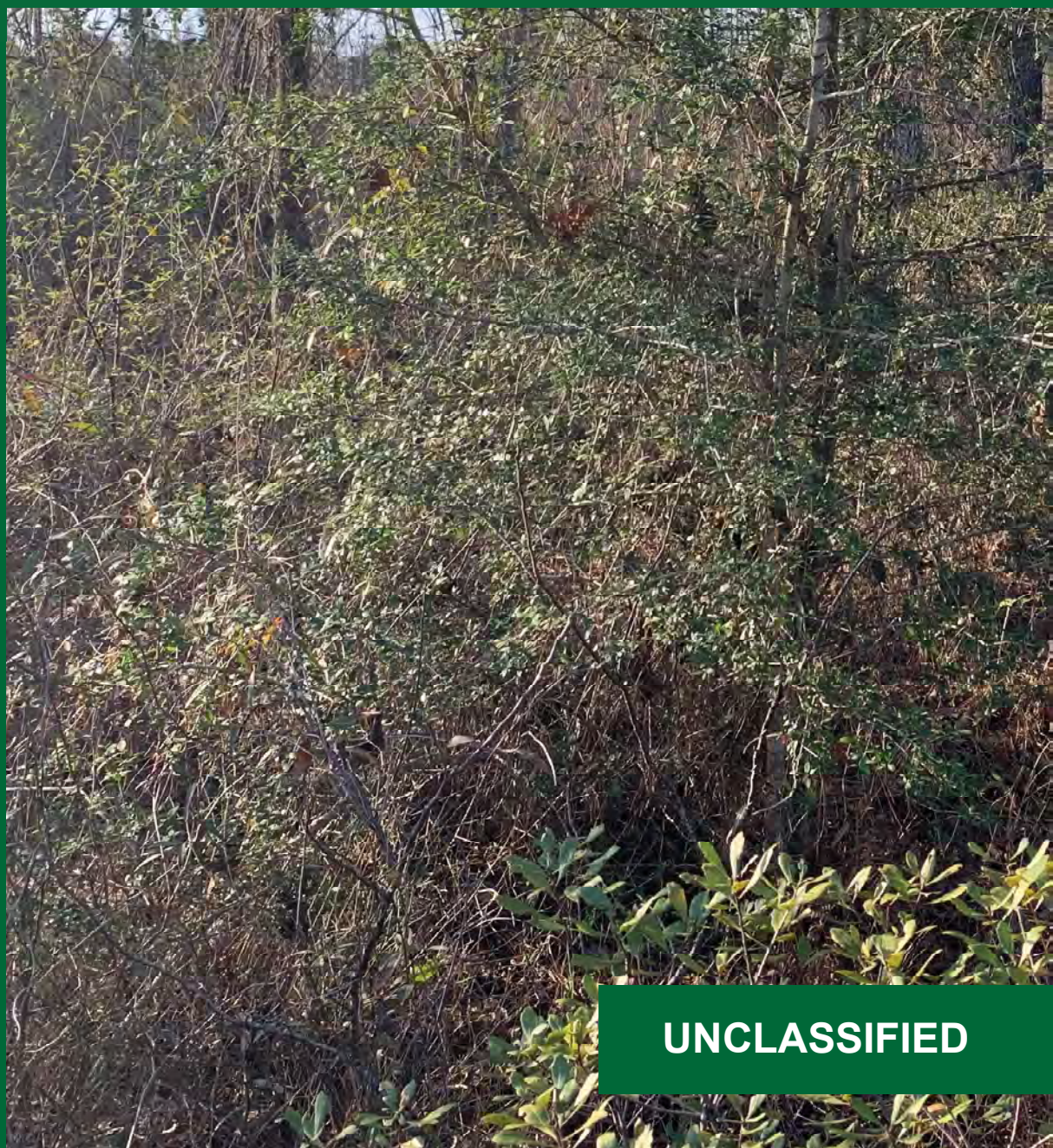
FINAL

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED ROTATIONAL UNIT BILLETING AREA (RUBA) IN THE SLAGLE 1 TRAINING AREA JOINT READINESS TRAINING CENTER (JRTC) AND FORT POLK, LOUISIANA

JUNE 2021



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JOINT READINESS TRAINING CENTER (JRTC) AND FORT POLK FORT POLK, LOUISIANA

FINDING OF NO SIGNIFICANT IMPACT (FNSI)

PROPOSED ROTATIONAL UNIT BILLETING AREA (RUBA) IN THE SLAGLE 1 TRAINING AREA FORT POLK, LOUISIANA

1. The findings and conclusions reached in this document are based on a thorough review of the impacts and analysis considered and disclosed in the Environmental Assessment (EA) attached to this document. The EA, including its data analysis and conclusions, are incorporated in this Final FNSI by reference.

2. **PROPOSED ACTION:** The JRTC and Fort Polk are proposing to develop a Rotational Unit Billeting Area (RUBA) within the Slagle 1 Training Area. The purpose of the Proposed Action is to construct a new RUBA to support full Brigade Combat Teams (BCTs) prior to and following rotational combat activities. The current RUBA does not have the capability to support a full BCT Reception, Staging, Onward-movement, and Integration (RSOI) area, which therefore limits training opportunities and does not support the mission of JRTC and Fort Polk. Development of the RUBA would allow such operation in these areas.

   The need for the Proposed Action is to allow JRTC and Fort Polk the capability to support full BCTs prior to and following rotational combat activities. The current RUBA is not adequate to support JRTC's BCT training mission.

3. **ALTERNATIVES CONSIDERED:** To address the purpose and need, JRTC and Fort Polk considered and analyzed three alternatives in the EA. Two alternatives consider slightly different layouts at the legacy Forward Operations Base (FOB) Warrior site and the third is the No Action Alternative. Two of the alternatives met the purpose and need of the Proposed Action. Alternative 3 (No Action) would result in the continued use of the current RUBA and this alternative does not meet the purpose and need for the Proposed Action.

   Alternative 1 (Area Development Plan [ADP] Alternative): Alternative 1 is located in the Slagle 1 Training Area in proximity to the legacy FOB Warrior site. The project area is approximately 373 acres. All or part of the following infrastructure would be developed as part of Alternative 1: fencing, guard towers, sleeping quarters (+/- 6,200 personnel), latrines, showers, mess areas, maintenance canopies, tactical operations center, parking, utilities, and communications.

   Alternative 2 (Environmentally Preferred Alternative): Alternative 2 is located in proximity to Alternative 1; however, the project area is shifted to the north compared to Alternative 1 to minimize impacts to the environment and enhance tactical capabilities. The project area is approximately 308 acres and all of the infrastructure described in Alternative 1 would be included as part of Alternative 2.

   Alternative 3 (No Action Alternative): Alternative 3 is the No Action Alternative. Consideration of the No Action Alternative is mandated in the Council on Environmental Quality (CEQ) 40 Code of Federal Regulations (CFR) Parts 1500-1508 and Environmental Analysis of Army Actions 32 CFR Part 651.34. The No Action Alternative serves as a baseline or reference point against which the potential effects of the Proposed Action and other alternatives are evaluated. One other alternative, in addition to the Proposed Action and No Action Alternatives, was considered but eliminated from further consideration. This

alternative and the reason for elimination from detailed analysis are provided below:

Self Army Airfield Alternative

This alternative is located in the southeast corner of Self Army Airfield. This proposed area has steep topography and large stream networks which would restrict development of the proposed RUBA. This alternative was eliminated because the lack of developable acreage does not allow the full purpose and need to be met.

4. **ENVIRONMENTAL CONSEQUENCES:** Potential impacts to soils, water quality (soil erosion from construction), water resources (streams, wetlands, and other water resources), and biological resources (forest ecology, native plants, invasive species, species of concern, threatened and endangered species, migratory birds, and game species) were considered and analyzed for Alternative 1 (ADP Alternative), Alternative 2 (Environmentally Preferred Alternative),and Alternative 3 (No Action). Based upon the analysis of baseline conditions; proposed activities; potential environmental effects; continued environmental stewardship; and monitoring measures and programs, no direct, indirect, or cumulative significant impacts on the environment would be expected to occur under the implementation of Alternative 1 (ADP Alternative) or Alternative 2 (Environmentally Preferred Alternative).

5. **PUBLIC COMMENT:** The EA and Draft FNSI were made available for public review from May 7, 2021 to June 7, 2021. No public comments were received. Additional information regarding this decision may be obtained by contacting JRTC and Fort Polk Public Affairs Office listed below.

Fort Polk Public Affairs Office
Attn: Ms. Kimberly Reischling
7033 Magnolia Drive
Fort Polk, Louisiana 71459-5342
(337) 531-7203

6. **CONCLUSIONS:** I have carefully reviewed the attached EA and the potential environmental consequences of each of the Alternative actions. Based on this review, I have determined that the Proposed Action will have no significant impacts on the environment.

7. **DECISION:** In light of the preceding conclusions, I have decided to implement ALTERNATIVE #2 as described in this EA. This will allow for the development of a new RUBA to adequately and safely support BCT RSOI as described in this EA and the continued implementation of the environmental stewardship monitoring measures and programs.

DAVID S. DOYLE
Brigadier General, USA
Commanding

Date: 17 JUL 21

ENVIRONMENTAL ASSESSMENT
FOR THE
PROPOSED ROTATIONAL UNIT BILLETING AREA (RUBA) IN
THE SLAGLE 1 TRAINING AREA
JOINT READINESS TRAINING CENTER (JRTC) AND FORT POLK, LOUISIANA

Prepared on Behalf of:

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June 2021

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FOR THE PROPOSED ROTATIONAL UNIT BILLETING AREA (RUBA)
IN THE SLAGLE 1 TRAINING AREA
JOINT READINESS TRAINING CENTER (JRTC)
AND FORT POLK, LOUISIANA

Approved By:

DAVID S. DOYLE
Brigadier General, USA
Commanding

Date: 17 JUL 21

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Reviewed By:

Kirk A. Mayfield
Deputy G3
JRTC and Fort Polk, Louisiana

Date: 9 Jul 21

Jonathan A. West
Chief, Conservation Branch
Environmental and Natural
Resources Management Division
Fort Polk, Louisiana

Date: 8 July 2021

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EXECUTIVE SUMMARY

The Joint Readiness Training Center (JRTC) is one of three Combat Training Centers (CTCs) throughout the Army focused on training for Army Brigade level combat operations. The current facilities do not adequately accommodate a full Army Brigade Combat Team (BCT) level Reception, Staging, Onward movement, and IQ Integration area.

To accomplish its mission as a CTC, JRTC and Fort Polk requires a Rotational Unit Billeting Area (RUBA) that would adequately support full BCTs prior to and following rotational combat activities. The current RUBA facility does not provide the capability to support a full BCT Reception, Staging, Onward-movement, and Integration (RSOI). It is undersized, disjointed, and situated in an area that is too wet and poorly suited for development. The location of the current RUBA also interferes with other principal North Fort activities, and does not conform to the Fort Polk Area Development Plan (ADP). Additionally, while the existing buildings are useful for training, they do not replicate in-theater, tactical conditions or improve readiness by providing realistic, stressful joint and combined arms training. The Proposed Action of developing a RUBA in the Slagle 1 Training Area would enhance the world-class training of BCTs at JRTC and Fort Polk.

The proposed development of a RUBA in the Slagle 1 Training Area would allow JRTC and Fort Polk to decommission the temporary facility within the North Fort cantonment area, align RUBA requirements with long-term development planning, and greatly improve the core mission requirement of training BCTs for combat operations. Following the establishment of the proposed RUBA in the Slagle 1 Training Area, existing facilities on North Fort would be re-evaluated and realigned or moved in accordance with the Installation Master Plan and the core mission requirement.

To meet this need, JRTC and Fort Polk propose to develop a new RUBA within the Slagle 1 Training Area. To address the purpose and need, the JRTC and Fort Polk

considered and analyzed three alternatives in this Environmental Assessment (EA). Three action alternatives met the need of the Proposed Action. However, Alternative 1 (ADP Alternative), Alternative 2 (Environmentally Preferred Alternative), and the No Action Alternative, which is required to be analyzed, were carried forward for analysis in this EA.

Alternative 1 (ADP Alternative)

Alternative 1 is located in the Slagle 1 Training Area in proximity to the legacy Forward Operating Base (FOB) Warrior site. The project area is approximately 373 acres. All or part of the following infrastructure would be developed as part of Alternative 1: fencing, guard towers, sleeping quarters (+/- 6,200 personnel), latrines, showers, mess areas, maintenance canopies, Tactical Operations Center (TOC), parking, utilities, and communications. Additionally, eight to 12 sediment basins will be installed prior to construction to minimize sedimentation of surface waters.

Alternative 2 (Environmentally Preferred Alternative)

Alternative 2 is located in proximity to Alternative 1; however the project area is shifted to the north compared to Alternative 1 to minimize impacts to the environment. The project area is approximately 308 acres. All the infrastructure described in Alternative 1 would be included as part of Alternative 2, including the sediment basins.

Alternative 3 (No Action Alternative)

Consideration of the No Action Alternative is mandated in the Council on Environmental Quality (CEQ) 40 Code of Federal Regulation (CFR) Parts 1500-1508 and Environmental Analysis of Army Actions 32 CFR Part 651.34. The No Action Alternative serves as a baseline against which the potential effects of the proposed action and other alternatives are evaluated.

One alternative, in addition to the Proposed Action Alternatives and the No Action Alternative, was considered but eliminated from further consideration. This alternative and the reason for elimination from detailed analysis are provided below.

Self Army Airfield Alternative

Under this alternative, the project area was proposed in the southeast corner of Self Army Airfield. However, this proposed area has steep topography and large stream networks which would restrict development of the proposed RUBA. This alternative was eliminated because of the lack of developable acreage does not allow the full purpose and need to be met.

This EA identifies environmental resource areas that have the potential to be affected as a result of the development of the RUBA. The resource areas were analyzed in detail to determine if impacts on the resource areas were significant environmental impacts. Additionally, this EA identifies and documents alternatives to the Proposed Action that were considered but eliminated from further consideration.

Table ES-1 presents a summary of the environmental impacts for each Alternative and resource areas analyzed in detail in this EA.

Table ES-1. Summary of Environmental Impacts

Alternative	Alternative 1 (ADP Alternative)	Alternative 2 (Environmentally Preferred Alternative)	Alternative 3 (No Action)
Soils	Direct, short-term, minor, and adverse impacts during construction; negligible, direct, long-term, and adverse impacts during operation	Direct, short-term, minor, and adverse impacts during construction; negligible, direct, long-term, and adverse impacts during operation	No impacts
Water Quality (soil erosion from construction)	Direct, short-term, adverse, and negligible impacts during construction; direct, long-term, negligible, and beneficial impacts during operation	Direct, short-term, adverse, and negligible impacts during construction; direct, long-term, negligible, and beneficial impacts during operation	No impacts
Water Resources: Streams, Wetlands, Other Water Resources	Direct, moderate, permanent, and adverse impacts during construction	Direct, moderate, permanent, and adverse impacts during construction	No impacts
Biological Resources: Forest Ecology, Native Plants	Direct, moderate, long-term, and adverse impacts	Direct, moderate, long-term, and adverse impacts	No impacts
Biological Resources: Invasive Species	Negligible impacts	Negligible impacts	No impacts
Biological Resources: Species of Concern	Direct, negligible, short-term, and adverse impacts on highly mobile species or direct, moderate, adverse impacts on less mobile species	Direct, negligible, short-term, and adverse impacts on highly mobile species or direct, moderate, adverse impacts on less mobile species	No impacts
Biological Resources: Threatened and Endangered Species	No impacts on RCW or LPS	No impacts on RCW or LPS	No impacts
Biological Resources: Migratory Birds and Game Species	Direct, short-term, negligible, and adverse impacts on migratory birds; negligible impacts on game species	Direct, short-term, negligible, and adverse impacts on migratory birds; negligible impacts on game species	No impacts

1.0 PURPOSE, NEED AND SCOPE

This section states the purpose and need of the proposed action and outlines the scope of the environmental analysis for the considered alternatives. Inherent to these objectives, the location and land ownership of the area under consideration, as well as the timing for the proposed action will also be described. In addition, the screening criteria used to develop the range of alternatives evaluated will be explained. Finally, the decision to be made will be identified.

1.1 INTRODUCTION

The Joint Readiness Training Center (JRTC) and Fort Polk have prepared this Environmental Assessment (EA) to evaluate and inform the decision makers of the potential environmental effects associated with the development of the Rotational Unit Billeting Area (RUBA) in the Slagle 1 Training Area. The JRTC is one of three Army Combat Training Centers (CTC) throughout the Army focused on training for Army Brigade level combat operations. These training rotations are focused for Army Brigade level combat operations. The current facilities do not adequately accommodate a full Brigade Combat Team (BCT) level Reception, Staging, Onward-movement, and Integration (RSOI) area prior to rotational combat activities. BCT RSOI activity requires infrastructure, equipment, and life support for a BCT.

Two action alternatives are being proposed in the EA and are described in Section 2.0. Furthermore, alternatives considered but not carried forward along with the No Action Alternative are detailed in Section 2.0. The proposed action is to construct a RUBA within the Slagle 1 Training Area in the vicinity of the former Forward Operating Base (FOB) Warrior to support the overall readiness of today's Army. The EA will evaluate potential impacts to the human and natural environments and identify the preferred alternative. This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (USC) 4321 et seq.), Council on Environmental Quality (CEQ) regulations Title 40 of the Code of Federal

Regulations (CFR) Parts 1500-1508 and Army Regulations (ARs) at 32 CFR Part 651 (Environmental Analysis of Army Actions). This was prepared in accordance with the legacy CEQ NEPA regulations as the planning process was initiated prior to the release of the updated CEQ NEPA regulations in 2020.

1.1.1 Army Mission

The Army exists to serve the American people, to defend the Nation, to protect vital national interests and to fulfill national military responsibilities. The Army's mission is to deploy, fight & win our nation's wars by providing ready, prompt & sustained land dominance by Army Forces across the full spectrum of conflict as part of the joint force. The Army recruits, organizes, trains and equips soldiers who, as vital members of their units and the Joint Team, conduct prompt, sustained combat and stability operations on land. The Army is also charged with providing logistics and support to enable the other Services to accomplish their missions when directed and to support civil authorities in time of emergency. Delivering the right Army forces at the right place and the right time is vital to the military's ability to defeat any adversary or control any situation in any environment across the full spectrum of military operations (Fort Polk 2019).

1.1.2 Fort Polk and JRTC Mission

The JRTC and Fort Polk train BCTs/Security Force Assistance Brigades to conduct large scale decisive combat operations on the battlefield against a near-peer adversary with multi-domain capabilities. Fort Polk enables assigned FORSCOM units to build Readiness in support of globally deployable missions; while facilitating a high quality of life for soldiers and Army families. Fort Polk supports the JRTC's advanced-level joint training for Army, Air Force, Navy and Marine Corps units under conditions that simulate low- and mid-intensity conflicts. The JRTC is one of three Army CTCs, supporting up to 12 annual JRTC rotations, focused on Army Brigade level combat operations. The JRTC and Fort Polk is also designated as one of the Army's power projection platforms.

The JRTC and Fort Polk develops leaders and trains BCTs alongside Unified Action Partners to conduct Unified Land Operations in the Decisive Action Training Environment to enable Forces Command (FORSCOM) to provide trained and ready forces to Combatant Commanders while taking care of soldiers, civilians and family members. Tenant units assigned to Fort Polk include JRTC Operations Group; 1-509th IN (ABN); 3rd Battalion, 353d (Training) Regiment; 3rd Brigade Patriots, 10th Mountain Division; 1st Battalion, 5th Aviation Regiment; 46th Engineer Battalion, 519th Military Police Battalion and the 115th Combat Support Hospital (changes to the 32d Field Hospital in March 2019). Several Louisiana, Texas and Mississippi Reserve and Army National Guard units are trained during annual training periods at JRTC and Fort Polk.

1.1.3 Installation Location and Land Ownership

Fort Polk is located in west central Louisiana in Natchitoches, Sabine, and Vernon Parishes near the communities of Leesville and DeRidder, and about 15 miles east of the Texas-Louisiana border (Figure 1-1). Fort Polk is comprised of Department of Defense (DoD) and U.S. Forest Service (USFS) permitted lands totaling approximately 243,527 acres. DoD-owned lands are divided into two primary land masses, Fort Polk and Peason Ridge. USFS permitted lands are divided into three separate land masses: the Intensive Use Area (IUA), the Limited Use Area (LUA), and the Special Limited Use Area (SLUA) (Fort Polk 2019). None of the alternatives analyzed in this EA would impact or utilize any USFS permitted lands under the Special Use Permit Agreements.

Peason Ridge is comprised of approximately 78,841 acres and is used to support both Army maneuver and live-fire training. The acreage for Peason Ridge includes approximately 42,500 acres recently acquired by Fort Polk. Fort Polk utilizes an area of USFS lands north of Peason Ridge called SLUA. The SLUA consists of approximately 12,380 acres and is available for limited training by the JRTC and Fort Polk. No live-fire activities are conducted in this area.

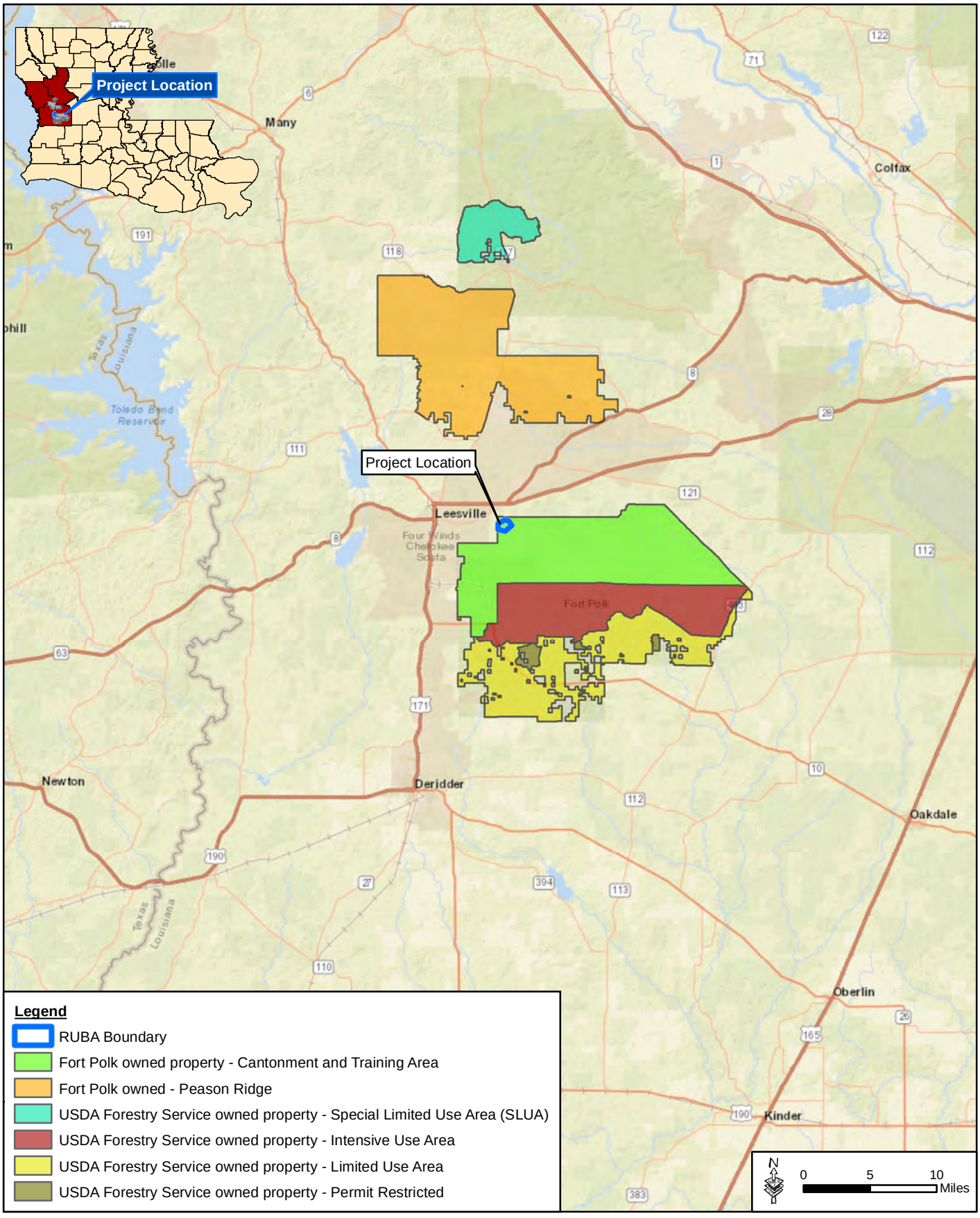

Figure 1-1. Location Map

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1.2 PURPOSE AND NEED FOR PROPOSED ACTION

The JRTC and Fort Polk requires a dedicated area for BCTs to mobilize, deploy, and demobilize for rotational training. A RUBA is a dedicated RSOI area. The current RUBA is not sufficient to support JRTC's BCT training mission. It is undersized, disjointed, and situated in an area that is too wet and poorly suited for development. The location of the current RUBA also interferes with other principal North Fort activities, and does not conform to the Fort Polk Area Development Plan (ADP). Additionally, while the existing buildings are useful for training, they do not replicate in-theater, tactical conditions or improve readiness by providing realistic, stressful joint and combined arms training. The proposed action of developing a RUBA in the Slagle 1 Training Area would enhance the world-class training of BCTs at JRTC and Fort Polk. During the North Fort Area Development Process, the planning team determined that the best location to site the RUBA would be in the Slagle 1 Training Area.

1.2.1 Purpose of the Proposed Action

The purpose of the proposed action is to develop an adequate RUBA with the capacity to support full BCTs prior to and following rotational combat activities.

1.2.2 Need of the Proposed Action

The JRTC is one of three CTCs throughout the Army focused on training for Army Brigade level combat operations. To accomplish its mission as a CTC, JRTC and Fort Polk requires a RUBA that would adequately support full BCTs prior to and following rotational combat activities. The current RUBA facility does not provide the capability to support a full BCT RSOI.

The current RUBA is not adequate to support JRTC's BCT training mission. The location of the RUBA in the North Fort cantonment area creates circumstances where the movement of BCTs between the RUBA and the training area conflict with daily North Fort cantonment activities. During each training rotation thousands of soldiers and their equipment arrive at Fort Polk and stage at the RUBA during mobilization to prepare for

the training event and then again afterwards during demobilization for review and preparation for return to their home station. This places a heavy burden on roads, parking, etc. and increases risks to personnel from greatly increased traffic thru congested areas and may create conflicts with other cantonment area activities. It is desirable for the RUBA to be located close to the Rotational Training Area and Major Supply Route (MSR) access. Also, it is desirable to separate rotational training unit (RTU) tactical vehicle and supply traffic from commercial and daily traffic serving North Fort. In addition, the status quo is not in alignment with the current ADP for the North Fort cantonment area.

Due to limited space, the prioritization of JRTC command and support facilities, the Commanding General's (CG) determination to locate the RUBA within the training area, conflicts with commercial and local traffic, and not aligning with the long-term ADP for North Fort, the proposed action is needed to support and enhance the training of BCTs.

The proposed development of a RUBA in the Slagle 1 Training Area would allow JRTC and Fort Polk to decommission the temporary facility within the North Fort cantonment area, align RUBA requirements with long-term development planning, and greatly improve the core mission requirement of training BCTs for combat operations. Following the establishment of the proposed RUBA in the Slagle 1 Training Area, existing facilities on North Fort would be re-evaluated and realigned or moved in accordance with the Installation Master Plan and the core mission requirement.

1.2.3 Criteria for Evaluation of Alternatives

Necessary characteristics of the alternatives considered:

- The RUBA should be sited close to Training Areas and major supply routes; equipment may arrive by commercial transport, convoy, or rail.
- Siting the RUBA in proximity to North Fort and Self Airfield is a requisite; however, the location should not interfere with operation of commercial and daily traffic of the Installation

- Replicate in-theater conditions and improve soldier readiness by providing realistic, stressful joint, and combined arms training.
- Sized to sufficiently support a complete BCT layout with distinct Battalion unit sets, except for the AVN BN, Tactical Operations Center (TOC), dining area with adjacent mobile kitchen, billeting, showers and latrines, tactical parking with stacking and staging lanes, vehicle maintenance canopies, and Container Express (CONEX) box storage.
- Close proximity to existing critical infrastructure (i.e., sanitary sewer, electrical service, and existing or developable roadways) and rotational support elements (Central Receiving and Shipping Point [CRSP] yard and brigade [BDE] White Cell and Safety, Company Operations Facility [COF], wash rack facilities, Simulation Center, Class IV/V Yards, and the railhead).
- Relatively level topography.
- The road system must be capable of supporting the full capacity of six battalions' vehicles and equipment as well as RUBA support vehicles (i.e., sewage and sanitation vehicles, maintenance vehicles, etc.),
- Minimize or avoid potential environmental impacts (i.e., wetlands, waterways, and flood zones).

