal to portions of the Main Enclave within the Cane Creek corridor. The ESMC also includes management prescriptions, monitoring and inventory programs, and funding requirements. Management of threatened and endangered species at the FM-ARNGTC is discussed further in Appendix I.

The ESMC was prepared in accordance with the ESA (16 USC §1531 *et seq.*), and implementing regulations of the USFWS (50 CFR Part 402). The plan was expanded to include goals and objectives described within DoD Directive (DoDD) 4700.4. The intent of the ESMC is to provide the AL ARNG with detailed information and procedures for management of threatened and endangered species in accordance with the INRMP. The ESMC is an INRMP component plan and is listed in Appendix S.

#### **4.1.4 Integrated Cultural Resources Management Plan**

As required by AR 200-1, the AL ARNG has prepared an updated ICRMP for all AL ARNG-managed facilities throughout the State of Alabama, including FM-ARNGTC. The current ICRMP identifies cultural resources including archaeological sites, historic properties, and cemeteries; sets forth goals, policies, and procedures pertaining to the management of cultural resources at these installations; and is synchronized with other AL ARNG environmental management plans. The ICRMP follows guidelines contained in AR 200-1.

The ICRMP is a five-year plan to integrate the planning and conduct of essential AL ARNG mission activities, along with real property and land use decisions, with legal requirements for historic preservation. The ICRMP is an internal AL ARNG and Army document that addresses compliance with the National Historic Preservation Act (NHPA) and other laws, regulations, and EOs relative to cultural resources. The ICRMP is the primary tool for cultural resources management while ensuring the successful accomplishment of the military mission at the highest levels of efficiency. Because of the primacy of the military mission, the ICRMP facilitates the identification of potential conflicts between the AL ARNG military mission and significant cultural resources, and outlines effective management procedures and compliance actions necessary to maintain the availability of mission-essential properties and acreage.

The purpose of the ICRMP is to ensure activities in support of the AL ARNG military mission and those of cultural resources management are integrated and consistent with Federal stewardship requirements. The ICRMP provides a plan of action for the AL ARNG to identify and manage the significant cultural resources that exist at AL ARNG facilities statewide including FM-ARNGTC facilities. Cultural resources include archaeological sites, historic properties, Native American sacred and traditional sites, cemeteries, archaeological collections, and associated records and documentation.

#### **4.1.5 Integrated Pest Management Plan**

An IPMP for the FM-ARNGTC was completed in Calendar Year (CY) 2000. This plan covers the Main Enclave and Pelham Range. This plan describes the installation's pest management requirements, outlines the resources necessary for surveillance and control of weeds; arthropod and vertebrate pests; and disease vectors that occur on the properties owned and administered by the FM-ARNGTC. It also describes the

administrative, safety, and environmental requirements of the program. Pests detailed in the plan include, but are not restricted to: mosquitoes, ticks, spiders, other biting arthropods, cockroaches, ants, and termites; vertebrate pests such as birds, rodents, and snakes; and weeds or other unwanted vegetation. IPM at the FM-ARNGTC is discussed further in Appendix I.

An updated version of the IPMP will be completed in 2021.

#### **4.1.6 Invasive and Exotic Species Survey and Management Plan**

An invasive and exotic species survey and management plan for the FM-ARNGTC was completed in CY 2016. This plan, covering the Main Enclave and Pelham Range, describes the installation's invasive and exotic species management requirements, outlines the resources necessary for surveillance and control of invasive and exotic species and noxious weeds that occur on the properties owned and administered by the AL ARNG. It also describes the administrative, safety, and environmental requirements of the program, to include eradication programs and infestation control methods. Plant species detailed in the plan include, but are not restricted to: silk tree (*Albizia julibrissin*), chinaberry (*Melia azedarach*), privet (*Ligustrum sinense*), princess tree (*Paulownia tomentosa*), kudzu (*Pueraria montana*), Chinese wisteria (*Wisteria sinensis*), Japanese honeysuckle (*Lonicera japonica*) and cogongrass (*Imperata cylindrica*). The invasive and exotic species survey and management plan is an INRMP component plan and is listed in Appendix S.

#### **4.1.7 Forest Management Plan**

The Army's forest management program is required, per AR 200-1, to "Practice responsible stewardship of forested lands to support the mission". Silvicultural treatments must be designed to improve military mission areas, and when possible, accomplish other objectives such as wildlife habitat and/or timber production. An approved Forest Management Plan (FMP) and environmental documentation as applicable under the NEPA are also required.

An FMP and timber inventory was completed in 2003 for the FM-ARNGTC. This FMP incorporated information from the most recent FM-ARNGTC timber inventory, which was completed in 2007. An updated timber inventory was completed in 2020.

The FMP serves as a management tool for forested and vegetated communities and aids in the identification of available training lands, timber harvest areas, and potential silviculture locations. The FMP was last updated in CY 2016. The plan is discussed further in Appendix G: Forest and Fire Management and is listed in Appendix S as an INRMP component plan.

#### **4.1.8 Integrated Wildland Fire Management Plan**

The IWFMP (June 2008) was developed to reduce wildfire potential, protect and enhance valuable natural resources, integrate applicable State and local permit and reporting requirements, and implement ecosystem management goals and objectives on the FM-ARNGTC facilities. It has been fully integrated with the goals and management activities of the AL ARNG outlined in this INRMP. An update to the IWFMP was completed in CY 2015. The IWFMP is discussed further in Appendix G and is listed in Appendix S as an INRMP component plan.

#### **4.1.9 Wetlands and Aquatic Habitat Management Program**

The AL ARNG is required to prudently manage its wetlands and other aquatic habitats by both Federal law and Army doctrine. These resources do not require active management per se; however, environmental management activities as well as routine training should be monitored to prevent adverse impacts to these resources.

Wetlands and Aquatic Habitat Management will ensure that all ground-breaking activities, including land clearing and construction, are analyzed to determine possible impacts to wetlands, floodplains, and aquatic

resources to prevent the degradation of these resources as required by Federal laws, regulations and EOs. The management program will also evaluate the need to obtain a Federal permit for various activities that could affect floodplains, wetlands, or other aquatic habitats, and will evaluate the need for environmental analysis in accordance with NEPA.

The management program serves to:

- Define wetlands and aquatic habitats;
- Define the AL ARNG's management objectives pertaining to wetlands and aquatic habitats;
- Identify existing wetland and aquatic resources at the FM-ARNGTC;
- Identify restrictions and regulatory requirements pertaining to wetlands and aquatic habitat management; and
- Identify specific areas that likely will require wetland delineations in conjunction with planned development at the FM-ARNGTC.

This management program will aid AL ARNG Environmental personnel as well as other decision-makers at the FM-ARNGTC to make informed decisions about the management of wetlands and other aquatic resources. Specifically, people who will benefit from this management program include:

- **Construction Facilities Management Office (CFMO)** – The CFMO designs, constructs and manages properties within the FM-ARNGTC. The AL ARNG is required to avoid impacts to wetlands, floodplains, and other aquatic resources. This involves planning and engineering staff within the CFMO, who must be aware of the legal requirements associated with managing the potential effects to these resources.
- **Environmental Program Office Personnel** – Environmental personnel review projects in accordance with regulatory requirements to determine potential impacts for projects that are planned within or in close proximity to wetlands and streams or in floodplains.

It is the goal of the AL ARNG to avoid adverse impacts to wetlands and aquatic habitats, as these are some of the most productive ecosystems available. It is the intent of the FM-ARNGTC to proactively manage for wetlands during the environmental planning process, thereby reducing potential impacts by avoidance. In general, the strategy of the AL ARNG to protect wetlands and aquatic habitats is avoidance.

Several of the program objectives were met by the Final Planning Level Wetland Survey Update and Surface Water Survey Report (Aerostar 2013).

#### 4.1.10 Natural Resources Planning Level Surveys (PLS)

Natural Resources PLS are training site-wide inventories to characterize essential components of the training site natural resources. The kinds, locations, and sensitivity of the resources serve as the foundation for environmental planning, including preparation of the INRMP. Training sites must conduct PLS as the foundation for natural resources management planning, including preparation of the INRMP. PLS include spatial products that can be hard-copy maps, GIS data layers, or both according to training site needs and capabilities. Required PLS include:

**Topography PLS:** At a minimum, this is a map that shows elevation, elevation contours, and associated data consistent with U.S. Geological Survey (USGS) standards and topographic map products. A topographic survey of the site was completed in 2001 (USDA NRCS 2001).

**Wetlands PLS:** At a minimum, this survey must describe and map the distribution and extent of wetlands on a training site. A PLS for wetlands and other regulated waters was completed in 2013 (Aerostar 2013).

**Surface Waters PLS:** At a minimum, this is a survey that describes and maps the distribution and extent of surface waters, consistent with U.S. Geological Survey standards. A PLS for wetlands and other regulated waters was completed in 2013 (Aerostar 2013).

**Soils PLS:** At a minimum, this survey must classify, categorize, describe, and map soils by map unit and meet current National Cooperative Soil Survey standards and procedures. The NRCS completed an updated soil survey of Pelham Range in 2002.

**Flora PLS:** At a minimum, this training site-wide vascular plant survey would produce a list of plant species with verified nomenclature, classification, and annotation compatible with the USDA NRCS's Plant List of Accepted Nomenclature, Taxonomy, and Symbols (PLANTS). The Vascular Flora Planning Level Survey was completed in 2013 by the Alabama Natural Heritage Program.

**Vegetation Communities PLS:** At a minimum, this survey, including field data, must describe and map the distribution and extent of plant alliances (alliances are characterized by diagnostic species or group of diagnostic species usually occurring in the dominant and uppermost stratum; similar to cover type). Positional and classification accuracy must be field checked. These requirements were met with the completion of the Vegetation Classification & Mapping report (Colorado State University Center for Environmental Management of Military Lands 2012).

**Threatened & Endangered Species PLS:** At a minimum, this survey must produce a map that shows the kinds and known distribution of Federally-endangered, threatened, proposed, and candidate species occurring on the training site. A threatened and endangered species survey was completed in 2003. The most recent bat survey was conducted in 2018 (Copperhead Consulting 2018).

**Fauna PLS:** At a minimum, this survey, including field data, must describe and map the distribution and extent of sensitive species (e.g., locally rare and keystone). A survey for macroinvertebrate species was completed in 2013 (Aerostar SES 2013) and a survey for vertebrate species was most recently conducted in 2016-2017 (Aerostar SES 2017).

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**APPENDIX A**  
**AGENCY CORRESPONDENCE**



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FORT McCLELLAN ARMY NATIONAL GUARD TRAINING CENTER  
ALABAMA ARMY NATIONAL GUARD  
P.O. Box 5280  
FORT McCLELLAN, ALABAMA 36205

REPLY TO  
ATTENTION OF

FM-ARNGTC-ENV

6 Feb 2019

MEMORANDUM FOR RECORD

**SUBJECT:** Request for Alabama Department of Conservation and Natural Resources (ADCNR) and United States Fish & Wildlife Service (USFWS) Annual Integrated Natural Resources Management Plan (INRMP) Review for Operation and Effect

1. In accordance with the Sikes Act, Army Regulation 200-1 and National Guard Bureau guidelines, the Alabama Army National Guard (ALARNG) annually requests review for operation and effect of the Ft McClellan Army National Guard Training Center's (FM-ARNGTC) INRMP. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions. As INRMP cooperative parties, both agencies are also invited for an annual site visit to review projects at the FM-ARNGTC.
2. Official correspondence to both agencies, dated January 4, 2019, included an annual INRMP report detailing project funding and completion for FY18. This correspondence letter requested feedback within 30 days.
3. A letter was received on February 1, 2019 from Mr. Matt Laschet of USFWS Ecological Services Field Office in Daphne, Alabama. This letter is found in the correspondence appendix of the INRMP. Mr. Laschet did not request a site visit.
4. No response or request for site visit was received by ADCNR.
5. The undersigned is the POC for information regarding the natural resources program for FM-ARNGTC and can be reached at (256) 847-4548, or via email at leah.l.neremstorino.nfg@mail.mil.

FOR THE RECORD:



Leah Storino  
Natural Resources Program Manager  
FM-ARNGTC  
Alabama Army National Guard



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1208-B Main Street  
Daphne, Alabama 36526

**SEP 11 2019**

IN REPLY REFER TO:

2019-CPA-0247

Ms. Leah Storino  
Natural Resources Program Manager  
Ft. McClellan Army National Guard Training Center  
1720 Congressman William L. Dickerson Drive  
P.O. Box 3711  
Montgomery, AL 36109-0711

Dear Ms. Storino:

Thank you for your letter dated August 15, 2019, providing us the opportunity to review the Draft Final Updated Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center 2019-2024. We have reviewed your information and are providing the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Sikes Act (16 USC 670a-670o Stat.1052), and the Migratory Bird Treaty Act of 1918, as amended (40 Stat. 755; 16 U.S.C. 703 et seq.) (MBTA).

The U.S. Fish and Wildlife Service (Service) has reviewed the 2019-2024 INRMP and would like to applaud you for your proactive approach to conserving the natural resources found on your installation. The proactive measures that not only protects federally listed bat species, but also other bat species, such as the petitioned tricolored bat or the little brown bat. We would like to acknowledge your integrated conservation and ecosystem management approach to managing your lands. Through this management approach you are protecting multiple species by managing habitat, creating new habitat, and by removing/preventing invasive plant species in an effort to maintain habitat for native animal species. We would also like to acknowledge your efforts to improve water quality, and promote the migration of aquatic species on Pelham Range.

We appreciate your efforts and thank you for your proactive approach. We look forward to working with you in the future. If the Service can help with any federally listed species or at-risk species needs please contact this office.

We appreciate the opportunity to comment on the effectiveness of your 2019-2024 INRMP. For questions or concerns please call Mr. Matt Laschet at (251) 441-5842.

Sincerely,

William J. Pearson  
Field Supervisor  
Alabama Ecological Services Field Office

STATE MILITARY DEPARTMENT  
JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD  
1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE  
P.O. BOX 3711  
MONTGOMERY, AL 36109-0711

REPLY TO  
ATTENTION OF

August 15, 2019

Environmental Program Office

Mr. Steve Bryant  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
4101 HWY 21 N  
Jacksonville, AL 36265

**Re: Request for Agency Review, Draft Final Updated Integrated Natural Resources Management Plan for the Fort McClellan Army National Guard Training Center**

Dear Mr. Bryant:

The Alabama Army National Guard (AL ARNG) is pleased to submit the Draft Final Updated Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center (FM-ARNGTC) for review by the Alabama Department of Conservation and Natural Resources (ADCNR).

The purpose of the Updated INRMP is to provide for the management of natural resources at FM-ARNGTC during the 2019-2024 timeframe. The plan documents the supporting laws, regulations and policies for natural resources programs, current conditions, and defines goals, objectives and projects to effectively implement natural resources management over the next five years. The INRMP's implementation supports Department of Defense mission-essential training by conserving natural resources, thereby achieving long-term sustainability of a highly diversified ecosystem that also functions as high-quality military training land.

Department of Defense INRMPs are required by the Sikes Act, as amended, to be reviewed annually for operation and effect and no less than every five years with cooperative parties, in order to incorporate necessary changes agreed upon by our agencies. The INRMP review process serves to renew and reflect the mutual agreement of the parties concerning conservation, protection and management of fish and wildlife resources on military lands.

Please note the plan's update is not required due to major change in military mission, status of natural resources, or their management at FM-ARNGTC. Provision for the management of federally-protected species documented on Pelham Range during the previous INRMP cycle are included, such as Indiana bat and northern long-eared bat. The plan addresses state ranked species and species with "petitioned for listing" status that are documented or have the potential for presence on the training center, in an effort to proactively protect and aid in their recovery, as well as avoid potential impacts to military training.

Additionally, the INRMP's fish and wildlife management program is intended to be consistent with Alabama's State Wildlife Action Plan. The management of game populations and our public hunting program is also intended to follow and complement ADCNR's similar programs. We invite your comments on any of these features of the plan in order to assist us in achieving shared goals for conserving Alabama's wildlife.

An updated list of planned projects, a critical component of achieving natural resources management objectives over the next several years, is included in the plan. These projects are dependent on adequate funding and execution of those funds in any given year; however the AL ARNG remains committed to each project's success and completion.

The AL ARNG seeks your agency's review and comment on the enclosed Draft Final Updated INRMP and respectfully requests an expedited review of 45 days. Your response on or before October 21, 2019 will assist our agency with INRMP implementation. Please notify the undersigned in writing within 15 days of receipt of the Updated INRMP. It is requested that a copy of your agency's comments be provided to the USFWS Daphne Ecological Services Field Office as a mutual INRMP cooperating party. This correspondence and the enclosure will also be provided to Mr. Marshall Williams, USFWS Region 4 Sikes Act Coordinator in Atlanta, GA and Mr. Chuck Sykes, Director of Wildlife and Freshwater Fisheries Division of your agency.

The point of contact for this request is Ms. Leah Storino, Natural Resources Program Manager, Environmental Office, Fort McClellan Army National Guard Training Center, P.O. Box 5280, Anniston, Alabama 36205-0280. Ms. Storino may be reached at (256) 847-4548, or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil).

Sincerely,

PICKETT.BRODERICK.ORL ANDO.1111269064

Broderick O. Pickett

Lieutenant Colonel, Alabama Army National Guard  
Environmental Program Manager

Enclosure

STATE MILITARY DEPARTMENT  
JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD  
1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE  
P.O. BOX 3711  
MONTGOMERY, AL 36109-0711

REPLY TO  
ATTENTION OF

August 15, 2019

Environmental Program Office

Mr. Bill Pearson  
United States Fish and Wildlife Service  
1208-B Main Street  
Daphne, Alabama 36526

**Re: Request for Agency Review of the Draft Final Updated Integrated Natural Resources Management Plan for the Fort McClellan Army National Guard Training Center 2019-2024**

Dear Mr. Pearson:

The Alabama Army National Guard (AL ARNG) is pleased to submit the Draft Final Updated Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center (FM-ARNGTC) for review by the United States Fish and Wildlife Service (USFWS).

The purpose of the Updated INRMP is to provide for the implementation of natural resources management at FM-ARNGTC during the 2019-2024 timeframe. The plan documents the supporting laws, regulations and policies for natural resources programs, current conditions, and provides goals, objectives and projects to effectively implement natural resources management at the training center for the next five years. The INRMP's implementation supports Mission-essential training by conserving natural resources, thereby achieving long-term sustainability of a highly diversified ecosystem that also functions as high-quality military training land.

As you are aware, INRMPs are required by law to be reviewed annually for operation and effect and no less than every five years, in order to incorporate necessary changes agreed upon by the cooperative parties. The INRMP review process also serves to renew the mutual agreement for natural resources management that exists between the AL ARNG, National Guard Bureau, USFWS, and the Alabama Department of Conservation and Natural Resources (ADCNR).

Please note the Updated INRMP is not required due to major change in military mission, status of natural resources, or their management at FM-ARNGTC. Changes include a new, stream-lined format and provision for the management of federally-protected species documented on Pelham Range during the previous INRMP cycle, such as Indiana bat and Northern long-eared bat.

Additionally, the plan addresses species with “petitioned for listing” status that are documented or have the potential for presence on the training center. This is done in an effort to proactively manage and provide protection to these species of concern, aid in their recovery and potentially avoid impacts to military training. A new projects table is also included which is a critical component of achieving natural resources management goals and objectives over the next several years. These projects are dependent on adequate funding and execution of those funds in any given year; however the AL ARNG remains committed to each project’s success and completion.

The AL ARNG seeks your agency’s review and comment on the enclosed Draft Final Updated INRMP and respectfully requests an expedited review of 45 days. Your response on or before October 21, 2019 will assist our agency with INRMP implementation. Please notify the undersigned in writing within 15 days of receipt of the Updated INRMP. It is requested that a copy of your agency’s comments be provided to ADCNR Wildlife and Freshwater Fisheries Division as a mutual INRMP cooperating party. A copy of this correspondence and the enclosure will also be provided to Mr. Marshall Williams, USFWS Region 4 Sikes Act Coordinator and Mr. Steve Bryant, ADCNR Supervising Wildlife Biologist in Jacksonville, Alabama.

The point of contact for this request is Ms. Leah Storino, Natural Resources Program Manager, Environmental Office, Fort McClellan Army National Guard Training Center, P.O. Box 5280, Anniston, Alabama 36205-0280. Ms. Storino may be reached at (256) 847-4548, or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil).

Sincerely,

PICKETT.BRODERICK.ORLAN  
DO.1111269064

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Broderick O. Pickett

Lieutenant Colonel, Alabama Army National Guard  
Environmental Program Manager

Enclosure

STATE MILITARY DEPARTMENT  
JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD  
1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE  
P.O. BOX 3711  
MONTGOMERY, AL 36109-0711

REPLY TO  
ATTENTION OF

August 15, 2019

Environmental Program Office

Mr. Chuck Sykes, Director  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
64 North Union Street  
Montgomery, AL 36130

**Re: Request for Agency Review, Draft Final Updated Integrated Natural Resources Management Plan for the Fort McClellan Army National Guard Training Center**

Dear Mr. Sykes:

The Alabama Army National Guard (AL ARNG) is pleased to submit the Draft Final Updated Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center (FM-ARNGTC) for review by the Alabama Department of Conservation and Natural Resources (ADCNR).

The purpose of the Updated INRMP is to provide for the management of natural resources at FM-ARNGTC during the 2019-2024 timeframe. The plan documents the supporting laws, regulations and policies for natural resources programs, current conditions, and defines goals, objectives and projects to effectively implement natural resources management over the next five years. The INRMP's implementation supports Department of Defense mission-essential training by conserving natural resources, thereby achieving long-term sustainability of a highly diversified ecosystem that also functions as high-quality military training land.

Department of Defense INRMPs are required by the Sikes Act, as amended, to be reviewed annually for operation and effect and no less than every five years with cooperative parties, in order to incorporate necessary changes agreed upon by our agencies. The INRMP review process serves to renew and reflect the mutual agreement of the parties concerning conservation, protection and management of fish and wildlife resources on military lands.

Please note the plan's update is not required due to major change in military mission, status of natural resources, or their management at FM-ARNGTC. Provision for the management of federally-protected species documented on Pelham Range during the previous INRMP cycle are included, such as Indiana bat and northern long-eared bat. The plan addresses state ranked species and species with "petitioned for listing" status that are documented or have the potential for presence on the training center, in an effort to proactively protect and aid in their recovery, as well as avoid potential impacts to military training.



Additionally, the INRMP's fish and wildlife management program is intended to be consistent with Alabama's State Wildlife Action Plan. The management of game populations and our public hunting program is also intended to follow and complement ADCNR's similar programs. We invite your comments on any of these features of the plan in order to assist us in achieving shared goals for conserving Alabama's wildlife.

An updated list of planned projects, a critical component of achieving natural resources management objectives over the next several years, is included in the plan. These projects are dependent on adequate funding and execution of those funds in any given year; however the AL ARNG remains committed to each project's success and completion.

The AL ARNG seeks your agency's review and comment on the enclosed Draft Final Updated INRMP and respectfully requests an expedited review of 45 days. Your response on or before October 21, 2019 will assist our agency with INRMP implementation. Please notify the undersigned in writing within 15 days of receipt of the Updated INRMP. It is requested that a copy of your agency's comments be provided to the USFWS Daphne Ecological Services Field Office as a mutual INRMP cooperating party. This correspondence and the enclosure will also be provided to Mr. Marshall Williams, USFWS Region 4 Sikes Act Coordinator in Atlanta, GA and Mr. Steve Bryant, ADCNR Supervising Wildlife Biologist in Jacksonville, Alabama.

The point of contact for this request is Ms. Leah Storino, Natural Resources Program Manager, Environmental Office, Fort McClellan Army National Guard Training Center, P.O. Box 5280, Anniston, Alabama 36205-0280. Ms. Storino may be reached at (256) 847-4548, or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil).

Sincerely,

PICKETT.BRODERICK.ORL ANDO.1111269064

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Date: 2019.08.15 13:24:39 -0500

Broderick O. Pickett

Lieutenant Colonel, Alabama Army National Guard  
Environmental Program Manager

Enclosure

STATE MILITARY DEPARTMENT  
JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD  
1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE  
P.O. BOX 3711  
MONTGOMERY, AL 36109-0711

REPLY TO  
ATTENTION OF

August 15, 2019

Environmental Program Office

Mr. Frederick M. Williams  
United States Fish and Wildlife Service  
1875 Century Blvd  
Atlanta, Georgia 30345

**Re: Request for Agency Review of the Draft Final Updated Integrated Natural Resources Management Plan for the Fort McClellan Army National Guard Training Center 2019-2024**

Dear Mr. Williams:

In accordance with the Sikes Act, this letter is to inform you that the Alabama Army National Guard has submitted the enclosed Draft Final Updated Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center (FM-ARNGTC) located in Anniston, Alabama for review by the United States Fish and Wildlife Service Daphne Ecological Services Field Office. Letters of correspondence requesting review and comment on the plan by October 21, 2019 are included for your records.

Should you have any questions or require further information, the point of contact for this request is Ms. Leah Storino, Natural Resources Program Manager, Environmental Office, Fort McClellan Army National Guard Training Center, P.O. Box 5280, Anniston, Alabama 36205-0280. Ms. Storino may be reached at (256) 847-4548, or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil).

Sincerely,

PICKETT.BRODERICK.ORL ANDO.1111269064  
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Date: 2019.08.15 14:14:50 -0500

Broderick O. Pickett  
Lieutenant Colonel, Alabama Army National Guard  
Environmental Program Manager

Enclosure



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1208-B Main Street  
Daphne, Alabama 36526

**FEB 01 2019**

IN REPLY REFER TO:  
2019-CPA-0082

Ms. Leah Storino  
Natural Resources Program Manager  
Ft. McClellan Army National Guard Training Center  
1720 Congressman William L. Dickerson Drive  
P.O. Box 3711  
Montgomery, AL 36109-0711

Dear Ms. Storino:

Thank you for your letter dated January 4, 2019, providing us the opportunity to comment on the effectiveness of the current Integrated Natural Resources Management Plan (INRMP).

Based on the information provided in reports, consultations, and site visits, we believe that your INRMP is effective. Your survey reports indicate that your management practices are having a positive/beneficial effect on the gray bat, Indiana bat, northern long-eared bat, Mohr's Barbara button and Tennessee yellow-eyed grass. Your INRMP is pro-active by addressing at-risk species such as the tri-colored bat. We would also like to applaud your efforts to manage habitat for listed species, improve water quality, and promote the migration of aquatic species on Pelham Range.

Some of the factors that have been cited for the need to list aquatic species is loss of connectivity due to fish passage barriers and sedimentation (water quality). We would like to suggest that in the next INRMP that you address any water quality and fish passage issues that occur on your installation. If the Service can help with any federally listed species or at-risk species needs please contact this office.

We appreciate the opportunity to comment on the effectiveness of your INRMP and look forward to reviewing the upcoming draft 2019 INRMP. For questions or concerns please call Mr. Matt Laschet at (251) 441-5842.

Sincerely,

William J. Pearson  
Field Supervisor  
Alabama Ecological Services Field Office

## FY18 INRMP ANNUAL REPORT

**To:** Mr. Bill Pearson, USFWS  
Mr. Charles Sykes, ADCNR  
Mr. Steve Bryant, ADCNR

**From:** LTC Broderick Pickett, Environmental Program Manager, Alabama Army National Guard

**Subject:** FY18 Annual Report on Implementation Status of the Fort McClellan Army National Guard Training Center Updated Integrated Natural Resources Management Plan (INRMP)

**Date:** 4 January 2019

**Reporting Period:** 1 October 2017 – 30 September 2018

### **Annual Coordination Meeting:**

No annual coordination meeting was held in FY18. This INRMP Annual Report will be used as the required annual INRMP coordination with USFWS and ADCNR for FY18. INRMP cooperative parties are encouraged to make an annual site visit to the FM-ARNGTC to review the INRMP for operation and effectiveness by reviewing INRMP projects and programs at the installation.

### **Program Overview:**

#### INRMP Goals and Objectives

FM-ARNGTC's INRMP describes the baseline conditions of natural resources at the installation and provides management programs and guidance allowing for the performance of successful military training, while providing for the conservation of renewable natural resources, preservation of rare and unique resources, and long-term sustainability of ecosystem-oriented resources. The management programs addressed in FM-ARNGTC's INRMP include sustainable range/integrated training area management, forest and fire management, fish and wildlife management, land and water resources management, wetland and aquatic habitat management, special interest natural area management, threatened and endangered species management, cultural resources management, pest management, outdoor recreation and public access, invasive and exotic species management, and land use planning.

The FM-ARNGTC INRMP is a training-driven plan, created with a dual goal:

- To allow for the conduct of appropriate military training at levels necessary to maintain a full readiness posture for National defense and civil missions; and
- To provide for management of natural resources in an ecosystem-oriented, sustainable manner, consistent with national, state, and local regulations.

The AL ARNG recognizes its responsibility to guarantee continued access to its land, air and water resources for realistic military training while ensuring that the natural and cultural resources entrusted to their care are sustained in a healthy condition for scientific research, education and other compatible uses by future generations. As such, the AL ARNG is committed to the planned, deliberate management of natural resources, supporting the installation operational mission, meeting or exceeding stewardship requirements, and enhancing the quality of life for its personnel and guests.

#### Mission Requirements

The AL ARNG's mission is to organize, train, and equip units for the conduct of state operations in support of the governor of Alabama and, if federalized, prepared to mobilize, deploy, fight, and win on the modern battlefield in support of wartime operations. The AL ARNG has eight Major Subordinate Commands within the state organization that include 20th Special Forces Group (Airborne) [20th SFG (A)], 62nd Troop Command, 167<sup>th</sup> Theater Support Command, 31st Chemical Brigade, 142nd Battlefield Surveillance Brigade, 226<sup>th</sup> Maneuver Enhancement Brigade, the 122<sup>nd</sup> Troop Command, and the 135<sup>th</sup> Expeditionary Sustainment Command. The 200th Regiment (Leadership) headquarters is located at the FM-ARNGTC. Its major mission

is to operate officer candidate training facilities, military occupational specialty qualification, and non-commissioned officer education systems schools for the state of Alabama and National Guard states in the region. Please note no significant changes to FM-ARNGTC's mission requirements have occurred during the reporting period.

#### Mission and the INRMP

The primary purpose of natural resources management and the INRMP at the FM-ARNGTC is to support the military training mission. With regard to accomplishment of the military mission, the overall goal is *to provide quality natural resources as a critical training asset* upon which to accomplish the mission of the AL ARNG at the FM-ARNGTC. Components of this overall goal adhere to resource management practices as identified within the Alabama Comprehensive Wildlife Conservation Strategy. These goals also include:

- Ensure no net loss in the capability of installation lands to support existing and projected military training and operations at the FM-ARNGTC; and
- Maintain quality training lands through range monitoring and damage minimization, mitigation, and rehabilitation.

No significant changes to FM-ARNGTC's natural resources have occurred during the reporting period.

#### No Net Loss to Training

The Sikes Act Improvement Act (SAIA) requires that FM-ARNGTC's INRMP provides for "...no net loss in the capability of military installation lands to support the military mission of the installation" (16 USC §670 *et seq.*). Primary impacts to training at FM-ARNGTC result from restrictions placed upon areas of environmental concern, including wetlands and endangered species locations. Locations are identified on the Natural Resource and Environmental Constraints Map issued to all trainers. Training may also be adjusted periodically to allow for timber harvest, prescribed burning, or other natural resources management activities. Environmental constraints promote awareness on the part of Soldiers. Learning to plan around environmental restrictions helps develop a disciplined mindset that is a valuable asset to today's Soldier. However, this must be balanced to avoid inadequate training due to excessive constraints. Regular meetings held with environmental staff, planners and trainers help to alleviate project or training restrictions by discussing mission requirements and environmental constraints in advance. This allows for a more innovative planning process and provides for creative solutions. As a result, FM-ARNGTC has experienced no net loss to training.

#### **Current Implementation Status:**

Twelve INRMP projects were completed or implemented in FY18. Annually occurring projects included the maintenance of wildlife enhancement areas, erosion management, invasive/exotic species control, prescribed burning, and forest management. A water quality study of Cane Creek and its tributaries was conducted in 2018. This study measured the amount of sediment load and bank erosion in these water bodies. Results of the study indicate a healthy riparian system on Pelham Range and identify specific locations for waterway improvement in the future.

Management of threatened and endangered (T&E) species habitats, and T&E population counts (for Tennessee yellowed-eyed grass and Mohr's Barbara's Buttons) are recurrent activities under FM-ARNGTC's Endangered Species Management Plan, a component plan of the INRMP. Population counts for both species were conducted and remain stable, although some locations continue to recover from drought conditions in 2016. T&E habitat management included mowing, conducting prescribed burns where possible, selective thinning, invasive/exotic species control and installing additional signage for awareness.

A summer bat survey confirmed the continued presence of gray bats and tricolored bats (petitioned species), and added the Mexican free-tailed bat to our species list for the installation. A total of 189 bats of 7 species were captured in mist nets. Nine species were documented acoustically. The AL ARNG is committed to practicing land management strategies that employ bat conservation measures recommended by USFWS.

The forestry program is an important component of natural resource management and an integral part of accomplishing INRMP goals and objectives. FM-ARNGTC's forestry program focuses on the regeneration and management of mountain longleaf pine. Approximately 4,800 acres were prescribed burned. FM-ARNGTC's forest management plan is available for review upon request.

The game management program facilitated public hunting opportunities, including a youth hunt, with seasons for deer, turkey, upland and small game. Two special hunting events were hosted on Pelham Range—a deer hunt for disabled hunters and a two-day dove hunt for Soldiers and their youth guests. Due to satisfactory participation and support for these events, the AL ARNG plans to conduct them again next season.

Please see attached tables for more detailed information regarding the status of INRMP projects. Table 1 details all proposed projects during the implementation period of 2012-2018. Projects completed in FY18 are represented in Table 2 in further detail.

**Proposed Implementation:**

Please see Table 3 for the status of projects planned or currently underway in FY19. All proposed projects are dependent upon funding from Army National Guard Directorate and the AL ARNG Joint Force Headquarters; therefore, some costs are estimated or will be determined.

A routine 5-year update to the INRMP is currently underway. A draft of the updated INRMP covering the next 5-year cycle will be available to the cooperative parties for their review and comment in 2019.

**Installation Personnel:**

Bernie Tucker, Environmental Branch Chief  
Leah Storino, Natural Resources Program Manager  
Jim Ratcliffe, Wildlife Biologist  
Logan McCord, Wildlife Biologist  
John Davidson, Registered Forester, Certified Prescribed Burn Manager  
Kenneth Gurley, Forestry Technician

**USFWS Regional Office Contact Information:**

Mr. Frederick M. Williams, Region 4 Sikes Act Coordinator  
USFWS  
1875 Century Blvd  
Atlanta, GA 30345  
(404) 679-4151

**USFWS Field Office Contact Information:**

Mr. Bill Pearson, Field Supervisor  
Mr. Matt Laschet, Biologist, ESA Section 7 and Sikes Act  
Ms. Shannon Holbrook, Endangered Plants and Bats  
Daphne Ecological Services Field Office  
1208-B Main Street  
Daphne AL 36526  
(251) 441-5181

**Alabama Department of Conservation and Natural Resources Contact Information:**

Mr. Charles F. Sykes, Director  
Alabama Division of Wildlife and Freshwater Fisheries  
64 North Union Street  
Montgomery, AL 36130  
(334) 242-3469

Mr. Steve Bryant, Supervising Wildlife Biologist  
Alabama Division of Wildlife and Freshwater Fisheries  
4101 HWY 21 N  
Jacksonville, AL 36265  
(256) 435-542

**Table 1 2012-2019 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
1	Integrated Wildland Fire Management Plan	2008	2015 Plan Update	Provide an update to the IWFMFMP in accordance with Army Wildland Fire Policy Guidance, to include Pelham Range and the Main Enclave.	\$0 (in house)	Class I	O&M Funds / Real Property Funds	Army Wildland Fire Policy Guidance (Sept 2002)	Completed FY15.
2	Forest Management	2008	2012 Plan Update 2018 Inventory 2008-2018 Implementation	Identify prescribed burning regimen, thinning techniques and areas where thinning will aid forest management and training, address Southern pine beetle infestation, control and removal.	\$150,000	Class I	Forestry Funds	AR 200-1; 32 CFR PART 651; SAILA (16 U.S.C 670 et seq.)	Plan update completed FY12. Implementation completed FY12-FY18.
3	Wildland Fire Management	2008	2012-2017	Conduct prescribed burning and wildfire suppression, manage to reduce threat and intensity of wildfires and maintain existing firebreaks.	MOA w/AFC	Class I	O&M Funds / Fire and Emergency Services Funds	Army Wildland Fire Policy Guidance (Sept 2002)	Completed FY12-FY18.
4	Vascular Flora Planning Level Survey	N/A	2011-2013	Perform a vascular flora baseline survey, to include Pelham Range and the Main Enclave.	\$50,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY13.
5	Plant Community Survey Update	2003	2011-2012	Perform an update to the planning level plant community survey.	\$50,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY12.
6	Mammalian Species Planning Level Survey Update	2007	2016-2017	Perform an update to the baseline mammal survey (Pelham Range and Main Enclave). Currently ongoing through summer 2017.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; 32 CFR PART 651; SAILA (16 U.S.C 670 et seq.)	Completed FY17.
7	Avian Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for birds, to include Pelham Range and the Main Enclave. Currently ongoing through summer 2017.	\$25,000	Class I	O&M Funds / Sikes Act Funds	Migratory Bird Treaty Act (16 U.S.C 703-712); SAILA (16 U.S.C 670 et seq.)	Completed FY17.
8	Reptile and Amphibian Species Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for reptiles and amphibians (Pelham Range and Main Enclave). Currently ongoing through summer 2017.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY17.

**Table 1 2012-2019 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
9	Fish Species Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for fish species (Pelham Range and the Main Enclave). Survey will include both seining and electro-shocking capture methods.	\$22,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAlA (16 U.S.C 670 et seq.)	Completed FY17.
10	Wildlife Habitat Enhancement	N/A	2012-2016	Create and maintain wildlife openings, construct nest boxes for wood ducks and bluebirds. Provide mineral blocks for wildlife. Annually recurring.	\$20,000 / year	Class III	O&M Funds	SAlA (16 U.S.C 670 et seq.)	Completed FY12-FY18.
11	Wetlands and Aquatic Habitat Management Plan	N/A	2012-2016	Create a Wetlands and Aquatic Habitat Management Plan to provide for sustainable management and conservation of wetlands, surface waters and riparian habitats at the FM-ARNGTC.	\$30,000	Class II	O&M Funds	CWA; AR 200-1; SAlA (16 U.S.C 670 et seq.)	Not funded.
12	Invasive and Exotic Species Control	2004	2012-2018 Implementation	Control and maintain invasive and exotic species, to include kudzu, privet and non-native grasses, utilizing mechanical, biological and chemical means. Use Pest Management Plan to control fire ants.	\$20,000 / year	Class II	O&M Funds / Real Property Funds	EO 13112; SAlA (16 U.S.C 670 et seq.)	Completed FY12-FY18.
13	Bat Survey	2007	2012 2014 2016 2018	Endangered species monitoring. Presence or absence survey for listed bat species on Pelham Range.	\$100,000	Class I	O&M Funds	SAlA (16 U.S.C 670 et seq.), EO 11988, ESA (16 USC §1536)	Completed.
14	Soil Erosion Management	2003	2012 Plan Update 2012-2016 Implementation	Implement programs identified within the SEMP. Train personnel and troop leaders. Annual monitoring and maintenance programs, repair erosion sites, prevent future feature formation.	\$35,000 / Plan \$20,000 / Year	Class II	O&M Funds / Real Property Funds	CWA; AR 200-1; 32 CFR PART 651	Plan update completed FY15. Implementation completed FY12-FY18.
15	Natural Resources Support Personnel	N/A	2012-2018	Hire and train FM-ARNGTC natural resources staff. Annually recurring.	\$80,000 / year	Class 0	O&M Funds	SAlA (16 U.S.C 670 et seq.)	Completed FY12- FY18.
16	Natural Resources Training	N/A	2012-2018	Train AL ARNG natural resources staff and range control personnel in identification of possible impacts to natural resources. Annually recurring.	\$10,000 / year	Class 0	O&M Funds	Multiple legal drivers	Completed FY12-FY18.



**Table 1 2012-2019 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
17	Invertebrate Species Planning Level Survey	N/A	2012-2013	Perform baseline invertebrate survey, aquatic and terrestrial, for Pelham Range and Main Enclave.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAIA (16 U.S.C 670 et seq.)	Completed FY13.
18	Water Quality Study	N/A	2018	Perform a baseline water quality study on Cane Creek of Pelham Range.	\$50,000	Class II	O&M Funds	CWA; AR 200-1; SAIA (16 U.S.C 670 et seq.)	Completed FY18.
19	Gray Bat Habitat Restoration	N/A	2012-2016	Endangered species habitat restoration. Remove invasive species in gray bat riparian corridor.	\$75,000	Class I	O&M Funds	SAIA (16 U.S.C 670 et seq.), ESA (16 USC §1536)	Not funded.
20	Surface Water Planning Level Survey Update	2000	2011-2012	Perform planning level survey update of surface waters on Pelham Range and Main Enclave.	\$50,000	Class I	O&M Funds	CWA; AR 200-1; SAIA (16 U.S.C 670 et seq.)	Completed FY13.
21	Wetlands Planning Level Survey Update	2000	2011-2012	Perform update of planning level wetlands survey.	\$50,000	Class I	O&M Funds	CWA; AR 200-1; SAIA (16 U.S.C 670 et seq.)	Completed FY13.
22	Invasive and Exotic Species Planning Level Survey Update	2004	2012 Survey Update/Plan	Perform update to baseline survey for invasive and exotic species. Update GIS data and Invasive and Exotic Species Management Plan.	\$40,000 / Plan	Class II	O&M Funds	EO 13112; SAIA (16 U.S.C 670 et seq.)	Completed FY15.
23	Threatened and Endangered Species Management Plan Update	2002	2019	Provide an update to the T&E Management Plan to add recently documented species and incorporate new conservation measures agreed upon by USFWS.	\$50,000	Class II	O&M Funds / Sikes Act Funds	AR 200-1; ESA (16 USC §1536); SAIA (16 U.S.C 670 et seq.)	Proposed FY19
24	Lloyd's Chapel Road Stabilization	N/A	2019	Design and construction of road stabilization measures (riprap, bank grading, revegetation, road resurfacing) on the boundary road leading to the Lloyd's Chapel Swale Special Interest Natural Area (SINA), habitat for Federally-listed Tennessee yellow-eyed grass. The project is necessary to stop the flow of silt/sediments towards the SINA downgradient.	\$350,000	Class I	O&M Funds / Sikes Act Funds	CWA; AR 200-1; ESA (16 USC §1536); SAIA (16 U.S.C 670 et seq.)	Funds received. Contract awarded FY19.

**Table 1 2012-2019 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
25	Deer Survey	2015	2018	Survey of deer population on Pelham Range to support quality deer management/game management program.	\$28,000	Class III	O&M Funds / Sikes Act Funds	SALA (16 U.S.C 670 et seq.)	Completed FY18.
26	INRMP Update	2012	2018-2019	Conduct 5-year update to the INRMP.	\$160,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SALA (16 U.S.C 670 et seq.)	In Progress
27	Timber Inventory	2003	2019-2020	Conduct/update existing inventory survey of marketable timber.	\$128,900	Class I	O&M Funds / Sikes Act Funds	AR 200-1; 32 CFR PART 651; SALA (16 U.S.C 670 et seq.)	In Progress
28	Fish Survey for Listed or Petitioned Species	N/A	2019-2020	Conduct survey for fish species of concern in suitable habitats.	\$35,000	Class I	O&M Funds / Sikes Act Funds	ESA (16 USC §1536)	Proposed FY19-20
29	Butterfly Survey for Listed or Petition Species	N/A	2019-2020	Conduct survey for butterfly species of concern in suitable habitats.	\$35,000	Class I	O&M Funds / Sikes Act Funds	ESA (16 USC §1536)	Proposed FY19-20

**Table 2 - FY18 INRMP Projects - Implemented**

<b>Project</b>	<b>INRMP Project</b>	<b>Cost</b>	<b>Description</b>
Forest Management Implementation	2	\$185,000	Thinning, plantation management, site preparation, and equipment costs. Funded by forestry funds (reimbursable program).
Wildland Fire Management	3	\$119,125	Conduct prescribed burning and wildfire suppression, manage to reduce the threat and intensity of wildfires and maintain firebreaks. Labor, equipment, fuel and training. Services provided by agreement with Alabama Forestry Commission.
Wildlife Habitat Enhancement	10	\$61,000	Creation and maintenance of wildlife enhancement openings, purchase and maintenance of equipment. This project is annually supported by game management funds (reimbursable program); however additional funds were provided by a grant from the National Wild Turkey Federation in FY18.
Invasive and Exotic Species Control	12	\$7841	Control invasive/exotic species utilizing mechanical, biological and chemical means.
Bat Survey	13	\$109,000	Population survey for listed bat species. Radio-tracking of Indiana bats, NLEB or tricolored bats.
Soil Erosion Management	14	\$19,927	Implementation of annual monitoring and maintenance programs by ITAM personnel (Integrated Training Area Management), repair erosion sites, prevention of future feature formation.
Natural Resources Support Personnel	15	\$348,000	Salaries for natural resource staff. This amount includes forestry personnel.
Natural Resources Training	16	\$2000	Training for natural resources personnel, includes forestry.
Cane Creek Water Quality Study	17	\$95,000	Perform baseline water quality study of Cane Creek and tributaries for the purpose of studying sediment load and potential bank erosion.
Lloyd's Chapel Swale Road Stabilization	24	\$350,000	Design and construction of road stabilization measures (riprap, bank grading, revegetation, road resurfacing) on the boundary road leading to the Lloyd's Chapel Swale Special Interest Natural Area, habitat for federally-listed Tennessee yellow-eyed grass. The project is necessary to stop the flow of silt/sediments towards the SINA downgradient. In progress - design completed; construction in FY19.
Deer Population Survey	25	\$28,000	Annual survey of deer population present on Pelham Range in support of the game management program.
INRMP Update	26	\$160,000	Routine 5-year update to the INRMP – in progress.
<b>Total Implementation Cost</b>		<b>\$1,484,893</b>	<b>Total INRMP project costs in FY18</b>

**Table 3 - FY19 INRMP Projects**

<b>Project</b>	<b>INRMP Project</b>	<b>Cost*</b>	<b>Description</b>
Forest Management Plan	2	\$180,000	Thinning, invasive species control, plantation management, site preparation, and equipment costs. Funded by forestry funds (reimbursable program). Recurring.
Wildland Fire Management	3	TBD	Conduct prescribed burning and wildfire suppression, manage to reduce the threat and intensity of wildfires and maintain existing firebreaks. Performed through agreement with Alabama Forestry Commission. Recurring.
Wildlife Habitat Enhancement	10	\$5,000	Maintenance of wildlife enhancement openings. This project is funded by a reimbursable game management program and may also be supported through grant monies. Recurring.
Invasive and Exotic Species Control	12	TBD	Control invasive/exotic species utilizing mechanical, biological and chemical means. Recurring.
Soil Erosion Management	14	TBD	Implementation of annual monitoring and maintenance programs by ITAM personnel (Integrated Training Area Management), repair erosion sites, prevention of future feature formation. Recurring.
Natural Resources Support Personnel	15	\$350,000	Salaries for natural resource staff including forestry personnel. Recurring.
Natural Resources Training	16	TBD	Training budget for natural resources staff. To be determined as funds are received. Recurring.
Endangered Species Management Plan Update	23	\$50,000	Update the 2002 ESMP to include current regulations, management strategies, and listed species documented on FM-ARNGTC.
Lloyd's Chapel Swale Road Stabilization	24	\$350,000 (FY18 funds)	Construction of road stabilization measures (riprap, bank grading, revegetation, road resurfacing) on the boundary road leading to the Lloyd's Chapel Swale Special Interest Natural Area, habitat for federally-listed Tennessee yellow-eyed grass. The project is necessary to stop the flow of silt/sediments towards the habitat downgradient. Construction to begin FY19.
INRMP Update	26	\$160,000 (FY18 funds)	Routine 5-year update to the INRMP. To be completed FY19.
Timber Inventory	27	\$128,900	Conduct inventory of marketable timber; through agreement with AFC. Forestry funds.
Fish Survey - Listed or Petitioned Species	28	\$35,000	Conduct survey for specific fish species of concern – blue shiner, Coldwater darter, pygmy sculpin. Proposed, not funded.
Butterfly Survey – Listed or Petitioned Species	29	\$35,000	Conduct survey for butterfly species of concern – Eastern monarch and frosted elfin. Proposed, not funded.

\*Costs for recurrent projects are estimated or to be determined (TBD).

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2019

Environmental Program Office

Mr. Steve Bryant  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
4101 HWY 21 N  
Jacksonville, Alabama 36265

Dear Mr. Bryant:

The Alabama Army National Guard annually reviews the Fort McClellan Army National Guard Training Center's (FM-ARNGTC) Integrated Natural Resources Management Plan (INRMP) for operation and effectiveness with the cooperation of the U.S. Fish & Wildlife Service and Alabama Department of Conservation and Natural Resources. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions. Please note, the INRMP is currently being updated for the next 5-year cycle. A draft update will be made available for your review and comment in 2019.

Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY18. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter. This INRMP report has also been sent to Mr. Charles Sykes of your agency.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at leah.l.neremstorino.nfg@mail.mil. We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,

PICKETT.BRODERICK.O  
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269064  
Date: 2019.01.16 16:07:24 -06'00'

**BRODERICK O. PICKETT**  
**LTC, FA ALARNG**  
**Environmental Program Manager**

Enclosure

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2019

Environmental Program Office

Mr. Bill Pearson  
U.S. Fish and Wildlife Service  
Alabama Ecological Services Field Office  
1208-B Main Street  
Daphne, AL 36526

Dear Mr. Pearson:

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Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY18. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you or your designee to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil). We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,

PICKETT.BRODERICK.O  
RLANDO.1111269064  
Digitally signed by  
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Date: 2019.01.16 16:09:08 -06'00'

**BRODERICK O. PICKETT**  
**LTC, FA ALARNG**  
**Environmental Program Manager**

Enclosure

## FY17 INRMP ANNUAL REPORT

**To:** Mr. Bill Pearson, USFWS  
Mr. Charles Sykes, ADCNR  
Mr. Steve Bryant, ADCNR

**From:** CPT Brent Beasley, Environmental Program Manager, Alabama Army National Guard

**Subject:** FY17 Annual Report on Implementation Status of the Fort McClellan Army National Guard Training Center Updated Integrated Natural Resources Management Plan (INRMP)

**Date:** 4 January 2018

**Reporting Period:** 1 October 2016 – 30 September 2017

### **Annual Coordination Meeting:**

No annual coordination meeting was held in FY17. This INRMP Annual Report will be used as the required annual INRMP coordination with USFWS and ADCNR for FY17. INRMP cooperative parties are encouraged to make an annual site visit to the FM-ARNGTC to review the INRMP for operation and effectiveness by reviewing INRMP projects and programs at the installation.

### **Program Overview:**

#### INRMP Goals and Objectives

FM-ARNGTC's INRMP describes the baseline conditions of natural resources at the installation and provides management programs and guidance allowing for the performance of successful military training, while providing for the conservation of renewable natural resources, preservation of rare and unique resources, and long-term sustainability of ecosystem-oriented resources. The management programs addressed in FM-ARNGTC's INRMP include sustainable range/integrated training area management, forest and fire management, fish and wildlife management, land and water resources management, wetland and aquatic habitat management, special interest natural area management, threatened and endangered species management, cultural resources management, pest management, outdoor recreation and public access, invasive and exotic species management, and land use planning.

The FM-ARNGTC INRMP is a training-driven plan, created with a dual goal:

- To allow for the conduct of appropriate military training at levels necessary to maintain a full readiness posture for National defense and civil missions; and
- To provide for management of natural resources in an ecosystem-oriented, sustainable manner, consistent with national, state, and local regulations.

The AL ARNG recognizes its responsibility to guarantee continued access to its land, air and water resources for realistic military training while ensuring that the natural and cultural resources entrusted to their care are sustained in a healthy condition for scientific research, education and other compatible uses by future generations. As such, the AL ARNG is committed to the planned, deliberate management of natural resources, supporting the installation operational mission, meeting or exceeding stewardship requirements, and enhancing the quality of life for its personnel and guests.

#### Mission Requirements

The AL ARNG's mission is to organize, train, and equip units for the conduct of state operations in support of the governor of Alabama and, if federalized, prepared to mobilize, deploy, fight, and win on the modern battlefield in support of wartime operations. The AL ARNG has eight Major Subordinate Commands within the state organization that include 20th Special Forces Group (Airborne) [20th SFG (A)], 62nd Troop Command, 167<sup>th</sup> Theater Support Command, 31st Chemical Brigade, 142nd Battlefield Surveillance Brigade, 226<sup>th</sup> Maneuver Enhancement Brigade, the 122<sup>nd</sup> Troop Command, and the 135<sup>th</sup> Expeditionary Sustainment Command. The 200th Regiment (Leadership) headquarters is located at the FM-ARNGTC. Its major mission

is to operate officer candidate training facilities, military occupational specialty qualification, and non-commissioned officer education systems schools for the state of Alabama and National Guard states in the region. Please note no significant changes to FM-ARNGTC's mission requirements have occurred during the reporting period.

#### Mission and the INRMP

The primary purpose of natural resources management and the INRMP at the FM-ARNGTC is to support the military training mission. With regard to accomplishment of the military mission, the overall goal is *to provide quality natural resources as a critical training asset* upon which to accomplish the mission of the AL ARNG at the FM-ARNGTC. Components of this overall goal adhere to resource management practices as identified within the Alabama Comprehensive Wildlife Conservation Strategy. These goals also include:

- Ensure no net loss in the capability of installation lands to support existing and projected military training and operations at the FM-ARNGTC; and
- Maintain quality training lands through range monitoring and damage minimization, mitigation, and rehabilitation.

No significant changes to FM-ARNGTC's natural resources have occurred during the reporting period.

#### No Net Loss to Training

The Sikes Act Improvement Act (SAIA) requires that FM-ARNGTC's INRMP provides for "...no net loss in the capability of military installation lands to support the military mission of the installation" (16 USC §670 *et seq.*). Primary impacts to training at FM-ARNGTC result from restrictions placed upon areas of environmental concern, including wetlands and endangered species locations. Locations are identified on the Natural Resource and Environmental Constraints Map issued to all trainers. Training may also be adjusted periodically to allow for timber harvest, prescribed burning, or other natural resources management activities. Environmental constraints promote awareness on the part of Soldiers. Learning to plan around environmental restrictions helps develop a disciplined mindset that is a valuable asset to today's Soldier. However, this must be balanced to avoid inadequate training due to excessive constraints. Regular meetings held with environmental staff, planners and trainers help to alleviate project or training restrictions by discussing mission requirements and environmental constraints in advance. This allows for a more innovative planning process and provides for creative solutions. As a result, FM-ARNGTC has experienced no net loss to training.

#### **Current Implementation Status:**

Eleven INRMP projects were completed or implemented in FY17. Annually occurring projects included the maintenance of wildlife enhancement areas, erosion management, invasive/exotic species control, prescribed burning, and forest management. A year-long faunal survey was completed for mammals, herps, birds and fish. Results of this comprehensive inventory point to a high level of biodiversity at the FM-ARNGTC with 271 species documented. This total includes 38 fish species, 56 species of amphibians and reptiles, 148 species of birds and 29 mammal species. Although no new Federally-listed species were found, ten state-protected species were documented and new special or unique habitats were identified.

Management of threatened and endangered (T&E) species habitats, and T&E population counts (for Tennessee yellowed-eyed grass and Mohr's Barbara's Buttons) are recurrent activities under FM-ARNGTC's Endangered Species Management Plan, a component plan of the INRMP. Population counts for both species were conducted and remain stable, although some locations were affected by the previous year's drought conditions. T&E habitat management included mowing, conducting prescribed burns where possible, selective thinning, and invasive/exotic species control.

The forestry program is an important component of natural resource management and an integral part of accomplishing INRMP goals and objectives. FM-ARNGTC's forestry program focuses on the regeneration and management of mountain longleaf pine. In FY17, forestry projects included 40 acres reforested with 12,000 containerized longleaf pines, 100 acres of natural regeneration pre-commercial thinning, 735 acres released as mid rotation treatment, 470 acres treated for invasive/exotic species, and 6,500 acres were prescribed burned. FM-ARNGTC's forest management plan is available for review upon request.



The game management program facilitated public hunting opportunities, including a youth hunt, with seasons for deer, turkey, upland and small game. Two special hunting events were hosted on Pelham Range—a deer hunt for disabled hunters and a two-day dove hunt for Soldiers and their youth guests. Due to satisfactory participation and support for these events, the AL ARNG plans to conduct them again next season.

Please see attached tables for more detailed information regarding the status of INRMP projects. Table 1 details all proposed projects during the implementation period of the INRMP (2012-2017). Projects completed in FY17 are represented in Table 2 in further detail.

**Proposed Implementation:**

Please see Table 3 for the status of projects planned or currently underway in FY18. All proposed projects are dependent upon funding from Army National Guard Directorate and the AL ARNG Joint Force Headquarters; therefore, some costs are estimated or will be determined.

FY17 is the last year in the current INRMP 5-year cycle. A routine 5-year update to the INRMP is planned in 2018 and coordination with cooperative parties will occur to ensure their input in the plan.

**Installation Personnel:**

Bernie Tucker, Environmental Branch Chief  
Leah Storino, Natural Resources Program Manager  
John Davidson, Registered Forester, Certified Prescribed Burn Manager  
Kenneth Gurley, Forestry Technician  
Jim Ratcliffe, Wildlife Biologist  
Jonathan Mills, Wildlife Biologist

**USFWS Regional Office Contact Information:**

Mr. Frederick M. Williams, Region 4 Sikes Act Coordinator  
USFWS  
1875 Century Blvd  
Atlanta, GA 30345  
(404) 679-4151

**USFWS Field Office Contact Information:**

Mr. Bill Pearson, Field Supervisor  
Mr. Matt Laschet, Biologist, ESA Section 7 and Sikes Act  
Ms. Shannon Holbrook, Endangered Plants and Bats  
Daphne Ecological Services Field Office  
1208-B Main Street  
Daphne AL 36526  
(251) 441-5181

**Alabama Department of Conservation and Natural Resources Contact Information:**

Mr. Charles F. Sykes, Director  
Alabama Division of Wildlife and Freshwater Fisheries  
64 North Union Street  
Montgomery, AL 36130  
(334) 242-3469

Mr. Steve Bryant, Supervising Wildlife Biologist  
Alabama Division of Wildlife and Freshwater Fisheries  
4101 HWY 21 N  
Jacksonville, AL 36265  
(256) 435-542

**Table 1 2012-2017 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
1	Integrated Wildland Fire Management Plan	2008	2015 Plan Update	Provide an update to the IWFMF in accordance with Army Wildland Fire Policy Guidance, to include Pelham Range and the Main Enclave.	\$0 (in house)	Class I	O&M Funds / Real Property Funds	Army Wildland Fire Policy Guidance (Sept 2002)	Completed FY15.
2	Forest Management	2008	2012 Plan Update 2018 Inventory 2008-2018 Implementation	Identify prescribed burning regimen, thinning techniques and areas where thinning will aid forest management and training, address Southern pine beetle infestation, control and removal.	\$50,000	Class I	Forestry Funds	AR 200-1: 32 CFR PART 651; SAILA (16 U.S.C 670 et seq.)	Plan update completed FY12. Implementation completed FY12-FY17.
3	Wildland Fire Management	2008	2012-2017	Conduct prescribed burning and wildfire suppression, manage to reduce threat and intensity of wildfires and maintain existing firebreaks.	MOA w/AFC	Class I	O&M Funds / Fire and Emergency Services Funds	Army Wildland Fire Policy Guidance (Sept 2002)	Completed FY12-FY17.
4	Vascular Flora Planning Level Survey	N/A	2011-2013	Perform a vascular flora baseline survey, to include Pelham Range and the Main Enclave.	\$50,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1: SAILA (16 U.S.C 670 et seq.)	Completed FY13.
5	Plant Community Survey Update	2003	2011-2012	Perform an update to the planning level plant community survey.	\$50,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY12.
6	Mammalian Species Planning Level Survey Update	2007	2016-2017	Perform an update to the baseline mammal survey (Pelham Range and Main Enclave). Currently ongoing through summer 2017.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1: 32 CFR PART 651; SAILA (16 U.S.C 670 et seq.)	Completed FY17.
7	Avian Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for birds, to include Pelham Range and the Main Enclave. Currently ongoing through summer 2017.	\$25,000	Class I	O&M Funds / Sikes Act Funds	Migratory Bird Treaty Act (16 U.S.C 703-712); SAILA (16 U.S.C 670 et seq.)	Completed FY17.
8	Reptile and Amphibian Species Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for reptiles and amphibians (Pelham Range and Main Enclave). Currently ongoing through summer 2017.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY17.

**Table 1 2012-2017 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
9	Fish Species Planning Level Survey Update	2007	2016-2017	Perform update to the baseline survey for fish species (Pelham Range and the Main Enclave). Survey will include both seining and electro-shocking capture methods.	\$22,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY17.
10	Wildlife Habitat Enhancement	N/A	2012-2016	Create and maintain wildlife openings, construct nest boxes for wood ducks and bluebirds. Provide mineral blocks for wildlife. Annually recurring.	\$20,000 / year	Class III	O&M Funds	SAILA (16 U.S.C 670 et seq.)	Completed FY12-FY17.
11	Wetlands and Aquatic Habitat Management Plan	N/A	2012-2016	Create a Wetlands and Aquatic Habitat Management Plan to provide for sustainable management and conservation of wetlands, surface waters and riparian habitats at the FM-ARNGTC.	\$30,000	Class II	O&M Funds	CWA; AR 200-1; SAILA (16 U.S.C 670 et seq.)	Not funded in FY17.
12	Invasive and Exotic Species Control	2004	2012-2016 Implementation	Control and maintain invasive and exotic species, to include kudzu, privet and non native grasses, utilizing mechanical, biological and chemical means. Use Pest Management Plan to control fire ants.	\$20,000 / year	Class II	O&M Funds / Real Property Funds	EO 13112; SAILA (16 U.S.C 670 et seq.)	Completed FY12-FY17.
13	Bat Survey	2007	2012 2014 2016	Endangered species monitoring. Presence or absence survey for listed bat species on Pelham Range.	\$50,000	Class I	O&M Funds	SAILA (16 U.S.C 670 et seq.), EO 11988, ESA (16 USC §1536)	Completed.
14	Soil Erosion Management	2003	2012 Plan Update 2012-2016 Implementation	Implement programs identified within the SEMP. Train personnel and troop leaders. Annual monitoring and maintenance programs, repair erosion sites, prevent future feature formation.	\$35,000 / Plan \$20,000 / year	Class II	O&M Funds / Real Property Funds	CWA; AR 200-1; 32 CFR PART 651	Plan update completed FY15. Implementation completed FY12-FY17.
15	Natural Resources Support Personnel	N/A	2012-2016	Hire and train FM-ARNGTC natural resources staff. Annually recurring.	\$80,000 / year	Class 0	O&M Funds	SAILA (16 U.S.C 670 et seq.)	Completed FY12- FY17.
16	Natural Resources Training	N/A	2012-2016	Train AL ARNG natural resources staff and range control personnel in identification of possible impacts to natural resources. Annually recurring.	\$10,000 / year	Class 0	O&M Funds	Multiple legal drivers	Completed FY12-FY17.

**Table 1 2012-2017 FM-ARNGTC INRMP Implementation Projects**

<b>Project Number</b>	<b>Project</b>	<b>Date of Existing Plan / Survey</b>	<b>Proposed Update or Implementation</b>	<b>Project Description</b>	<b>Estimated Cost</b>	<b>Class</b>	<b>Funding</b>	<b>Legal Driver</b>	<b>Project Status</b>
17	Invertebrate Species Planning Level Survey	N/A	2012-2013	Perform baseline invertebrate survey, aquatic and terrestrial, for Pelham Range and Main Enclave.	\$30,000	Class I	O&M Funds / Sikes Act Funds	AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY13.
18	Water Quality Study	N/A	2018	Perform a baseline water quality study on Cane Creek of Pelham Range.	\$50,000	Class II	O&M Funds	CWA; AR 200-1; SAILA (16 U.S.C 670 et seq.)	Funded FY18.
19	Gray Bat Habitat Restoration	N/A	2012-2016	Endangered species habitat restoration. Remove invasive species in gray bat riparian corridor.	\$75,000	Class I	O&M Funds	SAILA (16 U.S.C 670 et seq.); ESA (16 USC §1536)	Not Funded in FY17.
20	Surface Water Planning Level Survey Update	2000	2011-2012	Perform planning level survey update of surface waters on Pelham Range and Main Enclave.	\$50,000	Class I	O&M Funds	CWA; AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY13.
21	Wetlands Planning Level Survey Update	2000	2011-2012	Perform update of planning level wetlands survey.	\$50,000	Class I	O&M Funds	CWA; AR 200-1; SAILA (16 U.S.C 670 et seq.)	Completed FY13.
22	Invasive and Exotic Species Planning Level Survey Update	2004	2012 Survey Update/Plan	Perform update to baseline survey for invasive and exotic species. Update GIS data and Invasive and Exotic Species Management Plan.	\$40,000 / Plan	Class II	O&M Funds / Real Property Funds	EO 13112; SAILA (16 U.S.C 670 et seq.)	Completed FY15.

**Table 2 - FY17 INRMP Projects - Implemented**

<b>Project</b>	<b>INRMP Project</b>	<b>Cost</b>	<b>Description</b>
Forest Management Implementation	2	\$123,356	Thinning, plantation management, site preparation, and equipment costs. Funded by forestry funds (reimbursable program).
Wildland Fire Management	3	\$310,050	Conduct prescribed burning and wildfire suppression, manage to reduce the threat and intensity of wildfires and maintain firebreaks. Labor, equipment, fuel and training. Services provided by agreement with Alabama Forestry Commission.
Faunal Survey Updates	5-8	\$120,000	Update surveys for mammals, birds, reptiles, amphibians and fish. Completed fall 2017.
Wildlife Habitat Enhancement	10	\$4414	Creation and maintenance of wildlife enhancement openings. This project is annually supported by game management funds (reimbursable program); however additional funds were provided by a grant from the National Wild Turkey Federation in FY17.
Invasive and Exotic Species Control	12	\$48,969	Control invasive/exotic species utilizing mechanical, biological and chemical means. (\$46,068 from Forestry)
Soil Erosion Management	14	\$1136	Implementation of annual monitoring and maintenance programs by ITAM personnel (Integrated Training Area Management), repair erosion sites, prevention of future feature formation.
Natural Resources Support Personnel	15	\$337,670	Salaries for natural resource staff. This amount includes forestry personnel.
Natural Resources Training	16	\$2595	Training for natural resources personnel, includes forestry.
<b>Total Implementation Cost</b>		<b>\$857,842</b>	<b>Total INRMP project costs in FY17</b>

**Table 3 - FY18 INRMP Projects - Funded**

<b>Project</b>	<b>INRMP Project*</b>	<b>Cost**</b>	<b>Description</b>
Forest Management Plan	2	\$180,000	Thinning, invasive species control, plantation management, site preparation, and equipment costs. Funded by forestry funds (reimbursable program).
Wildland Fire Management	3	TBD	Conduct prescribed burning and wildfire suppression, manage to reduce the threat and intensity of wildfires and maintain existing firebreaks. Performed through agreement with Alabama Forestry Commission.
INRMP Update		\$160,000	Routine 5-year update to the INRMP.
Wildlife Habitat Enhancement	10	\$5,000	Maintenance of wildlife enhancement openings. This project is funded by a reimbursable game management program and may also be supported through grant monies.
Invasive and Exotic Species Control	12	TBD	Control invasive/exotic species utilizing mechanical, biological and chemical means.
Soil Erosion Management	14	TBD	Implementation of annual monitoring and maintenance programs by ITAM personnel (Integrated Training Area Management), repair erosion sites, prevention of future feature formation.
Natural Resources Support Personnel	15	\$347,150	Salaries for natural resource staff including forestry personnel.
Natural Resources Training	16	\$0	Training budget for natural resources staff. To be determined as funds are received.
Water Quality Study	17	\$95,000	Perform baseline water quality study of Cane Creek and tributaries for the purpose of studying sediment load and potential bank erosion.
Lloyd's Chapel Swale Road Stabilization		\$50,000	Design and construction of road stabilization measures (riprap, bank grading, revegetation, road resurfacing) on the boundary road leading to the Lloyd's Chapel Swale Special Interest Natural Area, habitat for federally-listed Tennessee yellow-eyed grass. The project is necessary to stop the flow of silt/sediments towards the SINA downgradient.
Bat Survey		\$75,000	Presence/absence survey for listed bat species. Summer 2018.
Endangered Species Management Plan Update		\$50,000	Update the 2002 ESMP to include current regulations, management strategies, and listed species documented on FM-ARNGTC.

\*Note: Projects without INRMP project numbers will be incorporated into the next 5-year cycle for the INRMP.

\*\*Costs for recurrent projects are estimated or to be determined (TBD).

FORT McCLELLAN ARMY NATIONAL GUARD TRAINING CENTER  
ALABAMA ARMY NATIONAL GUARD  
P.O. Box 5280  
FORT McCLELLAN, ALABAMA 36205

REPLY TO  
ATTENTION OF

FM-ARNGTC-ENV

6 FEB 2018

MEMORANDUM FOR RECORD

**SUBJECT:** Request for Alabama Department of Conservation and Natural Resources (ADCNR) and United States Fish & Wildlife Service (USFWS) Annual Integrated Natural Resources Management Plan (INRMP) Review for Operation and Effect

1. In accordance with the Sikes Act, Army Regulation 200-1 and National Guard Bureau guidelines, the Alabama Army National Guard (ALARNG) annually requests review for operation and effect of the Ft McClellan Army National Guard Training Center's (FM-ARNGTC) INRMP. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions. As INRMP cooperative parties, both agencies are also invited for an annual site visit to review projects at the FM-ARNGTC.
2. Official correspondence to both agencies, dated January 4, 2018, included an annual INRMP report detailing project funding and completion for FY17. This correspondence letter requested feedback within 30 days.
3. No response or request for site visit was received by ADCNR or USFWS.
4. The undersigned is the POC for information regarding the natural resources program for FM-ARNGTC and can be reached at (256) 847-4548, or via email at leah.l.neremstorino.nfg@mail.mil.

FOR THE RECORD:



Leah Storino  
Natural Resources Program Manager  
FM-ARNGTC  
Alabama Army National Guard



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
1208-B Main Street  
Daphne, Alabama 36526

IN REPLY REFER TO:  
2018-CPA-0061

**JAN 24 2018**

Ms. Leah Storino  
Natural Resource Program Manager  
Environmental Program Office  
P.O. Box 5280  
Fort McClellan, AL 36205-0280

Dear Ms. Storino:

Thank you for your letter, dated January 9, 2018, requesting concurrence with your species effects determination of may affect, but is not likely to adversely affect for gray bats, Indiana bats, northern long-eared bats, Tennessee yellow-eyed grass, Mohr's Barbara buttons, and whorled sunflower for minor forestry actions, for five years (in cycle with the integrated resource management plan (INRMP)) on Fort McClellan Army National Guard Training Center (FM-ARNGTC), Calhoun County, Alabama. We have reviewed your information and are providing the following comments in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the Migratory Bird Treaty Act of 1918, as amended (40 Stat. 755; 16 U.S.C. 703 et seq.)(MBTA).

We understand that the minor forestry actions include:

- Selective timber thinning in accordance with the forest management plan (FMP);
- Prescribed burning in accordance with the prescribed burn plan;
- Herbicide applications to control competition and invasive species in pine stands;
- Maintenance along previously existing right-of-ways; and
- Clear cutting under 1 acre such as for the treatment of the southern pine beetle infestation.

We further understand that all activities would be conducted with the following restrictions or conditions:

- Tree cutting and prescribed burning may occur any time of year except during the non-volant pup season (June 1<sup>st</sup> through July 31<sup>st</sup>);
- Dead trees, snags, or trees with exfoliating bark shall not be removed except for safety reasons during the non-volant pup season;
- Herbicide applications in forested environments shall be targeted, plant specific and follow the conservation measures specified in the programmatic agreement for bats;
- Areas containing federally listed Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be buffered and marked for avoidance prior to forestry activities in the vicinity;
- Areas containing Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be excluded from prescribed burns after April 1<sup>st</sup>;



- If listed species are documented during presence/absence surveys of an area planned for forestry activities, the action will be modified to incorporate avoidance measures such as exclusion buffers; and
- If a newly listed species or listed species not previously documented at FM-ARNGTC is found in any survey, the Alabama Army National Guard will cease forestry activities until consultation for that species is completed (with the exception of tricolored bat).

Based on the information provided we concur with your findings of may affect, but is not likely to adversely affect the gray bats, Indiana bats, northern long-eared bats, tricolored bats, Tennessee yellow-eyed grass, and Mohr's Barbara buttons. Furthermore, we have no issues with issuing a five-year blanket clearance for minor forestry activities, based on the information in your letter.

For questions or comments regarding this correspondence, please contact Mr. Matt Laschet, at (251) 441-5842 or via email [matthias\\_laschet@fws.gov](mailto:matthias_laschet@fws.gov).

Sincerely,



William J. Pearson  
Field Supervisor  
Alabama Ecological Services Field Office

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

9 January, 2018

Environmental Program Office

Mr. Bill Pearson  
1208-B Main Street  
Daphne, Alabama 36526

Dear Mr. Pearson:

In accordance with Section 7(a)(2) of the Endangered Species Act (ESA), the Alabama Army National Guard (AL ARNG) requests an informal consultation for Minor Forestry Actions at Fort McClellan Army National Guard Training Center (FM-ARNGTC). The AL ARNG proposes a consultation to address all minor, routine forestry activities for the next cycle of the Integrated Natural Resources Management Plan, 2018-2022, in order to streamline consultation requirements.

In 2015, the FM-ARNGTC became a participating installation in the Army National Guard Directorate's programmatic agreement (PA) for northern long-eared bats (to include the Indiana bat at FM-ARNGTC). Although expired, the AL ARNG continues to apply the conservation measures of the PA in order to streamline Section 7 consultation requirements for these species and aid in their recovery. Over the last three years, forestry activities such as selective harvests and prescribed burning have been consulted upon annually. The AL ARNG is currently performing a 5-year update to the INRMP and seeks to incorporate a comprehensive consultation for forestry actions that may affect those federally protected species (such as bats) documented at FM-ARNGTC. Conservation measures currently used or proposed by your Agency may be included in the appropriate sections of the INRMP and implemented during forestry activities without further consultation during the plan's 5-year cycle. The following forestry actions represent the majority of all forest management strategies implemented at FM-ARNGTC and are a critical component of natural resources management at the training center.

Minor forestry activities at the FM-ARNGTC include:

- Selective timber thinning in accordance with the forest management plan (FMP);
- Prescribed burning in accordance with the prescribed burn plan;
- Herbicide applications to control competition and invasive species in pine stands;
- Maintenance along previously existing right-of-ways; and
- Clear cutting under 1 acre such as for the treatment of southern pine beetle infestation.

All activities would be conducted with the following restrictions or conditions:

- Tree cutting and prescribed burning may occur any time of year **except** during the nonvolant pup season (June 1 through July 31);
- Dead trees, snags, or trees with exfoliating bark shall not be removed except for safety reasons during the nonvolant pup season (June 1 through July 31);
- Herbicide applications in forested environments shall be targeted, plant-specific and follow the conservation measures specified in the aforementioned PA for bats;
- Areas containing federally-listed Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be buffered and marked for avoidance prior to forestry activities in the vicinity;

- Areas containing Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be excluded from prescribed burns after April 1;
- If listed species are documented during presence/absence surveys of an area planned for forestry activities, the action will be modified to incorporate avoidance measures such as exclusion buffers; and
- If a newly listed species or listed species not previously documented at FM-ARNGTC is found in any survey, the AL ARNG will cease forestry activities until consultation for that species is completed (with the exception of tricolored bat).

Please note dead trees, snags and species with exfoliating bark (i.e. shagbark hickories) are not considered marketable timber and, therefore not selected for harvest under the FM-ARNGTC FMP as a standard practice. Additionally, the FMP does not provide for clear cutting except for the removal of trees to prevent further spread of disease or infestations.

The AL ARNG remains committed to conducting presence/absence surveys for bats and population surveys for our listed plant species. Should any listed species be found in areas planned for forestry operations, the appropriate avoidance measures will be implemented. Additionally, the AL ARNG will continue to consult on a case-by-case basis for actions not described in this consultation.

The AL ARNG determines the proposed action **may affect, but is not likely to adversely affect** the following Federally-listed species, or their habitats, documented at FM-ARNGTC: gray bat, Indiana bat, northern long-eared bat, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and tricolored bat. The AL ARNG has considered potential effects to the tricolored bat as it is petitioned for listing and documented at FM-ARNGTC. Should this species become listed, the proposed action may not require additional consultation. Proposed conservation and avoidance measures will likely protect these species from adverse effects.

The AL ARNG appreciates the continued support of the USFWS in conserving natural resources at FM-ARNGTC. We request your concurrence with a finding of "may affect, not likely to adversely affect" for the species listed above, invite your recommendations and look forward to incorporating this comprehensive consultation for minor forestry actions into the INRMP update process. Correspondence may be directed to the undersigned at P.O. Box 5280, Fort McClellan, Alabama 36205-0280; via phone 256-847-4548; or by email at leah.l.neremstorino.nfg@mail.mil.

Sincerely,



Leah Storino  
Natural Resources Program Manager  
Fort McClellan Army National Guard Training Center

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2018

Environmental Program Office

Mr. Charles Sykes  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
64 North Union Street  
Montgomery, AL 36130

Dear Mr. Sykes:

The Alabama Army National Guard annually reviews the Fort McClellan Army National Guard Training Center's (FM-ARNGTC) Integrated Natural Resources Management Plan (INRMP) for operation and effectiveness with the cooperation of the U.S. Fish & Wildlife Service and Alabama Department of Conservation and Natural Resources. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions.

Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY17. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you or your designee to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter. The report has also been sent to Mr. Steve Bryant of the Jacksonville, Alabama district office of your agency.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil). We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,



BRENT R. BEASLEY  
CPT, LG  
Environmental Program Manager

Enclosure

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2018

Environmental Program Office

Mr. Steve Bryant  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
4101 HWY 21 N  
Jacksonville, Alabama 36265

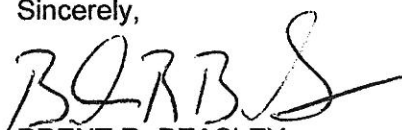
Dear Mr. Bryant:

The Alabama Army National Guard annually reviews the Fort McClellan Army National Guard Training Center's (FM-ARNGTC) Integrated Natural Resources Management Plan (INRMP) for operation and effectiveness with the cooperation of the U.S. Fish & Wildlife Service and Alabama Department of Conservation and Natural Resources. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions.

Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY17. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter. This INRMP report has also been sent to Mr. Charles Sykes of your agency.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil). We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,



BRENT R. BEASLEY  
CPT, LG  
Environmental Program Manager

Enclosure

**STATE MILITARY DEPARTMENT**  
**JOINT FORCES HEADQUARTERS ALABAMA NATIONAL GUARD**  
**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2018

Environmental Program Office

Mr. Bill Pearson  
U.S. Fish and Wildlife Service  
Alabama Ecological Services Field Office  
1208-B Main Street  
Daphne, AL 36526

Dear Mr. Pearson:

The Alabama Army National Guard annually reviews the Fort McClellan Army National Guard Training Center's (FM-ARNGTC) Integrated Natural Resources Management Plan (INRMP) for operation and effectiveness with the cooperation of the U.S. Fish & Wildlife Service and Alabama Department of Conservation and Natural Resources. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions.

Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY17. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you or your designee to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil). We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,



BRENT R. BEASLEY  
CPT, LG  
Environmental Program Manager

Enclosure

**STATE MILITARY DEPARTMENT**  
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**1720 CONGRESSMAN WILLIAM L. DICKINSON DRIVE**  
**P.O. BOX 3711**  
**MONTGOMERY, AL 36109-0711**

REPLY TO  
ATTENTION OF

4 January 2019

Environmental Program Office

Mr. Charles Sykes  
Alabama Department of Conservation and Natural Resources  
Division of Wildlife and Freshwater Fisheries  
64 North Union Street  
Montgomery, AL 36130

Dear Mr. Sykes:

The Alabama Army National Guard annually reviews the Fort McClellan Army National Guard Training Center's (FM-ARNGTC) Integrated Natural Resources Management Plan (INRMP) for operation and effectiveness with the cooperation of the U.S. Fish & Wildlife Service and Alabama Department of Conservation and Natural Resources. Annual reviews facilitate adaptive management by providing an opportunity for the parties to review the goals and objectives of the INRMP, as well as establish a realistic schedule for undertaking proposed actions. Please note, the INRMP is currently being updated for the next 5-year cycle. A draft update will be made available for your review and comment in 2019.

Enclosed for your review is the FM-ARNGTC Annual INRMP Report for FY18. At this time we offer the opportunity to provide feedback on the effectiveness of the INRMP and invite you or your designee to visit the training center. Please provide us with any questions, comments or concerns on our INRMP implementation within 30 days of receipt of this letter. This report has also been sent to Mr. Steve Bryant of the Jacksonville, Alabama district office of your agency.

All comments, requests for additional information or site visits should be directed to Leah Storino, Natural Resources Program Manager, Ft McClellan Army National Guard Training Center, P.O. Box 5280, Fort McClellan, Alabama 36205-0280. Ms. Storino can also be reached at (256) 847-4548 or via email at [leah.l.neremstorino.nfg@mail.mil](mailto:leah.l.neremstorino.nfg@mail.mil). We thank you for your assistance in managing our natural resources and look forward to hearing from you.

Sincerely,

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Date: 2019.01.16 16:08:27 -06'00'

**BRODERICK O. PICKETT**  
**LTC, FA ALARNG**  
**Environmental Program Manager**

Enclosure

**APPENDIX B**  
**INSTALLATION OVERVIEW AND MILITARY MISSION**



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## **APPENDIX B: INSTALLATION OVERVIEW AND MILITARY MISSION**

### **B.1 Location, Acreage, and History**

The FM-ARNGTC is located in Calhoun County, Alabama, directly north and northwest of the City of Anniston. The FM-ARNGTC consists of an approximately 22,246-acre tract known as Pelham Range and an additional 494 acres known as the Main Enclave (Figure 1, Appendix M). The two parcels are approximately five miles apart. The section of the Main Enclave that is known as the “new parcel” is state owned property. The remainder of the Main Enclave is federally owned. The Pelham Range tract is also federally owned.

Pelham Range is located approximately four miles northwest of downtown Anniston. It immediately adjoins Anniston Army Depot (ANAD) to the south, residential properties to the east, and is bounded by State Highway 109 on its southeast boundary. Primary road access is from U.S. Highway 431, which runs within about one-half mile of the northeast boundary. Lands to the north and west sides of the installation are in agriculture and low-density residential use. Pelham Range is predominately undeveloped (Figure 2, Appendix M).

The Main Enclave, which is located within the former Fort McClellan Main Post, lies east of U.S Highway 21, approximately four miles north of downtown Anniston. Except where it immediately abuts the highway, the Main Enclave is surrounded by other lands of the former Fort McClellan, and includes a smaller parcel known as the Military Operations in Urban Terrain (MOUT) site (Figure 3, Appendix M). Primary access is from Highway 21, and the internal road network of the former Fort McClellan connects the separate portions of the Main Enclave. The Main Enclave contains numerous buildings and facilities including administration, barracks, dining, unit administration, classrooms, vehicle maintenance, and storage areas.

#### **B.1.1 Acreage and Acquisition**

The Fort McClellan Main Post was acquired by the U.S. Government on March 17, 1917. On that date, Major Charles P. Summerall, head of the Artillery Bureau of the War College; John B. Carrington, Anniston Chamber of Commerce President; and L.C. Watson, Chamber Secretary, signed the contract of the purchase of land which was to become Camp McClellan, Alabama. Pelham Range was purchased in 1941 for \$675,000 (Reisz Engineering 1998a). Land acquisition entailed the relocation of 200 families from the town of Peaceburg (Reed *et al.* 1997; Reisz Engineering 1998a). In 1995, the Base Realignment and Closure (BRAC) Commission targeted Fort McClellan for closure. In 1999, Pelham Range (22,246 acres) and the Main Enclave (approximately 494 acres which includes the new parcel) were licensed to the AL ARNG for the FM-ARNGTC. A new parcel of approximately 148 acres was acquired in 2017 along the northern and eastern boundaries of the Main Enclave.

#### **B.1.2 Installation History**

In 1917, and shortly before the United States entered World War I, the Federal government purchased 19,953 acres of land in Calhoun County, Alabama for use as an artillery range. In July of that year, Camp McClellan was established as a mobilization camp, and by the time of the Armistice in November 1918, approximately 1,551 buildings had been erected. The camp was named for Major General George B. McClellan, General-in-Chief of the Union Army 1861-1862, and senator from New Jersey 1878-1881.

The installation remained active between the wars, and was designated a permanent installation (Fort McClellan) in 1929. During World War II the installation was used for a variety of training functions, and a 22,168-acre parcel previously known as Morrisville Maneuver Area was acquired and named Pelham Range. A separate 4,448-acre parcel known as the Choccolocco Corridor was acquired by long-term lease during the war.

In 1947, Fort McClellan was, like many other military installations, placed on inactive status but retained in Federal ownership. In 1951, the installation was reactivated as the home for the Chemical Corps School

and its successor organizations. The Women's Army Corps (WAC) School was established at Fort McClellan in 1952, and remained there until the WAC was incorporated in the rest of the Army in 1977. The Military Police (MP) School was moved from Fort Gordon, Georgia to Fort McClellan in 1975. As an installation whose main purpose over the years was training, Fort McClellan was developed with basic rifle marksmanship ranges, open-bay trainee barracks, and extensive classroom space.