1.3 SCOPE OF ENVIRONMENTAL ANALYSIS AND DECISION TO BE MADE

This EA considers the direct, indirect, and cumulative effects of the evaluated alternatives and the No Action Alternative for the development and operation (analytic scope) of a proposed RUBA in the Slagle 1 Training Area (geographic scope). This EA also provides a discussion of the affected environment and the potential impacts to environmental (air, soil, water, etc.) and biological (flora and fauna) resources. A team of subject matter experts identified the following Valued Environmental Components (VECs) for detailed evaluation:

- Soils
- Water Resources: Surface Water Quality (soil erosion from construction);

- Water Resources: Streams, Wetlands, Bogs, and other Surface Water Features;
- Biological Resources: Forest Ecology, Native Plants (species and communities), Invasive Plant Species, Species of Concern, Threatened and Endangered Species, Migratory Birds, Game Species.

1.4 PUBLIC PARTICIPATION

To facilitate analysis and the decision-making process, the Army maintains a policy of open communication with interested parties and invites public participation. All federal and state agencies, public and private organizations, and members of the public that have a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups are urged to participate in the Army's EA and decision-making processes, as guided by CEQ regulations at 40 CFR Parts 1500-1508 and ARs at 32 CFR Part 651.

As a result of internal Fort Polk scoping and the location and design features of the proposed action, no formal public scoping was required. A 30-day public comment period was the only opportunity offered to the public. The Final Draft EA and Draft Finding of No Significant Impact (DFNSI) were made available to Federal, state and local agencies, Native American tribes, and the public for review and comment from May 7 through June 7 2021. A Notice of Availability (NOA) announcing the release of the Final Draft EA and DFNSI was published in the *Alexandria Town Talk, Leesville Daily Leader, Beauregard Daily Times, and Fort Polk Guardian*. The EA and DFNSI were made available for public access at the Beauregard Parish Library, the Vernon Parish Library, and the Rapides Parish Library during the 30-day comment period. The Final Draft EA and DFNSI were also made available on-line at http://www.jrtc-polk.army.mil/environmental_compliance/NEPA.html. Proof of publication and posting of the EA at the public libraries is part of the Administrative Record. No public comments were received.

2.0 DESCRIPTION OF ALTERNATIVES

This section describes the proposed action and alternatives. Screening criteria are defined (consistent with the purpose and need statements in Sections 1.2.1 and 1.2.2) as a baseline to evaluate the range of possible alternatives in order to determine which will be carried forward for environmental analysis. To address the purpose and need, three alternatives will be analyzed in the EA, one of which is required to be the No Action Alternative (mandated in CEQ 40 CFR Parts 1500-1508 and Environmental Analysis of Army Actions 32 CFR Part 651.34). The proposed action is described in Section 2.1. Alternatives including the No Action Alternative are presented in Section 2.2. Alternatives considered but eliminated from detailed analysis are discussed in Section 2.3. To be considered for evaluation in the EA, an alternative must be feasible (capable of being implemented) and must meet the purpose and need for the project.

2.1 PROPOSED ACTION

The JRTC and Fort Polk requires the capacity to provide a training environment capable of challenging and evaluating BCTs combat and sustainment operations as its on-going mission. Currently, the JRTC and Fort Polk lacks a modern RUBA located adjacent to training areas that can support JRTC's training mission. The proposed action of developing a RUBA in the Slagle 1 Training Area would best support the JRTC and Fort Polk training mission of training BCTs for combat operations in line with the master plan. Locating the RUBA near the legacy FOB Warrior site would capitalize on the site's existing infrastructure to establish a cohesive, in-theater, tactical site to support a world-class training environment.

The proposed action is to construct a RUBA within the Slagle 1 Training Area in the vicinity of the legacy FOB Warrior site. The RUBA would be constructed to support a full BCT (+/- 6,200 personnel) and its full complement of equipment and materiel. Infrastructure may include: fencing, guard towers, sleeping quarters, latrines, showers, mess areas, maintenance canopies, TOCs, parking, utilities, and communications.

Three alternatives will be considered in the EA for development of the proposed RUBA. Alternatives 1 and 2 are located in the same general location in proximity to the legacy FOB Warrior site (Figure 2-1). Alternative 2 is shifted slightly north of Alternative 1 to minimize potential impacts on natural resources. Alternative 3 is the No Action Alternative. Alternatives 1 and 2 would meet the purpose and need for the proposed action by providing the infrastructure necessary to support BCT combat operations, and support the current ADP for the North Fort cantonment area. Alternative 3 (No Action) would result in the continued use of the RUBA in the North Fort cantonment area. This alternative does not meet the purpose and need for the proposed action, and is not in alignment with the ADP for the North cantonment area.

2.1.1 Alternative 1 (ADP Alternative)

Alternative 1 is located in the Slagle 1 Training Area in proximity to the legacy FOB Warrior site (see Figure 2-1). The project area is approximately 373 acres. All or part of the following infrastructure would be developed as part of Alternative 1: fencing, guard towers, sleeping quarters (+/- 6,200 personnel), latrines, showers, mess areas, maintenance canopies, TOC, parking, utilities, and communications. An existing sediment basin (Jeanne Junction) is located within the footprint of Alternative 1. The sediment basin was a mitigation measure to maintain soils on-site over time. Additionally eight to 12 sediment basins will be constructed as part of Alternative 1.

2.1.2 Alternative 2 (Environmentally Preferred Alternative)

Alternative 2 is located in proximity to Alternative 1; however, the project area is shifted to the north compared to Alternative 1 to minimize impacts to the environment (see Figure 2-1). The study area is approximately 308 acres and incorporates a 4-acre pond in its center. The proposed RUBA site would be approximately 200 acres. All the infrastructure described in Alternative 1 would be included as part of Alternative 2. The sediment basin described in Alternative 1 exists in the footprint for Alternative 2.

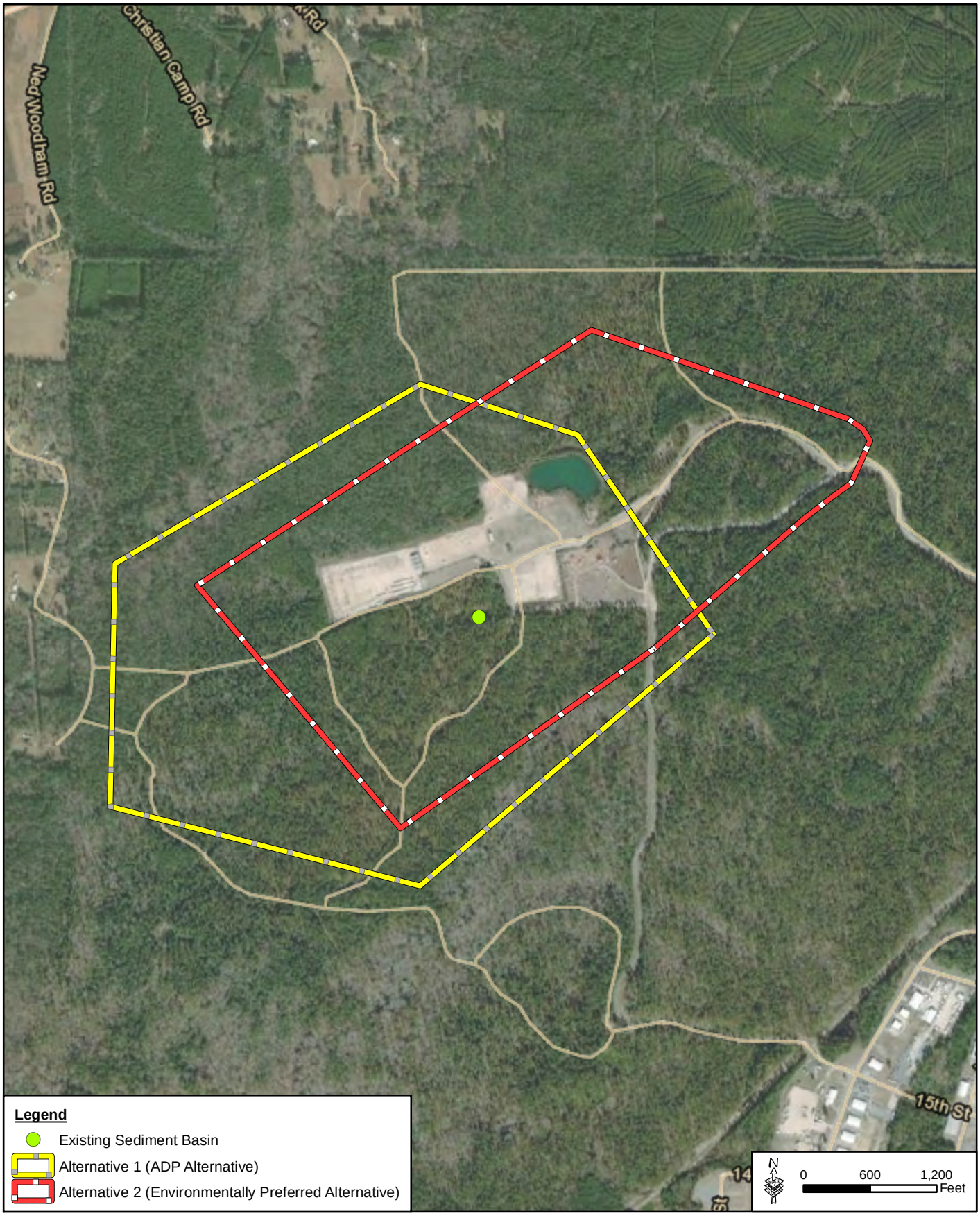

Figure 2-1. Alternative Map

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December 2020

2.1.3 Alternative 3 (No Action Alternative)

This alternative provides the baseline against which the potential effects of the proposed action and other alternatives are evaluated. Under this alternative, the proposed action would not be implemented requiring the continued use of the North Fort cantonment area. Additionally, Alternative 3 would not support the ADP for the North Fort cantonment area.

This alternative would not meet the purpose and need of the proposed action; however, this alternative (No Action Alternative) will be carried forward for analysis in the EA and provides a baseline for measuring the environmental consequences of the other two alternatives.

2.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED STUDY

Additionally, one other alternative, Self Army Airfield Alternative, was identified and eliminated from detailed analysis during the planning process. This alternative was proposed in the southeast corner of Self Army Airfield. The proposed site has steep topography and large stream networks which would restrict development of the proposed RUBA. This alternative was eliminated because the lack of developable acreage does not allow the full purpose and need to be met.

2.3 ALTERNATIVE SUMMARY

The alternatives considered in this EA must meet the purpose and need, as stated in Section 1.2. A total of three alternatives, including the No Action Alternative were identified. These alternatives include Alternative 1 (ADP Alternative), Alternative 2 (Environmentally Preferred Alternative), and Alternative 3 (No Action Alternative).

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This section describes the affected environment and methodology used to analyze the potential impacts (environmental consequences) on the affected environment that would result from implementation of the Alternatives for the development of a RUBA in the Slagle 1 Training Area. The affected environment represents baseline conditions against which environmental effects can be measured. An environmental impact or consequence is defined as a modification or change in the existing environment brought about by the action taken. Effects can be direct, indirect, or cumulative and can be temporary (short-term) or permanent (long-term). Effects can also vary in degree, ranging from only a slight discernable change to a drastic change in the environment. The terms “effect” and “impact” are synonymously used in this EA.

This EA focuses on resources and issues of concern identified during the internal scoping process (see Section 1.3) and on differences in effects among Alternatives. A tiered approach has been taken in the analysis for each VEC. Resource areas and issues of concern that were identified as having a very low level of concern are not discussed in detail. However, some resource areas that were identified as having a low level of concern are discussed on a limited basis. Those VECs that were identified as potentially having a medium or high level of concern are discussed in detail in this section.

3.2 VALUED ENVIRONMENTAL COMPONENTS AND MEASURE OF ENVIRONMENTAL EFFECTS

In 1997, CEQ published specific guidelines for Cumulative Effects Analysis (CEA), establishing a new impact assessment approach (or paradigm) that focuses on important regional resources, as opposed to the traditional action-impact approach used for direct and indirect effects. The new assessment approach focuses on VECs or resources that are important in a specific region. In 2007, the Army released its Draft

Cumulative Effects Guidance Manual. This manual provides a specific, detailed Army methodology to implement requirements outlined in the CEQ guidelines.

Utilization of this approach early on in the planning and decision-making process can effectively, systematically, and defensively identify the appropriate level of NEPA analysis required for each resource area. However, these VEC levels identified are not correlated with the level of anticipated effects.

To aid in the analysis of the environmental effects, to supplement guidance found in 32 CFR Part 651 and 40 CFR Parts 1500-1508, and to ensure a consistent and defensible evaluation of environmental effects, thresholds of concern were developed for each VEC. Resource management professionals and subject matter experts developed these thresholds. The spatial boundary and thresholds of concern for each VEC for the analysis of the alternatives are presented in Table 3-1.

The potential impacts of implementing a Proposed Action and Alternative(s) can be characterized by one of three types of impacts. They are as follows:

- ***Direct impact.*** Those effects caused by an action and that occur at the same time and place as the action.

- ***Indirect impact*****.** Those effects caused by an action and that occur later in time or are farther removed in distance from the action.

- ***Cumulative impact*****.** Those effects that result from the incremental impact of the action when added to "other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions". Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Table 3-1. Valued Environmental Components

Valued Environmental Component	Spatial Boundary	Threshold of Concern Proposed Action Would Cause or Result in
Land Use	Installation boundary or region of influence (ROI)	Concern that land use conflicts will occur. Examples include: preclusion of implementation of or conflicts with Fort Polk Integrated Natural Resources Management Plan or JRTC and Fort Polk Real Property Master Plan.
Geology	Geology within sub-watersheds of the installation boundary	Reduction in access to or availability of publicly or privately owned mineral resources.
Soils	Soils within the ROI	Soil loss or compaction to the extent that natural reestablishment of native vegetation within two growing seasons is precluded unless substantial rehabilitation efforts are undertaken.
Groundwater	Aquifer within the ROI	Degradation of aquifer quality; Violation of drinking water standards.
Water Resources: Streams, Wetlands, and Other Surface Water Resources	Sub-watershed, USACE jurisdictional Waters of the U.S., or state-designated stream segment within installation boundary	Sedimentation or discharge into streams, wetlands, Waters of the U.S., or state scenic streams within project footprint or adjacent to project within watershed (within a distance to be concerned about sedimentation); Net loss of wetlands (bogs, baygalls, hillside seeps, or riparian zones) within installation boundary due to direct or indirect effects (e.g. sedimentation).
Biological Resources: Forest Ecology, Native Plant Species and Communities, Nonnative and Invasive Plant Species	Installation boundary	Permanent conversion or net loss of forest lands at landscape scale of >5 percent relative to baseline; Permanent loss or degradation of designated rare/sensitive plant sites; Introduction or increased prevalence of undesirable non-native or invasive species.
Biological Resources: Species of Concern, Threatened and Endangered Species	Home range or protected habitat within the Installation boundary	Reduction of Red-cockaded Woodpecker (RCW) foraging habitat for one or more clusters/groups; Reduction of suitable habitat (e.g., gopher complexes) for Louisiana Pinesnake (LPS); Reduction in RCW or LPS habitat management unit (HMU) acreage; Permanent net loss of RCW foraging habitat from land base to a level below that required for achieving long-term RCW population recovery objectives; Elimination of time for biologists to manage these species; Direct mortality or other unpermitted “take” of threatened or endangered species.

Table 3-1, continued

Valued Environmental Component	Spatial Boundary	Threshold of Concern Proposed Action Would Cause or Result in
Biological Resources: Migratory birds and game species	Species home range, local habitat, or migratory range intersecting the Installation boundary	Long-term loss or impairment of a substantial portion of local habitat (species-dependent); Biologically significant decline in Migratory Bird Treaty Act (MBTA) population; Biologically significant decline in game species population.
Cultural Resources	Specific boundary of archaeological sites.	Irretrievable or irreversible damage to a prehistoric or historic site that is listed or is eligible/potentially eligible for listing on the National Register of Historic Places.
Noise	Land use zones within the ROI and Installation boundary	Exceedance of noise limit guidelines published in AR 200-1, Chapter 7 (1997); Exceedance of existing 65 dBA contour by 17 percent.
Air Quality	Airshed or Installation boundary	Violation of National Ambient Air Quality Standards (NAAQS).
Social Conditions: Public Access and Recreational Use, Public Services, Public Safety and Protection of Children, Environmental Justice	Installation boundary or ROI	Long-term substantial loss or displacement of recreational opportunities/resources relative to baseline; Substantial degradation of recreational value; Exceedance of Rational Threshold Value (RTV) for population and assessment of baseline social services; Need for increase in large-scale facilities (e.g. new school or hospital); Public safety hazard from military operations; Public health hazard from exposure to hazardous waste or hazardous materials; Disproportionate environmental health or safety risk to children; Disproportionate environmental, economic, social, or health impacts on minority or low income populations (EO 12898).
Socioeconomics	ROI	Exceedance of RTV for socioeconomic indicators (i.e., modeled population, personal income, employment, or business activity exceeds the difference between the maximum and average historical level over the past 19 years).

Table 3-1, continued

Valued Environmental Component	Spatial Boundary	Threshold of Concern Proposed Action Would Cause or Result in
Transportation and Infrastructure	Installation boundary or ROI	Decrease in Level-of-Service (LOS) of key installation arteries and collectors below the acceptable LOS; Road failure resulting in rutting, cracking, or other pavement problems that require substantial maintenance or rehabilitation activities; Violation of a Federal Aviation Administration (FAA) regulation that undermines the safety of commercial passengers or personnel at Alexandria International Airport/England Industrial Airpark; Impairment of installation's ability to meet federally mandated or Army objectives for waste minimization and pollution prevention; Accidence of existing facility or system capacity for hazardous waste/hazardous material management, storage, disposal, or emergency response; water supply and sewage treatment; or utility services.
General Compliance	Installation boundary or limits of affected environmental media	Violations of federal or state environmental rules, regulations, or permits held by the installation.

Environmental effects also may be expressed in terms of duration. The duration of short-term impacts is considered to be 1-year or less, and long-term impacts are described as lasting beyond 1-year. Long-term impacts can potentially continue in perpetuity.

In addition to the type and duration of an impact to a resource area, effects to resource areas are characterized by the relative magnitude of an environmental effect. Four terms are used throughout this EA to indicate the relative degree of predicted impacts that the Proposed Action and Alternatives would have. They are as follows:

- ***Negligible.*** The term used to indicate the relative degree of severity of an environmental effect that could occur, but might not be detectable.

- ***Minor.*** The term used to indicate the relative degree of severity of an environmental effect that is measurable, but is clearly not significant.

- ***Moderate.*** The term used to indicate the relative degree of severity of an environmental effect that might approach but not exceed a threshold of significance; for example, where a "threshold of concern" as described in Table 3-1, might be approached; where the predicted consequences of implementing an action suggest the need for additional care in following standard procedures, employing Best Management Practices (BMPs), or applying precautionary measures to minimize adverse effects; or where there is some uncertainty inherent in whether the effects forecast by a predictive model would occur.

- ***Significant.*** A measure in terms of the degree of severity of the environmental effect of an action reflecting the context and intensity of the effect, as defined in CEQ regulations (40 CFR 1508.27).

Lastly, environmental effects can either have beneficial or adverse impacts on a resource area.

The determination of the level of effects of the Proposed Action on threatened and endangered species follows the USFWS guidance, which uses somewhat different terms to describe the level of potential effects. Terms used by the USFWS are as follows:

- ***No Effect.*** The term used to indicate that no long or short-term effects are expected.

- ***Discountable.*** The term used to indicate that effects would be extremely unlikely to occur, or would be insignificant (the size of the impact should never reach the scale where "take" occurs) or completely beneficial. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct," and includes habitat modification and the impairment of essential behavioral patterns (i.e. breeding, feeding, sheltering; USFWS and National Marine Fisheries Service 1998). It should be noted that "discountable" as used herein is an aggregation of the three effect levels (discountable, insignificant, and completely beneficial) defined by the USFWS upon which a conclusion of "is not likely to affect" is made

- ***Adverse-individual.*** The term used to indicate effects that would be likely to adversely affect individuals, but not significantly affect populations.

- ***Adverse-population.*** The term used to indicate effects that would be likely to adversely affect the population.

3.3 RESOURCE AREAS AND EFFECTS NOT CONSIDERED

***Land Use*.** The Proposed Action does not include any proposal to change the land use on the Installation. Additionally, there are no changes to secondary uses of Army land. Thus, this resource area was eliminated from further analysis.

***Geology*.** The Proposed Action does not include new activities which would result in the extraction of mineral resources or affect any subsurface geological features. Thus, this resource area was eliminated from further analysis.

Groundwater. The Proposed Action does not include any new activities which would result in the degradation of aquifer quality or propose to remove water from an aquifer. Thus, this resource area was eliminated from further analysis.

Noise. The Proposed Action does not include any new activities which would result in the exceedance of noise limit guidelines. Thus, this resource area was eliminated from further analysis.

Air Quality. The Proposed Action is located within Vernon Parish, Louisiana. Air quality in Vernon Parish meets or exceeds the National Ambient Air Quality Standards established by the U.S. Environmental Protection Agency (USEPA 2020). Therefore, Vernon Parish is within attainment areas according to 40 CFR 81.319. The Proposed Action is not expected to have a discernible impact on Air Quality because the project would not result in any new permanent air emission sources. Thus, this resource area was eliminated from further analysis.

Social Conditions. The Proposed Action does not propose any action which would affect public access, recreational use, and public services. Additionally, the Proposed Action would not affect the level and frequency of public use within the designated areas at JRTC and Fort Polk. There would be no change in the management and maintenance of recreation areas. Thus, this resource area was eliminated from further analysis.

Socioeconomics. The Proposed Action does not propose any action which would affect the regional and local economics surrounding JRTC and Fort Polk land. Thus, this resource area was eliminated from further analysis.

Transportation and Infrastructure. The Proposed Action does not propose any action which would affect the level-of-service provided for and by the Installation. Thus, this resource area was eliminated from further analysis.

General Compliance. The Proposed Action does not propose any action which would cause a violation to federal or state environmental regulations or permits the Installation may hold. Thus, this resource area was eliminated from further analysis.

Cultural. The Proposed Action does not propose any action which would affect cultural resources. Thus, this resource area was eliminated from further analysis.

3.4 RESOURCE AREAS CONSIDERED ON A DETAILED BASIS

3.4.1 Soils

3.4.1.1 Affected Environment

There are five soil types that are located within the proposed alternatives. The United States Department of Agriculture (USDA) defines prime farmland as those soils that are best suited for food, feed, forage, fiber, or oilseed crops. One soil type located within the proposed alternatives is considered prime farmland (USDA NRCS 2002). Additionally, the USDA categorizes soils according to their erosion potential. Soil types that have an increased potential for erosion are correlated with positive land slope, frequency and duration of rainfall, and the amount of vegetative cover. The soil erosion hazard categories are slight, moderate, severe, or very severe. Erosion control measures are recommended for soils within the moderate, severe, or very severe categories. Approximately 40 percent of the soil types within the Proposed Alternatives are categorized as severe or very severe, and 60 percent are considered slight erosion hazards.

In addition to the categorical soil erosion hazard, the t-factor represents the approximate maximum average annual rate of soil erosion that can occur without causing a long-term decline in crop productivity. Soils located in the Proposed Alternatives are

described below and shown in Figures 3-1 and 3-2. Their acreages and t-factors are given in Table 3-2. Certain management practices such as the rehabilitation and establishment of vegetative cover on denuded areas is an effective means by which land managers can decrease erosion. The terrain in the proposed alternative sites is well suited for actions associated with the Proposed Action, but erosion poses an environmental issue if proper maintenance of the area is not implemented.

Cahaba fine sandy loam, 1 to 3 percent slopes (ChB), are very deep, well drained soils with medium runoff. These soils have moderate permeability, and gently slope. They are categorized as prime farmland and have a slight erosion hazard.

Eastwood silt loam, 1 to 5 percent slopes (EaC), are moderately well drained soils with medium runoff. These soils have very slow permeability, and slopes are gentle to moderate. These are not categorized as prime farmland and have a severe erosion hazard.

Eastwood silt loam, 5 to 12 percent slopes (EAE), are moderately well drained soils with rapid runoff. These soils have very slow permeability, and they are sloping to strongly sloping. These are not categorized as prime farmland and they have a very severe erosion hazard.

Guyton-Iuka complex, frequently flooded (GYA), are level to nearly level soils, moderately to poorly drained, and have slow runoff and moderate permeability. These soils are found in areas that are inundated by fast flowing floodwater up to 6 feet deep from several hours to several days. These are not categorized as prime farmland and have a slight erosion hazard.