In 1995 the BRAC Commission identified Fort McClellan for closure. The Chemical School, MP School, and Training Brigade moved to Fort Leonard Wood, Missouri as part of the newly implemented Maneuver Support Center; and the DoD Polygraph Institute moved to Fort Jackson, South Carolina. Following the closure of Fort McClellan, the Army retained Pelham Range (22,246 acres) and the Main Post. Pelham Range and approximately 494 acres (known as the Main Enclave) within the former Main Post cantonment area have been licensed to the AL ARNG.

On February 28, 2005, the United States Property and Fiscal Officer for Alabama, acting as the agent for the Chief of the NGB, accepted accountability for the properties licensed to the AL ARNG. NGB subsequently delegated overall responsibility for the management of the properties to the AL ARNG.

### **B.1.3 Neighbors**

The City of Anniston is located directly south of the Main Enclave and approximately five miles east of Pelham Range (Figure 1, Appendix M). A moderate size municipality (population 24,276), Anniston contains commercial, residential, and some industrial lands. The City of Oxford is located south of Anniston, along U.S. Interstate 20. Two major metropolitan areas, Atlanta, Georgia (100 miles to the east) and Birmingham, Alabama (60 miles to the west), are within a two hour drive of the FM-ARNGTC. Gadsden, Alabama, a slightly larger municipality, is located 28 miles to the north.

The ANAD, an Army Materiel Command installation, borders Pelham Range to the south. This facility encompasses over 18,000 acres (primarily forested) and is the only Army depot capable of performing maintenance on both heavy and light-tracked combat vehicles and their components (ANAD website: <http://www.anad.army.mil/mission.htm>). The ANAD also stores quantities of both conventional and other munitions, as well as general Army depot supplies.

The Mountain Longleaf National Wildlife Refuge, approximately 9016 acres, is located east of the Main Enclave on former Fort McClellan property. The Talladega National Forest, which covers approximately 377,000 acres in northeastern Alabama, and the Choccolocco State Forest are also located east of the Main Enclave.

## **B.2 Military Mission**

### **B.2.1 Overview**

The Alabama National Guard is comprised of both Army and Air National Guard (ANG) components, which support Federal and State constitutional authority with an organized military force of citizen soldiers. The primary training locations of the Alabama National Guard include: FM-ARNGTC; Fort Rucker, Alabama; Redstone Arsenal, Alabama; and Eglin Air Force Base, Florida. Some AL ARNG units also train at Camp Shelby, Mississippi and Camp Blanding, Florida.

The AL ARNG has a required mobilization day (M-day) strength of 11,123. The current Alabama Army National Guard force structure comprises 25 percent combat units and 75 percent combat support units (personal communication with AL ARNG Mobilization Readiness Branch, 2010).

According to the Alabama National Guard Annual Report (FY 2019) the Alabama National Guard end strength ceiling is 9,999 Soldiers (Directorate of Plans, Training, Mobilization, and Security January 2019). The current Alabama Army National Guard force structure comprises 25 percent combat units and 75

percent combat support units (personal communication with AL ARNG Mobilization Readiness Branch, 2010).

The AL ARNG's mission is to organize, train, and equip units for the conduct of State operations in support of the governor of Alabama and, if Federalized, prepared to mobilize, deploy, fight, and win on the modern battlefield in support of wartime operations. The AL ARNG has seven Major Subordinate Commands within the State organization that include:

- 20th Special Forces Group (Airborne) [20th SFG (A)],
- 62nd Troop Command,
- 226 Maneuver Enhancement Brigade (MEB),
- 135<sup>th</sup> Expeditionary sustainment Command,
- 122<sup>nd</sup> Troop Command,
- 167th Theater Support Command, and
- 31st Chemical Brigade.

The 200th Regiment (Leadership) headquarters is located at the FM-ARNGTC. Its major mission is to operate officer candidate training facilities, warrant officer candidate training facilities, military occupational specialty qualification, and non-commissioned officer education systems schools for the State of Alabama and National Guard states in the region. Alabama receives priority for training support, and the other states are assisted on a shortfall basis.

#### **B.2.1.1 20<sup>th</sup> Special Forces Group**

The 20th Special Forces Group (Airborne) plans, prepares for, and when ordered, conducts foreign internal defense, unconventional warfare special reconnaissance, and direct action operations in support of Communications Installation Company South (Nakata Planning Group 2001).

#### **B.2.1.2 62<sup>nd</sup> Troop Command**

The 62<sup>nd</sup> Troop Command provides:

- Principle peacetime (pre-mobilization) command and control in administration and logistics functions and training resourcing to its assigned troop units;
- Training assessments to supplement training assessment model and other evaluations; and
- Contingency planning guidance and task execution supervision for State and Federal Emergency Management Agency missions.

The Troop Command Headquarters has no war trace affiliation and will accomplish post-mobilization operational missions as may be assigned by the U.S. Army Forces Command (Nakata Planning Group 2001).

#### **B.2.1.3 226<sup>th</sup> Maneuver Enhancement Brigade (MEB)**

The 226<sup>th</sup> Maneuver Enhancement Brigade is a major subordinate command in the Alabama Army National Guard with more than 1,600 Soldiers assigned.

The organizational mission of the 226<sup>th</sup> Maneuver Enhancement Brigade is:

- Conducts security area operations,
- Conducts maneuver support operations, and
- Provides support to consequence management and stability operations.

The brigade headquarters is located in the historic Fort Whiting, in Mobile, Alabama. Subordinate units of the command are located from Winfield to Dothan, but the majority of units are based in the southwest portion of the state.

#### **B.2.1.4 135<sup>th</sup> Expeditionary Sustainment Command**

The 135<sup>th</sup> Expeditionary Sustainment conducts mission command of all units assigned, attached, and under its operational control. The unit provides sustainment planning, guidance, and support. In addition, it conducts mission command of task organized units in support of a state or national response to mitigate the effects of natural and/or man-made disasters.

#### **B.2.1.5 122<sup>nd</sup> Troop Command**

The 122<sup>nd</sup> Troop Support Command is responsible for more than 1,000 Soldiers. Primary capabilities include:

- Passenger and cargo air movement,
- Reconnaissance,
- Search and rescue, and
- Rescue hoist operations.

Ground support equipment consists of aviation ground power units, generators, cranes, forward repair systems, standard automotive tool sets, portable aircraft maintenance shelters, wreckers, fueling apparatus, and various other trailers and trucks. The majority of the subordinate units consist mainly of aviation assets from Birmingham, Hope Hull, and Mobile and include public affairs units and Military Police.

#### **B.2.1.6 167<sup>th</sup> Theater Support Command**

The mission of the 167<sup>th</sup> Theater Support Command is to (Nakata Planning Group 2001):

- Command, control, and supervise assigned and attached units;
- Advise and provide planning assistance to supported command and/or host nation;
- Plan for and direct the provision of combat service support through its subordinated operating commands to Army forces and other designated forces operating within a corps or theater area;
- Plan for, coordinate, and supervise rear battle activities within specified geographical areas assigned;
- When directed and appropriately augmented, plan for and direct provision of specified combat service support, in support of a contingency operation, to army and other separate unified, specified or joint forces in a contingency area; and
- Rapidly deploy, on a world-wide basis, a cell to assist army and/or joint forces in logistical concepts and planning.

#### **B.2.1.7 31st Chemical Brigade**

The mission of the 31<sup>st</sup> Chemical Brigade (formerly the 122<sup>nd</sup> Chemical Brigade) is to:

- Provide command and control of two to six Chemical Battalions and other assigned and attached units;
- Provide planning and coordination of combat, combat support and combat service support operations for all organic, assigned and attached units;
- Allocate units and resources in support of Nuclear, Biological, and Chemical (NBC) Reconnaissance, Decontamination, Biological Agent Detection, and Smoke Operations;
- Command and control of assigned units for training and support operations during inactive duty training and full time support staffs for daily activities;

- Monitor, supervise, and coordinate all administration, logistics, operations, and training of assigned units; including civilian and military personnel management, supply accountability, budgeting, and provisioning;
- Provide planning and preparation to assist civil authorities in accordance with the AL ARNG plan for emergency management activities; and
- When ordered by the Governor, provide command and control of assigned and attached units for conduct of Emergency Management Agency (EMA) operations.

### **B.2.2 Federal Military Mission**

The AL ARNG has its roots in the early militia movement associated with the American Revolution. The State Militia was formed in 1819 when Alabama was admitted to the Union. Despite this history, a formal Federal mission was a long-time in the making. On 13 October 1945, the most recent Federal mission was written. It states that the National Guard of the United States serves “to provide a Reserve component of the Army of the United States, capable of immediate expansions to war strength, able to furnish units fit for service anywhere in the world” (Dupuy 1971). This unit is to be trained and equipped to:

- Defend critical areas of the country against any form of invasion, meaning land, sea, or air;
- Assist with the mobilization of all other reserve forces; and
- Participate by units in all types of operations, including domestic or foreign offensive or defensive missions.

The ARNG operations can fall into one of the following four categories:

- 1) Maintain civil peace and order, whereas units may be deployed to break up a riot or to assist with maintaining crowd control at a local event.
- 2) Contain threat at a state, national, or international level.
- 3) Actively participate in war.
- 4) Assist in times of natural disaster, by performing rescue and relief missions during tornadoes, hurricanes, flooding, or snowstorms.

### **B.2.3 AL ARNG State Military Mission**

In the State role, the National Guard assists local law enforcement and emergency management agencies at the discretion of the Governor. In this capacity, AL ARNG provides command and control to civil authorities when required; to provide assistance to civil authorities in the protection of life and property; and to preserve the peace, order, and public safety under the direction of the Governor.

### **B.2.4 AL ARNG Community Mission**

Local armories provide meeting space, recreational opportunities, and support services to communities throughout the State. AL ARNG personnel are part-time soldiers and full-time citizens of the communities they serve. From hosting local blood drives and basketball leagues to providing a gathering place for community groups and functions, the AL ARNG is an integral part of many local communities and their day-to-day operations. Community level programs by the AL ARNG include performing approved engineering projects and providing indigent health care (Operation Care). The AL ARNG also participates in programs to educate Alabama youth about the dangers of illicit drugs and conducts operations to interdict and eradicate illegal drugs before they reach the community.

## **B.3 Natural Resources Needed to Support the Military Mission**

Relatively natural landscapes are required for the success of training activities at the FM-ARNGTC. Non-forested areas are required for the drop zone as well as firing ranges, while forested areas without excessive

underbrush may be used for dismounted training exercises. Ideally, forested areas should provide cover, but should not be so overgrown as to prevent movement. Areas consumed by invasive plant species such as kudzu or Chinese privet currently do not support the military mission and cannot be used by the AL ARNG to train.

The AL ARNG recognizes that its on-going and proposed training activities can potentially use or consume the natural resources on mission land, and that successful execution of their mission is dependent upon the optimum maintenance of their environment in a mode of sustainable use. The AL ARNG recognizes its responsibility to guarantee continued access to its land, air and water resources for realistic military training while ensuring that the natural and cultural resources entrusted to their care are sustained in a healthy condition for scientific research, education and other compatible uses by future generations.

### **B.3.1 Effects of Natural Resources on the Military Mission**

The SAIA requires that INRMPS provide for "...no net loss in the capability of military installation lands to support the military mission of the installation" (16 USC §670 *et seq.*). Primary impacts result from restrictions placed upon areas of environmental concern, including wetlands and endangered species locations. Training may also be adjusted periodically to allow for timber harvest, prescribed burning, or other natural resources management activities. Environmental constraints are briefed to soldiers in range safety briefings and pre-camp meetings. Environmental constraints promote awareness on the part of soldiers. Learning to plan around environmental restrictions helps develop a disciplined mindset that is a valuable asset to today's soldier. However, this must be balanced to avoid inadequate training due to excessive constraints.

Training requirements within the FM-ARNGTC that are affected by natural resource programs and activities include vehicle maneuver and driver training, large and small caliber firing activities and force-on-force maneuver training. Natural resource programs associated with these actions are identified in Appendix O: Table 3.

## **B.4 Operations and Activities at the FM-ARNGTC**

The FM-ARNGTC is the AL ARNG's primary training asset. The FM-ARNGTC maintains approximately 150 full-time staff and serves as a home station to 1152<sup>nd</sup> and 1153<sup>rd</sup> Fire Fighting Teams, Training Site-Alabama, and FM-ARNGTC, 200<sup>th</sup> Regiment. The 20<sup>th</sup> Special Forces Group is a tenant organization at FM-ARNGTC. Numerous military training activities occur annually at Pelham Range.

The FM-ARNGTC is used by units of the AL ARNG, ALANG, ARNG and ANG units from other states, Active Components of all branches of military service, U.S. Army Reserve (USAR), U.S. Air Force Reserve, U.S. Marine Corps Reserve, and local, State, and Federal law enforcement agencies. The AL ARNG tracks the use of the FM-ARNGTC using the Range Facility Management Support System (RFMSS). The RFMSS tracks the scheduling of ranges and training areas, communication with the firing desk, and produces annual training usage reports. The RFMSS can also be used to inventory equipment and track equipment maintenance schedules.

### **B.4.1 Military Training Facilities**

Training is performed throughout the state at the Readiness Centers, at FM-ARNGTC, and at leased lands at Eglin AFB (Cobb Training Site), and Redstone Arsenal. FM-ARNGTC serves as the primary training center for the AL ARNG and Pelham Range is the focus of the training lands. The AL ARNG has conducted training and utilized facilities at the former Fort McClellan for numerous years. The Range Complex Master Plan (RCMP) depicts the installation's current range and training land assets, general siting of future range complex project requirements, and the FM-ARNGTC's requirements and constraints. Future development at the FM-ARNGTC is directed by the FM-ARNGTC Real Property Development Plan (John Gallup & Associates, LLC 2008) and the state-wide Alabama Army National Guard Real Property Development Plan

(John Gallup & Associates, LLC 2008). The INRMP provides these development plans with environmental baseline information such as areas of environmental constraints, threatened and endangered species, and land and water resources.

#### **B.4.1.1 Pelham Range**

Pelham Range is predominantly undeveloped with the exception of a relatively small cantonment area (approximately 93 acres) located in the northeast portion of Pelham Range near Gate 3. Facilities at Pelham Range include a Unit Training Equipment Site (UTES) #1, a Game Management Office (GMO), Armed Forces Reserve Center (AFRC), Structural Collapse Simulator, a Fire Station, General Instruction Facility (GIF)/Simulations Center, Leadership Reaction Course (LRC), Tactical Unmanned Aerial System (TUAS) Administrative Support Building, a Potable Water Point, a 100-soldier Shower / Latrine facility, and Ammunition Supply Point (ASP) / Holding Area. The UTES #1 and vehicle parking area form a small cantonment area (Figure 2, Appendix M). Ranges/training facilities on Pelham Range may be divided into eight categories: basic weapons marksmanship ranges, direct fire gunnery ranges, collective live fire ranges, indirect fire ranges, special live fire ranges, other non-live fire facilities, and maneuver training areas.

Training facilities at Pelham Range include twelve (12) light maneuver training areas; eleven (11) basic marksmanship ranges and one (1) direct fire gunnery range; eight (8) mortar and six (6) artillery firing points; and two (2) special-use live fire ranges. Heavy maneuver training is restricted to existing roads and trails. The above identified ranges have the current co-use capability for Sniper Field Fire. These ranges and firing points share two (2) impact areas. Firing ranges, which are defined as locations where ordnance is expended, are grouped into four general categories on the basis of ordnance:

- *Ball ammunition* from direct fire weapons such as rifles, pistols, and machine guns;
- *Direct fire explosive ordnance* from 40mm grenades, M-72 LAW, and AT-4s;
- *Detonated explosive ordnance* such as C-4/TNT, detonation cord, and M-4 bursters; and
- *Tactical ordnance* for generation of smokes and obscurants.

Pelham Range consists of 22,246 acres within the installation boundary. Of this total area, approximately 17,584 acres are considered to be available for training. Within the training areas, 17,008 acres are classified as maneuver training areas. Additional training area is found in the personnel / equipment drop zone (576 acres). There are 51 acres of restricted areas within the non-training areas and 2,054 acres of restricted areas within the training areas (areas restricted based on environmental and cultural resources and/or live fire safety issues). A total of 4,722 acres are unavailable for training use. These off-limits or restricted areas consist of the two impact areas (4,629 acres) and the UTES #1 (93 acres) (AL ARNG Pers. Comm. 2015). Appendix O: Table 5 describes the training facilities and ranges available at the FM-ARNGTC.

There are many small shelters, towers, sheds, range houses and other ancillary structures on Pelham Range to support operations conducted there, including a drop zone.

Certain areas are specifically designated within the FM-ARNGTC for ground non-live-fire training use. The Tube Launched Optically Tracked Multiple Launch Rocket System (MLRS) will use Range 53 to fire non-live rockets. MLRS will use fire break routes to drive from the UTES #1 to access Range 53. The dud rockets will land in the Small Arms Impact Area.

Other specialized training facilities located at the FM-ARNGTC include:

- Land Navigation Site
- NBC Combat Trail (Smoke)
- Armored Vehicle Training Simulation Building
- Small Arms Simulation Building Engagement Skills Trainer
- Rock Crusher Site



- Leadership Reaction Course
- Airborne Drop Zone
- 16-Building Military Operations in Urban Terrain (MOUT) Facility

#### **B.4.1.2 Main Enclave**

The Main Enclave is developed and used for administrative and classroom activities. Range Control is also located in the Main Enclave. Property included within the Main Enclave consists of three geographically separated pieces: Main Enclave area; MOUT (Military Operations in Urban Terrain) site (combat in cities facility); and a newly acquired parcel of 148 acres (Figure 3, Appendix M). The total acreage for the Main Enclave is now 494 acres including the new parcel. The MOUT site consists of an additional 15 acres.

The Regional Training Institute (200th Regiment), which conducts an officer candidate school, warrant officer candidate school, horizontal engineering MOS transition course (21E), and the basic military police course is located on the Main Enclave in Buildings 1020, 1021, 1022, and 1023. These buildings contain administrator and instructor offices, student and instructor billets, and classrooms. Other facilities utilized by the Regional Training Institute include a principle classroom facility, additional housing for students and instructors, the contract dining facility, and ranges and training areas at Pelham Range.

#### **B.4.2 Natural Resources Law Enforcement**

The FM-ARNGTC Directorate of Plans, Training, Mobilization and Security maintains primary responsibility for law enforcement on Pelham Range and within the Main Enclave. There are full time security guards/physical security officers and one game warden. Law enforcement at the FM-ARNGTC is supplemented by the local sheriff department and State conservation officers, as needed. Violations include, but have not been restricted to, trespassing and game violations.

**APPENDIX C**  
**PERTINENT LAWS, REGULATIONS, AND EXECUTIVE ORDERS**

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## **Federal**

**American Indian Religious Freedom Act (42 USC §1196)** – requires the U.S. to protect and preserve religious rights of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

**Animal Damage Control Act (7 USC §426 *et seq.*)** – provides broad authority for investigation, demonstrations and control of mammalian predators, rodents and birds.

**American Antiquities Act of 1906 (16 USC §431-433)** – provides for the protection of items of archaeological significance, both historic and prehistoric.

**Archeological and Historical Preservation Act of 1974 (16 U.S.C 469 *et seq.*)** – provides for the preservation of historical and archaeological data (including relics and specimens).

**Archeological Resources Protection Act of 1979 (16 USC §470 *et seq.*)** – prohibits the excavation or removal from Federal or Indian lands any archaeological resources without a permit from the land manager.

**Bald and Golden Eagle Protection Act (16 USC §668a-c)** – prohibits taking or harming bald or golden eagles, their eggs, nests, or young without appropriate permit.

**Clean Air Act, as amended (42 USC §7401 *et seq.*)** – regulates air emissions from area, stationary, and mobile sources. This law authorizes the USEPA to establish NAAQS to protect public health and the environment.

**CWA: Section 401 Water Quality Certification, 1986 (33 USC §1341)** – requires State certification of Federal permits that result in actions that discharge into navigable waters. Under Section 401, states have authority to review Federal permits that may result in a discharge to wetlands or waterbodies under State jurisdiction.

**CWA: Section 404 – Permits for Dredged and Fill Material (33 USC §1344)**- Prohibits the discharge of dredged or filled materials into waters of the United States, including wetlands, without first obtaining a permit from USACE. Activities in wetlands that require Federal permits include, but are not limited to: placement of fill material; ditching activities when the excavated material is sidecast, mechanized land clearing; land leveling; and most road construction.

**Endangered Species Act of 1973, as amended (16 USC §1531 *et seq.*)** – provides for the identification and protection of threatened and endangered plants and animals and their critical habitats. Requires Federal agencies to conserve T/E species and cooperate with State and local authorities to resolve water resources issues in concert with the conservation of T/E species.

**Environmental Safeguard for Activities for Animal Damage Control on Federal Lands (EO 11870)** – restricts the use of chemical toxicants for mammal and bird control.

**Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136)** – Governs the use and application of pesticides in natural resource management programs.

**Federal Land Policy and Management Act (43 USC §1701)** – Establishes public land policy and guidelines for its administration and provides for the management, protection, development, and enhancement of the public lands.

**Federal Noxious Weed Act of 1974 (7 USC §2801 *et seq.*)** – Establishes control and eradication of noxious weeds and regulates them in interstate and foreign commerce.

**Fish and Wildlife Conservation Act (16 USC §2901)** – Provides for the protection of non-game fish and wildlife.

**Fish and Wildlife Coordination Act (16 USC §661 *et seq.*)** – Provides mechanism for wildlife conservation to receive equal consideration and be coordinated with water-resource development programs.

**Floodplain Management (EO 11988)** – Requires agencies to assess the effects that their actions may have on floodplains and to consider alternatives to avoid adverse effects and incompatible development on floodplains.

**Forest and Rangeland Renewable Resources Planning Act (16 USC §1601 *et seq.*)** – Requires and inventory of potential renewable resources and an evaluation of opportunities for improving their yield on goods and services. Agencies must provide an opportunity for public involvement and consultation with other agencies in establishing policies for multiple use and sustained yield.

**Greening the Government through Leadership in Environmental Management (EO 13148)** – This EO (Section 207, Environmentally and Economically Beneficial Landscaping) states that “each agency shall strive to promote the sustainable management of Federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices, and programs to reduce adverse impacts to the natural environment.”

**Hunting and Fishing on Federal Lands (10 USC §2671 *et seq.*)** – establishes requirements for regulating hunting, fishing, and trapping on military lands.

**Indian Sacred Sites (EO 13007)** – Provides for the protection of and access to Indian sacred sites.

**Invasive Species (EO 13112)** – Requires Federal agencies 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 introduction and provide for environmentally sound control of invasive species”; and “promote public education on invasive species and the means to address them.”

**Land and Water Conservation Act of 1965 (16 USC §4601 *et seq.*)** – assists in preserving, developing, and assuring accessibility to outdoor recreation resources.

**Legacy Resource Protection Program Act (P.L. 101-511)** – established a program for the stewardship of biological, geophysical, cultural and historic resources on DoD lands.

**Migratory Bird Conservation Act (16 USC §715 *et seq.*)** – Establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds.

**Migratory Bird Treaty Act, as amended (16 USC §703-712)** – Prohibits the taking or harming of a migratory bird, its eggs, nests, or young without the appropriate permit.

**National Environmental Policy Act of 1969, as amended (42 USC §4321)** – Provides a national charter for protection of the environment and requires Federal agencies to prepare a statement of environmental impact in advance of each major action that may significantly affect the quality of the human environment.

**National Historic Preservation Act of 1966 (16 USC §470 *et seq.*)** – provides for the preservation of historic properties throughout the U.S.

**Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended (16 U.S.C 4701 *et seq.*)** – established a program to prevent the introduction of and to control the spread of introduced aquatic nuisance species and the brown tree snake.

**Off Road Vehicle Use on Public Lands (EO 11989)** – limits the use of off-road vehicles on Federal lands soil, water, or natural resources could be adversely affected.

**Oil Pollution Prevention Act of 1990, Public Law 101-380** – Redefines the requirements of the National Contingency Plan to include planning for, rescue of, minimization of injury to, and assessment of damages for injury to fish and wildlife resources.

**Outleasing for Grazing and Agriculture on Military Lands (10 USC §2667)** – provides for the outleasing of public lands.

**Protection and Enhancement of Environmental Quality (EO 11514)** – provides for environmental protection of Federal lands and enforces requirements of NEPA.

**Protection and Enhancement of the Cultural Environment (EO 11593)** – supports previous laws and provides for additional protection of cultural resources.

**Protection of Wetlands (EO 11990)** – requires agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands.

**Recreational Fisheries (EO 12962)** – requires Federal agencies, to the extent practicable and where permitted by law, "to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities".

**Sale of Certain Interests in Land, Logs (10 USC §2665)** – Authorizes the sale of forest products and the reimbursement of the costs of managing forest resources for timber production.

**SAIA “Conservation Programs on Military Reservations” (16 USC §670a *et seq.*)** – Requires Federal military installations with adequate wildlife habitat to implement cooperative agreements with other agencies and develop long-range integrated natural resources management plans. Thereby, it is appropriate to manage natural resources for multipurpose uses and provide the public access to those uses to the extent consistent with the military mission. The act also sets guidelines for the collection of fees for the use of natural resources such as hunting and fishing.

**Soil Conservation Act (16 USC §590a *et seq.*)** – provides for soil conservation practices on Federal lands.

## **State**

**Section 9-13-11 of the 1975 Code of Alabama** – Requires entities to obtain a permit from the AFC prior to initiating a prescribed burn.

**Alabama Certified Burner Law** – This law reduces burner liability as long as the burner has acted in compliance with the law. Section 9-13-273(a) of the law states: "No property owner or his or her agent, conducting a prescribed burn in compliance with this article, shall be liable for damages or injury caused by fire or resulting smoke unless it is shown that the property owner or his or her agent failed to act within that degree of care required of others similarly situated."

**Alabama Invertebrate Species Regulation** – This regulation protects many mollusks, crustaceans, insects, and arachnids that occur in Alabama.

**Alabama Non-game Species Regulation** – this regulation protects many birds, mammals, fish, reptiles, and amphibians that occur in Alabama.

## **DoD Regulations and Guidance**

**DoDI 4715.3** Environmental Conservation Program

**32 CFR PART 651** Environmental Effects of Army Actions

**AR 200-1** Environmental Protection and Enhancement

<b>TM 5-633</b>	Fish and Wildlife Management
<b>TM 5-631</b>	Forest Management
<b>AR 405-80</b>	Granting Use of Real Estate
<b>AR 420-40</b>	Historic Preservation
<b>TM 5-630</b>	Land Management
<b>AR 350-19</b>	The Army Sustainable Range Program
<b>TC 25-1</b>	Training Land
<b>AR 210-9</b>	Use of Off-Road Vehicles on Army Lands
<b>DoDI 4150.7M</b>	DoD Pest Management Training and Certification
<b>DoDI 4150.7P</b>	DoD Plan for the Certification of Pesticide Applicators

**APPENDIX D**  
**RECORD OF ENVIRONMENTAL CONSIDERATION FOR**  
**IMPLEMENTATION OF THE FM-ARNGTC UPDATED INRMP AND**  
**FINDING OF NO SIGNIFICANT IMPACT**



**ARNG ENVIRONMENTAL CHECKLIST**

Enter information in the yellow shaded areas.

**PART A - BACKGROUND INFORMATION****1. PROJECT NAME:**

Integrated Natural Resources Management Plan Update for Pelham Range and The Fort McClellan Enclave

**2. PROJECT NUMBER:**

N/A

**3. DATE:**

23-Feb-11

**4. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:**

An Integrated Natural Resources Management Plan (INRMP), is required by the Sikes Act Improvement Act [SAIA, 16 U.S. Code (USC) §670a et seq.], and was developed for Fort McClellan in 2001, for use by the Alabama Army National Guard (AL ARNG) as the primary tool for the assessment and revision of the management of natural resources at the Fort McClellan Army National Guard Training Center (FM-ARNGTC). The proposed required 2011 INRMP update fulfills the requirements as stated within the SAIA, for assessment and evaluation of the natural resources programs and policies as identified in the 2001 INRMP. The INRMP was prepared pursuant to the SAIA, 21 Mar 97 US Army policy entitled Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plan (INRMP) ("Army INRMP Policy"); Army Regulation (AR) 200-1, Environmental Protection and Enhancement; 32 Code of Federal Regulations (CFR) 651; Defense (DoD) Directive 4700.1, Natural Resources Management Programs; and Department of Defense Instruction (DoDI) 4715.3, Environmental Conservation Program; and National Guard Bureau (NGB) policy.

**5. START DATE (dd-mmm-yy):** 1-Mar-11**6. END DATE (dd-mmm-yy):** 1-Sep-15**7. STATE/ORGANIZATION:** ALABAMA**8. SERVICE COMPONENT:** ARNG**9. ADDRESS:** P.O. Box 3711, Montgomery, Alabama 36109-0711**10. PROPONENT/UNIT NAME:** CFMO**11. POC:** LTC Chris Murphy**12. PROPONENT/UNIT ADDRESS:** P.O. Box 3711, Montgomery, Alabama 36109-0711**13. COMM VOICE:** (334) 271-7481**14. COMM FAX:****15. DSN VOICE:****16. DSN FAX:****17. EMAIL:** chris.murphy3@us.army.mil

18. Was the project adequately addressed in a separate environmental review? Do not include Environmental Baseline Surveys (EBSs).  YES  NO

If YES, fill out and attach copy of the decision document:

**Document Title:** AL ARNG EA for Implementation of INRMP, FM-ARNGTC, Alabama**Reviewing Agency:** National Guard Bureau**Date of Review: (dd-mmm-yy):** 1-Oct-01**PART B - HISTORICAL INFORMATION**

1. Is the agency undergoing, or has it undergone, legal action for NEPA issues?  YES  NO

2. Has there been previous ARNG training, construction, or similar proposals on the site?  YES  NO

3. Are there any known contentious environmental issues currently associated with the site?  YES  NO

Explain any YES answers.

Yes, the proposal is to update the existing INRMP.

4. Has the proposed type of equipment (tracked or wheeled) been operated on the site before?  YES  NO

If NO, what NEPA document covers this action? Provide copy of REC, FNSI, or ROD. This does not include EBSs.

**Document Title:****Preparing Agency:****Date (dd-mmm-yy):**

5. Describe the environmental setting, including past and present use of the site.

Pelham Range is predominately undeveloped with the exception of a relatively small cantonment area (approximately 85 acres) located in the northeast portion of Pelham Range near Gate 3. This area primarily consists of the UTES #1, OMS #10, and a vehicle parking area. The rest of the Range is used to support basic weapons marksmanship ranges, direct fire gunnery ranges, collective live fire ranges, indirect fire ranges, special live fire ranges and other associated maneuver training areas. Pelham Range has been used for active military training exercises since World War II.

**PART C - DESCRIPTION OF PROPOSED PROJECT/ACTION**

Include a map with the site clearly marked

1. The proposed action will involve (check all that apply):

<input type="checkbox"/> Training Activities/Areas	<input type="checkbox"/> Construction	<input type="checkbox"/> Reorganization/Restationing
<input type="checkbox"/> Maintenance/Repair/Rehabilitation	<input type="checkbox"/> Lease or License	<input checked="" type="checkbox"/> Environmental Plans/Surveys
<input type="checkbox"/> EBS Preparation		
<input type="checkbox"/> Other (Explain):		

2. Has any related real estate action been addressed in a separate environmental document within the last 5 years?  YES  NO

If YES Document Title: \_\_\_\_\_ Date (dd-mmm-yy): \_\_\_\_\_

3. Number of acres to be disturbed: None

4. How is the site currently zoned?

<input type="checkbox"/> Residential	<input type="checkbox"/> Commercial	<input type="checkbox"/> Industrial	<input type="checkbox"/> Park
<input checked="" type="checkbox"/> Other (Explain): <u>Military Installation</u>			

5. Briefly describe the surrounding area land uses (e.g., undeveloped, recreation, residential, etc):  
 The area surrounding Pelham Range is mainly undeveloped. Private property that adjoins the installation consists of a mixture of rural homes, pastures, timberland, and farms. Training areas along the southern boundary adjoin the Anniston Army Depot where missions related to chemical demilitarization, chemical storage, range firing, and maintenance of combat vehicles and equipment occur. The area surrounding the FM-ARNGTC Enclave is mix of residential, business, and a recreational area containing a golf course.

6. Provide distances to ALL environmentally sensitive areas:

TYPE	Distance	Unit	TYPE	Distance	Unit
a. Prime/Unique Farmland	~ 2	miles	e. Wild/Scenic River	~ 84	miles
b. Wilderness Area/National Park	~ 13	miles	f. Coastal Zones	~ 200	miles
c. Sole-Source Aquifer	~ 280	miles	g. Floodplain	See INRMP	
d. Wetlands	See INRMP				

**PART D - ENVIRONMENTAL IMPACT ANALYSIS**

**1. AIR**

a. Is the proposed action in a non-attainment/maintenance area?  YES  NO

**Attach a General Conformity Determination or Record of Non-Applicability (RONA) for Military Construction activities in non-attainment/maintenance areas.**

b. Will the proposed action require an air emissions permit, registration, license, etc?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

c. Will the proposed action release objectionable odors, smoke, dust, suspended particles, or noxious gases into the air?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO

d. Will the proposed action expose sensitive receptors (threatened or endangered plants or animals, or children) to pollutants?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Explain any YES answers and/or planned mitigation here.

b. A wildfire or prescribed burn may require a permit/notification to be given to appropriate regulatory agencies and possible sensitive smoke receptors. C. Smoke, dust, suspended particles, or noxious gases will be generated during a wildfire or prescribed burn.

**2. TRAFFIC**

a. Will the proposed action result in generation of or increase in aircraft activity/traffic?  YES  NO

b. Will the proposed action result in the generation of or increase in vehicular traffic?  YES  NO

c. Will the proposed action use and/or construct unimproved roads? During proposed action  YES  NO  
During normal operations after proposed action is completed  YES  NO

Explain any **YES** answers and/or planned mitigation here. Include aircraft types, number of sorties, and flight schedules (if applicable).

**3. NOISE**

a. Will the proposed action result in an increase in noise levels? During proposed action  YES  NO  
During normal operations after proposed action is completed  YES  NO

b. Is the proposed action close to any civilian activity where noise might affect the population (add any not listed in the spaces provided)? Include distances for all types:  YES  NO

TYPE	Distance	Unit	TYPE	Distance	Unit
(1) Residence/Home	~ 22	miles	(5) Library	~ 7	miles
(2) Church	~ 5	miles	(6) Wilderness Area	~ 17	miles
(3) School	~ 7	miles			
(4) Hospital	~ 6.8	miles			

c. Will the proposed action involve aircraft?  YES  NO

d. Will the proposed action involve night (10 pm to 7 am) operations? During proposed action  YES  NO  
During normal operations after proposed action is completed  YES  NO

Explain any **YES** answers.

**4. EARTH**

a. Will the proposed action result in long-term disruptions, displacements, compaction, or overcovering of soil, a permanent change in topography, or ground surface relief features?  YES  NO

b. Will the proposed action result in a long-term increase in wind or water soil erosion, on or off the site, after the proposed action is completed?  YES  NO

Explain any **YES** answers.

**5. NATURAL RESOURCES**

NOTE- A **subject matter expert** from the State/Territory ARNG Environmental Office must confirm the answers to these questions by signing the signature page.

a. Will the proposed action change the diversity or numbers of any species including mammals, birds, reptiles, amphibians, fish, trees, shrubs, grasses, crops, microflora, or aquatic plants?  YES  NO

b. Will the proposed action introduce any non-native species into the area?  YES  NO

c. Will the proposed action impact any plants or animals that are listed or candidates for threatened, unique, rare, or endangered status?  YES  NO

d. Will the proposed action create barriers to prevent the migration or movement of animals?  YES  NO

e. Will the proposed action deteriorate, alter, or destroy existing fish or wildlife habitat?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
f. Will the proposed action deplete any non-renewable natural resources?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
g. Will the proposed action alter, destroy, or significantly impact environmentally sensitive areas (wetlands, coastal zones, etc.)?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Explain any YES answers.			
<b>6. LAND USE</b>			
a. Will the proposed action alter the present land use of the site?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
b. Who owns the property?		<input checked="" type="checkbox"/> Federal/DOD <input type="checkbox"/> State <input type="checkbox"/> City/Town/County <input type="checkbox"/> Private <input type="checkbox"/> Other (Explain):	
c. Does the proposed action involve a real estate action (e.g., purchase, lease, permit, or license)?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Answer the following if you answered YES above:	(1) Has an EBS been completed? <b>If YES, attach the EBS.</b>	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	(2) Require an increase of acreage/amendment to an existing lease or license?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	(3) Require new purchase of additional acres using federal, state, or other funds?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	(4) Require a new lease, license, and/or land use permit?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
	(5) Replace or dispose of existing facilities?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Explain any YES answers.			
<b>7. SOLID WASTE</b>			
a. Will the proposed action generate solid wastes that must be disposed of on or off site?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Explain a YES answer.			
<b>8. HAZARDOUS WASTE</b>			
a. Will the proposed action generate hazardous waste?		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
b. Will the proposed action store and/or prepare for the disposal of hazardous waste or materials?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
c. Does the proposed action require a permit to accumulate hazardous waste or materials at the site?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
d. Does the proposed action have an increased risk for explosion, spill, or the release of hazardous waste or materials (including but not limited to pesticides, chemicals, or radiation)?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
e. Will the proposed action require the presence of trained personnel to handle and dispose of hazardous and/or toxic waste/materials?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

f. Will the proposed action involve the opportunity for hazardous material minimization and recycling?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Explain any **YES** answers.

g. Do you have a plan describing procedures for the proper handling, storage, use, disposal, and cleanup of hazardous and/or toxic materials?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

Explain any **NO** answers.

**9. WATER**

a. Will the proposed action change currents, course, or direction of water movements in marine or fresh waters?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
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b. Will the proposed action discharge sediments, liquids, or solid wastes into surface waters, or alter the surface water quality?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

c. Will the proposed action change the quality and/or quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
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d. Does the proposed action have the potential to accidentally spill hazardous or toxic materials in or near a body of water?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

e. Does the proposed action have the need for a Spill Control and Countermeasure Plan, and/or Installation Spill Contingency Plan (SPCC and/or ISCP)?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

f. Will the proposed action construct facilities or implement actions within floodplains and/or wetlands?	During proposed action	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
	During normal operations after proposed action is completed	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

g. Does the proposed action require an NPDES stormwater or wastewater discharge permit?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
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h. Does the proposed action involve the construction of a water or wastewater treatment system (oil water separators, grease traps, etc)?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
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Explain any **YES** answers.

**10. CULTURAL RESOURCES**

a. Does the proposed action involve an undertaking (Reference: 36 CFR 800.161[y]) to a building/structure 50 years or older?  YES  NO

If YES to Question a, has an architectural inventory/evaluation been completed to determine eligibility for the National Register of Historic Places?  YES  NO

b. Does the proposed action involve ground disturbance? (Reference: 36 CFR 800.161[y])  YES  NO

If YES to Question b, has an archaeological inventory been completed to determine if there are any archaeological sites present?  YES  NO

If YES to Question b, did the state contact any Federally-recognized Tribes to comment on the proposed action?  YES  NO

c. Does the proposed action fall under any Federal or Nationwide Programmatic Agreement or Programmatic Comment? If YES, reference it below.  YES  NO

d. Has the state contacted the SHPO for comments?  YES  NO

e. Does the proposed action have the potential to affect any traditional cultural properties or sacred sites? If YES, attach coordination with Federally-recognized Tribes.  YES  NO

Explain any YES answers.

Ground disturbance will occur during the planting of food plots, timber harvesting activities, and while conducting prescribed burns. The appropriate consultation has taken place in association with the update and implementation of this plan.

**11. POPULATION**

a. Will the proposed action alter the location, distribution, density, or growth rate of the human population of an area?  YES  NO

b. Will the proposed action affect children?  YES  NO

Reference: Executive Order 13045  
During proposed action  
During normal operations after proposed action is completed  YES  NO

c. Are there any Environmental Justice issues associated with the proposed action?  YES  NO

Reference: Executive Order 12898.

Explain any YES answers.

**12. INFRASTRUCTURE**

a. Will the proposed action result in the need for new systems or substantial alterations to the following utilities:

(1) Electrical power, fossil fuel or other (specify):  YES  NO

(2) Drinking water?  YES  NO

(3) Wastewater treatment?  YES  NO

(4) Sewer collection system?  YES  NO

(5) Wash racks?  YES  NO

(6) Solid waste disposal?  YES  NO

Explain any **YES** answers.

**PART E - INNOVATIVE READINESS TRAINING (IRT)**

Skip this portion if this is not an IRT Project

**1. REQUESTER INFORMATION**

a. REQUESTER NAME:		b. TITLE:	
c. AGENCY NAME:			
d. AGENCY ADDRESS:			
e. COMM VOICE:		f. COMM FAX:	g. DSN VOICE:
h. DSN FAX:		i. EMAIL:	
j. TYPE: <input type="checkbox"/> FEDERAL <input type="checkbox"/> STATE <input type="checkbox"/> LOCAL/MUNICIPAL <input type="checkbox"/> YOUTH/CHARITABLE			
k. SUPPORT TYPE REQUESTED: <input type="checkbox"/> ENGINEER <input type="checkbox"/> TRANSPORTATION <input type="checkbox"/> TECH ASSISTANCE <input type="checkbox"/> LOGISTICAL			
<input type="checkbox"/> COMMUNICATION <input type="checkbox"/> ADMINISTRATIVE <input type="checkbox"/> CEREMONIAL <input type="checkbox"/> PARADE			
<input type="checkbox"/> OTHER (SPECIFY):			

**2. ASSIGNED UNIT INFORMATION (Filled out by assigned National Guard unit)**

a. UNIT ASSIGNED PROJECT:		b. SERVICE COMPONENT:	
c. UNIT ADDRESS:			
d. PROJECT OFFICER	RANK:	NAME:	
e. SITE VISIT DATE (dd-mmm-yy)			
f. PROJECT ASSESSMENT (Give detailed assessment of project requirements. Review project requirements against the screening criteria in Section 651.29 of 32 CFR Part 651. If the project qualifies for a Categorical Exclusion, indicate the Categorical Exclusion code).			
g. ESTIMATED NUMBER OF HOURS REQUIRED TO COMPLETE PROJECT:		h. PERSONNEL REQUIRED:	<u>OFFICER</u> <u>ENLISTED</u>

**PART F - DETERMINATION**

- a. Does the proposed action have the potential to degrade the quality of the environment, or curtail the diversity of the environment?  YES  NO
- b. Does the proposed action have the potential for cumulative impacts on environmental quality when the effects are combined with those of other Federal/State actions, or when the action is of lengthy duration?  YES  NO
- c. Does the proposed action have environmental effects that will cause substantial adverse effects on the human or natural environment, either directly or indirectly?  YES  NO

**On the basis of this initial evaluation, the following is appropriate (check one):**

- An Environmental Baseline Survey (EBS) and a new checklist once the EBS is completed.
- IAW 32 CFR 651 Appendix B, the proposed action qualifies for a **Categorical Exclusion (CX)** that does not require a Record of Environmental Consideration.
- A Record of Environmental Consideration (REC).
- An Environmental Assessment (EA).
- A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS).

*Leah Nerem Storino*  
Signature of Proponent (Requester)

Leah Nerem Storino, NR  
Printed Name of Proponent (Requester)

3/18/2011  
Date Signed

Concurrence: *Chris Murphy*  
Environmental Program Manager

Chris Murphy, LTC  
Printed Name of Env. Program Manager

22 MAR 2011  
Date Signed

**Concurrence (as needed):**

*Mark Weeks*  
Signature of Landowner

Mark Weeks, SPDO  
Printed Name of Landowner

22 MAR 2011  
Date Signed

*Brian B. Barrontine*  
Signature of Facilities Officer

Brian B. Barrontine, COL  
Printed Name of Facilities Officer

24 MAR 2011  
Date Signed

*Randal G. Martin*  
Signature of Commander

Randal G. Martin, COL  
Printed Name of Commander

16 MAR 2011  
Date Signed

*Scott Gedling*  
Signature of Plans & Operations Officer

Scott Gedling, COL  
Printed Name of Plans & Operations Officer

27 MAR 2011  
Date Signed



**ARNG RECORD OF ENVIRONMENTAL CONSIDERATION**

**1. PROJECT NAME:**

**Integrated Natural Resources Management Plan Update for Pelham Range and The Fort McClellan Enclave**

**2. PROJECT NUMBER:**

N/A

**3. DATE:**

23-Feb-11

**4. PROJECT START DATE (dd-mmm-yy):**

1-Mar-11

**5. PROJECT END DATE (dd-mmm-yy):**

1-Sep-15

**6. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:**

An Integrated Natural Resources Management Plan (INRMP), is required by the Sikes Act Improvement Act [SAIA, 16 U.S. Code (USC) §670a et seq.], and was developed for Fort McClellan in 2001, for use by the Alabama Army National Guard (AL ARNG) as the primary tool for the assessment and revision of the management of natural resources at the Fort McClellan Army National Guard Training Center (FM-ARNGTC). The proposed required 2011 INRMP update fulfills the requirements as stated within the SAIA, for assessment and evaluation of the natural resources programs and policies as identified in the 2001 INRMP. The INRMP was prepared pursuant to the SAIA, 21 Mar 97 US Army policy entitled Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plan (INRMP) ("Army INRMP Policy"); Army Regulation (AR) 200-1, Environmental Protection and Enhancement; 32 Code of Federal Regulations (CFR) 651; Defense (DoD) Directive 4700.1, Natural Resources Management Programs; and Department of Defense Instruction (DoDI) 4715.3, Environmental Conservation Program; and

**7. CHOOSE ONE OF THE FOLLOWING:**

- An existing **Environmental Assessment** adequately covers the scope of this project.  
EA Date (dd-mmm-yy) Conducted By:
- An existing **Environmental Impact Statement** adequately covers the scope of this project.  
EIS Date (dd-mmm-yy) Conducted By:
- After reviewing the screening criteria and completing the ARNG Environmental Checklist, this project qualifies for a **Categorical Exclusion** (select one below).  
Categorical Exclusion Code:  See 32 CFR 651 App. B
- This project is exempt from NEPA requirements under the provisions of:  
Cite superseding law:

**8. REMARKS:**

Leah Nerem Storino  
Signature of Proponent (Requester)

Leah Nerem Storino, NR  
Printed Name of Proponent (Requester)

3/18/2011  
Date Signed

Concurrence: Chris Murphy  
Environmental Program Manager

Chris Murphy, LTC  
Printed Name of Env. Program Manager

22 MAR 2011  
Date Signed

FORT McCLELLAN ARMY NATIONAL GUARD TRAINING CENTER  
ALABAMA ARMY NATIONAL GUARD  
P.O. Box 5280  
FORT McCLELLAN, ALABAMA 36205

REPLY TO  
ATTENTION OF

FM-ARNGTC-ENV

23 FEB 2011

MEMORANDUM FOR RECORD

**SUBJECT:** Endangered Species Act (ESA) Section 7 Consultation Requirements and Natural Resources Review for Record of Environmental Consideration (REC) for the Updated Integrated Natural Resources Plan (INRMP) 2011-2015, Fort McClellan Army National Guard Training Center (FM-ARNGTC)

1. The AL ARNG has prepared this REC to identify and evaluate potential environmental effects from implementation of the Updated INRMP 2011-2015 for the FM-ARNGTC. The REC is intended to cover all activities related to the implementation of the Updated INRMP for the 2011-2015 timeframe. This plan represents an update to the 2001 INRMP as required by the Sikes Act Improvement Act (SAIA) and Army Regulation (AR) 200-1 "*Environmental Protection and Enhancement*", but changes do not alter the key components or intent of the 2001 INRMP. No significant changes in natural resources or military mission have occurred since 2001; therefore this change is defined as an update and not a revision to the plan.
2. The INRMP represents the AL ARNG's plan for the stewardship and conservation of natural resources present at the FM-ARNGTC, while providing for military mission. The proposed action of the AL ARNG is the implementing of the Updated INRMP. The purpose of the proposed action is to provide for long-term management of the FM-ARNGTC's natural resources while ensuring the efficiency of military mission. The Updated INRMP will provide for the conservation, rehabilitation and sustainable use of natural resources on the installation. The requirement for the proposed action comes from SAIA, as amended, and AR 200-1 which require the development and implementation of an INRMP for Federal properties with significant natural resources. These regulations also require updates or revisions to the INRMP at least every five years.
3. As the Updated INRMP includes a variety of management strategies considered Federal actions, an internal ESA Section 7 review and effects determination for the presence or potential habitat of Federally-listed species as required by the ESA of 1973, as amended, is required. The species list used for evaluating Federal actions at the FM-ARNGTC are those listed for Calhoun County as endangered, threatened, candidate or proposed for listing on the USFWS, Daphne Ecological Services Field Office website (<http://www.fws.gov/daphne/es/specieslst.html>). The list was further modified especially for FM-ARNGTC through email correspondence with Mr. Dan Everson, Deputy Field Supervisor, USFWS (dated August 2010). **Upon agreement with Mr. Everson, this list will be reviewed annually for changes.** The species below represent the USFWS-approved list for FM-ARNGTC of Federally-listed species which may occur, or have the potential for habitat to occur on the installation, for the purposes of ESA Section 7 consultation.

**FM-ARNGTC Federally-listed Species for Section 7 Consultation**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
Tennessee Yellow-eyed Grass	<i>Xyris tennesseensis</i>	Endangered
Gray Bat	<i>Myotis grisescens</i>	Endangered
Indiana Bat	<i>Myotis sodalis</i>	Endangered
Southern Clubshell	<i>Pleurobema decisum</i>	Endangered
Mohr's Barbara's Buttons	<i>Marshallia mohrii</i>	Threatened
Pygmy Sculpin	<i>Cottus pygmaeus</i>	Threatened
Painted Rocksnail	<i>Leptoxis taeniata</i>	Threatened
White Fringeless Orchid	<i>Platanthera integrilabia</i>	Candidate
Georgia Aster	<i>Aster georgianus</i>	Candidate
Whorled Sunflower	<i>Helianthus verticillatus</i>	Candidate

Note: This list is approved and provided by USFWS, Daphne Ecological Services Office, August 2010.

4. FM-ARNGTC's 2001 INRMP and Endangered Species Management Plan (ESMP) enabled the FM-ARNGTC to be excluded from any designation of critical habitat by the USFWS per 16 USC 1533(a)(3)(B)(i). Since the INRMP is integrated with the ESMP, and the ESMP is considered an INRMP component plan, together they provide for the protection, management and monitoring of FM-ARNGTC's threatened and endangered species. The INRMP and ESMP were developed in cooperation with the USFWS and Alabama Department of Conservation and Natural Resources (ALDCNR) and require both agencies approval for implementation. Since the Updated INRMP 2011-2015 and approved ESMP (2003) are designed to conserve natural resources, including Federally-threatened and endangered species and their habitats on the FM-ARNGTC, the AL ARNG has determined "no effect" will occur as a result of the Updated INRMP implementation.
5. The AL ARNG has determined that the Updated INRMP, integrated with the ESMP, also offers adequate protection to State-listed species, Species of Concern and Army At Risk Species. Attachment A is a list of those nongame species protected by Alabama regulations 220-2-.92, Nongame Species Regulation.
6. A planning level wetland survey of FM-ARNGTC was conducted by the U.S. Army Engineer Research and Development Center, Waterways Experiment Center in 2000 and documented in "*Delineation of Wetlands and Other Regulated Waters, Pelham Range, AL*". This survey identified approximately 991 acres of potentially jurisdictional wetlands present on the FM-ARNGTC. The AL ARNG has determined that the Updated INRMP provides for the adequate protection of jurisdictional or potentially jurisdictional wetlands occurring at the FM-ARNGTC, as required by Section 404 of the Clean Water Act and AR 200-1.
7. Non-renewable resources are present on the FM-ARNGTC. These resources, such as minerals, are defined in the INRMP. The AL ARNG has determined that the implementation of the Updated INRMP will not adversely affect the conservation of non-renewable resources on FM-ARNGTC.
8. Any significant changes to natural resources or military mission at the FM-ARNGTC will require a revision to the Updated INRMP 2011-2015, including submittal of the revision to the cooperative parties (USFWS, ALDCNR, and National Guard Bureau) for review and concurrence.
9. The POC for information regarding natural resources and the Updated INRMP 2011-2015 for FM-ARNGTC is Ms. Leah Nerem Storino, Natural Resources Program Manager,

Environmental Branch, Fort McClellan Army National Guard Training Center. Ms. Nerem Storino may be reached at (256) 847-4548, or via email at leah.nerem@us.army.mil.

FOR THE RECORD:

A handwritten signature in cursive script that reads "Leah Nerem Storino".

Leah Nerem Storino  
Natural Resources Program Manager  
FM-ARNGTC  
Alabama Army National Guard

ATTACHMENT A

Nongame Species Protected by Alabama Regulations

220-2-.92 Nongame Species Regulation

(1) It shall be unlawful to take, capture, kill, or attempt to take, capture or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following nongame wildlife species (or any parts or reproductive products of such species) without a scientific collection permit or written permit from the Commissioner, Department of Conservation and Natural Resources, which shall specifically state what the permittee may do with regard to said species:

(a) FISHES

Common Name	Scientific Name
Cavefish, Alabama	<i>Speoplatyrhinus poulsoni</i>
Cavefish, Southern	<i>Typhlichthys subterraneus</i>
Chub, Spotfin	<i>Cyprinella monacha</i>
Darter, Boulder	<i>Etheostoma wapiti</i>
Darter, Brighteye	<i>Etheostoma lynceum</i>
Darter, Coldwater	<i>Etheostoma ditrema</i>
Darter, Crystal	<i>Crystallaria asprella</i>
Darter, Goldline	<i>Percina aurolineata</i>
Darter, Holiday	<i>Etheostoma brevirostrum</i>
Darter, Lipstick	<i>Etheostoma chuckwachatte</i>
Darter, Lollipop	<i>Etheostoma neopterum</i>
Darter, Rush	<i>Etheostoma phytophilum</i>
Darter, Slackwater	<i>Etheostoma boschungii</i>
Darter, Slenderhead	<i>Percina phoxocephala</i>
Darter, Snail	<i>Percina tanasi</i>
Darter, Tuscumbia	<i>Etheostoma tuscumbia</i>
Darter, Vermilion	<i>Etheostoma chermocki</i>
Darter, Watercress	<i>Etheostoma nuchale</i>
Logperch, Blotchside	<i>Percina burtoni</i>
Madtom, Frecklebelly	<i>Noturus munitus</i>
Sculpin, Pygmy	<i>Cottus paulus</i>
Shad, Alabama	<i>Alosa alabamae</i>
Shiner, Blue	<i>Cyprinella caerulea</i>
Shiner, Cahaba	<i>Notropis cahabae</i>
Shiner, Ironcolor	<i>Notropis chalybaeus</i>
Shiner, Palezone	<i>Notropis albizonatus</i>
Sunfish, Spring Pygmy	<i>Elassoma alabamae</i>
Sturgeon, Alabama	<i>Scaphirhynchus suttkusi</i>
Sturgeon, Gulf	<i>Acipenser oxyrhynchus desotoi</i>
Sturgeon, Lake	<i>Acipenser fulvescens</i>

(b) AMPHIBIANS

Common Name	Scientific Name
Frog, Dusky Gopher	<i>Rana capito sevosa</i>
Hellbender, Eastern	<i>Cryptobranchus alleganiensis alleganiensis</i>

Salamander, Flatwoods  
Salamander, Green  
Salamander, Red Hills  
Salamander, Seal  
  
Salamander, Tennessee Cave  
Treefrog, Pine Barrens

*Ambystoma cingulatum*  
*Aneides aeneus*  
*Phaeognathus hubrichti*  
*Desmognathus monticola*  
(of Coastal Plain origin)  
*Gyrinophilus palleucus*  
*Hyla andersonii*

(c) REPTILES

**Common Name**  
Snake, Black Pine  
Snake, Eastern Coachwhip  
Snake, Eastern Indigo  
Snake, Florida Pine  
Snake, Gulf Salt Marsh  
Snake, Southern Hognose  
Terrapin, Mississippi Diamondback  
Tortoise, Gopher  
Turtle, Alabama Map  
Turtle, Alabama Red-bellied  
Turtle, Alligator Snapping  
Turtle, Barbour's Map  
Turtle, Black-knobbed Sawback  
Turtle, Escambia Bay Map

**Scientific Name**  
*Pituophis melanoleucus lodingi*  
*Masticophis flagellum flagellum*  
*Drymarchon corais couperi*  
*Pituophis melanoleucus mugitus*  
*Nerodia fasciata clarkii*  
*Heterodon simus*  
*Malaclemys terrapin pileata*  
*Gopherus polyphemus*  
*Graptemys pulchra*  
*Pseudemys alabamensis*  
*Macrolemys temminckii*  
*Graptemys barbouri*  
*Graptemys nigrinoda*  
*Graptemys ernsti*

(d) BIRDS

**Common Name**  
Crane, Mississippi Sandhill  
Dove, Common Ground  
Eagle, Bald  
Eagle, Golden  
Egret, Reddish  
Falcon, Peregrine  
Hawk, Cooper's  
Merlin  
Osprey  
Oystercatcher, American  
Pelican, American White  
Plover, Piping  
Plover, Snowy  
Plover, Wilson's  
Stork, Wood  
Tern, Gull-billed  
Warbler, Bachman's  
Woodpecker, Red-cockaded  
Wren, Bewick's

**Scientific Name**  
*Grus canadensis pulla*  
*Columbina passerina*  
*Haliaeetus leucocephalus*  
*Aquila chrysaetos*  
*Egretta rufescens*  
*Falco peregrinus*  
*Accipiter cooperi*  
*Falco columbarius*  
*Pandion haliaetus*  
*Haematopus palliatus*  
*Pelecanus erythrorhynchos*  
*Charadrius melodus*  
*Charadrius alexandrinus*  
*Charadrius wilsonia*  
*Mycteria americana*  
*Sterna nilotica*  
*Vermivora bachmani*  
*Picoides borealis*  
*Thryomanes bewickii*

(e) MAMMALS

**Common Name**  
Bat, Gray *Myotis*

**Scientific Name**  
*Myotis grisescens*

Bat, Indiana  
Bat, Rafinesque's Big-eared  
Bat, Southeastern  
Gopher, Southeastern Pocket  
Mouse, Alabama Beach  
Mouse, Meadow Jumping  
Mouse, Perdido Key Beach  
Weasel, Long-tailed

*Myotis sodalis*  
*Corynorhinus rafinesquii*  
*Myotis austroriparius*  
*Geomys pinetis*  
*Peromyscus polionotus ammobates*  
*Zapus hudsonius*  
*Peromyscus polionotus trissylepsis*  
*Mustela frenata*

(f) Other State or Federally protected nongame species.

In addition any required federal permits for federally protected species must be obtained.

(2) It shall be unlawful to possess more than one box turtle or to offer for sale, sell, or trade for anything of value any box turtle (*Terrapene spp.*), box turtle part or reproductive product except by permit as outlined in paragraph (1).

(3) It shall be unlawful to collect, harvest, possess, offer for sale, sell or trade for anything of value any common snapping turtle (*Chelydra serpentina*) or soft shell turtles (*Apalone ferox*, *Apalone muticus muticus*, *Apalone muticus calvatus*, *Apalone spiniferus spiniferus*, *Abalone spiniferus asper*) with a carapace length between four (4) inches and twelve (12) inches. (Except any species protected under this paragraph taken in a private pond by a pond owner or his agent while controlling nuisance animals is exempt but may not be sold or offered for sale or traded for anything of value).

(4) It shall be unlawful for any person to take or possess more than ten (10) legally taken turtles per day on the public waters or banks of the public waters of this state.

(5) Informational Note: See Section 9-11-269, Code of Alabama 1975, relating to protection of the flattened musk turtle (*Sternotherus minor depressus*).

Statutory Authority:

§§9-2-7, 9-2-8, and 9-2-12, Code of Alabama 1975 and Act No. 82-424 Acts of Alabama.

PENALTY: As provided by law.

7/18/87; 1/2/90; 9/16/92; 11/18/94; 10/19/95; 9/23/97; 7/30/98(ER); 12/3/98; 5/7/99; 7/20/99(ER); 10/19/99; 7/15/2000; 7/25/2001; 8/21/2002; 7/22/2003; 7/16/2004; 11/23/2005; 9/15/2006; 6/27/2007; 10/18/2007.

Taken from <http://www.outdooralabama.com/watchable-wildlife/regulations/nongame.cfm>.

## FINDING OF NO SIGNIFICANT IMPACT

Alabama Army National Guard

*Integrated Natural Resources Management Plan for the  
Fort McClellan Army National Guard Training Center*

Environmental Assessment

Pursuant to the Council on Environmental Quality (CEQ) Regulations (40 CFR1500-1508) for implementing the National Environmental Policy Act (NEPA) and Army Regulation (AR) 200-2, an Environmental Assessment (EA) was prepared to assess the potential effects of implementing the Integrated Natural Resources Management Plan (INRMP) for the Fort McClellan Army National Guard Training Center (FM-ARNGTC). The FM-ARNGTC INRMP was prepared in accordance with the Sikes Act (16 U.S.C. 670a et seq.)

### A. Description of Proposed Actions and Alternatives

The proposed action consists of implementing an Integrated Natural Resources Management Plan (INRMP) for the FM-ARNGTC. In general, the *purpose* of the proposed action is to provide for the effective, long-term management of the site's natural resources while allowing the training mission to proceed. More specifically, the purpose of implementing an INRMP (*per* 16 USC §670a et seq.) is to provide for:

- The conservation and rehabilitation of natural resources on military installations;
- The sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and non-consumptive uses; and
- Subject to safety requirements and military security, public access to military installations.

The *need* for the proposed action is to ensure natural resources are managed effectively at the FM-ARNGTC, as required by the Sikes Act, as amended, AR 200-3, and other applicable natural resource regulations and guidance documents, while allowing the training mission(s) to be accomplished in order to provide a fully trained and ready force.

#### A.1 Proposed Action

Alternative 1, or the Preferred Action Alternative, consists of implementing natural resources management measures as presented in the INRMP. Natural resources management methods and measures with respect to forest and fire management, fish and wildlife management, land and water resources management (and associated subcomponents), and outdoor recreation are presented in **Sections 5, 6, 7, and 8**, respectively of the INRMP. Management strategies related to these resource issues are discussed in each appropriate section and summarized in **Table 12-1** of the INRMP.

#### A.2 Alternatives Considered

Within the EA, alternatives to the proposed action that were examined include:

- Alternative 2: Modified Action Alternative— Adoption of Alternative 2 consists of implementing only those actions that are required by laws, regulations, and/or Executive Orders. Proactive management, not required by law, would not be implemented; and
- Alternative 3: No Action Alternative— Adoption of Alternative 3 would mean that an INRMP would not be implemented at the FM-ARNGTC and minimum natural resources management would occur.

All of the evaluated alternatives are located within the boundaries of the FM-ARNGTC. Alternatives located outside of these boundaries were not considered to be within the scope of this EA.

The EA concludes that Alternative 1 is the environmentally-preferred alternative that effectively satisfies the purpose of and need for the proposed action while limiting the potential for impact and the need for mitigation. Generally, the potential environmental consequences associated with implementing the Preferred Action Alternative, as proposed, would be expected to result in either a *positive effect* or *no effect* to the natural, cultural, and socioeconomic environments.



Alternative 2, the Modified Action Alternative was determined to potentially cause some *minor negative* effects to the natural, cultural, and socioeconomic environments at the FM-ARNGTC. Proactive management activities that would likely result in the long-term viability of the FM-ARNGTC as a training site would not occur.

Alternative 3, the No Action Alternative, if adopted, would mean that an INRMP would not be implemented at the FM-ARNGTC and only the very minimum natural resources management would occur. The No Action Alternative has been determined to not be a valid or reasonable alternative because implementation of this alternative would be a violation of the Sikes Act, as amended, as well as Army and Department of Defense (DoD) regulations and policies. Implementation of the No Action Alternative would therefore be expected to result in a *major, long-term negative* impact.

Overall, through its emphasis on resource avoidance, repair and/or monitoring, implementation of the INRMP under the *Preferred Action Alternative* is anticipated to result in net positive effects by sustaining and enhancing extant on-site natural resources while allowing training to proceed, and has been determined to be the best, most appropriate, and most practicable alternative.

## **B. Environmental Analysis**

The analysis of the potential environmental impacts of the Preferred Action Alternative, Modified Action Alternative, and No Action Alternative is documented in the aforementioned INRMP/EA. The potential for impacts on land use, air quality, noise environment, geology/topography/soils, ground and surface water resources, biological resources, cultural resources, socioeconomic, environmental justice, infrastructure, and hazardous and toxic materials/wastes, as well as the potential cumulative effects of the proposed action and alternatives, are detailed in the INRMP/EA.

Based on the analysis of potential effects of each of the alternatives in the INRMP/EA, implementation under either Alternative 1 or 2 will not have a significant individual or cumulative impacts on any environmental resources, provided appropriate plans are prepared and mitigation measures are successfully implemented, as specified within the INRMP/EA, as part of the action.

## **C. Mitigation Measures**

Certain mitigation measures are anticipated in order to ensure that no adverse impacts are expressed as a result of implementation of the Preferred Action Alternative. In order to prevent potential adverse impacts to FM-ARNGTC cultural resources, the ALARNG shall, through implementation of and coordination with the FM-ARNGTC Integrated Cultural Resources Management Plan (ICRMP) (*draft pending*).

## **D. Regulations**

There are no indications that implementation of the proposed action will violate any federal, state, or local environmental laws or regulations, provided the incorporated mitigation measures are fully implemented. The proposed action would not violate the National Environmental Policy Act (42 USC § 4321 to 4370e), its regulations as promulgated by the Council on Environmental Quality (40 CFR Parts 1500-1508), Army Regulation 200-2 "Environmental Effects of Army Actions" or any other federal, state, or local environmental laws or regulations.

## **E. Public Review and Comment**

A formal public involvement process was completed as part of the environmental planning process. Consultation letters were sent to interested parties and pertinent regulatory agencies in December 2000 to obtain input on the proposed action and relevant environmental data prior to preparation of the draft INRMP/EA. On 23 July 2001, a notice of availability of the draft INRMP/EA was placed in *The Anniston Star*, the local newspaper, and the INRMP/EA was placed within the *Public Library of Anniston-Calhoun County*. The public review period on the draft INRMP/EA terminated on 6 August 2001, as a pre-approved 15-day review was chosen in the interest of the project's implementation schedule. No comments were received through this review process. The draft INRMP/EA was revised to reflect concurrent, non-substantial comments provided by National Guard Bureau and ALARNG personnel; these revisions are reflected in the Final INRMP/EA and do not adversely affect the environmental effects analysis provided within this INRMP/EA.

Copies of the Final INRMP/EA are available for public review and comment. Copies can be reviewed at:

- The *Public Library of Anniston-Calhoun County* (108 East 10<sup>th</sup> Street, Anniston, AL 36201) during regular business hours.

Written comments on this Finding of No Significant Impact should be returned no later than 15 days after the date of official publication. Comments should be addressed to:


- State Military Department Headquarters, Alabama Army National Guard, Attention: final INRMP, MAJ Wayne Sartwell, P.O. Box 3711, Montgomery, AL, 36109-0711; —OR— via e-mail to 'fmarngtc\_inrmp@yahoo.com'

#### **F. Finding of No Significant Impact**

A careful review of the INRMP/EA has concluded that the implementation of the Preferred Action Alternative, as specified under Alternative 1, will not have any significant impact on the quality of the existing natural, cultural, or human environment, taking into account the incorporated mitigation measures. Implementation of the proposal does not constitute "a major federal action significantly affecting the quality of the human environment." To minimize potential impacts to the environment, while fulfilling all necessary regulatory mandates, the ALARNG has selected to implement Alternative 1, as recommended by the EA.

The requirements of the National Environmental Policy Act and the Council on Environmental Quality have been satisfied and an Environmental Impact Statement will not be prepared.

18 Oct 01  
Date

  
RICHARD O. MURPHY  
Colonel, National Guard Bureau  
Chief, Environmental Programs Division

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**APPENDIX E**  
**SUSATINABLE RANGE PROGRAM AND ITAM**

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## APPENDIX E: SUSTAINABLE RANGE PROGRAM / INTEGRATED TRAINING AREA MANAGEMENT

The Sustainable Range Program (SRP) is an Army program that integrates natural resources management with operational and training objectives (AR 350-19, “*The Army Sustainable Range Program*” 2005). A full list of the Integrated Training Area Management (ITAM) Program projects may be found in Appendix O: Table 23 ITAM Projects for FY 2020-2025.

The SRP is the Army's overall approach for improving the way in which it designs, manages, and uses its lands to ensure long-term sustainability. 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 program links the Range and Training Land Program (RTLTP) and range operations to natural resources management and real property management. The Army's SRP consists of two core programs:

1. RTLTP, consisting of range modernization and range operations; and
2. ITAM Program, consisting of land management and land maintenance, and focuses on the doctrinal capability of the Army's training land.

Both programs are directly managed and funded by Directorate, Training Simulations Division (DAMO-TRS). Because many programs and functional offices affect the management of Army ranges, the core programs are integrated under the SRP and are integrated with the Assistant Chief of Staff Installation Management (ACSIM) facilities as well as environmental management responsibilities and programs through the G-4's Munitions Management functions and the Army Range Safety Program. A full description of the Army's Sustainable Range Program can be found in AR 350-19, Sustainable Range Program signed by the Army G-3 on 30 August 2005.

The goals of the SRP are as follows:

- Achieve optimal sustained use of lands for the execution of realistic training, by providing a sustainable core capability, which balances usage, condition, and level of maintenance;
- Implement a management and decision-making process, which integrates Army training and other mission requirements for land use with sound natural and cultural resources management;
- Advocate proactive conservation and land management practices; and
- Align Army training land management priorities with the Army training, testing, and readiness priorities.

The ITAM program is a core program of the Sustainable Range Program and is responsible for maintaining the land to help the Army meet its training requirements. This requires understanding and balancing Army Training requirements and land management practices. ITAM is utilized for training land management, and does not include areas such as identified Impact Areas, Training Facilities or Live Fire Ranges.

The ITAM program relies on its four components and an integrated management from HQDA, MACOM, and installations to accomplish its mission. The four components are Range and Training Land Assessment (RTLTA); Training Requirements Integration (TRI); Land Rehabilitation and Maintenance (LRAM); and Sustainable Range Awareness (SRA). These components combine to provide the means to understand how the Army's training requirements impact land management practices, what the impact of training is on the land, how to mitigate and repair the impact, and communicate the ITAM message to soldiers and the public. GIS is a foundational support element that provides locational information that assists land managers in making their decisions.

GIS is a foundational support element of the SRP. SRP GIS provides information dominance to ensure SRP provides effective mission support. This GIS support includes development of GIS databases meeting Core SRP GIS data requirements, establishment of central GIS product and applications support to SRP and other installation mission support offices, and adherence to Federal, DoD and Army spatial data standards. The

SRP GIS program participates in installation and Army Enterprise GIS initiatives to eliminate redundancies in data development and applications, and reduce costs for these items to the SRP.

Information acquired under the SRP/ITAM umbrella is incorporated into an installation-specific INRMP, which guides overall military training within the constraints of NEPA and other applicable legislation and ARs, threatened and endangered species management, rehabilitation activities, and projected sustainability guidelines. The components of the ITAM program are discussed in the following sections.

### **E.1.1 Range and Training Land Assessment**

RTLTA is the land condition data collection and analysis component of the ITAM Program and focuses on sustaining doctrinal training. The RTLTA mission statement is “Inform the process of military land management to maximize the capability and sustainability of land to meet the Army training and testing mission.”

To accomplish this mission, RTLTA program managers inventory and monitor training land condition and manage and analyze natural resource information. Results are pertinent to management of training and testing lands from training area to installation scales and provides input to decisions that promote sustained and multiple uses on military lands. The RTLTA program evaluates relationships between land use and condition through the collection of physical and biological resource data. Some RTLTA projects are long-term, while others are relatively short. Key to RTLTA success is the evaluation of collected data. RTLTA is the training land condition knowledge center for the US Army. RTLTA data can support the information needs of:

- Installation Status Report (ISR)
- National Environmental Policy Act (NEPA)
- Army Training and Testing Area Carrying Capacity (ATTACC)/Land Condition Module (LCM)
- Installation Management Plans
- Assessing Internal Encroachment issues
- Land Rehabilitation and Management (LRAM) project evaluation

The intent of RTLTA is to collect the essential training land condition baseline information that is needed to effectively manage training lands. The flora, fauna, and soils data obtained from RTLTA surveys may be integrated with standard data elements from the ancillary components of ITAM (e.g., cultural resources, forest surveys, wetland surveys, endangered species surveys, and water quality monitoring).

The RTLTA program is a decentralized, installation-level management of objectives to document the status and trends in training land condition, examine the relationships between disturbance and condition, and support training area land use decisions. Objectives are defined, data collected and analyzed, managed, and reported in the RTLTA program. A key program component is getting analyzed data to those that make management decisions. This requires developing an installation specific data center of natural resource knowledge, understanding potential issues, and presenting information clearly and effectively. Documenting condition and change in high-use areas such as maneuver sites, bivouac areas, and firing points provides trainers with an understanding of potential site quality and the inputs for achieving and maintaining a desired level of site condition. Similarly, analysis of collected data may trigger LRAM projects for remediation of the area.

This program allows installation-level managers (land managers and range operations staff) to determine how they can best collect and use resource data to support short- and long-term land management decisions such as training area allocation, training area use, and land rehabilitation. Maintaining long-term site information helps installations address offsite investigations by the public and other agencies and to respond to assertions of poor land stewardship. Few other land users have the information and can document the effects of training as well as the Army. Pairing training history, environmental shifts, and off-site land condition, the Army successfully demonstrates its commitment to natural resources.

A successful RTLA program provides scientifically valid baseline and long-term monitoring data. Monitoring is a critical component of the adaptive management cycle, especially in the context of ecosystem management, but can only be successful if it is objective-based. Limited resources dictate that both qualitative and quantitative methods be utilized to address short- and long-term objectives. The core of the RTLA program is to provide the Army with training lands that are capable of meeting the doctrinal needs of training missions now and in the future. The FM-ARNGTC RTLA Monitoring Protocol was completed in early 2007.

#### **E.1.1.1 RTLA Implementation**

Establishment of a comprehensive GIS database is necessary to implement a successful RTLA program at the FM-ARNGTC. The AL ARNG has recently hired a GIS technician for the purposes of creating and maintaining a GIS database. The GIS database is in the process of being constructed.

The *GIS Equipment and Support* project will include the following:

- Establish and maintain GIS database; and
- Maintain GIS equipment.

The following baseline information will be included in a GIS database: vegetation cover, wetlands, floodplains, soils, threatened and endangered species, scheduled timber harvests, scheduled prescribed burns; designated fording points; and surface disturbance. Once a comprehensive GIS database is constructed, it may be used to:

- Schedule training activities in appropriate TAs; and
- Complete NEPA reviews for major actions.

The *Plot Management* project includes establishment and maintenance of experimental and reference area plots to aid in the establishment of carrying capacity standards for training areas.

#### **E.1.2 Training Requirements Integration**

TRI provides a decision support procedure that integrates training requirements with land management, training management, and natural and cultural resources management processes and data derived from RTLA and Army Conservation Program components. Training Requirements Integration relies heavily on RTLA-generated data to assist in determining the capability of the land to sustain a particular training activity with minimal disturbance to the affected environment. The integration of all requirements occurs through continuous consultation between the Directorate of Plans, Training, and Mobilization, natural and cultural resources managers, and other environmental personnel, as appropriate.

The goals for TRI are to: 1) Ensure sustained accessibility to adequate training lands to support training to standards under realistic natural conditions; 2) Provide military trainers and land managers with the necessary technical and analytical information to integrate doctrinally based training and testing with land constraints and quantify training land carrying capacity.

The TRI function is managed by the ITAM coordinator, with direct support from the Range and Training managers, and the RTLA and LRAM coordinators. TRI is further supported by the natural resources management and/or environmental personnel and the Directorate of Public Works (DPW). In addition, TRI involves coordination with external agencies and Federal departments. The Integrated Natural Resources Management Plan (INRMP) is an implementing document and requires TRI input.

TRI achieves the "training-environmental" balance and interface that is critical to ITAM and requires continuous interaction and coordination between the operations/training staff and the natural resources management/environmental personnel. This ensures wise land-use planning and management decisions that meet regulatory compliance, training, and testing activity requirements.



TRI matches the training activity with the most suitable site, and includes a rotation schedule for training lands. TRI also includes any restrictions required to maintain site quality, protect significant natural resources and minimize land damage while providing a safe training environment.

The TRI component has four objectives. Together the objectives and tasks provide the overall guidance for the management and execution of this component of the ITAM Program.

- Integrate training and testing requirements with training land management into a prioritized work plan, and execute requirements subject to availability of resources.
- Optimize training land management decisions by coordinating mission requirements and land maintenance activities with training and testing land carrying capacity.
- Identify existing and projected training land resources and prioritized land use requirements.
- Generate prioritized requirements for land rehabilitation, repair, and/or reconfiguration.

The implementation of TRI requires coordination between installation/operations training staff and natural resources management/environmental personnel. TRI allows for the appropriate allocation of specific training requirements to specific land parcels. The decision-making and allocation process is based on the land's "carrying capacity" with respect to training activities. The following are examples of possible land use options based on the aforementioned TRI objectives:

- Re-designate the parcel's use to an alternative training, mission, or non-mission activity to permit natural recovery; prolong sustainable use; or allow for rehabilitation, repair and maintenance;
- Re-design or reinforce a given parcel to support higher impact training;
- Alter likely training use of a given parcel by redesigning and reconfiguring the parcel;
- Cease training temporarily on a given land parcel to permit rehabilitation, repair and maintenance; and
- Cease all training permanently on a given parcel of land due to severe impacts and initiate restoration of that parcel.

The TRI function is managed by the ITAM coordinator, with direct support from the Range and Training managers, and the RTLA and LRAM coordinators. TRI is further supported by the natural resources management and/or environmental personnel and the Directorate of Public Works. In addition, TRI involves coordination with external agencies and Federal departments.

The operational scheduling and control of Pelham Range for military training is accomplished by dividing the installation into TAs (Figure 2, Appendix M). Each area is designated according to its location or use, and any site-specific constraints identified. Parameters for each different area can include the acreage of the site, acreage and type of any special or sensitive habitat (i.e. wetlands, erodible soils, species of concern), types of training allocated (i.e. weapons training, demolition, tracked vehicle training), types of access (paved roadways, gravel roadways, wooded trails), restricted areas, and any other environmental considerations specific to the individual TA.

The Sustainable Range Awareness program (Section E.1.4) serves to educate the training site users about site limitations and instructs guest units on the importance of minimizing damage to natural resources. This allows training site users to accomplish their training missions with minimal damage to the environment.

### **E.1.2.1 TRI Implementation**

To implement TRI at the FM-ARNGTC, the AL ARNG will include the location of military training exercises and other land uses as part of the GIS database being developed for the RTLA program. This will allow the AL ARNG to review land use and land disturbance in relation to natural resources throughout Pelham Range. In addition, the following projects will be implemented to support TRI.

The *Data Collection* project includes the collection of training and non-training data for use in comparing areas for training land use.

The *TRI Training* includes training personnel so that they are able to implement the TRI program.

### E.1.3 Land Rehabilitation and Maintenance

LRAM is the component of the ITAM Program that provides a preventive and corrective land rehabilitation and maintenance procedure to reduce the long-term impacts of training and testing on an installation. It includes training area redesign and/or reconfiguration to meet training requirements. LRAM uses technologies such as re-vegetation and erosion control techniques to maintain soils and vegetation required to support the military mission. These specifically designed efforts help installations maintain quality military training lands and minimize long-term costs associated with land rehabilitation or additional land purchases.

LRAM includes programming, planning, designing, and executing land rehabilitation, maintenance, and reconfiguration projects based on requirements and priorities identified in the TRI and RTLA components of ITAM. Projects are specifically designed to maintain quality military training lands, minimize long-term costs associated with land rehabilitation or additional land purchase, ensure compliance with environmental laws and regulations, and reduce erosion.

The goals of the LRAM program are to:

- Sustain **long-term** training/testing missions on lands held under the stewardship of the US Army.
- Sustain the overall condition of installation lands to ensure **long-term** military viability of its installations.
- Coordinate **long-term** land maintenance plans with other real property management programs on an installation.
- Apply best management practices for design and execution of LRAM to ensure that the rehabilitation, repair and maintenance results are commensurate with the applied resources.

LRAM projects may be planned and conducted in-house or through contract. The LRAM process begins with identification of potential LRAM projects. RTLA data and GIS technology are typically used to help identify projects. In the case of Pelham Range, erosion problem sites identified by the SEMP (Section 1.6.4) may qualify. However, by definition LRAM projects must be directly related to training impacts. Two common types of LRAM projects are training area rehabilitation and hardened sites.

Training area rehabilitation involves a wide array of techniques to correct erosion features, minimize disturbance, and revegetate denuded areas. Rehabilitation may occur within large training areas or more localized sites used for training. Rehabilitation areas may also be temporarily “off-limits” or protected through other restrictions. Revegetation is the critical stage of training area rehabilitation. Commonly used techniques for erosion control and establishment of vegetation include seedbed preparation, seeding, mulching, fertilizer application, and protection from runoff until vegetation is established. Techniques are specific to each project and revegetation processes would be completed utilizing native grasses and plant species. Species chosen would have proven ability to control and diminish erosion processes.

Hardened sites are areas that have been resurfaced with a base material, often overlaid with gravel. Sensitive areas within hardened sites may also be protected using barriers. Hardened sites are created in areas that receive repetitive training within a small area to the point where vegetation is damaged and “realism” is already drastically compromised. Potential locations include bivouac sites, firing points and troop assembly areas.

LRAM efforts are specifically designed to minimize long-term costs associated with land rehabilitation and reduce the need for additional land purchase due to unusable existing training site conditions. General objectives of the LRAM program are as follows:

- Identify land maintenance requirements;
- Identify project sites that require restoration, rehabilitation, or reconfiguration to improve access to training areas and increase duration of use;
- Develop a scope of work for the projects that includes a site description, design, resources required and expected outcome;
- Develop project prioritization lists based on RTLA data, GIS data, input from TRI, and other information available;
- Execute projects as resources are made available;
- Evaluate the effectiveness of the completed projects;
- Ensure that completed projects receive adequate preventative maintenance; and
- Coordinate long-term land maintenance plans with other real property management programs on an installation.

Erosion control, soil conservation, and training area rehabilitation are discussed further in Section 7.8.

#### **E.1.3.1 LRAM Implementation**

LRAM is linked to, but not specifically considered to be a component of natural resources management. Natural resources baseline information gathered for the RTLA program will be used to identify sites for rehabilitation and maintenance. This INRMP does not specifically provide a driver for projects specific to implementation of an LRAM program at the FM-ARNGTC. The AL ARNG will implement a variety of ITAM projects which may include:

- trail maintenance,
- soil stabilization,
- road closures to training areas,
- bridge and shoreline repair,
- training area development, and
- vegetation control.

A list of specific projects may be found in Appendix O: Table 23 – ITAM Projects for FY 2020-2025.

#### **E.1.4 Sustainable Range Awareness**

Sustainable Range Awareness (SRA) is the component of the ITAM Program that provides a proactive means to develop and distribute educational materials to users of range and training land assets. The SRA program focus on all land users including soldiers, leaders, civilians, and the local community who may use training lands for recreational purposes. Materials relate procedures that reduce the potential for inflicting avoidable impacts on range and training land assets, including the local natural and cultural resources. ITAM SRA addresses specific environmental sensitivities at the installation level to inform land users of restrictions and activities so as to prevent damage to natural and cultural resources. Awareness is crucial to the protection of diverse resources, such as sensitive species, SINAs and wetlands.

AR 350-19 mandates the integration of SRA into existing command and/or installation operational awareness activities and events, and initiate new events that maximize outreach for the command. The SRA component applies to soldiers, other services using Army lands, installation staff, other land users, and the public.

The goals of an installation's SRA program are to:

- Minimize resource damage by educating land users about how their activities impact the environment; and
- Instill a sense of pride and stewardship responsibility.

The SRA component has three objectives:

- Educate land users about environmental stewardship responsibilities. Successful management of training lands requires land users to have a clear understanding of the installation's mission(s).
- Improve public relations through SRA. An installation must communicate its success at sustaining mission activities while preserving Army land. The installation Public Affairs Office (PAO) must be involved.
- Conduct operational awareness for environmental professionals.

The SRA program for the AL ARNG has a two-fold thrust: one for units, leaders, commanders at all levels, training site staff, and the other for other non-military training site users (range users, local population, hunters, school and community groups). SRA is designed to improve their understanding of the effects of their mission, training, or activity on natural resources. Objectives of the SRA program at the FM-ARNGTC include:

- Educate land users about their environmental stewardship responsibilities. Successful management of training lands requires land users to have a clear understanding of the installation's mission(s). Provide information to units, leaders, soldiers, civilian employees, and other installation users to improve their understanding of impacts of their activities on the environment.
- Improve public relations through SRA. The AL ARNG must communicate their success at sustaining mission activities while preserving Army land. The installation Public Affairs Officer must also be involved in this process. Maintain good relations between the FM-ARNGTC and regional media.
- Conduct operational awareness for environmental professionals.
- Provide decision-makers with information needed to make judgments which affect the FM-ARNGTC natural resources program.
- Provide information to the military community and general public on recreational opportunities on Pelham Range, especially those related to hunting and fishing.

#### **E.1.4.1 SRA Implementation**

SRA Implementation includes the following:

- Creating SRA educational materials;
- Installing SRA signs, as applicable; and
- Public awareness.