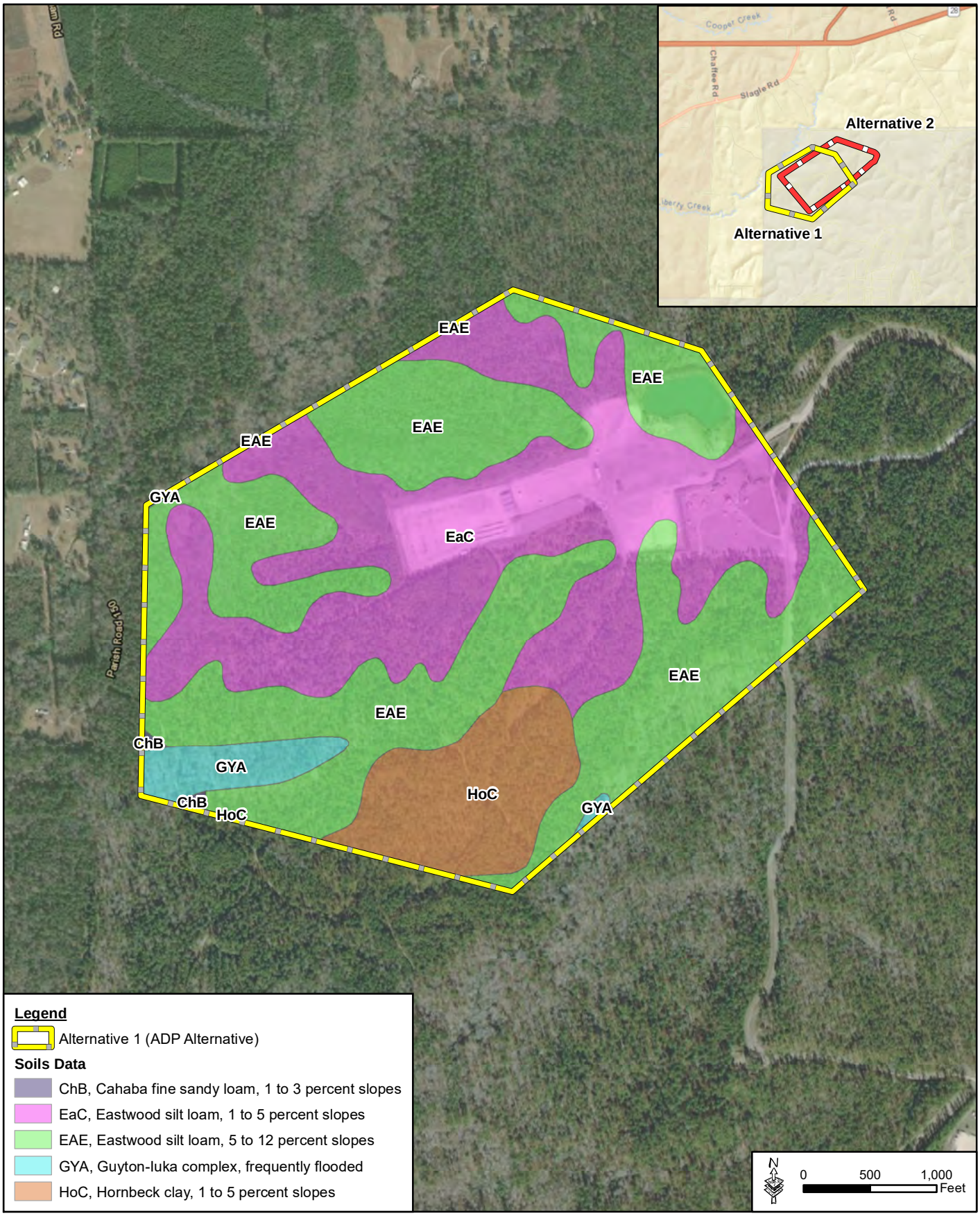

Figure 3-1. Soils Map – Alternative 1

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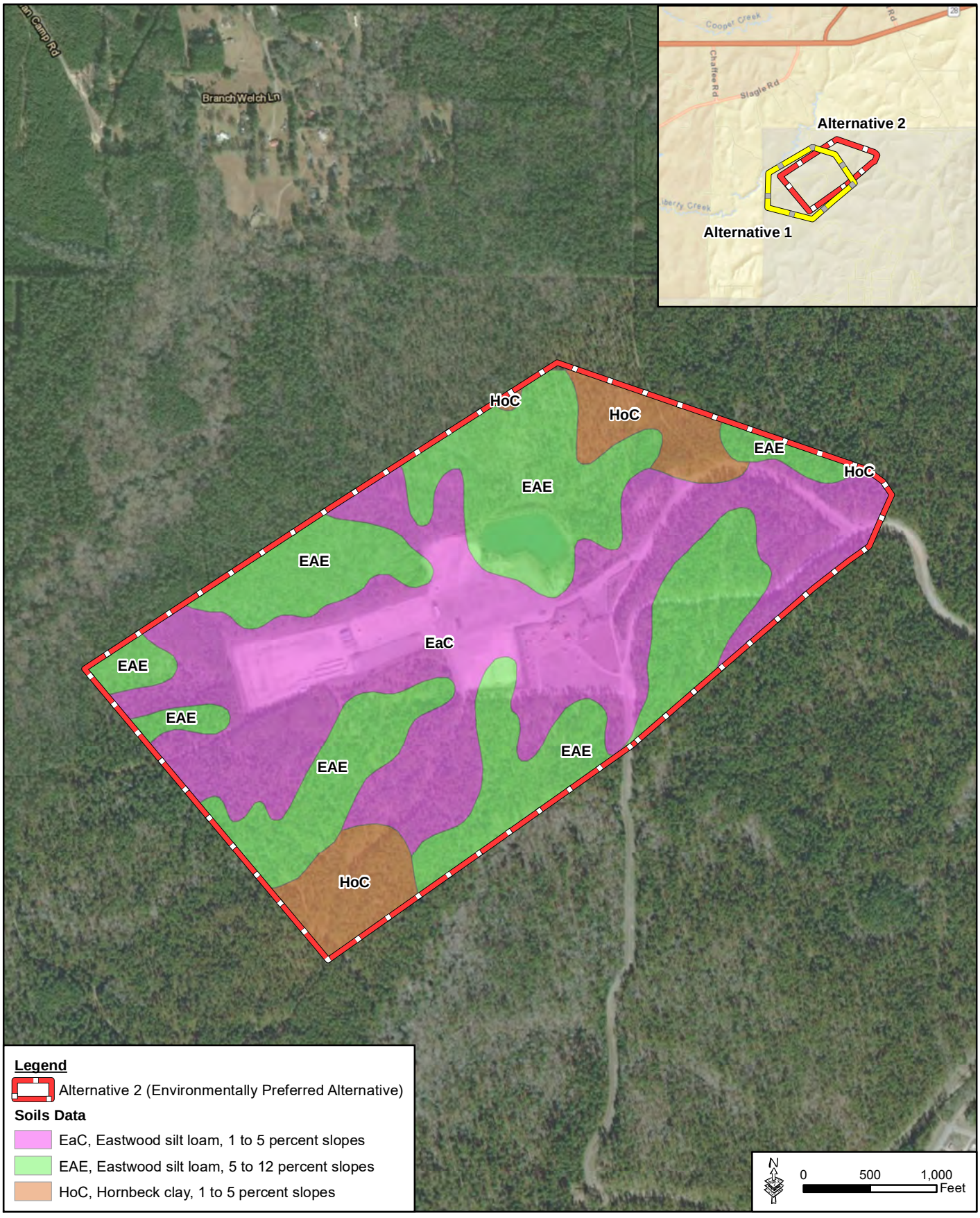

Figure 3-2. Soils Map – Alternative 2

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Table 3-2. Soil Types within the Proposed Alternatives

Soil Series	t-factor (tons/acre/year)	Acreage	
		Alternative 1	Alternative 2
Cahaba fine sandy loam (ChB)	5	0.72	-
Eastwood silt loam (EaC)	4	149.16	148.14
Eastwood silt loam (EAE)	4	173.39	130.83
Guyton-Iuka complex (GYA)	5	12.17	-
Hornbeck clay (HoC)	5	37.54	28.63

Hornbeck clay, 1 to 5 percent slopes (HoC), are very deep, moderately well drained soils with medium runoff. These soils have slow permeability, and they gently to moderately sloping. These are not categorized as prime farmland and have a slight erosion hazard.

Construction/Screening Commitments

The following measures will be implemented prior to, during, and following construction.

- ***Sediment Basins*.** A total of eight to 12 sediment basins would be installed prior to construction to reduce sedimentation. The sediment basins would be addressed under a follow-up NEPA process.

- ***SWPPP*.** A SWPPP, which would be implemented during construction, would ensure that any soil displacement during construction would be contained on-site.

- ***Revegetation*.** Upon completion of construction, the project site would be reseeded/revegetated with native vegetation at the landscape level and would be maintained by DPTMS.

Previous Commitments

Fort Polk has established programs and procedures to minimize soil erosion on its training lands. The following measures are currently implemented installation wide and would be used to maintain and sustain the training lands associated with the Proposed Action. The following describes existing procedures and programs utilized to decrease soil displacement and thereby protect waterways from sedimentation.

- ***Maneuver Damage Inspection and Monitoring.*** JRTC and Fort Polk maneuver damage inspection and repair program is being expanded to include identification, repair, and monitoring for damages from routine home station and rotational training events. All training lands are inspected for damage to soils, vegetation, streams, and wetlands, and sensitive environmental resources following each training exercise and corrective actions are initiated to minimize soil displacement.

- ***Development and Implementation of Watershed Management Plans.*** Watershed management plans are implemented on the Installation where ground disturbing military activities are permitted. Watershed sites requiring rehabilitation or maintenance would be prioritized by identification of severity of erosion problem areas. Implementation of the plans would involve design and installation of BMPs such as a sediment basin network or individual sediment basins in specific watersheds, silt fences, check dams, riprap in drainage pathways, erosion mats, reseeding, gabions, or enhancement/preservation of wider vegetated buffers adjacent to streams.

- ***Annual Maintenance of Sediment Basins.*** All sediment basins are inspected to ensure they are functioning properly. Basin maintenance will be prioritized according to need. Excess sediment will be removed from basins, applied to upland areas, and stabilized.

3.4.1.2 Environmental Consequences

Alternative 1 (ADP Alternative)

Under this Alternative, approximately 370 acres of soils would be disturbed as a result of implementing the RUBA. The majority of the soils located within the footprint of Alternative 1 are considered to have a slight erosion potential (60 percent), followed by severe (20 percent) and very severe (20 percent). A total of eight to 12 sediment basins would be installed prior to construction to reduce sedimentation. The sediment basins would be addressed under a follow-up NEPA process. A SWPPP, which would be implemented during construction, would ensure that any soil displacement during construction would be contained on-site. Upon completion of construction, the project site would be reseeded/revegetated with native vegetation at the landscape level and would be maintained by DPTMS. The programs described above in Section 3.4.6.1 will continue to be implemented at the Installation. These programs would adequately preclude potential soil displacement due to erosion during operation of the RUBA. The area would also be inspected by the maneuver damage inspection and monitoring and annual maintenance of sediment basins programs. Therefore, impacts on soils from Alternative 1 during construction are anticipated to be direct, short-term, minor, and adverse. Impacts during operation of the RUBA are anticipated to be negligible, direct, long-term, and adverse.

Alternative 2 (Environmentally Preferred Alternative)

Under this Alternative, approximately 308 acres of soils would be disturbed as a result of implementing the RUBA. Soils located within the footprint of Alternative 2 are considered to have equal parts slight (33 percent), severe (33 percent), and very severe (33 percent) erosion potential. Construction/Screening Commitments and Previous Commitments would be the same as those described for Alternative 1. Therefore, impacts on soils from Alternative 2 are anticipated to be direct, short-term, minor, and adverse during construction and direct, negligible, long-term, and adverse during operation of the RUBA.

Alternative 3 (No Action Alternative)

There would be no impacts to soil resources under this Alternative, as there would be no changes to the current baseline condition for these resources.

3.4.2 Surface Water Quality (Soil Erosion from Construction)

3.4.2.1 Affected Environment

Surface water systems are typically defined in terms of watersheds. A watershed is an area measured in a horizontal plane and enclosed by a topographic divide that contributes direct surface runoff into a water body (Fort Polk 2009). Watersheds drain, capture, filter, and store water and determine its subsequent release, and a watershed divides the landscape into hydrologically defined areas whose abiotic and biotic components interact. Watersheds are delineated into hydrologic units by the United States Geological Survey (USGS) using a nationwide system based on surface features. Both of the two alternatives are located within the Lower Sabine watershed (USGS 2020; see Figure 3-3).

Sedimentation to streams and riverine habitat is a water quality issue of concern. Whenever soils are disturbed, the potential for erosion or transport of sediment to streams, wetlands, and riverine habitat exists. Water quality at Fort Polk is regulated by the Louisiana Department of Environmental Quality (LDEQ) under Louisiana Title 33, Part IX-Water Quality Regulations, Chapter 11. This regulation establishes water quality criteria as well as use designations. Nonpoint sources are the primary pollutant sources of concern for surface water at Fort Polk. Nonpoint water pollution may include runoff from storm water, erosion, groundwater, septic systems, direct deposition of pollutants from wildlife, livestock, or atmospheric fallout, or various training activities. Under Section 303 (d) of the Clean Water Act (CWA), the EPA maintains a list of impaired or threatened waters (e.g., streams, river segments, lakes) along with the pollutant causing the impairment, if known. Liberty Creek is the only named stream that is located within Alternatives 1 and 2; there are also several small unnamed tributaries.

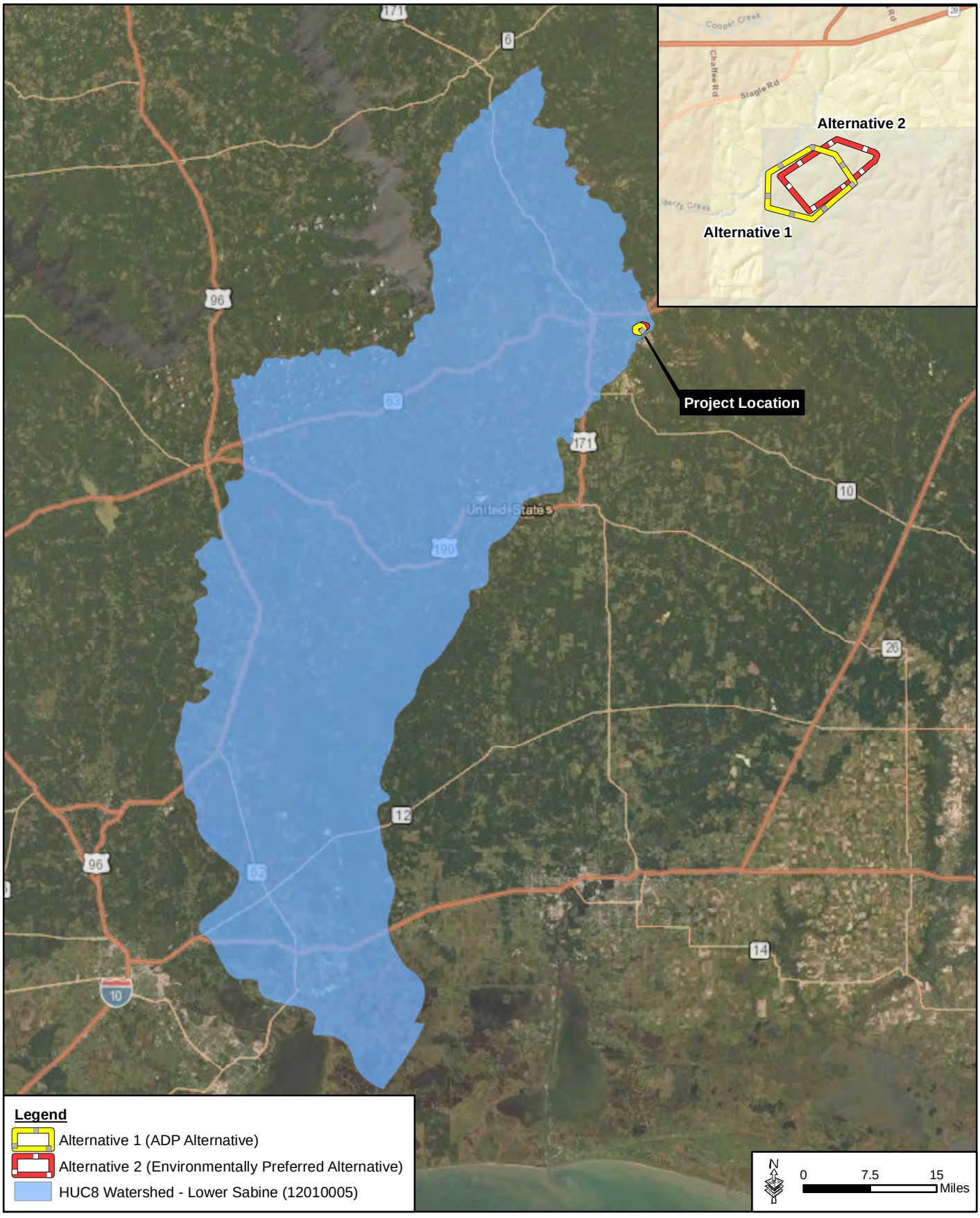

Figure 3-3. Proposed Action Watersheds

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Alternative 1 has 4.0 linear miles of streams, and Alternative 2 has 3.4 linear miles (see Figures 3-4 and 3-5). None of the streams within the two alternatives are listed on the 303(d) list of impaired waters (CBI 2020).

Under Section 303 (d) of the Clean Water Act (CWA), the EPA maintains a list of impaired or threatened waters (e.g., streams, river segments, lakes) along with the pollutant causing the impairment, if known. Liberty Creek is the only named stream that is located within Alternatives 1 and 2; there are also several small unnamed tributaries. Alternative 1 has 4.0 linear miles of streams, and Alternative 2 has 3.4 linear miles (see Figures 3-4 and 3-5). None of the streams within the two alternatives are listed on the 303(d) list of impaired waters (CBI 2020).

To protect water ways from sedimentation, Fort Polk implements large scale structural sedimentation control measures such as sediment basins. A sediment basin is usually constructed downslope of a hill or at the beginning of a drainage way. These water retention structures are designed to intercept, capture, and filter runoff by reducing water flow velocity and providing retention time adequate to allow soil particles to settle out before the water exits the impoundment. Sediment basins do not lessen soil loss, but decrease the amount of sediments entering and potentially impairing streams. By design, these structures capture displaced soil particles, which can then be gathered from the sediment basin and redistributed as needed for rehabilitation of disturbed lands. The Installation began installing sediment basins during the 1980s. Sediment basins have been installed at numerous sites on the Installation that are subject to intensive military training activities and/or the potential for soil erosion.

Construction/Screening Commitments

The following measures will be implemented prior to, during, and following construction.

- ***Sediment Basins*.** A total of eight to 12 sediment basins would be installed prior to construction to reduce sedimentation. The sediment basins would be addressed under a follow-up NEPA process.

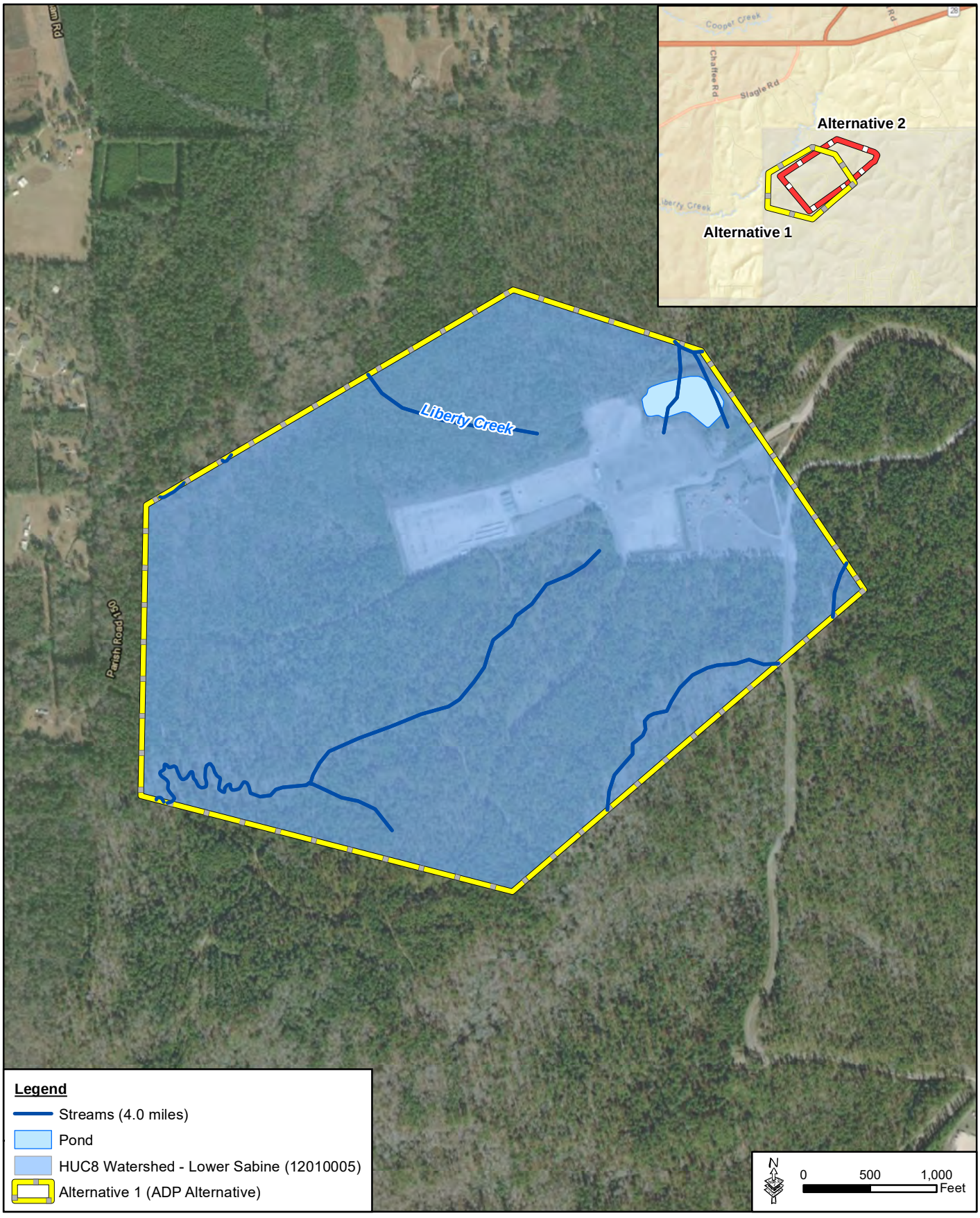

Figure 3-4. Surface Water – Alternative 1

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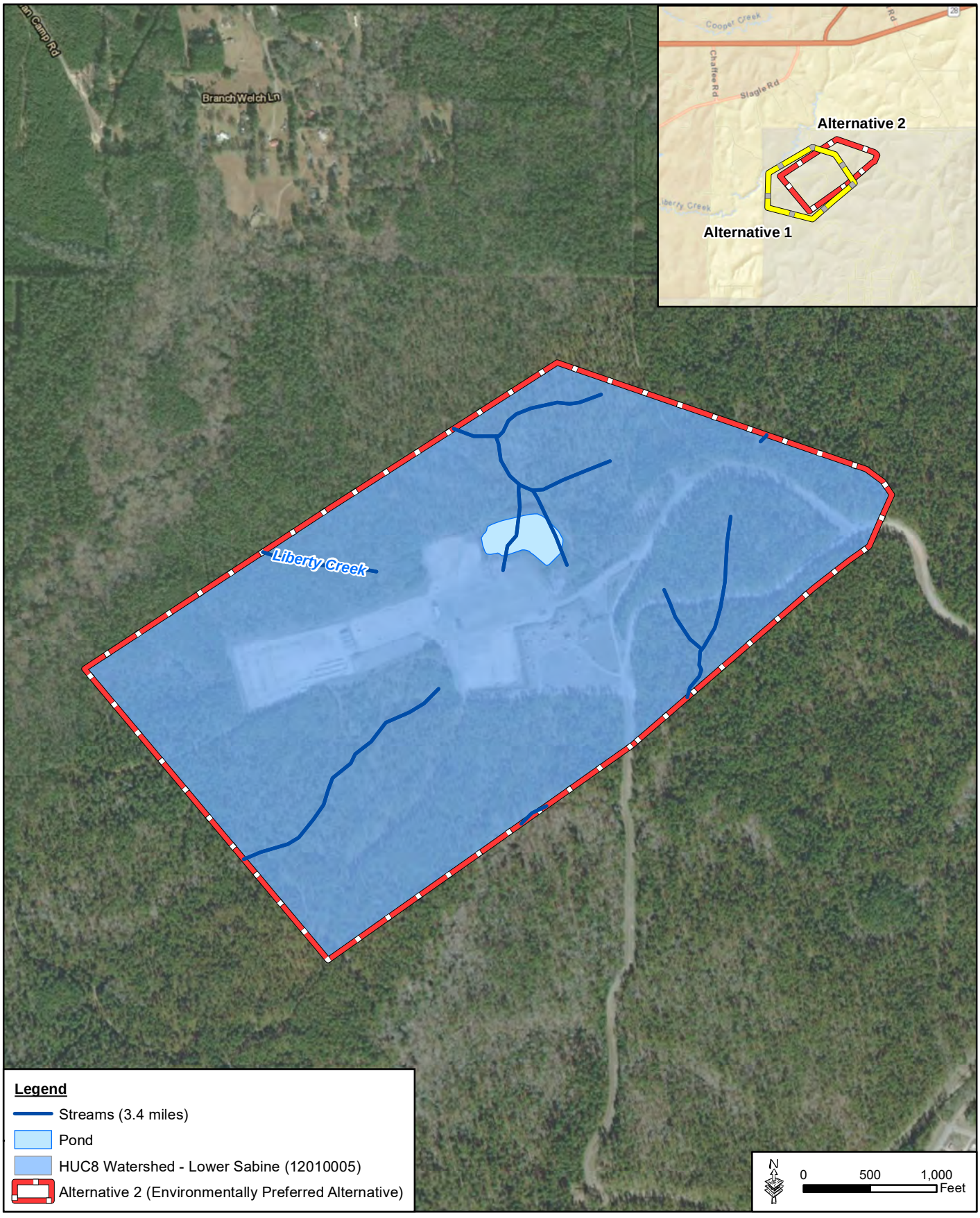

Figure 3-5. Surface Water – Alternative 2

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- ***SWPPP*.** A SWPPP, which would be implemented during construction, would ensure that any soil displacement during construction would be contained on-site.

- ***Revegetation.*** Upon completion of construction, the project site would be reseeded/revegetated with native vegetation at the landscape level and would be maintained by DPTMS.

Previous Commitments

Fort Polk has established programs and procedures to protect watersheds within its training lands. The following measures are currently implemented Installation-wide and would be used to maintain and sustain the proposed RUBA construction associated with the Proposed Action, and to protect watersheds and waterways from sedimentation.

- ***Development of Stream Gage Network*.** U.S. Geological Survey (USGS) and Fort Pork Environmental and natural Resources Management Division (ENRMD) have established a network of stream gaging stations to monitor stream flow and water quality parameters for the purpose of assessing stream response to changes in training intensity or land use. Data collected by the gages assist with estimating and mitigating sedimentation rates, a water quality issue of concern because the highly erodible nature of the soils and the potential for construction and training activities to increase soil erosion and delivery of sediment to streams.

- ***Construction Process Oversight*.** Procedures to ensure that environmental compliance requirements and measures to reduce adverse effects to environmentally sensitive resources are included in contract specifications for military construction projects. Contracting Officer Representative (COR) would ensure compliance with specified limits of construction, construction sequencing, Section 404 permit conditions, SWPPPs, and other environmental consideration during construction, as specified in construction specifications, NEPA, and permit

documents. The COR would review environmental requirements before construction, coordinate with the ENRMD NEPA document point-of-contact to ensure compliance, and have authority to halt construction if work is not performed in accordance with environmental requirements.

- ***Annual Maintenance of Sediment Basins*.** All sediment basins are inspected to ensure they are functioning properly. Basin maintenance will be prioritized according to need. Excess sediment will be removed from basins, applied to upland areas, and stabilized.

- ***Maneuver Damage Inspection and Monitoring.*** JRTC and Fort Polk maneuver damage inspection and repair program is being expanded to include identification, repair, and monitoring for damages from routine home station and rotational training events. All training lands are inspected for damage to soils, vegetation, streams, and wetlands, and sensitive environmental resources following each training exercise and corrective actions are initiated to minimize soil displacement.

3.4.2.2 Environmental Consequences

Alternative 1 (ADP Alternative)

Under this Alternative approximately 370 acres within the Lower Sabine watershed would be impacted. A total of eight to 12 sediment basins would be installed prior to construction to reduce sedimentation. The sediment basins would be addressed under a follow-up NEPA process. A SWPPP, which would be implemented prior to construction, would ensure that any soil displacement during construction would be contained on-site. Implementation of the SWPPP prior to any other construction will offset the environmental impacts to water resources during the construction and operation of the Proposed Action. Upon completion of construction, the project site would be reseeded/revegetated with native vegetation at the landscape level and would be maintained by DPTMS. The programs described above in Section 3.4.6.1 will continue to be implemented at the Installation. These programs would adequately

preclude potential soil displacement due to erosion during operation of the RUBA. The area would also be inspected by the maneuver damage inspection and monitoring and annual maintenance of sediment basins programs. Adverse impacts could occur during construction due to a natural rain event that could cause soil displacement, as approximately 40 percent of the soils within this Alternative have either severe or very severe erosion potential (see Section 3.4.1). Impacts on surface water quality are anticipated to be direct, short-term, adverse, and negligible during construction of the RUBA. During operation the impacts are anticipated to be direct, long-term, negligible, and beneficial. BMPs implemented as part of the SWPPP and Department of the Army Permit would minimize potential impacts associated with erosion and sedimentation.

Alternative 2 (Environmentally Preferred Alternative)

As a result of this Alternative, approximately 308 acres within the Lower Sabine watershed would be impacted. Approximately 66 percent of the soils within Alternative 2 have either severe or very severe erosion potential (see Section 3.4.1). Impacts to surface water quality under this Alternative would be similar to those described for Alternative 1.

Alternative 3 (No Action Alternative)

There would be no impacts to water resources under this Alternative, as there would be no changes to the current baseline condition for these resources.

3.4.3 Water Resources: Streams, Wetlands, and Other Surface Water Resources

3.4.3.1 Affected Environment

Wetlands are protected as a subset of “Waters of the United States” (Waters of the U.S.) under Section 404 of the CWA. Wetlands are defined as “areas that are inundated or flooded by surface or groundwater at a frequency and duration to support and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (CFR 33, Part 328.3[b]). Section 404 of the CWA requires permitting for certain activities occurring within jurisdictional wetlands.

Louisiana accounts for about 25 percent of the Nation's coastal wetlands, 40 percent of the Nation's salt marsh, and 80 percent of the coastal wetland losses (Fort Polk 2016). Much of the attention is given to Louisiana's coastal wetlands and the historic loss of these resources. However, the state also contains approximately 1.7 million acres of freshwater wetlands within its interior. Wetlands in areas of Fort Polk generally consist of freshwater bogs, baygalls, and swamps. Freshwater bogs are in areas where the water table is near the surface and these bogs are saturated for most of the year (Fort Polk 2010); the hydrology of these bogs is maintained by groundwater seepage or overland flow. Baygalls are maintained either by seepage from upslope locations or high water tables (Fort Polk 2010). Swamps are seasonally saturated and flood infrequently; these are maintained by groundwater seepage, rainfall, perched water tables, or surface water (Fort Polk 2010).

NEPA requires that projects be evaluated for possible impacts on wetland resources. In most cases, the Environmental and Natural Resources Management Division (ENRMD) makes the initial evaluation. A wetland delineation is conducted if the area is considered to potentially contain Waters of the U.S., including wetlands, and a wetland findings report is prepared. For projects with the potential for impacts, the wetlands findings report is referred to the USACE for a preliminary jurisdictional determination. Coordination with the USACE under the CWA is required for dredging or placement of fill within jurisdictional wetlands, and mitigation is required for any unavoidable impacts on jurisdictional wetlands.