#### **E.1.4.2 Military Personnel Awareness**

Implementation of natural resources protection requirements in the field depends upon effective communication with military trainers. Two important means of communicating natural resources concerns to military personnel are awareness materials and briefings.

SRA materials would be as site-specific as possible, including photographs or drawings depicting specific or unique on-site natural resources. Photographs of rare species and special habitats would be placed in highly visible places to ensure maximum audiences (i.e., briefing rooms, billeting common areas, etc.). In addition, materials would be for field use (i.e. durable, on coated paper).

Methods to protect natural resources in the field are outlined in the AL ARNG training pamphlet *“Protecting the Natural Resources on Pelham Range While Training to Protect the Nation”* (also known as

the “*Environmental Awareness Handbook*”, AL ARNG 2001). This booklet condenses environmental requirements into a single, clear publication. It provides “environmental ground rules” for use of Pelham Range and covers the following topics: off-road-vehicle movement, camouflage, stringing cable, crossing streams, fire, waste disposal, restricted areas, sensitive species and habitats, and archaeological sites. The booklet will be issued to all trainers using Pelham Range.

Range Control holds briefings for field officers and range safety officers approximately two times per month. Environmental and natural resources concerns are addressed in these briefings. Briefings are also conducted on an informal basis as needed. For instance, a military unit preparing to bivouac near a sensitive area or a contractor preparing to work near a wetland will be briefed on environmental requirements by Environmental Branch personnel.

Periodic meetings of the AL ARNG Environmental Quality Control Committee (EQCC) are another important forum for presenting information and concerns. This committee may be composed of members representing various interests for the installation (i.e., command operations, training engineering, planning, housing, recreation, environmental, natural resources, legal, safety, public affairs, etc.) and meets on an as needed basis. The committee will help to plan, execute, and monitor environmental actions and programs, including natural resources management.

#### **E.1.4.3 Public Awareness**

Educating and informing the public of management practices at the FM-ARNGTC (i.e., prescribed burning, wildlife openings, and grounds maintenance) generally increases support from the public. Articles published in local newspapers and public service announcements on television or radio are excellent means of communication. Such media reaches a diverse audience, and can be specifically designed to promote the AL ARNG mission within the context of stewardship. All media reports would be coordinated through the AL ARNG Public Affairs Office in Montgomery, Alabama.

As an additional method of public awareness, the public is sometimes made aware of certain issues or concerns through the very popular hunting and fishing program on Pelham Range. Regulations, posted in the Game Management Office (GMO), inform the public about angling and hunting opportunities or special restrictions. The GMO also offers other materials, such as Alabama hunting and fishing regulations and special publications of the ADCNR.

#### **E.1.5 Range Planning**

Long-term planning for range development is documented in the Range Complex Master Plan (RCMP) (AL ARNG 2018). The RCMP is an installation-level plan that outlines major range construction projects and training land use, environmental constraints to training and land development, and infrastructure requirements. Although it is a stand-alone document, the RCMP is integrated with the FM-ARNGTC Real Property Development Plan and Alabama Army National Guard Real Property Development Plan (AL ARNG 2018). The real property development plans are reviewed by the Environmental Branch to ensure that issues regarding environmental constraints and natural resources management are considered during the preliminary siting of required ranges.

**APPENDIX F**  
**NATURAL ENVIRONMENT**

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## **F. NATURAL ENVIRONMENT**

### **F.1 Physiographic Setting**

The FM-ARNGTC lies within the Valley and Ridge physiographic province of the Appalachian Highlands in Calhoun County in northeastern Alabama.

#### **F.1.1 Pelham Range**

Pelham Range has substantial variations in slope ranging from 0% to 50%. Virtually all of the land comprising Pelham Range is rolling and tree-covered, ranging in elevations from 480 feet above mean sea level (amsl) near the western boundary to more than 945 feet amsl in the southeast. Slopes vary widely, but only a few areas in the northwest are too steep for any kind of training use. The land is bisected and drained by Cane Creek, which flows east to west, as well as several tributaries (USGS various dates).

#### **F.1.2 Main Enclave**

The Main Enclave has a predominantly flat terrain suitable for construction and various other land uses without restriction. Elevations range from approximately 750 to 800 feet amsl. FM-ARNGTC has recently acquired 148 acres that are currently undeveloped. Virtually all of the land comprising the older parcel has been developed over the years, and almost all open areas are grassy (USGS various dates).

### **F.2 Climate**

Calhoun County has a temperate, humid climate characterized by hot, long summers and short, mild to moderately cold winters. Table 6 (Appendix O) summarizes weather data for 2017 gathered by the 'Anniston Metro Weather Station' as reported by Weather Underground (wunderground.com). The average annual temperature in Anniston in 2017 was 62 degrees Fahrenheit (°F). Freezing temperatures are common but of short duration. The first frost usually occurs by November 1, which provides a growing season of 210 days. Snow is rare and averages one-half to one inch. The annual rainfall average was 59.9 inches and was fairly well distributed. Severe droughts are rare, and more intense rains usually occur during warmer months. Winds in the area are seldom strong and frequently blow down the valley from the northeast. However, there is no persistent wind direction. Light breezes or calm prevails; although during passages of cyclonic disturbances, destructive local windstorms develop, some into tornadoes with winds of 100 miles per hour or more (Pittman *et al.* 1991).

#### **F.2.1 Climate Change**

Human activities are estimated to have caused approximately 1.0°C of global warming above pre-industrial levels, with a likely range of 0.8°C to 1.2°C. Global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate (IPCC 2018). According the 2018 IPCC summary for policy makers, climate models project robust differences in regional climate characteristics between present-day and global warming of 1.5°C and 2°C. These differences include increases in mean temperature in most land and ocean regions, hot extremes in most inhabited regions, heavy precipitation in several regions, and the probability of drought and precipitation deficits in some regions.

Of the 105,000 species studied, 6% of insects, 8% of plants and 4% of vertebrates are projected to lose over half of the climatically determined geographic range for global warming of 1.5°C, compared with 18% of insects, 16% of plants and 8% of vertebrates for global warming of 2°C (IPCC 2018). While it is difficult to predict exactly how these global changes will impact individual habitats and natural resources, it can be surmised that a more stringent and vigorous management protocol will be necessary to mitigate climate change impacts.



While the exact implications to the FM-ARNGTC are impossible to predict, there are a number of vulnerable natural resources that may be impacted. These include forested areas, wetlands, and streams. Erratic weather patterns may manifest as extended periods of hot, dry weather interspersed with flashier, more intense storm events. Hot, dry periods tend to produce an abundance of dead, dry plant mass. This mass can act as fuel for unplanned forest fires. Dead or stressed vegetation is not as effective at preventing erosion. During periods of high intensity storms, this could lead to a greater risk for erosion at the FM-ARNGTC. Flashy, intense storm events can also increase the risk of flooding.

### **F.3 Air Quality**

The ambient air quality in an area can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act Amendments of 1990 (CAAA) requires USEPA to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS are provided for seven criteria pollutants:

- Carbon monoxide (CO);
- Lead (Pb);
- Nitrogen dioxide (NO<sub>2</sub>);
- Ozone (O<sub>3</sub>);
- Particulate matter with an aerodynamic size less than or equal to 10 micrometers (PM-10);
- Particulate matter with an aerodynamic size less than or equal to 2.5 micrometers (PM-2.5); and
- Sulfur dioxide (SO<sub>2</sub>).

The FM-ARNGTC is within the East Alabama Intrastate Air Quality Control Region, which is classified as attainment for all NAAQS criteria pollutants. Calhoun County, where Pelham Range is located, is in attainment for all NAAQS criteria pollutants (USEPA 2018b). It should be noted that air quality is not managed through the INRMP.

### **F.4 Geology, Topography and Soils**

#### **F.4.1 Topography**

The FM-ARNGTC lies within the Valley and Ridge physiographic province of the Appalachian Highlands in Calhoun County in northeastern Alabama. Pelham Range is characterized by moderately rolling hills with numerous valleys. Elevations vary from approximately 480 to 945 feet above mean sea level (amsl). The Main Enclave, which lies approximately 5 miles east of Pelham Range, is relatively flat and ranges in elevation from approximately 750 to 800 feet amsl (USGS 2005).

#### **F.4.2 Geology**

The FM-ARNGTC is located within the fold and thrust belt of the Appalachian Valley and Ridge Physiographic Province. The fold and thrust belt is composed of Paleozoic sedimentary rock units that were repeatedly folded and thrust faulted by northwestward-directed tectonic stresses. Consolidated rocks ranging in age from Cambrian to Pennsylvanian have been sharply folded into asymmetrical northeast-trending anticlines and synclines. Transport of the Paleozoic rock sequence along thrust faults resulted in imbricate stacking of large slabs of rock referred to as thrust sheets. Smaller faults that splayed off larger thrust faults resulted in further imbricate stacking of rock units within individual thrust sheets. The Jacksonville Fault is the most significant structural geologic feature in this area both for its role in determining the stratigraphic relationships in the area and for its contribution to regional water supplies. This extensive thrust fault (which surrounds the Main Enclave to the east, south and west) trends

northeastward from the vicinity of Coldwater Spring through the cities of Anniston and Jacksonville to Piedmont in the northeast corner of Calhoun County (US Army 1999).

#### **F.4.2.1 Pelham Range Bedrock**

Pelham Range lies within this fold and thrust geologic belt and its majority is underlain by the Knox Group. The Knox Group is a thick sequence of light gray to light brown variably bedded, laminated siliceous dolostone that weathers to a chert residuum. The Weisner Formation, locally a sand stone and quartzite with thin-bedded shale, is the basal formation of the unmetamorphosed sedimentary rocks. It is capped by the Shady Dolomite, followed in turn by the Rome Formation and the Conasauga Formation, all of Cambrian age. The Shady Dolomite is a thin, gray, and medium to thick-bedded dolomite with some limestone beds. The Rome Formation is composed of colored shale with thin, interbedded sandstones and calcareous layers, and the Conasauga Formation is composed of interbedded limestone, dolomite, and shale (ES&E 1998).

The underlying Conasauga Formation outcrops along anticlinal axes in the northeastern portion of Pelham Range. In the western portion of Pelham Range, the Knox Group is overlain by a sequence of rock units ranging in age from Ordovician to Mississippian, several of which outcrop in a narrow, northeast trending, thrust-fault bound area. These units include the Newala and Little Oak Limestones of the Ordovician period; the Devonian-aged Frog Mountain Sandstone; and the Tusculumbia Limestone, Fort Payne Chert, and Floyd Shale of the Mississippian period (US CHPPM 1999). The underlying geology of Pelham Range is shown in Appendix M: Figure 4a.

Residuum derived from the weathering of carbonate bedrock predominates the subsurface interval between the ground surface and the top of bedrock at Pelham Range. The residuum consists primarily of brown, red, or tan sandy to silty clay, with thicknesses ranging from approximately 23 feet to greater than 108 feet below ground surface. Within the residuum, poorly correlateable, gradational zones of sand, silt, silty sand or silty gravel commonly occur. The thick layer of residuum hampers formation of sinkholes and other karst features. Karst features are generally present where the Knox Group outcrops or the residuum is thin. Sinkholes and springs have been identified on Pelham Range. Known sink holes and springs on Pelham Range are shown in Appendix M: Figure 4a.

#### **F.4.2.2 Main Enclave Bedrock**

Main Enclave is underlain by Paleozoic undifferentiated shales and carbonate rocks. This rock unit is Mississippian in age and consists of dark-gray shale and mudstone, locally containing thin interbeds and lenses of dark-greenish-gray sandstone. A small klippe of the Chilhowee Group occurs in the northeastern portion of the Main Enclave. The Chilhowee Group is the basal unit of the sedimentary sequence in Calhoun County. This unit is composed of light to medium-gray arkose, arkosic conglomerate, and discontinuous mudstone overlain by greenish-gray mudstone with siltstone and sandstone; dominantly light-gray pebbly quartzose sandstone in the upper part. The underlying geology of the Main Enclave is shown in Appendix M: Figure 4b.

#### **F.4.3 Soil Types and Characteristics**

Soils of the FM-ARNGTC are highly variable as a result of topography and drainage, parent material, and vegetation. Three major soil associations occur on Pelham Range and the Main Enclave. The Rarden-Montevallo-Lehew group occurs across the entire Main Enclave. This group also occurs on Pelham Range, in addition to the Anniston-Allen-Decatur-Cumberland and the Clarksville Fullerton soil groups. These soil groups are described as follows:

Anniston-Allen-Decatur-Cumberland association is composed of deep, well-drained, level to moderately steep soils in valleys underlain by limestone and shale. It is suited to many farm crops. Steeper slopes should be kept permanently in vegetation. Erosion can become a problem. Natural vegetation consists mostly of pine, oak, and hickory. The site index for loblolly pine on this soil association ranges from 66 to 85 feet at 50 years (Pittman *et al.* 1991). The association is found in the northern and west-central portions of Pelham Range and in the Main Enclave.

Clarksville-Fullerton series is characterized by well-drained to moderately well-drained, stony or cherty soils on ridge tops and steep slopes and in local alluvium on foot slopes or in draws. Erosion can be a problem on these soils. On steep slopes, lands should be kept in forest. Natural vegetation is mostly shortleaf and loblolly pine, white and blackjack oaks, and hickory. Soil limitations for roads and dwellings without basins are moderate to slight. This soil series encompasses over half of Pelham Range.

Rarden-Montevallo-Lehew association is composed of moderately deep or shallow soils on ridge tops and steep slopes and in local alluvium in draws. The association is suited to only a few crops, such as hay and forage, and it should remain in permanent vegetation. The present forest cover usually consists of pine, oak, hickory, and gum. Soil limitations for roads and dwellings are severe. The site index for loblolly pine on this soil association ranges from 66 to 85 feet at 50 years (Pittman *et al.* 1991). This soil association is found in the Main Enclave and along the western boundary and west-central portion of Pelham Range.

These soil types formed in residuum from bedrock weathering or from alluvium deposited in the valleys. Erosion of these soils removes the fine-grained matrix and leaves a gravel and cobble lag on the ground surface. The worst erosion problems combine a steep slope and moderate to deep gullies; they sometimes include an additional transport factor, such as a drainage ditch or a creek. Management of these problems entails active monitoring of likely erosion locations and performing remedial actions, such as seeding and limiting land use, when the problems occur.

The NRCS identified and mapped the soils of Pelham Range and the Main Enclave in 2002. Soils of Pelham Range and the Main Enclave are shown in Appendix M: Figure 5a and Figure 5b. Table 9 (Appendix O) lists the acreage and proportionate extent of the soils on Pelham Range.

#### **F.4.3.1 Soil Erosion History and Potential**

Erosion control and soil conservation is an important natural resources issue on Pelham Range due to the highly erodible soils found on the installation. The FM-ARNGTC SEMP was updated in 2014. The plan covers both the Main Enclave and Pelham Range. The SEMP assessed the previously identified erosion concern areas and identified new erosion concern areas (Thompson Engineering 2014). Erosion sites on Pelham Range are shown in Appendix M: Figure 6.

Problem sites were identified as an erosion location that hampers, impedes or alters the training mission in an adverse manner. Erosion at each site potentially threatens water quality, land stewardship goals, or infrastructure. The soil erosion management plan provides a rehabilitation/management plan for each site. Many of the areas identified in the 2003 SEMP have been repaired in accordance with that plan.

#### **F.4.5 Mineral Resources**

According to the Bureau of Land Management (BLM) Non-Energy Mineral Department no modern mining activities occur at FM-ARNGTC. By law, the BLM is prohibited from allowing mining activities on DoD lands. The BLM National Integrated Land System reports no permits or leases for oil and gas exploration or extraction at the FM-ARNGTC (<https://navigator.blm.gov/home>).

However, mineral deposits are known to be on Pelham Range according to the historical record. In the 1800s, small-scale iron mining occurred on both the Fort McClellan Main Post and Pelham Range (Reisz Engineering 1998a). Rich deposits of iron ore, limestone and forests for charcoal production made the area on Pelham Range suitable for the iron manufacturing process. An iron furnace, operating under various names to include Cane Creek Iron Works, was associated with a successful iron making business on Cane Creek between 1840 and the Civil War. Notably, this furnace supplied iron used in the construction of the state capital in Montgomery, for defensive use during the Mexican-American War, and finally the Confederacy (New South Associates 1992).

The Geological Survey of Alabama has recorded known mineral resources of iron, lead and zinc on Pelham Range in the USGS Mineral Resources Data System. Mineral resources sites on Pelham Range are shown in Appendix M: Figure 4a.

## **F.5 Ground and Surface Water Resources**

### **F.5.1 Ground Water**

Pelham Range and Main Enclave are underlain by the Valley and Ridge Aquifer system, with Piedmont and Blue Ridge Aquifer System bordering it to the southeast, and underlying the southeastern portion of Calhoun, County, Alabama. The Valley and Ridge System is comprised mainly of limestone (dolomite), sandstone, chert beds, and fractured shale.

Ground water circulation in the area extends to great depth, because of the plunging synclines and anticlines located at the northwest section of the Pelham Range area. Recharge to the Valley and Ridge System is by precipitation. During rain events water percolates down steeply inclined fractures until it reaches the Chattanooga Shale. The Shale retards the flow of a high percentage of water and causes the water to move laterally until water seeps from exposed bedrock. Annual average fresh water withdrawal from the Valley and Ridge Aquifer System is 149 million gallons per day.

Large groundwater storage reservoirs formed by thrust fault zones exist in Calhoun County. Groundwater generally moves southward along the east of the Choccolocco Mountains and then southwest from the southern end of the mountains. In the vicinity of the FM-ARNGTC, groundwater movement is in a west-northwest direction toward the Coosa River. Although groundwater quality is generally good (Foster Wheeler Environmental Corporation 1996), monitoring of groundwater wells on Fort McClellan by the USGS has revealed high concentrations of heavy metals (Tucker *et al.* 1995). Anthropogenic sources may contribute to the overall metal load; however, the greatest contributor is the natural environment (Reisz Engineering 1998a). According to data obtained from monitoring wells located at Pelham Range, groundwater elevations fluctuate between 546 and 668 feet amsl.

Much of the local drinking water supply comes primarily from Coldwater Spring, one of many local springs in use since pioneer days. This spring, with a flow of 24 to 36 million gallons per day, serves nearly 60 percent of Calhoun County residents, including Anniston, Oxford, Blue Mountain, Hobson City, the ANAD, and the former Fort McClellan.

### **F.5.2 Surface Waters**

The Cane/Cave Creek watershed is one of six major watersheds occurring in Calhoun County. Cane Creek and its tributaries (Remount, South Branch and Ingram Creeks) originate on the former Fort McClellan property. These three streams drain surface water from the southern portion of the Main Enclave. The northern portion of the Main Enclave is drained by Cave Creek, which also originates on the former Fort McClellan. Cave Creek is the only stream that flows through the Main Enclave; however a small emergent wetland is located along the northern boundary, north of Trench Hill Road near the intersection with Hanna Avenue.

There are 12,648 linear feet of stream at the FM-ARNGTC Main Enclave and 364,060 linear feet of stream in Pelham Range (Aerostar 2013). Cane Creek is the main stream flowing through Pelham Range. Cane Creek enters Pelham Range in its northeastern portion and meanders across the installation in a generally westward direction and drains the majority of land area on Pelham Range. The only areas on Pelham Range that are not drained by Cane Creek or its tributaries are those which lie in the northeastern and northwestern portions of Pelham Range. Intermittent streams in the northeastern and northwestern portions of Pelham Range drain to tributaries of Ohatchee Creek. Both Cane Creek and Ohatchee Creek are tributaries of the Coosa River. The USGS topographic maps depict two disappearing streams on Pelham Range. A perennial stream located in the southwestern portion of the facility flows in a northerly direction and empties into a large topographic low approximately 2,400 feet south of Cane Creek. An intermittent stream originates north of Pelham Range, flows toward the southwest, and ends approximately 4,000 feet north of Cane Creek.

There are approximately 10.6 acres of wetlands at the Main Enclave and approximately 1,760 acres of wetlands at Pelham Range (Aerostar 2013). This does not include an approximately 25-acre man-made lake, formerly known as Lake Contreras, located in the central portion of Pelham Range. The lake has not held water and is currently dry. The lake was fed by intermittent streams flowing into it from the south and east, but the lake level was evidently driven by groundwater. Previously, this lake was completely dry during parts of the year. No fish were known to occur in the lake. Other open water areas include Willett Springs, a small manmade impoundment (approximately ¼ acre) fed by a natural spring, small open water areas (generally 1-2 acres) within larger wetland systems, and small (generally < one acre) isolated ponds. Streams on both Pelham Range and the Main Enclave are fed by fresh water springs that often appear along the trace of thrust faults and yield up to 1,505 gpm. These springs occur in abundance on Pelham Range and originate in the underlying limestone strata (US CHPPM 1999). Streams, springs and associated karst physiographic features of Pelham Range are shown in Appendix M: Figure 4a. Surface water is also shown in Appendix M: Figure 7a and Figure 7b.

Water quality surveys in the area indicate relatively good water quality at most locations; the State has classified streams in this area as suitable for fish and wildlife use (ADEM 2018).

A surface water survey is planned for the newly acquired parcel at the Main Enclave as part of Objective 1b outlined in the Planned Projects Table (Appendix T).

### **F.5.3 Wetlands**

A wetland survey was conducted by Aerostar SES from 2011 to 2013 (Aerostar 2013) to delineate the location and extent of wetlands at the FM-ARNGTC. This wetland survey was conducted using procedures prescribed in the USACE 1987 Wetlands Delineation Manual (Technical Report Y-87-1), subsequent guidance from the Office of the Chief of Engineers (1992 and 1997), and the “Federal Register” [1986, 33 CFR 329.11(a)(1)]. These surveys were performed to produce planning level accuracy and were not intended as jurisdictional determinations; the planning level survey is intended to provide a predictive model for where jurisdictional wetlands may occur. Approximately 10.6 acres of potential jurisdictional wetland areas were identified on the Main Enclave and approximately 1,760 total acres of potential jurisdictional wetland areas were identified on Pelham Range (Appendix M: Figure 7a, Appendix O: Table 10). Wetlands and shallow water habitats were classified according to Cowardin *et al.* (1979) (Table 10). Table 11 provides descriptions of the types of wetlands that are found on Pelham Range. Wetlands identified on Main Enclave are shown in Appendix M: Figure 7b.

A wetlands survey is planned for the newly acquired parcel at the Main Enclave as part of Objective 1b outlined in the Planned Projects table (Appendix T).

#### **F.5.4 Floodplains**

Floodplains are generally low areas adjacent to streams, rivers, or lakes prone to flooding. The Federal Emergency Management Agency (FEMA) identifies flood-prone areas on Flood Insurance Rate Maps (FIRMs). FIRMs are primarily based on historic, meteorological, hydrologic, and hydraulic data. Open-space conditions, flood control works, and development are also taken into account in creating FIRMs. Base flood areas, or the 100-year floodplain, are delineated on FIRMs. An area within the 100-year floodplain has a 1-percent chance of flooding each year or a 26 percent chance of flooding over a 30-year period. Flood-prone areas within Pelham Range include areas adjacent to Cane Creek and relatively large tributaries (Appendix M: Figure 8a). Flood-prone areas in the vicinity of the Main Enclave include regions along Cave Creek (Appendix M: Figure 8b).

#### **F.5.5 Water Quality**

Water quality surveys in the area indicate relatively good water quality at most locations; the State has classified streams in this area as suitable for fish and wildlife use (ADEM 2018). The Cane Creek Water Quality Study conducted in 2018 found that Cane Creek is a relatively pristine stream (Cook Hydrogeology, 2018). Cane Creek is listed by ADEM on the 303d list of impaired waters for pathogens. During the 2018 Cane Creek Water Quality study a large amount of litter and debris was observed in the stream and floodplain that originates from the urban area east of Pelham Range (Cook Hydrogeology, 2018).

#### **F.5.6 Sources of Pollution**

Ground water migrates relatively slowly through FM-ARNGTC soils, which act as a natural filter to remove many contaminants. Potential for groundwater pollution is controlled by the hydrogeological settings of a given area, and groundwater pollution potential directly corresponds with hydraulic transmissivity and hydraulic conductivity. The ADEM Nonpoint Source Management Program indicates that the groundwater pollution potential index for the FM-ARNGTC area ranges from medium to low.

Specific potential sources of pollution at the FM-ARNGTC include defined AOCs, explosive ordnance storage areas, general soil erosion and sedimentation, lead-acid battery storage areas, pesticide storage areas, petroleum product tanks, propellant storage areas, solvent storage areas, non-coal mining sites/borrow pits, areas of previous storage for radiologically-active materials, other explosive material storage areas, and other toxic and hazardous material storage areas. In all cases, these issues remain the responsibility of the ARNG.

#### **F.5.7 Wild and Scenic Rivers**

Alabama has no designated wild and scenic rivers present in the vicinity of the FM-ARNGTC, and it is unlikely that any streams within the property would be eligible for such designation (American Rivers 2004).

### **F.6 Biological Resources**

#### **F.6.1 Biological Surveys**

Biological surveys that have been performed at the FM-ARNGTC are discussed below.

##### **F.6.1.1 Plant Communities and Timber Inventories**

- *Vascular Flora Planning Level Survey – Ft. McClellan National Guard Training Center (FM-ARNGTC), Alabama* (Alabama Natural Heritage Program, 2013).

- *Vegetation Classification & Mapping; Pelham Range, AL* (Colorado State University Center for Environmental Management of Military Lands 2012).
- *Plant Community Survey for the Fort McClellan Army National Guard Training Center* (AMEC 2004c) – This survey report identifies and maps plant communities on Pelham Range and the Main Enclave.
- *An Inventory and Appraisal of the Timber Assets located on the Pelham Range and Main Enclave Area as of February 21, 2003* (Sizemore & Sizemore, Inc. 2003) - The inventory included all merchantable timber within Pelham Range and the Main Enclave except impact areas, developed areas, and the Graham Drop Zone.
- *Vascular Flora of Fort McClellan, Calhoun County, Alabama* (Whetstone *et al.* 1996) – This survey report describes plant communities present on the former Fort McClellan, including the Main Post and Pelham Range. This survey report identifies and provides general location data for species of concern present on the Main Post and Pelham Range. In addition the survey report describes each vascular plant species identified at the former Fort McClellan. Plant communities were not mapped.
- *Fort McClellan, Alabama Forest Type Map and Stand Descriptions* (Resource Management Service 1984) – This survey included an inventory and mapping of forest stands on Fort McClellan.

#### **F.6.1.2 Fauna**

- *Faunal Survey for Vertebrate Species-Fort McClellan Army National Guard Training Center Calhoun County, Alabama* (Aerostar SES, 2017). A total of 271 species were collected, visually verified, or identified through tracks or scent stations during this survey. This included 38 species of fish, 56 species of amphibians and reptiles, 148 species of birds, and 29 mammal species.
- *Faunal Planning Level Survey of Macroinvertebrate Species for the Ft. McClellan Army National Guard Training Center (FM-ARNGTC), Alabama* (Aerostar Environmental Services, Inc. 2014).
- *Faunal Survey for Vertebrate Species for the Fort McClellan Army National Guard Training Center* (AMEC 2007) - This survey identified avian, mammal, herpetological and amphibious species present on FM-ARNGTC. A total of 264 species were collected or observed including: forty species of fish, fifty-five species of amphibians and reptiles, 150 species of birds, ten species of small mammals, and seventeen species of medium to large mammals. No State or Federally-threatened or endangered species were collected. Notable occurrences did include species of conservation concern for the state and Federal birds of conservation concern.
- *Aquatic Inventory and Evaluation of Willett Springs and Cabin Club Spring, Fort McClellan, Calhoun County, Alabama, Concerning the Potential Introduction of Pygmy Sculpin (Cottus pygmaeus)* (Godwin 1998) – This survey identified vertebrate and invertebrate species present in Willett Springs and Cabin Club Spring.
- *Freshwater Mollusk Survey, Fort McClellan, Alabama* (C2 Environmental Services, Inc. 1997) – This survey inventoried mollusks on Fort McClellan. No State or Federally-listed mollusk species were identified during the course of this study.

#### **F.6.1.3 Threatened and Endangered Species**

- *Survey for Bats on Ft. McClellan with Emphasis on T&E Species and Tricolored Bats* (Perimyotis sublavus) (Copperhead Environmental Consulting, Inc. 2018). This survey report describes methods and results of a bat investigation with an emphasis on T&E and tricolored bats at Fort McClellan.
- *Bat Population Survey with Emphasis on Myotis Species at the Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2016). This survey report

describes methods and results of a bat investigation with an emphasis on *Myotis* species at Fort McClellan.

- *Bat Population Survey with Emphasis on Myotis Species at the Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2014). This survey report describes methods and results of a bat investigation with an emphasis on *Myotis* species at Fort McClellan.
- *Bat Population Survey with Emphasis on Myotis Species at the Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2012). This survey report describes methods and results of a bat population survey with an emphasis on *Myotis* species at Fort McClellan.
- *Survey for the Gray Bat, Myotis grisescens (Howell) on Fort McClellan Army National Guard Training Center, Calhoun County, Alabama* (Engineering & Environment, Inc. 2007). This survey report describes methods and results of a gray bat investigation at Fort McClellan.
- *Habitat Suitability Assessment and Survey for the Gray Bat on Fort McClellan Army National Guard Training Center, Alabama* (BHE Environmental 2005) – Mist net surveys were conducted along Cane Creek and two of its tributaries on Pelham Range July 28-August 4, 2005. Six species of bats were captured during this survey, including the Federally-listed gray bat. The gray bat was captured only at one location along Cane Creek and was not captured along the surveyed tributaries. AnaBat technology was also used to identify bats during this survey. Gray bat vocalizations were identified along both Cane Creek and a tributary of Cane Creek.
- *Threatened and Endangered Species Survey Report for Myotis grisescens, Xyris tennesseensis, and Marshallia mohrii for the Fort McClellan Army National Guard Training Center* (AMEC 2003b) – This survey report provides population data and habitat descriptions for the Federally-listed species that are known to occur on Pelham Range. The gray bat portion of this report is based on the following survey: *Gray Bat Use of Fort McClellan Army National Guard Training Center, Calhoun County, Alabama* (Environmental Solutions & Innovations, LLC 2003).
- *Pollination Biology of the Endangered Plant, Xyris tennesseensis (Xyridaceae)* (Reisz Engineers 1999) – This biological study was conducted at Willett Springs on Pelham Range to investigate the pollination biology of TYG. This study identified important pollinators of this species at Willett Springs.
- *Red-cockaded Woodpecker Endangered Species Survey for the U.S. Army Chemical and Military Police Centers and Fort McClellan* (Reisz Engineering 1998b). Huntsville, AL. – This survey investigated the potential for red-cockaded woodpeckers on Fort McClellan.
- *Radiotelemetric Investigations of Foraging and Roosting Habitat of Gray Bats (Myotis grisescens) at Fort McClellan, Alabama: Draft* (3D/I 1997) – This survey report describes methods and results of a radiotelemetric investigation of gray bats at Fort McClellan.
- *Investigations for the Presence of Gray Bats (Myotis grisescens) at Fort McClellan, Alabama* (3D/I 1996) – This document describes methods and results of studies conducted to determine seasonal presence and distribution of gray bats on Fort McClellan.
- *Natural Heritage Inventory of Fort McClellan, Pelham Range: Federal Endangered, Threatened, Candidate Species and State Listed Species* [Alabama Natural Heritage Program (ALNHP) 1994a] – This survey report identified six SINAs containing one endangered plant, one threatened plant, and two candidate species.
- *Natural Heritage Inventory of Fort McClellan, Main Post: Federal Endangered, Threatened, Candidate Species and State Listed Species* (ALNHP 1994b) – This survey report identified six SINAs containing one endangered plant, one threatened plant, and two candidate species.



- *Results of Red-cockaded Woodpecker Survey on Fort McClellan, Alabama* (Summerour 1992) – Red-cockaded woodpecker (RCW) surveys were conducted throughout pine-dominated communities at Fort McClellan. The surveys did not locate any RCWs or excavated cavities.
- *A Study of the Endangered and Threatened Plants and Animals on Fort McClellan Military Installation and Pelham Range, Calhoun County, Alabama* (Metee and Haynes 1980) – The Geological Survey of Alabama conducted biological inventories that focused on fish and vascular plants. Detailed plant species lists and data collection sheets are provided. The study failed to identify any Federally-listed species.

#### **F.6.1.4 Wetlands**

- *Planning Level Wetland Update and Surface Water Survey Report, Fort McClellan Army National Guard Training Center, Anniston, Calhoun County, Alabama* (Aerostar SES LLC 2013). This document provides a planning level survey for wetlands and water bodies on Pelham Range. The purpose of this planning level wetland delineation project was to update the location and extent of Waters of the United States regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.
- *Delineation of Wetlands and Other Regulated Waters, Pelham Range, Alabama* (USACE 2000) – This document provides a planning level survey for wetlands and water bodies on Pelham Range. The purpose of this planning level wetland delineation project was to approximate the location and extent of Waters of the United States regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. The work was done under the terms of an Interservices Support Agreement between the Army National Guard Readiness Center and the U.S. Army Engineer Research and Development Center, Waterways Experiment Station. Delineated waters include streams, ponds, lakes and wetlands. All are regulated as Waters of the United States under Section 404 of the Clean Water Act.
- *Preliminary Wetland Survey, Fort McClellan and Pelham Range, Anniston, Alabama* (USACE 1992) – This survey mapped and assessed larger jurisdictional wetlands on Fort McClellan. The study includes a detailed analysis of wetland attributes, sensitivity to impacts and management potential.
- *Guide to Wetland Communities of Fort McClellan, Alabama* (Gaddy 1984) – This survey yielded a summary guide to wetland communities and a draft National Wetlands Inventory (NWI) map of Pelham Range.

#### **Invasive Exotic Species**

- *Invasive Exotic Species Survey and Management Plan for the Fort McClellan Army National Guard Training Center, Calhoun County, Alabama* (Thompson Engineering, 2017). A survey of invasive and exotic species was conducted at FM-ARNGTC. This survey data was used to update the Invasive Exotic Species Management Plan.
- *Invasive and Exotic Species Survey and Management Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Main Enclave, Calhoun County, Alabama* (AMEC 2004). A survey of invasive and exotic species was conducted at FM-ARNGTC. This data was used to compile a management plan for invasive exotic species at the training center.

## F.6.2 Flora

### F.6.2.1 Main Enclave

The Main Enclave is composed of primarily developed areas interspersed with loblolly pine (*Pinus taeda*) forests. At least 99 acres of forest lie within the 484-acre Main Enclave (AMEC 2003c). A survey is planned to determine forest acreage along the newly acquired parcel at Main Enclave.

### F.6.2.2 Pelham Range

Most of Pelham Range was cleared for agriculture prior to the U.S. Army Acquisition in 1940. Currently, Pelham Range is primarily forested, with the exception of the Graham Drop Zone and the Heavy Maneuver Training Area. Ridges and hills are now dominated by upland hardwood communities, and pines and lowland hardwoods are found on slopes and stream valleys. The more xeric pine stands on the eastern portion of Pelham Range contain longleaf pine (*Pinus palustris*). More mesic lands are covered by stands of loblolly pine (*Pinus taeda*), shortleaf pine (*Pinus echinata*), and hardwoods. Bottomland hardwoods occur along many streams on Pelham Range, with the majority located along the wide floodplain of Cane Creek.

Plant communities at Pelham Range were mapped by AMEC in 2003 and again in 2012 by Colorado State University (Appendix M: Figure 9a). A brief description of each plant community that was identified on the installation is provided below. Due to restricted access and safety concerns, plant communities were not mapped in the large and small impact areas. Based on aerial photography, the majority of both the small arms impact area and the large impact area appear to be primarily forested. There are some areas that appear to have sparse canopy. Previous studies have indicated that the large impact area contains a xeric hardpan savannah with an open tree canopy (Garland 1996).

- **Loblolly Pine Plantation:** This community represents young plantation stands of loblolly pine. This community does not include older stands which may contain planted pine, but now have a more natural structure.
- **Loblolly Pine Forest:** This forest community includes stands dominated by loblolly pine. Within this community, the dominant canopy species is loblolly pine, while longleaf pine, slash pine, and shortleaf pine are scattered or co-dominant in some areas. Other canopy and subcanopy species that may be present include yellow-poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), eastern red cedar (*Juniperus virginiana*), post oak (*Quercus stellata*), black oak (*Quercus velutina*), elms (*Ulmus* spp.), white oak (*Quercus alba*), blackgum (*Nyssa sylvatica*), flowering dogwood (*Cornus florida*), black cherry (*Prunus serotina*), and various hickories (*Carya* spp.). *Vaccinium* species, especially deerberry (*Vaccinium stamineum*), are common understory species in loblolly pine forests.
- **Longleaf Pine – (Shortleaf Pine, Loblolly Pine) Forest:** This forest community includes stands that are dominated by longleaf pine. On Pelham Range, other common canopy species within this community include loblolly pine, shortleaf pine, hickories and various oaks: blackjack oak (*Quercus marilandica*), water oak (*Quercus nigra*), southern red oak (*Quercus falcata*), and post oak. Common shrub species include: low-bush blueberry (*Vaccinium angustifolium*), winged sumac (*Rhus copallina*), and oakleaf hydrangea (*Hydrangea quercifolia*). Groundcover in longleaf pine stands is often dominated by bracken fern (*Pteridium aquilinum*). Other herbaceous species that are commonly found within longleaf pine stands include: milkweed (*Asclepias* sp.), dwarf iris (*Iris verna*), birdfoot violet (*Viola pedata*), *Panicum* spp., and wood sorrel (*Oxalis* spp.). The mixed pine composition and higher canopy closure of this community may be the result of fire suppression in woodlands more typically dominated by longleaf pine.

- Loblolly Pine Forest, Temporarily-flooded: Loblolly pine-dominated communities that are temporarily flooded are included in this forest community. The dominant canopy species is loblolly pine; other canopy species may include slash pine (*Pinus elliotii*), water oak, willow oak (*Quercus phellos*), sweetgum, and American elm (*Ulmus americana*). Common sub canopy species include sweetgum, blackgum, and red maple. Temporarily flooded loblolly pine forests generally occur adjacent to forested wetlands or along perennial streams.
- Loblolly Pine Forest, Seasonally Flooded: Seasonally flooded forests dominated by loblolly pine were included in this forest community. In some areas, slash pine is dominant; however, the presence of slash pine is the result of past plantings as this species does not occur naturally in this region. Other common canopy and sub canopy species common to this community include sweetgum, blackgum, red maple, water oak, and willow oak. One example of this community was identified on Pelham Range; it is located adjacent to a large forested wetland in Training Area 4C.
- Oak-Hickory Forest: This community designation includes upland forests on Pelham Range dominated almost exclusively by oaks and/or hickories. Oak-hickory forests occur on both relatively mesic and xeric sites over a broad range of elevations. There is a significant amount of variation among oak-hickory forests on Pelham Range with respect to species composition (as a result of slope, aspect, and topographic position). Common canopy species include southern red oak, chestnut oak (*Quercus prinus*), post oak, white oak (*Quercus alba*), northern red oak, scarlet oak (*Quercus coccinea*), black oak, blackjack oak (*Quercus marilandica*), pignut hickory (*Carya glabra*), mockernut hickory (*Carya tomentosa*), and sand hickory (*Carya pallida*). Pines (loblolly pine, longleaf pine, and shortleaf pine) are scattered throughout the canopy in some stands. Common sub canopy species include flowering dogwood, black cherry, blackgum, red maple, and sourwood. Common shrub species include hairy sweetshrub (*Calycanthus floridus*), oakleaf hydrangea, spicebush (*Lindera benzoin*), low-bush blueberry, winged sumac, and various viburnums. Bracken fern is a common groundcover in this community.
- Mixed Mesophytic Forest: Mixed mesophytic forests occur throughout Pelham Range on relatively mesic sites. This community is often found between upland dry oak-hickory forests and more mesic floodplain forests. This designation encompasses forests that are dominated by a variety of hardwood species; oaks, hickories, and sweetgum are generally a significant component of mixed mesophytic forests on Pelham Range. Common oak and hickory species found within these relatively mesic forests include white oak, southern red oak, water oak, and shagbark hickory; however, other oak and hickory species may be present also. Other species that are often components of mixed mesophytic forests include: yellow-poplar, loblolly pine, red maple, sugar maple (*Acer saccharum*), green ash (*Fraxinus pennsylvanica*), black walnut (*Juglans nigra*), sweetgum, black cherry, elms, and many others. The small tree and shrub layer of mixed mesophytic forests are also generally very diverse and often include species such as flowering dogwood, hop hornbeam (*Ostrya virginiana*), American hornbeam (*Carpinus caroliniana*), spicebush (*Lindera benzoin*) and hairy sweetshrub (*Calycanthus floridus*).
- Floodplain Forest: Forests that have been included in this category primarily include hardwood forests along the floodplain of Cane Creek and its tributaries. Floodplain communities are generally rich in species composition. Common canopy species found throughout floodplain forests on Pelham Range include: yellow-poplar, American elm, sweetgum, water oak, cherrybark oak (*Quercus pagoda*), swamp chestnut oak (*Quercus michauxii*), sycamore (*Platanus occidentalis*), eastern cottonwood (*Populus deltoides*), box-elder (*Acer negundo*), red maple, sugar maple, green ash, river birch (*Betula nigra*), shagbark hickory (*Carya ovata*), loblolly pine, and willow oak. Common sub canopy species include black cherry, red maple, sugar maple, sugarberry (*Celtis laevigata*), flowering dogwood, hornbeam, hop hornbeam, silky dogwood (*Cornus amomum*), and red mulberry (*Morus rubra*). Switch-cane (*Arundinaria gigantea*) is common in floodplain forests.

- Water Oak-Willow Oak-Sweetgum Seasonally- Flooded Forest: This forest community generally is located in poorly drained and somewhat poorly drained low areas along streams and are swampy in nature. Forested areas that have been included in this category generally are dominated by sweetgum, water oak, and/or willow oak. Additional common canopy trees include green ash, yellow-poplar, American elm, and sycamore. Common sub canopy species include red maple, box elder, blackgum, American hornbeam, and sweetgum. Understory species often include azaleas (*Rhododendron* spp.), stiff dogwood (*Cornus foemina*), and tag alder (*Alnus serrulata*). This community often has standing water seasonally.
- Black Willow Seasonally-Flooded Forest: This wetland community is dominated by black willow. Other common tree and shrub species that may occur within this community include sycamore, red maple, stiff dogwood, buttonbush (*Cephalanthus occidentalis*), tag alder (*Alnus serrulata*), and elderberry (*Sambucus canadensis*). The vine component of this community is often well developed. This community may have standing water seasonally or throughout the year.
- Southern Red Oak-Post Oak-Longleaf Pine Forest: This community primarily includes mixed forests found on dry to dry-mesic areas of Pelham Range, along ridges, and on dry, rocky slopes. Generally, southern red oak, post oak, and longleaf pine make up a significant portion of the canopy; however, other common canopy species may include: chestnut oak; black oak; white oak; blackjack oak; loblolly pine; pignut hickory; sand hickory, and mockernut hickory. Common sub canopy and understory species include sourwood, flowering dogwood, and various hickories. The shrub layer and groundcover of this plant community may be dense or relatively sparse. Common shrub and ground cover species include winged sumac, low-bush blueberry, oakleaf hydrangea, muscadine, and bracken fern.
- Oak-Hickory-Loblolly Pine Forest: Mixed forests dominated primarily by loblolly pine, oaks, and hickories were included in this community. Mixed pine-hardwood forests occur over a broad range of topographic positions, including well drained creek bottoms, concave and convex land surfaces, and on all slope directions. Common canopy species include: loblolly pine, post oak, southern red oak, white oak, water oak, pignut hickory, mockernut hickory, sweetgum, winged elm, and yellow-poplar. Common sub canopy species may include flowering dogwood, black cherry, and sweetgum.
- Loblolly Pine-Sweetgum Forest: Mixed loblolly pine-hardwood stands found on lower slopes were designated as loblolly pine-sweetgum forests; loblolly pine and sweetgum are generally dominant canopy species. Other hardwood species in the canopy may include water oak, willow oak, white oak, hickories, yellow-poplar, green ash, and elm. These forest communities are generally found on lower slopes and on more mesic sites. Subcanopy species include blackgum, red maple, black cherry, and hop hornbeam.
- Longleaf Pine Woodland: On Pelham Range, longleaf pine woodlands are dominated by longleaf pine; however scattered oaks (i.e., post oak, southern red oak, blackjack oak) and loblolly pine are common in the canopy and/or sub canopy. Species composition of this community is similar in nature to the longleaf pine forest. Common sub canopy trees include flowering dogwood and black cherry. Common shrub species include: low-bush blueberry, winged sumac, and oakleaf hydrangea. Groundcover in longleaf pine stands is often dominated by bracken fern. Other herbaceous species that are commonly found within longleaf pine stands include: milkweed, dwarf iris, birdfoot violet, *Panicum* spp., and wood sorrel.
- Successional areas: As a result of disturbance (i.e., clear cut, southern pine beetle damage, fire), many areas on Pelham Range are in various stages of succession and have been characterized as shrub land. Shrub land is characterized by woody vegetation less than approximately 20 feet tall and is dominated by true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. Areas characterized as shrub land on Pelham Range generally are early successional areas dominated by seedlings, shrubs, woody vines, and herbaceous vegetation. Common seedlings in successional areas include oaks, hickories, persimmon (*Diospyros*

*virginiana*), black cherry, and blackgum. Both winged sumac, smooth sumac (*Rhus glabra*), and blackberry (*Rubus* spp.) are very common in these areas also. Herbaceous ground cover and woody vines are also generally abundant in successional areas.

- **Kudzu (*Pueraria lobata*):** Kudzu, an exotic species found throughout Alabama, is present in several forested areas throughout Pelham Range. Kudzu is an aggressive exotic species that has the ability to take over and destroy native plant communities. Plant communities that have been completely taken over by kudzu have been designated as such.
- **Black Willow Seasonally-Flooded Shrub Land:** Areas characterized as natural or semi-natural temporarily-flooded deciduous shrub land occur within the Battle Drill Area. Many of these areas are dominated by black willow and are therefore designated as black willow seasonally-flooded shrub land. Other common woody species of wetland shrub lands include buttonbush, elderberry (*Sambucus canadensis*), red maple, water oak, sweetgum, and stiff dogwood. Common herbaceous species include rushes (*Juncus* spp.), wool grass (*Scirpus cyperinus*), fireweed (*Epilobium* spp.), seedbox (*Ludwigia* spp.), witch grass (*Panicum virgatum*), cattail (*Typha latifolia*), fowl grass (*Glyceria striata*), goldenrod (*Solidago* spp.), blackberry, sedges, and water plantain (*Alisma subcordatum*) (USACE 2000).
- **Grassland:** There are no naturally-occurring grasslands at the FM-ARNGTC; however several areas are maintained in an herbaceous state by mechanical means or fire. These areas include ranges, portions of the Graham Drop Zone, and portions of the Battle Drill Area. Grasses common to open herbaceous areas include fescue (*Festuca elatior*), bahiagrass (*Paspalum notatum*), and Johnson grass (*Sorghum halepense*). Native grasses such as little bluestem (*Schizachyrium scoparium*), purple-top (*Tridens flavas*), broomsedge (*Andropogon virginicus*), and switchgrass (*Panicum virgatum*) also may be common throughout grassland areas. Common forbs found throughout grassland areas include Queen-Anne's lace (*Daucus carota*), milkweeds (*Asclepias* spp.), ragweed (*Ambrosia* spp.), asters (*Aster* spp.), tickseed (*Coreopsis* spp.), goldenrod, ironweed (*Vernonia* spp.), and vervain (*Verbena* spp.). In addition various seedlings and shrubs (i.e., sumac, blackberry) may be scattered throughout these areas. Due to frequent fires, herbaceous areas also occur within the impact areas.
- **Wildlife Openings:** Planted wildlife openings are generally planted with both summer and winter crops. Common species planted in the openings include: clovers (*Trifolium* spp.); oats (*Avena sativa*) and wheat (*Triticum aestivum*); cowpeas (*Vigna* spp.); soybeans (*Glycine max*); various greens; browntop (*Panicum ramosum*); millet; and deer vetch (*Aeschynomore americana*).

### F.6.3 Timber Inventory

A timber inventory was completed for the FM-ARNGTC in 2003. The inventory included all merchantable timber within Pelham Range and the Main Enclave except impact areas, developed areas, and the Graham Drop Zone.

Forest stands were typed (e.g., pine, pine-hardwood, hardwood) and mapped on Pelham Range in 2003. Stands as small as three acres were included in the mapping program. Because much of the areas were cleared for agriculture prior to acquisition by the Army in 1940, the majority of timber stands are relatively young. Most existing mature stands were planted or naturally developed through succession during the 1950s and 1960s (Pittman *et al.* 1991). Table 12 (Appendix O) identifies the forest type in acres for Pelham Range, and Table 13 (Appendix O) presents stand volumes for the inventoried timber. The FMP includes maps of forest stands on Pelham Range and the Main Enclave. Total merchantable timber values as of 21 February 2003, were estimated to be between \$26,142,649 (undiscounted for possible metal contamination) and \$13,071,322 (discounted for possible metal contamination; Sizemore & Sizemore, Inc. 2003).

Additional information pertaining to the timber inventory may be found in the following documents:

- An Inventory and Appraisal of the Timber Assets located on the Pelham Range and Main Enclave Area as of February 21, 2003 (Sizemore & Sizemore, Inc. 2003); and
- Forest Management Plan for the Fort McClellan Army National Guard Training Center (AMEC 2003c).

Table 13 in Appendix O contains the stand volumes by product for the FM-ARNGTC based on the 2003 survey. A new timber inventory is planned and will include the new parcel on Main Enclave.

#### F.6.4 Fauna

The Faunal Survey for Vertebrate Species for the Fort McClellan Army National Guard Training Center (AerostarSES 2017) documented 173 birds and thirty-five mammals on the FM-ARNGTC. In addition, sixty-four species of reptiles and amphibians and thirty-eight species of fish were observed and recorded. Eleven species of bats have been documented through numerous bat surveys. Lists of wildlife species documented in the 2017 faunal survey, various bat surveys, as well as species observed outside of surveys, are included in Appendix O.

Game species known to occur on Pelham Range include the following: wood duck (*Aix sponsa*), eastern wild turkey (*Meleagris gallopavo*), northern bobwhite (*Colinus virginianus*), mourning dove (*Zenaida macroura*), white-tailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), eastern fox squirrel (*Sciurus niger*), eastern cottontail (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*), and raccoon (*Procyon lotor*) (Aerostar 2017).

Game fish species known to occur on Pelham Range include the following: striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*), redeye bass (*Micropterus coosae*), spotted bass (*Micropterus punctulatus*), ten species of sunfish (*Lepomis* spp.) including bluegill (*Lepomis macrochirus*), channel catfish (*Ictalurus punctatus*), yellow bullhead (*Ameiurus natalis*), and black crappie (*Pomoxis niromaculatus*) (Aerostar 2017).

#### F.6.5 Threatened and Endangered Species and Associated Special Interest Natural Areas

Five Federally-listed species are known to occur at the FM-ARNGTC (more specifically, on Pelham Range): Tennessee yellow-eyed grass (TYG, *Xyris tennesseensis*); Mohr's Barbara's buttons (MBB, *Marshallia mohrii*); the gray bat (*Myotis grisescens*), the Indiana bat (*Myotis sodalis*); and the northern long-eared bat (NLEB, *Myotis septentrionalis*). Many of the areas containing these species have been designated as Special Interest Natural Areas (SINAs).

Not all listed species habitat areas are within designated SINAs, but are still managed by the AL ARNG for their protection. SINAs are delineations of communities that are rare, sensitive, unique or ecologically important. SINAs support critical species or associations of species which are dependent on the maintenance of healthy ecological systems. SINAs are designed to be managed at a community or system level, thereby insuring the protection of critical elements or species within these areas. Management goals for these areas are not necessarily compliance related, and represent FM-ARNGTC's efforts to sustain natural communities through a multi-disciplinary resource management program. They should also be considered flexible with dynamic boundaries that may require re-delineation in the future to provide for adaptive management. If any changes to SINA boundaries become necessary, they may be captured in future plan updates. The addition or deletion of areas can occur during future plan updates.

Technical assistance for the management of SINAs is provided by the USFWS and ADCNR through the development of the Endangered Species Management Component plan (ESMC) (Appendix S). Additionally, as part of the AL ARNG's coordination with ADCNR, fish and wildlife management at the FM-ARNGTC is consistent with Alabama's SWAP. As Alabama's state wildlife action plan, the SWAP

provides direction for and coordination of wildlife conservation efforts in Alabama. The overall goal of the SWAP is to identify and conserve those species in greatest need for conservation action while also addressing the full array of wildlife and habitats. Alabama's SWAP can be found on the ADCNR website at [https://outdooralabama.com/sites/default/files/Research/SWCS/AL\\_SWAP\\_FINAL%20June2017.pdf](https://outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf).

Based upon communications with the USFWS Daphne Ecological Services Field Office, seven Federally-listed species identified as having the potential to occur at the FM-ARNGTC are the gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), southern clubshell (*Pleurobema decisum*), white fringeless orchid (*Platanthera integrilabia*), Tennessee yellow-eyed grass (*Xyris tennesseensis*), and Mohr's Barbara's buttons (*Marshallia mohrii*). These species will be included in any future flora and fauna surveys, or surveys for threatened and endangered species on the FM-ARNGTC.

The five Federally-listed species present on FM-ARNGTC, as well as the additional five with the potential to occur, are shown in Appendix O: Table 14. This table represents the list of Federal species reviewed for potential effects by Federal actions on the FM-ARNGTC, in accordance with Section 7 of the ESA. The list is provided by the Daphne Ecological Services Field Office and is subject to change upon annual review and communications with the USFWS.

The Coosa creekshell, Alabama rainbow, tricolored bat and golden-winged warbler are under review for listing by USFWS and have been documented at FM-ARNGTC. The monarch butterfly was recently documented at FM-ARNGTC and is now a candidate for listing. The AL ARNG proactively monitors and manages documented petitioned species when possible in an effort to aid in their recovery and prevent future listing.

As part of the FM-ARNGTC's commitment to the protection and recovery of Federally-listed species, a regular monitoring program is conducted to track population changes and management strategies. This data is available upon request to the USFWS and ADCNR to assist in their efforts towards recovering these species. Additional information pertaining to critical species within FM-ARNGTC's SINAs and the monitoring programs may be found in the ESMC (Appendix S).

### **F.6.5.1 Tennessee Yellow-eyed Grass**

#### **F.6.5.1.1 Description and Regional Distribution**

TYG is a perennial herb in the yellow-eyed grass family (*Xyridaceae*). This species ranges in height from approximately 2.3 to 3.3 feet and typically grows in clumps of a few to many bulbous-based individuals. The fleshy bulb-like base is comprised of small, dark outer scales and fleshy, white to rose or purplish inner scales. Leaves are basal. The more interior leaves are flat to slightly twisted, smooth-edged and linear. These inner leaves are deep green in color, 3.5 to 18 inches long and up to 0.4 inch wide. The outermost leaves are short and scale-like (USFWS 1994).

Small yellow flowers are borne on a solitary, broadly ovoid, cone-like spike, 0.2 to 0.6 inches at maturity. Terminal spikes are composed of numerous imbricate bracts, most of which shelter a single axillary flower. Flowers on a spike open in late morning and wither by mid-afternoon. Generally only one or a few flowers are emergent from a spike at one time. Flowering scapes are generally 1.0 to 2.3 feet tall, rising above the linear leaves (USFWS 1994).

TYG was Federally-listed as endangered on July 26, 1991. At time of listing, only seven populations were known to occur: five in Lewis County, Tennessee; one in Bartow County, Georgia; and one in Franklin County, Alabama (USFWS 1992). At the time the recovery plan was completed (1994), at least fourteen populations were known, including both the Willett Springs and Lloyd's Chapel Swale populations. After the recovery plan was published, an additional TYG population was discovered at the ANAD, which now

extends onto Pelham Range along Firing Fan Creek near Gate 14. These three populations are the only ones known to occur in Calhoun County. Today, 20 extant populations are known to occur in Tennessee, Georgia, and Alabama (Boyd *et al.* 2000).

TYG occurs on wet or moist sites in open or thinly wooded areas. This species often occurs in seep-slopes, springy meadows, and on the banks of gravelly shallows of small streams. In addition, this species is generally found in areas where calcareous rocks are at or near the surface in circumneutral to basic soils (USFWS 1992). Characteristics common to most sites hosting TYG include: a permanent moisture regime; open sunny conditions; and calcareous bedrock or thin calcareous soils (USFWS 1994).

Four separate populations of TYG have been identified on Pelham Range: one along the edge of the pool at Willett Springs; one in the area known as Lloyd's Chapel Swale; one along the edges of Rock Creek in Training Area 8A at Pelham Range; and an additional location further along Rock Creek in Training Areas 6C and 6D. These locations have been designated SINAs and are identified on Figure 11a Appendix M, with the exception of the Training Areas 6C and 6D location. The location along Rock Creek in Training Areas 6C and 6D is recently discovered and is not surveyed or well defined at this time due to its location between impact areas.

TYG populations at all four locations have been altered through human activity including training and maintenance operations to form open areas exposed to recurring disturbances or mowing. At Willett Springs, this has involved frequent mowing of the grassed border above the spring pool. At Lloyd's Chapel Swale, disturbances from road use and maintenance have caused exposure of mineral soils. At the Gate 14 SINA, road and boundary maintenance has caused pooling and additional open areas along Firing Fan Creek. Monitoring programs at these two sites revealed that mowing and/or soil disturbances are needed to maintain these populations. The Rock Creek location is not completely defined but is currently known at a road crossing that has created an opening along the creek. Population monitoring is significantly restricted due to its location in the surface danger zone for the small and large impact areas. Without periodic disturbances to all population location areas, succession can be expected to slowly eliminate suitable habitat (Garland 1996). Therefore, the continuation of disturbances is considered critical to the long-term survival of these populations.

#### **F.6.5.1.2 Willett Springs SINA**

The Willett Springs SINA is located in the central portion of Pelham Range approximately 50 feet east of Cane Creek (Figure 12a, Appendix M). This SINA includes a perennial spring and an impounded 1/4-acre pool. The spring was impounded prior to army ownership in 1941, and has since functioned as a recreational area. Water levels within the impoundment are stable with an overflow pipe discharging excess water to the stream below the dam at around 440 gallons per minute (Cook Hydrogeology, LLC 2018), which flows to Cane Creek. Maximum depth of the pool is approximately eight feet.

The spring head of the artificial impoundment is boxed with rocks and cement. An earthen dam exists on the north side of the pool and a low rock and cement wall exists along the south and eastern sides of the pool. A cement pier extends approximately 16.5 feet out into pool. Muskgrass (*Chara* sp.), a multi-celled macro alga, is the only aquatic vegetation in the pool (Godwin 1998). Godwin (1998) found that the water was fairly clear during winter months and less clear during summer months due to plankton blooms. Godwin (1998) noted invertebrates in Willet Springs including the following taxon: Annelida (Oligochaeta), Amphipoda, Isopoda, Odonata, Megaloptera, Ephemeroptera, and Diptera (Chironomidae, Tabanidae, Simuliidae). There are no fish in the impoundment.

TYG occurs in clumps along the edge of the impoundment, on the old concrete pier extending out into the pool, and in small detached tussocks. In moist areas, a few feet inland of the water's edge, the plant can be found in association with a variety of sedges, grasses and other herbaceous plants.



#### **F.6.5.1.3 Lloyd's Chapel Swale SINA**

Lloyd's Chapel Swale is located along the southeastern boundary of Pelham Range, adjacent to Highway 109 and an Alabama Department of Transportation (ALDOT) right-of-way (Figure 12a, Appendix M). This relatively small site (approximately 1/4 acre) was designated as a SINA due to the presence of TYG. In this area, a spring-fed ephemeral stream flows along the boundary of Pelham Range and the ALDOT right-of-way creating a low wetland area. The actual spring is located on Pelham Range and flows across the boundary onto the right-of-way. Approximately half the TYG population is located within the confines of Pelham Range, while remaining plants are located across the fence on the ALDOT right-of-way. The area is and has been severely altered through human activities. On the Pelham Range side, a boundary road and fence were constructed across the seepage area. Together with road use and erosion/sedimentation, this area has been continually disturbed and altered. The ALDOT portion of the site has been planted in grass and is periodically mowed. ALDOT does not specifically monitor or regulate this area.

When the presence of TYG was discovered at this site in 1992, the boundary road was open to vehicular traffic. The annual status report stated that "vehicles using the road in wet weather have created an expansive mud puddle that blocked the roadway." This forced traffic to drive off the road eliminating vegetated areas containing TYG. In 1993, the Army built earthen berms across the boundary road north and south of the seepage area containing TYG to attempt to minimize disturbance from traffic. Sedimentation has always been a concern in this area, but when the boundary road was in use, sediments were routinely removed with a bulldozer during road maintenance. Review of the site in 1994 indicated that the berms and reduced disturbance could have long-term negative effects on the site. Therefore, in 1995, the berms were removed and gates were installed to restrict traffic.

With removal of the berms and the control of vehicular traffic, threats to the TYG population primarily include sedimentation and competing vegetation. Fire is used occasionally and bush hogging is conducted annually to control herbaceous and woody vegetation. Removal of encroaching saplings is conducted as needed to maintain the site's open conditions.

#### **F.6.5.1.4 Gate 14 SINA**

Rock Creek flows north from the ANAD property onto Pelham Range along the southern boundary of Pelham Range approximately 160 feet west of Gate 14. The site lies at the boundary between TA 8E and TA 23B (Figure 12a, Appendix M). A gravel boundary road crosses Rock Creek (Firing Fan Creek) at this location; no bridge exists. The existence of the road in conjunction with the boundary fence between Pelham Range and the ANAD has caused Firing Fan Creek to pool south of the boundary road and fence. This pooling has created an opening along the creek edges south of the boundary. The boundary road on the Pelham Range side has created openings in the forest canopy so that additional sunlight reaches the creek edges. TYG occurs along the creek edges in these openings and in the roadbed itself. The Gate 14 population is an extension of a TYG population from the adjacent ANAD property. Since Pelham Range is downstream of the ANAD, it is likely that this population will continue to expand on Pelham Range in this area. The additional location recently discovered further downstream and its unique characteristics have led to the conclusion that there is a chance for additional plants between the two locations. TYG has been found growing on tiny islands or shoals in the creek at TA 6C where no additional canopy clearing has been performed. It is possible that it may exist in areas that are not completely open. A survey is planned for the creek drainage from Gate 14 to its confluence with Cane Creek in an effort to locate additional populations.

#### **F.6.5.1.5 Rock Creek SINA**

TYG was discovered in 2016 on Rock Creek in Training Areas 6C and 6D (Figure 12a, Appendix M). The full extent of the population is not known. Further surveying is needed to define the extent of this

population. Monitoring is significantly restricted due to its location in the surface danger zone for the small and large impact areas.

### **F.6.5.2 Mohr's Barbara's Buttons**

#### **F.6.5.2.1 Description and Regional Distribution**

Mohr's Barbara's Button (MBB) is an erect, perennial herb in the sunflower family (Compositae). This plant ranges in height from approximately 1 to 2 feet. Leaves are alternate, lance-oblong, firm-textured, and three-nerved. Larger leaves, approximately 3-8 inches in length, are generally clustered at the base while smaller leaves occur along the stem. Flowers are produced in several heads in branched arrangements. They are tubular in shape and white to pale pink in color. Flowering occurs from mid-May through June. Fruiting occurs from July through August. The fruit is an achene (USFWS 1990).

This species is known to occur in both the Cumberland Plateau and the Ridge and Valley physiographic regions. At the time the recovery plan was published (USFWS 1991), fifteen populations of this species were identified in three Alabama counties: Etowah, Cherokee, and Bibb (USFWS 1991). However, since the preparation of the recovery plan, 47 additional local sites have been discovered in Bibb County, Alabama, representing approximately 10 new population centers. A population was discovered within the Large Impact Area on Pelham Range in 1993. New locations for MBB continue to be documented, specifically along roadways.

MBB occur in moist, open woodlands, along shale-bedded streams, and in swales adjacent to roadside rights-of-way. This species occurs in full sun or partial shade in grass-sedge communities. Most known populations occur on soils of the Conasauga-Firestone Association (USFWS 1990). Soils are typically alkaline, high in organic matter, and seasonally wet. On Pelham Range, soils in the area occupied by MBB include: Townley-Enders-Corryton complex, 2-8% slopes; Minvale-Bodine complex, 25-50% slopes; and Bodine-Minville complex, 5-15% slopes, stony. Generally, common associates include *Helenium autumnale*, *Helianthus angustifolius*, *Lythrum alatum*, *Ruellia caroliniensis*, *Asclepias viridis*, *A. hirtella*, *Helianthus mollis*, and *Silphium terebinthinaceum*. Surrounding communities often include mixed hardwoods and scattered pine (USFWS 1991). The future of this species is dependent on the maintenance of open prairie-like woodlands.

#### **F.6.5.2.2 Impact Area Barren SINA**

A relatively large population of MBB occurs in the western portion of the Large Impact Area of Pelham Range (Figure 12a, Appendix M). This area is used to detonate dud-producing ordnance and is restricted; access to the impact area must be coordinated and authorized by Range Control and the Explosive Ordnance Detachment (EOD).

The area of occurrence has been designated as the Impact Area Barren SINA. The plants are located along the margins of a shallow shale-bedded ephemeral stream within the Large Impact Area. Individuals are also located in more upland areas near the impact area's western boundary. Fires resulting from explosive munitions occur annually within this impact area and the high frequency of fire has prevented woody encroachment and maintained conditions favorable to this species. Because many of the known populations of MBB occur along roadside rights-of-way, the population in the Impact Area Barren SINA may represent one of the only remaining fire-maintained populations (Garland 1996).

The Impact Area Barren SINA is currently delineated as encompassing approximately 284 acres within the western portion of the Large Impact Area known as the impact area barren (Figure 12a, Appendix M). MBB is known to occur in only a small portion of the area designated as the Impact Area Barren SINA, but may occur scattered throughout. Due to the presence of unexploded ordnance, a survey of the area designated as the Impact Area Barren SINA is not feasible.

This SINA is comprised of an open xeric hardpan savanna ranging from relatively dense to open tree canopy. The herb layer is dominated by grasses, sedges, and rushes, with strong legume and composite components. The virtual absence of invasive exotics, at least on portions of the site, suggests that some of this area has never been disturbed by plowing. Shallow ephemeral streams overlying shale bedrock can be found throughout this area. MBB are found along many of these streams. An ocular estimate recorded about 3,000 individuals along the drainages during June 1995.

This area contains unexploded ordnance and is off-limits for any type of training or on-the-ground management (except for EOD). As a result of activities occurring within these areas, wildfires are common and are not suppressed. Fire breaks surrounding the Large Impact Area prevent the spread of wildfires to other land use areas on Pelham Range. Monitoring and active management of this species must be very limited due to the presence of unexploded ordnance and mission requirements of the Large Impact Area.

### **F.6.5.2.3 Additional Areas Containing MBB**

Pelham Range has experienced a steady increase in MBB population over the years. Additional areas containing MBB were first discovered in 2002 and continue to be discovered each year since. These new populations occur in TAs 4A, 4B, 5A, 5C, 7B and 7C. Most of the locations are in ditches, along road edges, or in drainages under various canopy conditions (Figure 11a, Appendix M).

The species continues to be found in TAs used for land navigation exercises, bivouac operations and vehicle training. These TAs are not included in any SINA designated for the protection of this species, however measures to provide for MBB protection have been taken. These include additional signage, flagging and briefing for units using these TAs. The AL ARNG uses two management strategies in these TAs including a restricted mowing schedule during the growing season and prescribed burning.

### **F.6.5.3 Gray Bat**

#### **F.6.5.3.1 Description and Regional Distribution**

The gray bat is a monotypic species that occupies a limited geographic range in limestone karst areas of southeastern United States. Populations are found mainly in Alabama, northern Arkansas, Kentucky, Missouri, and Tennessee (Garland 1996). Gray bats occur throughout eastern Alabama, but the majority of known gray bat populations occur in the northern part of the state (3D/I 1995). Within Alabama, gray bats are known from approximately 40 cave systems in 11 northern counties. Most of these caves are associated with the Tennessee River Valley (Garland 1996).

Gray bats are almost entirely restricted to cave habitats and utilize caves year-round, migrating seasonally between winter and summer caves. In winter, gray bats generally hibernate in deep caves that act as cold air traps. Gray bats mate upon arrival to these hibernation caves; however females store that sperm over the winter and fertilization occurs upon leaving the hibernation site in the spring. Maternity and bachelor colonies are established between mid-March and mid-May. Females form large maternity colonies in relatively warm caves in close proximity to large water bodies. These maternity caves are generally 1-4 km from rivers or reservoirs, which are used as foraging sites. Females give birth to a single young between mid-May and mid-June. Males form bachelor colonies in cooler caves near water bodies; bachelor colonies are sometimes established in cooler portions of maternity sites. Females return to hibernation (torpor) sites between mid-August and mid-September, while males do not return until October (USFWS 1996; Virginia Polytechnic Institute & State University 1996).

Gray bats are seasonally active leaving their summer roosts at dusk to forage and returning at dawn. Nursing females may return within hours of dusk to nurse their young. The gray bat is entirely insectivorous, primarily feeding on aquatic insects emerging from water bodies. Gray bats forage over open water or rivers

with riparian vegetation; sections of rivers lacking woody vegetation along their banks are generally not utilized by the gray bat as foraging habitat (USFWS 1996; Virginia Polytechnic Institute & State University 1996).

#### **F.6.5.3.2 Cane Creek Corridor SINA**

Gray bats were first discovered within the boundaries of Pelham Range in August 1995 during mist net surveys completed by 3D/I. Mist nets were placed primarily along Cane Creek, which provides high and moderate quality foraging habitat for gray bats. Additional surveys have included:

- Mist net surveys in June and July 1996 (3D/I 1997);
- Mist net surveys in July and August 2002 (Environmental Solutions & Innovations, LLC 2003);
- Mist net surveys in September 2005 (BHE Environmental, Inc. 2005);
- Mist net, ANABAT, radio telemetry surveys in July 2007 (Engineering & Environment, Inc. 2007);
- Mist net and ANABAT in June 2012 (Copperhead Consulting 2012);
- Mist net and ANABAT in June 2014 (Copperhead Consulting 2014);
- Mist net and ANABAT in July 2016 (Copperhead Consulting 2016); and
- Mist net and ANABAT in August 2018 (Copperhead Consulting 2018).

These surveys have shown that the gray bat utilizes the forested corridor along Cane Creek. Due to the presence of the gray bat, the corridor along Cane Creek was designated as a SINA. Cane Creek Corridor SINA consists of the entire seven-mile corridor of Cane Creek on Pelham Range (Figure 11a, Appendix M). Cane Creek enters Pelham Range in the northeastern portion of the installation and meanders westward across the installation. The creek is approximately 18 feet wide with two-year low flows averaging 15 cubic feet per second. The Cane Creek Corridor provides foraging habitat for the bat. In addition, tributary streams to Cane Creek, such as Clear Creek, likely provide some foraging since multiple surveys have indicated that Cane Creek tributaries are frequently used by gray bats.

Foraging habitat for the gray bat is also present along Cave Creek, which flows through the Main Enclave and is a tributary to Cane Creek. Radio telemetry surveys have suggested that gray bats roost in or near Weaver Cave, which is located along Cave Creek approximately 1 mile west of the Main Enclave (3D/I 1997) on private property. Gray bat habitat along Cave Creek of the Main Enclave is shown in Figure 12b, Appendix M.

#### **F.6.5.4 The Indiana Bat**

##### **F.6.5.4.1 Description and Regional Distribution**

According to the USFWS, Indiana bats hibernate during winter in caves or, occasionally, in abandoned mines. In the spring, they migrate to their summer habitat in wooded areas where they typically roost under loose tree bark on dead or dying trees. Indiana bats forage in or along the edge of forested areas and their primary food source consists of insects. Indiana bats are found over most of the eastern United States, with almost half of the estimated population hibernating in the caves of southern Indiana, with other contributing states of Missouri, Kentucky, Illinois, and New York. Other states within the current range of the Indiana bat include Alabama, Arkansas, Connecticut, Iowa, Maryland, Michigan, New Jersey, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Vermont, Virginia, and West Virginia.

##### **F.6.5.4.2 Cane Creek Corridor SINA**

Mist nets were placed primarily along Cane Creek, which provides high and moderate quality foraging habitat for Indiana bats. One male Indiana bat was captured on Pelham Range in 2014 (Copperhead 2014), but none were found in the 2016 or 2018 surveys (Copperhead 2016 & 2018). Male Indiana bats do not

typically migrate far from their hibernacula during the summer months and will use the hibernaculum and nearby roosts during the summer. The male Indiana bat captured in 2014 was radio tagged, which led to identification of a roost tree (dead standing loblolly pine) in TA 2B. Additional surveys have included:

- Mist net and ANABAT in June 2012 (Copperhead Consulting 2012);
- Mist net and ANABAT in July 2016 (Copperhead Consulting 2016); and
- Mist net, ANABAT, radio telemetry surveys in August 2018 (Copperhead Consulting 2018).

Female Indiana bats have been caught on the Shoal Creek Ranger District of the Talladega National Forest approximately 20 miles to the east. The habitat of the Talladega National Forest is much more mountainous than that of Pelham Range. According to the 2018 field surveys and report (Copperhead 2018), Pelham Range does not likely have maternity colonies of Indiana bats. The forested portions of Pelham Range (approximately 17,000 acres) are potential summer habitat for forest-dwelling bats such as the Indiana bat.

### **F.6.5.5 Northern Long-eared Bat**

#### **F.6.5.5.1 Description and Regional Distribution**

Northern long-eared bats (NLEB) have longer ears and a longer, more sharply pointed tragus than other *Myotis spp.* The females tend to be larger than the males (Barbour and Davis 1969). NLEB are distributed throughout much of Canada and eastern United States, extending through Alabama and Georgia and into northern Florida. Small numbers have been observed in the Bear Creek River System (Hilton and Best 2000) and Bankhead National Forest in northwestern Alabama. They likely also occur in other forested areas throughout the Piedmont and Cumberland Physiographic Regions.

#### **F.6.5.5.2 Cane Creek Corridor SINA**

Mist nets were placed primarily along Cane Creek. One male NLEB was captured on Pelham Range in 2014 (Copperhead 2014), but none were found in the 2016 or 2018 surveys (Copperhead 2016 & 2018). Additional surveys have included:

- Mist net and ANABAT surveys in June 2012 (Copperhead Consulting 2012);
- Mist net and ANABAT surveys in June 2014 (Copperhead Consulting 2014);
- Mist net and ANABAT surveys in July 2016 (Copperhead Consulting 2016); and
- Mist net and ANABAT in August 2018 (Copperhead Consulting 2018).

Male NLEB do not typically migrate far from their hibernacula during the summer months and will use the hibernaculum and nearby roosts during the summer. Female NLEB have been caught on the Shoal Creek Ranger District of the Talladega National Forest approximately 20 miles to the east. The habitat of Pelham Range and the national forest is very different – the national forest being more mountainous. According to the 2016 and 2018 field surveys and report (Copperhead 2016 & 2018), Pelham Range does not likely have maternity colonies of NLEB.

### **F.6.6 At Risk Species/Species of Concern**

Managing DoD lands in a way that both supports military readiness and sustains ecological integrity requires an understanding of the species and ecosystems that are found on and around them. The DoD contains the largest number of Federally-listed species of all major Federal agencies, and its lands harbor more imperiled species than either the National Park Service or U.S. Fish and Wildlife Service (Groves *et al.* 2000a). Many installations are located in biologically rich areas of the United States, including areas where human development is a major threat to biodiversity. Some of these installations have become the last refuges of imperiled species habitat in rapidly urbanizing landscapes. Proactive conservation of imperiled species and their habitats on and around FM-ARNGTC can help preclude the need for Federal

listing, reduce recovery costs, and protect significant biological diversity, while enabling the FM-ARNGTC to continue providing high quality military training. It is the FM-ARNGTC's intention to focus conservation efforts not only towards endangered or threatened species, but also towards species that may warrant Federal listing if population declines occur or continue.

Species richness, including the presence of rare, sensitive or declining species, and relative abundance is an indication of the biodiversity that exists on the FM-ARNGTC and suggests that the site provides a wide range of habitats for wildlife communities. The mosaic of mature and early successional, abundant edge, upland, bottomland, riparian and wetland habitats translates to a very diverse landscape within a relatively limited area. Current management practices including wildlife openings, prescribed burns, timber harvests, and riparian and wetland buffers produce a variety of quality habitats.

The FM-ARNGTC utilizes several sources to monitor and provide management guidance for species of special concern. CFR and communications with the USFWS Daphne Ecological Services Office provide information on Federal protection designations and petitions for listing. The ADCNR's SWAP (2015-2025) identifies the state's species of greatest conservation need (SGCN) and describes their habitats and known range within the state. The SWAP also identifies threats; research or survey needs; and prioritizes conservation actions and partnerships for achieving its goals. The SWAP utilizes the ALNHP database to provide species conservation status and priority information. Information on SGCN can also be viewed on ADCNR'S website, [outdooralabama.com](http://outdooralabama.com). A list of Threatened and Endangered Species as well as species petitioned for listing can be found in Appendix O: Table 14.

#### **F.6.6.1 Alabama Natural Heritage Program and NatureServe**

In order to facilitate the management of species in decline, the FM-ARNGTC relies on biological surveys and data compiled by the Alabama Natural Heritage Program (ALNHP) and NatureServe. The Alabama Natural Heritage Program was created and supported by The Nature Conservancy as part of its efforts to start a collection of natural heritage programs in the United States. ALNHP is now an ongoing, computer-assisted ecological inventory administered through the [Auburn University Environmental Institute](http://www.auburn.edu/~envinst/). The program was begun in January of 1989, and exists to clearly identify significant natural "elements" (rare and endangered species and communities of species) and to help establish conservation priorities in Alabama. The ALNHP can be found online at <http://www.alnhp.org/>.

NatureServe is a non-profit conservation organization whose mission is to provide the scientific basis for effective conservation action. NatureServe and its network of natural heritage programs, including ALNHP, are the leading source for information about rare and endangered species and threatened ecosystems. NatureServe represents an international network of biological inventories-known as natural heritage programs or conservation data centers-operating in all 50 U.S. states, Canada, Latin America and the Caribbean. Together they not only collect and manage detailed local information on plants, animals, and ecosystems, but develop information products, data management tools, and conservation services to help meet local, national, and global conservation needs. The objective scientific information about species and ecosystems developed by NatureServe is used by all sectors of society-conservation groups, government agencies, corporations, academia, and the public-to make informed decisions about managing natural resources. NatureServe can be found online at the following website: <http://www.natureserve.org/index.jsp>.

In 1991, ALNHP contracted with the Mobile District of USACE to conduct a biological inventory of Pelham Range. The primary purpose of this inventory was to investigate for the presence, or for the potential presence, on Pelham Range of Federally-listed species of plants and animals (i.e., threatened and endangered), species which were candidates for Federal listing, and species which were otherwise rare or

sensitive (e.g., State-listed or State-protected species). The investigation identified the general character of the natural communities on Pelham Range and identified/noted the occurrence of special or significant natural areas found.

The following six plant species with State ranking (ALNHP and NatureServe) were also recorded:

- field horsetail (*Equisetum arvense*),
- soapwort gentian (*Gentiana saponaria*),
- pinesap (*Monotropa hypopithys*),
- southern rein orchid (*Platanthera flava*),
- Alabama skullcap (*Scutellaria alabamensis*), and
- narrow-leaved trillium (*Trillium lancifolium*).

The 1991 survey also identified one insect species and one mussel species of concern found on Pelham Range:

- caddisfly (*Protoptila maculata*) and
- Alabama rainbow (*Villosa nebulosa*).

A vascular flora survey conducted in 2013 for Fort McClellan recorded many of the above plant species as well as:

- Eggert's sunflower (*Helianthus eggertii*),
- Mohr's Barbara's button (*Marshallia mohrii*),
- Cumberland rose-gentian (*Sabatia capitata*),
- prairie willow (*Salix nigra*),
- southern nodding trillium (*Trillium rugelii*), and
- Tennessee yellow-eyed grass (*Xyris tennesseensis*).

These species and their State status, rank, and priority designations are shown in Appendix N. The purpose of the 2013 survey was to catalog all vascular plant species on Pelham Range, update existing records, document new occurrences of rare plant taxa monitored by ALNHP, and to document and describe rare and noteworthy occurrences of ecological communities. The survey documented 681 species including nine species classified as rare and endangered by ALNHP. They are:

- field horsetail (*Equisetum arvense*),
- Eggert's sunflower (*Helianthus eggertii*),
- Mohr's Barbara's buttons (*Marshallia mohrii*),
- Cumberland rose-gentian (*Sabatia capitata*),
- prairie willow (*Salix humilis*),
- Alabama skullcap (*Scutellaria alabamensis*),
- lance-leaf trillium (*Trillium lancifolium*),
- southern nodding trillium (*Trillium rugelii*), and
- Tennessee yellow-eyed grass (*Xyris tennesseensis*).

Three significant natural communities on Pelham Range were documented and characterized. These communities are considered high quality occurrences of rare or otherwise globally imperiled plant

assemblages: Montane Longleaf Pine Woodland, Sagpond, and Rich Levee Mixed Hardwood Bottomland Forest (Alabama Natural Heritage Program 2013).

Many other at risk species were recorded on the FM-ARNGTC during the faunal survey in 2007 (AMEC 2007). The following fish species of concern were found in Cane Creek during the 2006-2007 faunal survey (AMEC 2007): Alabama shad (*Alosa alabamae*) and striped bass (*Morone saxatilis*). However, neither of these species were found during the most recent survey in 2017 (Aerostar 2017). No fish species of concern were found during the Aerostar 2017 faunal survey.

During the herpetofaunal portion of the 2007 survey, the following six species of reptiles and amphibians of conservation concern were recorded:

- eastern tiger salamander (*Ambystoma tigrinum tigrinum*),
- southern red-backed salamander (*Plethodon serratus*),
- eastern hog-nosed snake (*Heterodon platirhinos*),
- eastern six-lined racerunner (*Cnemidophorus sexlineatus sexlineatus*),
- mole kingsnake (*Lampropeltis calligaster rhombomaculata*), and
- queen snake (*Regina septemvittata*).

In 2006, a tiger salamander was found regurgitated by an eastern hog-nosed snake. Eastern tiger salamander larvae was collected from an isolated gum pond in TA 23C at Pelham Range in August 2016.

In addition to several of the previously discovered species, the herpetofaunal survey of 2017 completed by Aerostar identified the following additional species of concern: the southeastern five-lined skink (*Emeces inexpectatus*), the red corn snake (*Pantherophis guttatus*), and the brownback salamander (*Eurycea aquatic*). The 2017 faunal survey also identified seven important herpetofaunal habitats on Pelham Range. These habitats are springs and isolated or ephemeral wetlands harboring several species of salamanders, newts, frogs, and snakes, any of which are species of concern. Protection of these special habitats is critical to protecting specific herpetofaunal species of concern and maintaining biological diversity on Pelham Range.

#### **F.6.6.2 Birds of Conservation Concern**

The FM-ARNGTC relies on the SWAP and the ALNHP database to monitor the conservation status of bird species found on the installation as well as *Birds of Conservation Concern (BCC) 2008*, a report by the USFWS Division of Migratory Bird Management. The *BCC 2008* uses current conservation assessment scores from three bird conservation plans: Partners in Flight North American Landbird Conservation Plan (PIF; Rich *et al.* 2004), the United States Shorebird Conservation Plan (USSCP; Brown *et al.* 2001, USSCP 2004), and the North American Waterbird Conservation Plan (NAWCP, Kushlan *et al.* 2002). This report's goal is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally-threatened or endangered) that represent the USFWS's highest conservation priorities. *BCC 2008* is intended to stimulate coordinated and collaborative proactive conservation actions among Federal, State, Tribal, and private partners. By focusing attention on these highest-priority species, *BCC 2008* promotes greater study and protection of the habitats and ecological communities upon which these species depend, thereby contributing to healthy avian populations and communities.

The FM-ARNGTC supports a wide diversity of avian fauna, including many species of concern. The following forty-six avian species of concern (Federal and/or State-listed species of concern) were documented on Pelham Range during the 2017 faunal survey:



- green heron (*Butorides virescens*)
- American bittern (*Botaurus lentiginosus*)
- whimbrel (*Numenius phaeopus*)
- American black duck (*Anas rubripes*)
- Cooper's hawk (*Accipiter cooperii*)
- golden eagle (*Aquila chrysaetos*)
- northern harrier (*Circus cyaneus*)
- peregrine falcon (*Falco peregrinus*)
- American kestrel (*Falco sparverius*)
- northern bobwhite (*Colinus virginianus*)
- king rail (*Rallus elegans*)
- Sandhill Crane (*Grus Canadensis*)
- solitary sandpiper (*Tringa solitaria*)
- American woodcock (*Scolopax minor*)
- yellow-billed cuckoo (*Coccyxus aestivalis*)
- chuck-wills-widow (*Caprimulgus carolinensis*)
- whip-poor-will (*Caprimulgus vociferous*)
- common nighthawk (*Chordeiles minor*)
- chimney swift (*Chaetura pelagica*)
- red-headed woodpecker (*Melanerpes erythrocephalus*)
- yellow-bellied sapsucker (*Sphyrapicus varius*)
- olive-sided flycatcher (*Contopus cooperi*)
- blue-headed vireo (*Vireo solitaries*)
- warbling vireo (*Vireo gilvus*)
- loggerhead shrike (*Lanius excubitor*)
- brown-headed nuthatch (*Sitta pusilla*)
- sedge wren (*Cistothorus platensis*)
- wood thrush (*Hylocichla mustelina*)
- Wilson's warbler (*Cardellina pusilla*)
- blackpoll warbler (*Dendroica striata*)
- Kentucky warbler (*Geothlypis Formosa*)
- worm-eating warbler (*Helmitheros vermivora*)
- Louisiana waterthrush (*Parkesia motacilla*)
- prothonotary warbler (*Protonotaria citrea*)
- cerulean warbler (*Setophaga cerulean*)
- prairie warbler (*Setophaga discolor*)
- yellow warbler (*Setophaga petechial*)
- Cape May warbler (*Setophaga tigrina*)
- golden-winged warbler (*Vermivora chrysoptera*)
- blue-winged warbler (*Vermivora cyanoptera*)
- Bachman's sparrow (*Aimophila aestivalis*)
- grasshopper sparrow (*Ammodramus savannarum*)
- field sparrow (*Spizella pusilla*)
- common grackle (*Quiscalus quiscula*)
- eastern meadowlark (*Sturnella magna*)
- bobolink (*Dolichonyx oryzivorus*)

Pursuant to EO 13186 and associated MOU between DoD and USFWS, efforts will be implemented that are practicable and reasonable that avoid or minimize impacts on migratory birds for nonreadiness activities.

The following eight mammal at risk species were documented on the FM-ARNGTC during the 2017 faunal survey or by observation by natural resources staff:

- short-tailed shrew (*Blarina brevicauda*),
- least shrew (*Cryptotis parva*),
- southeastern shrew (*Sorex longirostris*),
- oldfield mouse (*Peromyscus polionotus*),
- long-tailed weasel (*Mustela frenata*),
- eastern wood rat (*Neotoma floridana*),
- eastern harvest mouse (*Reithrodontomys humulis*), and
- black bear (*Ursus americanus*).

Federal and State status, rank and priority designations for all at risk species found on FM-ARNGTC are shown in Appendix N.

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**APPENDIX G**  
**FOREST AND FIRE MANAGEMENT**

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## G. FOREST AND FIRE MANAGEMENT

### G.1 Overview

Currently, forestland at the FM-ARNGTC is managed in accordance with the FMP (AMEC 2003), which incorporates information from the most recent FM-ARNGTC timber inventory, completed in 2007. A new inventory is planned for 2020. Information in this section is consistent with the FMP and would be used in conjunction with the FMP. The FMP is an INRMP component plan and is listed in Appendix S.

The Army's forest management program is required, per AR 200-1, to "be compatible with mission operations and support conservation compliance, sustainability, and natural resources stewardship." AR 200-1 directs management strategies to be broad-based to optimize overall natural resources benefits. Silvicultural treatments must be designed to improve military mission areas, and when possible, accomplish other objectives such as wildlife habitat and/or timber production. Thinnings, intermediate harvests, and salvage cuts are to be continued if the actions are described and planned in the approved INRMP.

### G.2 Compliance

Laws and regulations pertaining to forest management include:

- Title 9 of the 1975 Code of Alabama (Conservation and Natural Resources);
- Alabama Certified Burning Act;
- Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136);
- Forest and Rangeland Renewable Resources Planning Act (16 USC §1601 *et seq.*);
- NEPA (42 USC §4321);
- SAIA (16 U.S.C 670 *et seq.*);
- Sale of Certain Interests in Land, Logs (10 USC §2665);
- Clean Water Act; and
- Endangered Species Act.

These laws and regulations are described in Appendix C.

### G.3 Goals and Objectives

The INRMP's primary purpose is to support the AL ARNG Mission and readiness. This purpose is achieved by protecting, maintaining, and restoring natural resources on FM-ARTNGTC through the application of ecosystem management principles. The following INRMP goals and supporting objectives are identified as critical components to supporting the AL ARNG Mission. Objectives for achieving INRMP goals are further detailed in Appendices G, I, H, J. Projects to support these objectives can be found in Appendix T, Table 24 - Planned Projects.

#### **Maintain a sustainable, diverse, and productive forest.**

*Objectives (Appendices G and I)*

- 8a: Maintain forest inventory (G)
- 8b: Improve forest health and habitat quality through timber harvesting (G)
- 9a: Suppress or prevent damage caused by wildfire. (G)
- 9b: Prescribe burn (G)
- 10a: Adhere to the guidelines and projects presented in the IPMP (G)
- 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical techniques (G)

- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP (G)
- 11a: Adhere to the guidelines and projects presented in the FM-ARNGTC Invasive and Exotic Species Management Plan (I)
- 11b: Control invasive exotic species (I)

**Protect, maintain and restore aquatic ecosystems.**

*Objectives (App I)*

- 4a: Characterize riparian communities
- 4b: Implement riparian buffer zones
- 5a: Characterize wetland communities
- 5b: Implement wetland buffer zones
- 6a: Identify and rehabilitate eroding training lands
- 10a: Adhere to the guidelines and projects present in the IPMP
- 11b: Control invasive exotic species

**Protect threatened and endangered species, species of concern and their habitats.**

*Objectives (App I)*

- 6a: Identify and rehabilitate eroding training lands
- 7a: Monitor communities that could support threatened and endangered species
- 7b: Manage and maintain listed plant habitats
- 7c: Improve/protect unique habitats for listed and at-risk species
- 10a: Adhere to the guidelines and project present in the IPMP
- 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques
- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP
- 11b: Control invasive exotic species

**Provide opportunity for recreational use that is compatible with the AL ARNG Mission and natural resources management.**

*Objectives (Apps H and J)*

- 2a: Manage habitats for all native species (H)
- 2b: Assess faunal communities (H)
- 3a: Collect and maintain data on game species (J)

**Make natural resources management decisions using the best available scientific and field-tested information.**

*Objectives (Apps G, H, I, J)*

- 1b: Characterize natural communities (I)
- 2b: Assess faunal communities (H)
- 3a: Collect and maintain data on game species (J)
- 4a: Characterize riparian communities (I)
- 5a: Characterize wetland communities (I)
- 6a: Identify and rehabilitate eroding training lands (I)

- 7a: Monitor communities that could support threatened and endangered species (I)
- 8a: Maintain forest inventory (G)
- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP

#### G.4 Management Strategies

As described in the FMP for FM-ARNGTC, TAs are used as the primary management unit for forestry activities (i.e., prescribed fire, cutting). However, due to the variability within TAs, actual forest management activities occurring within a particular TA may vary. For example, a TA may contain both upland pine-dominated communities which will be burned on a three-year rotation and bottomland hardwood wetlands which will not be managed using prescribed fire. Management of forest stands on Pelham Range will be conducted consistent with mission requirements. Longleaf pine will be favored in all silvicultural practices conducted on sites with existing longleaf populations. On suitable upland sites management practices will be conducted with the eventual goal of restoring longleaf pine to its historic sites. Forest stands on Pelham Range will be managed on a multiple-use, sustained-yield basis. Multiple uses include military land use, longleaf pine restoration, timber production, recreation, habitat maintenance, and wildlife management. Forest management practices will be scheduled around mission-related activities.

The FMP proposes prescribed burning and thinning as the primary forest management tool. Other management tools will be used on an as-needed basis and are not specifically scheduled. The proposed prescribed burning for each TA and the proposed silvicultural treatments for forest stands at FM-ARNGTC are detailed through FY 26.

Silvicultural activities occurring on Pelham Range will be in accordance with Alabama's Best Management Practices for Forestry (AFC 2007). BMPs include recommendations for streamside management zones, stream crossings, access roads, timber harvest, site preparation, reforestation, prescribed burning, wildfire suppression, chemical treatments, and wetlands management. These BMPs can be obtained on-line at the website "Alabama's Best Management Practices for Forestry", <http://www.forestry.state.al.us/>

Management policies and specific management strategies pertaining to cutting, site preparation and regeneration, prescribed burning, and wildfire suppression, in-house timber use, forest pests and chemical treatments, wildlife habitat, and southern pine beetle are discussed in the following subsections. The only planned forest management activities on Pelham Range are prescribed burning, thinning, wildfire suppression (firebreak maintenance), and southern pine beetle control activities.

The AL ARNG shall fulfill NEPA requirements prior to all significant forestry activities. The FM-ARNGTC Environmental Section will be responsible for determining NEPA requirements with respect to forest management activities. The level of detail for NEPA compliance will be evaluated on a case-by-case basis.

There are four bat species of concern that are found at Pelham range: gray bat, Indiana bat, northern long-eared bat, and tricolored bat. The gray bat, Indiana bat, and northern long-eared bat are federally protected; and the tricolored bat is being considered for listing by the USFWS. The USFWS has advised that the current conservation measures for other bats at Pelham range will be sufficient for protecting tricolored bats, unless new information changes the current knowledge of the species' habitat requirements. Concurrence with USFWS dated January 24, 2018 regarding forestry management practices impacts on protected species (including the above listed bat species) found that the following activities may affect, but are not likely to adversely affect the aforementioned bat species at Pelham Range:

- Selective timber thinning in accordance with the forest management plan (FMP);



- Prescribed burning in accordance with the prescribed burn plan;
- Herbicide applications to control competition and invasive species in pine stands;
- Maintenance along previously existing ROWs; and
- Clear cutting under 1 acre such as for the treatment of the southern pine beetle infestation.

In the USFWS correspondence letter, the following conditions and restrictions were provided:

- Tree cutting and prescribed burning may occur any time of year except during the non-volant pup season (June 1 – July 31).
- Dead trees, snags, or trees with exfoliating bark shall not be removed except for safety reasons during the non-volant pup season.
- Herbicide applications in forested environments shall be targeted, plant specific, and follow the conservation measures specified in the programmatic agreement for bats.
- Areas containing federally listed Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be buffered and marked for avoidance prior to forestry activities in the vicinity.
- Areas containing Mohr's Barbara's buttons and Tennessee yellow-eyed grass will be excluded from prescribed burns after April 1<sup>st</sup>.
- If listed species are documented during presence/absence surveys of an area planned for forestry activities, the action will be modified to incorporate avoidance measures such as exclusion buffers.
- If a newly listed species or listed species not previously documented at FM-ARNGTC is found in any survey, the AL ARNG will cease forestry activities until consultation for that species is completed (with the exception of tricolored bat).

This consultation, as well as the 2015 programmatic agreement for northern long-eared bat and Indiana bat, can be found in Appendix A, Agency Correspondence. Additional details are provided in Appendix I.

#### **G.4.1 Cutting**

Cutting, or harvesting, is used as a silvicultural practice to achieve various objectives. Different types of cutting include clear-cut, seed tree cut, shelter wood cut, thinning, salvage cut, and sanitation cut as shown in Appendix O: Table 15.

Site condition and overall strategy for managing a particular type of stand are considered prior to determining the type of harvest or silviculture action. Harvest may vary from single-tree selection in hardwood stands to shelter wood or seed tree cuts in pine or pine/hardwood stands to clear-cuts for special purposes.

Clear cuts will be limited to specific requirements, such as disease/insect damage control, construction clearing, removal of over-mature stands and salvage operations. Storm damage or insect/disease may require salvage or sanitation cuts. Harvesting operations within floodplains, wetlands, and riparian zones will be restricted in accordance with (IAW) Alabama Best Management Practices for Forestry (2007).

An approximate 8-10 year cutting cycle is used to optimize the number of intermediate silvicultural treatments during any one pine rotation period. Each stand, however, is individually evaluated to determine silvicultural objectives. In some instances stands may be heavily thinned to enhance wildlife values, subsequently increasing the cutting cycle length. In other situations, the merchantability or size of the stand may necessitate lengthening the cutting cycle. The FMP provides the proposed silvicultural treatments for forest stands at FM-ARNGTC, including proposed thinning, cutting (due to damage), and planting. These activities are proposed to occur through 2026. Appendix O: Table 16 outlines the proposed yearly scheduled for thinning at the FM-ARNGTC.

Prior to harvesting operations, each stand will be evaluated to determine if trees are physiologically mature and have reached an age where a decline in vigor is measurably evident. Appendix O: Table 17 summarizes general harvesting guidelines for species found on Pelham Range.

Close coordination is maintained between the Pelham Range forestry personnel and the USACE Mobile District Forester (Resident Forester) in planning timber harvests. The Resident Forester is informed of any metal-contaminated timber. In addition, harvest areas are assessed by both foresters and the Range Control Officer to ensure safe and orderly conduct of harvesting operations. Harvesting within range fans must be conducted with permission from the Range Control Officer on a daily basis. Coordination is also maintained, as necessary, with Range Control to avoid conflict with training exercises and other activities occurring in proposed timber sale areas.

During harvest operations, timber is selected in accordance with guidelines established in U.S. Army Training Manual (TM) 5-631, paragraph 2-5. Generally, the following trees are marked for removal:

- **Sanitation trees:** Trees in which wood-destroying fungi are unmistakably evident. Trees infected with fusiform rust are removed when multiple infections will result in timber, which will not reach saw timber class. Trees heavily infested with bark beetles are marked for removal.
- **Poor risk trees:** Included are those in which the loss of marketable wood exceeds the annual growth of new wood; those which are over-mature and suppressed, unthrifty due to insect or fungus attack, or weakened mechanically and subject to wind throw; and those damaged by fire, logging, or insects.
- **Pine wolf tree:** Pine trees with large heavy limbs or spreading crowns which occupy a large area and suppress thrifty young trees around them.
- **Poorly formed trees:** Trees not suitable for saw timber because of form.
- **Mature trees:** Trees which have passed the peak of annual growth and natural vigor.

Markets are generally good for pine saw timber and pulpwood in the region. There are numerous mills within viable trucking distance from the FM-ARNGTC. These mills produce a range of products that include paper products, dimensional lumber, chip board, poles, and manufactured wood products.

#### G.4.2 Site Preparation and Regeneration

Site preparation includes activities designed to enhance site conditions and improve germination rates and/or seedling survival. Site preparation could include drum chopping, shearing, raking, piling into windrows, burning, or herbicide applications. Mechanical site preparation has been minimized in recent years with the virtual elimination of clear cutting. Most sites are prepared using prescribed burning to minimize soil disturbance.

Regeneration is the establishment of trees through natural or artificial means. Natural regeneration is used following seed tree or shelter wood cuts, while artificial regeneration is generally used following clear cuts. Artificial regeneration involves direct seeding or planting.

Natural regeneration is used when there is adequate stocking of high quality seed trees and optimal site characteristics. When these conditions are not present, subsequent artificial reforestation will be prescribed. Longleaf pine will be the only species of pine artificially regenerated on suitable upland sites. Machine or hand planting will be the selected method when an adequate seed source is unavailable. Because of manpower and equipment requirements in hand planting, these projects are usually accomplished via contract. Machine planting is also accomplished through contract. Spacing of seedlings during planting can vary due to specific site conditions and management objectives but will generally be 8 x 10 feet (544 trees/acre). This spacing permits equipment to pass between rows in subsequent thinning operations.

### G.4.3 Prescribed Burning

Prescribed burning is the purposeful application of fire in a controlled, knowledgeable manner that would be used as an effective forest management tool. The occurrence of fire is a natural component of many Southern forests and prescribed burning can be a desirable and economically-sound management practice on most pine sites. Prescribed fire is generally not used on hardwood sites; however, occasional burns through a hardwood stand can be beneficial. Prescribed fire would be used to accomplish the following.

- Reduce hazardous fuels – Periodically burning the underbrush that accumulates under pine stands would significantly decrease the chance of a catastrophic forest fire.
- Dispose of logging debris – A prescribed burn is a feasible option to decrease the number of un-sellable limbs, stems, and tops left after logging operations.
- Prepare sites for seeding or planting – Prescribed burns often expose adequate mineral soil and control competing vegetation.
- Improve wildlife habitat – Prescribed burning is recommended to improve wildlife habitat in loblolly, shortleaf, and longleaf pine stands. Prescribed burns generally increase forage by keeping hardwood sprouts short, tender, palatable, and abundant. Deer, dove, quail, and turkey generally benefit from prescribed burns.
- Manage competing vegetation – Prescribed burning is an effective way to control invasive hardwoods in pine stands.
- Control insects and disease – Prescribed burns would be used to control some insects and diseases.
- Enhance appearance – Prescribed burns often enhance recreation and aesthetic values of a forest by removing understory brush. This would also enhance the training value.
- Perpetuate fire-dependent species – Prescribed burning may be used to perpetuate many fire-dependent species. However, it is imperative to understand the ecology of the species to know which months would be ideal for a burn (Wade and Lunsford 1988).
- Improve training opportunities – Prescribed burns can clear forested areas of potentially dangerous materials, and enhance troop training within these areas. Through the removal of overgrowth, deadfalls and tree piles, the regeneration of the area enhances different training scenarios, to include movement to contact, force on force and cover and concealment tactics.

The AL ARNG will utilize a systematic prescribed burning program to minimize the potential danger of wildfires by reducing the quantity of fuels on the forest floor. Areas highly susceptible to fires will be burned on an annual basis, while other pine-dominated areas will be burned approximately every three years. Fuel reduction burns will occur in the winter during acceptable weather conditions. The FMP includes a full description of the prescribed burning schedule and a map of the proposed burn TAs for FM-ARNGTC, scheduled through FY 26. Appendix O: Table 18 outlines the proposed yearly schedule for proposed burns at the FM-ARNGTC, the TAs for proposed burns and the year in which these actions are proposed to take place.

Prescribed burns may also be administered to improve wildlife habitat. Burns during January to March are not anticipated to interfere with nesting season; however, some areas would remain unburned to provide sufficient cover for nesting. Quail, turkey, and small game generally benefit from prescribed burns every two years, while deer benefit from a prescribed burn rotation of two to four years (USDA NRCS 1999). As conditions and training schedules permit, growing season burns will be incorporated into the burn schedule at the FM-ARNGTC. Growing season burns will be utilized to improve wildlife habitat and encourage a native herbaceous understory community in suitable pine stands.

All prescribed burns will be conducted in accordance with the State of Alabama burning ordinances, good forest management practices, and FM-ARNGTC Range Control guidance. Smoke management has become

an important factor in scheduling prescribed burns. Weather conditions and the proximity of the burn to roads and built-up areas will be evaluated prior to each burn.

General guidelines for prescribed burning are listed below.

- Burns should be administered one to three days after a rain event so that surface fuels are dry and the soil is moist.
- Humidity should be between 30 and 55 percent.
- Air temperature should range between 20 and 50 °F in winter and 80 to 95 °F in summer.
- A steady wind (approximately 1-3 mph within the stand and 6-15 mph in the open) from the north or northwest is best (USDA NRCS 1999).

The reader should note that these guidelines are not site-specific and site conditions could warrant different guidelines. For example, the Graham Drop Zone may need winds greater than 15 mph and lower humidity values to burn.

Smoke management will be part of the prescribed burning plans for Pelham Range. General guidelines for smoke management are as follows:

- Identify smoke sensitive areas (i.e., highways, airports, hospitals, farms with livestock or poultry, and populated areas).
- Obtain and use weather and smoke management forecasts.
- Do not burn during pollution alerts or stagnant air conditions.
- Comply with air pollution control regulations.
- Burn when conditions are good for rapid dispersion.
- Use test fires to confirm smoke behavior.
- Use backing fires when possible for they produce fewer pollutants and restrict visibility less.
- Have an emergency plan if the prescribed burn gets out of control.

Additional guidelines pertaining to prescribed burning are listed in Guide sheet AL-338 (USDA NRCS 1999). The FMP provides the proposed prescribed burn schedule for each TA through FY 13.

#### **G.4.4 Army Wildland Fire Policy Guidance (August 2002)**

The Army Wildland Fire Policy Guidance (August 2002) supplements AR 420-90 (Fire and Emergency Services) and AR 200-1 (Environmental Protection and Enhancement). This guidance requires installations with unimproved grounds that present a wildfire hazard and/or installations that utilize prescribed burns as a land management tool will develop and implement an Integrated Wildland Fire Management Plan (IWFMP). The IWFMP (2015) was developed to reduce wildfire potential, protect and enhance valuable natural resources, integrate applicable State and local permit and reporting requirements, and implement ecosystem management goals and objectives on the FM-ARNGTC facilities. It has been fully integrated with the goals and management activities of the AL ARNG outlined in this INRMP. The IWFMP is an INRMP component plan and is listed in Appendix S.

Wildfires are controlled or extinguished at the FM-ARNGTC, depending upon time of year, the location of the fire, and potential for movement of the fire due to weather conditions. Firefighting tools include the use of water from the local fire suppression systems or suppression aids. Currently, there are no chemicals used for the suppression of fires. However, foam is available. The chemical component for the foam [Hi-combat A (Class A firefighting foam)] utilized at the FM-ARNGTC is identified as follows: Water (68%); Synthetic Detergent (30%); Propylene Glycol (16%); Dipropylene Glycol Monomehtylether (5%) and Corrosion Inhibitors (1%).

## **G.4.5 Wildfire Suppression**

### **G.4.5.1 FireBreaks and Wildfire Prevention**

Wildfire prevention, detection, and control are interrelated. Firebreaks are an essential management tool for both prescribed burning and wildfire prevention. Most wildfires on Pelham Range result from the use of pyrotechnic devices and/or tracer fire. In an effort to confine fires to the smallest area possible, active impact areas and ranges where tracers are utilized are surrounded by firebreaks. These established firebreaks form the primary defense perimeter for areas that experience recurring fires. Firebreaks are also maintained around numerous boundaries of Pelham Range. Roads on Pelham Range comprise part of the firebreak system.

Firebreaks may be characterized as primary or secondary firebreaks. Primary fire breaks are maintained on a three year cycle that coincides with the prescribed burn schedule for a TA. The majority of primary fire breaks consist of the network of interior roads in that TA. Secondary fire breaks were constructed in the past but are no longer maintained. They can be cleared rapidly if the need arises for a specific fire. New fire breaks are only constructed in an emergency situation or due to changing fire management requirements created by new facilities or specific management objectives. The construction of these new fire breaks will be reviewed by the NEPA process.

Roads and fire breaks are maintained by The Alabama Forestry Commission, FMTC Range Control, Facilities, and/or Environmental personnel. To reduce the chances that wildfires will occur on Pelham Range, the AL ARNG will:

- Maintain direct communication among Range Control, local Fire Departments, Environmental personnel, and troops;
- Post fire prevention notices during dry weather. Information is obtained by Range Control from the AFC;
- Educate troops and personnel on the dangers of wildfires through the use of fire danger classes. Troops are regularly verbally reminded to adhere to all range regulations and guidance regarding fire, including those pertaining to reporting and taking action on fires outside of duded impact areas;
- Require troops to report wildfires that they encounter in the field;
- Avoid the use of pyrotechnic devices (smoke grenades, flares) in dry grass or leaves due to the risk of wildfire;
- Smother smoldering or burning stumps with mineral soil; and
- Cut down burning or smoldering snags that could fall across a fire break.

The Installation Wildland Fire Program Manager reserves the right to recommend the suspension of use of pyrotechnic devices and tracer ammunition due to potentially hazardous fire weather conditions. This recommendation will be provided to the Range Control Officer in Charge as an extra safety precaution.

### **G.4.5.2 Allow Burn Policy**

In many areas of Pelham Range where a regular fire regime is necessary for management of sensitive species or unique natural habitats, e.g. longleaf pine, an allow-burn will be implemented for wildfires as long as the fire can be contained effectively within firebreaks.

### **G.4.5.3 Fire Reporting**

Fire reports are generated by the Radio Telephone Operator (RTO) desk. Copies of the report are provided to FM-ARNGTC Environmental personnel. When fires are confined to ranges and impact areas, they are

not considered economically or ecologically damaging. However, the location, time, and size of these fires are maintained in a logbook.

#### **G.4.6 In-house Timber Use**

Timber harvested for installation use as training course material, parking lot borders, posts, range materials, etc., will be marked, tallied and recorded for inclusion in end of year reports. Troops training in the field are not permitted to use trees for training activities unless it is deadfall or the activity has been approved through the FM-ARNGTC Environmental office.

#### **G.4.7 Wildlife Habitat**

Forest management is one of the primary activities that impacts wildlife habitat. The quality of wildlife habitat is a result of available food and cover which is dependent on forest characteristics (i.e., size, shape, age, age class distribution, species composition, and density) and management practices (i.e., rotation length, regeneration, prescribed burning). Generally, habitat variety and diversity are associated with wildlife diversity and abundance. Location, shape, size, type, and distribution of timber cuts are analyzed from the standpoint of wildlife habitat management, to provide a series of vegetative stages that are beneficial to both forestry and wildlife.

Strategies for enhancing wildlife habitat through forest management would include maintaining corridors and streamside management zones to prevent fragmentation while creating stands that give a large amount of habitat for game and non-game species; allowing mast-producing trees, at least five per acre, to remain as source of food for numerous wildlife species; maintain portions of stands with snags and large trees for cavity-nesting species, approximately one den tree per acre; use prescribed burning to enhance wildlife through increasing the quality and quantity of food available to wildlife; re-establishing native communities, such as longleaf pine, in areas outside of impact areas, drop zones, and heavy maneuvering training areas; avoid converting hardwood stands to pine plantations; and implement projects, such as bird boxes, bat houses, wildlife openings, and salt blocks, to enhance wildlife. Please refer to FMP for schedule and location of prescribed burn and thinning activities.

#### **G.4.8 Southern Pine Beetle**

The southern pine beetle (*Dendroctonus frontalis*) has the potential to affect very large acreages of pine forests on Pelham Range. New infestations are recorded annually on Pelham Range. To minimize outbreaks and infestations, the AL ARNG will routinely inspect pine forests for evidence of the southern pine beetle. If the presence of this insect is detected, the AL ARNG will address the problem using the following treatment guidelines adapted from the USDA Agriculture Handbook No. 575- Direct Control Methods for the southern pine beetle.

Areas of infestation will be prioritized based on criteria listed in Appendix O: Table 19. If possible, high priority sites would be addressed first. Low priority sites often do not require treatment. The AL ARNG will treat southern pine beetle infestations using one or more of the following methods: salvage removal; cut-and-leave; chemical control; and pile-and-burn (Appendix O: Table 20). If practicable, salvage removal will be the preferred method of treatment. Southern pine beetle infestation and outbreaks are unpredictable factors derived from natural occurrences that cannot be controlled. When conditions are right, infestations and outbreaks are inevitable.

Many southern pine beetle spots currently exist on Pelham Range. These areas will be planted with longleaf pine seedlings each year as time and budgets allow until all areas have been planted. Longleaf pine, in general, is less susceptible to diseases and pests than are loblolly or slash pine.

#### **G.4.9 Unplanned Activities**

Occasionally, unplanned forest management activities (i.e., salvage cuts) are required as a result of natural disturbance events such as insect infestations and/or weather events (i.e., ice storms, tornadoes, hurricanes). These activities are coordinated through FM-ARNGTC Range Control and Environmental personnel, as well as the USACE Mobile District, as applicable.

#### **G.4.10 Inventory and Monitoring**

A forest inventory was last completed for Pelham Range in 2007. A new inventory is planned for 2020. The following permanent forestry records are maintained for Pelham Range:

- Timber harvest reports, including timber stand improvement projects,
- Reforestation projects,
- Disease and insect infestations,
- Cover types,
- Wildlife openings, and
- Fire information, including the firebreak system, wildfires, and prescribed burning plan.

Contracts for timber sales are located in the Forestry files. Files are maintained according to timber availability and include information such as sales contracts, release reports, and field data and maps used in establishing boundaries and determining volumes. Records of income, costs, and volumes harvested in the forestry program have been documented since 1951. Pelham Range forests are periodically monitored for forest disease and insect problems.

#### **G.4.11 Forest and Wildland Fire Management Projects**

Forest management will be accomplished IAW the FMP to the extent practicable taking cultural resources and other natural resources management and training schedules into consideration. See Appendix T, Table 24 - Planned Projects for a list of all Proposed Projects.

#### **G.5 Relationship to other Natural Resources Issues**

Forest management is inherently linked to the following other natural resources management issues:

Habitat management – Silvicultural activities (i.e. prescribed burning, thinning) play an important role in habitat development and management.

Threatened and endangered species management – Forest management is restricted in areas containing threatened and endangered species. Prescribed fire may be used to improve and/or sustain appropriate habitat for threatened and endangered species.

Wetlands management – Harvesting is restricted within forested wetlands.

Invasive and exotic species management – Harvesting operations can open the canopy to allow rapid revegetation with invasive species such as kudzu, Chinese privet, Chinese wisteria, etc. These negative effects can be managed by post timber harvest inspections and timely implementation of appropriate invasive species management tools, e.g., fire, herbicides, biological controls.

Floodplains and riparian zone management – Harvesting is restricted on floodplains and in riparian zones.

Erosion control and water quality protection – The implementation of BMPs during forestry activities will promote watershed protection and help prevent erosion and increased turbidity of surface waters.

Air quality – Air quality is affected by smoke from prescribed burns and wildfires.

## **G.6 Military Mission Considerations**

Active forest management generally does not threaten the military mission because silvicultural activities are scheduled around training activities and mission requirements. Wildfires could negatively impact the military mission by creating smoke that interferes with visibility and consequently training activities and limiting areas available for training.

Training requirements within the FM-ARNGTC that are affected by natural resource programs and activities include vehicle maneuver and driver training, large and small caliber firing activities and force on force maneuver training. The forest management programs include prescribe burn and thinning operations, invasive species management, erosion control, spill prevention, water management, wetland management, riparian zone management, and threatened and endangered species management.



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**APPENDIX H**  
**FISH AND WILDLIFE MANAGEMENT**

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## H. FISH AND WILDLIFE MANAGEMENT

### H.1 Overview

This section discusses fish and wildlife management at the FM-ARNGTC with respect to terrestrial habitats, fish and game populations, and nuisance wildlife and wildlife diseases. Wetland habitat management and threatened and endangered species management are discussed in Appendix I.

As part of the AL ARNG's coordination with ADCNR, fish and wildlife management at the FM-ARNGTC is consistent with Alabama's State Wildlife Action Plan. The SWAP provides direction for and coordination of wildlife conservation efforts in Alabama. The overall goal of the plan is to identify and conserve those species in greatest need for conservation action while also addressing the full array of wildlife and habitats. The SWAP can be found on the ADCNR website at

[https://outdooralabama.com/sites/default/files/Research/SWCS/AL\\_SWAP\\_FINAL%20June2017.pdf](https://outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf).

### H.2 Compliance

Protection and management of fish and wildlife resources will be conducted in accordance with Federal laws and regulations, EOs, AR 200-1, DoDI 4715.3, USFWS regulations and agreements, and other applicable laws and guidance from higher headquarters. Federal and State laws and regulations pertaining to fish and wildlife management include:

- Bald Eagle Protection Act (16 USC §668a-d);
- ESA (16 USC 1531 *et seq.*);
- CWA: Section 401 Water Quality Certification, 1986 (33 USC §1341);
- CWA: Section 404 Permits for Dredged or Fill Material, (33 USC §1344 *et seq.*);
- EO 11990, Protection of Wetlands;
- Fish and Wildlife Conservation Act (16 USC §2901 *et seq.*);
- Fish and Wildlife Coordination Act, as amended (16 USC §661 *et seq.*);
- Migratory Bird Treaty Act, as amended (16 USC §703-712);
- Oil Pollution Prevention Act of 1990, Public Law 101-380;
- SAIA (16 USC §670a-o);
- EO 13186 Responsibilities of Federal Agencies to Protect Migratory Birds; and
- Fish, Game, and Wildlife. State of Alabama Code 2018: Title 9, Chapter 11.

These laws and regulations are described in Appendix C.

### H.3 Goals and Objectives

Fish and wildlife goals of the FM-ARNGTC include to provide opportunity for recreational use that is compatible with the AL ARNG Mission and natural resources management; and to make natural resources management decisions using the best available scientific and field-tested information. Objectives that support this goal are as follows:

- 2a: Manage habitats for all native species (H)
- 2b: Assess faunal communities (H)

### H.4 Management Strategies

To accomplish the fish and wildlife goals and objectives, the AL ARNG will implement management strategies pertaining to terrestrial habitat management, fish and game population management, migratory bird management, nuisance wildlife and wildlife diseases, and herpetofauna conservation and habitat

management. Fish, wildlife, and migratory bird management strategies are presented in the following subsections.

#### **H.4.1 Terrestrial Habitat Management**

Terrestrial habitat management involves manipulating various aspects of an ecosystem to benefit chosen wildlife species. Terrestrial habitats at the FM-ARNGTC primarily include bottomland and upland hardwood forests, mixed forests, and pine-dominated forests. For the most part, non-forested lands occur only in disturbed and artificially maintained areas (i.e., ranges, drop zone), to exclude the Impact Area Barren SINA. Management of these habitats generally is focused to benefit indigenous species, particularly threatened and endangered species and game species. In addition, impact areas also have open savannah-like areas as a result of frequent fires; however, no management occurs in these areas other than prescribed fire. The impact areas are burned annually for fuel reduction and ecosystem health.

Forest management practices, such as thinning and prescribed burning, affect forest stand characteristics and consequently habitat values. Timber management and wildlife management are coordinated to provide optimum benefits for both programs. The AL ARNG will enhance the terrestrial habitat on Pelham Range by implementing the strategies listed below.

- Create a mosaic of various sized and shaped stands that provide a large amount of habitat variety that will benefit not only white-tailed deer and wild turkey, but all other game and non-game species as well.
- Leave mast-producing trees (white oaks, water oaks, hickory, etc.) for the benefit of wildlife. Forest mast is an important source of food for deer, turkeys, quail, squirrels, and other wildlife species. Acorns are considered by many to be the most important game food in the South. It is desirable to leave at least five mast-producing trees per acre.
- Preserve portions of stands with snags and large trees for cavity-nesting species. Cavity and den trees are vital to support squirrel populations as well as many nesting birds. It is desirable to leave one den tree per acre.
- Implement projects to enhance wildlife habitat (i.e., bird boxes, pollinator plots, wildlife openings, salt blocks).
- Use prescribed fire to enhance wildlife habitat. Prescribed fire will be administered on a three-year cycle in thinned pine stands. Regular burning of these areas increases the quality and quantity of food available to wildlife species.
- Manage hardwood bottomlands primarily for wildlife with timber harvest directed at the release of mast-producing trees.
- Avoid converting hardwood stands and pine-hardwood stands to pine plantations.
- Re-establish native communities (e.g., longleaf pine) on Pelham Range where appropriate and practicable (areas outside of impact areas, drop zones, and heavy maneuver training areas).

#### **H.4.2 Game and Fish Population Management**

Game management is considerably different from management of other fish and wildlife species in that production of harvestable surpluses on a sustained basis is the major objective. Other objectives include “fair chase” and quality recreational opportunities. Game species that occur on Pelham Range include: white-tailed deer, eastern wild turkey, raccoon, bobwhite quail, mourning dove, waterfowl, squirrel, and the eastern cottontail/swamp rabbit. Game fish on Pelham Range include largemouth bass, Coosa bass, channel catfish, and panfish (bluegill and sunfish). Management of game and fish species is discussed below.

### White-tailed Deer

The AL ARNG manages Pelham Range to sustain a population of white-tailed deer to provide recreational harvest opportunities on a sustainable basis. This management strategy also strives to provide quality management of a more balanced and healthy deer herd. The standing density of white-tailed deer should be approximately 20-25 deer per square mile to maintain a sustainable yield of quality deer. Proper management of a deer herd requires general knowledge of the herd. General guidelines for obtaining information about the deer herd on Pelham Range are listed below.

- Monitor habitat (i.e., development of browse line), population, and herd health. A herd health evaluation would be requested from the ADCNR to determine the condition of deer relative to parasites and disease.
- Monitor the number of animals harvested each year by sex and age group. Age, weight, and antler development are recorded to determine if there are more deer on an area than the habitat can support (below average body size and antler development).
- Record hunter success rate (total number of deer harvested/total number of hunters) to develop trend data for analysis. Hunter success rate may be closely correlated with current population.
- Record lactation rate (milk production) of does to estimate fawn production.

Harvest restrictions are being utilized to meet three objectives for the deer herd on Pelham Range:

- Balance the buck to doe ratio;
- Increase the number of bucks in the 3.5+ age classes; and
- Promote a sustainable harvest.

### Wild Turkey

The AL ARNG will also manage Pelham Range to enhance wild turkey habitat and populations. Many factors affect the success of the wild turkey population, such as brood habitat requirements, hatching success, weather conditions during nesting season, availability of suitable habitat, and winter conditions. A standing density of approximately 15-20 birds per square mile on Pelham Range would be consistent with regional population levels. General guidelines for creating/identifying ideal habitat for turkey on Pelham Range include:

- A multi-aged, mixed pine-hardwood forest interspersed with openings totaling approximately 30% of the total acreage creates an ideal habitat for breeding turkeys (Geo-Marine, Inc. 1993). Openings producing grass, forbs, and insects would be well-dispersed throughout the forest to provide adequate brood-rearing habitat.
- Ideal fall and winter habitat includes native stands of pine-hardwood or hardwood stands. Bottomland hardwood stands are especially good wintering habitat for turkey.

### Mourning Dove

Although mourning doves are permanent residents over much of the South, their population increases exponentially in the fall and winter by migrating doves from the north. Dove populations benefit from grain crops, prescribed burning and timber stand thinning (Pittman *et al.* 1991).

### Raccoon

Raccoons benefit from management practices for other species; therefore, no active management program has been established for this animal. Den trees are left in areas of timber harvesting to provide sufficient den sites (Pittman *et al.* 1991).

### Bobwhite Quail

The success of the bobwhite quail is dependent on the extent of open land, quality and quantity of food producing plants, and success of nesting. Bobwhite quail benefit from prescribed burning, timber stand thinning, and wildlife openings planted for other species.

Although numbers for northern bobwhite quail have been in decline for decades in the Southeastern US, FM-ARNGTC is one of the few areas in Northeast Alabama that has a sustainable population of quail. Quail hunting is permitted on Pelham Range, following the state's hunting season for wild quail, and seems to have no negative impact on the quail population. Quail have been identified during annual Breeding Bird Surveys and by staff observations.

Timber stand thinning and prescribed fire have continued to improve habitat for quail on Pelham Range. Predator control, such as coyote trapping, benefits quail as well as wild turkey and white-tailed deer fawns. Quail counts by natural resources staff are planned in the upcoming seasons. This data will provide more information on the quail population and provide site specific data that may be used to further improve habitat for quail.

### Waterfowl

Waterfowl areas on the installation are primarily confined to Cane Creek, sloughs adjacent to Cane Creek, and a small number of beaver ponds. While the wood duck and the Canada goose are the only permanent residents, many other species of waterfowl winter in northern Alabama. Waterfowl benefit from the preservation of aquatic habitats and wetlands on Pelham Range.

### Squirrel

Eastern gray squirrels and fox squirrels benefit from hardwood mast trees, a well-distributed water supply, and sufficient nesting cavities (Pittman *et al.* 1991). Management practices are centered on these three requirements. Long rotations for timber harvest are desirable to ensure mast-producing trees. One to two den trees per acre and five mast-producing trees per acre are recommended in areas where timber is being harvested (Pittman *et al.* 1991).

### Eastern Cottontail/Swamp Rabbit

Rabbits benefit from management practices for deer and other species; therefore, no special management is accomplished. Cover is essential to rabbit survival, and care is taken when burning or disking to leave sufficient hiding places. Brush piles are an option for providing shelter (Pittman *et al.* 1991).

### Beaver

Recreational trapping is prohibited on Pelham Range. Management practices currently undertaken for this species consist of trapping and/or shooting for damage control purposes.

### Fish

There is minimal fishing on Pelham Range. Cane Creek and its tributaries are available for recreational fishing, provided they are not closed due to military training, natural resources management, or other activity. Fish harvest for each body of water is designated by creel, possession, and length limits for each game species. Limits are identical to State limits. Licenses have to be acquired by the GMO on Pelham Range.

## **H.4.3 Nuisance Wildlife and Wildlife Diseases**

Nuisance wildlife at the FM-ARNGTC primarily consists of beavers, coyotes, and raccoons. These species are controlled by trapping and/or shooting for damage control purposes.

Diseases affecting fish and wildlife may occur on the installation. As outlined in AR 200-1, installation Natural Resources personnel will consult with appropriate State wildlife personnel regarding large-scale fish and wildlife deaths and unnatural behavior occurring on the installation.

#### **H.4.4 Herpetofauna Conservation and Habitat Management**

According to past planning level surveys for reptiles and amphibians conducted in 2007 and 2017, the FM-ARNGTC has a very diverse herpetofaunal community. Species richness and relative abundance are indications of biodiversity and the quality of habitats that occur on the installation. Special areas that provide habitat for a variety of herpetofaunal species, such as springs and ephemeral and isolated wetlands, have been identified and prioritized for protection. More information about these sensitive habitats and the species present there can be found in the Faunal Survey for Vertebrate Species (Aerostar SES 2017). Lists of documented reptile and amphibian species can be found in Appendix N.

No herpetofaunal species with Federal protection have been documented as of yet, however one species found on the installation, the southeastern five-lined skink, is state protected and of high conservation concern. The eastern tiger salamander, documented in Training Area 23C, is also of high conservation concern in the state. Four other documented species have a state status of moderate conservation concern.

Amphibians and reptiles face ever-increasing challenges to their survival. Habitat loss is largely responsible for steep declines in populations. Understanding this, the AL ARNG will incorporate conservation measures and protections for reptiles and amphibians at the FM-ARNGTC through the guidance provided by DoDs Partners in Amphibian and Reptile Conservation (PARC) program and its appropriate regional organization, Southeast Partners in Amphibian and Reptile Conservation (SEPARC). PARCs primary responsibility is to ensure that DoD has the operational and logistical flexibility necessary for testing and training exercises. DoD PARC provides a framework for the military to effectively manage amphibians and reptiles on DoD lands by focusing on habitat and species management; inventory, research, and monitoring; as well as education, outreach, and training.

The AL ARNG will follow DoD PARCs *Plan for Amphibian and Reptile Conservation and Management on Department of Defense Lands (2015)* and *The Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States (2006)*. The strategic plan provides a framework for accomplishing DoD-wide conservation objectives related to the protection of amphibians, reptiles, and their habitats as part of a comprehensive effort to manage natural resources in ways that preclude mission conflicts and loss of training capabilities that can result from conservation-based regulatory restrictions. The habitat management guidelines focus on proactive guidance for improving the compatibility of land management practices and herpetofaunal species in the southeast. It includes habitat associations and requirements of amphibians and reptiles, possible threats to these habitats, and recommendations for managing lands in ways compatible with or beneficial to these species.

The following conservation measures are being implemented for the protection of herpetofaunal habitats at the FM-ARNGTC:

- Do Not Disturb/Sensitive Habitat awareness signs posted in special habitat areas



- Vegetated buffers maintained around wetlands, springs, and riparian zones
- Emphasis on dormant season prescribed fire
- Use of rotational prescribed burns to create and maintain mosaic habitats
- Educate Soldiers and staff about snake and turtle road mortality
- Train Soldiers and staff to communicate with natural resources personnel when encountering venomous snakes in training areas to allow for removal or safe encounters
- Use of best management practices for construction projects to prevent and control erosional runoff into waterways and adjacent habitats

Additionally, the AL ARNG will continue to inventory and monitor herpetofaunal habitats and share results of surveys with PARC or other partner agencies.

#### **H.4.5 Migratory Bird Management**

FM-ARNGTC provides habitats and open space for a wide variety of migratory birds that migrate annually within and beyond North America (Appendix N) for parts of their life cycles. Regardless of how these migratory birds use FM-ARNGTC, their presence provides important ecological services and an important indicator of ecosystem health. Department of Defense lands play a key role in bird conservation and represent a critical network of habitats for migratory birds, offering these birds migration stopover areas for resting and feeding, and suitable sites for nesting and rearing their young.

The vast majority of birds occupying FM-ARNGTC throughout the year are protected under the Migratory Bird Treaty Act (MBTA). The Migratory Bird Treaty Act of 1918, as amended and Executive Order (EO) 13186 of 10 January 2001, make it illegal to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products, except as allowed by the implementing regulations. EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, requires that Federal agencies avoid or minimize the impacts of their activities on migratory birds and make efforts to protect birds and their habitat. While the National Defense Authorization Act of 2003 allows incidental take of migratory birds as a result of military readiness activities, the intent of the allowance was to require the Armed Forces to give appropriate consideration to the protection of migratory birds when planning and executing such activities but not at the expense of diminishing their effectiveness.

Primary considerations with regard to migratory bird management at FM-ARNGTC are compliance with MBTA; implementation of migratory bird management actions in accordance with EO 13186; and support, contribution and compatibility with the goals and efforts of numerous regional migratory and game bird conservation programs.

Comprehensive bird conservation plans for migratory birds have been developed for landbirds, shorebirds and waterfowl. These conservation plans identify species and habitat conservation priorities at the national and more detailed regional scales. Plans that encompass Alabama and are applicable to FM-ARNGTC include:

- Partners in Flight North American Landbird Conservation Plan
- Partners in Flight Bird Conservation Plan for the Interior Low Plateaus
- North American Waterfowl Management Plan
- North American Waterbird Conservation Plan
- North American Bird Conservation Initiative
- Strategic Plan for Bird Conservation and Management on DoD Lands
- Alabama State Wildlife Action Plan

These plans provide the framework, conservation priorities, goals, and objectives comparable to INRMP goals and objectives for various migratory bird species and their habitats on FM-ARNGTC. Consistent with these plans, and within the framework of mission-focused conservation, the implementation of this INRMP will continue to support migratory bird conservation efforts. Other natural resources programs described in the INRMP also enhance migratory bird conservation, such as invasive and exotic species management, soil erosion management, forest management, predator control, and prescribed fire. The AL ARNG's conservation of a diverse array of native habitats contribute valuable habitat benefits to migratory birds in the region.

Additionally, specific bird conservation plans that are applicable to FM-ARNGTCs region and species include the Appalachian Mountains Joint Venture (AMJV) and the National Bobwhite Conservation Initiative (NBCI).

#### H.4.5.1 Habitat Conservation

As part of the NEPA process, the AL ARNG supports migratory bird conservation by identifying military training, construction, and land management actions that have the potential to adversely affect migratory bird populations and their habitats. In addition, the AL ARNG develops and implements conservation measures to avoid or minimize the take of migratory birds or enhance the quality of their habitats through the guidance provided by the aforementioned bird conservation plans and initiatives and the USFWS Nationwide Standard Conservation Measures (<https://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures/nationwide-standard-conservation-measures.php>). These measures are followed to the extent practicable at FM-ARNGTC, with an overall goal of reducing impacts to birds and their habitats while supporting military mission.

The following conservation measures are implemented for migratory bird habitat conservation and enhancement at FM-ARNGTC:

- **Forest Management:** Through timber management actions, convert even-age stands to early successional habitats or to mature stands with a defined midstory and herbaceous layer to support a wide variety of species; maintain bottomland hardwood stands and riparian zones; maintain existing snags in timber harvest areas and create new snags with prescribed fire to support cavity nesters.
- **Habitat Enhancement:** Prioritize enhancement or restoration of habitats supporting species of concern or a large number of species; plant species offering the greatest food sources for migratory birds in FM-ARNGTCs designated wildlife enhancement areas.
- **Invasive and Exotic Species Management:** Control and/or eradicate species that negatively impact the quality of bird habitats at FM-ARNGTC, such as removal of Chinese privet or kudzu, and conduct predator control such as coyote or feral cat removal.
- **Aquatic Habitat Protection:** Protect wetlands from disturbance through awareness training and signage, require appropriate buffers and preventative soil erosion measures as best management practices for construction projects, and conduct routine monitoring for aquatic habitat disturbances.
- **Wildlife Management:** Respond to calls from facility users for assistance with birds inhabiting buildings/structures to prevent nest destruction or bird mortalities when feasible; promote the design of facilities in a way that prevents birds from nesting in structures where it is not desired, or protects birds from entrapment.
- **Prescribed Fire:** Through the annual prescribed fire work plan, conduct prescribed fire during times that offer the greatest benefit to maintaining and creating quality bird habitat but does not negatively impact the nesting season for migratory species on FM-ARNGTC.

- **Vegetation Management:** Work with ITAM, DPW and military trainers to develop a modified mowing schedule for ranges and other open areas of the installation in order to prevent the removal of vegetation during migratory bird nesting season and where there is no impact to military mission; schedule the removal of invasive plant species used by breeding birds (such as Chinese privet) during the non-breeding season.
- **Pest Management:** Require installation pesticide applicators to conduct pest management actions in accordance with all applicable regulations and under the guidance and consultation of the FM-ARNGTC Environmental Office and Pest Management Coordinator.

#### H.4.5.2 Bird Population Inventory and Monitoring

The AL ARNG has implemented an inventory and monitoring program, at appropriate scales, using national standardized protocols to assess the status and trends of bird populations and habitats on the FM-ARNGTC. The inventory and monitoring program includes surveying for migrating, breeding and wintering birds, as well as identifying the habitat conditions needed by species of concern.

Migratory bird surveys and breeding bird counts provide a strong, statistically valid framework for detecting trends in migratory bird populations and assist managers in meeting their bird conservation goals. The AL ARNG has conducted two installation-wide faunal planning level surveys that inventoried bird species present on FM-ARNGTC in 2007 and 2017. Additionally, the breeding bird survey (BBS) routes established by these previous planning level surveys are used to conduct in-house bird surveys each year by FM-ARNGTC natural resources biologists in an effort to continue collecting data on species present at FM-ARNGTC during migration and breeding seasons. The BBS routes established on FM-ARNGTC can be viewed in the *Faunal Survey for Vertebrate Species for the Fort McClellan Army National Guard Training Center* (AMEC 2007) and *Faunal Survey for Vertebrate Species-Fort McClellan Army National Guard Training Center Calhoun County, Alabama* (Aerostar SES, 2017). The annual BBS also provides an opportunity to monitor potential changes in bird activity in areas that have undergone recent management activities such as timber thinning, prescribed fire, or military training. This is especially important for monitoring bird species of concern in their known habitats and providing land managers and planners with information needed to avoid impacts to those species.

The FM-ARNGTC natural resources staff also conducts annual surveys for nightjar species as part of the installation's participation in the U.S. Nightjar Survey Network, a nationwide volunteer survey effort coordinated by The Center for Conservation Biology ([www.nightjars.org](http://www.nightjars.org)). Survey results are reported each year and are used to develop a standardized, nationwide dataset for nightjar populations, in order to gain a better understanding of the declining populations of these species in the United States.

In 2019, the FM-ARNGTC began participating in the Alabama Wildlife and Freshwater Fisheries (WFF) Division's annual wood duck banding program. This goal of this program is to collect data on the survival and movement of the state's wood duck population in order to make informed decisions about wood duck seasons and harvest limits. FM-ARNGTC natural resources biologists follow the state's trapping and banding protocol and submit the annual report detailing wood ducks banded to the WFF Waterfowl Coordinator (Appendix T, Table 24 - Planned Projects).

Beginning in 2020, spring and fall quail count surveys will be conducted at FM-ARNGTC by natural resources biologists to assess the status of the installation's quail population. These surveys are being implemented with guidance from NBCI and in cooperation with the Alabama WFF Division (Appendix T, Table 24 - Planned Projects).

The AL ARNG will continue to seek opportunities to assist with bird monitoring efforts on regional and national scales, especially for bird species of concern documented at FM-ARNGTC. Guidance from *Coordinated Bird Monitoring: Technical Recommendations for Military Lands* (USGS, 2012) and technical

expertise from DoDs Partners in Flight will be used to provide guidelines and recommendations on survey methodology, design, data management and reporting.

#### **H.4.5.3 Data Reporting, Sharing, and Partnering**

The AL ARNG will share the results of bird monitoring surveys and inventories with national repositories, as well as work in conjunction with other DoD installations and partner agencies as requested.

Currently, results of avian surveys and monitoring efforts at FM-ARNGTC are reported by natural resources staff to national repositories such as eBIRD, Coordinated Bird Monitoring Database, the Avian Knowledge Network, U.S. Nightjar Survey Network, National Bobwhite Conservation Initiative and the Alabama WFF Division Wood Duck Banding Program as appropriate.

The AL ARNG will seek opportunities to create partnerships to work in conjunction with other DoD installations and Federal and State agencies to facilitate combined efforts for inventory, monitoring, management, and research. Further development of reasonable and effective conservation measures for migratory birds will be achieved by allowing reasonable access to FM-ARNGTC by USFWS or partner agencies to conduct sampling or survey programs or to provide assistance with existing programs.

#### **H.4.5.4 Migratory Bird Treaty Act and the DoD**

On July 31, 2006, the DoD and the USFWS entered into a Memorandum of Understanding (MOU) to Promote the Conservation of Migratory Birds, in accordance with Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds." This MOU was updated and resigned in 2014 and describes specific actions that should be taken by DoD to advance migratory bird conservation; avoid or minimize the take of migratory birds; and ensure DoD operations-other than military readiness activities-are consistent with the Migratory Bird Treaty Act. The MOU also describes how the USFWS and DoD will work together cooperatively to achieve these ends. This MOU specifically pertains to the following categories of DoD activities:

- 1) Natural resource management activities, including, but not limited to, habitat management, erosion control, forestry activities, hunting, fishing, agricultural outleasing, conservation law enforcement, invasive weed management, and prescribed burning;
- 2) Installation support activities, including but not limited to, administration, retail sales, food service, health care, water and sewage treatment, supply and storage, education, housing, equipment maintenance, base transportation, laundry and dry cleaning, recreation, and religious activities;
- 3) Operation of industrial activities;
- 4) Construction, maintenance, renovation, or demolition of facilities that support the activities described in items 1 through 3; and
- 5) Prevention or abatement of pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

Guidance to implement the MOU to promote the conservation of migratory birds can be found on the DoD PIF website (<https://www.denix.osd.mil/dodpif/home/>). The AL ARNG will work cooperatively with the USFWS to implement the actions described in the MOU and to take steps to further migratory bird conservation.

This MOU does not authorize the take of migratory birds. However, the USFWS may develop incidental take authorization for Federal agencies that have completed an Executive Order MOU. Measures should be implemented to the extent practicable to avoid or minimize such take of migratory birds.

#### H.4.5.5 Migratory Bird Rule

In July 2000, the United States Court of Appeals for the District of Columbia ruled that Federal agencies are subject to the take prohibitions of the Migratory Bird Treaty Act. In May 2002, the Center for Biological Diversity obtained an injunction prohibiting live fire military training exercises by the Department of the Navy that killed migratory birds on the island of Farallon de Medinilla in the Pacific Ocean. In December 2002, following a series of legal determinations on the case from the District Court for the District of Columbia and the Circuit Court, Congress authorized (in the FY2003 National Defense Authorization Act, Section 315) an interim period during which the prohibitions on incidental take of migratory birds would not apply to otherwise authorized military readiness activities. Congress believed the authorization to be an appropriate balance between the needs of national security and those of bird conservation.

The **Final Rule** was published in the Federal Register on February 28, 2007. The measure directs the Armed Forces to assess the effects of military readiness activities on migratory birds, in accordance with NEPA. It also requires the Armed Forces to develop and implement appropriate conservation measures if a proposed action may have a significant adverse effect on a migratory bird population. The rule also provides that when conservation measures require monitoring of migratory bird populations, the Armed Forces retain the data for five years.

The AL ARNG will follow the DoD Migratory Bird Guidance to ensure compliance with obligations in NEPA, the Migratory Bird Treaty Act and the Final Rule on Take of Migratory Birds by the Armed Forces (50 CFR Part 21).

As issued by a February 2018 Memorandum from Deputy Assistant Secretary of Defense (Environment, Safety and Occupational Health):

*On December 22, 2017, the U.S. Department of the Interior's Office of the Solicitor issued Solicitor's Opinion M-37050 that the Migratory Bird Treaty ACT (MBTA) prohibition on the "taking" or "killing" of migratory birds applies only to deliberate acts intended to take migratory birds, their nests, or their eggs. This opinion permanently withdraws and replaces Solicitor's Opinion M-37041 (ISSUED January 10, 2017). This opinion does not rescind the "military readiness rule" (50 C.F.R. §21.15), §315 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003, Executive Order 13186, or the resulting MOU with U.S. Fish and Wildlife Service.*

The potential for the criminalization of some forms of incidental take by the MBTA is not dealt with in this opinion, as it has yet to be addressed by a U.S. Supreme Court review. It is advised that the FM-ARNGTC should minimize the incidental take of migratory birds to the extent practicable and without diminishing the effectiveness of military readiness activities.

#### H.4.6 Inventory and Monitoring

Both inventory and monitoring are important to the FM-ARNGTC fish and wildlife management program. Baseline surveys of all natural resources on Pelham Range have been completed and will continue to be updated at appropriate or routine intervals. Surveys for species of concern, including listed and petitioned species, will continue to be conducted as requirements are identified. Monitoring existing species of concern will continue throughout the cycle of the INRMP. Planning level surveys of natural resources for the new parcel of the Main Enclave are planned.

#### **H.4.7 Terrestrial Habitats and Flora**

Terrestrial habitats are typically monitored through forest inventories and plant community surveys. Ecosystem management requires knowledge of plant community ecosystems. The FM-ARNGTC plans to conduct surveys to update the timber inventory in 2020. A flora inventory occurred in 2012 and the plant community survey is up to date.

#### **H.4.8 Non-game Fauna**

The vertebrate faunal survey was completed in 2017 for mammals, birds, reptiles, amphibians, and fish. The survey documented game and non-game species.

#### **H.4.9 Deer and Turkey**

Harvest data are used to monitor size and health of game populations. All game harvested must be reported. These numbers provide an inexpensive and effective means to monitor game populations.

All legally harvested deer are evaluated at check stations. Biologists collect data on area harvested, age (jawbones), and body weights. Biologists determine antler development for bucks and collect lactation data from does. Unique physical characteristics are also noted, and biological samples may be sent to the Disease Research Unit at the University of Georgia for analysis. Collected data are compared with data from previous years to obtain a trend of the herd's overall condition.

Legally harvested turkeys are evaluated at check stations. Data is collected on area harvested, weight, spur length, and beard length. Harvest data is the primary source of information on the status and trend of the turkey population.

#### **H.5 Relationship to other Natural Resources Management**

The following natural resources issues and programs pertain to the management of fish and wildlife resources.

Outdoor recreation: Hunting and fishing on Pelham Range are very important recreational resources to individuals of local communities.

#### **H.6 Military Mission Considerations**

General fish and wildlife management is accomplished in conjunction with the military mission and training activities; therefore fish and wildlife management generally does not interfere with the military mission.

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**APPENDIX I**  
**LAND AND WATER RESOURCES MANAGEMENT**



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## **I.0 LAND AND WATER RESOURCES MANAGEMENT**

The purpose of this section is to outline natural resources management that will support and be consistent with the military mission while protecting and enhancing such resources in accordance with accepted stewardship principles. Land and water resource management issues on Pelham Range and (in some cases) within the Main Enclave include:

- Ecosystem Management (Appendix I.1);
- Fish and Wildlife Management (Appendix I.2);
- Hunting Program (Appendix I.3);
- Water Resources Protection (Appendix I.4);
- Wetland Protection (Appendix I.5);
- Soil Erosion Control Management (Appendix I.6);
- Threatened and Endangered Species (Appendix I.7);
- Forest Management (Appendix I.8);
- Fire Management (Appendix I.9);
- Integrated Pest Management Program (Appendix I.10); and
- Invasive Species Program (Appendix I.11).

For each of the above-mentioned issues, the following subsections are provided: Overview; Compliance; Goals and Objectives; Management Strategies; Inventory and Monitoring, Projects, Relationship to other Natural Resources Issues; and Military Mission Considerations. Agricultural outleasing is also a natural resources management issue; however, no agricultural outleasing occurs on the properties included in this INRMP. Additional information for the above listed sections, including contact numbers and website addresses are listed in Appendix P.

### **I.1 Ecosystem Management**

#### **I.1.1 Overview**

Ecosystem management is a process that aims to conserve major ecological services and restore natural resources while meeting the socioeconomic, political and cultural needs of current and future generations. Ecosystem management is an integral component of land and resource management. The objectives of ecosystem management are congruent with and, in some cases, overlap with the objectives of other goals.

#### **I.1.2 Compliance**

Laws and regulations that are associated with control and abatement of pollution in U.S. waters include:

- CWA (33 USC §1341);
- U.S. Fish and Wildlife Coordination Act (16 USC §661);
- NEPA (42 USC §4321);
- EO 11990, Protection of Wetlands;
- EO 11752, Prevention, Control, and Abatement of Environmental Pollution; and
- EO 12088, Federal Compliance with Pollution

Under the CWA, Section 319 requires each state to prepare a Nonpoint Source Management Program. BMPs described in the Alabama Nonpoint Source Management Program (1989) and the Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas (ASWCC 2014), are to be followed in construction practices. Additionally, the USEPA published Storm Water Management for Construction Activities, September 1992, EPA 832-R-92-005 to be used in construction activity.

Construction activities one (1) acre or greater in size or construction activities less than 1 acre in size that are part of or associated with a larger plan of development or sale that might eventually exceed one acre must register with ADEM for NPDES permit coverage. In addition, construction activities less than 1 acre in size that are determined by ADEM to have significant potential to cause or contribute to water quality impairment, may be required to register. The NPDES permit establishes the required erosion control and revegetation standards. NPDES registration coverage must be retained until all disturbed areas have been reclaimed and/or effective stormwater quality remediation has been achieved.

The UTES washrack discharges are permitted under ADEM NPDES permit No. 0073016.

### **I.1.3 Goals**

Ecosystem management will be achieved through the following goal: to maintain a sustainable, diverse, and productive forest.

### **I.1.4 Management Strategies**

Storm water runoff from impervious surfaces has a high potential to carry pollutants into wetlands, surface waters, and groundwater. Impervious surfaces at the FM-ARNGTC include streets and sidewalks, parking lots and other paved areas, and buildings. The FM-ARNGTC will continue to follow existing plans (i.e., SPCC, SEMP, etc.) to protect water quality. In addition, the AL ARNG will implement the following strategies:

- Adhere to BMPs for the NPDES permitted sites;
- Designate stream crossing points and prohibit driving vehicles through streams to wash them;
- Use BMPs for all forest harvesting activities;
- Stabilize erodible exposed soils upon completion of timber harvests;
- Revegetate barren ground as soon as possible, with the exception of lands within duded impact areas. These efforts will be administered through the LRAM program;
- Minimize the use of pesticides and herbicides;
- Minimize the amount of impervious surfaces in newly developed areas; and
- Adhere to BMPs for construction activities described in the Alabama Nonpoint Source Management Program 1989, Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas (ASWCC 2014), and in the USEPA document Storm Water Management for Construction Activities, September 1992, USEPA 832-R-92-005.

### **I.1.5 Inventory and Monitoring**

Water quality monitoring is important to measuring ecosystem health at FM-ARNGTC. Land-based environmental degradation eventually affects water quality and aquatic ecosystems. In accordance with their NPDES permit (Permit Number - AL0073016), the AL ARNG routinely monitors discharges from the permitted sites at the FM-ARNGTC.

### **I.1.6 Objectives and Projects**

Specific projects that support the following objectives can be found in Appendix T, Table 24 - Planned Projects.

- Objective 1a: *Manage for ecosystem health, wildlife, and improved habitat quality.*
- Objective 1b: *Characterize natural communities.*

### **I.1.7 Relationship to other Natural Resources Management**

Storm water management and water quality control are related to the following other natural resources issues.

Forest Management – Potential adverse effects that silvicultural activities have on streams include increased levels of sediment and chemicals and thermal effects.

Fish and Wildlife Management – Adverse effects to streams and water quality may adversely affect aquatic resources and wildlife.

Wetlands Management – Wetlands and aquatic habitats may be adversely impacted by sedimentation and other pollutants resulting from poor storm water management.

### **I.1.8 Military Mission Considerations**

Improper storm water control can potentially lead to CWA violations, thus potentially resulting in fines and other penalties, which may ultimately compromise the integrity of the FM-ARNGTC as a viable training installation.

## **I.2 Floodplain and Riparian Zone Management**

### **I.2.1 Overview**

Floodplains are low areas adjacent to streams, rivers, or lakes prone to flooding. Riparian zones are vegetated communities along water bodies and may include both upland and wetland vegetation. Floodplains and/or riparian zones provide the following benefits:

- Store excess water during flood events;
- Provide shade for fish and other aquatic species;
- Improve water quality by reducing sedimentation;
- Stabilize stream banks; and
- Provide quality habitat and wildlife corridors.

Flood-prone areas on Pelham Range include areas adjacent to Cane Creek and relatively large tributaries. Flood-prone areas in the vicinity of the Main Enclave include regions along Cave Creek.

### **I.2.2 Compliance**

Riparian and floodplain protection is required by the SAIA. In addition, required floodplain management is outlined in EO 11988, *Floodplain Management*. Requirements of this EO include:

- All proposed actions must be evaluated to assess potential adverse effects to the floodplain;
- Alternatives must be considered to avoid adverse effects and incompatible development of the floodplain; and
- Agencies or proponents must provide opportunity for early public review of any plans or proposals for actions in floodplains.

### **I.2.3 Goals**

It is the goal of the FM-ARNGTC to manage floodplain and riparian zone resources by protecting, maintaining, and restoring aquatic ecosystems.

### **I.2.4 Management Strategies**

The AL ARNG will avoid development or management practices that could adversely affect the attenuation capacity of floodplains at the FM-ARNGTC. In addition, the AL ARNG will avoid adverse impacts to wetlands on floodplains. The AL ARNG will implement the following management strategies to protect floodplains and riparian zones at the FM-ARNGTC:

- Adhere to Alabama’s Best Management Practices for Forestry in riparian zones and on floodplains at the FM-ARNGTC;
- Maintain a 50-foot vegetated buffer along streams on Pelham Range; and
- Avoid adverse impacts on floodplains when possible. Floodplain development will be avoided where there is a practicable alternative; if no practicable alternative exists appropriate environmental impacts documentation will be promulgated.

### **I.2.5 Inventory and Monitoring**

FEMA-designated floodplains are shown in Appendix M: Figures 8a and 8b. Monitoring of floodplains and riparian zones will be in conjunction with other natural resources monitoring projects, as appropriate (i.e., wetlands and forest inventories).

### **I.2.6 Objectives and Projects**

Specific projects that support the following goals can be found in Appendix T, Table 24 - Planned Projects.

- Objective 4a: *Characterize riparian communities.*
- Objective 4b: *Implement riparian buffer zones.*

### **I.2.7 Relationship to other Natural Resources Issues**

Forest Management – As outlined in Alabama’s Best Management Practices for Forestry, forest management is restricted in riparian zones.

Fish and Wildlife Management – Riparian zones provide quality habitat and corridors between other habitat types. Riparian zones are utilized by all three listed bat species on Pelham Range. While none of the listed bat species have been documented on Cave Creek, it is still considered a potential habitat for these species. Additionally, there are many bird species that are dependent on the riparian corridors throughout Pelham Range.

### **I.2.8 Military Mission Considerations**

Although protection of riparian zones and floodplains may limit the area available for some types of military training, these areas may still be utilized for dismounted training like land navigation exercises. Therefore, there is effectively no net loss of training land for the AL ARNG by the identification and protection of riparian zones and floodplains.

## **I.3 Wetland and Aquatic Habitat Management**

### **I.3.1 Overview**

The USACE and the USEPA jointly define wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that 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” (USACE 1987).

The USACE Wetland Delineation Manual (Technical Report Y-87-1) is generally used to determine if an area is a wetland. The 1987 Manual may be downloaded from the following website: <http://www.saj.usace.army.mil/>. The original purpose of the 1987 Manual was to provide users with guidelines and methods to determine whether an area is a wetland for regulatory purposes. According to this manual, a wetland must exhibit certain vegetation, soils, and hydrology to be considered a wetland. Diagnostic environmental characteristics are described below (Environmental Laboratory 1987):

- 1) **Vegetation:** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in the legal definition. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptations(s), have the ability to grow, effectively complete, reproduce, and /or persist in anaerobic soil conditions. Regional lists of hydrophytic vegetation are available.
- 2) **Soil:** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions. Wetland soils are often gleyed (gray in color) or mottled, or contain a relatively high percentage of organic material resulting from anoxic conditions caused by temporary or permanent saturation.
- 3) **Hydrology:** The area is inundated either permanently or periodically at mean water depths less than or equal to 6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. In general, wetlands are distinguished by the presence of water, either at the surface or within the root zone.

Jurisdictional wetlands are wetlands that are regulated by the USACE. Areas that are determined to be a wetland in accordance with the 1987 Manual are not necessarily jurisdictional wetlands, meaning that not all wetlands are regulated by the USACE. The USACE makes jurisdictional determinations based on the connectivity of the wetland to navigable waters. If a surface connection is evident, the USACE will generally claim jurisdiction. Wetlands along the fringes of rivers, lakes, and streams would be considered jurisdictional wetlands, while a wetland along a small isolated pond would probably not be considered a jurisdictional wetland. Jurisdictional determinations are made on a case-by-case basis by the USACE.

As discussed in Appendix F.5, approximately 10.60 acres of wetlands and approximately 12,648 linear feet of stream were delineated at FM-ARNGTC Main Enclave; and approximately 1,760 acres of wetlands and approximately 364,060 linear feet of stream were delineated at Pelham Range. Wetlands include forested, scrub-shrub, and herbaceous cover types. Aquatic habitats on Pelham Range include Willett Springs, other small springs and pools, sag or gum ponds, numerous beaver impoundments, Cane Creek and its tributaries, and other small unnamed streams.

### **I.3.2 Compliance**

Wetlands and aquatic habitats are among the most productive and ecologically important communities on Pelham Range. Primary threats to wetlands and aquatic habitats on Pelham Range are siltation associated with erosion from a variety of activities and unauthorized vehicle access.

Laws, regulations, and EOs pertaining to wetlands protection and policies include:

- Rivers and Harbors Act of 1899 (33 USC §403);
- Fish and Wildlife Coordination Act of 1967 (16 USC §661);
- Land and Water Conservation Fund Act of 1968 (PL 88-578, as amended);
- CWA (33 USC §1341 *et seq.*);
- EO11988, Floodplain Management;
- EO 11990, Protection of Wetlands;
- NEPA (42 USC §4321); and
- SAIA (16 USC §670 *et seq.*).

AR 200-1, *Environmental Protection and Enhancement – Water Resources*, prescribes current Army policies, procedures, and standards for the conservation, protection, and restoration of surface water resources, including wetlands and aquatic habitats. AR 200-1 addresses wetlands in section 4-2, where it emphasizes management requirements outlined in Executive Order 11990. EO 11990 prescribes minimizing significant actions that contribute to the loss or degradation of wetlands and taking a progressive approach towards protecting existing wetlands, rehabilitating degraded wetlands, restoring former wetlands, and creating wetlands in an effort to increase the quality and quantity of the nation's wetlands

resource base. In addition, actions affecting wetlands require an environmental analysis in accordance with AR 200-1, 32 CFR 651 and applicable Federal and State laws and regulations.

Regulations pertaining to wetlands and other aquatic habitats are primarily found in Title 33 (Navigation and Navigable Waters) and Title 40 (Protection of Environment) of the Code of Federal Regulations (CFR). These regulations are extensive and only portions are relevant to activities occurring in wetlands and aquatic habitats. The primary sections of these regulations that affect and/or pertain to wetlands and aquatic habitat regulation are listed below.

- 33 CFR §320.1 et seq. (General Regulatory Policies);
- 33 CFR §323.1 et seq. (Permits for Discharges of Dredged or Fill Material into Waters of the United States);
- 33 CFR §328.1 et seq. (Definition of Waters of the United States);
- 33 CFR §330.1 et seq. (Nationwide Permits);
- 40 CFR § 230.1 et seq. (Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material);
- 40 CFR § 231.1 et seq. (Section 404(c) Procedures)
- 40 CFR § 232.1 et seq. (404 Program Definitions; Exempt Activities not Requiring 404 Permits)
- 40 CFR §233.1 et seq. (404 State Program Transfer Regulations)

The primary vehicle of wetlands protection and regulation is Section 404 of the CWA, which allowed the USACE to establish a permit system to regulate the dredging and filling of materials in “waters of the U.S” (Mitsch and Gosselink 1993). The USACE prohibits the discharge of dredged or fill material into “waters of the U.S.”, which includes jurisdictional wetlands, without a permit. The type of permit required depends on the extent of disturbance to the subject wetland or water body.

Alabama has very limited laws and regulations with respect to activities occurring in or affecting wetlands and other aquatic habitats. With the exception of issuing Section 401 Water Quality Certifications, the Alabama Department of Environmental Management (ADEM) does not regulate activities occurring in or affecting wetlands or other aquatic habitats. Therefore, wetlands (or other aquatic habitats) that do not fall under the jurisdiction of the USACE are not regulated in Alabama. Alabama does have an Antidegradation Policy (335-6-10-.04).

Physical disturbances to wetlands and disturbances to both perennial and intermittent streams (i.e., stream crossings) are regulated by the Federal CWA under Sections 404 and 401. Section 404 gives the USACE primary regulatory responsibility for permitting issues. Most proposed activities within streams or wetlands (such as filling, dredging, or clearing of ditches) require either a general or individual permit. The USACE would be consulted prior to any activities that could potentially affect wetlands or waterbodies to determine permitting requirements. General or individual permits may be required for such activities.

General permits issued by the USACE authorize various types of development projects in wetlands and other waters of the U.S. Activities authorized under general permits are considered similar in nature, causing minimal adverse effects to the environment. The USACE uses general permits for certain activities to minimize regulatory burdens and administrative costs by allowing landowners to proceed without having to obtain individual permits in advance. One type of general permit is known as a Nationwide permit; there are 44 Nationwide permits covering a variety of issues. Nationwide permits authorize certain activities and are valid only if the conditions applicable to the permit are met.

In general, individual permits are required for disturbances that exceed thresholds for disturbances covered by general permits. Permitting requirements vary depending on type, location, and extent of disturbance. A Section 404 individual permit, issued by the USACE, is often required prior to impacting streams or jurisdictional wetlands. Generally, whenever a Section 404 permit is required, a Section 401 Water Quality Certification issued by the State of Alabama is also required.

Wetland protection is also required by the SAIA, as well as EO 11990, which “requires agencies to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the beneficial values of wetlands.” Potential wetland impacts are a consideration when considering projects for analysis under NEPA.

### **I.3.3 Goals**

The following goals provide guidance for the management of wetlands and aquatic habitats: to protect, maintain and restore aquatic ecosystems and to make natural resources management decisions using the best available scientific and field-tested information.

### **I.3.4 Management Strategies**

The following strategies have been developed to protect wetlands and aquatic habitats at the FM-ARNGTC:

- Avoid disturbance of wetlands and aquatic habitats where practicable;
- Identifying all wetlands and aquatic habitats on the Environmental Constraints Map, which is distributed by Range Control to trainers and other land users;
- Use signs prohibiting vehicle access around wetlands and aquatic habitats that are experiencing training encroachment;
- Prohibit both vehicular and pedestrian maneuver near springs;
- Prohibit fording of streams with tracked or wheeled vehicles, except at designated crossings identified on the Environmental Constraints Map;
- Provide training units with written guidance (*Protecting the Natural Resources on Pelham Range while Training to Protect the Nation*) for natural resources protection;
- Provide briefings on the status of wetland management/protection to command and organization leaders through meetings on an as needed basis;
- Ensure that a NEPA review is used to identify wetland conflicts with planned actions and projects. If necessary, projects with potential impacts would be referred to the USACE to determine if jurisdictional wetlands are implicated and to establish mitigation procedures;
- Prevent surface water pollution by ensuring environmental plans (i.e., SWPPP) are followed;
- Prevent erosion and sedimentation into wetlands and aquatic habitats (Appendix I.8); and
- Protect Cane Creek and tributaries by protecting the riparian zone and stream banks through good forest, land, and wetlands management (Appendix I.2), with increase in buffer size in areas that the surrounding banks have a slope of greater than 10%.

### **I.3.5 Inventory and Monitoring**

As discussed in Appendix F.5, a wetlands and water body inventory of FM-ARNGTC was conducted from 2011 to 2013. The AL ARNG should continue to conduct periodic surveys to update the wetlands planning level survey, to determine the changes in wetlands and aquatic habitat, and identify areas of potential impact due to proposed construction activities or training. Wetlands and aquatic habitat should be visually inspected prior to and after the high training months for the FM-ARNGTC to identify areas that need larger buffer zones, or a more proactive management program. Vegetated buffer zones will be created adjacent to wetlands and aquatic habitats, defining land use restrictions within these areas, and incorporating them into the FM-ARNGTC GIS database for distribution to trainers and individual units (Appendix E).

### **I.3.6 Objectives and Projects**

Specific projects that support the following goals can be found in Appendix T, Table 24 - Planned Projects:



- Objective 5a: *Characterize wetland communities.*
- Objective 5b: *Implement wetland buffer zones.*

### **I.3.7 Relationship to other Natural Resources Issues**

Forest Management – As outlined in *Alabama’s Best Management Practices for Forestry*, forest management would be restricted in wetland areas, with limited removal (harvesting) of trees from banks, beds or steep slopes, if it will destabilize the soil and cause degradation of the water.

Fish and Wildlife Management – Wetlands and aquatic areas provide high-quality, productive habitat.

Water Quality – Wetlands can improve water quality by causing sediments to drop out of the water column and promoting chemical reactions that remove certain chemicals from the water.

### **I.3.8 Military Mission Considerations**

Protection and avoidance of wetlands limit lands available for training. However, the protection of wetlands is important to the ecological integrity of ecosystems on Pelham Range. Responsible stewardship of fish and wildlife resources is imperative to good public relations.

Non-permitted impacts to wetlands may result in CWA violations, thus potentially resulting in fines and other penalties, which may ultimately compromise the integrity of the FM-ARNGTC as a viable training installation.

Due to the locations of the identified wetlands on Pelham Range, and the distance from the main training areas, the wetlands do not affect available training lands or maneuvers. Additionally, land navigation is allowed in wetlands. Therefore, no net loss of training lands are indicated by the continued status of these wetlands or the protection thereof.

## **I.4 Invasive and Exotic Species**

### **I.4.1 Overview of Invasive Exotic Plant Species**

An invasive exotic species is defined as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” An alien species is defined as a “species including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem” (EO 13112). Noxious weeds are defined as “any living stage (including but not limited to, seeds and reproductive parts) of any parasitic or other plant of a kind, or subdivision of a kind, which is of foreign origin, is new to or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry or other interests of agriculture, including irrigation, or navigation or the fish and wildlife resources of the United States or the public health” (Federal Noxious Weed Act of 1974).

Exotic plant species can often spread rapidly through ecosystems since their natural predators are often not present. These species have the ability to retard natural succession and reforestation and generally cause a reduction of biological diversity in forests. Relatively common invasive and exotic plant species occurring at the FM-ARNGTC include silktree (also known as “mimosa”) (*Albizia julibrissin*), Japanese stilt grass (*Microstegium vimineum*), Chinese privet (*Ligustrum sinense*), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), kudzu (*Pueraria montana*), Chinese wisteria (*Wisteria sinensis*), and cogongrass (*Imperata cylindrica*). Cogongrass was first found at Pelham range in 2015. While new infestations are discovered each year, it is thus far being eradicated as it is being found.

### **I.4.2 Overview of Invasive Exotic Insect Species**

Two invasive exotic insect species identified on FM-ARNGTC include the southern pine beetle and the fire ant. Potential areas of concern for the southern pine beetle infestations as well as a complete list of potential invasive insect species are located in the *Invasive and Exotic Species Management Plan* (Thompson Engineering 2016).

### **I.4.3 Compliance**

Laws and regulations pertaining to invasive and exotic species and pest control include the following (also see Appendix C):

- EO 13112 of February 3, 1999 -- Invasive Species;
- National Invasive Species Act of 1996;
- Federal Noxious Weed Act of 1974 (7 USC §2801 *et seq.*);
- Federal Noxious Weed List, September 8, 2000;
- Federal Seed Act, 1939, (7 U.S.C. 1551-1611)
  
- Federal Plant Pest Act, May 23, 1957 as amended 1968, 1981, 1983, 1988 and 1994, (7 U.S.C. §§ 150aa-150jj);
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA, 7 USC §136);
- Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (as amended through 10/26/96);
- AR 200-1, Chapter 5, Pest Management;
- Alabama Nonindigenous Aquatic Plant Control Act, 1975, Act No. 95-767; and
- Alabama Regulation 80-10-14-.04 Noxious Weeds.

### **I.4.4 Goals**

The AL ARNG will take actions to eliminate to the extent possible invasive and exotic species at the FM-ARNGTC through the following goals:

- Maintain a sustainable, diverse, and productive forest,
- Protect, maintain and restore aquatic ecosystems, and
- Protect threatened and endangered species, species of concern and their habitats.

The *Invasive and Exotic Species Survey and Management Plan* is an INRMP component plan and is listed in Appendix S.

### **I.4.5 Management Strategies**

Invasive species would be eradicated if feasible; however, when invasive species appear to be well established, eradication may not be financially feasible. The most effective action may be to prevent their spread or lessen their impacts through control measures. The task of controlling invasive and exotic species is expensive, lengthy, and risky; however, in accordance with laws and regulations pertaining to the management of invasive and exotic species, the AL ARNG will prevent the introduction of invasive species and take measures to control invasive and exotic species already established in an economically and environmentally sound manner. The AL ARNG will conduct yearly surveys of identified invasive species locations at Pelham Range and the Main Enclave to assess the impacts that those species may have on current training needs and activities. Additional management strategies are included in the *Invasive and Exotic Species Management Plan* (Thompson Engineering 2016).

### **I.4.6 Inventory and Monitoring**

The AL ARNG conducted an invasive and exotic species survey, and implemented an Invasive and Exotic Species Management Plan in 2004. The AL ARNG has implemented an invasive and exotic species monitoring and control plan, based upon the methods identified within the *Invasive and Exotic Species Management Plan* (Thompson Engineering 2016).

The environmental and natural resources personnel of the AL ARNG, in conjunction with the FM-ARNGTC Range Control personnel, have identified invasive species posing the greatest danger to safety and training and alternate methods of removal and/or eradication have been implemented. Currently, girdling and physical removal of species has been the preferred method. However, girdling and use of herbicides has been effective on large growth areas. An invasive and exotic species monitoring and control program will continue to be implemented in order to achieve installation goals.

### **I.4.7 Objectives and Projects**

Specific projects that support the following goals can be found in Appendix T, Table 24 - Planned Projects:

- Objective 7b: *Manage and maintain listed plant habitats.*
- Objective 11a: *Adhere to the guidelines and projects presented in the FM-ARNGTC Invasive and Exotic Species Management Plan.*
- Objective 11b: *Control Invasive Exotic Species.*

### **I.4.8 Relationship to other Natural Resources Management**

Invasive and exotic species control is related to the following natural resources management issues:

Forest management – Prescribed burning may be used to control invasive species.

Fish and wildlife management – Herbicides and pesticides could impact non-target species, including threatened and endangered species.

Water quality – Herbicides and pesticides could impact water quality, with subsequent aquatic habitat implications.

### **I.4.9 Military Mission Considerations**

Invasive and exotic species have the capability to form dense strata within the forest which could interfere with on-the-ground training activities.

## **I.5 Integrated Pest Management**

### **I.5.1 Overview**

IPM is the use of multiple techniques in a compatible manner to avoid damage and minimize adverse environmental affects while obtaining control of target pests. The goal of IPM is to utilize non-chemical procedures to control pests, including both invasive and exotic plant and animal species. IPM is used on FM-ARNGTC properties, and typically a combination of the below IPM techniques is required to resolve a problem on a sustained basis:

- Mechanical control, which alters environments in which pests live, traps or removes pests (i.e. glue boards and live-traps) from where they are not wanted, or excludes pests from where they are not wanted (i.e. screening);
- Cultural control, which manipulates environmental conditions to suppress or eliminate pests (i.e. removal of food scraps or spreading manure on fields);

- Biological control, which uses predators, parasites, or disease organisms to control pests; and
- Chemical control, which relies on pesticides and/or herbicides to kill pest and/or undesirable species of plants.

IPM is accomplished at the FM-ARNGTC through the implementation of the Integrated Pest Management Plan for Fort McClellan Army National Guard Training Center (2019); an updated Pest Management Plan is currently being prepared for the FM-ARNGTC properties. The plan identifies elements of the program to include health and environmental safety, pest identification, pest management, as well as pesticide storage, transportation, use, and disposal. This plan serves as a tool to reduce pesticide use, enhance environmental protection, and maximize the use of IPM techniques.

### **I.5.2 Compliance**

Laws and regulations pertaining to pest management include the following:

- Federal Noxious Weed Act of 1974 (7 USC §2801 *et seq.*);
- Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136);
- Federal Pest Plant Act (7 USC §150a *et seq.*); and
- EO 13112, Invasive Species.

### **I.5.3 Goals**

The following goals support the integrated pest management efforts at the FM-ARNGTC:

- Maintain a sustainable, diverse, and productive forest
- Protect, maintain and restore aquatic ecosystems
- Protect threatened and endangered species, species of concern and their habitats
- Make natural resources management decisions using the best available scientific and field-tested information.

### **I.5.4 Management Strategies**

Pest management at the FM-ARNGTC is generally accomplished in-house. The IPM program at the FM-ARNGTC is discussed in detail in the Integrated Pest Management Plan for Fort McClellan Army National Guard FM-ARNGTC (AMEC 2019). The plan serves to reduce pesticide use, enhance environmental protection, and maximize the use of integrated pest management techniques. With respect to natural resources issues, the AL ARNG will use the following guidelines in accomplishing pest management at the FM-ARNGTC:

- Special considerations will be taken when using pest control tactics in areas where endangered species are found; for example, only certain pesticides are allowed due to the presence of the listed bats on Pelham Range.
- Pesticides will be administered in accordance with the Federal Insecticide, Fungicide and Rodenticide Act. Pesticides will not be administered in close proximity to wetlands or surface waterbodies unless such application is specifically approved on the label. Chemical sprays will be administered in low wind situations, to avoid incidental contact with water, or surrounding habitats that may be susceptible to the constituents of the chemicals.

### **I.5.5 Inventory and Monitoring**

The FM-ARNGTC Pest Management Coordinator manages the pest management program at the FM-ARNGTC and is responsible for all aspects of pest management record-keeping.

### **I.5.6 Objectives and Projects**

The following objectives support the goals of the integrated pest management plan:

- 10a: Adhere to the guidelines and project present in the IPMP
- 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques
- 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP

There are no natural resources projects pertaining to IPM scheduled at this time. Refer to Section I.4 to identify the program currently instituted at the FM-ARNGTC for the control and removal of invasive and exotic species.