Gulf South Research Corporation (GSRC) conducted a wetland delineation of the Proposed Alternatives between February 26 and 27, 2020. The potentially jurisdictional wetlands and Waters of the U.S. that were found in each of the alternatives are provided in Table 3-3 and shown in Figures 3-6 and 3-7.

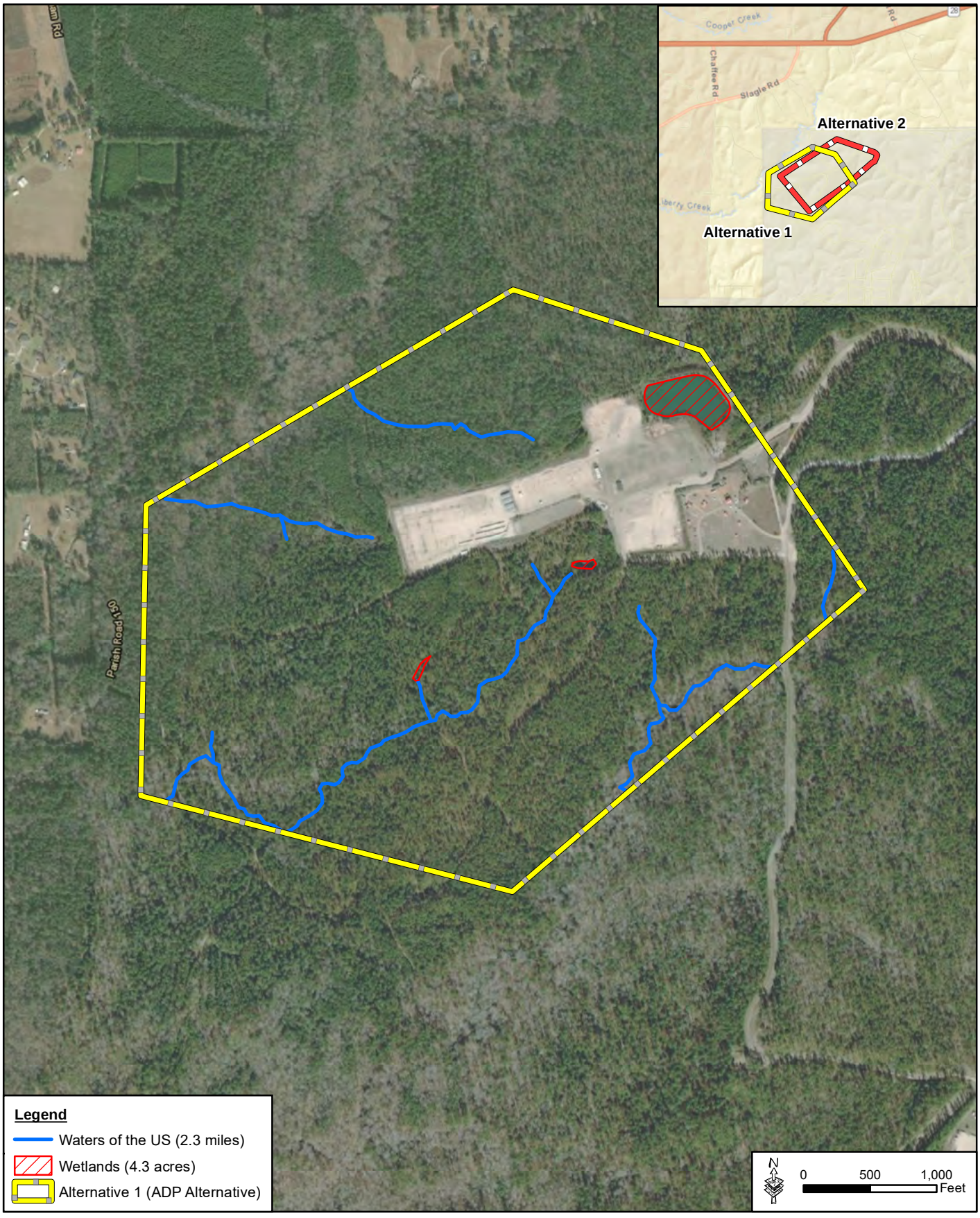

Figure 3-6. Wetlands – Alternative 1

GSRC

September 2020

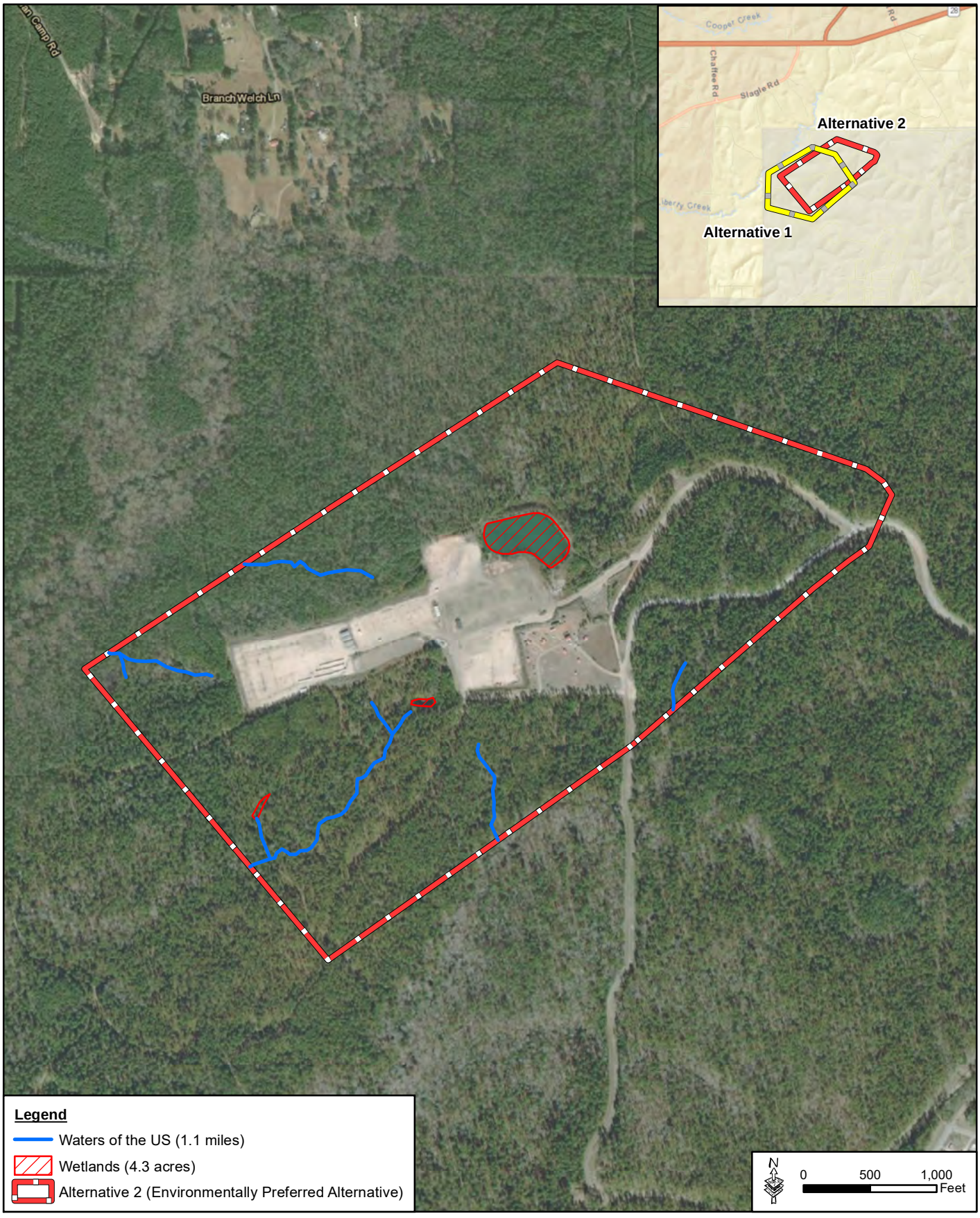

Figure 3-7. Wetlands – Alternative 2

GSRC

September 2020

Table 3-3. Wetlands and Waters of the U.S. in each Alternative

Alternative	Potentially jurisdictional wetlands (acres)	Potential Waters of the U.S (linear miles)
Alternative 1	4.3	2.3
Alternative 2	4.3	1.1

Source: GSRC 2020

Previous Commitments

Fort Polk has established programs and procedures to protect water resources within its training lands. The following measures are currently implemented Installation-wide and would be used to maintain and sustain the proposed RUBA associated with the Proposed Action. The following describes existing procedures and programs utilized to protect watersheds and thereby protect waterways from sedimentation.

- ***Development of a Stream Gage Network*.** The USGS and Fort Polk ENRMD have established a network of stream gage stations to monitor stream flow and water quality parameters for the purpose of assessing stream responses to changes in training intensity or land use. Data collected by the gages assists with estimating and mitigating sedimentation rates, a water quality issue of concern due to the highly erodible nature of soils and the potential for construction and training activities to increase soil erosion and sedimentation in streams.

- ***Construction Process Oversight*.** Procedures to ensure that environmental compliance requirements and measures to reduce adverse effects to environmentally sensitive resources are included in contract specifications for military construction projects. The Contracting Office Representative (COR) would ensure compliance with specified limits of construction, construction sequencing, Section 404 permit conditions, a Stormwater Pollution Prevention Plan (SWPPP), and other environmental considerations during construction, as specified in construction specifications, NEPA, and permit documents. The COR

would review environmental requirements before construction, coordinate with the ENRMD NEPA document point-of-contact to ensure compliance, and have the authority to halt construction if work is not performed in accordance with environmental requirements.

- ***Annual Maintenance of Sediment Basins*.** All sediment basins are inspected to ensure they are functioning properly. Basin maintenance is prioritized according to need. Excess sediment is removed from basins, applied to upland areas, and stabilized.

- ***Maneuver Damage Inspection and Monitoring.*** JRTC and Fort Polk maneuver damage inspection and repair program is being expanded to include identification, repair, and monitoring for damages from routine home station and rotational training events. All training lands are inspected for damage to soils, vegetation, streams, and wetlands, and sensitive environmental resources following each training exercise and corrective actions are initiated to minimize soil displacement.

3.4.3.2 Environmental Consequences

Alternative 1 (ADP Alternative)

Approximately 4 miles of streams, 4.3 acres of wetlands, and 2.3 miles of potential Waters of the U.S. would be impacted through the implementation of this Alternative (see Figures 3-4 and 3-6). Fort Polk would obtain a Section 404 permit for unavoidable impacts to wetlands and would purchase mitigation credits to offset potential impacts to wetlands as part of this alternative. Prior to any construction, a SWPPP would be developed for the entire project footprint. The purpose of the SWPPP is to maintain and control soils within the construction site, and it precludes and prevents the movement of soils away from the construction site footprint.

Impacts on wetlands and Waters of the U.S. would be direct, moderate, and adverse during construction. The issuance of a Department of the Army Permit and resulting

mitigation would reduce the impact level to less than significant. Mitigation ensures the project will result in no net loss of wetlands and the project is in compliance with Section 404 of the CWA.

Alternative 2 (Environmentally Preferred Alternative)

Approximately 3.4 miles of streams, 4.3 acres of wetlands, and 1.1 miles of potential Waters of the U.S. would be impacted through the implementation of this Alternative (see Figure 3-5 and 3-7). Fort Polk would obtain a Section 404 permit for unavoidable impacts to wetlands and would purchase mitigation credits to offset potential impacts to wetlands as part of this alternative. Prior to any construction, a SWPPP would be developed for the entire project footprint. The purpose of the SWPPP is to maintain and control soils within the construction site, and it precludes and prevents the movement of soils away from the construction site footprint.

Impacts on wetlands and Waters of the U.S. would be direct, moderate, and adverse during construction. The issuance of a Department of the Army Permit and resulting mitigation would reduce the impact level to less than significant. Mitigation ensures the project will result in no net loss of wetlands and the project is in compliance with Section 404 of the CWA.

Alternative 3 (No Action Alternative)

There would be no impacts to surface water resources under this Alternative, as there would be no changes to the current baseline condition for these resources.

3.4.4 Biological Resources: Forest Ecology, Native Plants, and Invasive Plant Species

3.4.4.1 Affected Environment

The Louisiana Wildlife Action Plan (WAP) divides the state into six different ecoregions. It defines an ecoregion as an area which shares similar ecological attributes such as vegetation, soils, geology, climate, hydrology, and wildlife. The Proposed Action area lies in the West Gulf Coastal Plain ecoregion; historically, this ecoregion contained upland longleaf pine (*Pinus palustris*) forests in association with hardwood slope forests

and mixed hardwood-loblolly forests. Additionally, forested seeps and hillside seepage bogs occurred historically along slopes at lower elevations (Fork Polk 2010). These associations were likely characteristic of the study area prior to timber management (Fort Polk 2010).

Forest Ecology

Installation botanists have identified 23 vegetation community types on the Installation and seven of these occur within the Proposed Action area. The vegetation community types located within the two Alternatives include shortleaf forest, mixed pine/hardwood forest, clay riparian, Fleming calcareous forest, artificial prairie, open water, and urban development (Fort Polk data). Both artificial prairie and urban development are considered disturbed community types while the remaining are natural communities. The acreages and proportion of each of these vegetation communities within the two Proposed Alternatives are provided in Table 3-4 and are shown in Figures 3-8 and 3-9.

Table 3-4. Vegetation Communities within the Proposed Alternatives

Vegetation Type	Alternative 1 (acres)	Alternative 2 (acres)
Artificial prairie	1.8 (0.5)	11.9 (3.8)
Clay riparian	69.7 (18.8)	47.6 (15.4)
Fleming calcareous forest	37.5 (10.1)	27.7 (9.0)
Mixed pine/hardwood forest	70.5 (19.1)	18.7 (6.0)
Mixed pine forest	130.8 (35.3)	141.8 (46.6)
Urban development	56.3 (15.2)	56.5 (18.3)
Water	3.5 (0.95)	3.6 (1.1)
Total	**370.1**	**307.8**

Source: Fort Polk GIS data 2020

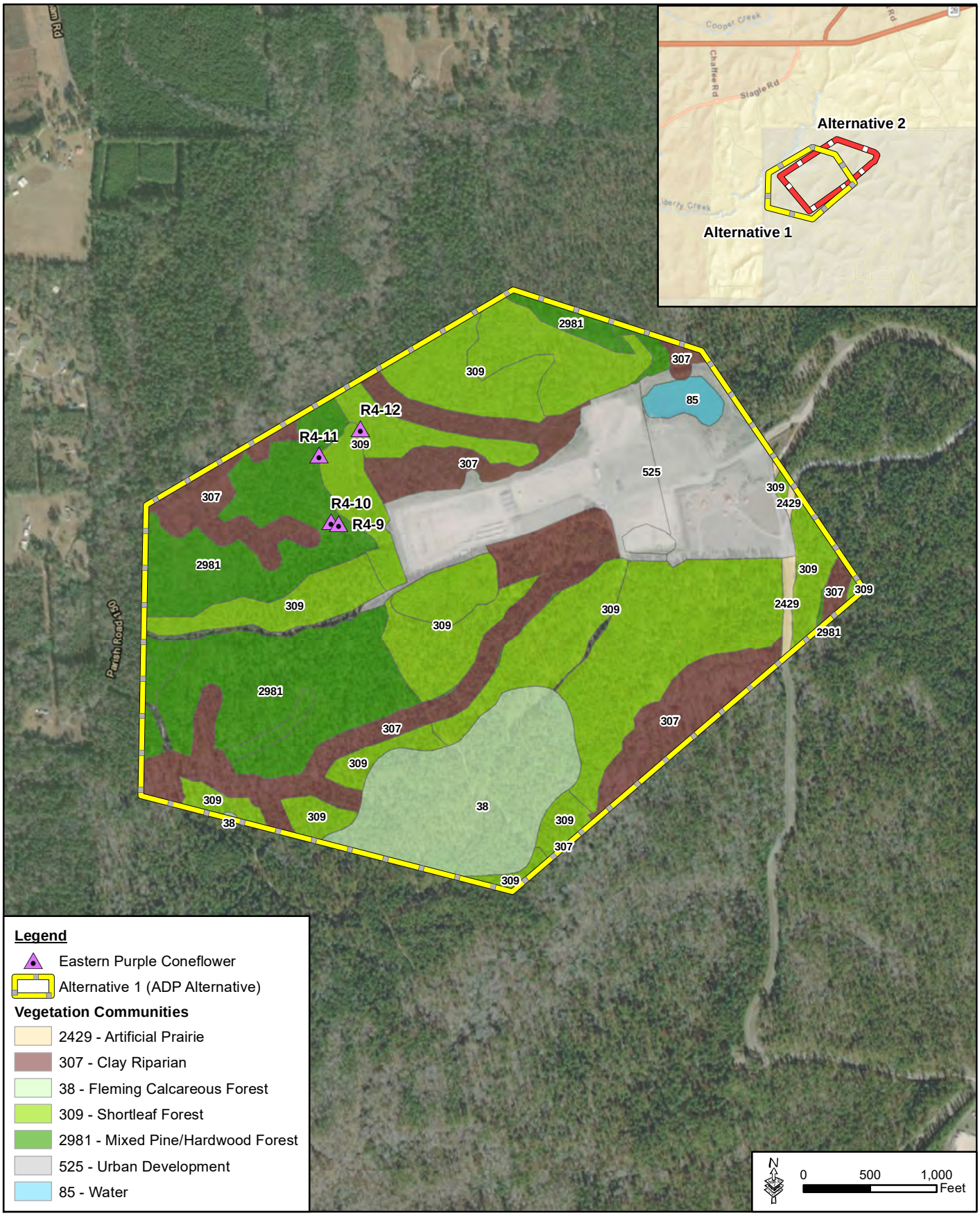

Figure 3-8. Vegetation Communities – Alternative 1

GSRC

September 2020

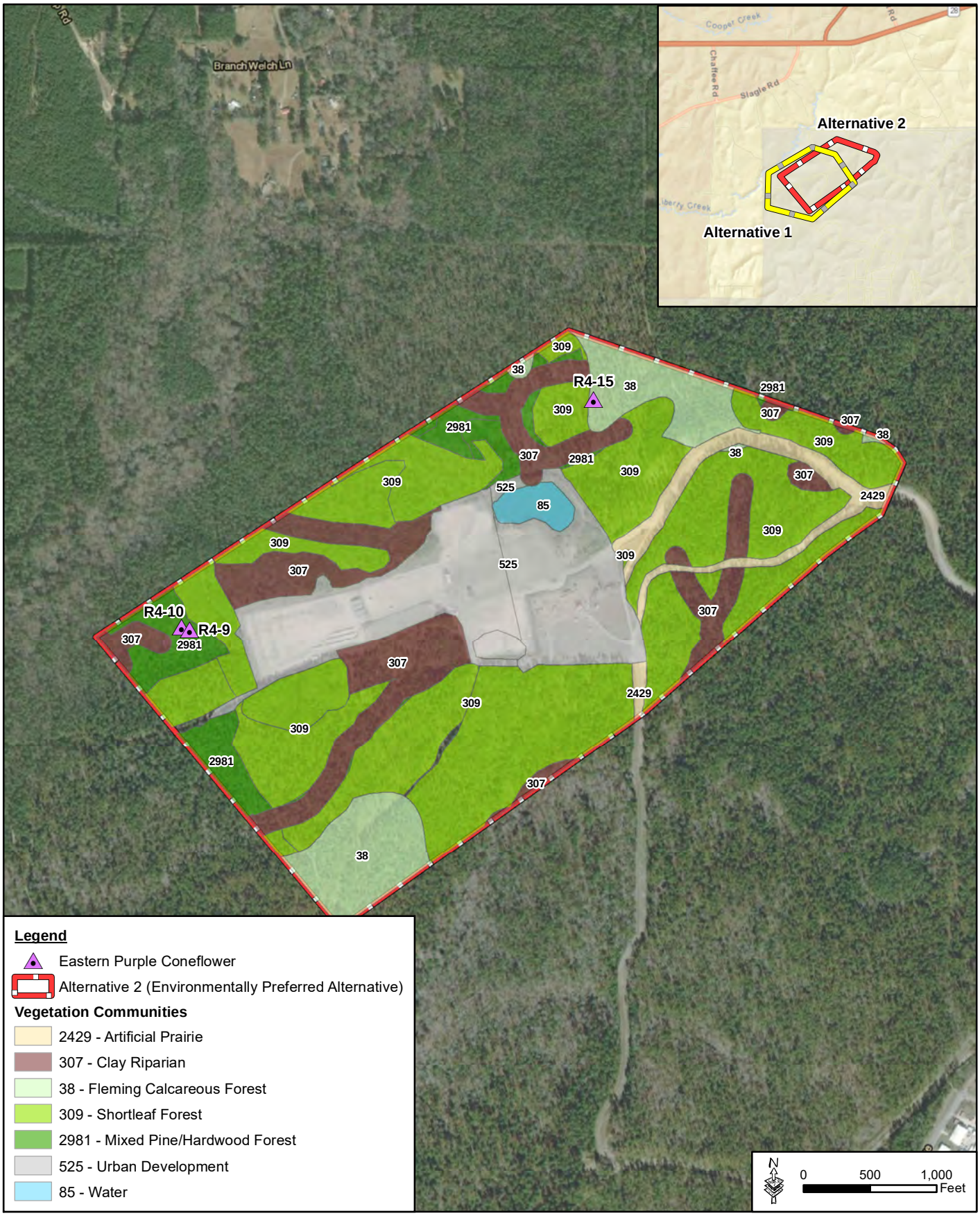

Figure 3-9. Vegetation Communities – Alternative 2

GSRC

September 2020

Each vegetation community contains unique assemblages of dominant and sub-dominant species. The artificial prairie community is composed of dominant species such as crabgrass (*Digitaria* spp.), Johnson grass (*Sorghum halepense*), and bahiagrass (*Paspalum notatum*). The clay riparian vegetation community is composed of species such as American beech (*Fagus grandifolia*), white oak (*Quercus alba*), sweetgum (*Liquidambar styraciflua*), and southern magnolia (*Magnolia grandiflora*). The Fleming calcareous forest community is typically dominated by white ash (*Fraxinus americana*) and also contains species such as sweetgum and hawthorn (*Crataegus* spp.). The mixed pine/hardwood forest community is dominated by several pine species including longleaf pine, loblolly pine (*Pinus taeda*), and shortleaf pine (*P. echinata*). Other typical species within the mixed pine/hardwood forest include oaks (*Quercus* spp.), yaupon holly (*Ilex vomitoria*), shining sumac (*Rhus copallinum*), and various berry species (*Vaccinium* spp.). The mixed pine forest community is also dominated by a mixture of loblolly pine, shortleaf pine, and longleaf pine, but lacks dominant hardwood species.

Several of these vegetation communities are considered state imperiled by the Louisiana Natural Heritage Program (LNHP) or have global status ranks as given by NatureServe (NatureServe 2020). Artificial prairies, urban development, and water do not contain rankings as these are considered maintained and/or disturbed vegetation communities. The vegetation communities on Fort Polk and their state and global status are given in Table 3-5.

Table 3-5. Vegetation Community Types and their State and Global Status

Fort Polk Vegetation Community	Louisiana WAP Habitat Community	State/Global Rank
Clay riparian	Small stream forest	S3/G3
Fleming calcareous forest	Calcareous forest	S2/G2?Q
Mixed pine/hardwood forest	Mixed hardwood-Loblolly pine/Hardwood slope forest	S3/G3G4
Shortleaf forest	Shortleaf pine/oak-hickory woodland	S1/G2G3

S1 = critically imperiled in Louisiana because of extreme rarity or because of some factors making it especially vulnerable to extirpation
S2 = imperiled in Louisiana because of rarity or because of some factors making it very vulnerable to extirpation
S3 = rare and local throughout the state or found locally in a restricted region of the state, or because of other factors making it vulnerable to extirpation
G2 = imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction throughout its range
G3 = either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range
G4 = apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery
G? = rank uncertain; or a range (e.g., G3G5) delineates the limits of uncertainty

Native Plants

The known flora of Fort Polk and Vernon Parish consists of approximately 1,467 species in 561 genera and 151 families (Fort Polk 2019). There are no known federally listed plant species on Fort Polk (USFWS 2020). Seventy-six (76) plant species are tracked on Fort Polk. Of those species, 52 are considered species of concern by the Louisiana Wildlife Diversity Program. All of the 76 species tracked on Fort Polk either occur or have the potential to occur within Fort Polk Main Post or Peason Ridge. The full list of species of concern are included in Appendix A. The only plant species on this list that is located within the two Proposed Alternatives is the eastern purple coneflower (*Echinacea purpurea*). The eastern purple coneflower has a state ranking of S2 (imperiled in Louisiana because of rarity [6 to 20 known extant populations]) and a global rank of G4 (apparently secure globally, though it may be quite rare in parts of its range). The 19 locations of eastern purple coneflower reported within the two Proposed Alternatives are shown in Figures 3-8 and 3-9.

On Fort Polk, numerous pitcher plant bogs are created by seepage from localized perched water tables, and these bogs tend to be small and isolated and occur on ridge slopes (Gene Stout and Associates 2004). Pitcher plant bogs may be quite small and may not always appear in association with wetland inventories and management schemes. Fort Polk and Kisatchie National Forest (KNF) contain the most and the largest acreage of pitcher plant bogs in Louisiana (Gene Stout and Associates 2004, LDWF 1996) which contained high amounts of plant diversity; a large pitcher plant bog may contain up to 100 different species (Louisiana Natural Heritage Program 1996). Species common to this type of bog include pipeworts (*Eriocaulon* spp.), sundews (*Drosera* spp.), butterworts (*Pinguicula* spp.), and several orchids (*Platanthera* spp); state rare plant species are also a common feature. On occasion, these bogs are damaged by military training. Certain bogs have natural and scientific value for their pristine condition and are under imminent threat. Protection areas for bogs are off-limits to military and civilian vehicular traffic and digging. There are no pitcher plant bogs located within the two alternative sites.

Non-native and invasive plant species

Large infestations of non-native or invasive plant species could affect Fort Polk's ability to use and maintain high quality forest. Non-native or invasive plant species, such as noxious weeds, have the potential to negatively impact projects involving soil erosion control, revegetation, wetland protection, and wildlife management. Several non-native and invasive plant species, such as Chinese tallow tree (*Triadica sebifera*), Japanese privet (*Ligustrum japonicum*), kudzu (*Pueraria montana*), and mimosa tree (*Albizia julibrissin*) have been reported on Fort Polk. The majority of the known non-native and invasive plants species found on Fort Polk have not spread aggressively and are usually restricted to more disturbed sites. Non-native and invasive species are "pushed" from these sites due to natural succession as disturbed areas recover back to a more natural state (Fort Polk 2019). No known invasive plant species have been recorded within the footprint of the Proposed Alternatives.

Fort Polk typically uses a combination of integrated pest management techniques to control or prevent the spread of noxious plants, which avoids damage and minimizes adverse side effects to non-target species and the environment (Gene Stout and Associates 2004).

Previous Commitments

Fort Polk has established programs and procedures to protect the rare and sensitive plants and communities on its training lands. The following describes existing procedures and programs utilized to protect forested areas, native plant species and communities.

- ***Construction Process Oversight*.** Procedures to ensure that environmental compliance requirements and measures to reduce adverse effects to environmentally sensitive resources are included in contract specifications for military construction projects. The COR would ensure compliance with specified limits of construction, construction sequencing, Section 404 permit conditions, storm water pollution prevention plans, and other environmental considerations during construction, as specified in construction specifications, NEPA, and permit documents. The COR would review environmental requirements before construction, coordinate with the ENRMD NEPA document point-of-contact to ensure compliance, and have authority to halt construction if work is not performed in accordance with environmental requirements.

- ***Bog mapping and monitoring*.** All bogs on the Installation are being digitally mapped and monitored. Bogs are being inspected for damage following training exercises and during annual training land inspection events, and corrective action to protect wetlands and rare/sensitive plant species are implemented as appropriate.

- ***Environmental Screening/Alternatives Analysis for Construction Projects*.** The Installation Master Planner would provide project footprint and alternative sites to the ENRMD before the plans are presented to the Real Property Planning Board (RPPB) for development of a screening analysis of effects and identification of environmentally preferred siting and design options. The environmentally preferred options would be presented to the RPPB, along with other options under consideration, to ensure that environmental factors and concerns are integrated early in the planning process. Potential benefits are reductions in future construction and mitigation costs, reduction or avoidance of adverse cumulative effects to environmental resources, streamlining of design and construction processes, and promotion of sustainability, conservation, and compliance with environmental regulations.

3.4.4.2 Environmental Consequences

Alternative 1 (ADP Alternative)

As a result of this Alternative, approximately 370 acres of vegetation from seven different communities would be removed. While the mixed pine forest community dominates the land area within this Alternative, the landscape is a mosaic of embedded wetlands and riparian habitats, calcareous forest, and mixed pine/hardwood forest. These features play a vital role in the region's biological diversity. Embedded riparian plant communities frequently dissect pine areas and contain overstories of hardwood and mixed pine/hardwood. Hardwood species reflect moisture regimes varying greatly by landform and aspect, and influence associated ground cover species. Four known locations of eastern purple coneflower would be impacted under this Alternative. With the continued implementation of Fort Polk's Integrated Natural Resources Management Plant (INRMP), impacts to forest ecology and native plant species are anticipated to have direct, moderate, long-term, and adverse impacts.

The implementation of this Alternative would not have any direct impacts to invasive species, as there are no known individuals located within the project footprint. However, invasive plant species tend to be found in more disturbed sites and the

clearing of vegetation may make this area more susceptible to invasive species. Therefore, the impacts of the Proposed Action on invasive plant species would be negligible.

Alternative 2 (Environmentally Preferred Alternative)

As a result of this Alternative, approximately 306 acres of vegetation from seven different communities would be removed. Impacts to forest ecology, native species, and invasive species under this Alternative would be similar to those described for Alternative 1.

Alternative 3 (No Action Alternative)

No trees or vegetation would be removed as a result of the No Action Alternative; therefore, there would be no impacts to forest ecology, native plants and communities, or invasive species.

3.4.5 Biological Resources: Species of Concern, and Threatened and Endangered Species

Fort Polk's wildlife species include most animals indigenous to the southwestern Louisiana pinelands region. Totals of 243 species of native birds and four introduced bird, 50 reptile species, 22 amphibian species, and 46 species of mammals have been recorded on Fort Polk (Fort Polk 2020).

The Louisiana Wildlife Diversity Program (LWDP) through the Louisiana Department of Wildlife and Fisheries (LDWF) maintains a list of plant and animal species that are considered species of concern. These species have state or global ranks provided by the LWDP and NatureServe (NatureServe 2020). Plant and animal species that are federally listed as proposed, threatened, or endangered by the USFWS receive federal protection under the Endangered Species ACT (ESA) of 1973. The only federally listed species known to occur on Fort Polk are the red-cockaded woodpecker (*Dryobates borealis*; hereafter RCW) and the Louisiana pinesnake (*Pituophis ruthveni*; hereafter LPS) (USFWS 2020 and Fort Polk 2019). The RCW was listed as endangered on

August 25, 1970 (35 Federal Register [FR] 13519 13520) and the LPS was listed as threatened on April 6, 2018 (83 FR 14958 14968).

3.4.5.1 Affected Environment

3.4.5.1.1 Species of Concern

A list of species of concern for Fort Polk was developed by identifying species on the 2019 Louisiana Species of Greatest Conservation Need List (LWDP) that occur or potentially occur within or adjacent to Fort Polk Main Post or Peason Ridge. This list is comprehensive and includes plants (76), butterflies (78), mussels (22), fish (53), crayfish (8), amphibians and reptiles (17), birds (58), and mammals (10) (see Appendix A). Installation biologists further grouped species of concern by habitat type and confirmed their presence on Fort Polk. There are 94 species of concern that occur or potentially occur within the vegetation communities in the two Proposed Alternatives and these species and the habitats they are found in are shown in Table 3-6.

3.4.5.1.2 Red-cockaded Woodpecker

The RCW, unlike other woodpecker species, excavates their cavities in living rather than dead trees or snags (Jackson 1994). The RCW can be found in a variety of pine forest habitats, including longleaf, loblolly, slash (*P. elliottii*), shortleaf (*P. echinata*), Virginia (*P. virginiana*), pond (*P. serotina*), or pitch pine (*P.rigida*) (Jackson 1994). The species depends on old-growth (80-100 year old) pine forests for both nesting habitat and foraging; and cavity trees are often infected with red heart fungus (*Phellinus pini*) (Fort Polk 2019). RCWs are highly social and live in family groups where they cooperatively breed. RCW forage primarily on insects and arthropods. Male and female RCW have divergent foraging strategies; males will often forage on the upper trunk and branches of pine trees while females will forage on the main trunk below the lowest branches (Jackson 1994).

JRTC and Fort Polk manage two separate RCW populations; the Vernon-Fort Polk population found on Fort Polk Main Post and the Vernon Unit of the Kisatchie National Forest (KNF), and the Peason Ridge population. The old growth forest stands of Fort

Table 3-6. Species of Concern that Occur or Potentially Occur within the Proposed Alternatives

Common Name	Scientific Name	Fort Polk Status	Habitat
Alligator Snapping Turtle	*Macrochelys temminckii*	Confirmed	clay riparian
American Bittern	*Botaurus lentiginosus*	Confirmed	open water
American Bumble Bee	*Bombus pensylvanicus*	Confirmed	artificial prairie
American Redstart	*Setophaga ruticilla*	Confirmed	mixed pine/hardwood forest, clay riparian, fleming calcareous forest
American Woodcock	*Scolopax minor*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian, fleming calcareous forest, artificial prairie
Bachman's Sparrow	*Peucaea aestivalis*	Confirmed	shortleaf pine forest, artificial prairie
Baird's Pocket Gopher	*Geomys breviceps sagittatus*	Confirmed	shortleaf pine forest
Bald Eagle	*Haliaeetus leucocephalus*	Confirmed	open water
Big Brown Bat	*Eptesicus fuscus*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian, fleming calcareous forest
Brown-headed Nuthatch	*Sitta pusilla*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest
Calcasieu Creek Crawfish	*Procambarus pentastylus*	Confirmed	clay riparian
Calcasieu Painted Crawfish	*Orconectes blacki*	Potential	clay riparian
Canvasback	*Aythya valisineria*	Confirmed	open water
Caspian Tern	*Hydroprogne caspia*	Confirmed	open water
Ceraclean Caddisfly	*Ceraclea spongillovorax*	Could not confirm	clay riparian
Chimney Swift	*Chaetura pelagica*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian, fleming calcareous forest
Chuck-will's-widow	*Antrostomus carolinensis*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian, fleming calcareous forest
Coal Skink	*Plestiodon anthracinus*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian
Common Ground-Dove	*Columbina passerina*	Confirmed	shortleaf pine forest, artificial prairie
Creeper	*Strophitus undulatus*	Confirmed	clay riparian

Table 3-6, continued

Common Name	Scientific Name	Fort Polk Status	Habitat
Dickcissel	*Spiza americana*	Confirmed	artificial prairie
Dunlin	*Calidris alpina*	Confirmed	open water
Eastern Coachwhip	*Coluber flagellum*	Confirmed	shortleaf pine forest, mixed pine/hardwood, fleming calcareous forest, artificial prairie
Eastern Harvest Mouse	*Reithrodontomys humulis*	Confirmed	artificial prairie
Eastern Hog-nosed Snake	*Heterodon platirhinos*	Confirmed	shortleaf pine forest, mixed pine/hardwood, clay riparian, artificial prairie
Eastern Meadowlark	*Sturnella magna*	Confirmed	artificial prairie
Eastern Pipistrelle	*Perimyotis subflavus*	Confirmed	shortleaf pine forest, clay riparian, fleming calcareous forest
Eastern Spadefoot	*Scaphiopus holbrookii*	Confirmed	mixed pine/hardwood forest, clay riparian
Eastern Wormsnake	*Carphophis amoenus*		mixed pine/hardwood forest
Field Sparrow	*Spizella pusilla*	Confirmed	shortleaf pine forest, artificial prairie
Flat-headed Snake	*Tantilla gracilis*	Confirmed (PR)	mixed pine/hardwood forest, fleming calcareous forest
Frosted Elfin	*Callophrys irus*	Potential	fleming calcareous forest, artificial prairie
Golden Mouse	*Ochrotomys nuttalli*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Grasshopper Sparrow	*Ammodramus savannarum*	Confirmed	shortleaf pine forest, artificial prairie
Greater Roadrunner	*Geococcyx californianus*	Confirmed	shortleaf pine forest, fleming calcareous forest, artificial prairie
Gull-billed Tern	*Gelochelidon nilotica*	Confirmed	open water
Henslow's Sparrow	*Ammodramus henslowii*	Confirmed	shortleaf pine forest, artificial prairie
Hooded Warbler	*Setophaga citrina*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Kentucky Warbler	*Geothlypis formosa*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Kisatchie Painted Crawfish	*Orconectes maletae*	Confirmed	clay riparian
Lark Sparrow	*Chondestes grammacus*	Confirmed	artificial prairie
Le Conte's Sparrow	*Ammodramus leconteii*	Confirmed	artificial prairie, open water

Table 3-6, continued

Common Name	Scientific Name	Fort Polk Status	Habitat
Lesser Scaup	*Aythya affinis*	Confirmed	open water
Little Blue Heron	*Egretta caerulea*	Confirmed	open water
Loggerhead Shrike	*Lanius ludovicianus*	Confirmed	artificial prairie, open water
Long-tailed Weasel	*Mustela frenata*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest, artificial prairie
Louisiana Black Bear	*Ursus americanus luteolus*	Potential	shortleaf pine forest, mixed pine/hardwood forest
Louisiana Slimy Salamander	*Plethodon kisatchie*	Potential	shortleaf pine forest, mixed pine/hardwood forest, clay riparian
Louisiana Waterthrush	*Parkesia motacilla*	Confirmed	mixed pine/hardwood forest, clay riparian
Marsh Wren	*Cistothorus palustris*	Confirmed	open water
Masked Springfly	*Helopicus bogaloosa*	Could not confirm	clay riparian
Molson's Microcaddisfly	*Hydroptila molsonae*	Could not confirm	clay riparian
Monarch	*Danaus plexippus*	Confirmed	artificial prairie
Northern Bobwhite	*Colinus virginianus*	Confirmed	artificial prairie
Northern Pintail	*Anas acuta*	Confirmed	open water
Osprey	*Pandion haliaetus*	Confirmed	open water
Painted Bunting	*Passerina ciris*	Confirmed	shortleaf pine forest
Pepper and Salt Skipper	*Amblyscirtes hegon*	Confirmed	clay riparian
Prairie Warbler	*Setophaga discolor*	Confirmed	mixed pine/hardwood forest
Prothonotary Warbler	*Protonotaria citrea*	Confirmed	clay riparian
Pygmy Rattlesnake	*Sistrurus miliarius*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian
Rafinesque’s Big-eared Bat	*Corynorhinus rafinesquii*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Razor-backed Musk Turtle	*Sternotherus carinatus*	Confirmed	clay riparian
Red-cockaded Woodpecker	*Picoides borealis*	Confirmed	shortleaf pine forest

Table 3-6, continued

Common Name	Scientific Name	Fort Polk Status	Habitat
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Confirmed	shortleaf pine forest
Redspot Darter	*Etheostoma artesiae*	Confirmed	clay riparian
Roseate Spoonbill	*Platalea ajaja*	Confirmed	open water
Rusty Blackbird	*Euphagus carolinus*	Confirmed	shortleaf pine forest, clay riparian
Sandhill Crane	*Antigone canadensis*	Confirmed	artificial prairie, open water
Scarletsnake	*Cemophora coccinea*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, fleming calcareous forest
Sedge Wren	*Cistothorus platensis*	Confirmed	artificial prairie, open water
Short-eared Owl	*Asio flammeus*	Confirmed	artificial prairie, open water
Silver-haired Bat	*Lasionycteris noctivagans*	Potential	clay riparian, fleming calcareous forest
Six-lined Racerunner	*Aspidoscelis sexlineata*	Confirmed	shortleaf pine forest, fleming calcareous forest, artificial prairie
Small-mouthed Salamander	*Ambystoma texanum*	Potential	clay riparian
Southeastern Myotis	*Myotis austroriparius*	Confirmed	mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Southern Creekmussel	*Strophitus subvexus*	Confirmed	clay riparian
Southern Red-backed Salamander	*Plethodon serratus*	Potential	shortleaf pine forest, mixed pine/hardwood forest, clay riparian
Southwestern Creek Crawfish	*Procambarus dupratzi*	Confirmed	clay riparian
Spotted Dusky Salamander	*Desmognathus conanti*	Confirmed	mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Swainson's Warbler	*Limnothlypis swainsonii*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian
Swallow-tailed Kite	*Elanoides forficatus*	Confirmed	mixed pine/hardwood forest
Timber Rattlesnake	*Crotalus horridus*	Confirmed in shortleaf pine forest, potential in all other habitats	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Upland Sandpiper	*Bartramia longicauda*	Confirmed	artificial prairie

Table 3-6, continued

Common Name	Scientific Name	Fort Polk Status	Habitat
Warbling Vireo	*Vireo gilvus*	Confirmed	mixed pine/hardwood forest, clay riparian
Western Slender Glass Lizard	*Ophisaurus attenuatus attenuatus*	Confirmed	shortleaf pine forest, artificial prairie
Western Wormsnake	*Carphophis vermis*	Could not confirm	mixed pine/hardwood forest
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest
White-tailed Kite	*Elanus leucurus*	Confirmed	artificial prairie, open water
Wild Indigo Duskywing	*Erynnis baptisiae*	Confirmed	fleming calcareous forest, artificial prairie
Wood Thrush	*Hylocichla mustelina*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Worm-eating Warbler	*Helmitheros vermivorum*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian
Yellow-throated Vireo	*Vireo flavifrons*	Confirmed	shortleaf pine forest, mixed pine/hardwood forest, clay riparian, fleming calcareous forest
Yellow-throated Warbler	*Setophaga dominica*	Confirmed	mixed pine/hardwood forest, clay riparian

Polk and Peason Ridge provide foraging, roosting, and nesting habitat that is critical to the survival of these RCW populations. The Vernon-Fort Polk population is designated as a primary core population ideally supporting 350 breeding pairs (Fort Polk 2010 and USFWS 2003). The Peason Ridge population is designated an essential support population which aims to support 10 or more active clusters. Fort Polk's goal is to maintain 92 active RCW clusters on Fort Polk and 70 on Peason Ridge (Fort Polk 2010); currently, the Vernon-Fort Polk population consists of 206 potential breeding groups while the Peason Ridge population has approximately 19 breeding pairs (Fort Polk 2020).

The collection of cavity trees that harbor or could potentially harbor an RCW family group is known as a cluster. RCW need 125 acres of good quality foraging habitat within a 0.5-mile radius of the cluster center (Fort Polk 2019). Proposed projects within this 0.5-mile buffer must be evaluated to determine if habitat removal would result in a loss of foraging habitat to below 125-acres post-project. Fort Polk maintains a HMU for the RCW; the HMU is all habitats that currently meet the requirements for suitable RCW nesting and foraging habitat (whether or not it is presently occupied), plus all habitats that could meet the requirements for habitat in the future. Currently, the total RCW HMU acreage on Fort Polk is approximately 31,532 acres (Moore 2018). Fort Polk is required to maintain a minimum of 24,228 acres of RCW HMU to support the Installation Regional Recovery Goal (IRRG).

There are no RCW cluster sites or RCW HMU located within the 0.5 mile of Alternative 1 or Alternative 2.

3.4.5.1.3 Louisiana Pinesnake

The LPS is a fossorial species, living primarily underground, with limited (seasonal and diurnal) above-ground movement. The LPS is generally associated with sandy, well-drained soils, open pine forests, in particular longleaf pine savannah with a sparse to moderate mid-story and a well-developed understory dominated by grasses (Gene Stout and Associates 2004). Much of Fort Polk contains suitable habitat for the LPS

(Fort Polk 2019). Baird's pocket gophers (*Geomys breviceps*) are both an important prey item and they also provide burrows for the LPS. LPS may spend up to 60% of their time underground, and they almost exclusively use Baird's pocket gopher burrows (Gene Stout and Associates 2004). They are also seasonally active, being more active between March and May and also fall, while they are least active between December and February, and in the heat of summer, especially August.

The major threats to LPS include habitat loss, fire suppression, and vehicle mortality (Gene Stout and Associates 2004). A population of LPS is located on JRTC and Fort Polk and is known mostly from trap captures that are part of an extensive, ongoing effort to monitor the species on Fort Polk. Over a 10-year period, only 18 LPS were documented on USFS IUA, making an accurate population estimate very difficult (Gene Stout and Associates 2004). Fort Polk established and maintains a 22,882-acre HMU for the LPS (Fort Polk 2019).

There are no LPS HMU located within the footprint of Alternative 1 or Alternative 2 and there are no known pocket gopher mounds or complexes located within either Proposed Alternative.

3.4.5.2 Environmental Consequences

3.4.5.2.1 Species of Concern

Alternative 1 (ADP Alternative)

Under this Alternative, approximately 370 acres of seven different vegetation communities would be removed. Eighty-two of the species of concern have been confirmed present within these vegetation community types. Several species of concern are found in multiple habitats, but the numbers of species found within each vegetation community type are as follows: artificial prairie (28 species), clay riparian (44 species), Fleming calcareous forest (24 species), mixed pine/hardwood (36 species), shortleaf forest (38 species), and water (18 species). Fifty-nine (59, or 71%) of these species are highly mobile (i.e., birds, mammals, insects) and could potentially move into available habitat adjacent to and outside of the Proposed Action area; these species would

experience direct, negligible, short-term, adverse impacts. The remaining species are less mobile (i.e., amphibians and reptiles, mollusk, crustaceans) and would experience direct, moderate, long-term, adverse impacts due to the implementation of the Proposed Action.

Alternative 2 (Environmentally Preferred Alternative)

Impacts to species of concern under this Alternative would be similar to those described for Alternative 1.

Alternative 3 (No Action Alternative)

There would be no impacts to any Species of Concern under this Alternative as no vegetation or wildlife habitat would be removed or altered as a result of the No Action Alternative.

3.4.5.2.2 Red-cockaded Woodpecker

Alternative 1 (ADP Alternative)

The implementation of this Alternative would have no effect on RCW, as there are no RCW partitions or RCW HMU located within the project footprint.

Alternative 2 (Environmentally Preferred Alternative)

The Proposed Action would have no effect on RCW, as there are no RCW partitions or RCW HMU located within the project footprint.

Alternative 3 (No Action Alternative)

No trees or vegetation would be removed as a result of the No Action Alternative. Therefore, there would be no impacts to RCW or RCW habitat or HMU.

3.4.5.2.3 Louisiana Pinesnake

Alternative 1 (ADP Alternative)

The implementation of this Alternative would have no effect on LPS, as there is no LPS HMU located within the project footprint. Additionally, there are no known Baird's

pocket gopher mounds or complexes located within this Alternative, and due to the LPS's strong association with these complexes, there would likely be no direct impacts on LPS due to the implementation of Alternative 1. It is possible that construction of this Alternative and removing timber could increase the quality of the habitat for Baird's pocket gopher, thereby increasing the possibility of impacts during training exercises.

Alternative 2 (Environmentally Preferred Alternative)

The implementation of this Alternative would have similar effects as those described for Alternative 1. There is no LPS HMU located within the project footprint and there are no known Baird's pocket gopher mounds or complexes located within this Alternative, and due to the LPS's strong association with these complexes, there would likely be no direct impacts on LPS due to the implementation of Alternative 2. It is possible that construction of this Alternative and removing timber could increase the quality of the habitat for Baird's pocket gopher, thereby increasing the possibility of impacts during training exercises.

Alternative 3 (No Action Alternative)

No trees or vegetation would be removed as a result of the No Action Alternative. Therefore, there would be no impacts to LPS or LPS habitat or HMU.

3.4.6 Biological Resources: Migratory Birds

3.4.6.1 Affected Environment

Several different avian surveys have been conducted on Fort Polk including annual Christmas Bird Counts (CBC), annual monitoring avian productivity and survivorship (MAPS) surveys, and point counts. These surveys are conducted at different times of the year, and together detect bird species on Fort Polk throughout the year. The MBTA was enacted in 1918 which made it unlawful to pursue, hunt, take, capture, kill, or sell any migratory bird or part, nest, or egg of any such bird (16 U.S.C §§ 703-712), unless permitted by regulations. The Conservation Branch ENRMD has compiled a list of bird species protected by the MBTA that occur on Fort Polk; a total of 243 bird species are currently on this list (Fort Polk 2020).

Common bird species that occur on Fort Polk include pine warbler (*Setophaga pinus*), yellow-rumped warbler (*Setophaga coronata*), American robin (*Turdus migratorius*), American goldfinch (*Spinus tristis*), white-throated sparrow (*Zonotrichia albicollis*), eastern bluebird (*Sialia sialis*), eastern phoebe (*Sayornis phoebe*), chipping sparrow (*Spizella passerina*), red-winged blackbird (*Agelaius phoeniceus*), red-tailed hawk (*Buteo jamaicensis*), and barred owl (*Strix varia*). Several bird species detected during annual MAPS surveys include northern cardinal (*Cardinalis cardinalis*), Carolina wren (*Thryothorus ludovicianus*), hooded warbler (*Setophaga citrina*), Acadian flycatcher (*Empidonax virescens*), yellow-billed cuckoo (*Coccyzus americanus*), summer tanager (*Piranga rubra*), tufted titmouse (*Baeolophus bicolor*), ruby-throated hummingbird (*Archilochus colubris*), red-bellied woodpecker (*Melanerpes carolinus*), red-eyed vireo (*Vireo olivaceus*), and prairie warbler (*Setophaga discolor*) (Fort Polk Conservation Branch ENRMD 2019).

3.4.6.2 Environmental Consequences

Alternative 1 (ADP Alternative)

Approximately 370 acres would be disturbed by clearing and grubbing the project area under Alternative 1. The habitat types found within this Alternative that migratory birds utilize, such as Fleming calcareous forest, shortleaf forest, mixed pine-hardwood forest, and clay riparian, are all common on JRTC and Fort Polk. Further, it is recognized that there is adequate suitable habitat in the surrounding areas to absorb any species or individuals that disperse from the implementation of the Proposed Action. Therefore, impacts to migratory birds are anticipated to be direct, short-term, negligible, and adverse.

Alternative 2 (Environmentally Preferred Alternative)

Approximately 308 acres would be disturbed by clearing and grubbing the project area under Alternative 2. The habitat types found within this Alternative that migratory birds utilize, such as Fleming calcareous forest, shortleaf forest, mixed pine-hardwood forest, and clay riparian, are all common on JRTC and Fort Polk. Further, it is recognized that there is adequate suitable habitat in the surrounding areas to absorb any species or

individuals that disperse from the implementation of the Proposed Action. Therefore, impacts to migratory birds are anticipated to be direct, short-term, negligible, and adverse.

Alternative 3 (No Action Alternative)

No trees or vegetation would be removed as a result of the No Action Alternative. Therefore, there would be no impact to migratory bird species on Fort Polk.

3.4.7 Biological Resources: Game Species

3.4.7.1 Affected Environment

Approximately 140,000 acres on Fort Polk and Peason Ridge are wildlife management areas (Gene Stout and Associates 2004). During times of JRTC training, as much as 90% of these lands may be closed to the public. Additionally, all areas containing unexploded ordnance or sensitive equipment are permanently closed for any outdoor recreation (e.g., hunting and fishing).

Several game species are managed through Fort Polk and LDWF. A memorandum of agreement between Fort Polk, JRTC, and LDWF was signed in February 2013 to reestablish an understanding of policies, procedures, and responsibilities of enforcing game and conservation laws and for the management and conservation efforts on JRTC and Fort Polk military installation (Fort Polk Conservation Branch ENRMD 2019).

Fort Polk has over 10,000 man-days of hunting each year (Gene Stout and Associates 2004). The most popular game species on Fort Polk include white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), and squirrels (gray squirrel [*Sciurus carolinensis*] and fox squirrel [*S. niger*]). Other hunted species include northern bobwhite (*Colinus virginianus*), mourning dove (*Zenaida macroaura*), feral pig (*Sus scrofa*), eastern cottontail (*Sylvilagus floridanus*), American woodcock (*Philohela minor*), and waterfowl, most commonly wood duck (*Aix sponsa*) (Gene Stout and Associates 2004).

The most intensively managed of these game species is white-tailed deer. Permit and hunting data are compiled by Fort Polk's Game Enforcement and LDWF; data collected include all hunting efforts (for all game species) and location of harvests, as well as deer sex, age, and weight (Fort Polk Conservation Branch ENRMD 2019). This enables Fort Polk to monitor hunting activities as well as deer herd health. Data has been collected over an approximately 40-year period (1980 - 2019). In the last year available (2017-2018), 895 deer, 31 turkey, 124 feral pigs, 623 squirrels, 38 bobwhite quail, 296 mourning dove, 30 wood duck, and 36 woodcock were harvested on both Fort Polk and Peason Ridge WMAs (Fort Polk Conservation Branch ENRMD 2019). No eastern cottontails were harvested.

3.4.7.2 Environmental Consequences

Alternative 1 (ADP Alternative)

There are no WMAs located within the footprint of this Alternative. Although 370 acres would be disturbed by clearing and grubbing, the implementation of this Alternative would not have any direct impacts to WMAs or hunting opportunities. Further, it is recognized that there is adequate suitable habitat in the surrounding area to absorb any dispersed species or individuals from the implementation of this Alternative. Therefore, impacts to game species are anticipated to be negligible.

Alternative 2 (Environmentally Preferred Alternative)

There are no WMAs located within the footprint of this Alternative. Although 308 acres would be disturbed by clearing and grubbing, the impacts would be the same as those described for Alternative 1.

Alternative 3 (No Action Alternative)

No trees, vegetation, or WMA habitat would be removed as a result of the No Action Alternative. Therefore, there would be no impacts to game species on Fort Polk through the No Action Alternative.

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4.0 CUMULATIVE EFFECTS

Cumulative effects are defined by the CEQ in 40 CFR 1508.7 as the "*impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*" The consideration of cumulative effects looks at effects on the resource from two perspectives: (1) the incremental effect on each condition of the resource from the Proposed Action and (2) how other past and present actions within the region might interact with the effects of the Proposed Action. Table 4-1 lists other major actions and activities that could contribute cumulatively to the effects of the Proposed Action. Note that the table includes present or foreseeable effects of other military actions that have been recently implemented or are yet to be fully implemented, such as the removal of trespass horses from training lands. Additionally, it is anticipated that all construction projects and environmental stewardship measures will occur as scheduled and those activities were considered in the cumulative effects determinations. The specific direct and indirect effects of these past and ongoing actions and activities have been previously addressed.

Some degree of cumulative effect could be identified for virtually any resource. However, only those resources that were identified as requiring detailed analysis are included in this section. Overall and cumulative effects are addressed by resource below. The analysis offers a more complete understanding of resource conditions that implementation of the Proposed Action might magnify, amplify, or otherwise exacerbate or ameliorate, and identifies the overall cumulative effects on the resource within the spatial boundary (or ROI).