### **I.5.7 Relationship to other Natural Resources Management**

IPM is related to the following natural resources management and issues:

Fish and wildlife management – Herbicides and pesticides could impact non-target species, including threatened and endangered species.

Water quality – Herbicides and pesticides could impact water quality, which could affect aquatic insects.

### **I.5.8 Military Mission Considerations**

Uncontrolled pests can become health hazards, which could threaten the military mission.

## **I.6 Threatened and Endangered Species and SINAs**

### **I.6.1 Overview**

Five Federally-listed species are known to occur at the FM-ARNGTC: TYG, MBB, the gray bat, the Indiana bat, and the northern long-eared bat. Additionally, the tricolored bat is found on Pelham Range and is currently being considered for listing. Management and protection of listed species will be given priority in natural resources management. State-listed species of concern are as follows:

- eastern tiger salamander (*Ambystoma tigrinum*)
- southeastern five-lined skink (*Plestiodon inexpectatus*)
- American black duck (*Anas rubripes*)
- American kestrel (*Falco sparverius*)
- king rail (*Rallus elegans*)
- Bachman's sparrow (*Peucaea aestivalis*)
- cerulean warbler (*Setophaga cerulean*)
- long-tailed weasel (*Mustela frenata*)
- northern harrier (*Circus hudsonius*)
- sandhill crane (*Grus Canadensis*)
- warbling vireo (*Vireo gilvus*)
- blue-headed vireo (*Vireo solitaries*)

Management of threatened and endangered species at the FM-ARNGTC is accomplished in accordance with the ESMC that was completed in 2002 and updated in 2021. Management strategies discussed in this section are consistent with the ESMC.

## I.6.2 Compliance

Protection and management of biological resources at the FM-ARNGTC are mandated by a number of laws, regulations, and guidance. The primary statutes, regulations, and guidance that direct and apply to management of threatened and endangered species include the following:

- ESA (16 USC §1531 *et seq.*);
- Migratory Bird Treaty Act (MBTA; 16 USC §703-712);
- National Environmental Policy Act of 1969 (NEPA; 42 USC §4321 *et seq.*);
- SAIA (16 USC §670 *et seq.*);
- Alabama Nongame Species Regulation (Chapter 220-2-92);
- Alabama Invertebrate Species Regulation (Chapter 220-2-98);
- DoDD 4715.03, Environmental Conservation Program;
- AR 200-1, Environmental Protection and Enhancement; and
- 32 CFR Part 651, Environmental Effects of Army Actions.

The protection of Federally-listed species is regulated under the ESA. Section 7 of the ESA requires Federal agencies to insure their actions do not jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of the critical habitat of such species. AR 200-1 provides direction for the implementation of the ESA on Army (or ARNG) installations. In addition, NEPA review and consideration of State-listed species is required per 32 CFR Part 651.15. Furthermore, Section 7(a) of the ESA requires formal consultation with the USFWS whenever a Federal proponent anticipates taking any action that is likely to adversely affect a listed species or critical habitat. Section 7 (a)(1) of the ESA requires Federal agencies to carry out programs for the conservation of T&Es. In addition, ESA Section 2(c)(1) obligates Federal entities to seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.

Alabama has not enacted specific endangered species legislation, but has promulgated regulations that provide protection for certain nongame species. These regulations include the “Alabama Nongame Species Regulation” (Chapter 220-2-92) and “Alabama Invertebrate Species Regulation” (Chapter 220-2-98). Both regulations make it unlawful to take, capture or kill, or attempt to take, capture or kill; possess, sell, trade, or offer to sell or trade listed species without a scientific collection permit. AR 200-1, *Environmental Protection and Enhancement*, requires that installations containing Federally-listed or proposed species and/or their critical habitats prepare ESMCs.

The ADCNR’s state wildlife action plan, or SWAP, identifies the state’s species of greatest conservation need (SGCN) and describes their habitats and known range within the state. This plan designates low, moderate, or high conservation concern to set priorities for wildlife management in Alabama. The SWAP also identifies threats; research or survey needs; and prioritizes conservation actions and partnerships for achieving its goals. The SWAP utilizes the ALNHP database to provide species conservation status and priority information. Alabama’s SWAP can be found on the ADCNR website at [https://outdooralabama.com/sites/default/files/Research/SWCS/AL\\_SWAP\\_FINAL%20June2017.pdf](https://outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf).

## I.6.3 Goals

The FM-ARNGTC strives to avoid adverse impacts to threatened and endangered species and enhance SINAs, as required by law and the ethics of good environmental stewardship. It is the intent of the FM-ARNGTC to proactively manage for these resources during the environmental planning process, thereby mitigating potential impacts by avoidance. Specific goals include:

- Protect threatened and endangered species, species of concern and their habitats and
- Make natural management decisions using the best available scientific and field-tested information.

Bats noted to occur on the range include: the big brown bat, the gray bat, the eastern red bat, the northern long-eared bat, the Indiana bat, the evening bat, the Seminole bat, the Mexican free-tailed bat, the silver-haired bat, the hoary bat, and the tricolored bat. Of these the Indiana, northern long-eared, and gray bats are Federally-listed.

#### **I.6.4 Management Strategies**

Management of threatened and endangered species is performed in accordance with the ESMC. Management of TYG, MBB, the Indiana bat, the northern long-eared bat, and the gray bat is summarized below. Additional information can be obtained from the ESMC.

##### **I.6.4.1 Tennessee Yellow-Eyed Grass**

TYG occurs in four locations on Pelham Range, including Willett Springs SINA, Lloyd's Chapel Swale SINA, Gate 14 SINA, and the Rock Creek management area. Management of these areas is discussed below.

###### **I.6.4.1.1 Willett Springs SINA**

The Willett Springs SINA is located in the central portion of Pelham Range approximately 50 feet east of Cane Creek. Willett Springs is a small manmade impoundment (approximately ¼ acre) fed by a natural spring. TYG occurs in clumps along the edge of the impoundment; on the old concrete pier extending out into the pool; and in small, detached tussocks.

Potential threats to TYG at Willett Springs include:

- 1) Potential trampling by people walking along the edge of the pond;
- 2) Invasion of woody species, which would eliminate sunny open areas along the edge of the pond;
- 3) Competition of other herbaceous species; and
- 4) Competition from non-native invasive plant species of all strata.

The AL ARNG has coordinated with the USFWS to determine the most appropriate course of action in the management of Willett Springs SINA. Management of the area will include the following.

- 1) Routine site inspections and annual population monitoring of the site will be accomplished as described in Section I.6.5 and results will be recorded in the Endangered Species Monitoring Database (ESMD).
- 2) Maintenance activities along the edges of Willett Springs will be performed on an as-needed basis based on observations made during reconnaissance visits. However, in general, the edges of the pond will be mowed in the spring to control competing vegetation.
- 3) Signs will be maintained within the SINA to restrict access to areas containing TYG.

###### **I.6.4.1.2 Lloyd's Chapel Swale SINA**

Monitoring and management of the Lloyd's Chapel Swale site has occurred since 1993. The Lloyd's Chapel Swale TYG population is located in a highly disturbed area. Currently, the population occurs along the boundary road and on the ALDOT right-of-way adjacent to Highway 109. Should HWY 109 be widened in the future, this would destroy a portion of the population. Construction of a highway could also change the hydrology of the area.

Other potential threats to TYG at Lloyd's Chapel Swale include:

- 1) Sedimentation from adjacent dirt roads;
- 2) Competition from plant species across all strata;
- 3) Competition from non-native invasive species; and
- 4) Unauthorized vehicle access through the site.

With USFWS cooperation, the AL ARNG manages Lloyd's Chapel Swale to maintain the open, sunny conditions preferred by TYG. The site is bush hogged usually in the fall to control competition and remove encroaching saplings and invasive plants as needed. Prescribed fire is not routinely used due to this site's location on the installation boundary and HWY 109; however it periodically experiences wildfire when conditions are dry. Site management includes the following:

- 1) Routine site inspections and annual population monitoring of the site will be accomplished as described in Section I.6.5 and results will be recorded in the ESMD.
- 2) Competing vegetation will be controlled using mechanical means and/or prescribed fire based on recommendations of the USFWS.
- 3) Access to the site is controlled by gates and signs to reduce unauthorized vehicle disturbance.

#### **I.6.4.1.3 Gate 14 SINA**

TYG thrives in open, sunny areas along the edges of Rock Creek, also known as Firing Fan Creek, in this area. Firing Fan Creek is on the ANAD side of the fence and Rock Creek on Pelham Range. TYG occurs on both sides of the fence. Potential threats include:

- 1) Insufficient lighting due to increased canopy density;
- 2) ANAD fence line maintenance with herbicides;
- 3) Sedimentation from the boundary road;
- 4) Herbaceous species competition; and
- 5) Invasive exotic species competition.

Maintenance of the boundary road will prevent closure of the canopy along the edges of the road where this species occurs.

The AL ARNG has coordinated with the USFWS to determine the most appropriate course of action in the management of TYG population within the Gate 14 SINA. Management of the area will include:

- 1) Routine monitoring and annual population counts;
- 2) Annual mowing to control competition;
- 3) Removal of invasive exotic species as needed; and
- 4) Coordination with ANAD to prevent accidental herbicide application along the fence line.

#### **I.6.4.1.4 Rock Creek**

The Rock Creek habitat area is located at the junction of training areas 6B, 6C and 6D, between the Small and Large Impact Areas where Rock Creek crosses under the training areas boundary road. TYG occurs on the water edges and in shoals in the creek. The area was only recently discovered and has not yet been completely surveyed or delineated due to its inaccessible location between SDZs. However, observations by natural resources staff estimate this population is of significant size as compared to other TYG locations on Pelham Range.

Potential threats to TYG at Rock Creek include:

- 1) Possible sedimentation from the roadways and roadway maintenance;
- 2) Invasion of woody species, which would eliminate sunny open areas along the edge of the creek;
- 3) Competition of other herbaceous species; and
- 4) Competition from non-native invasive plant species of all strata.

This site is relatively inaccessible due to training. Observation and management of the area will be conducted as the training schedule may allow in any given year as follows:



- 1) Site inspection and annual population monitoring will be conducted as the training schedule may allow in any given year as described in Section I.6.5 and results will be recorded in the ESMD.
- 2) The site will not have any active maintenance. It will be monitored for disturbances such as invasive species encroachment, erosion and sedimentation, and off road vehicle traffic.
- 3) Signs will be added along the road when they can be obtained.

#### **I.6.4.2 Mohr's Barbara's Buttons**

MBB is a perennial flowering plant that was officially listed as threatened by the USFWS in 1988. A recovery plan with the objective of delisting was subsequently prepared and approved in 1991. The species was first discovered at the FM-ARNGTC in 1993. Pelham Range has one large population of MBB in the Impact Area Barren SINA and other small localized populations scattered along roadsides in several training areas.

MBB typically occurs in moist, prairie-like forest openings and along shale-bedded streams. It's often found around natural spring and seep areas on poorly drained sandy-clay soils that have a high organic content. At the FM-ARNGTC, MBB occurs in full sun or partial shade conditions. This species maintains itself in areas that are naturally or artificially cleared, and was probably maintained naturally through occasional fire or local soil conditions that promoted a grass-sedge community.

##### **I.6.4.2.1 Impact Area Barren SINA**

MBB was discovered in the Large Impact Area of Pelham Range in 1993 by the ANHP and is considered one of the largest populations outside of Bibb County, Alabama. As required by Section 7 of the ESA, consultation with the USFWS was initiated and the area was designated as the Impact Area Barren SINA. Since the area containing the MBB contains unexploded ordnance, the area is off limits to all personnel thus preventing implementation of a comprehensive monitoring and management program. Initial estimates of the MBB population were conducted by visual means such as aerial flyovers.

Located along the western edge of the Large Impact Area, the Impact Area Barren SINA is comprised of an open xeric hardpan savanna ranging from relatively dense to an open tree canopy. The herbaceous layer is dominated by grasses, sedges and rushes with strong legume and composite components. MBB are found along ephemeral streams that flow through the site.

Potential threats to MBB in the Impact Area Barren SINA include the:

- 1) Invasion of woody species, which would eliminate sunny open areas; and
- 2) Competition of other herbaceous species and/or kudzu.

The AL ARNG has coordinated with the USFWS to determine the most appropriate course of action in the management of MBB populations in the SINA. Management of the areas will include:

- 1) Conduct annual prescribed burns as needed between mid-March and the first week of April.
- 2) Limited annual monitoring of the site when permission from Range Control and EOD escort can be obtained.

The management strategy for this SINA is to maintain the site with prescribed fire. However, recurring wild fires in the Large Impact Area are primarily responsible for maintaining the site since its discovery. The high frequency of fire has prevented woody encroachment and maintained conditions favorable to MBB. This population may represent one of the few naturally maintained remaining populations of MBB, and the continuation of a fire regime is considered the most critical management requirement for the Impact Area Barren SINA. If fire has not annually occurred by March 15, a prescribed burn will be scheduled for the site. This burn will be undertaken prior to green-up which usually occurs during the first week of April.

Access to the site for monitoring is limited to short visits approved by Range Control and with escort by EOD personnel. These visits focus primarily on the collection of qualitative information, visual estimates

and field observations for recording in the ESMD. Access to the site has not been approved for several years.

#### **I.6.4.2.2 Additional MBB Areas**

From 2002 to 2010, additional areas containing MBB were discovered along the edge of TA 5A and along the edge of the main roads in TAs 4A, 4B, 5C, 7B and 7C. These additional sites are primarily in disturbed areas along roads and have not been designated as SINAs. As these populations are located in areas that have historically been periodically mowed, the AL ARNG will continue to coordinate with the USFWS to determine the best management approach for these populations.

Potential threats to MBB along roadways include the:

- 1) Potential disturbance by vehicle traffic;
- 2) Competition from other plant species across all strata;
- 3) Competition from non-native invasive plant species across all strata; and
- 4) Herbicide application.

The AL ARNG has coordinated with the USFWS to determine the most appropriate course of action in the management of MBB populations along roadsides. Management of the areas will include:

- 1) Routine site inspection and annual population monitoring of the sites will be accomplished as described in Section I.6.5 and results will be recorded in the ESMD.
- 2) Mowing will be conducted after the growing season.
- 3) Prescribed burns will be conducted on a one to three-year rotational basis as determined for each training area by the FMP.
- 4) Monitoring the impacts of vehicle traffic will be conducted to determine if additional measures of protection are required.
- 5) Signs will be maintained along roadways containing MBB for driver awareness.

Surveys to identify additional populations are routinely conducted by natural resources staff. These surveys are generally scheduled during the flowering period in June and concentrate on areas containing potential habitat.

#### **I.6.4.3 Bat Species**

There are eleven bat species that are found at Pelham range: gray bat, Indiana bat, northern long-eared bat (NLEB), tricolored bat, hoary bat, silver-haired bat, big brown bat, eastern red bat, Seminole bat, evening bat, and Mexican free-tailed bat. The gray bat, Indiana bat, and northern long-eared bat are federally protected; and the tricolored bat is petitioned for listing. While the Mexican free-tailed bat is not federally listed, it is of high conservation concern in Alabama. While habitat type varies by species, the primary food source for the bats on Pelham Range is insects. Insect populations can be adversely impacted by biocides and industrial pollutants. Biocides are managed on Pelham Range in accordance with the Integrated Pest Management Plan (IPMP). Pollutants at Pelham Range are primarily controlled and managed through the implementation of the FM-ARNGTC NPDES permit, BMP's, and the SPCC/ISCP.

The protection of the Cane Creek corridor benefits several listed species. In recent years, it has been discovered that this corridor is an important foraging area for many species of bats in addition to gray bats. The Indiana bat and NLEB were netted on Cane Creek in 2014.

Proper forestry management techniques are one of the best ways to preserve bat habitat and avoid unnecessary impacts. A nationwide programmatic agreement (PA) with USFWS (2015) on the northern long-eared bat has a concurrence from FWS of "not likely to adversely affect" if activities are conducted in compliance with the guidelines and conservation measures set forth. While this PA is now expired, it is still in use for the Indiana bat. It covers various activities at FM-ARNGTC such as military training,

construction, and forestry activities. Concurrence with USFWS dated January 24, 2018 regarding forestry management practices impacts on protected species (including the above listed bat species) found that these activities may affect, but are not likely to adversely affect the aforementioned bat species at Pelham Range.

Minor forestry actions included in this concurrence are as follows:

- Selective timber thinning in accordance with the forest management plan (FMP);
- Prescribed burning in accordance with the prescribed burn plan;
- Herbicide applications to control competition and invasive species in pine stands;
- Maintenance along previously existing ROWs; and
- Clear cutting under 1 acre such as for the treatment of the southern pine beetle infestation

More detail is provided in Section I.6.7.

#### **I.6.4.3.1 Gray Bat**

In general, management of the gray bat at the FM-ARNGTC consists of protecting gray bat foraging habitat along Cane Creek and its tributaries, as well as Cave Creek on Main Enclave. Conserving these habitats entails protecting the riparian zone (an approximate 50-foot forested buffer on each side of the creek) and water quality. Foraging habitat is protected through the management of the Cane Creek Corridor SINA primarily by the restriction of activities inside the buffer. Activities occurring within the SINA as well as along other streams that contain gray bat foraging habitat are restricted in accordance with the Section 7 consultation. The AL ARNG will follow the guidelines listed below:

- 1) No smoke operations will be conducted in high quality habitat areas over Cane Creek.
- 2) Fog oil training will occur only during daylight hours.
- 3) Smoke operations will be restricted to designated areas (Section B.3.1).
- 4) All timber harvests will be written to comply with Alabama BMPs for Forestry.
- 5) Timber will generally be harvested by thinning throughout the installation. If clearcutting is deemed necessary, then the USFWS will be consulted on the potential effects to the gray bat.

The gray bat utilizes forested corridors along Cane Creek Corridor SINA on Pelham Range. Threats to the gray bat include:

- 1) Contraction of white-nose syndrome (WNS) in cave roosts;
- 2) Contamination of their food supply by biocides (i.e., herbicides, insecticides, pesticides);
- 3) Adverse alteration of their preferred foraging habitat;
- 4) Human induced natural adverse alterations of their summer and winter caves;
- 5) Human disturbance during hibernation and during the maternity period;
- 6) Vandalism; and
- 7) Removal of woody vegetation along travel corridors or adjacent to preferred foraging areas.

No cave roosts occur on Pelham Range; therefore, potential threats to gray bats on Pelham Range are restricted to Nos. 2, 3 and 7, as listed above.

The primary food base for the gray bat consists of insects, whose populations may be adversely affected by poor water quality. Aquatic insects are often adversely affected by pollutants through altered biochemical conditions, food resources, respiratory diffusion gradients, and habitat space (Williams & Feltmate 1992). Pollutants that could adversely affect the aquatic insect base of Cane Creek include sediments, biocides, and industrial pollutants.

Sedimentation of aquatic habitats on Pelham Range primarily results from erosion associated with roads, construction, and non-vegetation areas. The AL ARNG will implement measures to ensure soil conservation and prevent soil erosion and sedimentation for all soil-disturbing activities that occur on-site.

Maintaining intact riparian zones will also help prevent sediments and other contaminants from entering Cane Creek. Erosion is controlled and managed through implementation of the SEMP and construction site BMP plans.

In general, the Cane Creek Corridor SINA includes a 50-foot forested buffer on either side of Cane Creek, as measured from the bank. Activities allowed within the Cane Creek SINA include:

- Pedestrian traffic;
- Hunting and fishing; and
- Stream fording (ONLY at designated areas).

Activities prohibited without further consultation from the USFWS will include:

- Cutting activities, including thinning, within 50 feet of a stream or creek;
- Clear cutting on Pelham Range within SINAs unless for southern pine beetle control; and
- The use of herbicides or pesticides within 50 feet of a stream or creek.

The overall management strategies for protecting the Cane Creek Corridor are more passive than active. However, some activities are routinely prescribed to maintain habitat quality. The proper maintenance and renovation of ford sites along the creek, the use of best management practices associated with road maintenance and construction projects adjacent to the corridor and control of invasive species within and near the corridor are activities that will be planned and coordinated with the USFWS.

In accordance with Section 7 of the ESA, the AL ARNG initiated informal consultation with the USFWS in March of 2000 to address the potential effects of obscurant military training (fog oil) and timber harvesting operations on the gray bat on Pelham Range. The USFWS concurred that no adverse effect would be expected upon the gray bat as long as measures outlined in the consultation letters were implemented. The Mission EA (Thompson Engineering, Inc. 2018) addressed the use of fog oil, smoke, and obscurants and their effects to all FM-ARNGTC's listed bats. The consultation with USFWS updated the 2000 guidance by referencing the conservation measures in the 2015 programmatic agreement. This updated guidance on fog oil/smoke/obscurants includes the Indiana bat and NLEB and is more restrictive than the 2000 consultation.

#### **I.6.4.3.2 Indiana Bat**

The Indiana bat uses riparian and upland habitats for foraging, and in summer, uses trees for roosting. The Indiana bat captured during the 2014 survey was caught along Cane Creek. The AL ARNG continues to implement the conservation measures and consultation guidelines of the programmatic agreement with the USFWS Daphne Ecological Services Field Office regarding the "Informal Consultation and Management Guidelines for the Northern Long-eared Bat (2015)," which included allowances for the Indiana bat as well. The Cane Creek SINA management guidelines can be found in the gray bat section (I.6.4.3.1) above.

Threats to the Indiana bat include:

- 1) Contraction of WNS in cave roosts;
- 2) Contamination or habitat disruption of their food supply by biocides due to poor water quality;
- 3) Adverse alteration of their preferred foraging habitat;
- 4) Human induced natural adverse alterations of their summer and winter caves;
- 5) Human disturbance during hibernation and during the maternity period;
- 6) Vandalism; and
- 7) Removal of woody vegetation along travel corridors or adjacent to preferred foraging areas.

No cave roosts occur on Pelham Range; therefore, potential threats to Indiana bats on Pelham Range are restricted to Nos. 2, 3 and 7, as listed above.

The primary food base for the Indiana bat consists of insects, whose populations may be adversely affected by poor water quality. Aquatic insects are often adversely affected by pollutants through altered biochemical conditions, food resources, respiratory diffusion gradients, and habitat space (Williams & Feltmate 1992). Pollutants that could adversely affect the aquatic insect base of streams and creeks at Pelham range include biocides, industrial pollutants, and sediment.

Sedimentation of aquatic habitats on Pelham Range primarily results from erosion associated with roads, construction, and non-vegetation areas. The AL ARNG will implement measures to ensure soil conservation and prevent soil erosion and sedimentation for all soil-disturbing activities that occur on-site. Maintaining intact riparian zones will also help prevent sediments and other contaminants from entering streams and creeks. Erosion is controlled and managed through implementation of the SEMP and construction site BMP plans.

Indiana bats are impacted by threats to quality forest habitat used for roosting and foraging. This threat primarily comes from timber or construction operations that remove potential roost trees and from invasive species that choke the understory creating a cluttered flight path. Conservation measures for forestry actions to minimize impacts are implemented by FM-ARNGTC such as selective thinning, leaving snags and trees with exfoliating bark, and no burning or thinning during the non-volant season.

#### **I.6.4.3.3 Northern Long-eared Bat**

The primary food source for the northern long-eared bat consists of insects, whose populations are often adversely affected by pollutants. The northern long-eared bat (NLEB) forages in riparian habitats and upland forests. During the 2014 bat survey, a NLEB was netted along Cane Creek. The AL ARNG continues to implement the conservation measures and consultation guidelines of the programmatic agreement with the USFWS Daphne Ecological Services Field Office regarding the “Informal Consultation and Management Guidelines for the Northern Long-eared Bat” (2015).

Threats to the northern long-eared bat include:

- 1) The northern long-eared bat is highly susceptible to WNS;
- 2) Contamination or habitat disruption of their food supply due to poor water quality;
- 3) Adverse alteration of their preferred foraging habitat;
- 4) Human induced natural adverse alterations of their summer and winter caves;
- 5) Human disturbance during hibernation and during the maternity period;
- 6) Vandalism; and
- 7) Removal of woody vegetation along travel corridors or adjacent to preferred foraging areas.

No cave roosts occur on Pelham Range; therefore, potential threats to northern long-eared bats on Pelham Range are restricted to Nos. 2, 3 and 7, as listed above.

The primary food base for the NLEB consists of insects, whose populations may be adversely affected by poor water quality. Aquatic insects are often affected by pollutants through altered biochemical conditions, food resources, respiratory diffusion gradients, and habitat space (Williams & Feltmate 1992). Pollutants that could adversely affect the aquatic insect base of streams and creeks at Pelham range include biocides, industrial pollutants, and sediment.

Specifically at FM-ARNGTC, NLEB are impacted by threats to quality forest habitat used for roosting and foraging. This threat primarily comes from timber or construction operations that remove potential roost trees and from invasive species that choke the understory creating a cluttered flight path. Conservation measures for forestry actions to minimize impacts are implemented by FM-ARNGTC such as selective thinning, leaving snags and trees with exfoliating bark, and no burning or thinning during the non-volant season.

Sedimentation of aquatic habitats on Pelham Range primarily results from erosion associated with roads, construction, and non-vegetation areas. The AL ARNG will implement measures to ensure soil conservation and prevent soil erosion and sedimentation for all soil-disturbing activities that occur on-site. Maintaining intact riparian zones will also help prevent sediments and other contaminants from entering streams and creeks. Erosion is controlled and managed through implementation of the SEMP and construction site BMP plans.

#### **I.6.4.3.4 Tricolored Bat**

The tricolored bat has been captured in every survey since the 1990s and is often the third most captured bat species on the range. The lifestyle and habits of the tricolored bat mirror those of the northern long-eared and Indiana bats. The tricolored bat is currently petitioned for Federal listing and is undergoing a 12-month status review to determine if such listing is warranted. The AL ARNG has engaged in proactive discussions with FWS regarding the potential listing and has received guidance that the current conservation measures implemented for gray bats, Indiana bats, and NLEB should be sufficient for tricolored bats. It is the AL ARNG's goal to assist in species recovery and avoid potential listings when it is feasible to do so.

Future surveys may attempt to collect data on bat species of concern by studying their use of Pelham Range habitats. For example, the 2018 survey included radio tracking of female tricolored bats to learn more about their preferred summer roost habitat on Pelham Range. This data can be shared with other stakeholders as requested to assist with species conservation.

#### **I.6.4.3.5 Mexican Free-tailed Bat**

The Mexican free-tailed bat (MFTB) is also known as the Brazilian free-tailed bat, the Le Conte's free-tailed bat, and the guano bat. These bats are known only to occur in human-made structures and are of a high conservation concern due to a steady decline of documented roosts. This species is a high altitude flyer and is rarely caught in mist net surveys. Most are captured by surveying known roost sites. A distinctive, musky odor produced by the gular gland, enables humans to detect colonies from several hundred feet away. Their diet consists primarily of moths, but they may also consume beetles, flying ants, leafhoppers, and true bugs (Schmidly 1991). The MFTB is present in Alabama year round. In the southeastern United States, they enter a state of torpor whenever temperatures drop below 68° F. Throughout the southeastern United States, MFTBs are locally common, but protected roosts sites are few. Modern building designs and renovation/demolishing of old buildings have left fewer roost sites available.

During the August 2018 bat survey, a MFTB was captured for the first time at Pelham Range (Copperhead Environmental Consulting, October 2018). This new species capture is a confirmation of the level of species diversity, available habitat, and food sources on Pelham Range.

AL ARNG is currently seeking guidance on appropriate conservation needs from the ADCNR. Until such needs are outlined, ADCNR has indicated that the current conservation measures for addressing bats in buildings and other manmade structures under the PA is sufficient for protecting the MFTB at FM ARNGTC. These measures include performing building inspections prior to demolition and using humane exclusion during the inactive season. While it is currently of high conservation concern in the state, this status could potentially be downgraded once additional population data has been obtained. The species has been documented in other locations in north Alabama and there are more than two known roost sites in the state (personal communication ADCNR 2018).

#### I.6.4.4 Alabama Rainbow

The Alabama rainbow (*Villosa iris nebulosi*) is a freshwater mussel found in small streams in the Mobile basin upstream of the fall line in Alabama. It inhabits sand and gravel riffle areas in moderate currents. According to NatureServe, this species has been recorded in Calhoun, Clay, Cleburne, Jackson, Lawrence, Talladega and Winston counties in Alabama and is ranked “S3” of high conservation concern for the state. It is also petitioned for listing under the ESA.

Like many freshwater mussel species, the Alabama rainbow larvae are brooded in the gills of the female and, when mature, are released into the water where they spend a brief period as obligate parasites on the gills, fins, or other external parts of fish until they drop off. The following fish are identified as known hosts for the Alabama rainbow: long ear sunfish, redeye bass, spotted bass, and largemouth bass. All of these fish species have been documented in Cane Creek during faunal surveys.

Two dead specimen shells were documented at Willett Springs by Jim Godwin in 1992. However, the species has not been documented at FM-ARNGTC in faunal surveys since then. Like most freshwater mussels of conservation concern, destruction of suitable aquatic habitat through stream sedimentation and barriers to fish passage are thought to be primarily responsible for a decline in Alabama rainbow populations. This species has been raised at the ADCNRs Alabama Aquatic Biodiversity Center and stocked in some Alabama streams to aid in its recovery (Outdooralabama.com).

A mussel survey for species of concern is proposed for the current INRMP cycle as listed in Appendix T, Table 24 - Planned Projects and in section I.6.6 below.

Threats include destruction of habitat through sedimentation of creeks and fish passage barriers such as the Morrisville Dam and the Texas Road Crossing. These structures on Cane Creek are threats to aquatic species that require migrating for reproduction. Since the Alabama rainbow relies on fish species as their hosts for part of their life cycle, these obstructions represent a threat to the existence of viable habitat in Cane Creek and its tributaries. The USFWS has requested removal or modification of these structures to allow for passage of aquatic species. See FY19 USFWS Response to Annual Coordination in Appendix A.

#### I.6.4.5 Coosa Creekshell

The Coosa creekshell (*Villosa umbrans*) is a freshwater mussel endemic to the Coosa River drainage above the Fall Line in Alabama, Georgia and Tennessee. Although once widespread, it is now thought to persist only in a few tributaries in the uppermost reaches of the system, primarily in Georgia (Mirarchi et al., 2004). According to NatureServe, it has been identified in Calhoun, Clay, Cleburne and Talladega counties in Alabama and is ranked as “S2 Imperiled” in the state. Its habitat is primarily small creeks and medium-sized rivers. However, there are a few records from the Coosa River prior to its impoundment. It is found in a mixture of sand, gravel, and cobble substrates in moderate current (Williams et al., 2008) and utilizes blue gill/bream species (*Lepomis spp.*) and sculpins (*Cottus spp.*) as hosts for reproduction. These fish species occur on Pelham Range in Cane Creek and its tributaries. Destruction of habitat through impacts to streams, such as sedimentation, water pollution and barriers to fish passage, are responsible for the decline in Coosa creekshell populations within the region. The Coosa creekshell is currently petitioned for listing under the ESA.

The Coosa creekshell has been documented once in Cane Creek in 1992 by James Godwin. In 2013, it was documented in Rock Creek, a tributary to Cane Creek, during a macroinvertebrate survey (AerostarSES, 2013). Both occurrences were dead specimens as only the shells were found.

A mussel survey for species of concern is proposed for the current INRMP cycle as listed in Appendix T, Table 24 - Planned Projects and in section I.6.6 below.

Threats include destruction of habitat through sedimentation of creeks and fish passage barriers such as the Morrisville Dam and the Texas Road Crossing. These structures on Cane Creek are threats to aquatic species that require migrating for reproduction. Since the Coosa creekshell relies on fish species as their

hosts for part of their life cycle, these obstructions represent a threat to the existence of viable habitat in Cane Creek and its tributaries. The USFWS has requested removal or modification of these structures to allow for passage of aquatic species. See FY19 USFWS Response to Annual Coordination in Appendix A.

#### **I.6.4.6 Monarch Butterfly**

The monarch butterfly (*Danaus plexippus*) is a candidate for listing. In December 2020, the USFWS decided that listing the monarch under the Endangered Species Act was warranted but precluded at this time by higher priority listing actions. The status will be reviewed each year until a proposal is developed to list the monarch butterfly. This large, orange, showy species is one of the most well-known butterflies in the world and flies with its wings held in a 'V' shape. The North American populations of monarchs are strongly migratory, although some non-migratory populations exist in south Florida and the Gulf Coast. Over-wintering areas for North American populations are limited to a few dozen places in coastal California and the mountains of Mexico. The summer range includes portions of the continuous U.S. and the southern portions of all Canadian provinces bordering the United States where milkweeds occur. Populations in Florida and the Gulf Coast are considered non-migratory (NatureServe Explorer). Its habitat in North America is generalized occurring in wetlands, cropland, scrub/shrub, grasslands and forests among others, and is dependent on patches of milkweed for breeding.

This species is ranked globally secure, especially in non-migratory populations. However, in North America the migratory monarch is no longer considered secure due to its severe recent decline of roughly 90%. If native North American populations still represent most of the global total, then a decline of more than 50% has probably already occurred in less than a decade with a sharp downward trend as of late 2013 (NatureServe Explorer). This large-scale decline is primarily the result of changes in the breeding habitat, not the wintering habitat. Specifically, the loss of milkweed as a result of changes in agricultural practices has caused a dramatic decline in available breeding habitat for the species in North America.

The monarch was documented by Fort McClellan natural resources staff in September 2019. At FM-ARNGTC. A butterfly survey is planned to further search for this species on the range as described below in section I.6.6. Measures to conserve monarch habitat may include creation of pollinator plots and modified mowing of grassland habitats, such as ranges, where milkweeds may be present as outlined in section I.6.6.

#### **I.6.4.7 Frosted Elfin**

The frosted elfin butterfly (*Callophrys irus*) is petitioned for listing and currently undergoing a 12-month status review with the listing decision scheduled for FY23. It has a wingspan of  $\frac{3}{4}$  -  $1\frac{1}{4}$  inches and its underwing surfaces are brown with extensive gray frosting along the outer margins. The frosted area contains a distinct single black spot near the short, stubby tail. Upper surfaces are rarely seen but are dark brown. Males have a stigma patch, a pheromone-producing scent scale, on the forewing.

The frosted elfin butterfly is found in scattered local communities from Maine west across New York and southern Michigan to central Wisconsin; south along the Atlantic coast and the Appalachians to northern Alabama and Georgia. Its habitats include oak savannah and pine barren habitats, open woods, and forest edges with wild blue lupine. Lupines (*Lupinus* spp.) and wild indigos (*Baptisia* spp.) are reported in other areas. No host plant has yet been verified for Alabama, but the sundial lupine (*Lupinus perennis*) is the host in the Florida Panhandle. In the spring, females lay eggs on the flower buds of a host plant, usually wild lupine or false indigo. The chrysalis weaves a cocoon in leaf litter under the host plant. The caterpillars eat the flowers and seedpods.

Frosted elfin populations have plummeted in the last 50 years and the species is now rare throughout its range. In Alabama, there is only one occurrence record in the state. That specimen was collected in Tuscaloosa County during the 1950s and is currently housed at the Alabama Museum of Natural History. In Florida, lupine-eating populations occur only miles from the state line.



*Information taken from Alabama Butterfly Atlas—  
<https://Alabama.butterflyatlas.usf.edu/species/details/32/frosted-elfin>*

The species has not been identified on FM-ARNGTC, although it lies within the habitat range. A butterfly survey is planned to further search for this species on the installation and is outlined in Appendix T, Table 24 - Planned Projects Table and below in section I.6.6.

### **I.6.5 Inventory and Monitoring**

The Natural Resources Program Manager records the status of populations as well as significant events within ecological communities that potentially would affect threatened and endangered species in the ESMD. Species specific inventory and monitoring is discussed below.

TYG - TYG occurs within Willett Springs SINA, Lloyd's Chapel Swale SINA, Gate 14 SINA, and Rock Creek. Annual monitoring of TYG will be conducted in late July and August when flowers are present for consistent comparisons among years. Field surveys will involve a plant inventory and a qualitative assessment of habitat. The habitat assessment identifies impacts that may benefit or adversely affect the populations. The populations will also be visited on a routine basis throughout the year to monitor potential changes in the general area. The AL ARNG will continue to coordinate with the USFWS to determine the best management and monitoring techniques for these populations.

MBB - MBB occurs within the Large Impact Area (LIA) on Pelham Range in a population known as Impact Area Barren SINA. Access to the impact area for natural resources management is restricted and must be coordinated with Range Control and EOD personnel. Due to training and safety restrictions, detailed inventory of the population is not possible. This species also occurs along road edges, ditches and drainages in TAs 4A, 4B, 5A, 5C, 7B and 7C. Monitoring of these sites includes:

- Routine site reconnaissance visit to monitor for disturbances or other changes in habitat. Site observations will be recorded in the ESMD and may include the following: occurrence of flowering or fruiting individuals; apparent disturbances such as unauthorized vehicle access, mowing operations or heavy deer browse and bedding; evidence of invading woody vegetation (seedlings); invasive and exotic species; and any significant changes in the appearance of the site. Due to the restricted nature of the LIA (due to unexploded ordnance), only the edge of that area will be inspected.
- An annual site visit to conduct population counts will occur in June during the flowering season.

Gray bat, Indiana bat, northern long-eared bat, tricolored bat, and Mexican free-tailed bat - Mist net surveys are performed in the summers and include other USFWS-approved technologies such as radiotelemetry and ANABAT. FM-ARNGTC bat surveys adhere to USFWS Indiana Bat Survey Guidelines. However, the survey protocol may be modified or adapted with the permission and technical assistance from USFWS to fit the habitats on the installation or to achieve a certain objective. Survey designs are approved by the Daphne Ecological Services Field Office and focus on studying the bat population present on the installation; supporting NEPA analysis as required for the AL ARNGs proposed projects and training requirements; and providing stakeholders with data useful to bat conservation and species recovery efforts in the state and region.

The primary objective of the surveys is to confirm the presence of all listed bat species on FM-ARNGTC. Secondary objectives of surveys include assessing bat usage of the Cane Creek Corridor, tributaries and upland areas associated with the Cane Creek Corridor, delineating bat habitat, evaluating habitat quality and suitability, and determining the food base. It is the AL ARNG's goal to gain a better understanding of how bats utilize the FM-ARNGTC in order to provide adequate maintenance of their habitat and refinement of management efforts.

Since the gray bat was discovered on Pelham Range in 1995, a variety of surveys including mist net, acoustic, and radiotelemetry have occurred in 1996, 1997, 2002, 2004, 2005 and 2007, 2012, 2014, and

2018. These surveys/studies have confirmed the continued presence of the gray bat and the discovery of additional listed bat species (Indiana and northern long-eared) on the range. Surveys also provide important data on habitat use and population health. Relatively even numbers of male and female, and adult and juvenile gray bats and tricolored bats have been captured in surveys, indicating the resources for healthy breeding populations of these two species are available. Only one representative each from the northern long-eared and Indiana bats were captured during the 2014 survey. Additionally, these surveys also documented other species of bats on Pelham Range indicating that the diversity and quality of habitats supports a healthy bat population. For more information on gray bat surveys of FM-ARNGTC, please refer to the ESMC. The following is a list of previous surveys or studies for bats:

- *Literature Review and Habitat Characterization: Gray Bats (Myotis grisescens) at Fort McClellan, Alabama* (3D/International 1996a);
- *Investigations for the Presence of Gray Bats (Myotis grisescens) at Fort McClellan, Alabama* (3D/International 1996b);
- *Radiotelemetric Investigations of Foraging and Roosting Habitat of Gray Bats (Myotis grisescens) at Fort McClellan, Alabama* (3D/International 1997);
- *Gray Bat Use of Fort McClellan Army National Guard Training Center, Calhoun County, Alabama* (Environmental Solutions & Innovations, LLC 2003);
- *Habitat Suitability Assessment and Survey for the Gray Bat on Fort McClellan Army National Guard Training Center, Alabama* (BHE Environmental 2005);
- *Survey for the Gray Bat on Fort McClellan Army National Guard Training Center, Alabama* (BHE Environmental 2005);
- *2007 Survey for the Gray Bat, Myotis grisescens on Fort McClellan Army National Guard Training Center, Calhoun County, Alabama* (Engineering & Environmental, Inc. 2007);
- *Bat survey with Emphasis on Myotis species, Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2012);
- *Bat survey with Emphasis on Myotis species, Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2014);
- *Bat Population Survey with Emphasis on Myotis species at the Fort McClellan Army National Guard Training Center* (Copperhead Environmental Consulting, Inc. 2016); and
- *Survey for Bats on Ft. McClellan with Emphasis on T&E Species and Tricolored Bats (Perimyotis subflavus)* (Copperhead Environmental Consulting, Inc. 2018).

The emergence of WNS, a disease caused by the fungus *Geomyces destructans*, currently represents the most critical threat to bat species in North America. The northern long-eared and tricolored bats are particularly susceptible to WNS. The disease is responsible for an unprecedented mortality in hibernating bats in the eastern U.S. and has spread rapidly since its discovery in 2007 (USFWS 2011). As a result, the USFWS has developed a plan to assist State and Federal agencies in the management of WNS in bats, *A National Plan for Assisting States, Federal Agencies, and Tribes in Managing White-Nose Syndrome in Bats* (USFWS 2011). This plan outlines the critical elements in the investigation and management of WNS, identifies key action items to address stated goals, and outlines the roles of agencies involved in the effort. Additionally, the USFWS has recommended a decontamination protocol to prevent the transmission of *G. destructans* during bat surveys ([www.whitenosesyndrome.org](http://www.whitenosesyndrome.org)).

WNS was first detected in the state of Alabama in 2011. The AL ARNG is committed to working with State and Federal agencies to manage the effects of WNS at Pelham Range and within the region. All bat surveys adhere to and will continue to adhere to the USFWS decontamination protocol. Data obtained from surveys may be reported to USFWS or other wildlife agencies in an effort to coordinate and cooperate in the development and implementation of an effective national response to the disease.

**SINAs** - SINAs are monitored through routine visits by natural resources personnel. Significant changes in the landscape, disturbances, or any other management needs identified will be recorded in the ESMD.

### **I.6.6 Objectives and Projects**

The following objectives support the goals of the Threatened and Endangered Species Management Program at FM-ARNGTC:

- Objective 7a: *Monitor communities that could support threatened and endangered species,*
- Objective 7b: *Manage and maintain listed plant habitats, and*
- Objective 7c: *Improve/protect unique habitats for listed and at-risk species.*

Specific projects related to these objectives can be found in Appendix T, Table 24 - Planned Projects.

### **I.6.7 Relationship to other Natural Resources Management**

Silvicultural Practices: Silvicultural practices will only be performed within SINAs to ensure ecological integrity. MBB and TYG can probably tolerate light thinnings; however, clear cutting, use of herbicides, and/or mechanical site preparation could be very damaging to these plants and such actions should be approved by USFWS prior to implementing. Wooded corridors that provide the gray bat with cover on nightly flights between roosting and foraging areas would be protected. In addition, the use of herbicides and pesticides in areas adjacent to foraging and roost sites would be carefully controlled and monitored for unanticipated adverse effects (Johnson and Wehrle 2000).

Fire management: Prescribed fire may be used to control invasive species and ensure the ecological integrity of SINAs, as appropriate.

All forestry activities will be conducted with the following restrictions or conditions as they pertain to bats:

- Thinning and prescribed burning may occur any time of year except during the non-volant pup season (June 1-July 31);
- Dead trees, snags, or trees with exfoliating bark shall not be removed except for safety reasons during the non-volant pup season;
- Herbicide applications in forested environments shall be targeted, plant specific and follow the conservation measures specified in the PA for bats; and
- If listed species are documented during presence/absence surveys of an area planned for forestry activities, the action will be modified to incorporate avoidance measures such as exclusion buffers unless it can be conducted during the inactive season (October 15 to April 1).

### **I.6.8 Military Mission Considerations**

The presence of threatened and endangered species may minimize or prohibit the use of some areas on Pelham Range for some training activities. In cases where endangered species management in accordance with the appropriate guidance would conflict with mission activities, consultation with the USFWS and the ADCNR will be initiated to avoid jeopardizing any listed species or its critical habitat.

However, due to the location of threatened and endangered plant species on the FM-ARNGTC, there is no loss of training lands. These locations are in areas identified as off limits for ordnance (Impact Area), along roadsides and in ditches, around water features protected by buffer zones, on the installation boundary or other similar areas where training does not take place or requires only foot traffic. The only restriction that affects training pertains to the use of colored smoke grenades, which are prohibited in forested areas during the non-volant pup season (June and July) for listed bats. The AL ARNG has shifted smoke grenade use in forested areas to other months of the year to accommodate this restriction without impact to mission. Should training requirements or schedule change and the restriction cannot be accommodated, the AL ARNG will initiate the appropriate level of consultation with the USFWS to resolve the conflict.

## **I.7 Grounds Maintenance, Landscaping, and Urban Forestry**

### **I.7.1 Overview**

An Executive Memorandum dated 26 April 1996 directs Federal executive departments and agencies to use regionally native plants in landscaping for Federal grounds and Federally-funded projects. Native species generally provide better habitat for wildlife and have relatively low irrigation requirements. In addition, the use of native species generally reduces the need for pesticides and fertilizers. Landscaping often involves urban forestry. Urban forestry is the maintenance of individual trees or groupings of trees in an urban environment or between dominant land uses. Urban forests are valued for non-consumptive uses such as providing shade, aesthetic value, and habitat for wildlife.

The Main Enclave and portions of Pelham Range are maintained as improved and semi-improved grounds. Improved grounds include residential, and industrial areas; linear infrastructure facilities; and recreational and construction sites. Semi-improved grounds include altered lands, road shoulders, and other land use areas that require little maintenance. These areas need routine or periodic grounds maintenance.

### **I.7.2 Compliance**

Laws and regulations pertaining to grounds maintenance, landscaping, and urban forestry are as follows:

- EO 13148, Greening the Government through Leadership in Environmental Management;
- Presidential Memorandum (April 1994), Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds; and
- Federal Insecticide, Fungicide, and Rodenticide Act (7 USC §136).

These regulatory items are listed in Appendix C.

### **I.7.3 Goals**

The goals of grounds maintenance and landscape management are as follows:

- Protect, maintain and restore aquatic ecosystems
- Protect threatened and endangered species, species of concern and their habitats; and
- Make natural resources management decisions using the best available scientific and field-tested information.

### **I.7.4 Management Strategy**

Grounds maintenance is performed by facility engineers on Main Enclave and Pelham Range. Costs will be minimized by the use of low maintenance native species, reforestation, natural areas, and wildlife habitat. Specific management strategies for landscaping and grounds maintenance are as follows:

- Low maintenance, indigenous plants will be used in new landscaping projects.
- Innovative designs to retain water and retard surface water runoff will be implemented.
- The use of organic fertilizers will be considered to reduce the amount of chemical fertilizers.
- Areas not required to be intensively managed will be allowed to revert to a natural state.
- New landscaping surrounding structures eligible for or listed on the National Register will be coordinated through the Cultural Resources Manager (CRM) to reduce the potential for negative impacts.

### **I.7.5 Monitoring and Inventory**

There are not currently any monitoring or inventory programs in place at the FM-ARNGTC pertaining to grounds maintenance or landscaping.

### **I.7.6 Objectives and Projects**

The following objective supports all three of the grounds maintenance, landscaping, and urban forestry goals:

Objective 6a: *Identify and rehabilitate eroding training lands.*

Specific projects associated with this objective can be found in Appendix T, Table 24 - Planned Projects.

### **I.7.7 Relationship to other Natural Resources Management**

The following issues and programs are related to landscaping, grounds maintenance, and/or urban forestry:

- IPM – Native species are generally more resistant to pests than non-native species.
- Wildlife – The use of native species in landscaping improves wildlife habitat in urban areas.

### **I.7.8 Military Mission Considerations**

Appropriate grounds maintenance, landscaping, and urban forestry practices do not pose a threat to the military mission.

## **I.8 Erosion Control and Soil Conservation**

### **I.8.1 Overview**

Erosion control and soil conservation are important natural resources issues at the FM-ARNGTC due to the highly erodible soils found on the installation properties. The updated Soil Erosion Management Plan for the Fort McClellan Army National Guard Training Center (Thompson Engineering 2014) was prepared for Pelham Range and the AL ARNG Main Enclave. The purpose of the SEMP is to develop a means for evaluation, prevention, rehabilitation, and monitoring for present and possible future soil erosion associated with activities at the FM-ARNGTC. This SEMP addresses Pelham Range and the Main Enclave individually based upon training activities performed at each site, respectively.

The SEMP identified 45 areas of potential erosion and fourteen (14) specific areas of concern on Pelham Range (Appendix M: Figure 6). Erosion was not noted as a significant problem on at the Main Enclave. However, a minor area of sheet and rill erosion was documented on Trench Hill. The SEMP identifies viable options for the maintenance of current and possible future erosion sites and recommends soil erosion management practices. The SEMP also provides a cursory economic evaluation of possible erosion control measures and outlines a plan for monitoring and rehabilitation of erosional sites. The SEMP utilized the Fort McClellan Soil Erosion Management Plan (1994) as a baseline for known erosion sites on the Pelham Range properties. The SEMP is an INRMP component plan and is listed in Appendix S.

Problematic erosion sites are identified in the SEMP. Sites are rated from moderate to severe (Appendix O: Table 21). The amount of land, the erosion type(s) and the impacts to current and possible future training needs were taken into account during the identification process. Erosion at each site potentially threatens water quality, land stewardship goals, or infrastructure. The erosion management plan provides a rehabilitation/management plan for each site. To date, remediation of some of these sites has been accomplished; remediation for remaining sites is accomplished in accordance with funding availability and environmental compliance and mission status priorities.

### **I.8.2 Compliance**

Laws and regulations pertaining to erosion control and soil conservation include:

- Soil Conservation Act (16 USC §590a *et seq.*);
- CWA (33 USC §1341 *et seq.*); and
- EO 11989, Off-road Vehicle Use.

These laws and regulations are described in Appendix C.

### **I.8.3 Goals**

Soil conservation and erosion control goals of the FM-ARNGTC are as follows:

- Protect, maintain and restore aquatic ecosystems
- Protect threatened and endangered species, species of concern and their habitats; and
- Make natural resources management decisions using the best available scientific and field-tested information.

Soil conservation and erosion control is a fundamental component to managing land and water resources at the FM-ARNGTC.

### **I.8.4 Management Strategies**

#### **I.8.4.1 Erosion Prevention**

The FM-ARNGTC will control erosion and dust and prevent sedimentation into adjacent wetlands and waterbodies. The FM-ARNGTC will initiate soil erosion management practices including institutional, structural, and vegetative practices. Institutional practices are procedures, policies or regulations that ensure operations are conducted in such a manner as to reduce their impact. Structural practices consist of permanent construction and engineering practices to install erosion-resistant surfaces, stabilize drainage, modify slopes to reduce runoff velocity and trap sediments on-site. Vegetative practices consist of establishing live native plants on erosive or exposed surfaces. Plants stabilize slopes by binding soils with their roots, shielding soils from rainfall impact, interrupting surface runoff by roughening the surface, allowing more water to infiltrate rather than run off over the surface, trapping sediments in runoff, and wicking moisture out of soils by evapotranspiration. In addition, vegetative practices are self-regenerating and relatively maintenance free. Currently, these practices are being utilized for eroded sites within Pelham Range.

Table 22 lists institutional, structural, and vegetative practices that will be used to prevent or repair erosion problems. Additional information on these erosion control practices is available in the SEMP and the Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas (2009).

As required by AR 200-1 and 32 CFR Part 651, the AL ARNG will assess the potential erodability of a site during the planning of new development, training, and other land uses. Soils for Pelham Range are illustrated in Appendix M: Figure 5a. Soils for the Main Enclave are shown in Appendix M: Figure 5b.

#### **I.8.4.2 Vegetative / Re-vegetative Practices**

The success of the re-vegetation of disturbed sites is dependent upon the chemical and physical properties of the soil in which the plants will be rooted. Correct pH and phosphorus levels and the need for nitrogen fertilization are necessary for degraded lands to become re-vegetated. Therefore, soil amendments (lime and fertilizer) would be applied to rehabilitation sites before seeding. Proper application procedures would include soil analysis to ensure proper nutrient application levels. Other factors to consider are soil moisture, effects of the amendment on non-target species, weather patterns and potential contamination of streams, ponds and lakes.

Lime is used to neutralize acidic soils. The rate of lime application would be sufficient to raise soil pH to a value to support the species of plant material used for re-vegetation. Quality agricultural limestone is generally the preferred choice. Lime should be incorporated into the top six inches of soil, which allows better rooting of plants, and minimizes lime loss via rainfall runoff. Lime should not be applied under wet soil conditions because it is difficult to incorporate uniformly into the soil.

Fertilizers consist of three primary plant nutrients: nitrogen (N), available phosphorous ( $P_2O_5$ ) and water-soluble potash ( $K_2O$ ). Mixtures of fertilizer materials are commercially available; their grade or content is expressed as a ratio in weight percent as N:P:K. Fertilizer would be applied according to the results of the soil test. Fertilizers are also incorporated into the top 2 to 4 inches of soil, and should not be applied when soils are wet. In wet soils, salt from the fertilizer forms, which can significantly reduce the percentage of seed germination, especially with grasses. The effectiveness of bacteria that have been preemptively inoculated on legumes is also reduced under such conditions.

Vegetative and re-vegetative practices are identified as:

- Grassed Waterways are swales and culverts that have been shaped and lined with vegetated sod forming grass to prevent erosion in areas of concentrated runoff. When trying to reduce the possibility of severe gully erosion, grassed waterways provide a helpful solution. They force storm runoff water to flow down the center of an established grass strip and can carry very large quantities of storm water across a field without erosion. Grassed waterways are also used as filters to remove sediment, but may sometimes lose their effectiveness when too much sediment builds up in the waterways. To prevent this, it is important that vegetative residues, buffer strips, and other erosion control practices and structures be used along with grass waterways for maximum effectiveness.
- Buffer Strips are small areas or strips of land in permanent vegetation, designed to manage environmental concerns. Buffers include: riparian buffers, filter strips, contour grass strips, cross-wind trap strips, herbaceous wind barriers, and vegetative barriers. Strategically placed buffer strips can effectively mitigate the movement of sediment. Buffer strips are installed on a rolling topography with complex slopes where contour strips (contour strips are the same principle as a buffer strip, on a larger scale and usually on flat to slightly rolling lands) are difficult to establish.
- Barrier Strips involve a single or double row of closely growing grass or cereals established on the contour to provide protection against runoff.
- Riparian Strips are buffer strips of grass, shrubbery, plants, and other vegetation that grow on the banks of rivers and streams and areas with water conservation problems. The strips slow runoff and catch sediment. In shallow water flow, they can reduce sediment by 30% to 50% (Iowa State University, undated).
- Transplants are recommended for steep slopes receiving rapid runoff, only. Clump forming native grasses that will form dense hedges when planted close together are recommended. The hedges act as a barrier, holding back water and sediments. The sediment deposit over time will form natural terraces and aid in the slowing of water runoff. Shoots should be planted from 5 to 12 inches apart, depending on the present rate of water flow.
- Vegetated filter strips may be planted around the margins of training and range areas. Filter strips aid to slow runoff velocity, trap sediments and increase infiltration. These may be used to relieve or aid runoff from terraces. Filter strips and grassed waterways are not recommended for steep slopes or rocky soils. The proposed features require a dense stand of vegetative cover to function properly (Field and Engel undated).

Implementation of soil erosion practices are at the discretion of the FM-ARNGTC Environmental Branch and Range Control. Practices, as identified above, financial considerations and erosion priority list have been identified for the FM-ARNGTC in the SEMP. A definitive schedule for repair of eroded sites, and erosion prone sites has not been outlined. Considerations for erosion repair, control and maintenance are based upon the training activities within the region, extant of erosion characteristics and the affect that those characteristics have upon the AL ARNG to fulfill their mission.

### **I.8.5 Inventory and Monitoring**

An updated inventory of soil erosion areas on Pelham Range was completed in 2014 (Thompson Engineering 2014). Based on the field survey and information gathered during the 2014 SEMP update, the

FM-ARNGTC guidance provided in the previous SEMP's (1994 and 2003) appears to have been effective at reducing soil erosion. Subsequent facility-wide inspections for identifying new erosion areas and individual site evaluations for previously documented erosion areas will occur annually. Assessments will be accomplished through the use of aerial photography or on-site inspections. Indicators of erosion problems include a relatively low percent of perennial vegetation cover or areas with developing erosional features. A detailed site evaluation will be completed if a preliminary site visit indicates: 1) the onset of erosional features, with the potential to inflict damage to roads, culverts or other structures; 2) transport of sediment to environmentally sensitive areas such as wetlands or special habitats; or 3) interruption of training. The site will be identified with a severity rating (Appendix O: Table 21), and rehabilitation methods will be identified as appropriate.

### **I.8.6 Objectives and Projects**

Soil conservation and erosion problems are primarily related to training activities. Actual projects, including construction measures and other means pertaining to soil conservation and erosion control will be administered through the ITAM program.

*Objective 6a: Identify and rehabilitate eroding training lands.*

Specific projects associated with this objective can be found in Appendix T, Table 24 - Planned Projects.

### **I.8.7 Relationship to other Natural Resources Management**

Erosion control and soil conservation practices are related to the following other natural resources management issues:

Forest management – BMPs are used during silvicultural activities to control soil erosion.

Water quality – Erosion negatively impacts the water quality of receiving streams.

Wetlands – Erosion negatively impacts wetlands and aquatic habitats through increased potential for siltation.

### **I.8.8 Military Mission Considerations**

Appropriate soil conservation and erosion control are vital to the military mission. Threats to the military mission, as characterized by removal of and/or lack of accessibility to available training lands and other resources, such as infrastructure components, include:

- Undermining of roads;
- Loss of topsoil, which would decrease revegetation rates;
- Impacts to area streams or other aquatic habitats, potentially resulting in CWA implications; and
- establishment of washout areas on training lands.



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**APPENDIX J**  
**OUTDOOR RECREATION MANAGEMENT AND PUBLIC ACCESS**

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## **J. OUTDOOR RECREATION MANAGEMENT AND PUBLIC ACCESS**

### **J.1 Overview**

Outdoor recreation is defined as a recreational program, activity, or opportunity that is dependent on the natural environment. Examples include hunting, fishing, trapping, picnicking, bird watching, off-road vehicle use, hiking and interpretive trails use, wild and scenic river use, and under developed camping areas. Outdoor recreational opportunities at Pelham Range are restricted to hunting, fishing and special events organized by the Environmental branch. For several years, fishing has not been allowed at Pelham Range but can be reinstated by the Garrison Commander.

### **J.2 Compliance**

Laws and regulations pertaining to outdoor recreation include the following (also see Appendix C):

- SAIA (16 USC §670 et seq.);
- EO 12962, Recreational Fisheries; and
- 10 USC §2672 et seq.

The SAIA (16 USC §670 et seq.) requires DoD lands with suitable resources to be managed for outdoor recreation and to be open to the public provided that such access would not compromise the security, safety, or integrity of natural resources. Primarily due to safety and security issues, public access is granted only for hunting and fishing on Pelham Range. The AL ARNG regulates hunting and fishing on Pelham Range in accordance with Alabama hunting and fishing regulations. These regulations include opening and closing dates for hunting each game species and bag limits. Fishing is renewed annually at the discretion of the Garrison Commander. AR 200-1, *Environmental Protection and Enhancement*, and FM-ARNGTC Regulation 200-1-1, *Hunting and Fishing on Pelham Range*, are the primary means of establishing controls on hunting and fishing as well as other natural resources-related activities on Pelham Range. Recreational users of Pelham Range must also comply with FM-ARNGTC Regulation 350-2, *Range and Terrain*.

### **J.3 Goals and Objectives**

It is the goal of the FM-ARNGTC to provide military personnel and the general public quality outdoor recreational opportunities, consistent with the military mission, while maintaining ecosystem integrity and function.

### **J.4 Public Access**

The FM-ARNGTC is a Federally-owned, restricted-access military training facility. When granted, access to the FM-ARNGTC is a privilege, not a right, and is subordinate to security and safety requirements and accomplishing the military mission. The Training Site Commander (TSC) may, at any time, deny, revoke, or suspend access privileges or modify access requirements to facilitate mission needs and to ensure the safety and security of the public and/or government property.

Public access is granted at the FM-ARNGTC for the purpose of natural resource-oriented outdoor recreation as long as access does not interfere with safety requirements, security requirements, or accomplishment of the military mission. In addition, such access must be within manageable quotas, threatened and endangered species restrictions, and the ability of natural resources to support such use. Access can be denied in any and all hunting and fishing areas for wildlife management or biological reasons. All natural resource-oriented outdoor recreation must be coordinated through the Range Control Office, and subsequently through the GMO if such access is for hunting and fishing; uncontrolled or open public access is not permitted. The FM-ARNGTC occasionally hosts special events for small groups or individuals to visit installation cemeteries or to view and enjoy other natural and cultural resources.

Pelham Range is fenced and public access is restricted. Authorized entry into Pelham Range is through Gate 3 where security personnel check identification of persons entering the area. Persons having identification issued by the FM-ARNGTC or the AL ARNG are allowed entry. All others must have a pass or authorization issued by the Security Office. Security personnel routinely patrol Pelham Range. Additionally, a police officer who is authorized to make arrests and issue tickets patrols the area.

## **J.5 Hunting and Fishing**

### **J.5.1 Overview**

With respect to natural resources-oriented outdoor recreation, the FM-ARNGTC will manage its lands primarily for hunting and fishing opportunities. The hunting and fishing program is managed by a staff FM-ARNGTC Wildlife Biologist. Approximately 350 hunters and anglers utilize Pelham Range annually. Deer hunting is the most popular consumptive-use activity, followed by turkey hunting, and small game hunting.

Hunting is available on approximately 17,000 acres and is authorized during seasons determined by the ADCNR, Division of Wildlife and Freshwater Fisheries. The AL ARNG may further restrict the hunting days within the set season dates for each game species. Hunting is allowed approximately seven months out of the year and the seasons are typically consistent with the State of Alabama seasons. The first season normally begins in early October, and the last ends at the end of the following April. Deer season begins October 15th and ends February 10th. Turkey season starts March 15th and ends April 30th. In addition, selected training areas may be closed during the hunting season due to mission requirements and for wildlife management or biological reasons.

Impoundments and streams on Pelham Range are not currently open to fishing. Fishing on Pelham Range is not allowed but may be in the future subject to the discretion of the Garrison Commander.

### **J.5.2 Registration and Requirements**

In order to participate in hunting and fishing on Pelham Range, individuals must obtain the following permits, licenses, and equipment, most of which can be obtained at the GMO:

- Pelham Range Hunting and Fishing License – Hunters and anglers must have a valid Pelham Range Hunting and Fishing License issued by the GMO.
- State Licenses - Persons are responsible for obtaining appropriate hunting and/or fishing licenses from the State of Alabama prior to purchase of the Pelham Range License.
- Fish and Wildlife Orientation Course - Hunters and anglers must attend the Fish and Wildlife Orientation Course/Range Safety Briefing every two years prior to purchasing a Pelham Range Hunting and Fishing License. Senior citizens wishing only to fish must still attend the orientation course.
- Blaze Orange - All persons hunting with a firearm, with the exception of turkey hunting, are required to wear at least 500 square inches of blaze orange to include a vest and hat.

Revenue through the sale of post permits for the 2017-2018 season totaled approximately \$30,000, the highest in the previous five years.

### **J.5.3 Check-out and Clearing Procedures**

FM-ARNGTC Regulation 200-1-1, *Hunting and Fishing* on Pelham Range, outlines specific requirements of hunters, anglers, and other recreational users of the FM-ARNGTC for check-out and clearing procedures, as administered by the GMO. Range Control provides a weekly list to the GMO of areas available for recreational use. The FM-ARNGTC Environmental Branch Chief also informs the GMO of areas closed for management purposes, such as prescribed burning. All persons wishing to hunt or participate in other forms of outdoor recreation must first report, in person, to the GMO to review open and closed areas.

Persons reporting to the GMO will be issued a temporary permit to be displayed on the dash of personal vehicles used on the range.

Hunting over wildlife openings is strictly prohibited on Pelham Range. All areas on Pelham Range are closed to hunting except as assigned by the GMO. As such, all persons wishing to hunt must report to the GMO for assignment to a hunting area. Hunting areas will be assigned according to hunter preference, provided the number of hunters in any given hunting area does not exceed safety limitations. Only one form of hunting will be allowed at any one time within a hunting area. For example, deer and small game hunters will not be assigned to the same hunting area on the same day.

Clearance is required for shotgun and black powder deer hunters, only. To collect data, the GMO maintains a clearance/deer-check station on Pelham Range near Gate 3. Shotgun and black powder hunters must clear through the GMO or Gate 3 for every day they are assigned hunting privileges, whether they hunt or not. Failure to clear will result in a suspension of hunting privileges. Any deer hunter not clearing will be reported to the Game Warden, who will conduct a search as necessary. Harvested deer must be presented for checking upon clearance. Bow hunters are not required to clear unless a deer has been harvested. If a deer is harvested, bow hunters will be required to furnish harvest data (i.e., weight, jawbone, sex, antler development, etc.) to the GMO within 7 days. Turkey hunters are not required to clear unless a turkey has been harvested. Harvested turkeys must be presented to the GMO for inspection prior to clearance. If check-stations are closed, harvest data (i.e., weight, spur length, and beard length) must be furnished to the GMO no later than the following day. Upland game hunters (quail, dove, small mammals, etc.) need not clear but must provide requested harvest information listed on the back of the permit issued by the GMO. Permits may be deposited in drop boxes located at Gate 3 and the GMO.

#### **J.5.4 Hunting/Fishing Map**

The *FM-ARNGTC Wildlife Enhancement Areas* map (Appendix M: Figure 13) is issued to all Pelham Range license holders to assist them in navigating Pelham Range. These maps identify off-limits areas, bow hunting areas, streams, wetlands, fording sites, roads, parking areas, wildlife openings and TA boundaries.

#### **J.6 Recreation and Ecosystem Management**

Pelham Range's outdoor recreation program affects ecosystems with respect to harvested fish and game species and disturbance associated with recreational users. The AL ARNG will ensure that recreation activities do not jeopardize ecosystem integrity. Activities will be monitored for impacts on ecosystem integrity, as appropriate. Special consideration will be given to the protection of natural areas from negative impacts due to outdoor recreation; access to such areas will be limited to authorized scientific personnel. The AL ARNG will avoid introduction of such areas to unauthorized personnel through the distribution of maps or other location means.

#### **J.7 Outdoor Recreation Projects**

As stated in the Planned Projects table (Appendix T), the overlying goal for outdoor recreation is to provide opportunity for recreational use that is compatible with the AL ARNG Mission and natural resources management. In depth data, management and analysis will allow the FM-ARNGTC to effectively balance human recreation with biodiversity conservation. The following objective supports this goal:

*Objective 3a: Collect and maintain data on game species.* Facets of this objective include the following:

- Collect and analyze harvested game data;
- Conduct annual deer survey;
- Conduct and analyze turkey poult counts;
- Conduct and analyze bobwhite quail surveys;

- Participate in the wood duck banding program with state conservation when requested by ADCNR; and
- Training for AL ARNG personnel.

### **J.8 Relationship to other Natural Resources Management**

Forest management and fish and wildlife management issues and programs are both relevant to outdoor recreation management.

Ecosystem Management - Managing for ecosystem health and characterizing natural communities are essential inputs for game species management.

Forest management practices - Improving forest health and habitat quality directly affects wildlife habitat and wildlife populations.

Fish and Wildlife Management Programs - Creating wildlife openings and providing mineralized salt blocks allow for healthier and larger game populations.

### **J.9 Military Mission Considerations**

Accomplishment of the military mission has priority over outdoor recreation. Outdoor recreation activities will be available on Pelham Range as long as the military mission is not compromised. If recreational or management activities conflict with military activities, the military mission will always supersede such activities. The FM-ARNGTC's two impact areas, along with numerous firing ranges, are off-limits to recreation. Recreational access to other areas of Pelham Range will be restricted as determined by Range Control and the TSC. The TSC may at any time deny, revoke, or suspend access privileges or modify access requirements to facilitate mission needs and to ensure the safety and security of the public and/or government property.

**APPENDIX K  
CULTURAL RESOURCES MANAGEMENT**



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## **K. CULTURAL RESOURCES MANAGEMENT**

### **K.1 Cultural Resources at the FM-ARNGTC**

In the State of Alabama, all Federal projects are reviewed by the Alabama Historical Commission (AHC) which serves as the State Historic Preservation Office (SHPO). Management of cultural resources on AL ARNG properties is conducted through the AL ARNG Environmental Program Office at the Joint Forces Headquarters (JFHQ) in Montgomery, Alabama; under the auspices of the AL ARNG Environmental Program Manager. Further, management of cultural resources on AL ARNG properties is outlined explicitly in the Integrated Cultural Resources Management Plan (ICRMP) and Cultural Resources Handbook. For further information, please refer to Section 4.0 of the ICRMP.

### **K.3 Effects of Natural Resources Management on Cultural Resources**

Potential adverse effects to cultural resources from natural resources management are associated primarily with ground disturbance resulting from erosion control, firebreak maintenance, timber harvest, prescribed burning, and the creation or maintenance of wildlife openings. To reduce potential for disturbance, the AL ARNG will plan natural resources projects to avoid archaeological sites that may be eligible for the NRHP in coordination with the Environmental Program Office (cultural resources) and Environmental Program Manager. GIS data on cultural resources, maintained by the AL ARNG, will aid the review process accomplished as part of the NEPA review process.

Certain archaeological sites and cemeteries are protected as restricted areas on Pelham Range. If an archaeological site is discovered accidentally or disturbed during a natural resources project, the project will be suspended until the Environmental Program Office (cultural resources) and Environmental Program Manager and/or the AHC are notified. Standard operating procedures (SOPs) are included in the ICRMP. The FM-ARNGTC will take special precautions to avoid the disclosure of cultural resources location information to inappropriate parties, including emplacement of special measures with regard to GIS and mapping. Note that the location of cultural resources, especially traditional cultural properties, is considered confidential under multiple regulations (36 CFR 296.18; 16 USC 431-433; 16 USC 461; 16 USC 470, Section 304; 16 USC 469; 16 USC 470aa-mm, 43 CFR Part 7; 5 USC Section 552(b); and 42 USC 4231, Section 102).

Generally, natural resources management has numerous positive implications for cultural resources protection. Ecosystem management (Appendix I.1), wetlands management (Section I.3), SINA management (Section I.6), and erosion control and soil conservation (Section I.8) all contribute to protection of archaeological sites. However, natural resources management actions have the potential to affect cultural resources.

The following training and routine operational and maintenance activities and natural resources management activities could require Section 106 consultation:

Program Area	Type of Activity
Range Operations	Artillery impact and live-firing of weapons, ordnance disposal, tracked and wheeled vehicle maneuvering
Maintenance Operations	Facility construction, right-of-way easements, repair, alteration, modification, demolition, or disposal of standing structures (bridges 45+ years of age), construction of a modern structure or feature within the view shed of an historic property or district, construction of new roads (dirt or paved), other earthmoving activities (i.e., terrain modification)
Integrated Training Area Management	Restoration in areas that have been disturbed by troop activities (stream banks, trails, low water crossing, maneuver damage)
Environmental	Remediation activities that involve building demolition and earth excavation to remove contaminants, spill/hazard response for soil removal (emergency Section 106)
Forestry	Forest management (i.e., timber harvesting, tree planting, prescribed burning, crop tree release, timber stand improvements)
Wildland Fire	Construction of fire breaks in new areas which involve earthmoving activities
Land Rehabilitation and Maintenance (LRAM)	Repair of extreme erosion, removal of woody vegetation
Wildlife Management	In ground trapping arrays, development of new food plots, or ground disturbance at food plots located on known archaeological sites; plowing and disking in historically agricultural areas
Soil Conservation	Erosion control measures that alter original ground surface
Wetlands Management	In ground water control systems, earthen dams or mound features
Outdoor Recreation	Construction of pedestrian trails

Activities that generally do not require Section 106 consultation include:

- Mowing and routine landscaping;
- Field bivouacking (without the creation of new emplacements) and land navigation;
- Use of existing excavated areas;
- Munitions storage;
- Fueling and refueling activities;
- Repair, alteration, modification, demolition, or disposal of structures less than 50 years of age (exceptions apply to properties that meet Criteria Considerations that would make it eligible for listing to the NRHP); and
- Transfer of a structure over 50 years of age to another Federal agency.

All land disturbing activities would be coordinated through the JFHQ Environmental Program Office (cultural resources) and the Environmental Program Manager to ensure compliance with relevant cultural resources laws and regulations, and that no negative impacts are incurred to cultural resources.

#### **K.4 Traditional Use of Plants and Other Natural Resources**

The AL ARNG is currently working with Federally Recognized Tribes with ancestral ties to Alabama with regards to language addressing traditional plant use and other natural resources.

**APPENDIX L**  
**LAND USE AND PLANNING, NATURAL RESOURCES MANAGEMENT**

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## **L. LAND USE, LAND USE PLANNING, AND NATURAL RESOURCES MANAGEMENT**

This section discusses land use at the FM-ARNGTC and specific natural resources management (i.e., forest management, fish and wildlife management, land and water management, and outdoor recreation) occurring within each land use area. This section also addresses natural resources considerations that would be taken into account during land use planning.

### **L.1 Current Land Use and Natural Resources Management**

#### **L.1.1 Main Enclave**

As shown in Figure 3, Appendix M, the Main Enclave consists of properties within a developed area of the former Fort McClellan; therefore, natural resources occurring in this area are limited. Land area primarily consists of impervious surfaces (i.e., paved areas, buildings) and improved and semi-improved grounds. FM-ARNGTC has recently acquired 148 acres that are undeveloped. Cave Creek, a tributary of Cane Creek, flows through the Main Enclave area. Natural resources management within this area will focus on land and water management issues (Appendix I) such as storm water and water quality, riparian zone management, pest management, and landscaping and grounds maintenance. Specific natural resources management in this area will include:

- Protecting Cave Creek, as it has been identified as potential foraging habitat for gray bats. The protection of Cave Creek will primarily include conserving the tree canopy over it, removing invasive plant species and reducing artificial lighting where possible;
- Maintaining a vegetative buffer along the Cave Creek stream bank to minimize pollutants' impact to the stream system;
- Using native species in any new landscaping;
- Ensuring that use of herbicides and pesticides are minimized in accordance with IPM strategies (Appendix I); and
- Conducting further surveys of the new 148 acres added to the Main Enclave in order to identify natural resources and their management requirements.

#### **L.1.2 Pelham Range**

Land use on Pelham Range is discussed in this section according to the type of training activities that occurs in particular areas. Based on training activities, Pelham Range has been divided into the following land use areas: the cantonment area, areas used for light maneuver training, areas used for heavy maneuver training, duded impact areas, and a drop zone (Figure 2, Appendix M). In addition, restricted areas, and an ammunition transfer point are located on Pelham Range. Natural resources management is based on the requirements of the military mission within each of these areas. Natural resource management within SINAs, located within the primary land use areas, is discussed in Appendix I.6.

##### **L.1.2.1 Pelham Range Cantonment Area**

The Pelham Range cantonment area (approximately 93 acres) consists of a UTES and additional support facilities. This area primarily is used for equipment maintenance, storage, and support activities. Generally no natural resources management occurs within this area, except storm water and water quality control, (Appendix I.1), invasive species and noxious weed control (Appendix I.4), pest management (see Appendix I.5), and grounds maintenance (Appendix I.7).

### **L.1.2.2 Light Maneuver Training Areas**

The majority of land area on Pelham Range (approximately 15,933 acres) is available for light maneuver training. Light maneuver training areas are generally utilized for bivouac sites, base camps, staging activities, field maintenance activities, land navigation (foot traffic, compass orienteering), vehicle movements (dirt road convoys), engineer training, and combat support and combat service support. TAs designated for light maneuver training are shown on Figure 2, Appendix M.

Light maneuver training areas are primarily forested and will be managed to enhance natural resources consistent with the needs of the military mission. Natural resources management occurring throughout light maneuver training areas will include:

- Forest and fire Management activities as described in Appendix G;
- Fish and Wildlife Management, such as wildlife enhancement areas as described in Appendix H and in Appendix T (Planned Projects);
- Land and Water Resources Management as described in Appendix I;
- Ecosystem Management as described in Appendix T (Planned Projects); and
- Hunting and fishing as allowed by the GMO and Range Control.

SINAs occurring within the Light Training Maneuver Areas are available for restricted use based on the needs of species occurring within those areas. The species located within these SINAs are Federally-protected, and management of these species is not optional; however, due to the locations of these SINAs within the identified light maneuver areas, the protection of these species does not affect the net amount of training lands, as these SINAs are located on the fringes of existing wetlands, impact areas and property boundaries, thereby reducing the actual training performed in these areas. The SINAs are not located within close proximity to the dismounted training or land navigation courses. The general management of SINAs is discussed in Appendix I.6.

### **L.1.2.3 Heavy Maneuver Training Area**

Heavy maneuver training is currently restricted to existing roads and trails. The former heavy maneuver training area, which encompassed approximately 1,075 acres, was located in the western portion of Pelham Range in TAs 24A and 24C (Figure 2, Appendix M). However, this area is no longer used for this type of training.

### **L.1.2.4 Duded Impact Areas**

Two distinct areas on Pelham Range are designated as duded impact areas: the Large Impact Area (approximately 2,094 acres) and the Small Arms Impact Area (approximately 2,535 acres, Figure 2, Appendix M). Weapons effects are contained in these areas using earthen berms or natural terrain features. These areas contain unexploded ordnance and are off-limits for any type of training or on-the-ground management. As a result of activities occurring within these areas, wildfires are common and are not suppressed. Fire breaks surrounding the areas prevent the spread of wildfires to other land use areas on Pelham Range.

A relatively large population of MBB, a Federally-protected species, occurs within the portion of the large impact area designated as the Impact Area Barren (Figure 6, Appendix M). The high frequency of wildfires within the impact area is the primary factor behind the success of this species in this area. Due to the location of this species in an explosives impact area, a comprehensive monitoring and management program has not been implemented. The impact areas are managed by prescribed fire annually for a dual purpose: to reduce the chances of a catastrophic wildfire from military training and as part of natural resource management. Limited management will occur in the Impact Area Barren. This area has been characterized by an open xeric hardpan savannah with an open tree canopy (Garland 1996). Due to the presence of MBB in the

Impact Area Barren, prescribed burns and wildfires within this area will be recorded in the ESMD after each fire; the area will be visited as appropriate and the extent of the burn recorded.

#### **L.1.2.5 Graham Drop Zone**

The Graham Drop Zone (approximately 433 acres) is located in the eastern portion of Pelham Range (Figure 2, Appendix M). This area is maintained as open grassland and is used for personnel and/or equipment to land following a parachute jump or drop. The Graham Drop Zone also has an air strip for the operation of unmanned aerial systems. Due to training activities, this area is required to be non-forested. This area will be maintained using annual prescribed burns and/or brush mowing as needed. As a result of the land use, natural resources management primarily focuses on soil conservation, erosion control, and water quality. Specific natural resources management that will occur in this area will include:

- Maintenance of wildlife enhancement areas for fish and wildlife management and migratory bird conservation (Appendix T, Table 24 - Planned Projects, objective 2a);
- Implementation of a modified mowing schedule, when possible to aid in the conservation of nesting migratory birds during breeding season;
- Reducing exposed soils and unstable slopes by vegetating exposed soils with native species;
- Installing silt fencing and grassed waterways to slow runoff and retain sediments in-place;
- Stabilizing side slopes by mulching and seeding in areas that have eroded due to overland flow;
- Restricting off-road vehicle traffic and stabilizing the vehicular use areas (i.e. gravel, hardpan); and
- Vegetating non-traffic areas and drainage ways.

#### **L.1.2.6 Ammunition Transfer Point**

The Ammunition Transfer Point is located in Training Area 22D, in the area formerly used as a driver's training course. This area is utilized for storage and issue of ammunition and has a safety zone radius of approximately 1,800 feet. Land use within the safety zone (approximately 234 acres) is restricted to forest management activities. Hunting and training is not allowed in this area.

#### **L.1.2.7 Restricted Areas**

Restricted areas are scattered throughout Pelham Range (Figure 2, Appendix M). Areas of restricted use include: Installation Restoration Program sites, firing points, range areas, and areas with security considerations. Where the training schedule allows, and with approval of the Range Control Officer, a modified mowing schedule for ranges maintained as open grassland will be implemented for the conservation of nesting migratory birds during breeding season, such as on Range 10 and Graham Drop Zone. A modified mowing schedule for ranges corresponds to Objective 2a of the Planned Projects table (Appendix T).

### **L.2 Natural Resources and Land Use Planning**

Natural resources and natural resources management would be taken into account during land use planning. Natural and cultural resources will be considered prior to the implementation of land use changes and/or development projects. All ground-breaking activities with the potential to impact natural or cultural resources shall be reviewed by the FM-ARNGTC Environmental Branch Chief. Impacts to natural resources would be avoided using the following principles.

- Habitat fragmentation would be avoided. Habitat fragmentation results when contiguous community types (i.e., forestland) are bisected or "cut up" by roads, rights-of-way, or other development. New rights-of-way would be collocated with existing disturbance corridors where practicable to minimize habitat fragmentation.



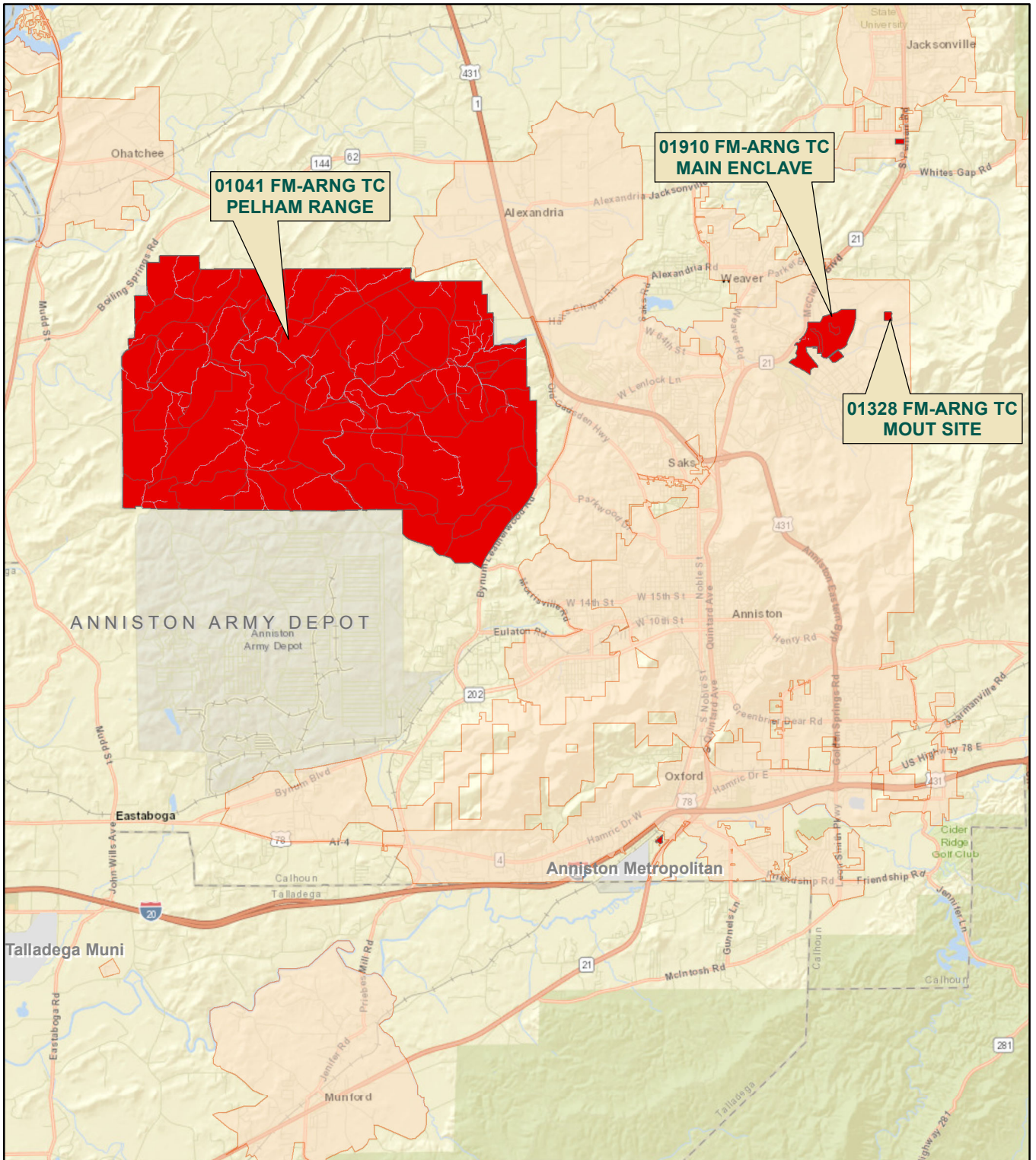
- New buildings and training facilities would be sited in previously disturbed areas when possible. If new undisturbed areas must be utilized for development, new facilities should occur adjacent to previously disturbed land if possible.
- Activities with the possibility of contaminant release (i.e., vehicle refueling) would occur a minimum of 50 feet (and preferably more) from water bodies and wetlands to minimize the potential for release to surface waters.
- Land clearing (with the exception of selected prescribed burning) would not occur within 50 feet of waterbodies or jurisdictional wetlands.
- Impervious surfaces generally increase storm water runoff and would be minimized in areas of new development. Alternative surfaces (i.e., gravel pathways) would be considered to minimize impervious surface area at the FM-ARNGTC.
- Erosion control will be a consideration of land use planning; construction within areas of highly erodible soils will be avoided to the extent possible; erosion control measures and methods of controlling sedimentation will be included in preliminary designs for new construction or improvement of existing facilities.

**APPENDIX M**  
**FIGURES**

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# Figure 1

## Location of FM-ARNGTC



### Transportation

- Primary Limited Access or Interstate
- Primary US and State Highways
- Secondary State and County
- Local or Rural road
- Railroads
- Rivers

### Boundaries

- AL ARNG SITE
- Anniston Army Depot
- Airport Areas
- National Park - Forest
- State Park or Forest
- City Area

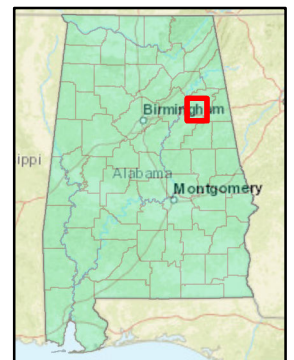
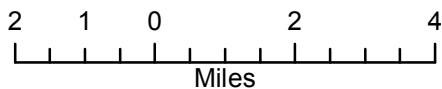




Figure 3  
Main Enclave  
Land Use

- ▲ Point of Interest
- Building
- ▭ Installation Boundary



Base Map: ESRI Street Map  
Installation Data: AL ARNG GIS

Map By: Ann Ray  
Date: 1/5/2018

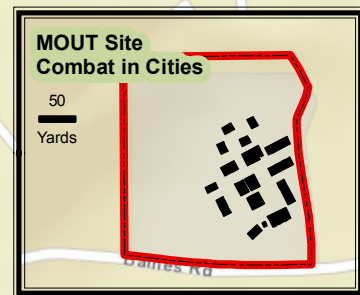
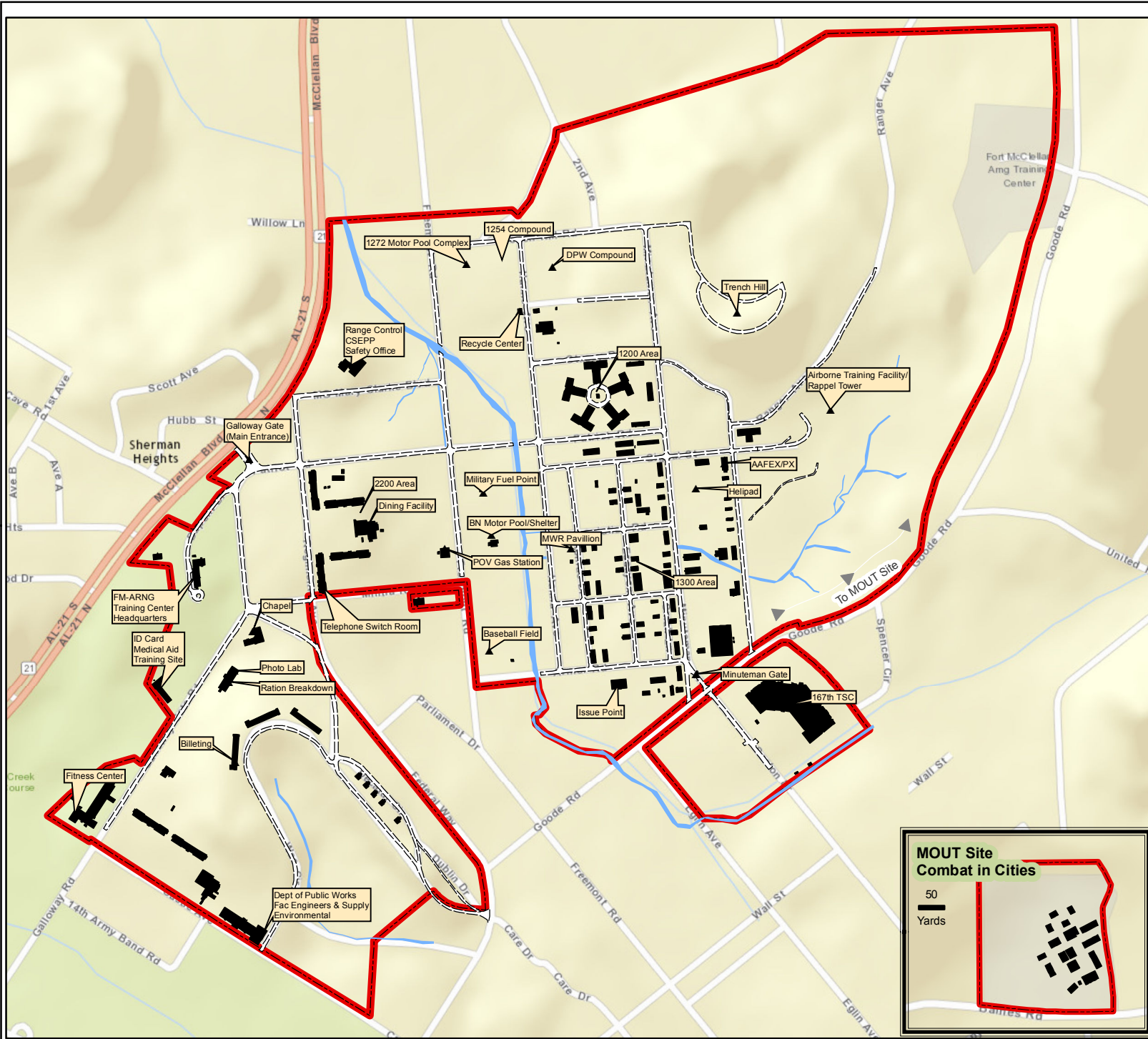
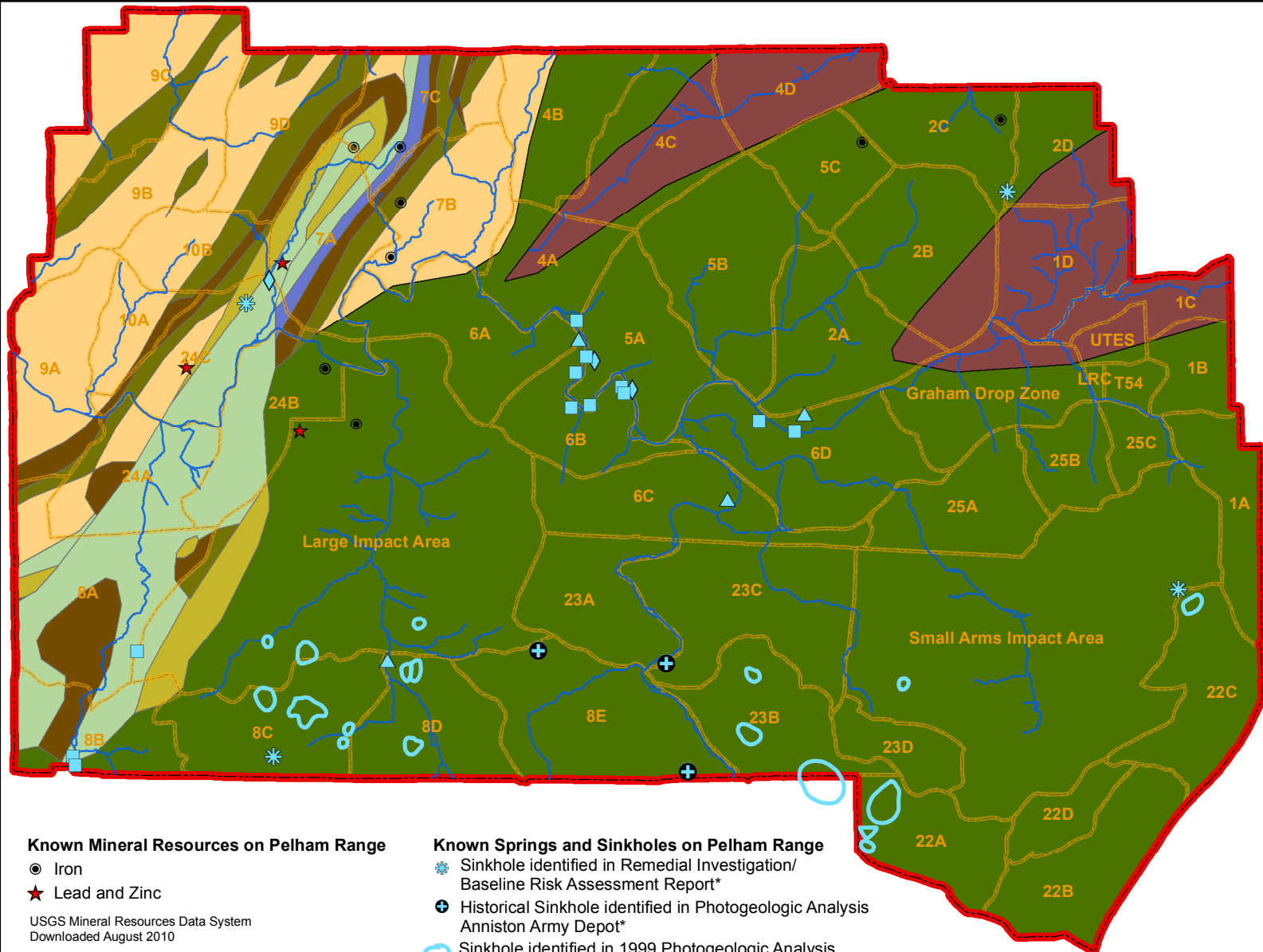
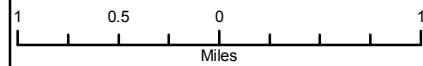


Figure 4a  
Geology  
of Pelham Range



- Cc Conasauga Formation
- Dfm Frog Mountain Sandstone
- Mtfp Tuscumba Limestone and Fort Payne Chert undivided
- OCK Knox Group undifferentiated
- Oa Athens Shale
- On Newala Limestone
- Os Sequatchie Formation
- PMpwf Parkwood Formation and Floyd Shale undiff.
- Training Area Boundary
- Pelham Range Boundary



WGS 1984  
UTM Zone 16N  
Base Map: Geological Survey of Alabama Data Portal  
accessed August 2010  
Installation Data: AL ARNG GIS  
Base Map: Esri World Street Map

Map By: Ann Ray  
Date: 1/5/2018



**Known Mineral Resources on Pelham Range**

- Iron
- ★ Lead and Zinc

USGS Mineral Resources Data System  
Downloaded August 2010

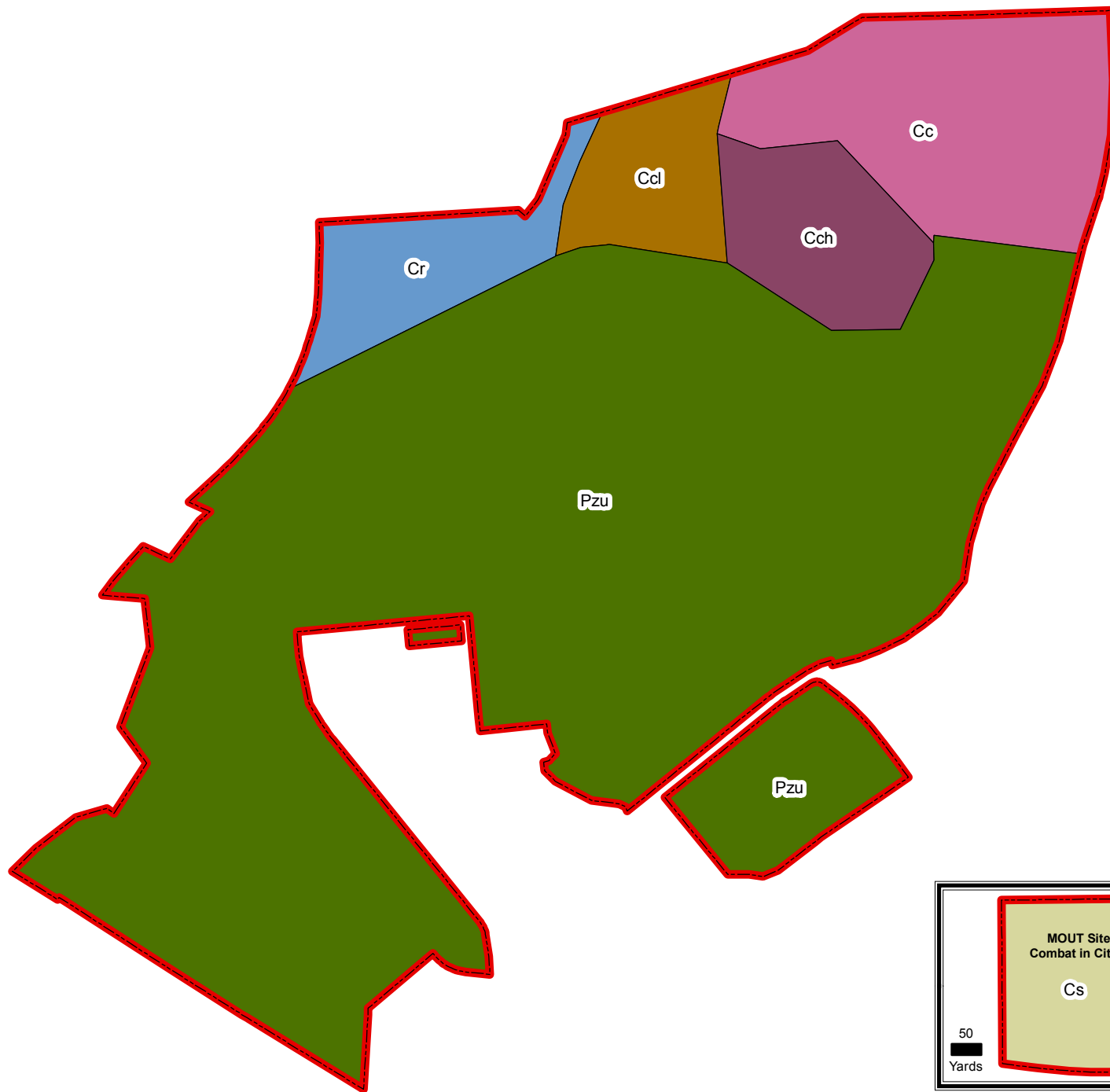
**Known Springs and Sinkholes on Pelham Range**

- ✱ Sinkhole identified in Remedial Investigation/  
Baseline Risk Assessment Report\*
- ⊕ Historical Sinkhole identified in Photogeologic Analysis  
Anniston Army Depot\*
- Sinkhole identified in 1999 Photogeologic Analysis  
Anniston Army Depot\*
- ▲ Spring identified in Remedial Investigation/Baseline  
Risk Assessment Report\*
- Spring identified in Receptor Sampling Locations Map at  
Anniston Army Depot by SAIC\*
- ◆ Spring identified in 2010 by FM ALRNG staff

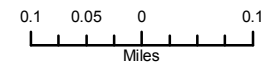
\* Approximate locations derived by georeferencing Figure 10. Locations of Springs and Sinkholes on Pelham Range  
"Revised Draft Preliminary Assessment No. 38-EH-1775-99 Fort McClellan Army National Guard Training Center  
Fort McClellan, Alabama" 28 May-17 June 1999.



Figure 4b  
Geology  
of the  
Main Enclave

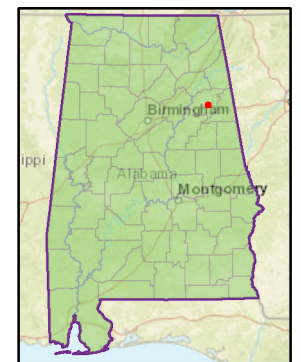
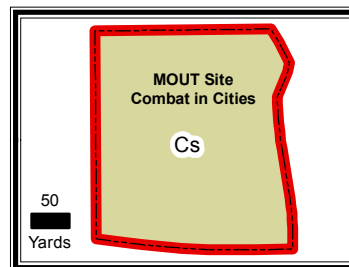


- Geologic Formation**
- Cc Conasauga Formation
  - Cch Chilhowee Group undiff.
  - Ccl Conasauga Formation
  - Cr Rome Formation
  - Cs Shady Dolomite
  - Pzu Paleozoic shale undiff.
  - Installation Boundary





Base Map: Geological Survey of Alabama Data Portal,  
Esri World Street Map  
Installation Data: AL ARNG GIS

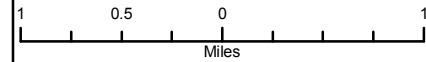
Map By: Ann Ray  
Date: 1/5/2018





# Figure 5a Soils of Pelham Range

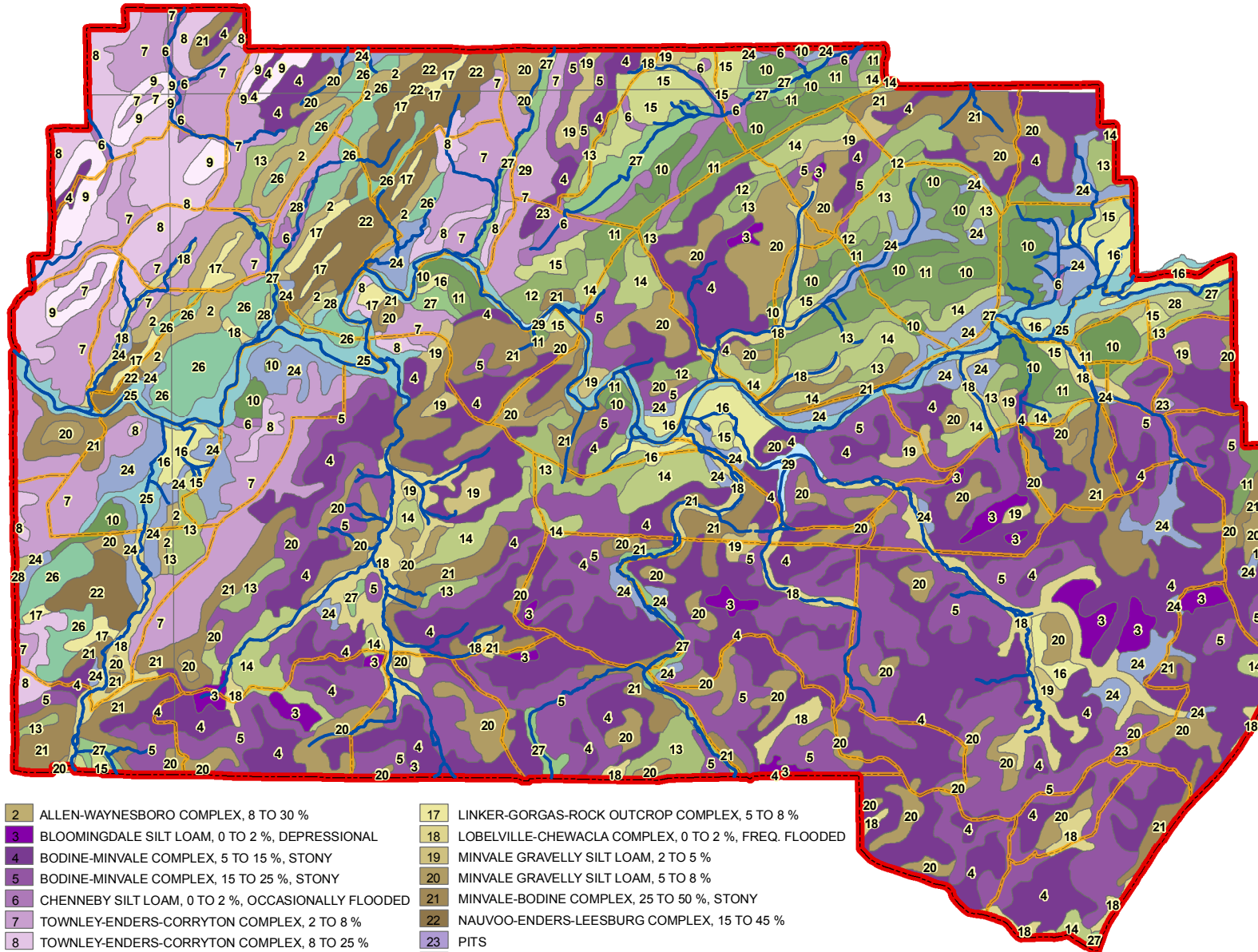
 Training Area Boundary  
 Pelham Range Boundary



  
**NORTH**  
 WGS 1984  
 UTM Zone 16N

Base Map: USDA Pelham Range  
 Soil Survey 2002  
 Installation Data: AL ARNG GIS  
 Base Map: Esri World Street Map

Map By: Ann Ray  
 Date: 1/5/2018



- |   |   |
|---|---|
| <b>2</b> ALLEN-WAYNESBORO COMPLEX, 8 TO 30 %                                  | <b>17</b> LINKER-GORGAS-ROCK OUTCROP COMPLEX, 5 TO 8 %                  |
| <b>3</b> BLOOMINGDALE SILT LOAM, 0 TO 2 %, DEPRESSIONAL                       | <b>18</b> LOBELVILLE-CHEWACLA COMPLEX, 0 TO 2 %, FREQ. FLOODED          |
| <b>4</b> BODINE-MINVALA COMPLEX, 5 TO 15 %, STONY                             | <b>19</b> MINVALE GRAVELLY SILT LOAM, 2 TO 5 %                          |
| <b>5</b> BODINE-MINVALA COMPLEX, 15 TO 25 %, STONY                            | <b>20</b> MINVALE GRAVELLY SILT LOAM, 5 TO 8 %                          |
| <b>6</b> CHENNEBY SILT LOAM, 0 TO 2 %, OCCASIONALLY FLOODED                   | <b>21</b> MINVALE-BODINE COMPLEX, 25 TO 50 %, STONY                     |
| <b>7</b> TOWNLEY-ENDERS-CORRYTON COMPLEX, 2 TO 8 %                            | <b>22</b> NAUVOO-ENDERS-LEESBURG COMPLEX, 15 TO 45 %                    |
| <b>8</b> TOWNLEY-ENDERS-CORRYTON COMPLEX, 8 TO 25 %                           | <b>23</b> PITS  |
| <b>9</b> CORRYTON-ENDERS COMPLEX, 15 TO 40 %                                  | <b>24</b> TASSO LOAM, 0 TO 3 %  |
| <b>10</b> DECATUR LOAM, 2 TO 5 %  | <b>25</b> TOCCOA, PRUITTON, AND CHEWACLA SOILS, 0 TO 2 %, FREQ. FLOODED |
| <b>11</b> DECATUR LOAM, 5 TO 8 %  | <b>26</b> WAYNESBORO-ALLEN COMPLEX, 2 TO 8 %                            |
| <b>12</b> DEWEY SILT LOAM, 2 TO 5 %   | <b>27</b> WEHADKEE-BLOOMINGDALE COMPLEX, 0 TO 2 %, FREQ. FLOODED        |
| <b>13</b> DEWEY-FULLERTON COMPLEX, 5 TO 8 %                                   | <b>28</b> WOLFFTEVER SILT LOAM, 0 TO 2 %                                |
| <b>14</b> DEWEY-MINVALA COMPLEX, 8 TO 15 %                                    | <b>29</b> WATER   |
| <b>15</b> ETOWAH LOAM, 2 TO 5 %   |   |
| <b>16</b> HAMBLEN, PRUITTON, AND KETONA SOILS, 0 TO 2 %, OCCASIONALLY FLOODED |   |

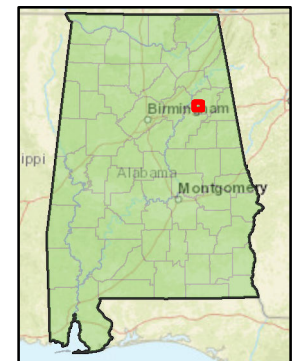

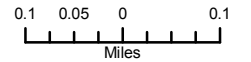


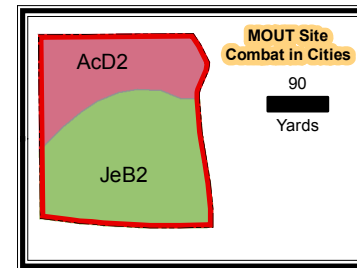
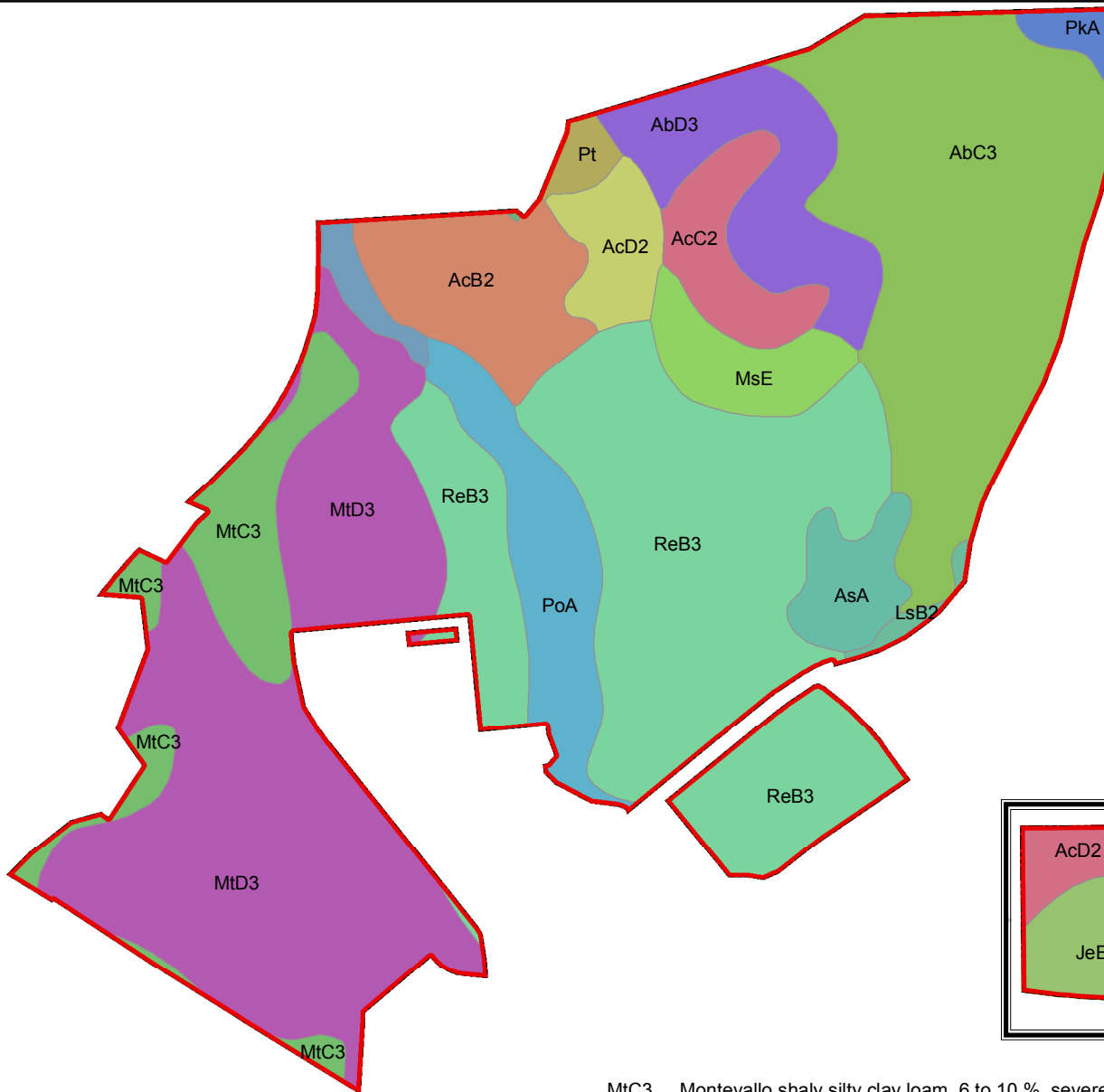
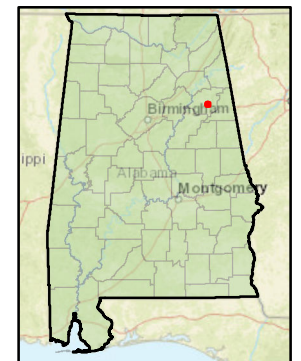
Figure 5b  
Soils  
of the  
Main Enclave

 Installation Boundary



Data Sources: SSURGO Calhoun County Soils Data  
accessed January 2017  
Base map: Esri World Street Map  
Installation Data: AL ARNG GIS

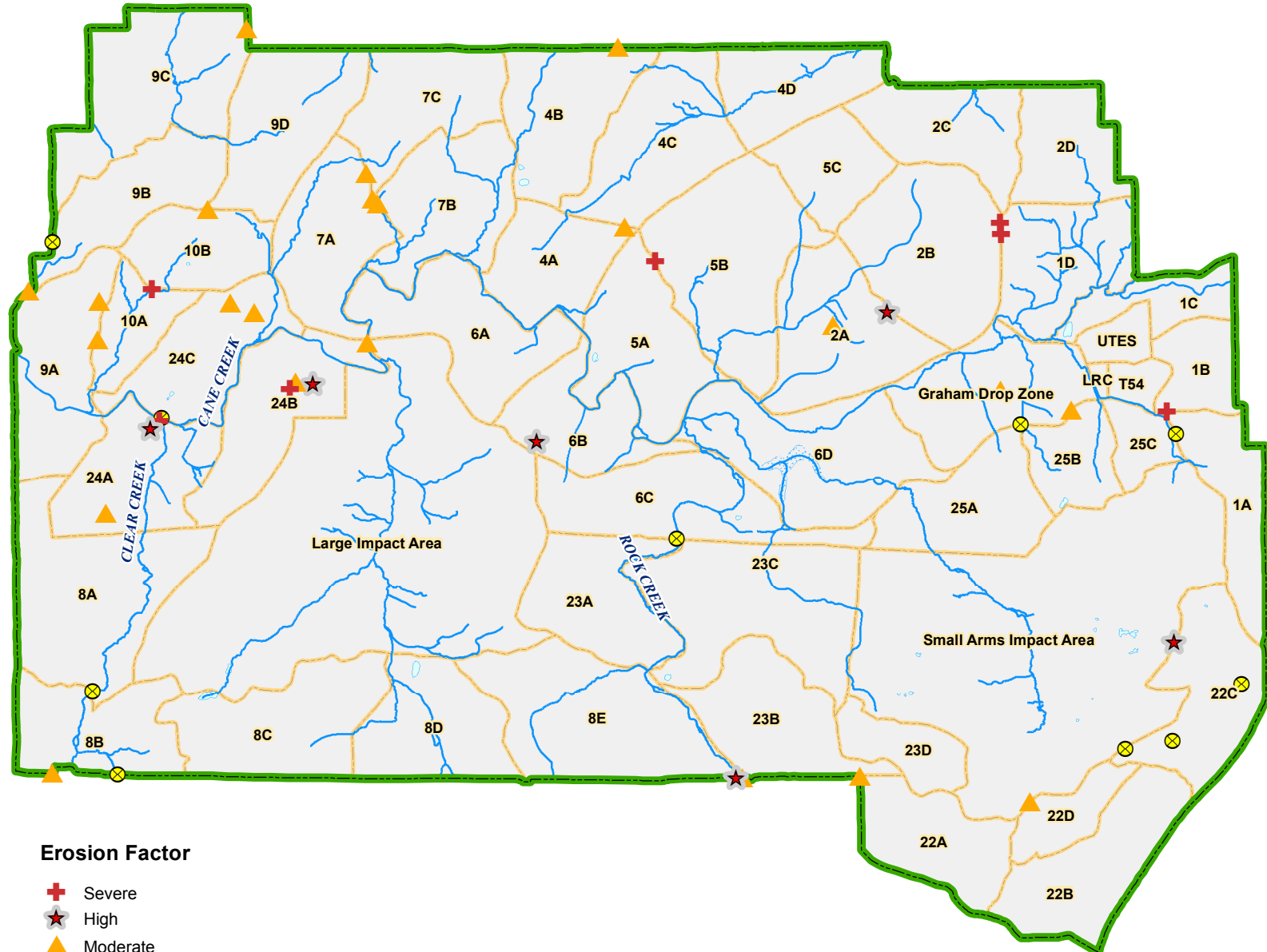
Map By: Ann Ray  
Date: 1/5/2018





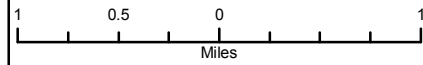
AbD3 Anniston gravelly clay loam, 10 to 15 %, s everely eroded  
AcB2 Anniston and Allen gravelly loams, 2 to 6 %, eroded  
AcC2 Anniston and Allen gravelly loams, 6 to 10 %,eroded  
AcD2 Anniston and Allen gravelly loams, 10 to 15 , eroded  
AsA Atkins and Stendal soils, local alluvium, 0 to 2 % slopes  
JeB2 Jefferson gravelly fine sandy loam, 2 to 6 %, eroded  
LsB2 Locust gravelly fine sandy loam, 2 to 6 % slopes  
MsE Montevallo shaly silt loam, 15 to 40 % slopes

MtC3 Montevallo shaly silty clay loam, 6 to 10 %, severely eroded  
MtD3 Montevallo shaly silty clay loam, 10 to 40 %, severely eroded  
PhA Philo and Stendal fine sandy loams, 0 to 2 % slopes  
PkA Philo and Stendal soils, local alluvium, 0 to 2 % slopes  
PoA Pope fine sandy loam, 0 to 2 % slopes  
Pt Pits, sand, and gravel  
PuA Purdy silt loam, 0 to 2 % slopes  
ReB3 Rarden silty clay loam, shallow, 2 to 6 %, severely eroded  
TyA Tyler silt loam, 0 to 2 % slopes

Figure 6  
Erosion  
on Pelham Range



 Training Area Boundary  
 Pelham Range Boundary







  
**NORTH**  
 WGS 1984  
 UTM Zone 16N

Installation Data: AL ARNG GIS  
 Base Map: Esri World Street Map

Map By: Ann Ray  
 Date: 1/5/2018



**Erosion Factor**

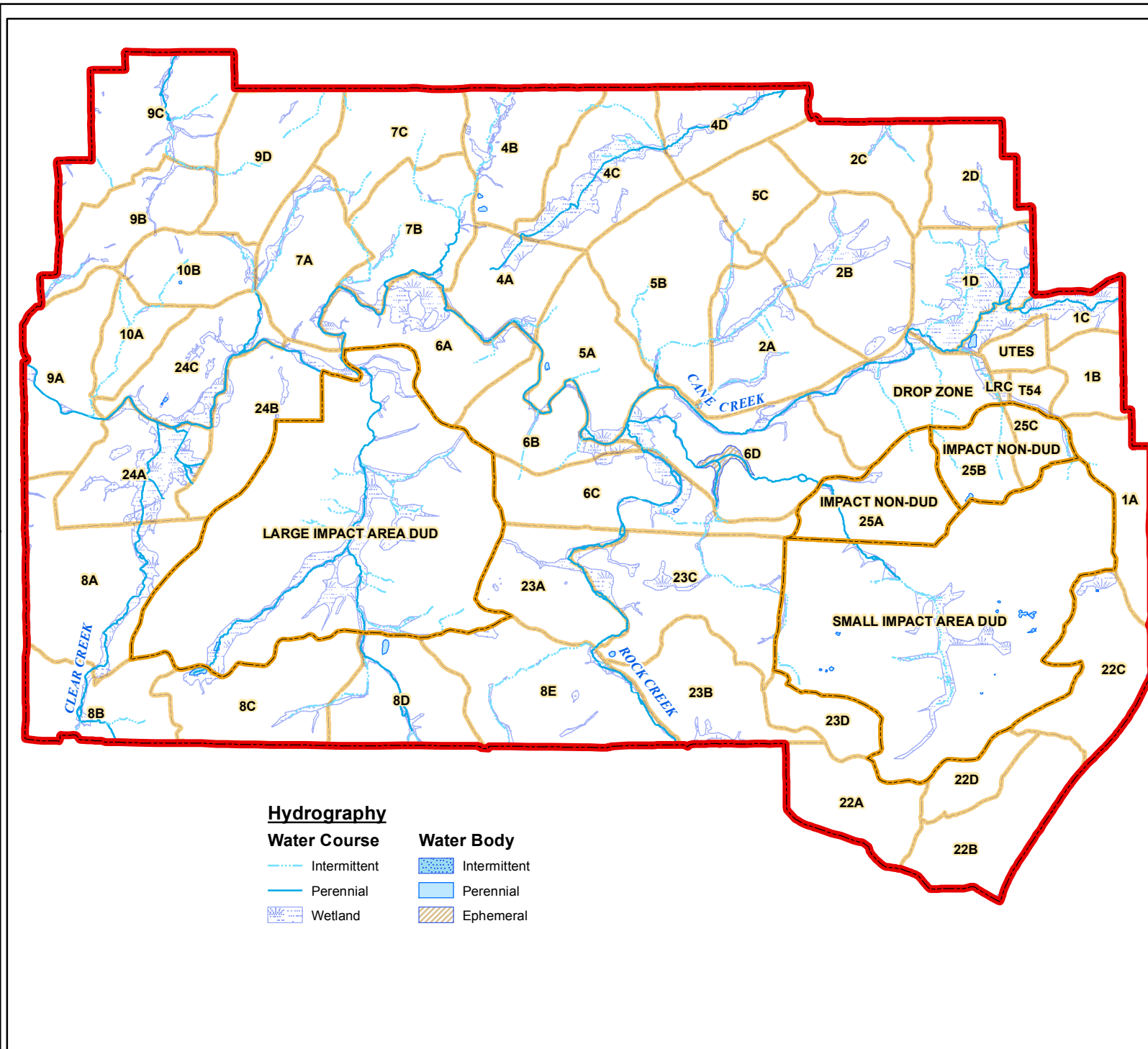
-  Severe
-  High
-  Moderate
-  Low



Erosion GIS Data Deliverable Associated with "Soil Erosion Management Plan (SEMP), Fort McClellan Army National Guard Training Center, Pelham Range and Main Enclave, Calhoun County, Alabama". Prepared by Thompson Engineering 2014.

Erosion not limited to point location.



Figure 7a  
Wetlands and Waterbodies  
on Pelham Range






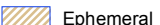


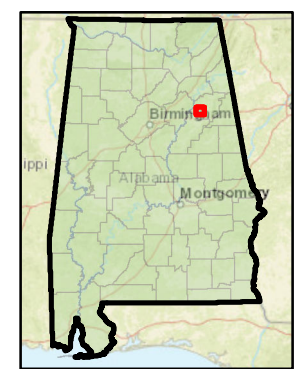
 Training Area Boundary  
 Pelham Range Boundary




WGS 1984  
 UTM Zone 16N  
 Installation Data: AL ARNG GIS  
 Base Map: Esri World Street Map  
 Map By: Ann Ray  
 Date: 1/5/2018



<b>Hydrography</b>	
<b>Water Course</b>	<b>Water Body</b>
 Intermittent	 Intermittent
 Perennial	 Perennial
 Wetland	 Ephemeral



**Figure 7b**  
**FORT McCLELLAN**  
**AL ARNG TRAINING CENTER**  
**Main Enclave**  
**Wetlands and Waterbodies**

 Installation Boundary







WGS 1984  
 UTM Zone 16N

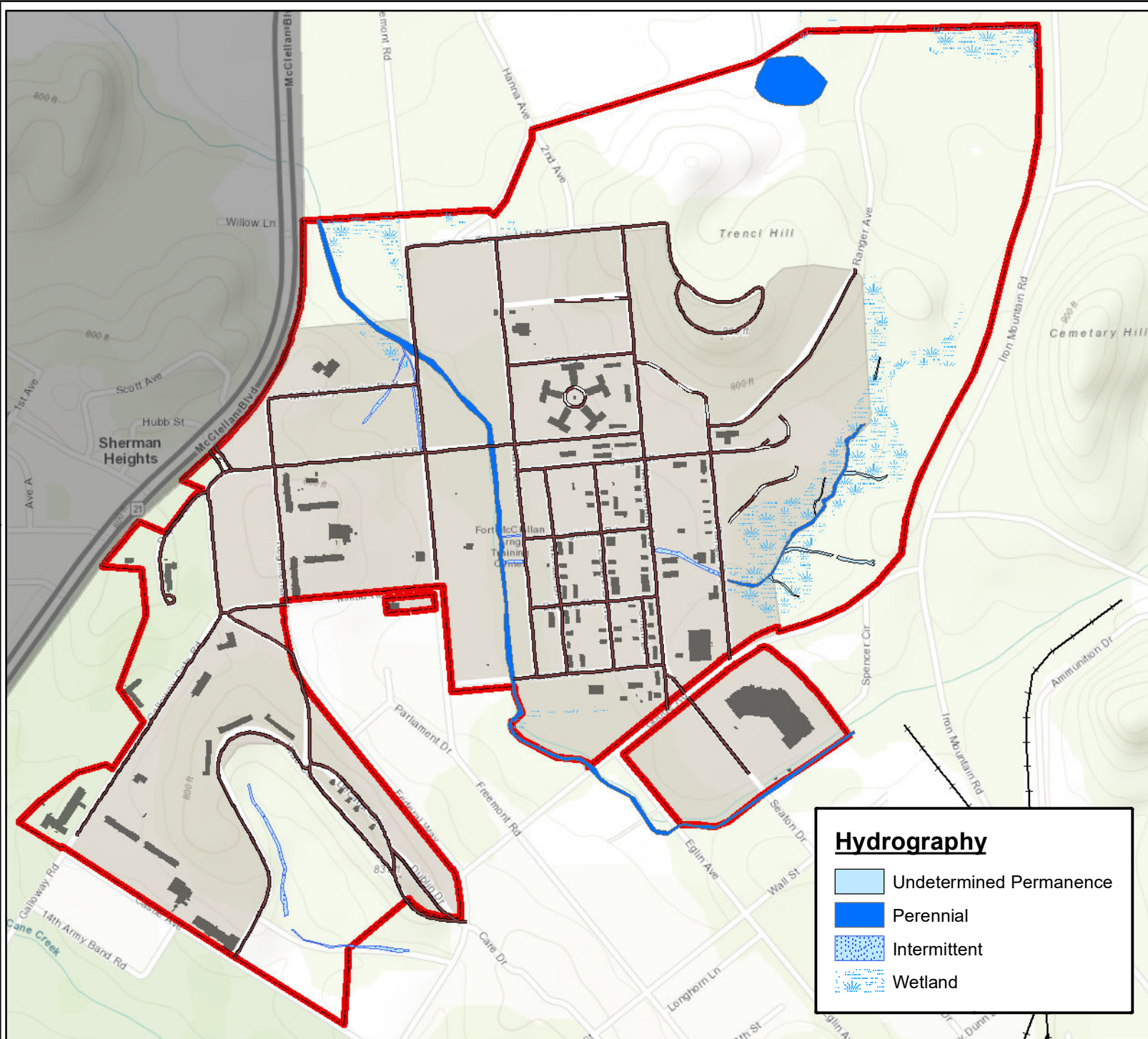
Installation Data: AL ARNG GIS  
 Basemaps: Esri World Street Map,  
 World Topographic Map

Map By: Rebecca Turley Ridley  
 Date: 2021-04-01

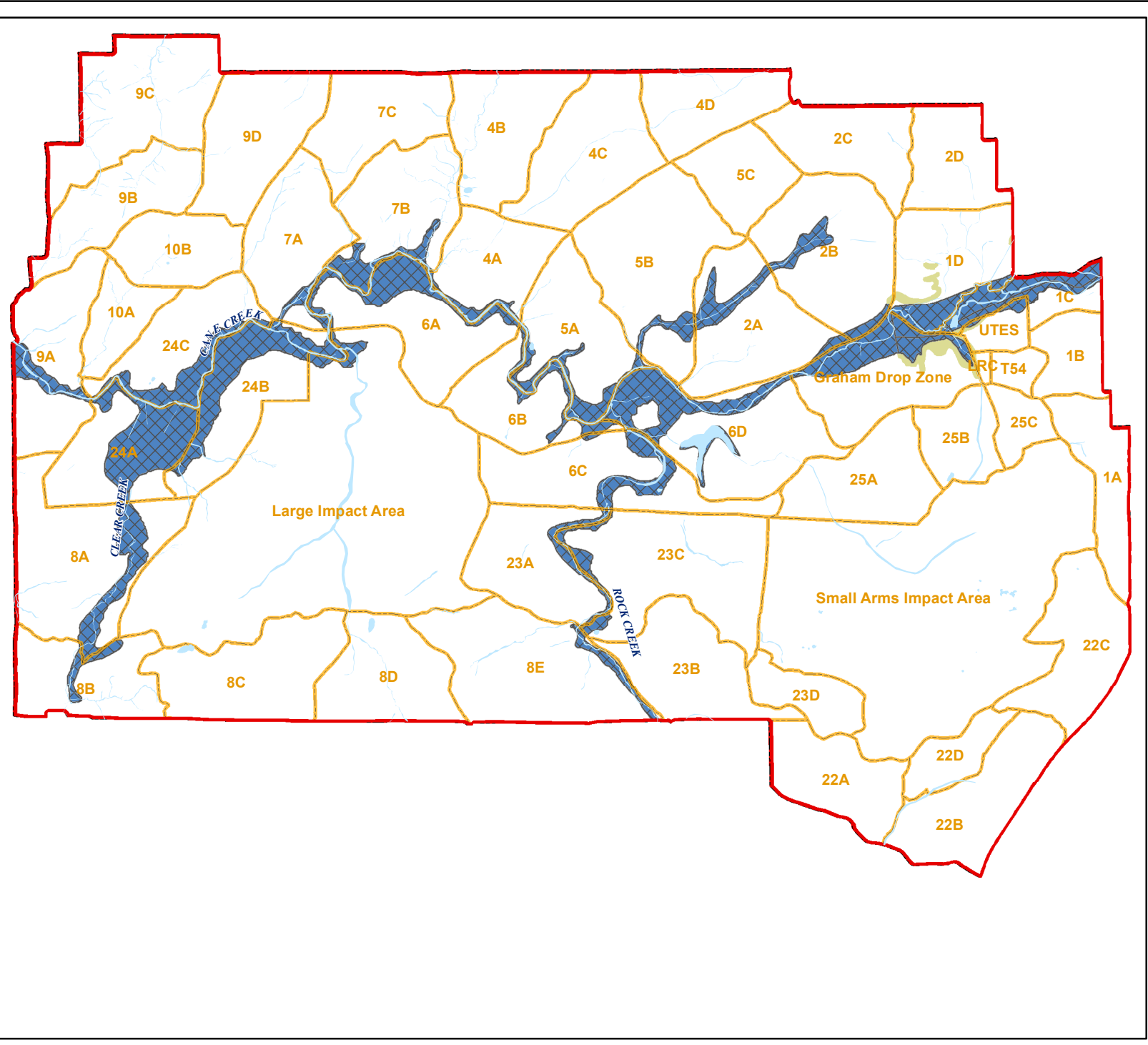


**Hydrography**

-  Undetermined Permanence
-  Perennial
-  Intermittent
-  Wetland



**Figure 8a**  
**FEMA Floodplains**  
**on Pelham Range**



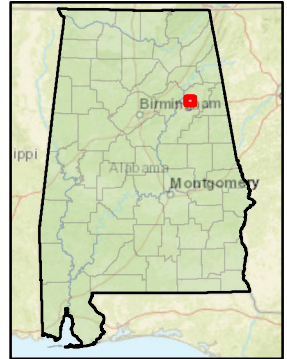
-  100-Year Floodplain
-  500-Year Floodplain
-  Hydrography
-  Training Area Boundary
-  Pelham Range Boundary







**NORTH**  
 WGS 1984  
 UTM Zone 16N

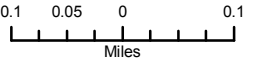
Installation Data: AL ARNG GIS  
 Flood Zone data downloaded from FEMA.gov  
 Base Map: Esri World Street Map

Map By: Ann Ray  
 Date: 1/5/2018



**Figure 8b  
FEMA Floodplains  
on the  
Main Enclave**

-  Hydrography
-  100-Year Floodplain
-  500-Year Floodplain (N/A)
-  Installation Boundary



WGS 1984  
UTM Zone 16N  
Installation Data: AL ARNG GIS  
Base Map: Esri World Topographic Map,  
Esri World Street Map  
Flood Zone data downloaded from FEMA.gov  
No flood zones present at MOUT site.

Map By: Ann Ray  
Date: 1/5/2018

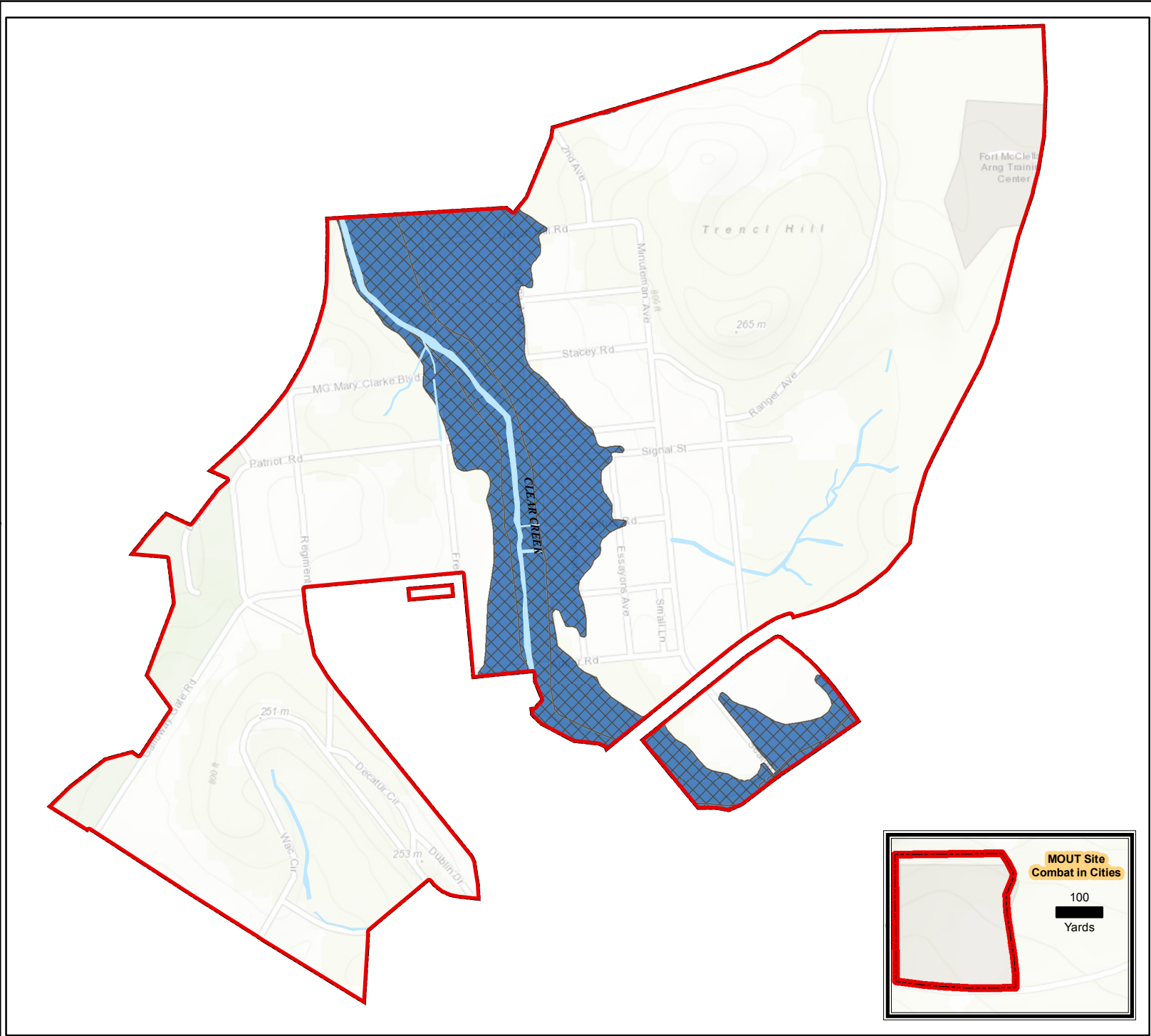
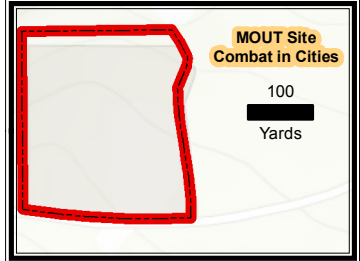
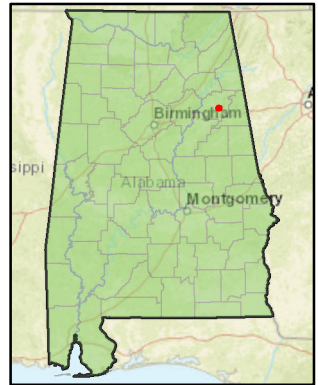
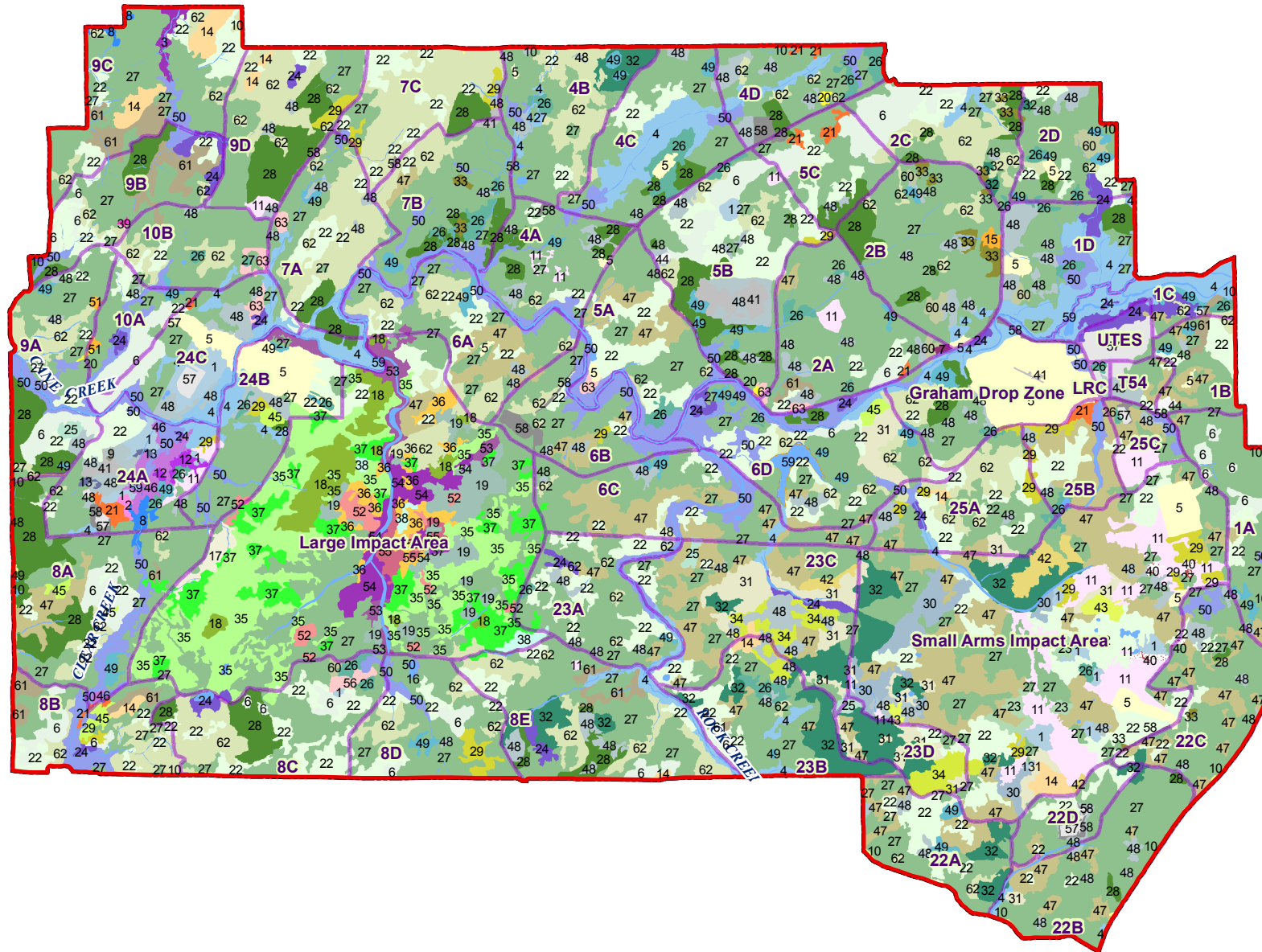


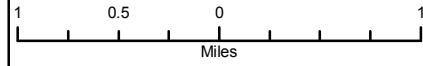


Figure 9a  
Plant Communities  
on Pelham Range



-  Training Area Boundary
-  Pelham Range Boundary



**NORTH**

WGS 1984  
UTM Zone 16N

Installation Data: AL ARNG GIS  
Base Map: Esri World Street Map

Map By: Ann Ray  
Date: 1/5/2018



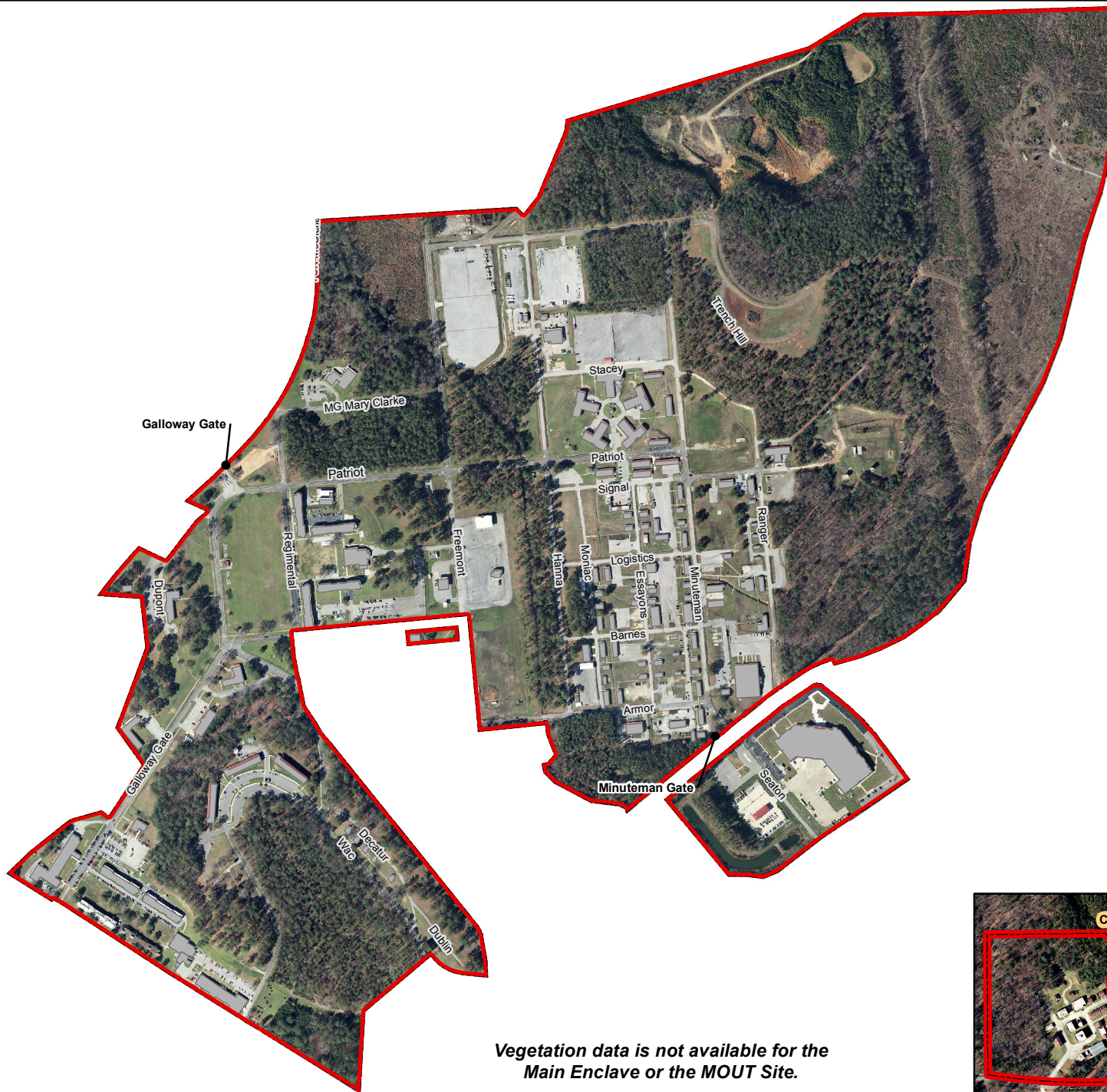
Classification Legend on Following Page




## Alliance Level Classification

1	(Sawtooth Blackberry, Southern Dewberry) Shrubland Alliance	32	Longleaf Pine Forest Alliance
2	(Smooth Sumac, Winged Sumac) Shrubland Alliance	33	Longleaf Pine Plantation Shrubland Phase Alliance
3	(Swamp Chestnut Oak, Cherrybark Oak, Shumard Oak) - Sweetgum Temporarily Flooded Forest Alliance	34	Longleaf Pine Woodland Alliance
4	(Willow Oak, Water Oak, Diamondleaf Oak) Temporarily Flooded Forest Alliance	35	Lowland or submontane deciduous forest (Species not verified - In Impact Area)
5	Bahia Grass Herbaceous Alliance	36	Medium tall sod perennial graminoid (Species not verified - In Impact Area)
6	Black Oak - White Oak - (Scarlet Oak) Forest Alliance	37	Mixed evergreen and deciduous forest (Species not verified - In Impact Area)
7	Black Walnut Forest Alliance	38	Mixed evergreen and deciduous woodland (Species not verified - In Impact Area)
8	Black Willow Temporarily Flooded Forest Alliance	39	Nepalese browntop Semi-natural Herbaceous Alliance
9	Black Willow Temporarily Flooded Shrubland Alliance	40	Non-Agriculture Disturbed Areas Sparsely Vegetated Alliance
10	Broomsedge Bluestem - Bahia Grass - (Sawtooth Blackberry, Southern Dewberry) - (Canada goldenrod) Shrub Herbaceous Alliance (Boundary/Firebreak)	41	Non-Vegetated Land
11	Broomsedge Bluestem Herbaceous Alliance	42	Post Oak - Blackjack Oak Forest Alliance
12	Carolina Willow Temporarily Flooded Forest Alliance	43	Post Oak - Blackjack Oak Woodland Alliance
13	Carolina Willow Temporarily Flooded Shrubland Alliance	44	Quarry/Gravel Pit
14	Chestnut Oak - (Scarlet Oak, Black Oak) Forest Alliance	45	Shortleaf Pine - (White Oak, Southern Red Oak, Post Oak, Black Oak) Forest Alliance
15	Chinese Privet Shrubland Alliance	46	Soft Rush Seasonally Flooded Herbaceous Alliance
16	Common Buttonbush Semipermanently Flooded Shrubland Alliance	47	Southern Red Oak Forest Alliance
17	Deciduous woodland (Species not verified - In Impact Area)	48	Sweetgum - Southern Red Oak - (Winged Sumac, Smooth Sumac) - (Sawtooth blackberry, Southern Dewberry) Wooded Shrubland Alliance
18	Evergreen forest (Species not verified - In Impact Area)	49	Sweetgum Forest Alliance
19	Evergreen woodland (Species not verified - In Impact Area)	50	Sycamore - Sweetgum - Red Maple - Green Ash Temporarily Flooded Forest Alliance
20	Food Plot	51	Tapered Rosette Grass Herbaceous Alliance
21	Kudzu Vine-Shrubland Alliance	52	Temperate deciduous shrubland (Species not verified - In Impact Area)
22	Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Forest Alliance	53	Temporarily flooded deciduous forest (Species not verified - In Impact Area)
23	Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Woodland Alliance	54	Temporarily flooded deciduous shrubland (Species not verified - In Impact Area)
24	Loblolly Pine - (Willow Oak, Water Oak, Diamondleaf Oak) Temporarily Flooded Forest Alliance	55	Temporarily flooded temperate perennial graminoid (Species not verified - In Impact Area)
25	Loblolly Pine - Shortleaf Pine Forest Alliance	56	Tuliptree Forest Alliance
26	Loblolly Pine - Sweetgum Semi-natural Forest Alliance	57	Urban
27	Loblolly Pine Forest Alliance	58	Urban Vegetation
28	Loblolly Pine Planted Forest Alliance	59	Water
29	Loblolly Pine Woodland Alliance	60	Water Oak Forest Alliance
30	Longleaf Pine - (Loblolly Pine) - (Southern Red Oak, Post Oak, Blackjack Oak) Woodland Alliance	61	White Oak - (Northern Red Oak, Hickory species) Forest Alliance
31	Longleaf Pine - (Southern Red Oak, Post Oak, Blackjack Oak) Forest Alliance	62	White Oak - (Southern Red Oak, Post Oak) Forest Alliance
		63	White Oak - (Water Oak) Forest Alliance

Figure 9b  
Plant Communities  
on the  
Main Enclave

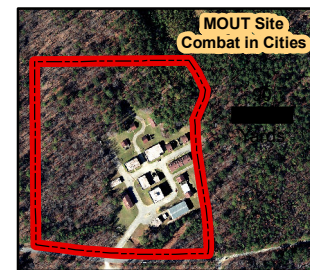
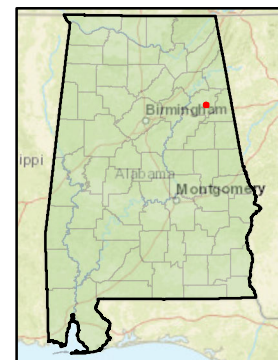


 Installation Boundary



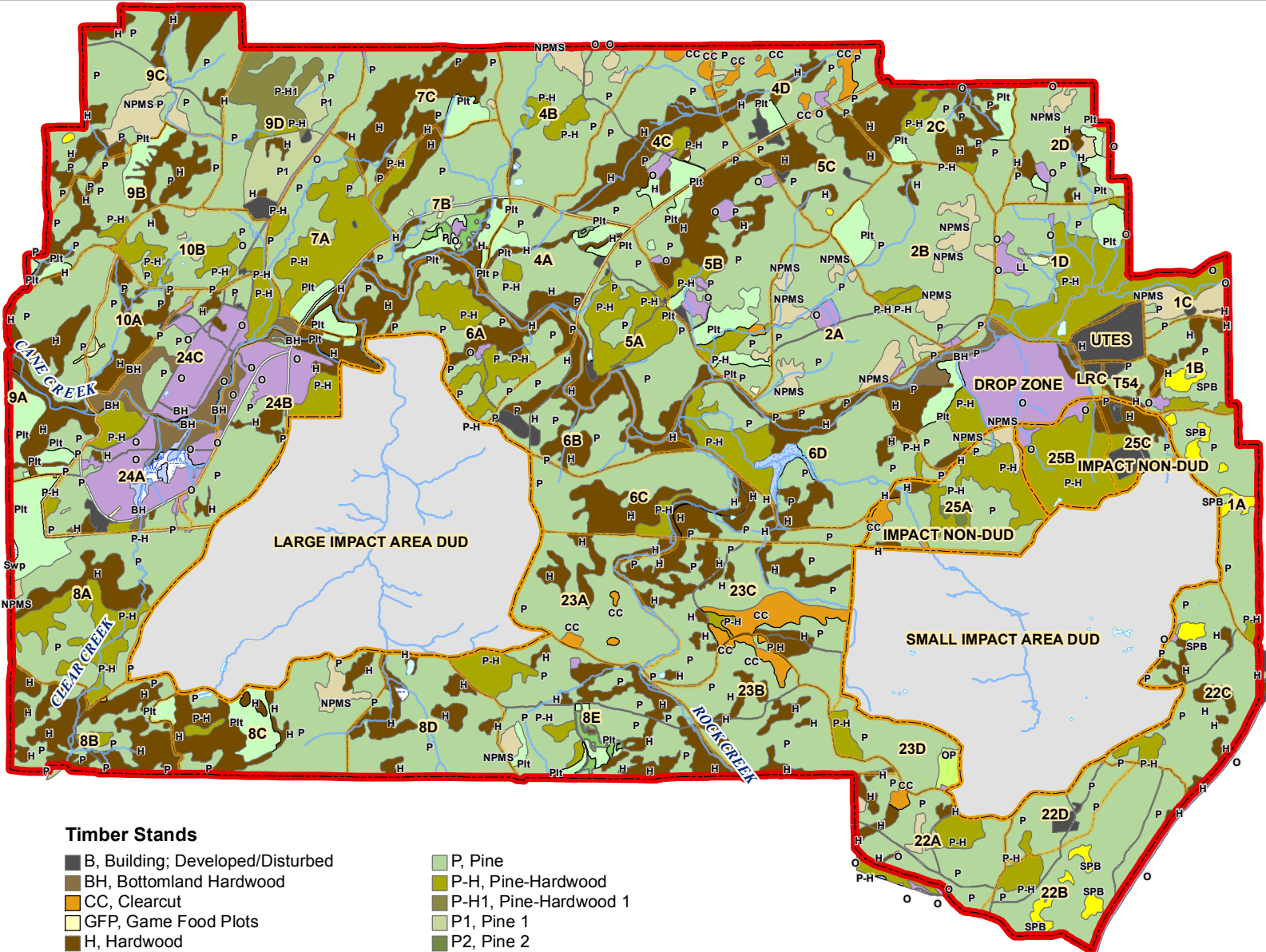
WGS 1984  
UTM Zone 16N



Installation Data: AL ARNG GIS  
Aerial Data Flown 2017.  
Base Map: Esri World Street Map  
Map By: Ann Ray  
Date: 1/5/2018

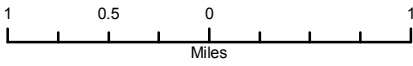


*Vegetation data is not available for the  
Main Enclave or the MOUT Site.*

Figure 10  
Timber Stands  
on Pelham Range



 Training Area Boundary  
 Pelham Range Boundary























WGS 1984  
UTM Zone 16N

Installation Data: AL ARNG GIS  
Base Map: Esri World Street Map

Map By: Ann Ray  
Date: 1/5/2018



**Timber Stands**

- |   |  |
|---|--|
|  B, Building; Developed/Disturbed      |  P, Pine                          |
|  BH, Bottomland Hardwood               |  P-H, Pine-Hardwood               |
|  CC, Clearcut                          |  P-H1, Pine-Hardwood 1            |
|  GFP, Game Food Plots                  |  P1, Pine 1                       |
|  H, Hardwood                           |  P2, Pine 2                       |
|  Impact Area (No Data)                 |  Plt, Plantation Pine             |
|  LL, Longleaf 2004                     |  PltU, Plantation Pine Understock |
|  NPMS, Natural Pre-Merchantable Stands |  SPB, SPB                         |
|  O, Open                               |  Swp, Swamp                       |
|  OP, Open Pine                         |  W, Water                         |

Timber Stand Boundaries Based on Timber Inventory Conducted by Sizemore & Sizemore, Inc. in February 2003



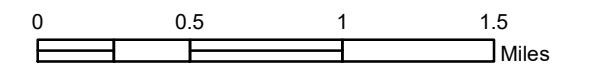
Figure 11a  
Invasive Species  
on Pelham Range



**LEGEND**

- Invasive Species Points\*
- Invasive Species Areas\***
- KUDZU
- PRIVET
- COGONGRASS
- Other (See Appendix 2)
- Installation Training Area Boundaries
- ANAD Boundary
- Paved Road
- Unpaved Road
- Stream

\*9 Invasive Species Point and Polygon ID #s  
See Appendix 2



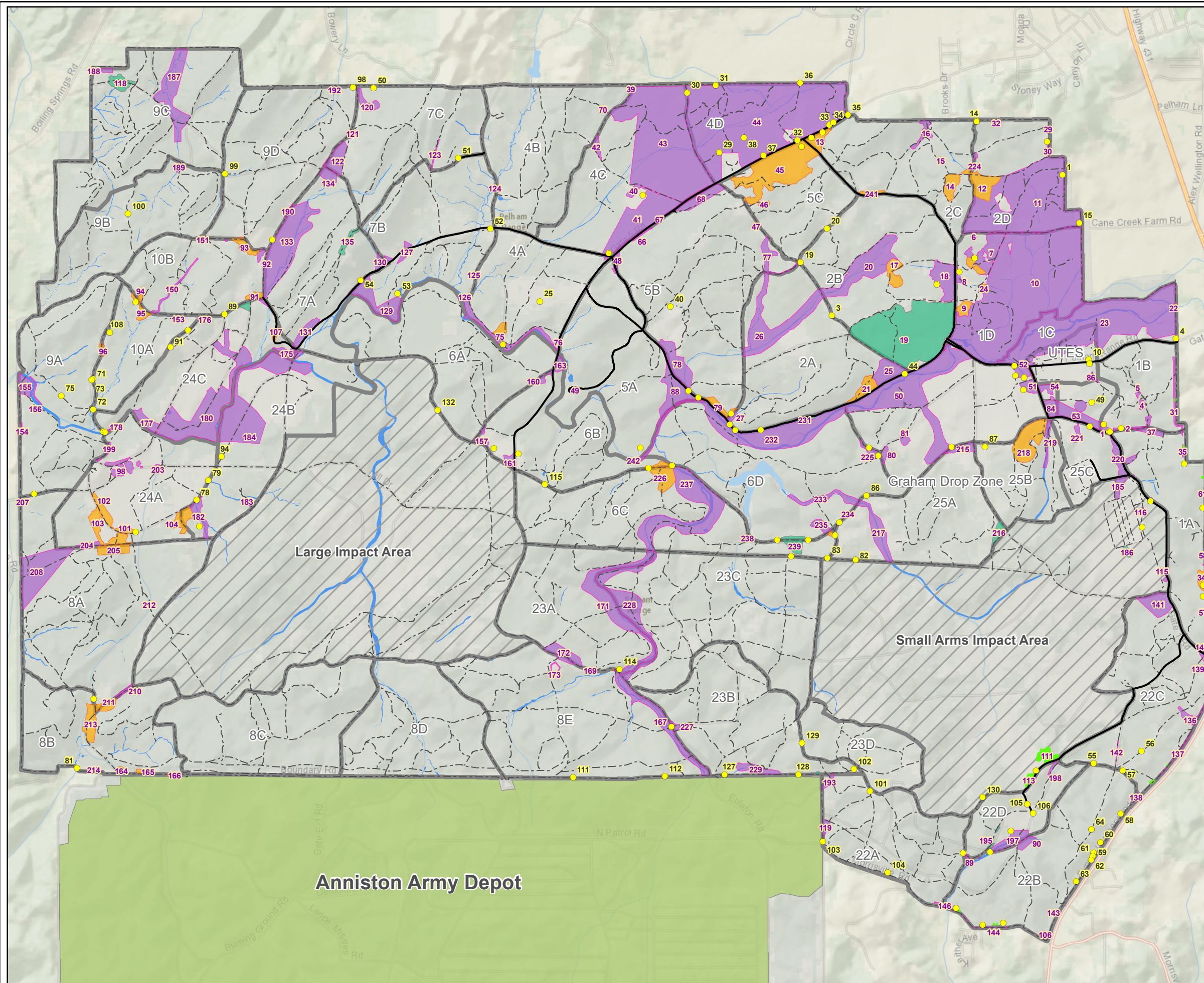
National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC

PROJECT NO.:

DATE:

17-1101-0217

JULY 2018



Document Path: P:\2017\Projects\110117-101-0217 AL ARNG INRMP\Working\Environmental\GIS\MAX\INVASIVES\_LIND\_11x17.mxd

Figure 11b  
Invasive Species  
on the  
Main Enclave

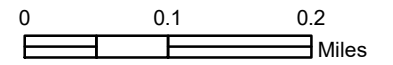


**LEGEND**

**Invasive Species Areas\***

- KUDZU
- PRIVET
- COGONGRASS
- Other (See Appendix 2)
- Installation Boundary
- ANAD Boundary
- Paved Road
- Unpaved Road
- Stream

\*9 Invasive Species Polygon ID #s  
See Appendix 2



National Geographic, Esri, DeLorme, NAVTEQ, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, IPC

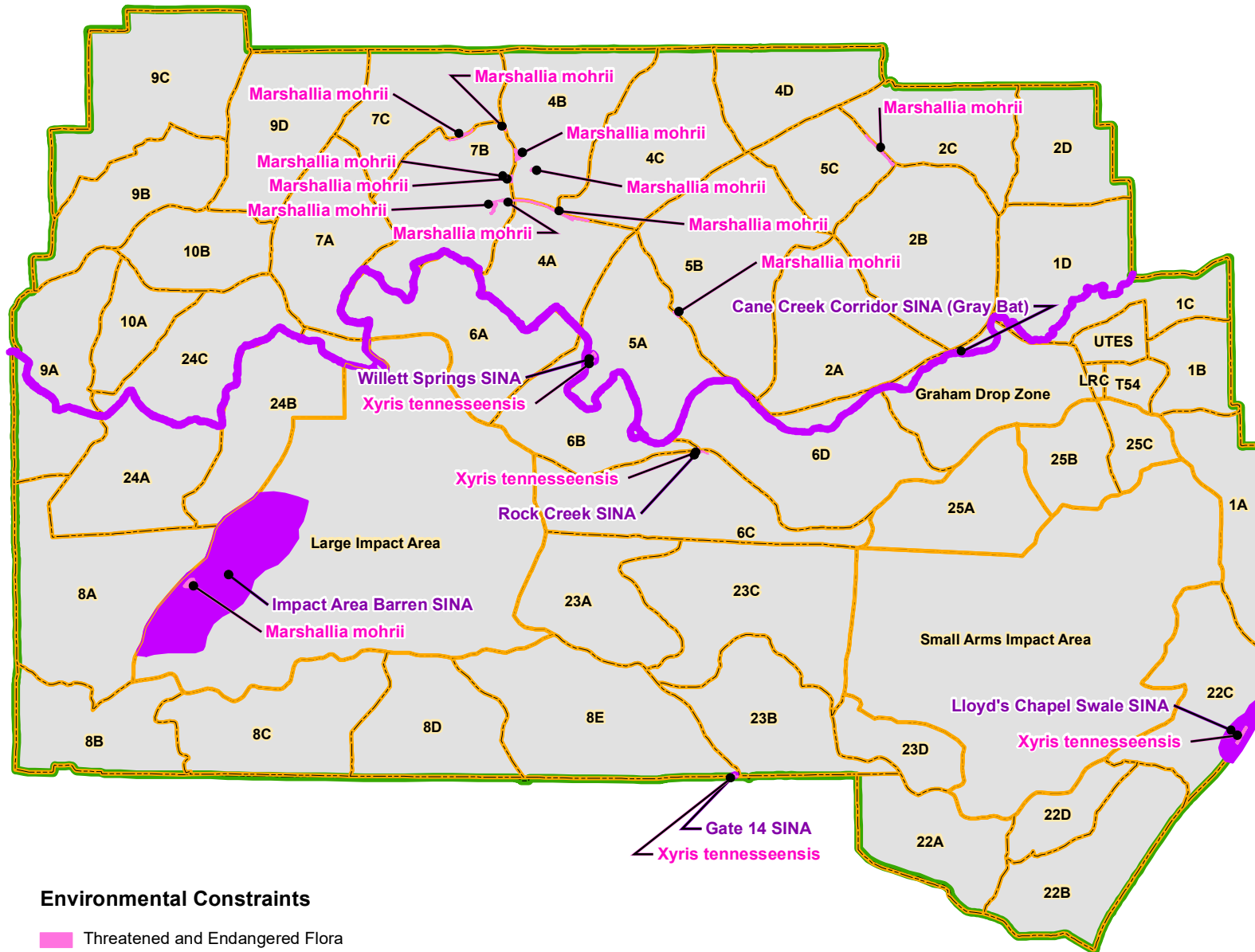
PROJECT NO.:  
17-1101-0217

DATE:  
JULY 2018

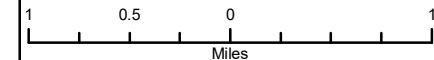
Document Path: P:\2017\Projects\17-1101-0217\ALARMING\INRMIP\Working\Environmental\GIS\MXD\INVASIVES\_ENCLAVE\_LIND\_11x17.mxd



Figure 12a  
Threatened and Endangered Species /  
SINAs of  
Pelham Range



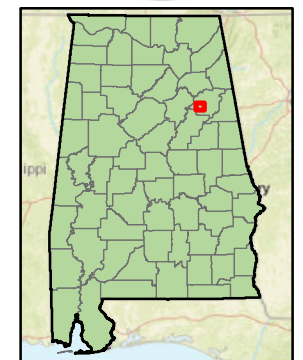
Training Area Boundary  
Pelham Range Boundary



**NORTH**  
WGS 1984  
UTM Zone 16N

Installation Data: AL ARNG GIS  
Base Map: Esri World Street Map

Map By: Ann Ray  
Date: 1/7/2019





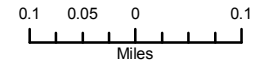
**Environmental Constraints**

- Threatened and Endangered Flora
- SINA

Flora Boundaries updated 2017.  
by AL ARNG staff Jim Ratcliff, Leah Storino, and Ann Ray.

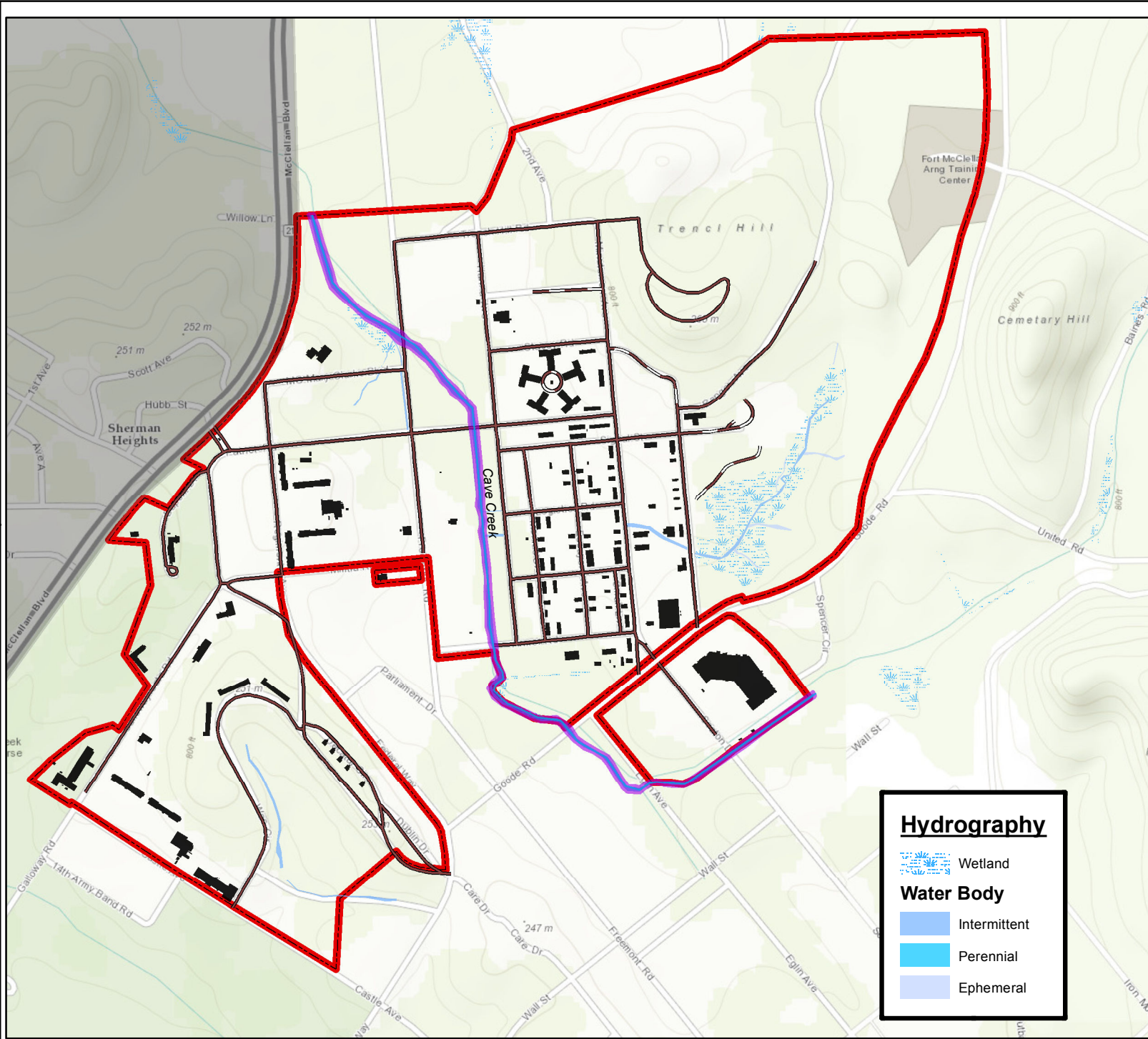
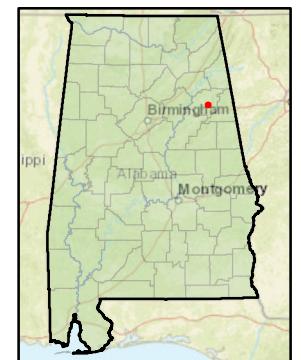
Figure 12b  
Threatened and  
Endangered Species  
of the  
Main Enclave

-  Gray Bat Habitat
-  Installation Boundary




Installation Data: AL ARNG GIS  
Base map: Esri World Topographic Map,  
Esri World Street Map

Map By: Ann Ray  
Date: 1/5/2018



**Hydrography**

-  Wetland

**Water Body**




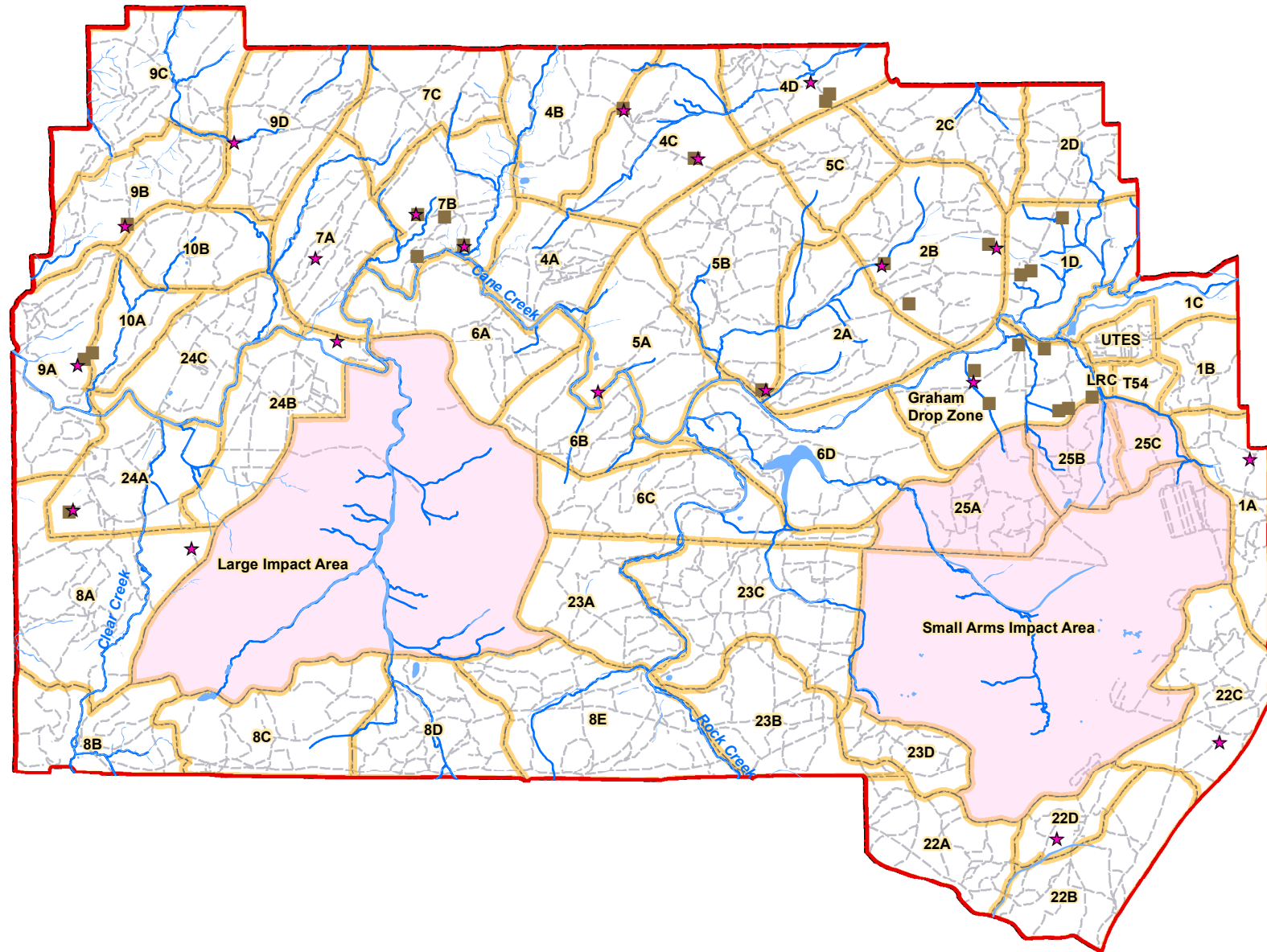
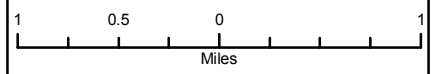
-  Intermittent
-  Perennial
-  Ephemeral

Figure 13  
Wildlife  
Enhancement Areas



- ★ Salt Lick
- Food plot
- Hydrography
- - - Roads/Trails
- ▭ Training Area Boundary
- ▭ Pelham Range Boundary



**NORTH**  
WGS 1984  
UTM Zone 16N

Installation Data: AL ARNG GIS  
Base map: Esri World Street Map  
Map By: Ann Ray  
Date: 1/5/2018

Salt lick, and food plot data collected 2017 by Ann Ray.  
Salt Licks are not permanent; locations subject to change.