From 1910 to the late 1930s, large scale clear-cutting of timber for lumber production occurred throughout the region. By 1937, nearly 120 billion board feet of lumber had been produced, converting the longleaf pine canopy to grassland. "*Fullerton Mill, located just south of Fort Polk produced at its peak 120 million board feet of lumber per*

Table 4-1. Actions and Activities Contributing to Cumulative Effects

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Upgrade Road from Rancho 45 to GDZ	Removal of vegetation, soil erosion, water quality, and sedimentation	1997
Tree Removal Adjacent to Buildings at Rancho 45	Removal of seven trees	1998
Resurfacing of Geronimo FLS	Resurfaced FLS to permit safe use during SBCT rotation	2003
Construction of Sediment Rock/Broken Concrete Weir	Constructed a weir across a drain at the south end of Fullerton Road on GDZ; vegetation removal, soil erosion, and sedimentation	2003
Vegetation Management at GDZ	Mowing and removing small trees, brush, and tall grass at GDZ; removal of vegetation	2004
Construction of a traffic circle	Construction of traffic circle at Carnis/Artillery intersection; removal of vegetation, soil erosion, and sedimentation	2004
Resurfacing existing roads for maintaining a maneuver corridor (Rancho 45 Cutoff)	Removal of vegetation, soil erosion, and sedimentation	2004
Construction of Sediment Basins for GDZ	Removal of vegetation, soil erosion, and sedimentation	2005
Timber removal at Integrated Training Area Management (ITAM, Carnins Village)	Removal of timber on approximately 10 acres; removal of vegetation, erosion, and sedimentation	2006
Construction of seven buildings at Geronimo Airfield Complex	Removal of vegetation, soil erosion, sedimentation, stormwater, and biological resources	2006
Refurbish offset Geronimo FLS	Removed a strip of grass 900 meters by 50 meters and filled in washouts; removal of vegetation, soil erosion, and sedimentation	2006
Resurface existing Geronimo Tank Trail Road	Stormwater and sedimentation	2006
Repair and clean sediment basins	Repaired and cleaned sediment basins at Self Airfield and GDZ; soil erosion, sedimentation, and stormwater	2006
Resurface Fullerton FLS and correct erosion	Soil erosion, sedimentation, and stormwater	2006
Installation of a new power line	Installed a new power line at North Fort. Provided Phase 3 electrical power to Forward Operating Base (FOB) SPIRIT, SWORD, and RANCHO 45. Included 75 foot right of way and removed two acres of HMU; removal of vegetation, temporary soil erosion, increased sedimentation, biological resources, and wildlife habitat loss	2006

Table 4-1, continued

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Silt basin maintenance	Maintained four silt basins at Fullerton, east of GDZ, approximately 10 acres. Removal of vegetation, temporary soil erosion, sedimentation, water resources	2007
Repair/rehabilitate TA Fullerton 4 adjacent to GDZ, south of Junk Hill	Approximately 25 acres; removal of vegetation, temporary soil erosion, and sedimentation	2007
Repair/rehabilitate TA Fullerton 1, northeast of Carnis Village	Approximately 5 acres; removal of vegetation, temporary soil erosion, and sedimentation	2007
Construction of berm near Fullerton 4 near Carnis	Removal of vegetation, soil erosion, sedimentation, and loss of forest wildlife habitat	2007
Shape and surface trail on east side of GDZ with aggregate base course	Removal of vegetation, soil erosion, sedimentation, and stormwater	2007
Excavation of material and correct eroded areas at sediment basin GDZ	Removal of vegetation, soil erosion, sedimentation, and stormwater	2007
Shape GDZ and seed eroded area	Approximately 28 acres; removal of vegetation, temporary soil erosion, sedimentation, and stormwater	2007
Rehabilitate Fullerton 1	Approximately 5 acres; removal of vegetation, soil erosion, and sedimentation	2008
Installation of surveillance camera system, Rancho 45	No effects	2008
Repair eroded areas throughout GDZ	Removal of vegetation, temporary soil erosion, sedimentation, hazardous waste, and stormwater	2008
Expansion of GDZ	Removal of vegetation, soil erosion, biological resources, hazardous waste, stormwater, removal of wildlife habitat, and sedimentation	2008
Closure of four FOB water wells	Closed water wells at Anvil, Sword, McGovern, and Rancho 45; drinking water and hazardous/solid waster	2008
Improvised explosive device (IED) lane at Rancho 45	Removal of vegetation, soil erosion, and sedimentation	2008
Upgrade power from Combined Arms Collective Training Facility (CACTF) to intersection of Smith Villa and Fullerton roads	No effects	2008

Table 4-1, continued

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Spray growth retardant herbicide on GDZ	Approximately 680 acres; air quality, indoor air quality, asbestos, lead, drinking water, stormwater, hazardous waste, and pest management	2009
Construct sediment basin north of GDZ expa nsion project	Approximately 30 acres; removal of vegetation, temporary soil erosion, sedimentation, biological resources, and removal of wildlife habitat	2009
Reconstruct road near sediment basin north of Tarkira/Carnis	Removal of vegetation, soil erosion, sedimentation, stormwater, and biological resources (removed approximately 3 acres of HMU)	2009
Repair Geronimo FLS ramp and runway	Removal of vegetation, soil erosion, sedimentation, and stormwater	2010
Erosion control repairs at Carnis Village	Soil erosion, sedimentation, and stormwater	2010
Erosional repairs at Maddox Village, FOB Anvil, Carnis Village, CACTF/Range Operations and Control Area (ROCA), and Artillery Road	Removal of vegetation, soil erosion, sedimentation, and stormwater	2010
Install underground electrical supply to IED after action review theater at Rancho 45	Soil disturbance, soil erosion, and sedimentation	2011
Construction of a low water crossing at Fullerton 4 to include road repairs and erosion control near Carnis Village (West Carnis Village Road)	Removal of vegetation, soil disturbance, soil erosion, water quality, and stormwater	2011
Construction of horse corral around sediment basin located southwest of CACTF in GDZ	Approximately 3 acres; removal of vegetation, soil disturbance, soil erosion, sedimentation, water quality, and stormwater	2011
Demolition/disposal of Rancho 45 latrine	Soil disturbance, hazardous/solid waste, water quality, and stormwater	2011
Demolition of Rancho 45 latrine	Soil disturbance, hazardous/solid waste, water quality, and stormwater	2012
Demolition of bleachers 9793, Rancho 45	Soil disturbance and solid waste	2012

Table 4-1, continued

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Operation of Two Reverse Osmosis Water Purification Units (ROWPUs) for Rotational Exercise 13-01 at the Pond on Southwest Corner of GDZ and the Pond on the North Side of FOB Warrior (Hospital Site/Jeane Junction)	Drinking water	2012
Reduction of Wire, Swing Fence and Posts, Light Poles, Towers, and Weapon Clearing Barrels at JCOP Turani (also known as Carnis), Fullerton 1	Solid waste	2013
Erosion Control at Fullerton 4 GDZ	Removal of vegetation, soil disturbance, soil erosion, and sedimentation	2013
Installation of Horse Corral Southeast of GDZ	Approximately 2 acres; removal of vegetation, soil disturbance, temporary soil erosion, sedimentation, and water quality	2013
Preparation of Geronimo FLS to Meet Geometrical and Structural Requirements for C17/130 Aircraft	Work included core sampling, re-establishment of crown and profile, and grading shoulders for drainage; removal of vegetation, soil disturbance, temporary erosion, sedimentation, water quality, and stormwater	2013
Installation of Water and Sewer Facilities for Fire Station Near GDZ, Fullerton Training Area (SP0600-08-C-8257)	Removal of vegetation, soil disturbance, temporary soil erosion	2013
Tree Clearance for the Northern Section of GDZ	Action includes re-grading and re-aligning drainage, establishment of ground cover, and implementation of maintenance; soil disturbance, temporary soil erosion, sedimentation, and stormwater	2014
Implementation of Erosion Control Measures on the East Side of GDZ	Approximately 3 acres; terraced and placed culverts on the east side of GDZ; removal of vegetation, soil disturbance, temporary soil erosion, and sedimentation	2014
Preparation for the December 2015 Rotational Exercise for the 20th Engineer Brigade	Installation of training aids to include trench trainer, collapsed structure trainer, and two confined space trainers at the CACTF; soil disturbance	2014

Table 4-1, continued

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Fullerton FLS Repairs at GDZ	Work included grading, re-establishment of crown, and application of soil cement; soil disturbance, temporary soil erosion and sedimentation	2015
Demolition of Rancho 45 General Instruction Building	Asbestos, air quality, soil disturbance, temporary soil erosion, hazardous/solid waste, and lead	2015
Placement of a Minimum of 12 inches of Soil Cement to Cap Geronimo FLS	Work included excavation, fill, grade, and repair/resurfacing of taxiways and parking areas; soil disturbance, temporary soil erosion, sedimentation, and water quality	2015
Construct three helicopter landing zones to Support Air Assault Operations in Fullerton 1	Work included clearing and grubbing of vegetation; removal of vegetation, soil disturbance, soil erosion, sedimentation, and storm water	2016
Repair Sediment Basin in Geronimo TA	Work included the removal of trees, vegetation, silt, and repair riser; removal of vegetation, soil disturbance, temporary soil erosion, sedimentation, and water quality	2016
Repair LWC 1 in Geronimo TA	Work included removing trees, installing concrete approaches, installing rip-rap, and placing aggregate; removal of vegetation, soil disturbance, temporary soil erosion, and sedimentation	2016
Construct Chemical Latrine Pads at Ranges 8A,11, 13, 14, 14D, 15, 21, 23B, 24, CACTF, and Zion Hill Shoothouse (HC 00162-7P)	Removal of vegetation, soil disturbance, and temporary soil erosion	2016
Tree Clearing at Geronimo	Approximately 8 acres; work included removal of all live trees, dead trees, and stumps to at least 8 inches below ground level; remove all debris and dispose of off Fort Polk; and fill in all holes: removal of vegetation, soil disturbance, temporary erosion, sedimentation, solid waste, and water quality	2017
Tactical Area Bivouac Site Rehabilitation (TABS) Project, Fullerton 1 TA	Approximately 23 acres; work included reshaping, terracing, installation of drop pipes, water bars, and ditches, grubbing, and removal of approximately 20 trees; removal of vegetation, soil disturbance, temporary soil disturbance, sedimentation, water quality, and stormwater	2018

Table 4-1, continued

Contributing Activity	Description of Activity and Nature of Effects	Time Frame
Fullerton 1 TABS Rehabilitation Project Phase II	Approximately 15 acres; project repaired a degraded trail in the vicinity of GDZ and East Fullerton Road located in the Fullerton 1 TA. Work included the removal of trees and stumps, installation of an earthen levee, and the placement of culverts, water bars, ditches, and rocks; removal of vegetation, soil disturbance, temporary soil disturbance, sedimentation, water quality, and stormwater	2018

year and some 2.25 billion board feet over its lifetime" (Fort Polk 2009). By 1943, it was estimated that only three percent of Louisiana's longleaf pine forest remained uncut old growth, most of which was located in Vernon and Rapides Parishes (Fort Polk 2009). These clear-cut timber practices contributed to soil erosion and soil compaction from heavy equipment, and changed much of the landscape from forest to grasslands and thickets. In 1924, the U.S. Congress passed the Clarke-McNary Act, which allowed the purchase of cut-over lands for National Forests, and Louisiana passed an act that authorized the state to cooperate with the federal government in purchasing forest land (Fort Polk 2009).

Camp Polk, now Fort Polk, was established between 1939 and 1945. During the early years of Fort Polk and between 1974 and 1993, when the 5th Infantry Division (Mechanized) was Fort Polk's major tenant, there were construction and training activities that contributed further to localized soil erosion, storm water run-off, and sedimentation. The 5th Infantry Division (Mechanized) trained with heavy-tracked vehicles that caused considerable soil erosion, soil compaction, and stream sedimentation.

Since 1993, when the JRTC was established at Fort Polk, positive changes have occurred in training activities and forestry practices, despite adverse effects of construction. Because of changes in force structure and mission requirements, training events changed from the frequent use of heavy, mechanized track vehicles to training events involving foot soldiers and the use of wheeled vehicles, which reduced soil erosion and soil compaction. Although tracked vehicles are employed by some home station and rotational units that train at JRTC and Fort Polk, the number of tracked vehicles and frequency of use has diminished substantially since realignment of the 5th Infantry Division to Fort Hood, Texas, in 1992.

Although reforestation and environmental and natural resource management efforts by the Army have helped to restore the longleaf pine forest at a landscape scale, localized reductions in habitat suitability and availability for many species have resulted from past

construction of firing ranges, training facilities, and other facilities. Construction of the North and South Fort cantonment areas, ranges, drop zones on Fort Polk's Main Post and Peason Ridge Training Areas, the Peason Ridge Live-Fire Complex, and the Multi-Purpose Range Complex resulted in habitat losses or reduced habitat quality for RCWs, LPSs, as well as sensitive, conservation, and management indicator species associated with upland pine habitats and communities. Habitat losses from mature upland pine associated species have also occurred as a result of past road construction and clearing for mineral extraction.

Timber harvests have altered vegetation conditions either by thinning stands (i.e. reducing timber stocking), shelterwood cutting, or clear-cutting. These activities were required to provide habitat for species reliant on early successional habitats and to maintain upland pine forest health, especially longleaf pine stands. Understory development in overstocked longleaf pine stands is generally poor. Poorly developed understories reduce habitat suitability for species associated with mature longleaf pine forest and reduce the efficiency with which prescribed fire can be applied for proper stand management. When Fort Polk was established, most of the longleaf pine timber had been removed. Through replanting, natural succession, and forest management, most of those lands were reforested, ameliorating the effects of deforestation within the ROI. Also, most of the maneuver damage resulting from training during the World War II and Vietnam War eras has since been repaired or naturally recovered. Although localized clearing for roads and building construction, and the establishment of training areas and ranges represent long-term land use commitments with limited value to proposed, threatened or endangered species, Fort Polk and the KNF largely remain "*islands of biodiversity*" within the ROI, which is dominated by intensively managed industrial forests, agricultural, and rural land uses. Past, present, and reasonably foreseeable future actions were considered in the determination of cumulative effects. In some instances, the effects of past actions by the Army and other federal or private interests persist to the present time and may result in cumulative, or additive, effects on resources of concern. In other instances, the effects of past actions have been largely ameliorated or offset over time and no longer present a source of cumulative effects.

4.1 CUMULATIVE EFFECTS FOR SOILS

A major cumulative impact on soils would occur if the action exacerbates or promotes long-term erosion or if there would be a substantial reduction in agricultural production or loss of prime farmland soils. The environmental impacts to soils under the Proposed Action are anticipated to be direct, short-term, moderate, and adverse during construction. Adverse impacts are anticipated during construction due to the soil disturbance created by the tree removal. Approximately 0.72 acre of prime farmland soils would be disturbed under the Proposed Alternative. Two soil types located within the Proposed Alternative have severe to very severe erosion potential and may require erosion control measures. Erosion control measures will be implemented prior to land clearing. Therefore when combined with other existing and proposed actions in the region, the Proposed Action does not have the potential to result in major adverse cumulative impacts on soils.

The environmental impacts to soils under the Proposed Action are anticipated to be direct, long-term, negligible, and adverse during operation. Adverse impacts are anticipated during operation due to the normal activities and operation of the RUBA. Negligible impacts, by definition, are unmeasurable and therefore cannot be added to other past, present, and reasonable foreseeable future actions to produce a measurable cumulative impact.

4.2 CUMULATIVE EFFECTS FOR WATER RESOURCES: WATER QUALITY (SOIL EROSION FROM CONSTRUCTION)

The environmental impacts on surface water quality for the Proposed Action are anticipated to be direct, short-term, adverse, and negligible during construction and direct, long-term, beneficial, and negligible during operation. Negligible impacts, by definition, are unmeasurable and therefore cannot be added to other past, present, and reasonably foreseeable future actions to produce a measurable cumulative impact.

4.3 CUMULATIVE EFFECTS FOR WATER RESOURCES: STREAMS, WETLANDS, AND OTHER SURFACE WATER RESOURCES

A major adverse impact on surface water resources would occur if an action substantially depletes surface water supplies, substantially alters drainage patterns, violates CWA or state water quality regulations, or results in the loss of Waters of the U.S. that cannot be compensated. The Proposed Action would have direct, permanent, minor, and adverse impacts to streams, wetlands, and potential Waters of the U.S. Unavoidable impacts to jurisdictional wetlands will be permitted through the Section 404 process. These impacts will be mitigated at an established wetland mitigation bank to ensure a no net loss of wetlands. The mitigation ensures the project will result in no net loss of wetlands, and the project is in compliance with Section 404 of the CWA. Thus, the Proposed Action would not have a negative cumulative effect on wetlands.

4.4 CUMULATIVE EFFECTS FOR BIOLOGICAL RESOURCES: FOREST ECOLOGY, NATIVE PLANTS, AND INVASIVE PLANT SPECIES

A major adverse cumulative impact on forest ecology, native plants, and invasive plant species would occur if a substantial reduction in ecological processes, communities, or populations would threaten the long-term viability of a species or result in the substantial loss of a sensitive community that could not be offset or otherwise compensated. Under the Proposed Action vegetation would be cleared and impacts on forest ecology and native plants are anticipated to be direct, moderate, long-term, and adverse; and impacts to invasive species are anticipated to be negligible.

The majority of vegetation types contained in the alternative areas are common on Fort Polk and the ROI. The Proposed Action, when considered with other past, current, and foreseeable future actions, would not result in major adverse cumulative impacts on forest ecology and native plants.

There would be negligible impacts on invasive species, as there are none located within the project area. Negligible impacts, by definition, are unmeasurable and therefore

cannot be added to other past, present, and reasonably foreseeable future actions to produce a measurable cumulative impact. Although there are no invasive species located within the Proposed Action, the Proposed Action may result in additional occurrences of invasive species in the future. When considered with other past, current, and foreseeable future actions, the Proposed Action would not result in major cumulative impacts on invasive species.

4.5 CUMULATIVE EFFECTS FOR BIOLOGICAL RESOURCES: SPECIES OF CONCERN, AND THREATENED AND ENDANGERED SPECIES

4.5.1 Species of Concern

A major adverse cumulative impact on species of concern would occur if a combination of past, present, and foreseeable future actions resulted in a jeopardy opinion for any endangered, threatened, or special status species. Ninety-four different species of concern could potentially be impacted due to the Proposed Action. Depending on the species, impacts could either be direct, negligible, short-term, and adverse or direct, moderate, permanent, and adverse impacts.

4.5.2 Red-Cockaded Woodpecker

The Proposed Action is not likely to adversely affect the RCW, as there are no known RCW partitions, clusters, or HMU within the Proposed Action footprint; therefore the Proposed Action would not result in major cumulative impacts on RCW populations in the ROI.

4.5.3 Louisiana Pinesnake

The Proposed Action is not likely to adversely affect the LPS, as there are no known LPS, LPS HMU, or Baird's pocket gopher mounds within the Proposed Action footprint; therefore the Proposed Action would not result in major cumulative impacts on LPS populations in the ROI.

4.6 CUMULATIVE EFFECTS FOR BIOLOGICAL RESOURCES: MIGRATORY BIRDS

The Proposed Action is anticipated to have direct, short-term, negligible, and adverse impacts on migratory bird populations. Negligible impacts, by definition, are unmeasurable and therefore cannot be added to other past, present, and reasonably foreseeable future actions to produce a measurable cumulative impact.

4.7 CUMULATIVE EFFECTS FOR BIOLOGICAL RESOURCES: GAME SPECIES

The Proposed Action is anticipated to have negligible impacts on game species populations. Negligible impacts, by definition, are unmeasurable and therefore cannot be added to other past, present, and reasonably foreseeable future actions to produce a measurable cumulative impact.

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5.0 SUMMARY

This EA has been prepared to evaluate the potential effects on the natural and human environment from activities associated with the Proposed Action to develop the RUBA in the Slagle 1 Training Area at JRTC and Fort Polk. This EA has evaluated the potential effects of implementing each viable Alternative as identified in Section 2.0. The following VECs were analyzed in detail: Water Resources: Streams, Wetlands, and Other Surface Water Resources; Biological Resources: Forest Ecology, Native Plant Species, Invasive Species, Species of Concern, Threatened and Endangered Species, and Migratory Birds and Game Species; and Soils. Additionally a number of previous mitigation and monitoring measures and commitments were identified for each VEC in the detailed analysis of Section 3.0. Implementation of these measures will lessen the impacts to those resources areas and reduce the anticipated impacts to a non-significant level. A copy of the mitigation and monitoring measures is included in full in Appendix C of this document. Table 5-1 summarizes the potential effects of implementing the Proposed Action.

Table 5-1. Summary of Environmental Impacts

Alternative	Alternative 1 (ADP Alternative)	Alternative 2 (Environmentally Preferred Alternative)	Alternative 3 (No Action)
Soils	Direct, short-term, minor, and adverse impacts during construction; negligible, direct, long-term, and adverse impacts during operation	Direct, short-term, minor, and adverse impacts during construction; negligible, direct, long-term, and adverse impacts during operation	No impacts
Water Quality (soil erosion from construction)	Direct, short-term, adverse, and negligible impacts during construction; direct, long-term, negligible, and beneficial impacts during operation	Direct, short-term, adverse, and negligible impacts during construction; direct, long-term, negligible, and beneficial impacts during operation	No impacts
Water Resources: Streams, Wetlands, Other Water Resources	Direct, moderate, permanent, and adverse impacts during construction	Direct, moderate, permanent, and adverse impacts during construction	No impacts

Table 5-1, continued

Alternative	Alternative 1 (ADP Alternative)	Alternative 2 (Environmentally Preferred Alternative)	Alternative 3 (No Action)
Biological Resources: Forest Ecology, Native Plants	Direct, moderate, long-term, and adverse impacts	Direct, moderate, long-term, and adverse impacts	No impacts
Biological Resources: Invasive Species	Negligible impacts	Negligible impacts	No impacts
Biological Resources: Species of Concern	Direct, negligible, short-term, and adverse impacts on highly mobile species or direct, moderate, adverse impacts on less mobile species	Direct, negligible, short-term, and adverse impacts on highly mobile species or direct, moderate, adverse impacts on less mobile species	No impacts
Biological Resources: Threatened and Endangered Species	No impacts on RCW or LPS	No impacts on RCW or LPS	No impacts
Biological Resources: Migratory Birds and Game Species	Direct, short-term, negligible, and adverse impacts on migratory birds; negligible impacts on game species	Direct, short-term, negligible, and adverse impacts on migratory birds; negligible impacts on game species	No impacts

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7.0 ACRONYMS AND ABBREVIATIONS

AR	Army Regulation
BCTs	Brigade Combat Teams
BMPs	Best Management Practices
CBC	Christmas Bird Count
CEA	Cumulative Effects Analysis
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cmbgs	Centimeters below ground surface
COA	Conservation Opportunity Area
COR	Contracting Office Representative
CTC	Combat Training Centers
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DoD	Department of Defense
DPTMS	Directorate of Plans, Training, Mobilization, and Security
DRAS	Dual Row Aerial Supply
DZ	Drop Zone
EA	Environmental Assessment
ENRMD	Environmental and Natural Resources Management Division
ESA	Endangered Species Act
EIS	Environmental Impact Statement
EO	Executive Order
FEIS	Final Environmental Impact Statement
FLS	Forward Landing Strip
FNSI	Finding of No Significant Impact
FORSCOM	Forces Command
HMU	Habitat Management Units
INRMP	Integrated Natural Resources Management Plan
IRRG	Installation Regional Recovery Goal

ITAM	Integrated Training Area Management
IUA	Intensive Use Area
JRTC	Joint Readiness Training Center
KNF	Kisatchie National Forest
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
LNHP	Louisiana Natural Heritage Program
LOS	Level of Service
LPS	Louisiana Pine Snake
LUA	Limited Use Area
LUPZ	Land Use Planning Zone
LWDP	Louisiana Wildlife Diversity Program
MAPS	Monitoring Avian Productivity and Survivorship
MBTA	Migratory Bird Treaty Act
MSR	Major Supply Route
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NOI	Notice of Intent
RCW	Red-cockaded Woodpecker
ROI	Region of Influence
RTV	Rational Threshold Value
SGCN	Species of Greatest Conservation Need
SLUA	Special Limited Use Area
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VEC	Valued Environmental Components

APPENDIX A
FORT POLK SPECIES OF CONCERN

The list of Fort Polk species of concern below was developed by identifying those species from the 2019 Louisiana Rare Species List, obtained from the Louisiana Wildlife Diversity Program (formerly, Louisiana Natural Heritage Program), that occur or potentially occur within or adjacent to Fort Polk Main Post or Peason Ridge, including the Peason Ridge expansion lands. Species are sorted ascending by scientific name within species groups (plants, butterflies, mussels, fishes, crayfishes, amphibians, reptiles, birds, and mammals).

Scientific Name	**Common Name**	**Species Status**[a,b]	**Installation Priority**[c]	**Fort Polk Ranking Estimated Abundance**[d]
Plants				
Acacia angustissima var. hirta	Prairie acacia	G5T4?	Low	P3
Agalinis filicaulis	Thread-stem false foxglove	S2, G3G4	Mod	P1
Amoprha paniculata	Panicled false indigobush	S2, G2G3	High	P1
Amsonia ludoviciana	Louisiana bluestar	S3, G3	Low-Mod	P1
Antennaria parlinii ssp. fallax	Parlin's pussytoes	G5T5	Low	P2
Apocynum cannabinum	Indian hemp	G5	None	P3
Asclepias rubra	Red milkweed	S3, G4G5	Low-Mod	P3
Aureolaria pectinata	Combleaf yellow false foxglove	G5?	Low	P2
Bouteloua rigidiseta	Texas grama	S1, G5	Mod	P2
Burmannia biflora	Northern bluethread	S3, G4G5	Low-Mod	P1
Callicarpa americana var. lactea	White French mullberry	G5	Low	P1
Calopogon oklahomensis	Oklahoma grasspink	S1, G3	Mod	P2
Carex meadii	Mead's sedge	S3, G4G5	Low-Mod	P2
Carex microdonta	Littletooth sedge	S3, G4	Low-Mod	P3
Carex venusta	Darkgreen sedge	S1, G4	Mod	P1
Cirsium muticum	Swamp thistle	SU, G5	Low-Mod	P2
Cyperus grayoides	Mohlenbrock's Umbrella-sedge	S3, G3	Low-Mod	P2
Cypripedium kentuckiense	Southern Lady's-slipper	S1, G3	Mod	P2
Danthonia sericea	Downy danthonia	G5?	Low	P1

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Decumaria barbara	Climbing hydrangea	G5	Low	P1
Echinacea purpurea	Eastern purple coneflower	S2, G4	Low-Mod	P3
Erigeron pulchellus	Robin's plantain	G5	Low	P1
Erythronium rostratum	Yellow troutlily	G5	Low	P2
Euphorbia bicolor	Snow on the prairie	G4G5	Low	P2
Galium virgatum	Southwestern bedstraw	S2, G5	Low-Mod	P2
Gentiana saponaria	Harvestbells	G5	Low	P2
Geranium maculatum	Spotted geranium	S1, G5	Mod	P1
Heliotropium tenellum	Pasture heliotrope	S2, G5	Low-Mod	P2
Hexalectris spicata	Spiked crested coralroot	S2, G5	Low-Mod	P1
Hibiscus aculeatus	Comfortroot	G4G5	Low	P2
Ilex ambigua	Carolina holly	G5	Low	P1
Isotria verticillata	Large whorled pogonia	G5	Low	P1
Lachnocaulon digynum	Pineland bogbutton	S3, G3G4	Low-Mod	P2
Lindera benzoin	Northern spicebush	G5	Low	P1
Lobelia flaccidifolia	Foldear lobelia	S2?, G5	Low-Mod	P1
Lophiola aurea	Goldencrest	S2S3, G4	Low-Mod	P1
Lycopodiella cernua	Staghorn clubmoss	S2, G5	Low-Mod	P1
Malaxis unifolia	Green adder's-mouth orchid	G5	Low	P1
Marshallia trinervia	Broadleaf barbara's buttons	S1, G3	Mod	P3
Nymphoides aquatica	Big floatingheart	G5	Low	P1
Orobanche uniflora	One-flowered Broomrape	S1, G5	Mod	P1
Panicum flexile	Wiry panicgrass	S2, G5	Low-Mod	P2
Panicum rigidulum var. combsii	Combs' panicgrass	S1, G5T5?	Mod	P1
Phryma leptostachya	American lopseed	G5	Low	P1
Platanthera blephariglottis var. conspicua	White fringed orchid	S1, G4G5 T3T4	Mod	P1
Platanthera clavellata	Small green wood orchid	G5	Low	P2

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Platanthera cristata	Crested yellow orchid	G5	Low	P2
Platanthera flava	Pale green orchid	G4?T4?Q	Low	P1
Platanthera integra	Yellow fringeless orchid	S3, G3G4	Low-Mod	P2
Pteroglossaspis ecristata	Giant orchid	S2, G2G3	High	P1
Ratibida pinnata	Pinnate prairie coneflower	G5	Low	P2
Rhus aromatica	Fragrant sumac	G5	Low	P2
Rhus glabra	Smooth sumac	G5	Low	P1
Rhynchospora capitellata	Brownish beaksedge	S1, G5	Mod	P1
Rhynchospora compressa	Flatfruit beaksedge	S3, G4	Low-Mod	P1
Rhynchospora debilis	Savannah beaksedge	S3, G4?	Low-Mod	P1
Rhynchospora macra	Large beaksedge	S3, G3G4	Low-Mod	P2
Rhynchospora microcarpa	Southern beaksedge	S3, G5	Low-Mod	P1
Rhynchospora miliacea	Millet beaksedge	S2, G5	Low-Mod	P3
Rudbeckia missouriensis	Missouri orange coneflower	S2, G4G5	Low-Mod	P2
Rudbeckia scabrifolia	Roughleaf coneflower	S3, G3G4	Low-Mod	P3
Sabatia macrophylla	Large-leafed rose gentian	G4G5	Low	P3
Selaginella apoda	Meadow spikemoss	G5	Low	P1
Seymeria cassioides	Yaupon black-senna	G5	Low	P2
Silene subciliata	Louisiana catchfly	S2, G3	Low-Mod	P1
Sparganium americanum	American bur-reed	G5	Low	P2
Taenidia integerrima	Yellow pimpernel	S2, G5	Low-Mod	P1
Tetragonotheca ludoviciana	Louisiana nerveray	S3, G4	Low-Mod	P3
Thalictrum dasycarpum	Purple meadow-rue	G5	Low	P2
Trifolium reflexum	Buffalo clover	G3G4	Low	P1
Uvularia sessilifolia	Sessileleaf bellwort	S2, G5	Low-Mod	P2
Xanthorhiza simplicissima	Yellowroot	S1, G5	Mod	P3
Xyris drummondii	Drummond's yelloweyed grass	S3, G3G4	Low-Mod	P3