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**APPENDIX N**  
**SPECIES OCCURRING AT FM-ARNGTC**

*[THIS SPACE HAS BEEN INTENTIONALLY LEFT BLANK]*

# FM-ARNGTC Aquatic Invertebrate Master List Survey 2013

Invasive Species			Global Rank	State Rank
Order	Family	Scientific Name	Global Rank	State Rank
Lumbriculida	Lumbriculidae			
Tubificida	Naididae			
Tubificida	Naididae	<i>Dero trifida</i>		
Acari	Hygrobatidae	<i>Atractides</i>		
Acari	Hygrobatidae	<i>Hygrobates</i>		
Acari	Lebertiidae	<i>Lebertia</i>		
Coleoptera	Dytiscidae	<i>Neoporus</i>		
Coleoptera	Elmidae			
Coleoptera	Elmidae			
Coleoptera	Elmidae	<i>Macronychus glabratus</i>		
Coleoptera	Elmidae	<i>Microcylloepus pusillus</i>		
Coleoptera	Elmidae			
Coleoptera	Elmidae	<i>Stenelmis</i>		
Coleoptera	Psephenidae	<i>Psephenus herricki</i>		
Collembola	Isotomidae	<i>Isotomurus</i>		
Diptera	Ceratopogonidae			
Diptera	Chironomidae	<i>Ablabesmyia</i>		
Diptera	Chironomidae	<i>Ablabesmyia mallochi</i>		
Diptera	Chironomidae			
Diptera	Chironomidae	<i>Cladotanytarsus</i>		
Diptera	Chironomidae	<i>Corynoneura</i>		
Diptera	Chironomidae	<i>Cryptochironomus</i>		
Diptera	Chironomidae	<i>Lopescladius hyporheicus</i>		
Diptera	Chironomidae	<i>Microtendipes</i>		
Diptera	Chironomidae	<i>Neozavrelia</i>		
Diptera	Chironomidae	<i>Polypedilum pupae</i>		
Diptera	Chironomidae	<i>Rheopelopia</i>		
Diptera	Chironomidae	<i>Rheotanytarsus</i>		
Diptera	Chironomidae	<i>Rheotanytarsus pupae</i>		
Diptera	Chironomidae	<i>Apedilum</i>		
Diptera	Chironomidae			
Diptera	Chironomidae	<i>Chironomus</i>		
Diptera	Chironomidae	<i>Labrundinia</i>		
Diptera	Chironomidae	<i>Orthocladius crictopus group</i>		
Diptera	Chironomidae	<i>Polypedilum</i>		
Diptera	Chironomidae	<i>Polypedilum flavum</i>		
Diptera	Chironomidae	<i>Polypedilum tritum</i>		
Diptera	Chironomidae	<i>Psectrocladius</i>		
Diptera	Chironomidae	<i>Rheopelopia</i>		
Diptera	Chironomidae	<i>Rheotanytarsus pellucidus</i>		
Diptera	Chironomidae	<i>Stempellinella</i>		
Diptera	Chironomidae	<i>Subletta</i>		
			Global Rank	State Rank
Order	Family	Scientific Name	Global Rank	State Rank
Diptera	Chironomidae	<i>Tanytarsus</i>		

## FM-ARNGTC Aquatic Invertebrate Master List Survey 2013

Diptera	Chironomidae	<i>Tanytarsus pupae</i>		
Diptera	Chironomidae	<i>Thienemanniella</i>		
Diptera	Chironomidae	<i>Thienemanniella xena</i>		
Diptera	Chironomidae	<i>Tribelos pupae</i>		
Diptera	Chironomidae	<i>Tribelos jucundum</i>		
Diptera	Chironomidae	<i>Tribelos fusciorne</i>		
Diptera	Empididae	<i>Hemerodromia</i>		
Diptera	Empididae	<i>Hemerodromia pupae</i>		
Diptera	Limoniidae	<i>Antocha</i>		
Diptera	Simuliidae	<i>Simulium</i>		
Diptera	Tipulidae	<i>Prionocera</i>		
Diptera	Tipulidae	<i>Tipulidae</i>		
Diptera	Tipulidae	<i>Antocha</i>		
Diptera	Tipulidae	<i>Tipula</i>		
Diptera				
Diptera				
Diptera		<i>Diptera</i>		
Ephemeroptera	Baetidae			
Ephemeroptera	Baetidae	<i>Baetis intercalaris</i>		
Ephemeroptera	Baetisidae	<i>Baetisca</i>		
Ephemeroptera	Caenidae	<i>Caenis diminuta</i>		
Ephemeroptera	Heptageniidae			
Ephemeroptera	Heptageniidae	<i>Maccaffertium exiguum</i>		
Ephemeroptera	Heptageniidae	<i>Stenacron interpunctatum</i>		
Ephemeroptera	Heptageniidae	<i>Maccaffertium</i>		
Ephemeroptera	Isonychiidae	<i>Isonychia</i>		
Ephemeroptera	Tricorythidae	<i>Tricorythodes albilineatus</i>		
Ephemeroptera				
Hemiptera	Veliidae			
Megaloptera	Corydalidae	<i>Corydalus cornutus</i>		
Megaloptera	Corydalidae	<i>Corydalus pectinicornis</i>		
Megaloptera	Corydalidae	<i>Chauliodes</i>		
Odonata	Aeshnidae	<i>Boyeria vinosa</i>		
Odonata	Coenagrionidae	<i>Argia</i>		
Odonata	Gomphidae	<i>Dromogomphus</i>		
Odonata	Gomphidae			
Odonata	Gomphidae	<i>Ophiogomphus</i>		
Odonata	Libellulidae	<i>Libellula</i>		
Odonata	Macromiidae	<i>Macromia georgiana</i>		
Odonata				
Odonata	Aeshnidae	<i>Anax junius</i>		
Odonata	Calopterygidae	<i>Calopteryx maculata</i>		
Odonata	Coenagrionidae	<i>Enallagma aspersum</i>		

# FM-ARNGTC Aquatic Invertebrate Master List Survey 2013

Order	Family	Scientific Name	Global Rank	State Rank
Odonata	Gomphidae	<i>Stylurus</i>		
Odonata	Libellulidae	<i>Libellula vibrans</i>		
Odonata	Libellulidae	<i>Libellula luctuosa</i>		
Odonata	Libellulidae	<i>Sympetrum rubicundulum</i>		
Trichoptera	Glossosomatidae	<i>Protoptila</i>		
Trichoptera	Hydropsychidae	<i>Hydropsyche</i>		
Trichoptera	Hydropsychidae			
Trichoptera	Hydropsychidae	<i>Cheumatopsyche</i>		
Trichoptera	Leptoceridae	<i>Oecetis inconspicua</i>		
Trichoptera	Philopotamidae	<i>Chimarra</i>		
Trichoptera	Polycentropodidae	<i>Cernotina</i>		
Trichoptera				
Amphipoda	Crangonyctidae	<i>Crangonyx</i>		
Decapoda	Cambaridae			
Isopoda	Asellidae	<i>Caecidotea</i>		
Isopoda	Asellidae	<i>Lirceus</i>		
Unioidea	Unionidae	<i>Villosa umbrans</i>	G2	S2
Veneroidea	Corbiculidae	<i>Corbicula fluminea</i>		
Veneroidea	Pisidiidae			
Veneroidea	Sphaeriidae	<i>Musculium</i>		
Veneroidea	Sphaeriidae			
Architaenioglossa	Viviparidae	<i>Campeloma regulare</i>		
Basommatophora	Ancylidae			
Basommatophora	Ancylidae	<i>Laevapex</i>		
Basommatophora	Ancylidae			
Basommatophora	Physidae	<i>Physella</i>		
Basommatophora	Planorbidae	<i>Micromenetus</i>		
Caenogastropoda	Pleuroceridae	<i>Elimia</i>		
Mesogastropoda	Hydrobiidae			
Mesogastropoda	Pleuroceridae	<i>Elimia godwini</i>		
Mesogastropoda	Pleuroceridae	<i>Elimia modesta</i>		
Tricladida	Planariidae	<i>Dugesia</i>		
Total-119				

# Master Bird Species List FMARNGTC

## Non-native and Invasive Species

### Birds of Conservation Concern (2017 federal list)

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
Grebes						
Pied-billed Grebe	<i>Podilymbus podiceps</i>	x			S3B	LCC
Cormorants						
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	x			S5N	LSCC
Gulls						
Ring billed Gull	<i>Larus delawarensis</i>		x			LSCC
Wading Birds						
Great Egret	<i>Ardea alba</i>	x	x		S4	LCC
Great Blue Heron	<i>Ardea herodias</i>	x	x		S5	LCC
Green Heron	<i>Butorides virescens</i>	x	x	PIF-CBSD	S5B	MCC
Little Blue Heron	<i>Egretta caerulea</i>	x	x		S3N	MCC
Black-crowned Night-heron	<i>Nycticorax nycticorax</i>	x	x		S3B	MCC
White Ibis	<i>Eudocimus albus</i>	x			S3N	MCC
American Bittern	<i>Botaurus lentiginosus</i>	x		BCC	S3N-SP	MCC
Swans, Geese and Ducks						
Blue-winged Teal	<i>Anas discors</i>	x	x		S2B	LSCC
Mallard	<i>Anas platyrhynchos</i>	x	x		S3B	LSCC
American Black Duck	<i>Anas rubripes</i>	x	x		S2B-SP	HCC
Wood Duck	<i>Aix sponsa</i>	x	x		S5	LCC
Canada Goose	<i>Branta canadensis</i>	x	x		S3B	LSCC
Hooded Merganser	<i>Lophodytes cucullatus</i>	x	x		S3B	LCC
Snow Goose	<i>Chen caerulescens</i>	x			S3N	LCC
Green-winged Teal	<i>Anas crecca</i>	x			S5N	LSCC
Bufflehead	<i>Bucephala albeola</i>	x			S4N	MCC
Diurnal Raptors						
Cooper's Hawk	<i>Accipiter cooperii</i>	x	x		SP	LCC
Sharp-shinned Hawk	<i>Accipiter striatus</i>	x	x		S3B	LCC
Red-tailed Hawk	<i>Buteo jamaicensis</i>	x	x		S4B	LSCC
Red-shouldered Hawk	<i>Buteo lineatus</i>	x	x		S5	LCC
Broad-winged Hawk	<i>Buteo platypterus</i>	x	x		S4B	LCC
Northern Harrier	<i>Circus cyaneus</i>	x	x		S2B-SP	MCC
Peregrine Falcon	<i>Falco peregrinus</i>	x		BCC(b)	SP	MCC
Merlin	<i>Falco columbarius</i>		x			MCC
American Kestrel	<i>Falco sparverius</i>	x	x	BCC(b)	S2B-SP	MCC
Turkey Vulture	<i>Cathartes aura</i>	x	x		S5	LSCC
Black Vulture	<i>Coragyps atratus</i>	x	x		S4B	LSCC
Upland Game Birds						
Northern Bobwhite	<i>Colinus virginianus</i>	x	x	PIF-CBSD	S5	MCC
Wild Turkey	<i>Meleagris gallopavo</i>	x	x		S5	LSCC

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
Cranes, Rails and Allies						
Common Gallinule	<i>Gallinula galeata</i>		x			MCC
Sora	<i>Porzana carolina</i>	x	x		S5N	LCC
King Rail	<i>Rallus elegans</i>	x	x	PIF-Yel(d)	S4N-GB	HCC
Virginia Rail	<i>Rallus limicola</i>	x	x		S4N	LCC
Sandhill Crane	<i>Grus canadensis</i>		x		SP	LCC
Shorebirds						
Spotted Sandpiper	<i>Actitis macularia</i>		x			MCC
Solitary Sandpiper	<i>Tringa solitaria</i>	x	x	BCC	SNR	NC
Wilson's Snipe	<i>Gallinago delicata</i>	x	x		S5N	LCC
American Woodcock	<i>Scolopax minor</i>	x	x	PIF-Yel(d)	S3B-GB	MCC
Killdeer	<i>Charadrius vociferus</i>	x	x		S5	LCC
Pigeons and Doves						
Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	x	x		SNA	NC
Mourning Dove	<i>Zenaida macroura</i>	x	x		S5	LSCC
Cuckoos and Allies						
Yellow-billed Cuckoo	<i>Coccyzus aestivalis</i>	x	x	PIF-CBSD	S5B	LCC
Owls						
Great Horned Owl	<i>Bubo virginianus</i>	x	x		S5	MCC
Eastern Screech-owl	<i>Otus asio</i>	x	x		S5	LCC
Barred Owl	<i>Strix varia</i>	x	x		S5	LSCC
Goatsuckers and Swifts						
Chuck-wills-widow	<i>Caprimulgus carolinensis</i>	x	x	BCC/PIF-CBSD	S5B	MCC
Whip-poor-will	<i>Caprimulgus vociferus</i>	x	x	BCC/PIF-Yel(d)	S5B	MCC
Common Nighthawk	<i>Chordeiles minor</i>		x	PIF-CBSD		MCC
Chimney Swift	<i>Chaetura pelagica</i>	x	x	PIF-Yel(d)	S5B	MCC
Hummingbirds						
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	x	x		S5	LSCC
Kingfishers						
Belted Kingfisher	<i>Ceryle alcyon</i>	x	x		S5	MCC
Woodpeckers						
Northern Flicker	<i>Colaptes auratus</i>	x	x		S4B	MCC
Pileated Woodpecker	<i>Dryocopus pileatus</i>	x	x		S5	LCC
Downy Woodpecker	<i>Picoides pubescens</i>	x	x		S5	LCC
Hairy Woodpecker	<i>Picoides villosus</i>	x	x		S5	LCC
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	x	x		S5	LSCC
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	x	x	BCC/PIF-Yel(d)	S5	MCC
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	x	x	BCC	S5N	LCC
Tyrant Flycatchers						
Olive-sided Flycatcher	<i>Contopus cooperi</i>	x	x	BCC/PIF-Yel(d)	SNA	NC
Eastern Wood-Pewee	<i>Contopus virens</i>	x	x		S5B	MCC
Acadian Flycatcher	<i>Empidonax virescens</i>	x	x		S5B	LCC
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	x	x		S5B	LSCC
Eastern Phoebe	<i>Sayornis phoebe</i>	x	x		S5	LSCC
Eastern Kingbird	<i>Tyrannus verticalis</i>	x	x		SNA	LCC



Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
Shrikes and Vireos						
Yellow-throated Vireo	<i>Vireo flavifrons</i>	x	x		S5B	LCC
Warbling Vireo	<i>Vireo gilvus</i>	x	x		S1B-SP	MCC
White-eyed Vireo	<i>Vireo griseus</i>	x	x		S5B	LSCC
Red-eyed Vireo	<i>Vireo olivaceus</i>	x	x		S5B	LSCC
Philadelphia Vireo	<i>Vireo philadelphicus</i>		x			NC
Blue-headed Vireo	<i>Vireo solitarius</i>	x	x		S2B-SP	LCC
Loggerhead Shrike	<i>Lanius excubitor</i>	x		BCC/PIF-CBSD	S4B	MCC
Jays, Crows and Allies						
American Crow	<i>Corvus brachyrhynchos</i>	x	x		S5	LSCC
Fish Crow	<i>Corvus ossifragus</i>	x	x		S5	LSCC
Blue Jay	<i>Cyanocitta cristata</i>	x	x		S5	LCC
Swallows						
Barn Swallow	<i>Hirundo rustica</i>	x	x		S5B	LCC
Cliff Swallow	<i>Petrochelidon pyrrhonata</i>		x			LSCC
Purple Martin	<i>Progne subis</i>	x	x		S5B	LCC
Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	x	x		S5B	LSCC
Tree Swallow	<i>Tachycineta bicolor</i>		x			LSCC
Chickadees and Allies						
Tufted Titmouse	<i>Baeolophus bicolor</i>	x	x		S5	LSCC
Carolina Chickadee	<i>Poecile carolinensis</i>	x	x		S5	LCC
Nuthatches and Creepers						
Red-breasted Nuthatch	<i>Sitta canadensis</i>	x	x		S4N	LSCC
White-breasted Nuthatch	<i>Sitta carolinensis</i>	x	x		S5	LSCC
Brown-headed Nuthatch	<i>Sitta pusilla</i>	x	x	BCC	S5	LCC
Brown Creeper	<i>Certhia americana</i>	x	x		S4N	LCC
Wrens						
Carolina Wren	<i>Thryothorus ludovicianus</i>	x	x		S5	LSCC
House Wren	<i>Troglodytes aedon</i>	x	x		S1B	LSCC
Winter Wren	<i>Troglodytes troglodytes</i>	x	x		S5N	LSCC
Sedge Wren	<i>Cistothorus platensis</i>	x		BCC	S5N	LCC
Marsh Wren	<i>Cistothorus palustris</i>	x			S5	MCC
O. W. Warblers and Thrushes						
Ruby-crowned Kinglet	<i>Regulus calendula</i>	x	x		S5N	LSCC
Golden-crowned Kinglet	<i>Regulus satrapa</i>	x	x		S5N	LSCC
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	x	x		S5B	LSCC
Hermit Thrush	<i>Catharus guttatus</i>	x	x		S5N	LSCC
Gray-cheeked Thrush	<i>Catharus minimus</i>	x	x		SNA	NC
Swainson's Thrush	<i>Catharus ustulatus</i>	x	x		SNR	NC
Wood Thrush	<i>Hylocichla mustelina</i>	x	x	BCC/PIF-Yel(d)	S5B	MCC
Eastern Bluebird	<i>Sialia sialis</i>	x	x		S5	LSCC
American Robin	<i>Turdus migratorius</i>	x	x		S5	LCC

Species	Scientific Name	Survey Found		Federal Status*	State	State
		2006	2017		Status*	Priority*
Mimids						
Gray Catbird	<i>Dumetella carolinensis</i>	x	x		S4N	LCC
Northern Mockingbird	<i>Mimus polyglottos</i>	x	x		S5	LCC
Brown Thrasher	<i>Toxostoma rufum</i>	x	x		S5	LCC
Starlings and Mynas						
European Starling	<i>Sturnus vulgaris</i>	x	x		SNA	NC
Waxwings						
Cedar Waxwings	<i>Bombycilla cedrorum</i>	x	x		S2B	LSCC
Wood Warblers						
Kentucky Warbler	<i>Geothlypis formosa</i>	x	x	BCC/PIF-Yel(d)	S4B	LCC
Common Yellowthroat	<i>Geothlypis trichas</i>	x	x		S5	LCC
Worm-eating Warbler	<i>Helmitheros vermivora</i>	x	x	BCC	S3B	LCC
Yellow-breasted Chat	<i>Icteria virens</i>	x	x		S5B	LCC
Black-and-white Warbler	<i>Mniotilta varia</i>	x	x		S5B	LCC
Tennessee Warbler	<i>Oreothlypis peregrina</i>	x	x		SNR	NC
Nashville Warbler	<i>Oreothlypis ruficapilla</i>		x			NC
Louisiana Waterthrush	<i>Parkesia motacilla</i>	x	x	BCC	S5B	LCC
Northern Waterthrush	<i>Parkesia noveboracensis</i>		x			NC
Prothonotary Warbler	<i>Protonotaria citrea</i>	x	x	BCC/PIF-Yel(d)	S5B	MCC
Ovenbird	<i>Seiurus aurocapillus</i>	x	x		S5B	LCC
Northern Parula	<i>Setophaga americana</i>	x	x		S5B	LSCC
Bay-breasted Warbler	<i>Setophaga castanea</i>		x			NC
Cerulean Warbler	<i>Setophaga cerulea</i>		x	BCC/PIF-Yel(d)	SP	HCC
Yellow-rumped Warbler	<i>Setophaga coronata</i>	x	x		S5N	LSCC
Prairie Warbler	<i>Setophaga discolor</i>	x	x	BCC/PIF-Yel(d)	S5B	LCC
Yellow-throated Warbler	<i>Setophaga dominica</i>	x	x		S5B	LCC
Blackburnian Warbler	<i>Setophaga fusca</i>		x			NC
Magnolia Warbler	<i>Setophaga magnolia</i>	x	x		SNR	NC
Palm Warbler	<i>Setophaga palmarum</i>	x	x		S4N	LCC
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	x	x			MCC
Pine Warbler	<i>Setophaga pinus</i>	x	x		S5	LSCC
American Redstart	<i>Setophaga ruticilla</i>	x	x		S4B	LCC
Black-throated Green Warbler	<i>Setophaga virens</i>	x	x		S5B	LCC
Blue-winged Warbler	<i>Vermivora cyanoptera</i>	x	x	BCC	S3B	MCC
Hooded Warbler	<i>Wilsonia citrina</i>	x	x		S5B	LSCC
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	x		BCC/PIF-Red	SNR	LSCC
Orange-crowned Warbler	<i>Vermivora celata</i>	x			S4N	LSCC
Blackpoll Warbler	<i>Dendroica striata</i>	x		PIF-CBSD	SNR	LSCC
Tanagers, Cardinals & Allies						
Northern Cardinal	<i>Cardinalis cardinalis</i>	x	x		S5	LSCC
Blue Grosbeak	<i>Passerina caerulea</i>	x	x		S5B	LSCC
Indigo Bunting	<i>Passerina cyanea</i>	x	x		S2N	LCC
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	x	x		SNR	NC
Scarlet Tanager	<i>Piranga olivacea</i>	x	x		S5B	LSCC

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
Summer Tanager	<i>Piranga rubra</i>	x	x		S5B	LSCC
Dickcissel	<i>Spiza americana</i>		x			MCC
Sparrows and Allies						
Bachman's Sparrow	<i>Aimophila aestivalis</i>	x	x	BCC/PIF-Red	S3-SP	HCC
Grasshopper Sparrow	<i>Ammodramus savannarum</i>		x	PIF-CBSD		MCC
Dark-eyed Junco	<i>Junco hyemalis</i>	x	x		S5N	LSCC
Swamp Sparrow	<i>Melospiza georgiana</i>	x	x		S5N	LSCC
Song Sparrow	<i>Melospiza melodia</i>	x	x		S3B	LCC
Savannah Sparrow	<i>Passerculus sandwichensis</i>	x	x		S5N	LCC
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	x	x		S5	LCC
Vesper Sparrow	<i>Pooecetes gramineus</i>	x	x		S4N	MCC
Chipping Sparrow	<i>Spizella passerina</i>	x	x		S5	LSCC
Field Sparrow	<i>Spizella pusilla</i>	x	x	PIF-CBSD	S5	MCC
White-throated Sparrow	<i>Zonotrichia albicollis</i>	x	x		S5N	LCC
Fox Sparrow	<i>Passerella iliaca</i>	x			S4N	LCC
White-crowned Sparrow	<i>Zonotrichia atricapilla</i>	x			S4N	LCC
Icterids						
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	x	x		SNR	LCC
Orchard Oriole	<i>Icterus spurius</i>	x	x		S5B	LCC
Baltimore Oriole	<i>Icterus galbula</i>	x			S3B	LSCC
Brown-headed Cowbird	<i>Molothrus ater</i>	x	x		S5B	LSCC
Common Grackle	<i>Quiscalus quiscula</i>	x	x	PIF-CBSD	S5B	LCC
Eastern Meadowlark	<i>Sturnella magna</i>	x	x	PIF-CBSD	S5B	MCC
Bobolink	<i>Dolichonyx oryzivorus</i>	x		PIF-Yel(d)	SNR	LSCC
Finches						
American Goldfinch	<i>Carduelis tristis</i>	x	x		S5	LSCC
House Finch	<i>Carpodacus mexicanus</i>	x	x		SNA	LSCC
Purple Finch	<i>Carpodacus purpureus</i>	x	x		S5N	LCC
New Species- Species identified other than 2 faunal surveys						
American Pipit	<i>Anthus rubescens</i>					LCC
Purple Gallinule	<i>Porphyrio martinicus</i>					LCC
Cape May Warbler	<i>Setophaga tigrina</i>			PIF-Yel(d)		LCC
Wilson's Warbler	<i>Cardellina pusilla</i>			PIF-CBSD		LCC
Yellow Warbler	<i>Setophaga petechia</i>				SP	MCC
Golden Eagle	<i>Aquila chrysaetos</i>			BGEPA	SNRN-SP	HCC
Whimbrel	<i>Numenius phaeopus</i>			BCC	S3N	NL
Bank Swallow	<i>Riparia riparia</i>					LCC
Horned Lark	<i>Eremphila alpestris</i>					LCC
Total- 175 Bird Species						

# FM-ARNGTC Pelham Range Terrestrial Invertebrate Master List Survey 2013

## Invasive Species

Class	Order	Family	Genus	Species
Arachnida	Araneae	Philodromidae	<i>Tibellus</i>	
Arachnida	Araneae	Anyphaenidae	<i>Wulfila</i>	<i>saltabundus</i>
Arachnida	Araneae	Anyphaenidae	<i>Wulfila</i>	
Arachnida	Araneae	Araneidae	<i>Acacesia</i>	<i>hamata</i>
Arachnida	Araneae	Araneidae	<i>Acanthepeira</i>	<i>venusta</i>
Arachnida	Araneae	Araneidae	<i>Araneus</i>	<i>miniatus</i>
Arachnida	Araneae	Araneidae	<i>Argiope</i>	<i>aurantia</i>
Arachnida	Araneae	Araneidae	<i>Mangora</i>	<i>maculata</i>
Arachnida	Araneae	Araneidae	<i>Neoscona</i>	
Arachnida	Araneae	Araneidae		
Arachnida	Araneae	Clubionidae	<i>Clubonia</i>	
Arachnida	Araneae	Gnaphosidae	<i>Eilica</i>	<i>bicolor</i>
Arachnida	Araneae	Liocranidae	<i>Agroeca</i>	
Arachnida	Araneae	Lycosidae	<i>Pardosa</i>	
Arachnida	Araneae	Lycosidae	<i>Rabidosa</i>	<i>rabida</i>
Arachnida	Araneae	Lycosidae	<i>Rabidosa</i>	<i>punctulata</i>
Arachnida	Araneae	Lycosidae	<i>Trochosa</i>	
Arachnida	Araneae	Lycosidae		
Arachnida	Araneae	Oxyopidae	<i>Oxyopes</i>	<i>salticus</i>
Arachnida	Araneae	Oxyopidae	<i>Oxyopes</i>	
Arachnida	Araneae	Oxyopidae	<i>Oxyopes</i>	<i>occidens</i>
Arachnida	Araneae	Oxyopidae	<i>Peucetia</i>	<i>viridans</i>
Arachnida	Araneae	Oxyopidae		
Arachnida	Araneae	Salticidae	<i>Neon</i>	
Arachnida	Araneae	Salticidae	<i>Thiodina</i>	
Arachnida	Araneae	Salticidae	<i>Metacyrba</i>	<i>taeniola</i>
Arachnida	Araneae	Salticidae	<i>Pelegrina</i>	
Arachnida	Araneae	Salticidae		
Arachnida	Araneae	Tetragnathidae	<i>Tetragnatha</i>	
Arachnida	Araneae	Thomisidae	<i>Mecaphesa</i>	<i>dubia</i>
Arachnida	Araneae	Thomisidae	<i>Mecaphesa</i>	
Arachnida	Araneae	Thomisidae	<i>Misumenoides</i>	<i>formosipes</i>
Arachnida	Araneae	Thomisidae	<i>Xysticus</i>	<i>elegans</i>
Arachnida	Araneae	Thomisidae	<i>Xysticus</i>	
Arachnida	Araneae	Thomisidae		
Arachnida	Araneae	Araneidae	<i>Araniella</i>	<i>displicata</i>
Arachnida	Opiliones	Phalangidae	<i>Phalangium</i>	<i>opilio</i>
Arachnida	Opiliones	Sclerosomatidae	<i>Leiobunum</i>	
Arachnida	Opiliones	Sclerosomatidae	<i>Leiobunum</i>	
Arachnida	Opiliones	Sclerosomatidae	<i>Leiobunum</i>	<i>bimaculatum</i>
Diplopoda	Spirobolida			
Diplopoda	Polydesmida		<i>Polydesmida</i>	

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Genus</b>	<b>Species</b>
Insecta	Orthoptera	Gryllidae	<i>Oecanthus</i>	
Insecta	Blattodea	Blattidae	<i>Periplaneta</i>	<i>fuliginosa</i>
Insecta	Blattodea	Ectobiidae	<i>Parcoblatta</i>	<i>virginica</i>
Insecta	Blattodea	Ectobiidae		
<b>Insecta</b>	<b>Blattodea</b>	<b>Ectobiidae</b>	<b><i>Blattella</i></b>	<b><i>germanica</i></b>
Insecta	Blattodea	Ectobiidae	<i>Parcoblatta</i>	
Insecta	Coleoptera	Chrysomelidae	<i>Cryptocephalus</i>	<i>obsoletus</i>
Insecta	Coleoptera	Chelonariidae	<i>Chelonarium</i>	<i>lecontei</i>
Insecta	Coleoptera	Cerambycidae	<i>Aneflomorpha</i>	<i>subpubescens</i>
Insecta	Coleoptera	Cerambycidae	<i>Oberea</i>	<i>perspicillata</i>
Insecta	Coleoptera	Cerambycidae	<i>Prionus</i>	
Insecta	Coleoptera	Cerambycidae	<i>Prionus</i>	<i>pocularis</i>
Insecta	Coleoptera	Chrysomelidae	<i>Agroiconota</i>	<i>bivittata</i>
Insecta	Coleoptera	Chrysomelidae	<i>Labidomera</i>	<i>clivicollis</i>
Insecta	Coleoptera	Chrysomelidae	<i>Diabrotica</i>	<i>undecimpunctata</i>
Insecta	Coleoptera	Chrysomelidae	<i>Disonycha</i>	<i>leptolineata</i>
Insecta	Coleoptera	Chrysomelidae	<i>Exema</i>	
Insecta	Coleoptera	Chrysomelidae	<i>Capraita</i>	<i>circumdata</i>
<b>Insecta</b>	<b>Coleoptera</b>	<b>Coccinellidae</b>	<b><i>Harmonia</i></b>	<b><i>axyridis</i></b>
Insecta	Coleoptera	Endomychidae	<i>Aphorista</i>	<i>vittata</i>
Insecta	Coleoptera	Coccinellidae	<i>Adalia</i>	
Insecta	Coleoptera	Coccinellidae	<i>Coccinella</i>	<i>novemnotata</i>
Insecta	Coleoptera	Coccinellidae	<i>Coccinella</i>	<i>septempunctata</i>
Insecta	Coleoptera	Coccinellidae		
Insecta	Coleoptera	Erotylidae	<i>Loberus</i>	
Insecta	Coleoptera	Curculionidae	<i>Anthonomus</i>	
Insecta	Coleoptera	Curculionidae		
Insecta	Coleoptera	Curculionidae	<i>Centrinites</i>	<i>strigicollis</i>
Insecta	Coleoptera	Curculionidae	<i>Naupactus</i>	<i>peregrinus</i>
Insecta	Coleoptera	Nosodendridae	<i>Orphilus</i>	
Insecta	Coleoptera	Cantharidae	<i>Podabrus</i>	
Insecta	Coleoptera	Cantharidae	<i>Atalantycha</i>	
Insecta	Coleoptera	Cantharidae	<i>Chauliognathus</i>	
Insecta	Coleoptera	Elateridae	<i>Diplostethus</i>	<i>carolinensis</i>
Insecta	Coleoptera	Elateridae		
Insecta	Coleoptera	Elateridae	<i>Orthostethus</i>	<i>infuscatus</i>
Insecta	Coleoptera	Elateridae		
Insecta	Coleoptera	Lampyridae	<i>Photuris</i>	
Insecta	Coleoptera	Lycidae	<i>Plateros</i>	
Insecta	Coleoptera	Hydrophilidae	<i>Hydrochara</i>	<i>obtusata</i>
Insecta	Coleoptera	Hydrophilidae	<i>Cercyon</i>	
Insecta	Coleoptera	Hydrophilidae	<i>Berosus</i>	
Insecta	Coleoptera	Hydrophilidae	<i>Enochrus</i>	
Insecta	Coleoptera	Hydrophilidae	<i>Tropisternus</i>	
Insecta	Coleoptera	Hydrophilidae		
Insecta	Coleoptera	Scarabaeidae	<i>Phyllophaga</i>	

Class	Order	Family	Genus	Species
Insecta	Coleoptera	Geotrupidae	<i>Geotrupes</i>	
Insecta	Coleoptera	Geotrupidae	<i>Geotrupes</i>	
Insecta	Coleoptera	Lucanidae	<i>Dorcus</i>	
Insecta	Coleoptera	Lucanidae	<i>Lucanus</i>	<i>elaphus</i>
Insecta	Coleoptera	Lucanidae	<i>Lucanus</i>	<i>capreolus</i>
Insecta	Coleoptera	Scarabaeidae	<i>Aphodius</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Cotinis</i>	<i>nitida</i>
Insecta	Coleoptera	Scarabaeidae	<i>Trigonopeltastes</i>	<i>delta</i>
Insecta	Coleoptera	Scarabaeidae	<i>Cyclocephala</i>	<i>lurida</i>
Insecta	Coleoptera	Scarabaeidae	<i>Diplotaxis</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Phyllophaga</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Phyllophaga</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Diplotaxis</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Anomala</i>	<i>marginata</i>
Insecta	Coleoptera	Scarabaeidae	<i>Anomala</i>	<i>undulata</i>
Insecta	Coleoptera	Scarabaeidae	<i>Popillia</i>	<i>japonica</i>
Insecta	Coleoptera	Scarabaeidae	<i>Pelidnota</i>	<i>punctata</i>
Insecta	Coleoptera	Scarabaeidae	<i>Canthon</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Copris</i>	
Insecta	Coleoptera	Scarabaeidae	<i>Copris</i>	<i>minutus</i>
Insecta	Coleoptera	Scarabaeidae	<i>Onthophagus</i>	<i>hecate</i>
Insecta	Coleoptera	Scarabaeidae	<i>Onthophagus</i>	
Insecta	Coleoptera	Scarabaeidae		
Insecta	Coleoptera	Scarabaeidae	<i>Digitonthophagus</i>	<i>gazella</i>
Insecta	Coleoptera	Trogidae	<i>Omorgus</i>	
Insecta	Coleoptera	Trogidae	<i>Trox</i>	
Insecta	Coleoptera	Staphylinidae		
Insecta	Coleoptera	Staphylinidae		
Insecta	Coleoptera	Staphylinidae	<i>Aleochara</i>	
Insecta	Coleoptera	Silphidae	<i>Nicrophorus</i>	<i>sayi</i>
Insecta	Coleoptera	Silphidae	<i>Nicrophorus</i>	<i>orbicollis</i>
Insecta	Coleoptera	Mordellidae	<i>Isotrilophus</i>	<i>erraticus</i>
Insecta	Coleoptera	Tenebrionidae	<i>Strongylium</i>	<i>tenuicolle</i>
Insecta	Coleoptera	Tenebrionidae	<i>Tribolium</i>	
Insecta	Coleoptera	Tenebrionidae	<i>Uloma</i>	
Insecta	Coleoptera	Carabidae	<i>Brachinus</i>	
Insecta	Coleoptera	Carabidae	<i>Cicindela</i>	<i>punctulata</i>
Insecta	Coleoptera	Carabidae	<i>Harpalus</i>	
Insecta	Coleoptera	Carabidae	<i>Lebia</i>	<i>viridis</i>
Insecta	Coleoptera	Carabidae	<i>Pterostichus</i>	
Insecta	Coleoptera	Carabidae	<i>Pterostichus</i>	<i>femoralis</i>
Insecta	Coleoptera	Carabidae		
Insecta	Coleoptera	Carabidae		
Insecta	Coleoptera	Carabidae	<i>Aspidoglossa</i>	<i>subangulata</i>
Insecta	Coleoptera	Carabidae	<i>Cicindela</i>	
Insecta	Coleoptera	Carabidae		

Class	Order	Family	Genus	Species
Insecta	Coleoptera	Dytiscidae	<i>Dytiscus</i>	
Insecta	Coleoptera	Dytiscidae		
Insecta	Coleoptera	Dytiscidae		
Insecta	Coleoptera	Gyrinidae	<i>Dineutus</i>	
Insecta	Coleoptera	Haliplidae	<i>Haliplus</i>	
Insecta	Coleoptera	Tenebrionidae		
Insecta	Coleoptera			
Insecta	Coleoptera	Cerambycidae	<i>Oncideres</i>	<i>cingulata</i>
Insecta	Dermaptera	Anisolabididae	<i>Euborellia</i>	<i>annulipes</i>
Insecta	Diptera	Asilidae	<i>Machimus</i>	
Insecta	Diptera	Drosophilidae	<i>Drosophila</i>	
Insecta	Diptera	Ichneumonidae	<i>Ophion</i>	
Insecta	Diptera	Anthomyiidae		
Insecta	Diptera	Fanniidae	<i>Fannia</i>	
Insecta	Diptera	Muscidae	<i>Hebecnema</i>	
Insecta	Diptera	Tachinidae	<i>Gonia</i>	
Insecta	Diptera	Calliphoridae	<i>Calliphora</i>	<i>vomitorea</i>
Insecta	Diptera	Calliphoridae	<i>Phormia</i>	<i>regina</i>
Insecta	Diptera	Calliphoridae	<i>Lucilia</i>	<i>sericata</i>
Insecta	Diptera	Calliphoridae	<i>Lucilia</i>	<i>coeruleiviridis</i>
Insecta	Diptera	Calliphoridae	<i>Lucilia</i>	<i>illustris</i>
Insecta	Diptera	Oestridae	<i>Cephenemyia</i>	
Insecta	Diptera	Sarcophagidae	<i>Sarcophaga</i>	
Insecta	Diptera	Sarcophagidae		
Insecta	Diptera	Tabanidae	<i>Genea</i>	
Insecta	Diptera	Mycetophilidae	<i>Neoempheria</i>	
Insecta	Diptera	Conopidae	<i>Stylogastrinae</i>	<i>biannulata</i>
Insecta	Diptera	Ceratopogonidae	<i>Probezzia</i>	<i>pallida</i>
Insecta	Diptera	Ceratopogonidae		
Insecta	Diptera	Ceratopogonidae	<i>Phaenobezzia</i>	<i>opaca</i>
Insecta	Diptera	Ceratopogonidae		
Insecta	Diptera	Chaoboridae	<i>Chaoborus</i>	<i>punctipennis</i>
Insecta	Diptera	Chironomidae		
Insecta	Diptera	Culicidae	<i>Ochleratus</i>	
Insecta	Diptera	Limoniidae		
Insecta	Diptera	Syrphidae	<i>Milesia</i>	<i>virginiensis</i>
Insecta	Diptera	Syrphidae	<i>Pipiza</i>	
Insecta	Diptera	Syrphidae	<i>Toxomerus</i>	<i>geminatus</i>
Insecta	Diptera	Syrphidae		
Insecta	Diptera	Tabanidae		
Insecta	Diptera	Tabanidae	<i>Tabanus</i>	
Insecta	Ephemeroptera	Ephemeridae		
Insecta	Ephemeroptera	Ephemeridae	<i>Hexagenia</i>	
Insecta	Ephemeroptera	Ephemeridae	<i>Hexagenia</i>	<i>limbata</i>
Insecta	Ephemeroptera	Cercopidae	<i>Prosapia</i>	<i>bicincta</i>
Insecta	Hemiptera	Cicadellidae	<i>Draeculacephala</i>	<i>producta</i>

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Genus</b>	<b>Species</b>
Insecta	Hemiptera	Cicadellidae	<i>Draeculacephala</i>	<i>balli</i>
Insecta	Hemiptera	Cicadellidae	<i>Graphocephala</i>	
Insecta	Hemiptera	Cicadellidae	<i>Graphocephala</i>	<i>versuta</i>
Insecta	Hemiptera	Cicadellidae	<i>Sibovia</i>	<i>occatoria</i>
Insecta	Hemiptera	Cicadellidae		
Insecta	Hemiptera	Cercopidae	<i>Prosapia</i>	<i>bicincta</i>
Insecta	Hemiptera	Cicadellidae	<i>Draeculacephala</i>	
Insecta	Hemiptera	Cicadellidae		
Insecta	Hemiptera	Cicadellidae	<i>Paraulacizes</i>	<i>irrorata</i>
Insecta	Hemiptera	Membracidae	<i>Heliria</i>	
Insecta	Hemiptera	Membracidae	<i>Micrutalis</i>	
Insecta	Hemiptera	Membracidae	<i>Archasia</i>	
Insecta	Hemiptera	Membracidae	<i>Heliria</i>	
Insecta	Hemiptera	Alydidae	<i>Alydus</i>	<i>pilosulus</i>
Insecta	Hemiptera	Alydidae	<i>Alydus</i>	<i>eurinus</i>
Insecta	Hemiptera	Alydidae		
Insecta	Hemiptera	Coreoidea	<i>Piezogaster</i>	
Insecta	Hemiptera	Alydidae	<i>Alydus</i>	<i>eurinus</i>
Insecta	Hemiptera	Flatidae		
Insecta	Hemiptera	Cydnidae	<i>Dallasiellus</i>	<i>lugubris</i>
Insecta	Hemiptera	Notonectidae	<i>Notonecta</i>	<i>irrorata</i>
Insecta	Hemiptera	Pentatomidae	<i>Euschistus</i>	<i>servus</i>
Insecta	Hemiptera	Pentatomidae	<i>Euschistus</i>	<i>tristigmus</i>
Insecta	Hemiptera	Pentatomidae	<i>Mormidea</i>	<i>lugens</i>
Insecta	Hemiptera	Pentatomidae		
Insecta	Hemiptera	Pentatomidae	<i>Banasa</i>	<i>calva</i>
Insecta	Hemiptera	Pentatomidae	<i>Mormidea</i>	<i>lugens</i>
Insecta	Hemiptera	Pentatomidae	<i>Oebalus</i>	<i>pugnax</i>
Insecta	Hemiptera	Scutelleridae	<i>Homaemus</i>	
Insecta	Hemiptera	Thyreocoridae	<i>Corimelaena</i>	<i>lateralis</i>
Insecta	Hemiptera	Thyreocoridae	<i>Corimelaena</i>	<i>lateralis</i>
Insecta	Hemiptera	Largidae	<i>Largus</i>	<i>succinctus</i>
Insecta	Hemiptera	Alydidae	<i>Alydus</i>	<i>eurinus</i>
Insecta	Hemiptera	Apidae	<i>Apis</i>	
Insecta	Hemiptera	Apidae	<i>Apis</i>	<i>mellifera</i>
Insecta	Hemiptera	Apidae		
Insecta	Hemiptera	Corixidae		
Insecta	Hemiptera	Fulgoroidae	<i>Acanalonia</i>	<i>servillei</i>
Insecta	Hemiptera	Fulgoroidae	<i>Pintalia</i>	
Insecta	Hemiptera	Membracidae	<i>Entylia</i>	<i>carinata</i>
Insecta	Hemiptera	Miridae	<i>Apolygus</i>	<i>lucorum</i>
Insecta	Hemiptera	Miridae	<i>Lygus</i>	<i>lineolaris</i>
Insecta	Hemiptera	Miridae	<i>Taylorilygus</i>	<i>apicalis</i>
Insecta	Hemiptera	Reduviidae	<i>Phymata</i>	
Insecta	Hemiptera	Reduviidae		
Insecta	Hemiptera	Reduviidae	<i>Rocconota</i>	



<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Genus</b>	<b>Species</b>
Insecta	Hemiptera	Reduviidae	<i>Apiomerus</i>	<i>eurinus</i>
Insecta	Hemiptera	Reduviidae	<i>Rasahus</i>	<i>hamatus</i>
Insecta	Hemiptera			
Insecta	Hemiptera	Flatidae	<i>Metcalfa</i>	<i>pruinosa</i>
Insecta	Hemiptera	Flatidae	<i>Ormenoides</i>	<i>venusta</i>
Insecta	Hemiptera	Flatidae		
Insecta	Hemiptera	Berytidae	<i>Jalysus</i>	
Insecta	Hemiptera			
Insecta	Hymenoptera	Cynipidae	<i>Antistrophus</i>	<i>laciniatus</i>
Insecta	Hymenoptera	Formicidae	<i>Formica</i>	
Insecta	Hymenoptera	Formicidae	<i>Prenolepis</i>	<i>imparis</i>
<b>Insecta</b>	<b>Hymenoptera</b>	<b>Formicidae</b>	<b><i>Solenopsis</i></b>	<b><i>invicta</i></b>
Insecta	Hymenoptera	Formicidae	<i>Hypoponera</i>	
Insecta	Hymenoptera	Formicidae	<i>Forelius</i>	<i>pruinosis</i>
Insecta	Hymenoptera	Formicidae	<i>Aphaenogaster</i>	
Insecta	Hymenoptera	Formicidae	<i>Pheidole</i>	
Insecta	Hymenoptera	Ichneumonidae	<i>Lissonota</i>	
Insecta	Hymenoptera	Ichneumonidae	<i>Perilissus</i>	
Insecta	Hymenoptera	Ichneumonidae	<i>Euceros</i>	
Insecta	Hymenoptera	Ichneumonidae	<i>Enicospilus</i>	<i>purgatus</i>
Insecta	Hymenoptera	Ichneumonidae	<i>Ophion</i>	
Insecta	Hymenoptera	Ichneumonidae		
Insecta	Hymenoptera	Ichneumonidae		
Insecta	Hymenoptera	Ichneumonidae	<i>Enicospilus</i>	<i>purgatus</i>
Insecta	Hymenoptera	Ichneumonidae	<i>Enicospilus</i>	
Insecta	Hymenoptera	Ichneumonidae		
Insecta	Hymenoptera	Tiphiidae	<i>Myzinum</i>	<i>quinquecinctum</i>
Insecta	Hymenoptera	Vespidae	<i>Polistes</i>	
Insecta	Hymenoptera	Vespidae	<i>Dolichovespula</i>	<i>maculata</i>
Insecta	Hymenoptera	Vespidae	<i>Vespula</i>	<i>squamosa</i>
Insecta	Hymenoptera	Vespidae	<i>Vespula</i>	<i>maculifrons</i>
Insecta	Hymenoptera	Vespidae	<i>Dolichovespula</i>	<i>maculata</i>
Insecta	Hymenoptera	Vespidae	<i>Vespa</i>	<i>crabro</i>
Insecta	Hymenoptera	Vespidae	<i>Polistes</i>	
Insecta	Hymenoptera	Megachilidae	<i>Coelioxys</i>	
Insecta	Hymenoptera	Mutillidae	<i>Timulla</i>	<i>vagans</i>
Insecta	Hymenoptera	Halictidae	<i>Lasioglossum</i>	
Insecta	Hymenoptera	Sphecidae	<i>Isodontia</i>	<i>apicalis</i>
Insecta	Mantodea	Mantidae	<i>Stagmomantis</i>	<i>carolina</i>
Insecta	Mantodea	Mantidae	<i>Tenodera</i>	
Insecta	Mecoptera	Panorpidae	<i>Panorpa</i>	
Insecta	Megaloptera	Corydalidae	<i>Corydalus</i>	<i>cornutus</i>
Insecta	Neuroptera	Ascalaphidae	<i>Ululodes</i>	<i>quadripunctatus</i>
Insecta	Neuroptera	Chrysopidae	<i>Chrysopa</i>	<i>oculata</i>
Insecta	Neuroptera	Mantispidae	<i>Dicromantispa</i>	<i>interrupta</i>
Insecta	Neuroptera	Mantispidae	<i>Zeugomantispa</i>	<i>minuta</i>

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Genus</b>	<b>Species</b>
Insecta	Orthoptera	Acrididae	<i>Schistocerca</i>	<i>americana</i>
Insecta	Orthoptera	Acrididae	<i>Melanoplus</i>	<i>keeleri</i>
Insecta	Orthoptera	Acrididae		
Insecta	Orthoptera	Acrididae	<i>Arphia</i>	<i>granulata</i>
Insecta	Orthoptera	Acrididae	<i>Chortophaga</i>	<i>viridifasciata</i>
Insecta	Orthoptera	Acrididae	<i>Melanoplus</i>	
Insecta	Orthoptera	Acrididae	<i>Gryllus</i>	<i>rubens</i>
Insecta	Orthoptera	Gryllidae	<i>Gryllus</i>	
Insecta	Orthoptera	Gryllidae	<i>Orocharis</i>	<i>saltator</i>
Insecta	Orthoptera	Gryllidae	<i>Allonemobius</i>	
Insecta	Orthoptera	Gryllidae	<i>Allonemobius</i>	<i>socius</i>
Insecta	Orthoptera	Gryllidae		
Insecta	Orthoptera	Gryllidae	<i>Allonemobius</i>	<i>socius</i>
Insecta	Orthoptera	Gryllidae	<i>Oecanthus</i>	<i>quadripunctatus</i>
Insecta	Orthoptera	Gryllidae	<i>Oecanthus</i>	
Insecta	Orthoptera	Gryllidae		
Insecta	Orthoptera	Gryllacrididae	<i>Ceuthophilus</i>	
Insecta	Orthoptera	Rhaphidophoridae	<i>Ceuthophilus</i>	
Insecta	Orthoptera	Rhaphidophoridae	<i>Conocephalus</i>	<i>attenuatus</i>
Insecta	Orthoptera	Tettigoniidae	<i>Conocephalus</i>	<i>fasciatus</i>
Insecta	Orthoptera	Tettigoniidae	<i>Neoconocephalus</i>	
Insecta	Orthoptera	Tettigoniidae	<i>Odontoxiphidium</i>	<i>apterum</i>
Insecta	Orthoptera	Tettigoniidae		
Insecta	Orthoptera	Tettigoniidae	<i>Conocephalus</i>	
Insecta	Orthoptera	Tettigoniidae	<i>Scudderia</i>	
Insecta	Orthoptera	Tettigoniidae	<i>Scudderia</i>	<i>texensis</i>
Insecta	Orthoptera	Tettigoniidae	<i>Conocephalus</i>	
Insecta	Orthoptera	Tettigoniidae	<i>Neoconocephalus</i>	<i>triops</i>
Insecta	Orthoptera	Tettigoniidae	<i>Neoconocephalus</i>	
Insecta	Orthoptera	Tettigoniidae		
Insecta	Orthoptera	Tettigoniidae		
Insecta	Orthoptera	Tettigoniidae		
Insecta	Phasmida	Diapheromeridae	<i>Diapheromera</i>	<i>femorata</i>
Insecta	Plecoptera	Perlidae	<i>Acroneuria</i>	
Insecta	Plecoptera	Perlidae	<i>Perlesta</i>	
Insecta	Trichoptera			
Total- 301				

# FM-ARNGTC Pelham Range Terrestrial Invertebrete Master List Survey 2013

All in Class Insecta and Order Lepidoptera

Family	Scientific Name	Common Name
Acrolophidae	<i>Acrolophus sp.</i>	
Arctiidae	<i>Halysidota tessellaris</i>	Banded Tussock Moth
Arctiidae	<i>Hypoprepia fucosa</i>	Painted Lichen Moth
Arctiidae	<i>Cisseps fulvicollis</i>	Yellow-Collared Scape Moth
Crambidae	<i>Colomychus talis</i>	Colorful Moth
Crambidae	<i>Desmia funeralis</i>	Grape Leafroller
Crambidae	<i>Diacme elealis</i>	Paler Diacme
Crambidae	<i>Diastictis ventralis</i>	White-Spotted Brown Moth
Crambidae	<i>Glyphodes sibillalis</i>	Mulberry Leaf-tier Moth
Crambidae	<i>Herpetogramma pertextalis</i>	Bold-Feathered Grass Moth
Crambidae	<i>Nomophila nearctica</i>	Lucerne Moth
Crambidae	<i>Perispasta caeculalis</i>	Titian Peale's Crambid
Crambidae	<i>Pyrausta bicoloralis</i>	Bicolored Pyrausta Moth
Crambidae	<i>Udea rubigalis</i>	Celery Leaf-tier
Crambidae	<i>Herpetogramma sp.</i>	
Crambidae	<i>Pyrausta subsequalis</i>	Pyrausta Subsequalis
Erebidae	<i>Apantesis nais</i>	Nais Tiger Moth
Erebidae	<i>Apantesis phalerata</i>	Harnessed Tiger Moth
Erebidae	<i>Caenurgia chloropha</i>	Vetch Looper Moth
Erebidae	<i>Catocala cara</i>	Darling Underwing
Erebidae	<i>Catocala habilis</i>	Habilis Underwing
Erebidae	<i>Catocala maestosa</i>	Sad Underwing
Erebidae	<i>Catocala mira</i>	Wonderful Underwing
Erebidae	<i>Catocala vidua</i>	Widow Underwing
Erebidae	<i>Cisthene juanita</i>	Cisthene Juanita
Erebidae	<i>Cisthene packardii</i>	Packard's Lichen Moth
Erebidae	<i>Clemensia albata</i>	Little White Lichen Moth
Erebidae	<i>Crambidia pallida</i>	Pale Lichen Moth
Erebidae	<i>Cycnia tenera</i>	Delicate Cycnia
Erebidae	<i>Dasychira basiflava</i>	Yellow-Based Tussock Moth
Erebidae	<i>Diacrisia virginica</i>	Yellow Wolly Bear Moth
Erebidae	<i>Dyspyralis sp.</i>	
Erebidae	<i>Eilema bicolor</i>	Bicolored Moth
Erebidae	<i>Euchaetes egle</i>	Milkweed Tussock Moth
Erebidae	<i>Grammia figurata</i>	Figured Tiger Moth
Erebidae	<i>Grammia parthenice</i>	Parthenice Tiger Moth
Erebidae	<i>Grammia virguncula</i>	Little Virgin Tiger Moth
Erebidae	<i>Hemeroplanis habitalis</i>	Black-Dotted Hemeroplanis
Erebidae	<i>Hemeroplanis scopulepes</i>	Variable Tropic Moth
Erebidae	<i>Hypsoropha hormos</i>	Small Necklace Moth
Erebidae	<i>Idia aemula</i>	Common Idia
Erebidae	<i>Idia americalis</i>	American Idia

Family	Scientific Name	Common Name
Erebidae	<i>Mocis texana</i>	Texas Mocis
Erebidae	<i>Orgyia leucostigma</i>	White-Marked Tussock Moth
Erebidae	<i>Palthis asopialis</i>	Faint-Spotted Palthis
Erebidae	<i>Panopoda carneicosta</i>	Brown Panopoda
Erebidae	<i>Panopoda rufimargo</i>	Red-Lined Panopoda
Erebidae	<i>Phytometra rhodarialis</i>	Pink-Bordered Yellow
Erebidae	<i>Plusiodonta compressipalpis</i>	Moonseed Moth
Erebidae	<i>Pyrrharctia isabella</i>	Isabella Tiger Moth
Erebidae	<i>Scolecocampa liburna</i>	Dead-Wood Borer Moth
Erebidae	<i>Spilosoma congrua</i>	Agreeable Tiger Moth
Erebidae	<i>Spilosoma virginica</i>	Virginian Tiger Moth
Erebidae	<i>Tetanolita mynesalis</i>	Smoky Tetanolita
Erebidae	<i>Utetheisa ornatrix</i>	Ornate Bella Moth
Erebidae	<i>Virbia aurantiaca</i>	Orange Holomelina
Erebidae	<i>Virbia sp.</i>	
Erebidae	<i>Zale lunata</i>	Lunate Zale
Erebidae	<i>Zanclognatha lituralis</i>	Lettered Fan-Foot
Erebidae	<i>Zanclognatha protumnusalis</i>	Zanclognatha Protumnusalis
Euteliidae	<i>Paectes pygmaea</i>	Pygmy Paectes
Geometridae	<i>Aethalura intertexta</i>	Four-Barred Gray
Geometridae	<i>Anavitrinella pampinaria</i>	Common Gray
Geometridae	<i>Besma quercivoraria</i>	Oak Besma
Geometridae	<i>Cleora sublunaria</i>	Double-Lined Gray
Geometridae	<i>Epimecis hortaria</i>	Tulip-Tree Beauty
Geometridae	<i>Eulithis diversilineata</i>	Lesser Grapevine Moth
Geometridae	<i>Eupithecia spp.</i>	
Geometridae	<i>Eusarca confusaria</i>	Confused Eusarca
Geometridae	<i>Hypagyrtis sp.</i>	
Geometridae	<i>Iridopsis vellivolata</i>	Large Purplish Gray
Geometridae	<i>Lobocleta ossularia</i>	Drab Brown Wave
Geometridae	<i>Lomographa glomeraria</i>	Gray Spring Moth
Geometridae	<i>Lophosis labeculata</i>	Stained Lophosis
Geometridae	<i>Macaria aemulataria</i>	Common Angle
Geometridae	<i>Nemoria lixaria</i>	Red Bordered Emerald
Geometridae	<i>Nemoria mimosaria</i>	White Fringed Emerald
Geometridae	<i>Plagodis alcoolaria</i>	Hollow-Spotted Plagodis
Geometridae	<i>Plagodis phlogosaria</i>	Straight Lined Plagodis
Geometridae	<i>Probole amicaria</i>	Friendly Probole
Geometridae	<i>Scopula cacuminaria</i>	Frosted Tan Wave Moth
Geometridae	<i>Scopula inductata</i>	Soft-Lined Wave
Geometridae	<i>Speranza sp.</i>	
Geometridae	<i>Venusia comptaria</i>	Brown-Shaded Carpet
Geometridae	<i>Xanthotype sospepta</i>	Crocus Geometer
Geometridae	<i>Xanthotype urticaria</i>	False Crocus Geometer
Geometridae	<i>Besma endropiaria</i>	Straw Besma
Geometridae	<i>Besma sp.</i>	

Family	Scientific Name	Common Name
Geometridae	<i>Costaconvexa centrostrigaria</i>	Bent-Line Carpet
Geometridae	<i>Ectropis crepuscularia</i>	Porcelain Gray
Limacodidae	<i>Euclea delphinii</i>	Spiny Oak Slug-Moth
Limacodidae	<i>Lithacodes fasciola</i>	Yellow-Collard Slug Moth
Limacodidae	<i>Monoleuca semifascia</i>	Pin-Striped Slug Moth
Limacodidae	<i>Natada nasoni</i>	Nason'S Slug Moth
Limacodidae	<i>Parasa chloris</i>	Smaller Parasa
Limacodidae	<i>Apoda biguttata</i>	Shagreened Slug Moth
Lycaenidae	<i>Celastrina neglecta</i>	Summer Azure
Lycaenidae	<i>Strymon melinus</i>	Gray Hairstreak
Megalopygidae	<i>Lagoa crispata</i>	Black Waved Flannel Moth
Megalopygidae	<i>Lagoa lacyi</i>	Florida Flannel Moth
Megalopygidae	<i>Megalopyge bisseza</i>	Megalopyge Bisseza
Megalopygidae	<i>Megalopyge opercularis</i>	Southern Flannel Moth
Noctuidae	<i>Achatodes zaeae</i>	Elder Shoot Borer
Noctuidae	<i>Acronicta increta</i>	Small Oak Dagger
Noctuidae	<i>Agrotis ipsilon</i>	Ipsilon Dart
Noctuidae	<i>Amphipyra pyramidoides</i>	Copper Underwing
Noctuidae	<i>Apamea helva</i>	Yellow Three Spot
Noctuidae	<i>Catocala amica</i>	Girlfriend Underwing
Noctuidae	<i>Catocala lineellla</i>	Little Lined Underwing
Noctuidae	<i>Epiglaea decliva</i>	Sloping Sallow
Noctuidae	<i>Feltia herilis</i>	Master'S Dart
Noctuidae	<i>Galgula partita</i>	The Wedgling
Noctuidae	<i>Leucania multilinea</i>	Many-Lined Wainscot
Noctuidae	<i>Leucania phragmitidicola</i>	Phragmites Wainscot
Noctuidae	<i>Leucania ursula</i>	Ursula Wainscot
Noctuidae	<i>Marimatha nigrofimbria</i>	Black Bordered Lemon
Noctuidae	<i>Mythimna unipuncta</i>	Armyworm Moth
Noctuidae	<i>Oligia modica</i>	Black-Banded Brocade
Noctuidae	<i>Orhtosia spp.</i>	
Noctuidae	<i>Orthodes majuscula</i>	Rustic Quaker
Noctuidae	<i>Papaipema arctivorens</i>	Northern Burdock Borer
Noctuidae	<i>Perigea xanthioides</i>	Red Groundling
Noctuidae	<i>Polygrammate hebraeicum</i>	Hebrew Moth
Noctuidae	<i>Ponometia semiflava</i>	Half-Yellow Moth
Noctuidae	<i>Pseudeustrotia carneola</i>	Pink-Barred Pseudeustrotia
Noctuidae	<i>Raphia frater</i>	The Brother
Noctuidae	<i>Schinia arcigera</i>	Arcigera Flower Moth
Noctuidae	<i>Spodoptera ornithogalli</i>	Yellow-Striped Armyworm Moth
Noctuidae	<i>Stiria rugifrons</i>	Yellow Sunflower Moth
Noctuidae	<i>Anathix ralla</i>	Dotted Sallow Moth
Noctuidae	<i>Xestia elimata</i>	Southern Variable Dart Moth
Notodontidae	<i>Clostera inclusa</i>	Angle-Lined Prominent
Notodontidae	<i>Datana angusii</i>	Angus'S Datana
Notodontidae	<i>Datana drexelii</i>	Drexel'S Datana

Family	Scientific Name	Common Name
Notodontidae	<i>Heterocampa biundata</i>	Wavy-Lined Heterocampa
Notodontidae	<i>Heterocampa oblique</i>	Oblique Heterocampa
Notodontidae	<i>Heterocampa sp.</i>	
Notodontidae	<i>Hyparpax aurora</i>	Pink Prominent
Notodontidae	<i>Nadata gibbosa</i>	White-Dotted Prominent
Nymphalidae	<i>Agraulis vanillae</i>	Gulf Fritillary
Nymphalidae	<i>Asterocampa celtis</i>	Hackberry Emperor
Nymphalidae	<i>Cercyonis pegala</i>	Common Wood Nymph
Nymphalidae	<i>Cyllopsis gemma</i>	Eastern-Gemmed Satyr
Nymphalidae	<i>Euptoieta claudia</i>	Variegated Fritillary
Nymphalidae	<i>Junonia coenia</i>	Common Buck-Eye
Nymphalidae	<i>Lethe anthedon</i>	Northern Pearly-Eye
Nymphalidae	<i>Limenitis arthemis</i>	Red Spotted Purple
Nymphalidae	<i>Megisto cymela</i>	Little-Wood Satyr
Nymphalidae	<i>Phyciodes phaon</i>	Phaon Crescent
Nymphalidae	<i>Polygonia interrogationis</i>	Question Mark
Nymphalidae	<i>Satyroides eurydice</i>	Eyed Brown
Nymphalidae	<i>Vanessa atalanta</i>	Red Admiral
Nymphalidae	<i>Vanessa virginiensis</i>	American Painted Lady
Pieridae	<i>Phoebis sennae</i>	Cloudless Sulphur
Pieridae	<i>Pyrisitia lisa</i>	Little Yellow
Pieridae	<i>Abaeis nicippe</i>	Sleepy Orange
Pyralidae	<i>Dioryctria ebeli</i>	South Coastal Coneworm
Pyralidae	<i>Dolichomia binodulalis</i>	Pink-Fringed Dolichomia Moth
Pyralidae	<i>Hypsopygia costalis</i>	Clover Hayworm
Saturniidae	<i>Anisota stigma</i>	Spiny Oakworm Moth
Saturniidae	<i>Automeris io</i>	Io Moth
Saturniidae	<i>Eacles imperialis</i>	Imperial Moth
Saturniidae	<i>Eacles imperialis caterpillar</i>	Imperial Moth
Sphingidae	<i>Amphion floridensis</i>	Nessus Sphinx
Sphingidae	<i>Darapsa choerilus</i>	Azalea Sphinx
Sphingidae	<i>Deidamia inscriptum</i>	Lettered Sphinx
Sphingidae	<i>Lapara coniferarum</i>	Southern Pine Sphinx
Tortricidae	<i>Acleris forskaleana</i>	Hairnet Acleris
Tortricidae	<i>Acleris logiana</i>	Acleris Logiana
Tortricidae	<i>Choristoneura obsoletana</i>	Choristoneura Obsoletana
Tortricidae	<i>Choristoneura rosaceana</i>	Oblique-Banded Leafroller Moth
Tortricidae	<i>Sparganothis sulphureana</i>	Sparganothis Fruitworm
Yponomeutidae	<i>Argyresthia sp.</i>	
Yponomeutidae	<i>Atteva aurea</i>	Ailanthus Webworm
Zygaenidae	<i>Harrisina americana</i>	Grapeleaf Skeletonizer
Total-175		

**MASTER FAUNAL LIST**

<b>Fish Species</b>	<b>Scientific Name</b>	<b>Survey Found</b>		<b>Federal Status*</b>	<b>State Status*</b>	<b>State Priority*</b>
		<b>2006</b>	<b>2017</b>			
<b>Anchovies and Herring</b>						
Alabama Shad	<i>Alosa alabamae</i>	x		SC	S3-SP	HCC
Gizzard Shad	<i>Dorosoma cepedianum</i>	x			S5	LSCC
<b>Carps, Minnows and Suckers</b>						
Largescale Stoneroller	<i>Campostoma oligolepis</i>	x	x		S4	LSCC
Alabama Shiner	<i>Cyprinella callistia</i>		x			LSCC
Blacktail Shiner	<i>Cyprinella venusta</i>	x	x		S5	LSCC
Alabama Hogsucker	<i>Hypentelium etowanum</i>	x	x		S5	LSCC
Striped Shiner	<i>Luxilus chrysocephalus</i>	x	x		S5	LSCC
Spotted Sucker	<i>Minytrema melanops</i>	x	x		S5	LSCC
Black Redhorse	<i>Moxostoma duquesnei</i>	x	x		S5	LSCC
Golden Redhorse	<i>Moxostoma erythrurum</i>	x	x		S5	LSCC
Blacktail Redhorse	<i>Moxostoma poecilurum</i>	x	x		S5	LSCC
Rainbow Shiner	<i>Notropis chrosomus</i>	x	x		S4	LSCC
Silverstripe Shiner	<i>Notropis stilbius</i>	x	x		S4	LSCC
Coosa Shiner	<i>Notropis xaenocephalus</i>	x	x		S4	LSCC
Riffle Minnow	<i>Phenacobius catostomus</i>	x	x		S4	LSCC
Blacknose Dace	<i>Rhinichthys atratulus</i>	x	x		NL	LSCC
Creek Chub	<i>Semotilus atromaculatus</i>	x	x		S5	LSCC
Spottail Shiner	<i>Notropis hudsonius</i>	x			NL	NL
<b>Catfishes</b>						
Yellow Bullhead	<i>Ameiurus natalis</i>	x	x		S5	LSCC
Channel Catfish	<i>Ictalurus punctatus</i>	x	x		S5	LSCC
Black Bullhead	<i>Ameiurus melas</i>		x			LSCC
<b>Topminnows, Livebearers and Allies</b>						
Western Mosquitofish	<i>Gambusia affinis</i>	x	x		S5	LSCC
<b>Sculpins and Allies</b>						
Banded Sculpin	<i>Cottus carolinae</i>	x	x		S5	LSCC
<b>Sunfishes, Perches and Allies</b>						
Striped Bass	<i>Morone saxatilis</i>	x			S5	MCC
Coosa Darter	<i>Etheostoma coosae</i>	x	x		S4	LSCC
Speckled Darter	<i>Etheostoma stigmaeum</i>		x			LSCC
Redbreast Sunfish	<i>Lepomis auritus</i>	x	x		S5	LSCC
Green Sunfish	<i>Lepomis cyanellus</i>	x	x		S5	LSCC
Green Sunfish Hybrid	<i>Lepomis cyanellus hyb.</i>	x	x			LSCC
Pumpkinseed	<i>Lepomis gibbosus</i>	x	x		SNA	NL
Warmouth	<i>Lepomis gulosus</i>	x	x		S5	LSCC
Bluegill	<i>Lepomis macrochirus</i>	x	x		S5	LSCC
Dollar Sunfish	<i>Lepomis marginatus</i>	x	x		S5	LSCC
Longear Sunfish	<i>Lepomis megalotis</i>	x	x		S5	LSCC
Redear Sunfish	<i>Lepomis microlophus</i>	x	x		S5	LSCC
Spotted Sunfish	<i>Lepomis punctatus</i>	x	x		S5	NL
Redeye Bass	<i>Micropterus coosae</i>	x	x		S5	LSCC
Spotted Bass	<i>Micropterus punctulatus</i>	x	x		S5	LSCC
Largemouth Bass	<i>Micropterus salmoides</i>	x	x		S5	LSCC
Mobile Logperch	<i>Percina kathae</i>	x	x		S4	LSCC

**MASTER FAUNAL LIST**

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
Blackbanded Darter	<i>Percina nigrofasciata</i>	x	x		S5	LSCC
Black Crappie	<i>Pomoxis nigromaculatus</i>	x	x		S5	LSCC
Freshwater Drum	<i>Aplodinotus grunniens</i>	x			S5	LSCC
<b>Total- 43 Fish Species</b>						

**Reptiles**

Amphibians: Frogs and Toads						
Northern Cricket Frog	<i>Acris crepitans crepitans</i>	x	x		S5	LCC
Southern Cricket Frog	<i>Acris gryllus gryllus</i>	x	x		S5	LSCC
American Toad	<i>Anaxyrus americanus</i>	x	x		S5	LSCC
Fowler's Toad	<i>Anaxyrus fowleri</i>	x	x		S5	LSCC
Eastern Narrow-mouthed Toad	<i>Gastrophryne carolinensis</i>	x	x		S5	LSCC
Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>	x	x		S5	LSCC
Green Treefrog	<i>Hyla cinerea</i>	x	x		S5	LSCC
Barking Treefrog	<i>Hyla gratiosa</i>	x	x		S5	LCC
American Bullfrog	<i>Lithobates catesbeiana</i>	x	x		S5	LSCC
Green Frog	<i>Lithobates clamitans</i>	x	x		S5	LSCC
Southern Leopard Frog	<i>Lithobates sphenoccephalus</i>	x	x		S5	LSCC
Mountain Chorus Frog	<i>Pseudacris brachyphona</i>	x	x		S5	LSCC
Northern Spring Peeper	<i>Pseudacris crucifer</i>	x	x		S5	LSCC
Upland Chorus Frog	<i>Pseudacris feriarum</i>		x			LSCC
Eastern Spadefoot Toad	<i>Scaphiopus holbrookii</i>		x			LCC
Southeastern Chorus Frog	<i>Pseudacris feriarum</i>	x			S5	LSCC
Amphibians: Salamanders						
Marbled Salamander	<i>Ambystoma opacum</i>	x	x		S5	LCC
Mole Salamander	<i>Ambystoma talpoideum</i>	x	x		S5	LCC
Eastern Tiger Salamander	<i>Ambystoma tigrinum tigrinum</i>	x	x	PS	S3	HCC
Spotted Dusky Salamander	<i>Desmognathus conanti</i>	x	x		NL	LCC
Northern dusky Salamander	<i>Desmognathus fuscus</i>		x			NC
Brownback Salamander	<i>Eurycea aquatica</i>		x			MCC
Southern Two-lined Salamander	<i>Eurycea cirrigera</i>	x	x		S5	LSCC
Three-lined Salamander	<i>Eurycea guttolineata</i>	x	x		S5	LSCC
Eastern Newt	<i>Notophthalmus viridescens</i>	x	x		S5	LSCC
Northern Slimy Salamander	<i>Plethodon glutinosus</i>	x	x		S5	LSCC
Northern Red Salamander	<i>Pseudotriton ruber ruber</i>	x	x		SNR	LCC
Spotted Salamander	<i>Ambystoma maculatum</i>	x			S5	LCC
Southern Red-backed Salamander	<i>Plethodon serratus</i>	x			S2	MCC
Common Mudpuppy	<i>Necturus maculosus</i>	x			S4	LCC
Lizards						
Northern Green Anole	<i>Anolis carolinensis carolinensis</i>	x	x		S5	LSCC
Eastern Six-lined Racerunner	<i>Aspidozelis sexlineata sexlineata</i>	x	x		S5	MCC
Common Five-linked Skink	<i>Plestiodon fasciatus</i>		x			
Southeastern Five-lined Skink	<i>Plestiodon inexpectatus</i>	x	x		S3	HCC
Eastern Fence Lizard	<i>Sceloporus undulatus</i>	x	x		S5	LCC
Ground Skink	<i>Scincella lateralis</i>	x	x		S5	LCC



**MASTER FAUNAL LIST**

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
<b>Snakes</b>						
Copperhead	<i>Agkistrodon contortrix</i>	x	x		S5	LSCC
Cottonmouth	<i>Agkistrodon piscivorus</i>	x	x		S5	LSCC
Eastern Worm Snake	<i>Carphophis amoenus amoenus</i>	x	x		S5	LSCC
Northern Black Racer	<i>Coluber constrictor constrictor</i>	x	x		S5	LCC
Timber Rattlesnake	<i>Crotalus horridus</i>	x	x		S5	LCC
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	x	x		S5	MCC
Black Kingsnake	<i>Lampropeltis getula nigra</i>	x	x		S5	LCC
Plain-bellied Water Snake	<i>Nerodia erythrogaster</i>	x	x		S5	LSCC
Northern Water Snake	<i>Nerodia sipedon</i>	x	x			NC
Midland Water Snake	<i>Nerodia sipedon pleuralis</i>	x	x		S5	LSCC
Red Corn Snake	<i>Pantherophis guttatus</i>		x			MCC
Gray Ratsnake	<i>Pantherophis spiloides</i>	x	x		S5	LSCC
Queen Snake	<i>Regina septemvittata</i>	x	x		S5	MCC
Southeastern Crowned Snake	<i>Tantilla coronata</i>	x	x		S5	LCC
Eastern Garter Snake	<i>Thamnophis sirtalis sirtalis</i>	x	x		S5	LCC
Ring-necked Snake	<i>Diadophis punctatus</i>	x			S5	LSCC
Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>	x			S5	LSCC
Mole Kingsnake	<i>Lampropeltis calligaster rhombomaculata</i>	x			S3	MCC
<b>Turtles</b>						
Gulf Coast spiny softshell	<i>Apalone spinifera aspera</i>	x	x		SP	LCC
eastern painted turtle	<i>Chrysemys picta picta</i>	x	x		S5	LSCC
common snapping turtle	<i>Chelydra serpentina serpentina</i>	x	x		SP	LSCC
river cooter turtle	<i>Pseudemys concinna</i>		x			LSCC
stripeneck musk turtle	<i>Sternotherus minor peltifer</i>	x	x		NL	LCC
common musk turtle	<i>Sternotherus odoratus</i>	x	x		S5	LSCC
eastern box turtle	<i>Terrapene carolina carolina</i>	x	x		SP	LCC
pond slider	<i>Trachemys scripta</i>	x	x		S5	LSCC
yellow-bellied slider	<i>Trachemys scripta scripta</i>		x			
eastern chicken turtle	<i>Deirochelys reticularia reticularia</i>	x			S3	LCC
<b>Total- 64 Reptile Species</b>						

**Mammals**

<b>Ungulates</b>						
white-tailed deer	<i>Odocoileus virginianus</i>	x	x		S5	LSCC
<b>Carnivores</b>						
coyote	<i>Canis latrans</i>	x	x		S5	LSCC
bobcat	<i>Lynx rufus</i>	x	x		S4	LSCC
river otter	<i>Lontra canadensis</i>	x	x		S4	LCC
striped skunk	<i>Mephitis mephitis</i>	x	x		S4	LCC
long-tailed weasel	<i>Mustela frenata</i>		x		S3-SP	HCC
american mink	<i>Mustela vison</i>		x		S5	LCC
raccoon	<i>Procyon lotor</i>	x	x		S5	LSCC
gray fox	<i>Urocyon cinereoargenteus</i>	x	x		S5	LSCC
red fox	<i>Vulpes vulpes</i>	x			S4	LSCC

**MASTER FAUNAL LIST**

Species	Scientific Name	Survey Found		Federal Status*	State Status*	State Priority*
		2006	2017			
<b>Edentates</b>						
armadillo	<i>Dasyus novemcinctus</i>	x	x		S5	NL
<b>Insectivores</b>						
northern short-tailed shrew	<i>Blarina brevicauda</i>	x	x		S5	MCC
least shrew	<i>Cryptotis parva</i>	x	x		S5	MCC
southeastern shrew	<i>Sorex longirostris</i>	x			S4	MCC
<b>Marsupials</b>						
opossum	<i>Didelphis virginiana</i>	x	x		S5	LSCC
<b>Rabbits and Hares</b>						
swamp rabbit	<i>Sylvilagus aquaticus</i>	x	x		S5	LCC
eastern cottontail	<i>Sylvilagus floridanus</i>	x	x		S5	LSCC
<b>Rodents</b>						
beaver	<i>Castor canadensis</i>	x	x		S5	LSCC
woodland vole	<i>Microtus pinetorum</i>	x	x		S5	LCC
house mouse	<i>Mus musculus</i>		x			NC
eastern woodrat	<i>Neotoma floridana</i>		x			MCC
muskrat	<i>Ondatra zibethicus</i>	x	x		S5	LSCC
cotton mouse	<i>Peromyscus gossypinus</i>	x	x		S5	LSCC
white-footed mouse	<i>Peromyscus leucopus</i>	x	x		S4	LSCC
oldfield mouse	<i>Peromyscus polionotus</i>	x	x	PS	S5	MCC
eastern harvest mouse	<i>Reithrodontomys humulis</i>	x	x		S5	MCC
eastern mole	<i>Scalopus aquaticus</i>		x			LCC
eastern gray squirrel	<i>Sciurus carolinensis</i>	x	x		S5	LSCC
fox squirrel	<i>Sciurus niger</i>	x	x		S3	LCC
hispid cotton rat	<i>Sigmodon hispidus</i>	x	x		S5	LSCC
eastern chipmunk	<i>Tamias striatus</i>	x	x		S5	LSCC
marsh rice rat	<i>Oryzomys palustris</i>	x			S5	LSCC
<b>Mammal Species Identified other than Faunal Surveys</b>						
American black bear	<i>Ursus americanus</i>				S2-SP	HCC
southern flying squirrel	<i>Glaucomys volans</i>				S5	LSCC
woodchuck	<i>Marmota monax</i>				S5	LSCC
<b>Total- 35 Mammal Species other than Bats</b>						
<b>Bats</b>						
gray bat	<i>Myotis grisescens</i>			LE	S2	HCC
tricolored bat	<i>Perimyotis subflavus</i>			PET	S5	LSCC
big brown bat	<i>Eptesicus fuscus</i>				S5	LSCC
eastern red	<i>Lasiurus borealis</i>				S5	LSCC
Seminole bat	<i>Lasiurus seminolus</i>				S4	LSCC
hoary bat	<i>Lasiurus cinereus</i>				SNR	MCC
evening bat	<i>Nycticeius humeralis</i>				S5	LSCC
northern Long- eared bat	<i>Myotis septentrionalis</i>			LE	S2-SP	HCC
silver-haired bat	<i>Lasionycteris noctivagans</i>					
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>					
Indiana bat	<i>Myotis sodalis</i>			LT	S2-SP	HCC
<b>Total- 11 Bat Species</b>						

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**APPENDIX O**  
**TABLES**

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**APPENDIX O: TABLES**

**Table 1: Summary of Programs and Projects**

Management Program	Program Summary/Status	Projects from 2011 INRMP	2011 INRMP Project Status	Proposed Projects (2019-2023)
<b>Natural Resources Programs</b>				
Forest and Fire Management	Forest stands are managed on a multiple-use, sustained yield basis, to include military land use, timber production, recreation, habitat maintenance, and wildlife management. Forests are managed in accordance with the Forest Management Plan. Silvicultural activities occurring on Pelham Range are performed in accordance with Alabama’s Best Management Practices for Forestry. Roads and fire breaks are maintained to reduce the risk of wildfire.	Forest Management Longleaf Pine Management Prescribed Fire Management	Completed Ongoing Ongoing	Forest Management Longleaf Pine Management Prescribed Fire Management
Fish and Wildlife Management	Planning level surveys are being conducted to monitor wildlife present at the installation. The AL ARNG continues to allow hunting and fishing on the installation in accordance with Federal and State laws. The Game Management Office Wildlife Biologist and State game and fish personnel monitor game and fish taken from the FM-ARNGTC. Bluebird and wood duck boxes have been placed in appropriate areas. Wildlife openings are maintained for habitat enhancement. Mineral blocks are provided for wildlife. Wildlife enhancement projects are also funded by National Public Lands Day events but are dependent upon grant funding.	Wildlife Habitat Enhancement Avian Species Survey Reptile and Amphibian Species Survey Fish Species Survey Mammal Species Survey	Completed/Ongoing Completed Completed Completed Completed	Wood Duck Box Projects Wildlife Habitat Enhancement

Management Program	Program Summary/Status	Projects from 2011 INRMP	2011 INRMP Project Status	Proposed Projects (2019-2023)
Stormwater and Water Quality Control	The AL ARNG continues to minimize pollutants from entering surface waters through the implementation of BMPs.	Cane Creek Water Quality Study	Completed	None
Floodplain and Riparian Zone Management	Floodplain habitats and riparian zones are protected through buffer zones along streams. Floodplains and riparian zones have been incorporated into the AL ARNG's GIS database.	Floodplain and Riparian Zone Management	Completed	None
Wetland and Aquatic Habitat Management	Wetlands and aquatic habitats are generally avoided during training exercises. Riparian buffers are maintained to protect wetlands and streams and help maintain good wildlife habitat.	Wetland Planning Level Survey Update	Complete	Wetland Planning Level Survey for new parcel at Main Enclave
Invasive and Exotic Species and Noxious Weeds	The AL ARNG prohibits the use of invasive plants for landscaping or other purposes. BMPs are implemented to minimize land disturbances that promote invasion, and re-vegetate disturbed areas with native species. The AL ARNG continues to monitor Southern pine beetle infestations and treats as appropriate. Invasive plant species infestations have been identified and will be controlled as appropriate.	Invasive and Exotic Species Survey and Management Plan and Update Invasive and Exotic Species Monitoring	Completed Ongoing	Invasive and Exotic Species Control and Monitoring
Threatened and Endangered Species	The AL ARNG continues to monitor populations and protect the habitat of Tennessee yellow-eyed grass, Mohr's Barbara's buttons, the gray bat, the Indiana bat, and the northern long-eared bat.	Bat Survey Bat Habitat Management Population and Habitat Monitoring of Listed Plants	Completed Ongoing Ongoing	Bat Surveys Population Monitoring

Management Program	Program Summary/Status	Projects from 2011 INRMP	2011 INRMP Project Status	Proposed Projects (2019-2023)
Grounds Maintenance, Landscaping, and Urban Forestry	Areas not required to be maintained as improved grounds are allowed to revert to a more natural state to minimize landscaping requirements. Native species are used in landscaping. Pesticides are applied in accordance with the Pest Management Plan.	Landscaping and Grounds Maintenance	Ongoing	Landscaping and Grounds Maintenance
Erosion Control and Soil Conservation	Best Management Practices are implemented to prevent erosion. Areas that suffer from erosion are repaired and rehabilitated in accordance with the Soil Erosion Management Plan.	Soil Erosion Management Plan and Survey Update Annual Monitoring and Maintenance	Completed Ongoing	Soil Erosion Management, Monitoring and Maintenance
Outdoor Recreation	Hunting and fishing are outdoor recreational activities that occur on Pelham Range. Special hunts for youth, soldiers and disabled hunters are held annually. Special environmental education events for small public groups, such as National Public Lands Day, may occur on a limited basis.	Hunting and Fishing Program Implementation Youth, Soldier, and Disabled Hunters' Events	Completed/Ongoing	Hunting and Fishing Program Management Youth, Soldier and Disabled Hunters' Events National Public Lands Day Event Other Environmental Education Events
Land Use, Land Use Planning, and Natural Resources Management	Currently, natural resources personnel include: Natural Resources Program Manager, Forester, Forestry Technician, and Wildlife Biologist.	Natural Resources Program Manager Natural Resources Support Personnel Natural Resources Training	Completed/Ongoing Completed/Ongoing Completed/Ongoing	Natural Resource Program Manager Natural Resources Support Personnel Natural Resources Training
<b>ITAM Programs</b>	<b>ITAM Programs</b>	<b>ITAM Programs</b>	<b>ITAM Programs</b>	<b>ITAM Programs</b>
Range and Training Land Assessment	The GIS program has been implemented. GIS is used to schedule training activities in appropriate Training Areas and create maps for AL ARNG personnel, units, hunters, and other visitors. This GIS database is used to analyze	GIS Equipment and Support	Ongoing	GIS Equipment and Support GIS Technician



Management Program	Program Summary/Status	Projects from 2011 INRMP	2011 INRMP Project Status	Proposed Projects (2019-2023)
	how training is affecting the resources at the installation.			
Training Requirements Integration	Communication among Directorate of Plans, Training, and Mobilization; Natural and Cultural Resources Managers, and other environmental branch personnel ensures that training activities are occurring in the most appropriate areas. Natural resources are evaluated during and after training activities to identify areas for rest or rotational training. Areas that need rehabilitation, repair, and reconfiguration are managed on a priority basis. Plots should be established to evaluate training impacts in the long-term.	Plot Management Data Collection TRI Training	Ongoing Ongoing Ongoing	Plot Management Data Collection TRI Training
Land Rehabilitation and Maintenance	Restoration projects are performed on an as needed basis, based on inspection and training records. Best management practices are implemented to ensure that the rehabilitation, repair, and maintenance results are commensurate with resources.	Trail Maintenance LRAM Personnel LRAM Equipment and Supplies Soil Stabilization Road Closure to Training Areas Track Vehicle Crossings/Turning Pads Bridge Site/Shoreline Repair Vegetation Control	Ongoing Ongoing Not completed Ongoing Not Completed Not Completed Ongoing Ongoing	Trail Maintenance LRAM Personnel  Soil Stabilization Road Closure to Training Area Track Vehicle Crossings/Turning Pads Bridge Site/Shoreline Repair Vegetation Control
Environmental Awareness/Sustainable Range Awareness	Maps showing sensitive areas are circulated to all training personnel. Environmental Constraint Maps are updated as needed based on additional surveys and updated information.	None	Not Applicable	Create SRA Materials Create and Distribute Soldier Field Cards

**Table 2: Degree of Previous INRMP Implementation 2017**

Management Program	Goals	Program Summary/Status	Projects from 2011 INRMP	Project Status
<b>Natural Resources Programs</b>				
Forest and Fire Management	Maintain healthy, biologically diverse forested ecosystems that will sustain native populations of flora and fauna; Support an optimal mix of multiple uses and values (both consumptive and non-consumptive); Provide for watershed protection; and Maintain forests in a condition that minimizes threat to safety and human health.	Forest stands are managed on a multiple-use, sustained yield basis, to include military land use, timber production, recreation, habitat maintenance, and wildlife management. Forests are managed in accordance with the Forest Management Plan. Silvicultural activities occurring on Pelham Range are performed in accordance with Alabama’s Best Management Practices for Forestry. Roads and fire breaks are maintained to reduce the risk of wildfire.	Forest Management Longleaf Pine Management Prescribed Fire Management	Completed Ongoing Ongoing
Fish and Wildlife Management	Maintain and restore natural ecosystems favorable for the production of indigenous fish and wildlife populations, particularly Federally-listed species protected under the ESA. Maintain diverse plant and animal life where it does not conflict with the military mission Support an optimal mix of multiple uses, consumptive and non-consumptive Minimize wildlife-related health risks, safety risks, and environmental damage.	Planning level surveys are being conducted to monitor wildlife present at the installation. The AL ARNG continues to allow hunting and fishing on the installation in accordance with Federal and State laws. The Game Management Office, Wildlife Biologist and State game and fish personnel monitor game taken from the FM-ARNGTC. Bluebird, wood duck and pollinator boxes have been placed in appropriate areas. Wildlife openings are maintained for habitat enhancement.	Wildlife Habitat Enhancement Avian Species Survey Reptile and Amphibian Species Survey Fish Species Survey Mammal Species Survey	Completed/Ongoing Completed Completed Completed Completed

Management Program	Goals	Program Summary/Status	Projects from 2011 INRMP	Project Status
Stormwater and Water Quality Control	Minimize pollutants entering surface waters.	The AL ARNG continues to minimize pollutants entering surface waters through the implementation of BMPs.	Cane Creek Water Quality Study	Completed
Floodplain and Riparian Zone Management	Avoid adverse impacts to floodplains and riparian zones to the extent possible.	Floodplain habitats and riparian zones are protected through buffer zones along streams. Floodplains and riparian zones have been incorporated into the AL ARNG's GIS database.	Floodplain and Riparian Zone Management	Completed
Wetland and Aquatic Habitat Management	Avoid adverse impacts to wetlands and strive to achieve the goal of "no net loss" of values and functions of wetlands.	Wetlands and aquatic habitats are generally avoided during training exercises. Riparian buffers are maintained to protect wetlands and streams and help maintain good wildlife habitat.	Wetland Planning Level Survey Update	Completed
Invasive and Exotic Species and Noxious Weeds	Control invasive and exotic species appropriately, and restore natural ecosystems where such efforts do not conflict with the military mission.	The AL ARNG prohibits the use of invasive plants for landscaping or other purposes. BMPs are implemented to minimize land disturbances that promote invasion, and re-vegetate disturbed areas with native species.  The AL ARNG continues to monitor Southern pine beetle infestations and treats as appropriate. Invasive plant species infestations have been identified and will be controls as appropriate.	Invasive and Exotic Species Survey and Management Plan and Update  Invasive and Exotic Species Monitoring	Completed  Ongoing
Integrated Pest Management	Eliminate pest using environmentally and economically sound means.	The AL ARNG utilizes chemical and non-chemical procedures to control pests. Chemical applications are limited in use and location where they can be utilized, in accordance the Pest Management Plan.	N/A	Ongoing

Management Program	Goals	Program Summary/Status	Projects from 2011 INRMP	Project Status
Threatened and Endangered Species	Avoid adverse impacts to threatened and endangered species and Special Interest Natural Areas.	The AL ARNG continues to monitor populations and protect the habitat of Tennessee yellow-eyed grass, Mohr's Barbara's buttons, and the gray bat.	Bat Survey Bat Habitat Management Population and Habitat Monitoring of Listed Plants	Completed Ongoing Ongoing
Grounds Maintenance, Landscaping, and Urban Forestry	Effectively and economically maintain the landscapes and grounds of the FM-ARNGTC in an environmentally safe and sensitive manner that compliments the military mission while protecting the real estate and human health.	Areas not required to be maintained as improved grounds are allowed to revert to a more natural state to minimize landscaping requirements. Native species are used in landscaping. Pesticides are applied in accordance with the Pest Management Plan.	Landscaping and Grounds Maintenance	Ongoing
Erosion Control and Soil Conservation	Comply with water quality and other environmental laws through permitting and limiting discharge. Prevent and/or control erosion through education of personnel, design of new facilities, establishment of streamside management zones, and inspection of facilities. Rehabilitate eroded areas. Integrate mission requirements with capability of the land to ensure sustainable use.	Best Management Practices are implemented to prevent erosion. Areas that suffer from erosion are repaired and rehabilitated in accordance with the Soil Erosion Management Plan.	Soil Erosion Management Plan and Survey Update Annual Monitoring and Maintenance	Completed Ongoing
Outdoor Recreation	Provide high quality opportunities for hunting and fishing without interfering with the military mission and within biological and recreational carrying capacities of the resources.	Hunting and fishing are available to the public on Pelham Range.	Hunting and Fishing Program Implementation Youth, Soldier, and Disabled Hunters' Events	Completed/Ongoing

Management Program	Goals	Program Summary/Status	Projects from 2011 INRMP	Project Status
Land Use, Land Use Planning, and Natural Resources Management	None listed	Natural resources personnel include: a natural resources program manager, a registered forester, a forestry technician, and a wildlife biologist.	Natural Resources Program Manager Natural Resources Support Personnel Natural Resources Training	Completed/Ongoing Completed/Ongoing Completed/Ongoing
<b>ITAM Program</b>				
Range and Training Land Assessment	Utilize data to maximize the capability and sustainability of Army training land to meet the Army mission.	The GIS program has been implemented and is used to schedule training activities in appropriate training areas and create maps for AL ARNG personnel, hunters, and other visitors. This GIS database is also used to analyze how training is affecting the resources at the installation.	GIS Equipment and Support	Ongoing
Training Requirements Integration	<p>Achieve optimal sustained use of lands for the execution of realistic training, by providing a sustainable core capability, which balances usage, condition, and level of maintenance.</p> <p>Implement a management and decision-making process, which integrates Army training and other mission requirements for land use with sound natural and cultural resources management.</p> <p>Align Army training land management priorities with Army training, testing, and readiness priorities.</p>	Communication among Directorate of Plans, Training, and Mobilization; Natural and Cultural Resources Managers, and other environmental personnel ensures that training activities are occurring in the most appropriate areas. Training areas are evaluated during and after training activities to identify areas for rest or rotational training. Areas that need rehabilitation, repair, and reconfiguration are managed on a priority basis. Plots have not been established to evaluate training impacts in the long-term.	Plot Management Data Collection TRI Training	Ongoing Ongoing Ongoing

Management Program	Goals	Program Summary/Status	Projects from 2011 INRMP	Project Status
Land Rehabilitation and Maintenance	Advocate proactive conservation and land management practices.	Restoration projects are performed on an as needed basis, based on inspection and training records. Best management practices are implemented to ensure that the rehabilitation, repair, and maintenance results are commensurate with resources.	Trail Maintenance LRAM Personnel LRAM Equipment and Supplies Soil Stabilization Road Closure to Training Area Track Vehicle Crossings/Turning Pads Bridge Site/Shoreline Repair Vegetation Control	Ongoing Ongoing Ongoing Ongoing Completed Ongoing Ongoing
Environmental Awareness/ Sustainable Range Awareness	None listed	Soldier Field Cards are distributed outlining basic range rules and regulations that include environmental restrictions.	None	Not applicable

**Table 3: Designation of Land Areas at Pelham Range**

Note: The Pelham Range Total Acreage does not equal the sum of the designation areas because many of the categories overlap with one another.

Designation of Training Area	Area (acres)	Cover Type	General Effects of the Military Mission and Land Use	Natural Resource Programs
UTES	35	Facilities	Moderate intensity usage / Moderate effects / Vehicle Maintenance Area	Erosion Control Spill Prevention
Large Impact Area	2,094	Forest / scrub-shrub	No access / management / Large Caliber Firing	Prescribed Burn (Annually)
Small Arms Impact Area	2,535	Forest / scrub-shrub	No access / Small Caliber Firing	Prescribed Burn (Annually)
Light Maneuver	16,065	Roads / Forest / scrub-shrub	Moderate intensity usage / dismantled / light vehicle training / moderate effects	Invasive Species Management, Prescribed Burns, Forest Thinning, Erosion Control
Heavy Maneuver	1,074	Roads	High intensity usage / vehicle training / maneuver areas / intensive effects	Erosion Control
Drop Zone	200	Grasslands / scrub-shrub (no over story vegetation)	Typically light intensity usage, although DZs may sometimes be used for light maneuver / moderate effects / Artillery Firing, Parachute Jumps	Invasive Species Management, Erosion Control, "Let it Burn" Policy
Ammunition Supply Point (ASP)	10	Grasslands/scrub-shrub	Distribution and turn-in of training ammunition	N/A
Wetlands and water bodies	1,760	Water bodies / forests / Grasslands / scrub-shrub	Vehicle access restricted except at approved water crossings / no effects	Water Management, Wetland Management, Riparian Zone Management, Erosion Control
SINAs and areas containing T&E species	16,444	Forested and non-forested areas	Vehicle Access Restricted / no effects	Threatened and Endangered Species Management, Erosion Control, Riparian Zone Management
<b>Pelham Range Total</b>	<b>22,246</b>			

**Table 4: Designation of Land Areas at Main Enclave**

Designation	Area (acres)	Cover Type	Designation of Land Use
Main Enclave	261.4	Urban	Retained for billeting, administration, classrooms, Range Control, CSEPP Emergency Ops Center, PX, Central Issue Facility, Armed Forces Reserve Center.
Military Operations in Urban Terrain site (MOUT)	14.84	Urban	Military Operation in Urban Terrain Collective Training Facility (mock city)
New Parcel	148	Forests/grasslands/ scrub-shrub	New property. Usage as yet undefined.
Total (acres)	424.24		

**Table 5: Training Assets Available at the FM-ARNGTC**

Training Assets	Description
Basic Marksmanship Ranges	Range 50 Non-Standard Small Arms Range Range 51 Non-Standard Small Arms Range Range 52 Standard 10/25 meter zero Range Range 53 Known Distance Range, 25 lanes Range 57 Automated Field Fire Range, 16 lanes Range 58 Standard 10/25 Meter Range, 50 firing points Range 59 Modified Record Fire Range, 16 lanes Range 60 40 mm (grenade) Machine Gun Qualification Range, 4 firing points Urban Assault Course (UAC) and Live Fire Shoothouse (LFSH) Virtual Shoothouse Light and Heavy Breech Facilities
Direct Fire Gunnery Range	Range 10 Multi-Purpose Machine Gun Range (MPMG) has 5 stationary firing points for machine gun and sniper qualification
Collective Live Fire Ranges	Range 8 (ISBC) Infantry Squad Battle Course
Indirect Fire Ranges	Mortar Firing Points: 3, 4, 5, 6, 7, 8, 10, and 11 Artillery Firing Points: 2, 3, 4, 11, 11A, 12, and 18 Observation Points (OP): Blue, Brook, and Red
Other, Non-live Fire Facilities	Graham Drop Zone – Airborne Training, Tactical Unmanned Aerial System Training (TUAS) Land Navigation Courses – Dismounted Navigation Training
Light Maneuver Training Area	44 Light Maneuver TAs divided into 39 sub areas- dismounted training or bivouac Improvised Explosive Device (IED) Defeat Lane Tactical Training Base (TTB)
Heavy Maneuver Training Area	Limited to existing roads and trails

**Table 6: Average Rainfall/Temperatures for Anniston, Calhoun County, Alabama**

Month	Average Rainfall (inches)	Average Minimum Temp. (°F)	Average Maximum Temp. (°F)	Average Temp. (°F)
January	5	35	57	46
February	5	37	60	48
March	5.7	41	65	53
April	4.3	49	75	62
May	3.3	57	84	70
June	4.3	65	90	77
July	3.9	68	92	80
August	3.6	67	92	79
September	4	61	86	73
October	2.2	49	76	62
November	3.7	37	64	50
December	4.3	34	57	45
Year	49.3	50	75	62



**Table 7: National Ambient Air Quality Standards**

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide (CO)	9 ppm (10 mg/m <sup>3</sup> )	8-hour average <sup>(1)</sup>	None	
	35 ppm (40 mg/m <sup>3</sup> )	1-hour average <sup>(1)</sup>		
Lead (Pb)	0.15 µg/m <sup>3</sup> <sup>(2)</sup>	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m <sup>3</sup>	Quarterly Average	Same as Primary	
Nitrogen Dioxide (NO <sub>2</sub> )	53 ppb <sup>(3)</sup>	Annual (arithmetic average)	Same as Primary	
	100 ppb	1-hour <sup>(4)</sup>	None	
Ozone (O <sub>3</sub> )	0.075 ppm (2008 std)	8-hour <sup>(8)</sup>	Same as Primary	
	0.08 ppm (1997 std)	8-hour <sup>(9)</sup>	Same as Primary	
	0.12 ppm	1-hour <sup>(10)</sup>	Same as Primary	
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup>	24-hour <sup>(5)</sup>	Same as Primary	
Particulate Matter (PM <sub>2.5</sub> )	15.0 µg/m <sup>3</sup>	Annual (arithmetic average) <sup>(6)</sup>	Same as Primary	
	35 µg/m <sup>3</sup>	24-hour <sup>(7)</sup>	Same as Primary	
Sulfur Dioxide (SO <sub>2</sub> )	0.03 ppm	Annual (arithmetic average)	0.5 ppm	3-hour <sup>(1)</sup>
	0.14 ppm	24-hour <sup>(1)</sup>		
	75 ppb <sup>(11)</sup>	1-hour	None	

Source: USEPA 2010.

**Table 8: Geologic Units Underlying the FM-ARNGTC**

Location/Geologic Unit	Description
<b>Main Enclave</b>	
Chilhowee Group, undifferentiated	Light to medium-gray arkose, arkosic conglomerate, and discontinuous mudstone overlain by greenish-gray mudstone with minor siltstone and sandstone; dominantly light-gray pebbly quartzose sandstone in upper part.
Conasauga Formation	Medium-bluish-gray fine-grained, thin-bedded argillaceous limestone and interbedded dark-gray shale in varying proportions.
Rome Formation	Variegated thinly interbedded mudstone, shale, siltstone, and sandstone; limestone and dolomite occur locally. Quartzose sandstone commonly present near top of formation.
Shady Dolomite	Bluish-gray or pale-yellowish-gray thick-bedded siliceous dolomite; characterized by coarsely crystalline porous chert.
Paleozoic shale, undifferentiated	Dark-gray shale and mudstone, locally containing thin interbeds and lenses of dark-greenish-gray sandstone includes probable Floyd Shale in area east of Gadsden, Etowah County.
<b>Pelham Range</b>	
Sequatchie Formation	Grayish-red, grayish-green, and yellowish-gray thin-bedded calcareous shale and calcareous mudstone containing interbedded fossiliferous limestone, and medium-gray to moderate-red partly sandy and glauconitic, medium to coarse-grained bioclastic limestone.
Knox Group, undifferentiated	Light-gray to light-brown locally sandy dolomite, dolomitic limestone, and limestone; characterized by abundant light-colored chert.
Athens Shale	Black graptolitic shale, locally contains interbedded dark-gray limestone.
Conasauga Formation	Lower unnamed shale facies in eastern Valley and Ridge consists of dark-green to pale-olive fossiliferous shale with a few dark-gray limestone interbeds.
Parkwood Formation and Floyd Shale undifferentiated	Parkwood Formation -- Interbedded medium to dark-gray shale and light to medium-gray sandstone; locally contains dusky-red and grayish-green mudstone, argillaceous limestone, and clayey coal. Floyd Shale -- Dark-gray shale, sideritic in part; thin beds of sandstone, limestone and chert are locally present; beds of partly bioclastic, partly argillaceous limestone are abundant in parts of Calhoun and Cherokee Counties.
Frog Mountain Sandstone	Light to dark-gray sandstone with thin dark-gray shale interbeds, light-gray to black dolomudstone, glauconitic limestone, and fossiliferous chert locally in lower part.
Newala Limestone	Light to dark-gray thick-bedded micritic and peloidal limestone and minor dolomite.
Tuscumbia Limestone and Fort Payne Chert undivided	Tuscumbia Limestone -- light-gray partly oolitic limestone; very coarse bioclastic crinoidal limestone common; light-gray chert nodules and concretions locally abundant. Fort Payne Chert -- very light to light-olive-gray, thin to thick-bedded fine to coarse-grained bioclastic (abundant pelmatozoans) limestone containing abundant nodules, lenses and beds of light to dark-grey chert. Upper part of formation locally consists of light-bluish-gray laminated siltstone containing vugs lined or filled with quartz and scattered throughout the formation are interbeds of medium to greenish-gray shale, shaly limestone and siltstone. Lenses of dark-gray siliceous shale occur locally at the base of the Fort Payne in Wills Valley. Commonly present below the Fort Payne is a light-olive-gray claystone or shale (Maury Formation) which is mapped with the Fort Payne. The Tuscumbia and Fort Payne are undifferentiated in Murphrees and Wills Valleys.

**Table 9: Acreage and Proportionate Extent of the Soils on Pelham Range**

Soil Name	Acres	Percent
Allen-Waynesboro Complex, 8 to 30 percent slopes	327	1.5
Bloomingtondale silt loam, 0 to 2 percent slopes, depressional	248	1.1
Bodine-Minvale complex, 5 to 15 percent slopes, stony	4,595	205
Bodine-Minvale complex, 15 to 25 percent slopes, stony	3,219	14.5
Chenneby silt loam, 0 to 2 percent slopes, occasionally flooded	254	1.1
Townley-Enders-Corryton complex, 2 to 8 percent slopes	1,667	7.5
Townley-Enders-Corryton complex, 8 to 25 percent slopes	763	3.4
Corryton-Enders Complex, 15 to 40 percent slopes	249	1.1
Decatur loam, 2 to 5 percent slopes	643	2.9
Decatur loam, 5 to 8 percent slopes	594	2.7
Dewey silt loam, 2 to 5 percent slopes	135	0.6
Dewey-Fullerton complex, 5 to 8 percent slopes	775	3.6
Dewey-Minvale complex, 8 to 15 percent slopes	705	3.2
Etoway loam, 2 to 5 percent slopes	311	1.4
Hamblen, Pruittton, and Ketona soils, 0 to 2 percent slope, occasionally flooded	333	1.5
Linker-Gorgas-Rock outcrop complex, 5 to 8 percent slopes	135	0.6
Lobelville-Chewacla complex, 0 to 2 percent slopes, frequently flooded	979	4.5
Minvale gravelly silt loam, 2 to 5 percent slopes	274	1.2
Minvale gravelly silt loam, 5 to 8 percent slopes	1,616	7.2
Minvale-Bodine complex, 25 to 50 percent slopes, stony	1,370	6.1
Nauvoo-Enders-Leesburg complex, 15 to 45 percent slopes	498	2.2
Pits	9	*
Tasso loam, 0 to 3 percent slopes	919	4.3
Toccoa, Pruittton, and Chewacla soils, 0 to 2 percent slopes, frequently flooded	686	3.5
Waynesboro-Allen complex, 2 to 8 percent slopes	488	2.2
Wehadkee-Bollmingdale complex, 0 to 2 percent slopes, frequently flooded	397	1.8
Wolfveer silt loam, 0 to 2 percent slopes	83	0.4
Water	34	0.2
<b>Total</b>	<b>22,306</b>	<b>100</b>

Source: USDA NRCS 2002

**Table 10: Wetlands and Other Regulated Waters at Pelham Range**

Wetlands	Total Number	Size(acres)
Palustrine emergent (PEM)	37	258.67
Palustrine scrub-shrub (PSS)	24	113.40
Palustrine forested (PFO)	67	615.24
PFO/PSS	2	3.14
PEM/PSS	1	0.34
<b>Total Wetlands</b>	<b>131</b>	<b>990.79</b>

**Table 11: Description of Wetlands on Pelham Range**

Description of Wetlands Types
<p>All wetlands identified on Pelham Range were classified as palustrine emergent (PEM), palustrine scrub/shrub (PSS), or palustrine forested (PFO). Palustrine wetlands include all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. Wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5% are also classified as palustrine. In addition, wetlands lacking appropriate vegetation may be classified as palustrine if all of the following four characteristics are met: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5% (Cowardin et al. 1979).</p>
<p><b>PEM</b> wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et al. 1979). PEM wetlands occur scattered throughout Pelham Range in natural and created depressional areas within valleys or adjacent to streams. Characteristic species of PEM wetlands included rushes (<i>Juncus spp.</i>), wool grass (<i>Scirpus cyperinus</i>), fireweed (<i>Epilobium sp.</i>), seedbox (<i>Ludwigia alterniflora</i>), witch grass (<i>Panicum virgatum</i>), cattail (<i>Typha latifolia</i>), black willow (<i>Salix nigra</i>), fowl grass (<i>Glyceria striata</i>), seedbox (<i>Ludwigia palustris</i>), goldenrod (<i>Solidago sp.</i>), blackberry (<i>Rubus sp.</i>), sedges (<i>Carex spp</i>), and water plantain (<i>Alisma subcordatum</i>) (USACE, Waterways Experiment Station, 2000).</p>
<p><b>PSS</b> wetlands include wetland areas dominated by woody vegetation less than 6 m (20 feet) tall and are dominated by true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions (Cowardin et al. 1979). PSS wetlands occur scattered throughout Pelham Range along stream corridors and disturbed valley floors. Common woody species of PSS wetlands included red maple (<i>Acer rubrum</i>), water oak (<i>Quercus nigra</i>), black willow (<i>Salix nigra</i>), sweetgum (<i>Liquidambar styraciflua</i>), and dogwood (<i>Cornus foemina</i>) (USACE, Waterways Experiment Station, 2000).</p>
<p><b>PFO</b> wetlands are characterized by woody vegetation that is 6 m tall or taller (Cowardin et al. 1979). PFO wetlands occur scattered throughout Pelham Range along stream corridors and within slowly permeable to non-permeable surface depressions. Common species of PFO wetlands included sweetgum (<i>Liquidambar styraciflua</i>), American elm (<i>Ulnus americana</i>), sycamore (<i>Platanus occidentalis</i>), water oak (<i>Quercus nigra</i>), red maple (<i>Acer rubrum</i>), willow oak (<i>Quercus phellos</i>), loblolly pine (<i>Pinus taeda</i>), and black willow (<i>Salix nigra</i>) (USACE, Waterways Experiment Station 2000).</p>

Source: USACE 2000.

**Table 12: Forest Type and Inventoried Acres**

Cover Type	Areal Coverage (acres)
Natural Pine	9,868.8
Pine Plantation	709.0
Pine Plantation, under stocked	40.3
Hardwood	3,030.7
Pine/Hardwood	1,958.2
Swamp Bottom/Hardwood	172.6
Natural Pre-merchantable	384.6
Southern pine beetle/dead/dying	89.8
Natural idle	19.8
Clear-cut	179.6
<b>Total</b>	<b>16,453.4</b>

**Table 13: FM-ARNGTC Stand Volumes**

Product	Trees	Tons
Pine Pulpwood	691,056	105,966
Pine Chip-N-Saw	213,396	87,933
Pine Saw Timber	336,028	385,879
<b>Total Pine</b>	<b>1,240,480</b>	<b>579,778</b>
Hardwood Pulpwood	869,069	242,184
Hardwood Saw Timber	129,461	114,355
<b>Total Hardwood</b>	<b>998,530</b>	<b>356,539</b>
Standing Snags <sup>1</sup>	187,614	---

**Table 14: Federally-listed or Petitioned Species Occurring or with Potential to Occur on FM-ARNGTC**

Species Common Name	Scientific Name	Federal Status	State Rank	Occurrence
Tennessee yellow-eyed grass	<i>Xyris tennesseensis</i>	E	S1	Present
gray bat	<i>Myotis grisescens</i>	E	SP	Present
Indiana bat	<i>Myotis sodalist</i>	E	S2	Present
northern long-eared bat	<i>Myotis septentrionalis</i>	T	S2	Present
Mohr's Barbara's buttons	<i>Marshallia mohrii</i>	T	S3	Present
southern clubshell	<i>Pleurobema decisum</i>	E	S2	Not Found
white fringeless orchid	<i>Platanthera integrilabia</i>	T	S1/S2	Not Found
monarch butterfly	<i>Danaus plexippus</i>	C	SP	Present
Alabama rainbow	<i>Villosa nebulosa</i>	R	S3	Present
Coosa creekshell	<i>Villosa vanuxemensis</i>	P	S2	Present
frosted elfin	<i>Callophrys irus</i>	P	SU	Not Found
tri-colored bat	<i>Perimyotis subflavus</i>	P	S3	Present
golden-winged warbler	<i>Vermivora chrysoptera</i>	P	SU	Present

Source: USFWS Daphne Ecological Services Office 2018, USFWS Environmental Conservation Online System 2021.

LEGEND:

E - Endangered; Federally-protected under the ESA.

T - Threatened; Federally-protected under the ESA.

SC – Federally-listed Species of Concern.

P – Petitioned for Listing

C - Candidate

R– Under Review

S1 - Critically imperiled in Alabama because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation from Alabama.

S2 - Imperiled in Alabama because of rarity (6-20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from Alabama.

S3 - Rare or uncommon in Alabama (on the order of 21-100 occurrences).

S4 - Apparently secure in Alabama, with many occurrences

SU – Unrankable – Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

**Table 15: Timber Cutting Methods**

Cutting Method	Description
Clear-cut	A clear-cut is the removal of most or all of the trees from a particular area. Clear-cut may be used to remove an overly mature or diseased stand. Clear cutting may also be used to adhere to mission requirements.
Seed tree cut	A seed tree cut is the removal of most trees from a stand. Desirable trees are left in sufficient numbers to reseed the cut-over area. The number of trees left per acre depends on tree species and diameter. In the case of loblolly pine, 6-12 trees are generally left per acre for seed production. Once reproduction is established, seed trees are usually harvested.
Shelterwood Cut	A shelterwood cut is the gradual removal of an entire stand over two to three cuts. Shelterwood cuts are generally used to regenerate heavy-seeded species.
Thinning	A thinning is a cutting in an immature stand or group of trees to increase the rate of growth of residual timber, to foster higher quality timber, to improve spacing, and to promote sanitation. The least promising dominants and co-dominants competing with the most promising individuals of these classes are removed. Larger trees will be selected individually for removal. Suppressed or diseased trees may also be removed during thinnings.
Salvage Cut	A salvage cut is used to remove dead or injured trees. Salvage cuts are often required following storm events, severe fires, or insect/disease infestations.
Sanitation Cut	A sanitation cut is used to remove diseased trees.

**Table 16: Thinning Timeline for the FM-ARNGTC**

Year	Training Areas Proposed for Thinning
2019	Portions of TAs 1A, 2B, 2D, 4A, 7C, 8A, and 24A
2020	Portions of TAs 1D, 2C, 2D, 4A, 4C, 4D, 5B, 6B, 8A, 9A and, 9B
2021	Portions of TAs 4D, 5A, 5B, 7A, 7B, and 24C
2022	Portions of TAs 6A, 10B, and 24B

**Table 17: General Harvesting Guidelines**

Tree Species	General Harvesting Guidelines
Loblolly Pine	Found on relatively good sites with sufficient moisture. This species can be grown to sawtimber in a relatively short rotation period. The desirable rotation length on some elevated sites ranges between 40 to 55 years, whereas 50 to 75 years appears to be a more desirable rotation on moist sites, due to soil types and fertility.
Shortleaf Pine	Found on old fields and drier upland sites and appears to reach maximum vitality at 40 to 50 years.
Longleaf Pine	Longleaf pine formerly had a rotation length of 60-80 years. As part of the effort to return this species to its historic ecosystem role, longleaf will not be final harvested unless individuals are obviously deteriorated or damaged by insects, or the stand requires thinning.
Hardwoods	Managed selectively to maturity on favorable sites. Commercially valuable oaks, yellow poplar and black walnut may be selectively harvested between 70 to 100 years of age, depending on an area's wildlife value. Mature bottomland hardwoods primarily will be managed for wildlife habitat. Sweetgum will be removed in pine stands due to competition for space, nutrients, and available sunlight.
N/A	Training needs are to be evaluated prior to the taking of trees that cause no imminent danger to troops (possible deadfall, etc), as some training requirements and activities require optimal tree density and distribution.

**Table 18: Prescribed Burn Timeline for the FM-ARNGTC**

Time Schedule	Year	Training Areas Proposed for Prescribed Burn
Non Scheduled	N/A	UTES Area
3 Year	2019, 2022, 2025	TAs 2C, 2A, 4A, 4B, 4D, 5C, 7B, 8A, 8C, 8D, 9A, 9B, 9C, 22C, 23C,
3 Year	2020, 2023	TAs 1D, 2B, 2D, 5B, 6A, 6C, 7A, 8B, 9D, 22B, 23A,
3 year	2021, 2024	TAs 1A, 1B, 1C, T54, 4C, 4D, 5A, 6B, 6D, 7C, 9A, 10A, 10B, 22A, 23D
2 year	2019, 2021, 2023, 2025	Graham Drop Zone, 24A, 24B, 24C,
2 year	2020, 2022, 2024, 2026	TA 22D, 25A, 25B, and 25C
Annual	Annual	Large Impact Area, Small Arms Impact Area

**Table 19: Criteria to Prioritize Southern Pine Beetle Infestations**

Criteria	Spots Classification	Risk Rating Points
Number of fresh attacks	Absent	0
	Present	30
Number of freshly attacked trees and those with developing broods	1-10	0
	11-20	10
	21-50	20
	More than 50	40
Pine basal area (or stand density) at active head(s) (sq ft/acre)	Less than 80 (low density)	0
	80-120 (medium density)	10
	more than 120 (high density)	20
Average size class of timber	Pulpwood (dbh <9 in)	0
	Sawtimber (dbh > 9 in)	10
Risk Rating (cumulative score)		
0-30 Low Priority		
40-60 Medium Priority		
70-100 High Priority		

Source: Swain and Remnion, no date.

**Table 20: Treatment Method Descriptions**

Treatment Method	Description
Salvage removal	Removal of infested trees. Trees within a buffer zone are also removed to ensure recently-attacked trees are included in the removal. In general a buffer zone of approximately 40-70 feet would be used; however, larger buffers may be needed around large, rapidly expanding infestations. Generally buffer width would not exceed average height of trees.
Cut-and-leave	Generally used to control small outbreaks (10-50 infested trees). This method involves felling infested trees and trees within a buffer zone surrounding infested trees. Trees are felled toward the center of the infestation. Dead trees, in which all southern pine beetles have emerged, may be left standing for habitat purposes.
Chemical control	Use of insecticides to treat individual trees or small groups of trees.
Pile-and-burn	Removal of infested trees through felling, piling, and burning them on-site. The infested bark must be thoroughly charred for this method to be effective.

Source: Swain and Remnion, no date.



**Table 21: Erosion Potential Factor Descriptions**

<b>Factor</b>	<b>Description</b>
LOW	Visible signs of sheet erosion or beginnings of rill erosion features not to extend more than one foot in length and not to be deeper than inch. To be monitored.
MODERATE	Visible signs of rill erosion features not to be deeper than four inches with an undetermined length. Not severe enough to impede traffic or alter the direction of traffic or training vehicles. Requires preventative measures.
HIGH	Visible signs of erosion deeper than six inches in depth for an undetermined length. Signs of erosion above rill features to include soil displacement and visible rock or gravel. Signs of sediment deposit at end of erosion features. Requires erosion control measures immediately with possibility of engineering features.
SEVERE	Severe erosion with formation of gullies, destruction of roadways or movement of boulders or vegetation. Will stop traffic movement and alter training routes. Requires engineering controls to repair and erosion control measures to prevent future erosion problems.

**Table 22: Soil Erosion Control Practices**

<b>Institutional practices</b>	<b>Structural practices</b>	<b>Vegetative practices</b>
AL ARNG Environmental Branch review of land use changes; Storm water discharge permits; Borrow site permitting; Borrow site Standard Operating Procedures (SOPs); Inspection of facilities; Inclusion of the SEMP in Range Operation Regulations; Training of Personnel; Streamside Management Zones; Limiting vehicle access; BMPs for construction activities.	Erosion-resistant surfaces; Improved/hardened stream crossings; Interceptor dikes and swales, check dams; Drainage ditches and culverts; Silt fence, sediment traps, and sediment retention ponds	Seeding; Transplanting; Vegetative filter strips (utilizing native species)

**Table 23 – ITAM Projects for FY 2020-2025**

<b>Project</b>	<b>Estimated 5-Year Cost</b>	<b>Location</b>	<b>Benefits to Natural Resources</b>	<b>Legal Driver</b>
SRP GIS Program	\$240K	Throughout Pelham Range	Provides digital data of land use, land condition, and land repair or improvement projects.	TC 25-1, AR 350-19
Vegetation Control	\$245k	Throughout Pelham Range	Removes or controls invasive and noxious plant species.	TC 25-1, AR 350-19
Range and Training Land Assessment	\$269k	Throughout Pelham Range	Monitors effects of training on natural resources and suitability of land for training missions. If natural resources are impacted, the RTLA may trigger an LRAM project to repair land damage.	TC 25-1, AR 350-19
Maintain Vehicle Low Water Crossings	\$215k	Throughout Pelham Range	Reduces soil erosion into streams and waterways that can negatively impact water quality through the maintenance of hardened and stabilized stream crossings.	CWA, AR 350-19
Maintain Maneuver Trails	\$1.1m	Throughout Pelham Range	Reduces soil erosion through trail stabilization, repairs maneuver damage, and provides defined traffic lanes to reduce off-trail maneuver. Off trail maneuver can severely impact natural resources.	TC 25-1, AR 350-19

Maintain Helicopter Landing Zones	\$290k	Throughout Pelham Range	Reduces wind erosion and airborne dust from helicopter rotor wash and soil erosion caused by support vehicles.	CAA, TC 25-1, AR 350-19
Maintain Bivouac Sites	\$245k	Throughout Pelham Range	Stabilizes soil and reduces soil erosion after bivouac use. Restores natural drainage after training events.	TC 25-1, AR 350-19
Maintain Artillery and Mortar Firing Points	\$420k	Throughout Pelham Range	Stabilizes soil after training events to reduce soil erosion. Restores natural drainage caused by maneuver.	TC 25-1, AR 350-19
Erosion Control in Training Areas	\$296k	Throughout Pelham Range	Stabilizes soil after training events to reduce soil erosion. Restores natural drainage caused by maneuver.	TC 25-1, AR 350-19
Training Requirements Integration	\$40k	N/A	Insures training mission requirements and ITAM actions are included in the INRMP, ICRMP, IWFMP, and other planning documents.	AR 350-19, SAIA, AR 200-1
Sustainable Range Awareness	\$25k	N/A	Provides Soldier Field Cards with installation specific information to include: natural resources awareness, environmental protection, installation contacts, and safety information.	AR 350-19, AR 200-1

**APPENDIX P**  
**RELEVANT WEBSITES AND ADDITIONAL INFORMATION**

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## APPENDIX P: RELEVANT WEBSITES AND ADDITIONAL INFORMATION

### P.1 Forest and Fire Management

#### Contacts:

AFC, Montgomery, Alabama: (334) 240-9300

AFC, Jacksonville, AL: (256) 435-6245

#### Internet Addresses:

A Guide for Prescribed Fire in Southern Forests: <http://www.bugwood.org/pfire/>

AFC: <http://www.forestry.state.al.us/>

AFC, Weather and Fire Danger: <http://www.forestry.state.al.us/weather.asp>

Alabama BMPs for Forestry: <http://www.forestry.alabama.gov/BMPIndex.aspx?bv=2&s=1>

American Forests – (202) 737-1944: <http://www.americanforests.org/>

BMPs to protect water quality: <http://www.aces.edu/pubs/docs/A/ANR-1031/>

Fire Effects on Plants and Wildlife: <http://www.fs.fed.us/database/feis/>

National Wildfire Coordinating Group: <http://www.nwcg.gov/>

Society of American Foresters: <http://www.safnet.org/>

Southern Pine Beetle: [http://www.forestry.alabama.gov/southern\\_pine\\_bark\\_beetles.aspx?bv=3&s=1](http://www.forestry.alabama.gov/southern_pine_bark_beetles.aspx?bv=3&s=1)

USDA Forest Service: <http://www.fs.fed.us/>

### P.2 Fish and Wildlife

#### Contacts:

ADCNR, Division of Wildlife and Freshwater Fisheries, Montgomery, Alabama:

Commissioner's office: (334) 242-3486

Wildlife Section (Chief – Gary H. Moody): (334) 242-3469

Fisheries Section (Chief – Stan Cook): (334) 242-3471

#### Internet Addresses:

ADCNR, Division of Wildlife and Freshwater Fisheries: <https://www.outdooralabama.com/about-us/wildlife-and-freshwater-fisheries-division>

ADCNR Alabama Wildlife Action Plan 2015-2025.

[https://outdooralabama.com/sites/default/files/Research/SWCS/AL\\_SWAP\\_FINAL%20June2017.pdf](https://outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf)

ADEM: <http://www.adem.state.al.us/>

Southeastern Cooperative Wildlife Disease Study: <http://www.uga.edu/scwds>

DoD Partners in Flight <https://www.denix.osd.mil/dodpif/home/>

### **P.3 Storm water and Water Quality**

ADEM: <http://www.adem.state.al.us/>

Alabama Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, March 2009: [http://swcc.alabama.gov/pages/erosion\\_handbook.aspx](http://swcc.alabama.gov/pages/erosion_handbook.aspx)

USACE Mobile District: Regulatory Branch (OP-SA), P.O. Box 2288, Mobile, AL , 36628-0001; <http://www.sam.usace.army.mil/op/reg/permmob2.htm>

### **P.4 Floodplain and Riparian Zone**

EO 11988: [http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/eo\\_11988.shtm](http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/eo_11988.shtm)

Wetland management: <http://water.epa.gov/type/wetlands/index.cfm>

EO 11990: <http://water.epa.gov/lawsregs/guidance/wetlands/eo11990.cfm>

National Wetlands Research Center: <http://www.nwrc.usgs.gov/>

Classification of Wetlands and Deepwater Habitats of the United States Manual: <http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm>

Center for Aquatic Plants Aquatic Plant Manuals and Field Guides: <http://aquat1.ifas.ufl.edu/manuals.html>

### **P.5 Invasive and Exotic Species**

Noxious weed list: <http://plants.usda.gov/java/noxiousDriver>

EO 13112: <http://www.invasivespeciesinfo.gov/laws/execorder.shtml>

USFWS Invasive Species: <http://www.fws.gov/invasives/index.html>

Invasive Plants of the Eastern United States: <http://www.invasive.org/eastern/>

The National Invasive Species Council: <http://www.invasivespecies.gov/>

Center for Invasive Species and Ecosystem Health: <http://www.invasive.org/>

### **P.6 Integrated Pest Management**

IPM, Alabama Information Center: <http://www.aces.edu/departments/ipm/>

The Armed Forces Pest Management Board: <http://www.afpmb.org/>

Southern IPM Center: <http://www.sripmc.org/index.cfm>

IPM Access, Ecological Maintenance and Design Solutions: <http://www.ipmaccess.com/>

### **P.7 Threatened and Endangered Species and Species of Concern**

#### Contacts:

Division of Wildlife and Freshwater Fisheries, Montgomery, Alabama - (334) 242-3469

ANHP, Montgomery, Alabama – (334) 834-4519

TNC, Birmingham, Alabama – (205) 251-1155

USFWS, Daphne, Alabama – (251) 441-5181

*Internet addresses:*

ADCNR, Division of Wildlife and Freshwater Fisheries: <http://www.dcnr.state.al.us/agfd/>

ADCNR, Nongame Protected Species: <http://www.outdooralabama.com/watchable-wildlife/regulations/nongame.cfm>

ADCNR, Species of High Conservation Concern: <http://www.outdooralabama.com/watchable-wildlife/what/>

ANHP: <http://www.alnhp.org/>

Alabama Plant Conservation Alliance: <http://gump.auburn.edu/boyd/apca/Welcome.html>

Center for Plant Conservation: <http://www.centerforplantconservation.org/welcome.asp>

DoD Endangered, Threatened and Species at Risk:

<https://www.denix.osd.mil/portal/page/portal/NaturalResources/ThreatenedEndangeredandAtRiskSpecies/CandidateSpeciesandSpeciesatRisk>

NatureServe, Network of Natural Heritage Programs: <http://www.natureserve.org/explorer/index.htm>

TNC, Birmingham, Alabama: <http://www.tnc.org/states/alabama/>

USFWS: <http://www.fws.gov/>

USFWS, Southeast Region: <http://southeast.fws.gov/>

USFWS, Southeast Region, Daphne Ecological Field Services: <http://www.fws.gov/daphne/>

USFWS Endangered Species of Calhoun County: <http://www.fws.gov/daphne/es/specieslst.html>

USFWS White-nose Syndrome: <http://www.fws.gov/WhiteNoseSyndrome>

## **P.8 Grounds, Landscaping and Urban Forestry**

Alabama Wildflower Watch: <http://www.auburn.edu/awac/watch1.htm>

Alabama Urban Forestry: <http://www.aces.edu/pubs/docs/A/ANR-1210-B/>

Alabama Urban Forestry Association: <http://www.aufa.com/>

## **P.9 Geology, Soils, and Erosion control**

NRCS: <http://www.nrcs.usda.gov/>

NRCS, Calhoun County Field Office - (256) 835-0512

National Soil Erosion Research Laboratory: <http://topsoil.nserl.purdue.edu/nserlweb/>

Bureau of Land Management (BLM): <https://navigator.blm.gov/home>

## **P.10 Outdoor Recreation**

Alabama Division of Wildlife and Freshwater Fisheries: <http://www.dcnr.state.al.us/agfd/>

Alabama Wildlife Federation: <http://alabamawildlife.org>

Federal Recreation Site: <http://www.recreation.gov>



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**APPENDIX Q**  
**REFERENCES**

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**APPENDIX Q: REFERENCES**

- 3D/International, Inc., Environmental Group, 1995. Biological Assessment: Disposal and Reuse of Fort McClellan, Alabama.
- 3D/International, Inc., Environmental Group, 1996. Investigations for the Presence of Gray Bats (*Myotis grisescens*) at Fort McClellan, Alabama.
- 3D/International, Inc., Environmental Group, 1997. Radiotelemetric Investigations of Foraging and Roosting Habitat of Gray Bats (*Myotis grisescens*) at Fort McClellan, Alabama, Cincinnati, Ohio.
- Aerostar SES, LLC, 2017. Faunal Survey for Vertebrate Species, Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Aerostar SES, LLC, 2013a. Faunal Survey for Vertebrate Species, Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Aerostar SES, LLC, 2013b. Final Planning Level Wetland Update and Surface Water Survey Report Fort McClellan Army National Guard Training Center Alabama Army National Guard Anniston, Calhoun County, Alabama.
- Aerostar Environmental Services, INC 2010. Stream Hydrological Investigation and Limited Wetland Delineation, Clear Creek, Anniston, Calhoun County, Alabama. Anniston Army Depot and Fort McClellan Army National Guard Training Center.
- Alabama Army National Guard, 2001. “Protecting the Natural Resources on Pelham Range While Training to Protect the Nation” (also known as the “Environmental Awareness Handbook”).
- Alabama Army National Guard, 2002. Personal Communications with Various Personnel, FM-ARNGTC, Anniston, and State Military Department, Montgomery, Alabama.
- Alabama Army National Guard, 2010. Personal Communications with Mobilization Readiness Branch, State Military Department, Montgomery, Alabama.
- Alabama Army National Guard, 2008. Range Complex Master Plan, FM-ARNGTC, State Military Department, Montgomery, Alabama.
- Alabama Army National Guard, 2010. AL ARNG Strength Report August 9, 2010, State Military Department, Montgomery, Alabama.
- Alabama Army National Guard, May 2010. State Military Department Regulation (FM-ARNGTC Regulation) 200-1-1: Hunting and Fishing on Pelham Range. Montgomery, Alabama.
- Alabama Department of Conservation and Natural Resources, September 2015. “Alabama’s Wildlife Action Plan 2015-2025, revised March 2016.
- Alabama Department of Environmental Management, 2000. Water Use Classifications for Interstate and Intrastate Waters (Chapter 335-6-11), Water Division – Water Quality Program.
- Alabama Forestry Commission, 1993 (updated 2007). Alabama’s Best Management Practices for Forestry; [http://www.forestry.state.al.us/publications/BMPs/2007\\_BMP\\_Manual.pdf](http://www.forestry.state.al.us/publications/BMPs/2007_BMP_Manual.pdf)
- Alabama Natural Heritage Program, 1994a. Natural Heritage Inventory of Fort McClellan, Pelham Range: Federal Endangered, Threatened, Candidate Species and State Listed Species.
- Alabama Natural Heritage Program, 1994b. Natural Heritage Inventory of Fort McClellan, Main Post: Federal Endangered, Threatened, Candidate Species and State Listed Species.
- Alabama Natural Heritage Program, 2001. electronic data received February 21, 2001 from Ms. Terra Manasco, Science Information Manager, Alabama Natural Heritage Program, Montgomery, Alabama.

- Alabama Natural Heritage Program 2013. Vascular Flora of Pelham Range - Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Alabama Soil and Water Conservation Committee (ASWCC), 2018. "The Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas."
- AMEC, 2002a, Endangered Species Management Plan for the Fort McClellan Army National Guard Training Center, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2002b, Integrated Cultural Resources Management Plan for the Fort McClellan Army National Guard Training Center, Pelham Range, and Fort McClellan Main Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2003b, Threatened and Endangered Species Survey Report for *Myrtis grisescens*, *Xyris tennesseensis*, and *Marchallia mohrii* for the Fort McClellan Army National Guard Training Center, Pelham Range and Fort McClellan Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2003c, Forest Management Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Main Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2004a, Spill Prevention, Control and Countermeasure Plan and Installation Spill Contingency Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Fort McClellan Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2004b, Pollution Prevention Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Fort McClellan Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2004c, Plant Community Survey for the Fort McClellan Army National Guard Training Center, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC, 2004d. Invasive and Exotic Species Survey and Management Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Main Enclave, Calhoun County, Alabama.
- AMEC, 2005, Draft Integrated Cultural Resources Management Plan for the Alabama Army National Guard and Activities at AL ARNG-Managed Facilities Throughout the State of Alabama, Calhoun County, Alabama, Huntsville, Alabama.
- AMEC 2007. Faunal Survey for Vertebrate Species for the Fort McClellan Army National Guard Training Center.
- American Rivers, 2004, List of Wild and Scenic Rivers, <http://www.americanrivers.org/>.
- Babour M.G., J.H. Burk, and W.D. Pitts, 1987, Terrestrial Plant Ecology, The Benjamin/Cummings Publishing Company, Inc., Menlo Park, California.
- BHE Environmental, Inc., 2005. Habitat Suitability Assessment and Survey for the Gray Bat on Fort McClellan Army National Guard Training Center, Alabama, Cincinnati, Ohio.
- Boyd, R.S., J.M. Moffett, Jr., M.A. Wall, A. Teem, J. Cochrane, R. Cody, and T.W. Barger, 2000. Status, Ecology, and Management Concerns of the Tennessee Yellow-eyed Grass (*Xyris tennesseensis*), Department of Biological Sciences, Auburn University, Auburn, Alabama.
- C2 Environmental Services, Inc., July 1997. Freshwater Mollusk Survey, Fort McClellan, Alabama: Final Report, Chamblee, Georgia.
- Colorado State University Center for Environmental Management of Military Lands, 2012. Vegetation Classification & Mapping; Pelham Range, Alabama.

- Cook Hydrogeology, LLC 2018. Assessment of Water Quality, Sediment Transport, and Land-Use Impacts in the Cane Creek Watershed, Pelham Range, Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Copperhead Environmental Consulting, INC 2021. Endangered Species Management Component for the Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Copperhead Environmental Consulting, INC 2018. Survey for Bats on Ft. McClellan with Emphasis on T&E Species and Tricolored Bats (*Perimyotis subflavus*).
- Copperhead Environmental Consulting, INC 2016. Bat Population Survey with Emphasis on *Myotis* Species at the Fort McClellan Army National Guard Training Center.
- Copperhead Environmental Consulting, INC 2014. Bat Population Survey with Emphasis on *Myotis* Species, Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Copperhead Environmental Consulting, INC 2012. Bat Survey on Pelham Range of Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States, U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C.
- Department of the Army, 2004. Army Sustainable Range Program: <http://srp.army.mil/public/srp/overview.jsp>.
- Dupuy, Ernest, 1971. The National Guard: A Compact History, Hawthorne Books, Inc., New York.
- Environmental Sciences & Engineering Inc., January 1998. Final Environmental Baseline Survey, Fort McClellan, Alabama.
- Environmental Solutions & Innovations, LLC, 2003. Gray Bat Use of Fort McClellan Army National Guard Training Center, Calhoun County, Alabama, Cincinnati, Ohio.
- Engineering & Environment, INC 2007. Survey for the Gray Bat, *Myotis grisescens* (Howell) on Fort McClellan Army National Guard Training Center, Calhoun County, Alabama.
- Foster Wheeler Environmental Corporation, 1996. Description of Affected Environment: U.S. Army Chemical and Military Police Centers and Fort McClellan, Huntsville, Alabama.
- Gaddy, 1984. Guide to Wetland Communities of Fort McClellan, Alabama.
- Garland, B. William, 1996. Endangered Species Management Plan for Fort McClellan, Alabama.
- Geo-Marine, Inc., 1993. Habitat Analysis and 10-year Management Plan for White-tailed Deer and Eastern Turkey, Pelham Range Training Area, Fort McClellan, Alabama, Contract No. DABR02-92-C-0036, Baton Rouge, Louisiana.
- Godwin, James, 1998. Aquatic Inventory and Evaluation of Willett Springs and Cabin Club Spring, Fort McClellan, Calhoun County, Alabama, Concerning the Potential Introduction of Pygmy Sculpin (*Cottus pygmaeus*). Alabama Natural Heritage Program, Montgomery, Alabama.
- Holstein, Dr. Harry, Hill, C.E., Cleveland, N., 2000. An Archaeological Pedestrian Phase I Survey of Fort McClellan, Calhoun County, Alabama. The Department of Army.
- John Gallup & Associates, LLC, 2001. Real Property Development Plan and Feasibility Study for Fort McClellan Army National Guard Training Center, AL, San Diego, California.
- John Gallup & Associates, LLC, 2008. Fort McClellan Army National Guard Training Center Real Property Development Plan, San Diego, California.

- John Gallup & Associates, LLC, 2008. Alabama Army National Guard Real Property Development Plan, San Diego, California.
- Johnson, Rhett and Brett Wehrle, 2000. Threatened and Endangered Species of Alabama: A Guide to Assist with Forestry Activities, Auburn, Alabama; <http://www.pfmt.org/wildlife/endangered> – last revised 09/25/00.
- Keystone Center, 1996. Keystone Center policy dialogue on a Department of Defense biodiversity management strategy: final report. The Keystone Center, Keystone, Colorado.
- Law Engineering and Environmental Services, 1993. Final Natural Areas Management Plan for Fort McClellan, Alabama, USACE, Mobile District.
- Leslie, M., G.K. Meffe, J.L. Hardesty, and D.L. Adams, 1996. Conserving Biodiversity on Military Lands: A Handbook for Natural Resources Managers. The Nature Conservancy, Arlington, Virginia.
- Meffe, G.K. and C.R. Carroll, 1994. Principles of Conservation Biology, Sinauer Associates, Inc., Sunderland, Massachusetts.
- Mettee, Maurice F. and Robert R. Haynes, 1980. A Study of the Endangered and Threatened Plants and Animals on Fort McClellan Military Installation and Pelham Range, Calhoun County, Alabama, Geological Survey of Alabama.
- Mitsch, W. J. and J.G. Gosselink, 1993. Wetlands, Van Nostrand Reinhold, New York, New York.
- Moss, Jerry L., 1999. Alabama's Division of Wildlife and Freshwater Fisheries Studies Rare Fish, Fisheries Section News Article, Northport, Alabama, <http://www.dcnr.state.al.us/agfd/FNASTudiesRare.html>.
- Nakata Planning Group in association with RUST Environment and Infrastructure, November 1994. Soil Erosion Management Plan: Fort McClellan, Alabama.
- Nakata Planning Group, LLC, 2000. Alabama Army National Guard Real Property Development Plan (Corrected Final Submittal), Colorado Springs, Colorado.
- Nakata Planning Group, LLC, 2001. Alabama Army National Guard Range and Training Land Program Development Plan, Colorado Springs, Colorado.
- National Guard Bureau, 2002. The Army National Guard Manual for Compliance with the National Environmental Policy Act of 1969 – Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with NEPA (ARNG NEPA Manual).
- New South Associates and ERC Environmental and Energy Services Co., Inc., 1999. Fort McClellan: A Cultural Resource Overview. USACE, Mobile District.
- Pittman, William E., Luther M. Owen, Jr., B. William Garland, Benjamin S. Weathers, Glenda F. Southerland, and Debra J. O'Hara, 1991. Integrated Natural Resource Management Plan (INRMP), Fort McClellan, Alabama.
- Reisz Engineering, 1998a. Integrated Natural Resources Management Plan (1998-2002), Fort McClellan, Alabama. Huntsville, Alabama.
- Reisz Engineering, 1998b. Red-cockaded Woodpecker Endangered Species Survey for the U.S. Army Chemical and Military Police Centers and Fort McClellan. Huntsville, Alabama.
- Reisz Engineers, 1999. Pollination Biology of the Endangered Plant, *Xyris tennesseensis* (*Xyridaceae*). Huntsville, Alabama.
- Resource Management Service, 1984. Fort McClellan, Alabama Forest Type Map and Stand Descriptions.

- Sizemore & Sizemore, Inc., 2003. An Inventory and Appraisal of the Timber Assets Located on the Pelham Range and ALARG Enclave Area as of February 21, 2003, Tallassee, Alabama.
- Summerour, Bill, 1992. Results of Red-Cockaded Survey on Fort McClellan, Alabama, Jacksonville State University, Jacksonville, Alabama.
- Swain, Kenneth M. Sr. and Michael C. Remion, no date. Direct Control Methods for the Southern Pine Beetle, USDA Handbook No. 575, <http://everest.ento.vt.edu/~salom/Hndbk575/575.html>.
- Tucker, Robert E., John B. McHugh, R. Tommy Hopkins, and B. William Garland, 1995. Rock and Soil Geochemical and Natural-water Hydrogeochemical Surveys and Environmental Implications, Fort McClellan, Alabama, U.S. Geological Survey, Denver, Colorado.
- Thompson Engineering, Inc., 2014. Soil Erosion Management Plan for the Fort McClellan Army National Guard Training Center, Pelham Range and Main Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- Thompson Engineering, Inc., 2016. Invasive and Exotic Species Survey and Management Plan for Fort McClellan Army National Guard Training Center, Pelham Range and Fort McClellan Enclave, Calhoun County, Alabama, Huntsville, Alabama.
- Thompson Engineering, Inc., 2017. Final Environmental Assessment for Enhanced Mission Training and Operations at the Fort McClellan Army National Guard Training Center.
- U.S. Army Chemical and Military Police Centers & Fort McClellan, 28 August 1996. Fort McClellan Reg. 200-3: Hunting and Fishing on Fort McClellan. Department of the Army, Fort McClellan, Alabama.
- U.S. Army Corps of Engineers (USACE), 1987. Wetlands Delineation Manual (Technical Report Y-87-1) Waterways Experiment Station, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.
- U.S. Army Corps of Engineers (USACE), 1992. Preliminary Wetland Survey, Fort McClellan and Pelham Range, Anniston, Alabama.
- U.S. Army Corps of Engineers (USACE), 2000. Delineation of Wetlands and other Regulated Waters, Pelham Range, Alabama, Waterways Experiment Station, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.
- U.S. Army Environmental Policy Institute, 1992. U.S. Army Environmental Strategy into the 21st Century, U.S. Government Printing Office 1993-747-677.
- U.S. Army, Training and Doctrine Command (TRADOC), 1998. Final Environmental Impact Statement, Disposal and Reuse of Fort McClellan, Alabama, USACE, Mobile District.
- U.S. Army, 1995. Protecting Natural Resources in the Field, Fort McClellan, Alabama.
- U.S. Army, 1998. Pest Management Plan for Fort McClellan, Alabama, Fort McClellan, Alabama.
- U.S. Army, 1999. ITAM Procedural Manual.
- U.S. Army, 2002. Army Wildland Fire Policy Guidance, <http://www.tncfire.org/deptarmy.pdf>
- U.S. Army, 2005. The Army Sustainable Range Program, (AR 350-19), [http://www.apd.army.mil/pdffiles/r350\\_19.pdf](http://www.apd.army.mil/pdffiles/r350_19.pdf)
- U.S. Census Bureau, Census 2000. Redistricting Data (PL 94-171) Summary File, Matrices PL1, PL2, PL3, and PL4, <http://www.factfinder.census.gov/>.
- U.S. Census Bureau, Census 2000. Summary File 1 (SF1) and Summary File 3 (SF3), <http://www.factfinder.census.gov/>.



- U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS), 1999. Prescribed Burning – Forest Land, Alabama Guidesheet No. AL 338.
- U.S. Department of Agriculture – Natural Resources Conservation Service, 2002. Soil Survey of Pelham Range of Fort McClellan, Alabama.
- U.S. Department of Agriculture—Natural Resources Conservation Service, 1961. Soil Survey of Calhoun County, Alabama.
- U.S. Environmental Protection Agency, 1994. Integrated Ecosystem Protection Research Program: A Conceptual Plan, Working Draft, Washington, D.C.
- U.S. Environmental Protection Agency, 2018a. Air & Radiation, National Ambient Air Quality Standards (NAAQS), <http://www.epa.gov/>.
- U.S. Environmental Protection Agency, 2018b. USEPA Green Book Nonattainment Areas for Criteria Pollutants website: <https://www.epa.gov/green-book>.
- U.S. Fish and Wildlife Service, 1990. Endangered and Threatened Species of the Southeastern United States (The Red Book), USFWS, Region 4, <http://endangered.fws.gov/i/q/saq53.html>.
- U.S. Fish and Wildlife Service, 1991. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Plant *Xyris tennesseensis* (Tennessee Yellow-Eyed Grass). Federal Register 56 (32): 6341-6345.
- U.S. Fish and Wildlife Service, 1992. Endangered and Threatened Species of the Southeastern United States (The Red Book), USFWS, Region 4, <http://endangered.fws.gov/i/q/saq6r.html>.
- U.S. Fish and Wildlife Service, 1994. Tennessee Yellow-Eyed Grass (*Xyris tennesseensis*) Recovery Plan, Jackson, Mississippi.
- U.S. Fish and Wildlife Service, 1996. Gray Bat Taxonomy. <http://fwie.fw.vt.edu/WWW/esis/lists/e053002.htm>
- U.S. Geological Survey, various dates. 1:24000 topographic quadrangle maps in Calhoun County, Alabama.
- U.S. Geologic Survey, 2005. National Mapping Information. United States Department of the Interior.
- Varner, J. Morgan, III, John S. Kush, and Ralph S. Meldahl, April 2000. The Mountain Longleaf Pine Resources of Fort McClellan, Alabama: Final Report on their Status, Ecology, and Management Needs. Longleaf Pine Stand Dynamics Laboratory, Auburn University School of Forestry and Wildlife Sciences.
- Virginia Polytechnic Institute and State University, 1996. Endangered Species Information System, Species: Bat, Gray, Blacksburg, Virginia.
- Wade, Dale D. and James D. Lunsford, 1988. A Guide for Prescribed Fire in Southern Forests, <http://www.pfmt.org/standman/prescrib.htm>.
- Webb, Dr. D.R., Date unknown. Effects of Habitat Fragmentation on Avian Neotropical Migrants at Fort McClellan, AL: Final Report. Net Work Associates, Eugene, Oregon.
- Whetstone, R. D., J. M. Ballard, L. M. Hodge, and D. D. Spaulding, 1996. Vascular Flora of Fort McClellan, Calhoun County, Alabama, Whetstone Consulting, Inc., Anniston, Alabama.
- Williams, D.D. and B.W. Feltmate, 1992. Aquatic Insects, CAB International, Wallingford UK.
- World Climate, 2004. Anniston – Calhoun Co, Calhoun County, Alabama USA, <http://www.worldclimate.com/>.

**APPENDIX R**  
**GLOSSARY**

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**APPENDIX R: GLOSSARY**

**Alien Species** – Species that is not native to the ecosystem in which it is inhabiting.

**Ambient** – The environment as it exists around people, plants, and structures.

**Ambient Air Quality Standards** – Those standards established according to the Clean Air Act (CAA) to protect health and welfare (AR 200-1).

**Anticline** – Type of fold characterized by an arch or upfold.

**Aquatic** – Pertaining to water.

**Aquifer** – An underground geological formation containing usable amounts of groundwater which can supply wells and springs.

**Attainment Area** – Region that meets the NAAQS for a criteria pollutant under the CAA.

**Battalion (Artillery)** – A mid-level combat support headquarters organization typically containing one headquarters battery and three subordinate batteries.

**Berm** – A mound of earthen material.

**Best Management Practices (BMPs)** – Methods, measures, or practices to prevent or reduce the contribution of pollutants to U.S. waters. BMPs may be imposed in addition to, or in the absence of, effluent limitations, standards, or prohibitions (AR 200-1).

**Biodiversity** – The variety and variability of living organisms and the environment in which they occur.

**Buffer Zone** – A strip of erosion-resistant vegetation between a waterway or wetland and an area of more intensive land use.

**Candidate Species** – Species on which the USFWS has enough information to warrant an Endangered or Threatened status.

**Carrying Capacity** – The number of individuals of a species that can be supported by the environment. Carrying capacity constantly changes and is a function of both the natural environment (predominantly rainfall and soil erosion rates) and the cultural management of the site (predominantly maintenance of vegetative cover).

**Clearcut** – Removal of most or all of the trees from a particular area.

**Compaction** – The packing of soil together into a firmer, more dense mass, generally caused by the pressure of great weight.

**Contaminants** – Any physical, chemical, biological or radiological substances that have an adverse affect on air, water, or soil.

**Cantonment Area** – Area containing troops' quarters.

**Carbonate Rock** – A rock containing the radical (CO<sub>3</sub>).

**Council on Environmental Quality (CEQ)** – An Executive Office of the President composed of three members appointed by the President, subject to approval by the Senate. Each member shall be exceptionally qualified to analyze and interpret environmental trends, and to appraise programs and activities of the Federal Government. Members are to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs of the Nation, and to formulate and recommend national policies to promote the improvement of the quality of the environment.

**Criteria Pollutants** – The CAA of 1970 required the USEPA to set air quality standards for common and widespread pollutants in order to protect human health and welfare. There are six "criteria pollutants":

ozone (O<sub>3</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), lead (Pb), nitrogen oxides (NO<sub>x</sub>), and particulate matter less than 10 micrometers in diameter (PM-10).

**Cultural Resources** – A broad term referring to prehistoric, historic, architectural, and traditional cultural properties. Examples of cultural resources include prehistoric or historic districts, sites, buildings, structures or objects included on or eligible for inclusion to the National Register of Historic Places [Section 301(5) of NHPA]. Those resources that have recognized significance are referred to as historic properties.

**Cumulative Impact (Effect)** – The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (Federal or nonFederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

**Direct Effects** – Effects that are caused by the action and occur at the same time and same place [40 CFR 1508.8 (a)].

**Dolomite** – Sedimentary rock primarily composed of the mineral dolomite (CaMgCO<sub>3</sub>).

**Drop Zone** – Cleared area used for personnel or equipment to land following a parachute jump or drop.

**Dudded Impact Area** – Area used to detonate dud-producing ordnance.

**Ecology** – Branch of biology dealing with the relations between organisms and their environment.

**Ecosystem** – Dynamic and natural complex of living organisms and their nonliving environment and their interactions.

**Emission** – A release of a pollutant.

**Enclave** – Area containing administration and billeting facilities.

**Endangered Species** – Species that is in danger of extinction within all or a portion of its range. Endangered species are protected under the ESA.

**Endemic** – Naturally occurring only in a specific area. For example, the red-cockaded woodpecker, which is endemic to longleaf forests in the southeastern U.S., occurs only in southeastern longleaf forests and nowhere else in the world.

**Environmental Assessment/Environmental Impact Statement (EA/EIS)** – An EA is a publication that provides sufficient evidence and analysis to show whether a proposed system will adversely affect the environment or be environmentally controversial. If the proposed system will adversely affect the environment or be controversial, an EIS is prepared to disclose impacts.

**Environmental Constraint** – A natural resource (i.e., wetland, stream, T/E species) that has the potential to limit training activities.

**Environmental Justice** – Issue addressed in Environmental Assessments pertaining to the potential disproportionately high and adverse environmental effects to minority and low income communities from Federal actions.

**Erosion** – The wearing away of land surface by wind, water, or ice.

**Exotic Species** – Species that is not native to the ecosystem in which it is inhabiting.

**Farmland** – Cropland, pastures, meadows, and planted woodland.

**Fauna** – Animal life, especially the animal characteristics of a region, period, or special environment.

**Firebreak** – Barriers intended to prevent the spread of a fire. Roads, streams, and/or plowed lines can be used as firebreaks.

**Flora** – Vegetation; plant life characteristic of a region, period, or special environment.

**Floodplain** – Nearly flat plain along the course of a stream that is naturally subject to flooding.

**Ford** – Improved crossing in a creek or stream in a shallow area.

**Fugitive Dust** – Particles light enough to be suspended in air which are not caught in a capture or filtering system. For this document, this refers to particles put in the air by moving vehicles and air movement over disturbed soils at construction sites.

**Geographic Information System (GIS)** – GIS technology allows environmental analysts to compile, analyze, and model information relevant to proposals that require environmental analysis. It is also a tool that assists decision making by providing a visual depiction of complex data, customized for the situation and circumstances associated with the decision.

**Hazardous Substances** – A substance as defined by section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

For the purpose of this regulation a hazardous substance is any one of the following. 1) Any substance designated pursuant to section 311(b)(2)(A) of the CWA. 2) Any element, compound, mixture, solution or substance designated pursuant to Section 102 of CERCLA. 3) Any hazardous waste having the characteristics identified under the RCRA. 4) Any toxic pollutant listed under the Toxic Substances Control Act (TSCA). 5) Any hazardous air pollutant listed under Section 112 of CAA. 6) Any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to fraction subsection 7 of TSCA.

The term does not include: 1) Petroleum, including crude oil or any thereof, which is not otherwise specifically listed or designated as a hazardous substance in a above. 2) Natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

A list of hazardous substances is found in 40 CFR 302.4 (AR 200-1).

**Hazardous Waste** – A solid waste which, when improperly treated, stored, transported, or disposed, poses a substantial hazard to human health or the environment. Hazardous wastes are identified in 40 CFR section 261.3 or applicable foreign law, rule, or regulation (see also solid waste) (AR 200-1).

**Hazardous Waste Storage** – As defined in 40 CFR 260. 10, ". . . the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed, or stored elsewhere" (AR 200-1).

**Herbicide** – An agent used to destroy or inhibit plant growth.

**Holistic** – pertaining not only to the individual elements of a system but also to their relation to all other elements of that system

**Improved Grounds** – Land area occupied by residential, commercial, or industrial development; linear infrastructure facilities; or recreational or construction sites.

**Indigenous Species** – Species native to an area.

**Indirect Effects** – Effects that are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate; and related effects on air, water, and other natural systems, including ecosystems [40 CFR 1508.8 (b)].

**Installation** – A grouping of facilities, located in the same general vicinity, over which the installation commander has authority (AR 200-1).

**Intermittent Stream** – Stream that flows during the wet season.

**Invasive Species** – An “alien species whose introduction does or is likely to cause environmental harm or harm to human health (EO 13112)”.

**Karst Topography** – Type of topography characterized by the presence of sinkholes, caverns, and diversion of surface water to subterranean routes.

**Limestone** – A sedimentary rock composed almost entirely of mineral calcite (CaCO<sub>3</sub>).

**Mesic** – Having moist conditions; moisture regime between xeric (dry) and hydric (wet).

**Mitigation** – Measures taken to reduce adverse impacts on the environment.

**Mobile Sources** - Vehicles, aircraft, watercraft, construction equipment, and other equipment that use internal combustion engines for energy sources (AR 200-1).

**Monitoring** – The assessment of emissions and ambient air quality conditions. The following monitoring techniques are used emission estimates, visible emission readings, diffusion or dispersion estimates, sampling or measurement with analytical instruments (AR 200-1).

**Mulch** – The natural or artificial layer of plant residue or other materials covering the land surface which conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

**National Ambient Air Quality Standards (NAAQS)** – Nationwide standards set up by the USEPA for widespread air pollutants, as required by Section 109 of the CAA. Currently, six pollutants are regulated by primary and secondary NAAQS: carbon monoxide (CO), lead, (Pb), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), particulate matter (PM-10), and sulfur dioxide (SO<sub>2</sub>).

**National Environmental Policy Act (NEPA)** – U.S. statute that requires all Federal agencies to consider the potential effects of proposed actions on the human and natural environment (AR 200-1).

**Natural Resources** – All elements of nature and their environments of soil, air, and water, including earth resources (nonliving resources such as minerals and soil components) and biological resources (living resources such as plants and animals).

**Nonattainment Area** – An area that has been designated by the EPA or the appropriate State air quality agency as exceeding one or more national or State ambient air quality standards.

**Noxious Weed** – Nonnative plants that have the potential to cause damage to agricultural activities, navigation, or fish and wildlife resources.

**Ordnance** – Military supplies such as weapons and ammunition.

**Parent Materials** – The original materials from which soil is broken down.

**Particulates or Particulate Matter** - Fine liquid or solid particles such as dust, smoke, mist, fumes or smog found in air.

**Pesticide** – Any poison, organic or inorganic, that is used to destroy pests of any sort (plant or animal); pesticides include insecticides, fungicides, rodenticides, herbicides.

**Plant Community** – A vegetative complex unique in its combination of plants which occurs in particular locations under particular conditions.

**Pollutant** – A substance introduced into the environment that adversely affects the usefulness of a resource.

**Potable Water** – Water which is suitable for drinking.

**Prescribed Fire/Prescribed Burning** – Purposeful application of fire in a controlled, knowledgeable manner to accomplish a set of predetermined objectives. Prescribed fire is often used to reduce hazardous forest fuels (i.e., dead plant material), dispose of logging debris, prepare sites for planting, improve wildlife

habitat, manage competing vegetation, control insects and disease, enhance forest appearance, and perpetuate fire-dependent species.

**Regeneration** – The establishment of trees through natural or artificial means.

**Remediation** – A long-term action which reduces or eliminates a threat to the environment.

**Riparian Areas** – Areas adjacent to rivers and streams that have a high density, diversity and productivity of plant and animal species relative to nearby uplands.

**Runoff** – that part of precipitation, snow met, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

**Salvage Cut** – Removal of dead or diseased trees.

**Sanitation Cut** – Removal of dead or injured trees.

**Sedimentation** – Process of depositing soil particles, clays, sands, or other sediments that were picked up by flowing water.

**Seed tree cut** – Removal of most trees from a stand. Desirable trees are left in sufficient numbers to reseed the cut-over area.

**Semi-improved grounds** – Land area occupied by altered lands, road shoulders, and other land uses requiring little maintenance.

**Shale** – Sedimentary rock composed of silt- and clay-sized particles.

**Shelterwood Cut** – The gradual removal of an entire stand over two to three cuts; generally used to regenerate heavy-seeded species.

**Significant Impact** – According to 40 CFR 1508.27, "Significantly" as used in NEPA requires consideration of both context and intensity.

a. *Context* – The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

b. *Intensity* – This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action.

**Silviculture** – The manipulation of forest stands to meet forest management objectives.

**Site Preparation** – The enhancement of site conditions to improve germination rates and/or seedling survival.

**Snag** – Standing dead tree.

**Socioeconomics** – Social and economic aspects of a community or geographic area including demographics, economy, housing, schools, medical facilities, service facilities, recreational facilities, and/or health and safety issues.

**Soil** – The mixture of altered mineral and organic material at the earth's surface that supports plant life.

**Solid Waste** – Any discarded material that is not excluded by section 261.4(a) or that is not excluded by variance granted under sections 260.30 and 260.31 (40 CFR 261.2).

**Spring** – Area of discharge where the water table intersects the ground surface.

**Stewardship** – The management of resources in a way that preserves and enhances the resources.



**Storm water** – Runoff from a storm event, snow melt runoff, and surface runoff and drainage.

**Surface Water** – All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, wetlands impoundments, seas, estuaries, etc.); also refers to springs, wells, or other collectors which are directly influenced by surface water.

**Swale** – An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water.

**Terrestrial** – Relating to land, rather than air or water.

**Thinning** – Selective cutting within a stand. Thinnings may be used to increase the rate of growth of residual timber, to foster higher quality timber, to improve spacing, and/or to promote sanitation.

**Threatened Species** – A species that is likely to become Endangered within the foreseeable future. Threatened species are protected under the ESA.

**Topography** – The physical feature of a surface area including relative elevations and the position of natural and human-made features.

**Toxic Substance** – A harmful substance which includes elements, compounds, mixtures, and materials of complex composition.

**Tribe** – A Federally-recognized tribe or other Federally-recognized Native American group or organization.

**Tributary** – A river or stream that flows into a larger river or stream.

**Urban forestry** – Maintenance of individual trees or groupings of trees in an urban environment or between dominant land uses.

**Watershed** – The land area or region draining into a body of water.

**Waters of the United States (as defined in 33 USC §1344) –**

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

Which are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1)-(6) of this definition. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

**Water Table** – The depth or level below which the ground is saturated with water.

**Wetlands** – Areas that are regularly saturated by surface or groundwater and, thus, are characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include swamps, bogs, fens, marshes, and estuaries.

**Xeric** – Dry

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**APPENDIX S**  
**COMPONENT PLANS**

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## **APPENDIX S: COMPONENT PLANS**

Updated component plans are available upon request and include the following:

- *ENDANGERED SPECIES MANAGEMENT COMPONENT*
- *FOREST MANAGEMENT PLAN*
- *INTEGRATED WILDLAND FIRE MANAGEMENT PLAN*
- *INVASIVE AND EXOTIC SPECIES SURVEY AND MANAGEMENT PLAN*
- *SOIL EROSION MANAGEMENT PLAN*

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**APPENDIX T**  
**PLANNED PROJECTS**



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**Table 24 - Planned Projects**

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status	
Ecosystem Management	I	Objective 1a: Manage for ecosystem health, wildlife and improved habitat quality					
		Control or eliminate invasive species (20 acres per year)	Annually	IH, C	ENV		
		Continue prescribed fire regime (5000 acres per year)	Annually	C	ENV		
		Continue RTLA program	Annually	IH	ITAM	Ongoing	
		Objective 1b: Characterize natural communities					
		New parcel wetlands and surface water survey	2021-2022	C	ENV	Completed	
Fish and Wildlife Management	H	Objective 2a: Manage habitats for all native species					
		Maintain native species vegetative buffers around water resources	Continually	IH	ENV	Ongoing	
		Maintain wildlife enhancement areas	Continually	IH	ENV	Ongoing	
		Create pollinator plots	2021-2025	IH	ENV		
		Wood duck box management	Annually	IH	ENV	Ongoing	
		Create modified mowing and prescribed burn schedule to protect migratory bird habitat	Annually	IH	ENV, FAC	Ongoing	
		Objective 2b: Assess faunal communities					

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status
		New parcel faunal survey (herpifauna and fish)	2021-2025	C	ENV	
Outdoor Recreation	J	Objective 3a: Collect and maintain data on game species				
		Collect and analyze harvested game data	Annually	IH	ENV	Ongoing
		Conduct annual deer survey	Annually	IH, C	ENV	
		Collect and analyze turkey poult counts	Annually	IH	ENV	Ongoing
		Collect and analyze bobwhite quail surveys	Annually	IH	ENV	Ongoing
		Participate in wood duck banding program with state conservation	Per need	IH	ENV	
		Training for ALARNG personnel	Per need	IH	ENV	
Water Resources Protection	I	Objective 4a: Characterize riparian communities				
		New parcel surface water survey	2021-2022	C	ENV	Completed
		Objective 4b: Implement riparian buffer zones				
		Training for ALARNG personnel	Per need	IH	ENV	

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status
Wetland Protection	I	Objective 5a: Characterize wetland communities				
		New parcel wetlands survey	2021-2022	C	ENV	Completed
		Objective 5b: Implement wetland buffer zones				
		Training for ALARNG personnel	Per need	IH, C	ENV	
Soil Erosion Control Management	I	Objective 6a: Identify and rehabilitate eroding training lands				
		Repair erosion sites identified by the FM-ARNGTC Soil Erosion Management Plan	Per need	IH	ITAM	
		Repair new erosion sites as identified	Per need	IH	ITAM	
		BMP training for ALARNG personnel	Per need	IH	ENV, ITAM	
Threatened and Endangered Species	I	Objective 7a: Monitor communities that could support threatened and endangered species				
		Fish survey for listed and petitioned species	2021-2025	C	ENV	
		Mussel survey for listed and petitioned species	2021-2025	C	ENV	
		White fringeless orchid habitat modeling and survey	2021-2025	C	ENV	
		Butterfly survey for listed and petitioned species	2021-2025	C	ENV	

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status	
		Bat Population Survey	2023	C	ENV		
		Tennessee yellow-eyed grass population monitoring	Annually	IH	ENV	Ongoing	
		Mohr’s Barbara’s buttons population monitoring	Annually	IH	ENV	Ongoing	
		Objective 7b: Manage and maintain listed plant habitats					
		Routine mowing or prescribed fire at listed plant habitats	Annually	IH	ENV	Ongoing	
		Remove invasive or exotic species in listed plant habitats	Per need	IH	ENV	Ongoing	
		Objective 7c: Improve/protect unique habitats for listed and at-risk species					
		Improve early successional riparian habitat for golden-winged warbler (petitioned) and other migratory birds	2020-2025	IH, C	ENV	Ongoing	
		Install awareness signs	2020-2022	IH, C	ENV		
		Training for ALARNG personnel	Per need	IH, C	ENV		
Forest Management	G	Objective 8a: Maintain forest inventory					
		Installation-wide forest inventory	2019-2020	C	ENV	Completed	
		Objective 8b: Improve forest health and habitat quality through timber harvesting					
		Conduct timber harvesting IAW Forest Management Plan	Annually	C	ENV	Ongoing	

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status
		Adhere to bat conservation measures for forest management recommended by USFWS	Per need	C	ENV	Ongoing
Fire Management	G	Objective 9a: Suppress or prevent damage caused by wildfire				
		Suppress wildfires	Per need	C	FES	Ongoing
		Maintain firebreaks and construct new ones	Per need	C	FES	Ongoing
		Objective 9b: Prescribe burn				
		Continue prescribed fire regime (5000 acres per year)	Annually	C	ENV, FES	Ongoing
Integrated Pest Management Program	I	Objective 10a: Adhere to the guidelines and projects presented in the IPMP				
		Objective 10b: Use IPM techniques to eliminate, suppress, or control pests using both chemical and nonchemical control techniques				
		Objective 10c: Continue to conduct pest monitoring and pest management requirements outlined in the statewide IPMP				
		Training for ALARNG personnel	Per need	IH, C	ENV	
Invasive Exotic Species Program	I	Objective 11a: Adhere to the guidelines and projects presented in the FM-ARNGTC Invasive and Exotic Species Management Plan				
		Objective 11b: Control invasive exotic species				

Management Area	Appendix	Objectives and Projects to Achieve Objectives	Year	Method <sup>1</sup>	Proponent <sup>2</sup>	Status
		Control or eliminate invasive species (20 acres per year)	Annually	IH,C	ENV, ITAM	Ongoing
		Prohibit the planting of invasive species	Continually	IH	ENV, SITE, ITAM	Ongoing
		Promote revegetation with native grasses	Continually	IH	ENV, FAC, SITE, ITAM	Ongoing
		Training for ALARNG personnel	Per need	IH, C	ENV,FAC, ITAM	

<sup>1</sup> Probable method of conducting project: C = contract; IH = in-house

<sup>2</sup> Party responsible for funding and/or conduct of action: ENV = environmental office; FAC = facilities maintenance funds; ITAM = training funds; FES = fire and emergency services; SITE = training site staff.

**APPENDIX U**  
**ANNUAL REVIEW AND UPDATES**



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**Annual Review and Coordination Signature Page**  
**Updated Integrated Natural Resources Management Plan**  
**Fort McClellan Army National Guard Training Center**  
**Calhoun County, Alabama**

This attached signature page will be utilized to record the signatures of the Supervisor, United States Fish and Wildlife Service, and the Chief of the Alabama Department of Conservation and Natural Resources. Signatures are to be recorded on a yearly basis, after annual review and comment is completed by the agencies identified within the table. If Signatures are not obtained, the Fort McClellan Natural Resources Manager will write a Memorandum for Record documenting the Annual Review and any changes to the INRMP required at that time.

REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
Alabama Army National Guard	U.S. Fish and Wildlife Service	Alabama Department of Conservation and Natural Resources
Date	Date	Date
REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
Alabama Army National Guard	U.S. Fish and Wildlife Service	Alabama Department of Conservation and Natural Resources
Date	Date	Date
REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
Alabama Army National Guard	U.S. Fish and Wildlife Service	Alabama Department of Conservation and Natural Resources
Date	Date	Date
REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
Alabama Army National Guard	U.S. Fish and Wildlife Service	Alabama Department of Conservation and Natural Resources
Date	Date	Date
REVIEWED BY:	REVIEWED BY:	REVIEWED BY:
Alabama Army National Guard	U.S. Fish and Wildlife Service	Alabama Department of Conservation and Natural Resources
Date	Date	Date