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Xyris scabrifolia	Harper's yelloweyed grass	S2, G3	Low-Mod	P2
Zigadenus densus	Osceola's plume	S2, G5	Low-Mod	P3
Zizaniopsis miliacea	Giant cutgrass	G5	Low	P1
Butterflies				
Abaeis nicippe	Sleepy Orange	G5	Low	P1
Achalarus lyciades	Hoary Edge	G5	Low	P1
Agraulis vanillae	Gulf Fritillary	G5	Low	P3
Amblyscirtes hegon	Pepper and Salt Skipper	SU, G5	Low-Mod	PU
Anaea andria	Goatweed Leafwing	G4G5	Low	P3
Anthocharis midea	Falcate Orangetip	S4, G4G5	Low-Mod	PU
Ascia monuste	Great Southern White	G5	Low	P1
Atalopedes campestris	Sachem	G5	Low	P1
Atrytonopsis hianna	Dusted Skipper	S3, G4G5	Low-Mod	PU
Battus philenor	Pipevine Swallowtail	G5	Low	P3
Calephelis virginiensis	Little Metalmark	S4, G4	Low	P1
Calycopis cecrops	Red-banded Hairstreak	G5	Low	P2
Celastrina ladon	Spring Azure	G4G5	Low	P1
Cercyonis pegala	Common Wood Nymph	G5	Low	P3
Chlosyne gorgone	Gorgone Checkerspot	G5	Low	P1
Chlosyne nycteis	Silvery Checkerspot	G5	Low	P1
Colias eurytheme	Orange Sulphur	G5	Low	P2
Colias philodice	Clouded Sulphur	G5	Low	P3
Copaeodes minima	Southern Skipperling	G5	Low	P1
Cupido comyntas	Eastern Tailed-Blue	G5	Low	P1
Cyllopsis gemma	Gemmed Satyr	G4G5	Low	P1
Danaus plexippus	Monarch	G4	Low	P1
Echinargus isola	Reakirt's Blue	G5	Low	P1
Epargyreus clarus	Silver-spotted Skipper	G5	Low	P1

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Erynnis baptisiae	Wild Indigo Duskywing	SU, G5	Low-Mod	PU
Erynnis funeralis	Funereal Duskywing	G5	Low	P1
Erynnis horatius	Horace's Duskywing	G5	Low	P3
Erynnis juvenalis	Juvenal's Duskywing	G5	Low	P2
Euphyes dukesi	Duke's Skipper	S3, G3	Low-Mod	PU
Euphyes vestris	Dun Skipper	G5	Low	P1
Euptoieta claudia	Variegated Fritillary	G5	Low	P1
Eurytides marcellus	Zebra Swallowtail	G5	Low	P2
Hemiargus ceraunus	Ceraunus Blue	G5	Low	P1
Hermeuptychia sosybius	Carolina Satyr	G5	Low	P3
Hesperia meskei	Meske's Skipper	SU, G3G4	Low-Mod	PU
Hylephila phyleus	Fiery Skipper	G5	Low	P2
Junonia coenia	Common Buckeye	G5	Low	P3
Lerema accius	Clouded Skipper	G5	Low	P1
Libytheana carinenta	American Snout	G5	Low	P1
Limenitis arthemis astyanax	Red-spotted Purple	G5T5	Low	P2
Megathymus streckeri	Strecker's Giant Skipper	SU, G5	Mod	PU
Megathymus yuccae	Yucca Giant Skipper	SU, G5	Mod	PU
Megisto cymela	Little Wood Satyr	G5	Low	P3
Nastra lherminier	Swarthy Skipper	G5	Low	P2
Nathalis iole	Dainty Sulphur	G5	Low	P1
Neonympha areolatus	Georgia Satyr	S3, G3G4	Low-Mod	P3
Nymphalis antiopa	Mourning Cloak	G5	Low	P1
Oligoria maculata	Twin-spot Skipper	G4	Low	P1
Panoquina ocola	Ocola Skipper	G5	Low	P1
Papilio cresphontes	Giant Swallowtail	G5	Low	P1
Papilio glaucus	Eastern Tiger Swallowtail	G5	Low	P2
Papilio palamedes	Palamedes Swallowtail	G4	Low	P3

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Papilio polyxenes	Black Swallowtail	G5	Low	P1
Papilio troilus	Spicebush Swallowtail	G4?	Low	P3
Phoebis sennae	Cloudless Sulphur	G5	Low	P3
Pholisora catullus	Common Sootywing	G5	Low	P1
Phyciodes phaon	Phaon Crescent	G5	Low	P1
Phyciodes tharos	Pearl Crescent	G5	Low	P3
Polites vibex	Whirlabout	G5	Low	P1
Polygonia comma	Eastern Comma	G5	Low	P1
Polygonia interrogationis	Question Mark	G5	Low	P1
Pompeius verna	Little Glassywing	G5	Low	P1
Pyrgus communis	Common Checkered Skipper	G5	Low	P3
Pyrgus oileus	Tropical Checkered Skipper	G5	Low	P1
Pyrisitia lisa	Little Yellow	G5	Low	P3
Satyrium calanus	Banded Hairstreak	G5	Low	P1
Satyrium kingi	King's Hairstreak	SU, G3G4	Mod	PU
Strymon melinus	Gray Hairstreak	G5	Low	P3
Thorybes bathyllus	Southern Cloudywing	G5	Low	P1
Thorybes mexicana	Confused Cloudywing	G5	Low	P1
Thorybes pylades	Northern Cloudywing	G5	Low	P3
Urbanus proteus	Long-Tailed Skipper	G5	Low	P3
Vanessa atalanta	Red Admiral	G5	Low	P1
Vanessa cardui	Painted Lady	G5	Low	P3
Vanessa virginiensis	American Lady	G5	Low	P1
Wallengrenia egeremet	Northern Broken-Dash	G5	Low	P1
Wallengrenia otho	Southern Broken-Dash	G5	Low	P1
Zerene cesonia	Southern Dogface	G5	Low	P2
Mussels				
Amblema plicata	Threeridge	S5/G5	Low	NR

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Fusconaia flava	Wabash Pigtoe	S5/G5	Low	NR
Glebula rotundata	Round Pearlshell	S4/G4G5	Low	NR
Lampsilis hydiana	Louisiana Fatmucket	S5/G4Q	Low	NR
Lampsilis teres	Yellow Sandshell	S5/G5	Low	NR
Leptodea fragilis	Fragile Papershell	S5/G5	Low	NR
Ligumia subrostrata	Pondmussel	S5/G5	Low	NR
Obliquaria reflexa	Threehorn Wartyback	S5/G5	Low	NR
Plectomerus dombeyanus	Bankclimber	S5/G5	Low	NR
Potamilus purpuratus	Bleufer	S5/G5	Low	NR
Pyganodon grandis	Giant Floater	S5/G5	Low	NR
Cyclonaias mortoni	Western Pimpleback	S5/G3	Low	NR
Pseudodontoideus subvexus	Southern Creekmussel	S1/G3	Mod	NR
Strophitus undulatus	Creeper	S2/G5	Low-Mod	NR
Toxolasma parvus	Lilliput	S5/G5	Low	NR
Toxolasma texasiensis	Texas Lilliput	S5/G4	Low	NR
Tritogonia verrucosa	Pistolgrip	S5/G4G5	Low	NR
Uniomerus declivis	Tapered Pondhorn	S5/G5	Low	NR
Uniomerus tetralasmus	Pondhorn	S5/G5	Low	NR
Utterbackia imbecillis	Paper Pondshell	S5/G5	Low	NR
Utterbackia peggyae	Florida Floater	S5/G3	Low	NR
Villosa lienosa	Little Spectaclecase	S5/G5	Low	NR
Fishes				
Ameiurus melas	Black Bullhead	S5/G5	Low	NR
Ameiurus natalis	Yellow Bullhead	S5/G5	Low	NR
Ammocrypta vivax	Scaly Sand Darter	S5/G5	Low	NR
Aphredoderus sayanus	Pirate Perch	S5/G5	Low	NR
Cyprinella lutrensis	Red Shiner	S5/G5	Low	NR
Cyprinella venusta	Blacktail Shiner	S5/G5	Low	NR

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Elassoma zonatum	Banded Pygmy Sunfish	S5/G5	Low	NR
Erimyzon oblongus	Eastern Creek Chubsucker	S5/G5	Low	NR
Erimyzon sucetta	Lake Chubsucker	S5/G5	Low	NR
Esox americanus	Redfin Pickerel	S5/G5	Low	NR
Esox niger	Chain Pickerel	S5/G5	Low	NR
Etheostoma artesiae	Redspot Darter	S3/G5	Low	NR
Etheostoma chlorosoma	Bluntnose Darter	S5/G5	Low	NR
Etheostoma gracile	Slough Darter	S5/G5	Low	NR
Etheostoma proeliare	Cypress Darter	S5/G5	Low	NR
Etheostoma whipplei	Redfin Darter	S5/G4	Low	NR
Fundulus notatus	Blackstripe Topminnow	S5/G5	Low	NR
Fundulus olivaceus	Blackspotted Topminnow	S5/G5	Low	NR
Gambusia affinis	Western Mosquitofish	S5/G5	Low	NR
Hybognathus hayi	Cypress Minnow	S5/G5	Low	NR
Hybognathus nuchalis	Mississippi Silvery Minnow	S5/G5	Low	NR
Hybopsis amnis	Pallid Shiner	S5/G4	Low	NR
Ichthyomyzon fossor	Northern Brook Lamprey	S5/G4	Low	NR
Ichthyomyzon gagei	Southern Brook Lamprey	S5/G5	Low	NR
Labidesthes sicculus	Brook Silverside	S5/G5	Low	NR
Lepomis cyanellus	Green Sunfish	S5/G5	Low	NR
Lepomis gulosus	Warmouth	S5/G5	Low	NR
Lepomis macrochirus	Bluegill	S5/G5	Low	NR
Lepomis marginatus	Dollar Sunfish	S5/G5	Low	NR
Lepomis megalotis	Longear Sunfish	S5/G5	Low	NR
Lepomis miniatus	Redspotted Sunfish	S5/G5	Low	NR
Lepomis punctatus	Spotted Sunfish	S5/G5	Low	NR
Luxilus chrysocephalus	Striped Shiner	S5/G5	Low	NR
Lythrurus fumeus	Ribbon Shiner	S5/G5	Low	NR

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Lythrurus umbratilis	Redfin Shiner	S5/G5	Low	NR
Micropterus punctulatus	Spotted Bass	S5/G5	Low	NR
Micropterus salmoides	Largemouth Bass	S5/G5	Low	NR
Minytrema melanops	Spotted Sucker	S5/G5	Low	NR
Moxostoma poecilurum	Blacktail Redhorse	S5/G5	Low	NR
Notemigonus crysoleucas	Golden Shiner	S5/G5	Low	NR
Notropis atrocaudalis	Blackspot Shiner	S5/G4	Low	NR
Notropis sabinae	Sabine Shiner	S4/G4	Low	NR
Notropis texanus	Weed Shiner	S5/G5	Low	NR
Notropis volucellus	Mimic Shiner	S5/G5	Low	NR
Noturus gyrinus	Tadpole Madtom	S5/G5	Low	NR
Noturus nocturnus	Freckled Madtom	S5/G5	Low	NR
Noturus phaeus	Brown Madtom	S4/G4	Low	NR
Opsopoeodus emiliae	Pugnose Minnow	S5/G5	Low	NR
Percina maculata	Blackside Darter	S5/G5	Low	NR
Percina sciera	Dusky Darter	S5/G5	Low	NR
Pimephales vigilax	Bullhead Minnow	S5/G5	Low	NR
Pomoxis annularis	White Crappie	S5/G5	Low	NR
Semotilus atromaculatus	Creek Chub	S5/G5	Low	NR
Crayfishes				
Creaserinus fodiens	Digger Crayfish	S5/G5	Low	NR
Faxonella clypeata	Ditch Fencing Crayfish	S5/G5	Low	NR
Procambarus acutus	White River Crawfish	S5/G5	Low	NR
Procambarus clarkii	Red Swamp Crawfish	S5/G5	Low	NR
Procambarus dupratzi	Southwestern Creek Crayfish	S5/G5	Low	NR
Procambarus kensleyi	Free State Chimney Crawfish	S5/G4	Low	NR
Procambarus pentastylus	Calcasieu Creek Crayfish	S3/G3	Low-Mod	NR

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Procambarus zonangulus	Southern White River Crawfish	S5/G5	Low	NR
Amphibians				
Ambystoma maculatum	Spotted Salamander	S5/G5	Low	P2
Ambystoma tigrinum	Eastern Tiger Salamander	S1/G5	Mod	PU
Amphiuma tridactylum	Three-toed Amphiuma	S5/G5	Low	P2
Lithobates areolatus areolatus	Southern Crawfish Frog	S1/G4T4	Mod	P1
Necturus beyeri	Gulf Coast Waterdog	S3/G4	Low-Mod	P2
Ophisaurus attenuatus attenuatus	Western Slender Glass Lizard	S3/G5T5	Low	P3
Plestiodon anthracinus	Coal Skink	S3/G5	Low	P2
Plethodon kisatchie	Louisiana Slimy Salamander	S1/G3G4	Mod	PU
Plethodon serratus	Southern Red-Backed Salamander	S1/G5	Mod	PU
Scaphiopus hurterii	Hurter's Spadefoot Toad	S3/G5	Low	P1
Siren intermedia	Lesser Siren	S5/G5	Low	P2
Reptiles				
Apalone mutica	Smooth Softshell	S3/G5	Low	P3
Crotalus horridus	Timber Rattlesnake	S3S4/G4	Low	PU
Deirochelys reticularia	Western Chicken Turtle	S2/G5	Low	P1
Heterodon platirhinos	Eastern Hog-Nosed Snake	S3/G5	Low	P3
Sistrusrus miliarius	Pygmy Rattlesnake	S2/G5	Low	P2
Sternotherus carinatus	Razor-Backed Musk Turtle	S4/G5	Low	P3
Birds				
Accipiter cooperii	Cooper's Hawk	S2B, S3N/G5	Low-Mod	Uncommon (Spring, Summer, Winter)
Centronyx henslowii[e]	Henslow’s Sparrow	S3N/G4	Low	Fairly Common (Winter)
Ammospiza leconteii	Leconte’s Sparrow	S4N/G5	Low	Fairly Common (Winter)
Ammodramus savannarum[e]	Grasshopper Sparrow	S1B, S3N/G5	Mod	Rare (Winter)

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Anas acuta	Northern Pintail	S5N/G5	Low	Very Uncommon (Winter)
Anas platyrhynchos	Mallard	S5/G5	Low	Very Uncommon (Winter)
Antrostomus carolinensis[e]	Chuck-Will's-Widow	S4B/G5	Low	Fairly Common (Spring/Summer)
Antrostomus vociferus[e]	Eastern Whip-poor-will	S5/G5	Low	Rare (Migration)
Asio flammeus	Short-eared Owl	S3N/G5	Low	Rare (Winter)
Aythya affinis	Lesser Scaup	S5N/G5	Low	Uncommon (Winter)
Aythya valisineria	Canvasback	S4N/G5	Low	Rare (Winter)
Bartramia longicauda[e]	Upland Sandpiper	S4N/G5	Low	Very Uncommon (Migration)
Botaurus lentiginosus	American Bittern	S4N/G5	Low	Rare (Winter)
Chondestes grammacus	Lark Sparrow	S3/G5	Low	Uncommon (Summer)
Chordeiles minor[e]	Common Nighthawk	S5/G5	Low	Fairly Common (Spring/Summer)
Cistothorus palustris	Marsh Wren	S4/G5	Low	Rare (Migration)
Cistothorus platensis	Sedge Wren	S4N/G5	Low	Fairly Common (Fall/Winter/Spring)
Colinus virginianus[e]	Northern Bobwhite	S3/G4G5	Low-Mod	Fairly Common (Year-round)
Columbina passerina	Common Ground Dove	S1B,S2N/G5	Mod	Rare (Transient)
Coturnicops noveboracensis[e]	Yellow Rail	S3S4N/G4	Low	Rare (Migration)

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Elanoides forficatus[e]	Swallow-tailed Kite	S1S2B/G5	Mod	Very uncommon (Spring/Summer)
Elanus leucurus	White-tailed Kite	S1B, S1S2N/G5	Mod	Very uncommon (Year-round)
Euphagus carolinus[e]	Rusty Blackbird	S3N/G4	Low	Very uncommon (Winter)
Falco peregrinus	Peregrine Falcon	S3N/G4	Low-Mod	Rare (Transient)
Falco sparverius paulus[e]	Southeastern American Kestrel	S2/G5T4	Low-Mod	Common (Year-round)
Syterna niloitica[e]	Gull-billed Tern	S2/G5	Low-Mod	Rare (Transient)
Geococcyx californianus	Greater Roadrunner	S3/G5	Low	Fairly common (Year-round)
Geothlypis formosa[e]	Kentucky Warbler	S4B/G5	Low	Uncommon (Spring/Summer)
Haliaeetus leucocephalus[e]	Bald Eagle	S3/G5	Mod	Very Uncommon (Spring, Fall, and Winter)
Helmitheros vermivorus	Worm-eating Warbler	S3B/G5	Low	Very Uncommon (Migration)
Hylocichla mustelina	Wood Thrush	S4B/G4	Low	Fairly Common (Spring/Summer)
Lanius ludovicianus[e]	Loggerhead Shrike	S4/G4	Low	Fairly Common (Year-round)
Limnothlypis swainsonii[e]	Swainson's Warbler	S4B/G4	Low	Uncommon (Spring/Summer)
Lophodytes cucullatus	Hooded Merganser	S2S3B, S4N/G5	Low	Uncommon (Winter)

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Melanerpes erythocephalus[e]	Red-headed Woodpecker	S4/G5	Low	Fairly Common (Year-round)
Mycteria americana	Wood Stork	S3N/G4	Low	Rare (Transient)
Onychoprion fuscatus	Sooty Tern	S1B/G5	Mod	Rare (Transient)
Pandion haliaetus	Osprey	S3/G5	Low	Very Uncommon (Transient)
Parkesia motacilla	Louisiana Waterthrush	S3B/G5	Low	Uncommon (Spring/Summer)
Passerina ciris[e]	Painted Bunting	S5B/G5	Low	Uncommon (Spring/Summer)
Platalea ajaja	Roseate Spoonbill	S5B/G5	Low	Rare (Transient)
Protonotaria citrea	Prothonotary Warbler	S5B/G5	Low	Rare (Migration)
Rallus elegans[e]	King Rail	S3B, S4N/G4	Low	Rare (Spring)
Scolopax minor	American Woodcock	S1B, S5N/G5	Mod	Fairly Common (Winter)
Setophaga cerulea[e]	Cerulean Warbler	S1B/G4	Mod	Rare (Migration)
Setophaga discolor	Prairie warbler	S4B/G5	Low	Fairly Common (Spring/Summer)
Setophaga dominica	Yellow-throated Warbler	S4B/G5	Low	Very Uncommon (Spring/Summer)
Setophaga rutcilla	American Redstart	S3B/G5	Low	Very Uncommon (Migration)
Sitta carolinensis	White-breasted Nuthatch	S2/G5	Low-Mod	Rare (Transient)
Sitta pusilla[e]	Brown-headed Nuthatch	S5/G4	Low	Common (Year-round)

Scientific Name	Common Name	Species Status[a,b]	Installation Priority[c]	Fort Polk Ranking Estimated Abundance[d]
Spiza americana[e]	Dicksissel	S4B/G5	Low	Fairly Common (Spring/Summer/Fall)
Spizella pusilla	Field Sparrow	S4BS5N/G5	Low	Fairly Common (Winter/Spring)
Hydroprogne caspia	Caspain Tern	S1S2B, S3N/G5	Mod	Rare (Migration)
Calidris subruficollis[e]	Buff-breasted Sandpiper	S3N/G4	Low	Very Uncommon (Migration)
Vermivora chrysoptera[e]	Golden-winged warbler	S2N/G4	Low	Rare (Migration)
Vermivora cyanoptera[e]	Blue-winged warbler	S5/G5	Low	Very Uncommon (Migration)
Vireo flavifrons	Yellow-throated Vireo	S4B/G5	Low	Fairly Common (Summer)
Vireo gilvus	Warbling Vireo	S1B/G5	Mod	Rare (Migration)
Mammals				
Chaetodipus hispidus	Hispid Pocket Mouse	S2/G5	Low	P3
Corynorhinus rafinesquii	Rafinesque's Big-eared Bat	S4/G3G4	Mod	P3
Geomys breviceps breviceps	Baird's Pocket Gopher	S4/G5TNR	Mod	P3
Lasionycteris noctivagans	Silver-haired Bat	SZ/G3G4	Low	PU
Eptesicus fuscus	Big Brown Bat	S2/G5	Mod	P1
Mustela frenata	Long-tailed Weasel	S3/G5	Low	P1
Myotis austroriparius	Southeastern Myotis	S4/G4	Low	P3
Reithrodontomys humulis	Eastern Harvest Mouse	S3/G5	Low	P1
Ursus americanus luteolus[f]	Louisiana Black Bear	S3/G5T2	Low	P1
Vulpes vulpes	Red Fox	S5/G5	Low	P1

Notes:

[a] Louisiana Wildlife Diversity Program (LWDP) Rare Species State Ranks from Louisiana Rare Species List (2018; http://www.wlf.louisiana.gov/wildlife/louisiana-natural-heritage-program):

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations), S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations),

S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, S4 = apparently secure in Louisiana with many occurrences,

S5 = demonstrably secure in Louisiana,
SU = possibly in peril in Louisiana, but status uncertain,

and S? = rank uncertain.

Qualifiers for non-resident bird species denote season of occurrence as breeding (B) or non-breeding (N); State ranks were not available for some species in the state's rare species list.

[b] Global Rank from LWDP Rare Species List:

G1 = critically imperiled globally because of extreme rarity, G2 = imperiled globally because of rarity,

G3 = either very rare and local throughout its range or found locally in a restricted range, G4 = apparently secure globally, though it may be quite rare in parts of its range,

G5 = demonstrably secure globally, although it may be quite rare in parts of its range, GQ = uncertain taxonomic status,

G? = rank uncertain, and
T = subspecies or variety rank.

[c] Conservation priority based on level of decline and potential impact to the mission as low, low to moderate (Low-Mod) or moderate (Mod). Species of high conservation concern are considered Army Species at Risk (SAR) or are under consideration for federal listing and provided in Table D.5.1 of Fort Polk's Integrated Natural Resources Management Plan;

[d] Fort Polk abundance ranking based on Fort Polk staff observations: P1 = Very rare (< 5 occurrences)

P2 = Rare on Fort Polk (6-40 occurrences)
P3 = Not common on Fort Polk (> 40 occurrences)
PU = No record; Occurs within 50 miles of the property; Status Uncertain NR = Species not yet ranked, insufficient Installation-wide monitoring data Avian Species Ranks - Abundance (Season of Occurrence)

Common = 11-25 likely to be seen/heard in appropriate habitat in one

day Fairly common (3-10 likely to be seen/heard in appropriate habitat

in one day Uncommon = 1-2 likely to be seen/heard in appropriate

habitat in one day Very uncommon = 1 to 5 records during a season

likely

Rare = only 1-3 observations total recorded on the Installation

[e] Species classified as Fort Polk Mission Sensitive Priority Bird Species based on classifications completed by the US Department of Defense and Partners In Flight (PIF) Fact Sheet #11: DoD PIF Mission-Sensitive Priority Bird Species. All Fort Polk Mission Sensitive Priority Bird Species are identified in Appendix D.4.b of this INRMP.

[f.] Solitary bears observed, or tracks observed on two occasions within the past 10 years on Army and adjacent Kisatchie National Forest lands, but no known occurrence of breeding females within the Fort Polk region.

APPENDIX B
MIGRATORY BIRD TREATY ACT SPECIES KNOWN TO OCCUR ON FORT POLK

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Accipiter cooperii	Cooper's Hawk	G5	U	Spring, Summer, Winter	X	X		
Accipiter striatus	Sharp-shinned Hawk	G5	U	Fall, Winter, Spring	X	X		
Actitis macularius	Spotted Sandpiper	G5	U	Migration	X			
Agelaius phoeniceus	Red-Winged Blackbird	G5	A	Year-round	X	X	X	
Aix sponsa	Wood Duck	G5	C	Year-round	X	X		X
Ammodramus savannarum[e]	Grasshopper Sparrow	G5	R	Winter	X	X		
Ammospiza leconteii	Leconte's Sparrow	G5	FC	Winter	X	X		
Anas acuta	Northern Pintail	G5	VU	Winter	X	X		
Anas crecca	Green-winged Teal	G5	FC	Fall, Winter, Spring	X	X		
Anas platyrhynchos	Mallard	G5	VU	Winter	X	X		
Anhinga anhinga	Anhinga	G5	U	Year-round	X	X		
Anser albifrons	Greater White-fronted Goose	G5	R	Migration	X	X		
Anser caerulescens	Snow Goose	G5	VU	Winter, Fall	X	X		
Anser rossii	Ross's Goose	G4	R	Migration	X			
Anthus rubescens	American Pipit	G5	FC	Winter	X	X		
Anthus spragueii[e, f]	Sprague's Pipit	G3G4	R	Winter	X	X		
Antrostomus carolinensis[e]	Chuck-will's-widow	G5	FC	Spring, Summer	X			
Antrostomus vociferus[e]	Eastern Whip-poor-will	G5	R	Migration	X		X	
Archilochus colubris	Ruby-throated Hummingbird	G5	A	Spring, Summer, Fall	X		X	
Ardea alba	Great Egret	G5	FC	Year-round	X	X		
Ardea herodias	Great Blue Heron	G5	FC	Year-round	X	X		
Asio flammeus	Short-eared Owl	G5	R	Winter Transient	X	X		
Aythya affinis	Lesser Scaup	G5	U	Winter	X	X		
Aythya collaris	Ring-necked Duck	G5	U	Fall, Winter	X	X		
Aythya valisineria	Canvasback	G5	R	Winter	X	X		
Baeolophus bicolor	Tufted Titmouse	G5	A	Year-round	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Bartramia longicauda[e]	Upland Sandpiper	G5	VU	Migration	X			
Bombycilla cedrorum	Cedar Waxwing	G5	A	Winter, Spring	X	X	X	
Botaurus lentiginosus	American Bittern	G5	R	Winter	X	X		
Branta canadensis	Canada Goose	G5	R	Migration	X	X		
Bubo virginianus	Great Horned Owl	G5	FC	Year-round	X	X	X	
Bubulcus ibis	Cattle Egret	G5	A	Spring, Summer	X			
Bucephala clangula	Common Goldeneye	G5	R	Winter	X	X		
Buteo jamaicensis	Red-tailed Hawk	G5	FC	Year-round	X		X	
Buteo lineatus	Red-shouldered Hawk	G5	FC	Year-round	X		X	
Buteo platyperus	Broad-winged Hawk	G5	A	Spring, Summer, Fall	X		X	
Butorides virescens	Green Heron	G5	FC	Spring, Summer, Fall	X			
Calidris alpina	Dunlin	G5	R	Migration	X			
Calidris bairdii	Baird's Sandpiper	G5	R	Migration	X			
Calidris himantopus	Stilt Sandpiper	G5	VU	Migration	X			
Calidris mauri	Western Sandpiper	G5	R	Migration	X			
Calidris melanotos	Pectoral Sandpiper	G5	U	Migration	X			
Calidris minutilla	Least Sandpiper	G5	R	Migration	X			
Calidris pusilla	Semipalmated Sandpiper	G5	VU	Migration	X			
Calidris subruficollis[e]	Buff-breasted Sandpiper	G4	VU	Migration	X			
Cardellina canadensis	Canada Warbler	G5	R	Migration	X		X	
Cardellina pusilla	Wilson's Warbler	G5	R	Migration	X	X	X	
Cardinalis cardinalis	Northern Cardinal	G5	A	Year-round	X	X	X	
Cathartes aura	Turkey Vulture	G5	A	Year-round	X	X		
Catharus fuscescens	Veery	G5	R	Migration	X		X	
Catharus guttatus	Hermit Thrush	G5	FC	Winter	X	X		
Catharus minimus	Gray-cheeked Thrush	G5	R	Migration	X		X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Catharus ustulatus	Swainson's Thrush	G5	R	Migration	X		X	
Centronyx henslowii[e]	Henslow's Sparrow	G4	FC	Winter	X	X		
Certhia americana	Brown Creeper	G5	VU	Winter	X	X	X	
Chaetura pelagica	Chimney Swift	G4G5	FC	Spring, Summer	X		X	
Charadrius vociferus	Killdeer	G5	FC	Year-round	X			
Chlidonias niger	Black Tern	G4G5	R	Migration	X	X		
Chondestes grammacus	Lark Sparrow	G5	VU	Summer	X			
Chordeiles minor	Common Nighthawk	G5	FC	Spring, Summer	X		X	
Circus hudsonius	Northern Harrier	G5	U	Fall, Winter, Spring	X	X	X	
Cistothorus palustris	Marsh Wren	G5	R	Migration	X			
Cistothorus platensis	Sedge Wren	G5	FC	Fall, Winter, Spring	X	X		
Coccothraustes vespertinus	Evening Grosbeak	G5	R	Transient	X	X	X	
Coccyzus americanus	Yellow-billed Cuckoo	G5	FC	Summer, Spring	X		X	
Coccyzus erythropthalmus	Black-billed Cuckoo	G5	R	Migration	X		X	
Colaptes auratus	Northern Flicker	G5	FC	Year-round	X	X	X	
Columbina inca	Inca Dove	G5	VU	Transient	X			
Columbina passerina	Common Ground-Dove	G5	R	Transient	X			
Contopus cooperi[e]	Olive-sided Flycatcher	G4	R	Migration	X			
Contopus virens	Eastern Wood-Pewee	G5	FC	Spring, Summer, Fall	X		X	
Coragyps atratus	Black Vulture	G5	FC	Year-round	X	X		
Corvus brachyrhynchos	American Crow	G5	A	Year-round	X	X	X	
Corvus ossifragus	Fish Crow	G5	FC	Year-round	X	X	X	
Coturnicops noveboracensis[e]	Yellow Rail	G4	R	Migration	X	X		
Cyanocitta cristata	Blue Jay	G5	C	Year-round	X	X	X	
Dendrocygna autumnalis	Black-bellied Whistling-Duck	G5	R	Migration	X			
Dendrocygna bicolor	Fulvous Whistling-Duck	G5	VU	Transient	X			

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Dolichonyx oryzivorus	Bobolink	G5	VU	Migration	X		X	
Dryobates borealis	Red-cockaded Woodpecker	G3	C	Year-round	X	X	X	
Dryobates pubescens	Downy Woodpecker	G5	FC	Year-round	X	X	X	
Dryobates villosus	Hairy Woodpecker	G5	FC	Year-round	X	X	X	
Dryocopus pileatus	Pileated Woodpecker	G5	C	Year-round	X	X	X	
Dumetella carolinensis	Gray Catbird	G5	FC	Year-round	X	X	X	
Egretta caerulea	Little Blue Heron	G5	FC	Spring, Summer, Fall	X			
Egretta thula	Snowy Egret	G5	FC	Spring, Summer, Fall	X			
Elanoides forficatus[e]	Swallow-tailed Kite	G5	VU	Spring, Summer	X			
Elanus leucurus	White-tailed Kite	G5	VU	Year-round	X			
Empidonax minimus	Least Flycatcher	G5	R	Migration	X			
Empidonax virescens	Acadian Flycatcher	G5	FC	Migration, Summer	X		X	
Eremophila alpestris	Horned Lark	G5	R	Transient	X	X		
Eudocimus albus	White Ibis	G5	U	Summer	X			
Euphagus carolinus[e]	Rusty Blackbird	G4	VU	Winter	X	X		
Euphagus cyanocephalus	Brewer's Blackbird	G5	R	Winter	X	X		
Falco columbarius	Merlin	G5	R	Winter	X	X		
Falco peregrinus	Peregrine Falcon	G4	R	Transient	X	X		
Falco sparverius paulus	Southeastern American Kestrel	G5T4	C	Year-round	X	X	X	X
Fulica americana	American Coot	G5	U	Winter	X		X	
Gallinago delicata	Wilson's Snipe	G5	VU	Winter	X	X		
Gallinula galeata	Common Gallinule	G5	R	Transient	X	X		
Gavia immer	Common Loon	G5	R	Migration	X			
Geococcyx californianus	Greater Roadrunner	G5	FC	Year-round	X	X		
Geothlypis formosa[e]	Kentucky Warbler	G5	U	Spring, Summer	X		X	
Geothlypis trichas	Common Yellowthroat	G5	FC	Year-round	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Haemorhous mexicanus	House Finch	G5	C	Year-round	X	X	X	
Haemorhous purpureus	Purple Finch	G5	U	Winter, Spring	X			
Haliaeetus leucocephalus[e]	Bald Eagle	G5	VU	Fall, Winter, Spring	X	X		
Helmitheros vermivorum	Worm-eating Warbler	G5	VU	Migration	X			
Hirundo rustica	Barn Swallow	G5	A	Spring, Summer, Fall	X		X	
Hydroprogne caspia	Caspian Tern	G5	R	Migration	X			
Hylocichla mustelina	Wood Thrush	G4	FC	Summer, Spring	X	X	X	
Icteria virens	Yellow-breasted Chat	G5	C	Summer, Spring	X		X	
Icterus galbula	Baltimore Oriole	G5	FC	Migration	X		X	
Icterus spurius	Orchard Oriole	G5	FC	Spring, Summer	X		X	
Ictinia mississippiensis	Mississippi Kite	G5	C	Spring, Summer	X		X	
Junco hyemalis	Dark-eyed Junco	G5	C	Fall, Winter, Spring	X	X	X	
Lanius ludovicianus[e]	Loggerhead Shrike	G4	FC	Year-round	X	X		
Limnothlypis swainsonii[e]	Swainson's Warbler	G4	U	Spring, Summer	X		X	
Lophodytes cucullatus	Hooded Merganser	G5	U	Winter	X	X		
Mareca americana	American Wigeon	G5	U	Winter	X	X		
Mareca strepera	Gadwall	G5	VU	Winter	X	X		
Megaceryle alcyon	Belted Kingfisher	G5	FC	Year-round	X	X	X	
Megascops asio	Eastern Screech Owl	G5	FC	Year-round	X	X	X	
Melanerpes carolinus	Red-bellied Woodpecker	G5	C	Year-round	X	X	X	
Melanerpes erythrocephalus[e]	Red-headed Woodpecker	G5	FC	Year-round	X	X	X	
Melospiza georgiana	Swamp Sparrow	G5	FC	Winter, Spring	X	X	X	
Melospiza lincolnii	Lincoln's Sparrow	G5	VU	Fall, Winter, Spring	X		X	
Melospiza meloida	Song Sparrow	G5	C	Winter, Spring	X		X	
Mergus serrator	Red-breasted Merganser	G5	R	Migration	X	X		
Mimus polyglottos	Northern Mockingbird	G5	C	Year-round	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Mniotilta varia	Black-and-white Warbler	G5	FC	Migration	X		X	
Molothrus ater	Brown-headed Cowbird	G5	C	Year-round	X	X	X	
Mycteria americana	Wood Stork	G4	R	Transient	X			
Myiarchus crinitus	Great Crested Flycatcher	G5	FC	Spring, Summer, Fall	X		X	
Nyctanassa violacea	Yellow-crowned Night Heron	G5	R	Summer, Spring	X			
Nycticorax nycticorax	Black-crowned Night Heron	G5	VU	Summer	X			
Onychoprion fuscatus	Sooty Tern	G5	R	Transient	X			
Oreothlypis celata	Orange-crowned Warbler	G5	C	Fall, Winter, Spring	X	X		
Oreothlypis peregrina	Tennessee Warbler	G5	R	Migration	X		X	
Oreothlypis ruficapilla	Nashville Warbler	G5	R	Migration	X		X	
Oxyura jamaicensis	Ruddy Duck	G5	VU	Fall, Winter	X	X		
Pandion haliaetus	Osprey	G5	VU	Transient	X			
Parkesia motacilla	Louisiana Waterthrush	G5	U	Spring, Summer	X		X	
Parkesia noveboracensis	Northern Waterthrush	G5	R	Migration	X			
Passerculus sandwichensis	Savannah Sparrow	G5	A	Fall, Winter, Spring	X	X	X	
Passerella itiaca	Fox Sparrow	G5	VU	Winter	X	X		
Passerina caerulea	Blue Grosbeak	G5	FC	Spring, Summer	X		X	
Passerina ciris[e]	Painted Bunting	G5	U	Spring, Summer	X		X	
Passerina cyanea	Indigo Bunting	G5	C	Spring, Summer, Fall	X		X	
Pelecanus erythrorhynchos	American White Pelican	G4	VU	Migration	X	X		
Petrochelidon pyrrhonota	Cliff Swallow	G5	C	Spring, Summer	X			
Peucaea aestivalis[e, f]	Bachman's Sparrow	G3	FC	Year-round	X	X		
Phalacrocorax auritus	Double-crested Cormorant	G5	U	Fall, Winter	X	X		
Phalaropus tricolor	Wilson's Phalarope	G5	R	Migration	X			
Pheucticus ludovicianus	Rose-breasted Grosbeak	G5	U	Migration	X			
Pipilo erythrophthalmus	Eastern Towhee	G5	FC	Year-round	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Piranga olivacea	Scarlet Tanager	G5	R	Migration	X			
Piranga rubra	Summer Tanager	G5	C	Spring, Summer, Fall	X		X	
Platalea ajaja	Roseate Spoonbill	G5	R	Transient	X			
Plegadis chihi	White-faced Ibis	G5	VU	Migration	X			
Pluvialis dominica	American Golden-Plover	G5	R	Migration	X		X	
Podilymbus podiceps	Pied-billed Grebe	G5	C	Fall, Winter, Spring	X		X	
Polioptila caerulea	Blue-gray Gnatcatcher	G5	FC	Year-round	X	X	X	
Pooecetes gramineus	Vesper Sparrow	G5	VU	Winter Resident	X	X		
Porphyrio martinicus	Purple Gallinule	G5	R	Migration	X			
Porzana carolina	Sora	G5	VU	Migration	X			
Progne subis	Purple Martin	G5	FC	Spring, Summer	X		X	
Protonotaria citrea	Prothonotary Warbler	G5	R	Migration	X		X	
Pyrocephalus rubinus	Vermilion Flycatcher	G5	R	Winter Transient	X	X		
Quiscalus quiscula	Common Grackle	G5	FC	Spring, Summer, Winter	X	X		
Rallus elegans	King Rail	G4	R	Spring	X			
Rallus limicola	Virginia Rail	G5	R	Migration	X			
Recurvirostra americana	American Avocet	G5	R	Transient	X			
Regulus calendula	Ruby-crowned Kinglet	G5	C	Fall, Winter, Spring	X	X		
Regulus satrapa	Golden-crowned Kinglet	G5	FC	Fall, Winter, Spring	X	X		
Riparia riparia	Bank Swallow	G5	R	Migration	X		X	
Sayornis phoebe	Eastern Phoebe	G5	FC	Fall, Winter, Spring	X	X	X	
Scolopax minor	American Woodcock	G5	FC	Winter	X	X		
Seiurus aurocapilla	Ovenbird	G5	R	Migration	X		X	
Setophaga americana	Northern Parula	G5	U	Spring, Summer	X		X	
Setophaga castanea	Bay-breasted Warbler	G5	R	Migration	X		X	
Setophaga cerulea[e]	Cerulean Warbler	G4	R	Migration	X		X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Setophaga citrina	Hooded Warbler	G5	C	Spring, Summer, Fall	X		X	
Setophaga coronata	Yellow-rumped Warbler	G5	C	Winter	X		X	
Setophaga discolor[e]	Prairie Warbler	G5	FC	Spring, Summer	X		X	
Setophaga dominica	Yellow-throated Warbler	G5	VU	Summer	X		X	
Setophaga fusca	Blackburnian Warbler	G5	R	Migration	X		X	
Setophaga magnolia	Magnolia Warbler	G5	VU	Migration	X		X	
Setophaga palmarum	Palm Warbler	G5	U	Fall, Winter	X	X		
Setophaga pensylvanica	Chestnut-sided Warbler	G5	U	Migration	X		X	
Setophaga petechia	Yellow Warbler	G5	VU	Migration	X		X	
Setophaga pinus	Pine Warbler	G5	A	Year-round	X	X	X	
Setophaga ruticilla	American Redstart	G5	VU	Migration	X		X	
Setophaga virens	Black-throated Green Warbler	G5	FC	Migration	X		X	
Sialia sialis	Eastern Bluebird	G5	C	Year-round	X	X	X	X
Sitta canadensis	Red-breasted Nuthatch	G5	U	Fall, Winter, Spring	X	X	X	
Sitta carolinensis	White-breasted Nuthatch	G5	R	Transient	X			
Sitta pusilla[e]	Brown-headed Nuthatch	G4	C	Year-round	X	X	X	
Spatula clypeata	Northern Shoveler	G5	U	Fall, Winter	X	X		
Spatula discors	Blue-winged Teal	G5	C	Migration, Winter	X	X		
Sphyrapicus varius	Yellow-bellied Sapsucker	G5	FC	Winter, Fall	X	X	X	
Spinus pinus	Pine Siskin	G5	FC	Winter, Spring	X	X	X	
Spinus tristis	American Goldfinch	G5	A	Fall, Winter, Spring	X	X	X	
Spiza americana[e]	Dickcissel	G5	FC	Spring, Summer, Fall	X			
Spizella passerina	Chipping Sparrow	G5	A	Year-round	X	X	X	
Spizella pusilla	Field Sparrow	G5	FC	Winter, Spring	X	X		
Stelgidopteryx serripennis	Northern Rough-winged Swallow	G5	FC	Migration	X		X	
Strix varia	Barred Owl	G5	FC	Year-round	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Sturnella magna	Eastern Meadowlark	G5	C	Year-round	X	X	X	
Syterna niloitica[e]	Gull-billed Tern	G5	R	Transient	X			
Tachycineta bicolor	Tree Swallow	G5	FC	Migration	X		X	
Thryomanes bewickii	Bewick's Wren	G5	R	Winter	X	X		
Thryothorus ludovicianus	Carolina Chickadee	G5	C	Year-round	X	X	X	
Thryothorus ludovicianus	Carolina Wren	G5	A	Year-round	X	X	X	
Toxostoma rufum	Brown Thrasher	G5	FC	Year-round	X	X	X	
Tringa flavipes	Lesser Yellowlegs	G5	R	Migration	X			
Tringa melanoleuca	Greater Yellowlegs	G5	R	Migration	X			
Tringa solitaria	Solitary Sandpiper	G5	VU	Migration	X			
Troglodytes aedon	House Wren	G5	C	Fall, Winter, Spring	X	X	X	
Troglodytes hiemalis	Winter Wren	G5	VU	Winter, Fall	X	X		
Turdus migratorius	American Robin	G5	A	Year-round	X	X	X	
Tyrannus forficatus	Scissor-tailed Flycatcher	G5	FC	Spring, Summer, Fall	X		X	
Tyrannus tyrannus	Eastern Kingbird	G5	FC	Spring, Summer	X		X	
Tyrannus verticalis	Western Kingbird	G5	R	Migration	X	X		
Tyto alba	Barn Owl	G5	R	Transient	X	X	X	
Vermivora chrysoptera[e]	Golden-winged Warbler	G4	R	Migration	X		X	
Vermivora cyanoptera[e]	Blue-winged Warbler	G5	VU	Migration	X		X	
Vireo flavifrons	Yellow-throated Vireo	G5	FC	Summer	X		X	
Vireo gilvus	Warbling Vireo	G5	R	Migration	X			
Vireo griseus	White-eyed Vireo	G5	FC	Year-round	X	X	X	
Vireo olivaceus	Red-eyed Vireo	G5	C	Spring, Summer, Fall	X		X	
Vireo philadelphicus	Philadelphia Vireo	G5	R	Migration	X			
Vireo solitarius	Blue-headed Vireo	G5	FC	Migration, Winter	X	X	X	
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	G5	R	Migration	X	X	X	

Scientific Name	Common Name	Global Rank[a]	Est. Pop. Size[b]	Use of Installation[c]	Monitoring Type and Frequency[d]			
					Avian Point Counts	Christmas Bird Count	MAPS	Nest Boxes
Zenaida asiatica	White-winged Dove	G5	R	Transient	X	X	X	
Zenaida macroura	Mourning Dove	G5	C	Year-round	X	X		
Zonotrichia albicollis	White-throated Sparrow	G5	FC	Fall, Winter, Spring	X	X	X	
Zonotrichia leucophrys	White-crowned Sparrow	G5	U	Winter	X	X	X	

Notes:
[a] Global rank
G3 = either very rare and local throughout its range or found locally in a restricted range,
G4 = apparently secure globally, though it may be quite rare in parts of its range,
G5 = demonstrably secure globally, although it may be quite rare in parts of its range,
T = subspecies or variety rank.
[b] Estimated population size based on Fort Polk point count records during season of greatest abundance on the Installation:
A = Abundant or 26+ likely to be seen/heard in appropriate habitat in one day;
C = Common or 11-25 likely to be seen/heard in appropriate habitat in one day;
FC = Fairly Common or 3-10 likely to be seen/heard in appropriate habitat in one day;
U = Uncommon or 1-2 likely to be seen/heard in appropriate habitat in one day;
VU = Very Uncommon or 1 to 5 records during a season likely; and
R = Rare or 1 to 3 records ever made on the Installation.
[c] Use of Installation is classified as follows:
Year-round = resident species present throughout the year;
Migration = species present and using the Installation during brief periods (days or weeks) of spring and fall migration;
Transient = species occuring infrequently over time and without viable local populations; and
Season of use = Winter, Spring Summer, Fall or a combination thereof.
[d] Avian monitoring is comprised of four projects and capture of data by those programs for a particular species is dependent on species presence during time of project implementation. Those projects are listed below and further described in Section D.6.a of this INRMP:
Avian Point Counts = Avian point counts conducted monthly along three routes established by Installation biologists;
Christmas Bird Count (CBC) = An annual one-day event during the period of December 14-Janurary 5 to identify avian species across the entire Installation in accordance with Annual Audubon CBC program requirements;
MAPS = Breeding season capture and banding of avian species at mist net stations established according to the Institute for Bird Populations Monitoring Avian Productivity and Survivorship (MAPS) program requirements; and
Nest Box = Annual monitoring of nest boxes erected on the Installation to provide sutiable nesting habitat for targeted species. Boxes are monitored for nest initiation and to estimate reproductive output.
[e] Species classified as Fort Polk Mission Sensitive Priority Bird Species based on classifications completed by the US Department of Defense and Partners In Flight (PIF) Fact Sheet #11: DoD PIF Mission-Sensitive Priority Bird Species. Fort Polk Mission Sensitive Priority Bird Species are identified in Appendix D.4.b.
[f] Army Species at Risk are plant and animal species that are not federally listed as threatened or endangered under the ESA, but that are federally designated as proposed or candidates for listing, are regarded by NatureServe as critically imperiled or imperiled (G1 or G2) throughout their range, or are birds that are regarded by NatureServe as vulnerable (G3) throughout their range, or have an IUCN status of CR, EN, VU, or NT (DoD Legacy Program 2014).

APPENDIX C
MITIGATION AND MONITORING PLAN

1. MITIGATION AND MONITORING MEASURES

The Joint Readiness Training Center (JRTC) and Fort Polk and the Kisatchie National Forest (KNF) have developed this mitigation and monitoring plan as a part of the Final Environmental Impact Statement (FEIS) for proposed actions relating to force transformation, installation mission support, and long-term use of adjacent Forest Service lands. A set of 15 mitigation and monitoring measures are proposed to address potential adverse effects to the human environment identified in the FEIS. These measures would augment existing and proposed Army and Forest Service environmental stewardship programs and practices, and taken collectively, would mitigate adverse effects through time, in accordance with Council on Environmental Quality regulations at 40 CFR 1508.20, by avoiding, minimizing, reducing or rectifying adverse effects to soils, vegetative cover, water quality and biological resources.

Figure V-1 portrays the conceptual approach used in development of the proposed mitigation and monitoring measures. Measures were developed within five functional areas that contribute to sustainment of military training lands and natural resources. Each of the functional areas serves to integrate the achievement of training requirements and environmental stewardship activities and principles through time and space. The five functional areas are:

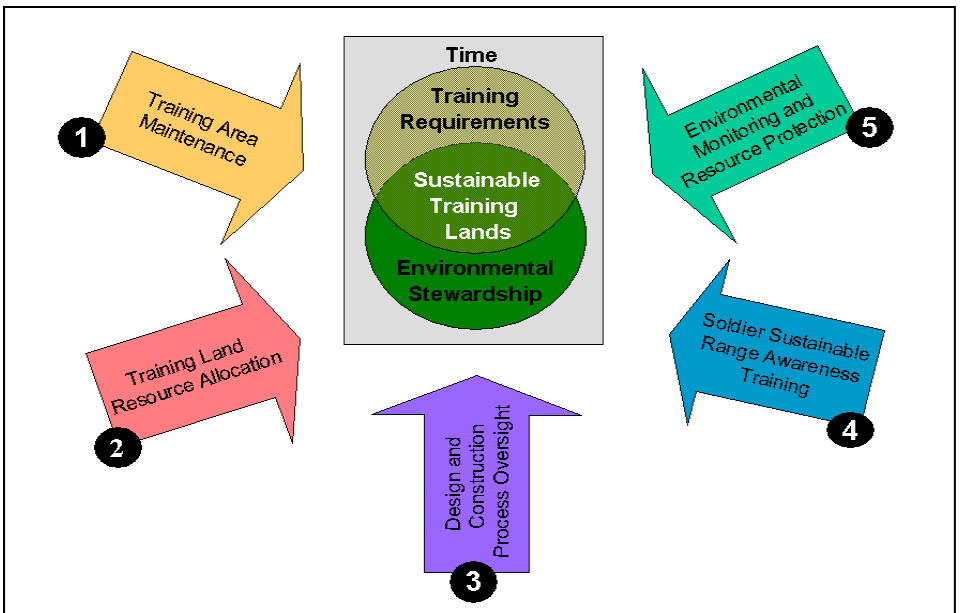

Figure V-1. Conceptual Framework for Mitigation and Monitoring Plan

- Training Area Maintenance;
- Training Land Resource Allocation (i.e., scheduling of training and non-training activities);
- Facilities Design and Construction Process Oversight;

- Soldier Sustainable Range Awareness Training; and
- Environmental Monitoring and Resource Protection.

The sections below provide descriptions of the proposed mitigation and monitoring measures within each functional area; objectives to be achieved; the affected resources (i.e., those expected to benefit from implementation of the mitigation and monitoring measures); Army and Forest Service roles and responsibilities; and the key tasks to be conducted.

TRAINING AREA MAINTENANCE

Proposed Environmental Stewardship/Mitigation Measure 1A

Description

Maneuver Damage Inspection and Monitoring. The JRTC and Fort Polk's maneuver damage inspection and repair program would be expanded to include identification, repair, and monitoring for damages from routine home station training events and to track compliance with applicable environmental protocols and restrictions on Army and Forest Service lands. All training lands would be inspected for maneuver damage to soils, vegetation, streams and wetlands, and sensitive environmental resources following each training exercise, and corrective actions would be conducted as required. A point of contact within each unit, such as the unit Environmental Compliance Officer (ECO), would be designated to ensure that repairs conducted by the unit were completed appropriately. In addition, a written agreement between the garrison and mission commanders would establish responsibilities and funding mechanisms for maneuver damage repairs. Corrective actions such as grading, seeding and fertilizing to reestablish vegetative cover would be monitored and evaluated for effectiveness.

It should be noted that expansion of JRTC and Fort Polk's existing maneuver damage inspection and repair program is included as a part of the proposed action (see Section 2.4.6.1 of the FEIS). However, the proposal has been refined to include a written agreement for funding of repairs and is included in the mitigation and monitoring plan due to its linkage to measures 1D, 2A, 2B, 2C, 5B and 5D.

Objectives

- Minimize or avoid degradation of training lands and long-term damage to soils, vegetation, streams and wetlands, and sensitive environmental resources through identification and correction of maneuver damages and soldier Sustainable Range Awareness education
- Comply with JRTC and Fort Polk (FP) Regulation 385-1 and Forest Service Special Use Permit (SUP)/Operating Plan, including restrictions on activities within red-cockaded woodpecker (RCW) clusters, cultural resource sites, and other marked environmentally sensitive resources.
- Minimize long-term maintenance and rehabilitation costs.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Endangered species
- Cultural resources

Roles and Responsibilities

- Garrison Commander institutes a program for maneuver damage inspection, corrective actions, monitoring, and reporting. Program managed by Chief of Staff, Garrison and executed by Directorate of Plans, Training and Mobilization, Directorate of Public Works (DPW), and Directorate of Resource Management (DRM), in coordination with Assistant Chief of Staff, G3 (Operations and Plans) and Forest Service.

Key Tasks

- Inspect all training lands following each training exercise.
- Conduct corrective actions.
- Monitor effectiveness of corrective actions.
- Track compliance with JRTC and FP Regulation 385-1 and SUP/Operating Plan.
- Report and evaluate overall performance.

Mitigation Measure 1B

Description

*Development and Implementation of Watershed Management Plan*s. Watershed management plans would be updated or developed for all subwatersheds on Fort Polk main post, Intensive Use Area (IUA), Limited Use Area (LUA) and Peason Ridge where ground disturbing military activities are permitted. Management plans would be reviewed annually and updated on a rotating basis at 3-5 year intervals according to watershed conditions, priorities for land rehabilitation, and availability of funds. Watersheds in the northeastern portion of Peason Ridge containing tributaries to Kisatchie Bayou would receive first priority for update of management plans and land rehabilitation measures. Within other watersheds, sites requiring rehabilitation or maintenance would be prioritized by identification of severity of erosion problem areas. Implementation of the plans would involve design and installation of Best Management Procedures (BMPs) such as a sediment basin network or individual sediment basins in specific watersheds, silt fences, check dams, riprap in drainage pathways, erosion mats, reseeding, gabions, or enhancement/ preservation of wider vegetated buffers adjacent to streams.

Objectives

- Sustain training land conditions and long-term soil productivity by implementing land rehabilitation and maintenance practices designed to minimize soil erosion and compaction, limit soil loss, restore or maintain vegetative cover, and restore disturbed or degraded areas to natural conditions.
- Minimize sediment loading to streams and wetlands.

Affected Resources

- Vegetative cover
- Soils
- Water resources

Roles and Responsibilities

- Garrison Commander implements updated watershed management plans for rehabilitation of damaged sites. Program managed by Chief of Staff, Garrison through review/approval of annual Integrated Training Area Management (ITAM) Work Plan and development of long-term priorities, in coordination with Assistant Chief of Staff, G3 and Forest Service.

Key Tasks

- Develop/update management plans for watersheds on Fort Polk main post, IUA, LUA and Peason Ridge where ground-disturbing training activities are permitted
- Conduct annual review of watershed management plans and prioritize sites for rehabilitation.
- Conduct site work, restore vegetative cover and eliminate excessive erosion from damaged sites.

Mitigation Measure 1C

Description

*Annual Maintenance of Sediment Basin*s. All sediment basins would be inspected to insure that they are functioning properly. Basin maintenance would be prioritized based on need. Excess sediment would be removed from basins, applied to upland areas and stabilized.

Objectives

- Ensure that sediment basins are functioning properly to trap soil particles before they enter streams and wetlands.

Affected Resources

- Soils
- Water resources

Roles and Responsibilities

- Garrison Commander conducts annual maintenance of sediment basins across the installation.
- Program managed by Chief of Staff, Garrison and executed by DPTMS, DPW, DRM, in coordination with Assistant Chief of Staff, G3 and Forest Service.

Key Tasks

- Inspect sediment basins and develop priority list and schedule for maintenance.
- Remove excess sediment from basins according to schedule and apply in upland areas.

Mitigation Measure 1D

Description

*Temporary Closure of Site*s. Maneuver damage inspectors would identify sites on Army and Forest Service needing protection to facilitate recovery from maneuver damage to soils, vegetation, streams and wetlands, and sensitive environmental resources. Sites would be marked as temporarily off-limits to digging/driving, and recovery would be monitored. Closed areas would be added on a quarterly or as needed basis to the “No Dig/No Drive” map used to help military trainers for planning purposes.

Objectives

- Maintain training through identification and correction of maneuver damages to soils, vegetation, streams and wetlands, and sensitive environmental resources.
- Protect sensitive environmental resources.
- Minimize long-term maintenance and rehabilitation costs.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Endangered species
- Cultural resources

Roles and Responsibilities

- Garrison Commander approves temporary closure of sites as needed to facilitate recovery.

Key Tasks

- Maneuver damage inspectors identify sites needing protection to facilitate recovery.
- Sites are temporarily marked as off-limits to digging/driving.
- Inspectors monitor condition of sites.
- "No Dig/No Drive" training map overlay is updated quarterly.

2. TRAINING LAND RESOURCE ALLOCATION

Mitigation Measure 2A

Description

Integration of Maneuver Damage Inspection and Repair into Annual Training Calendar. Sufficient time on the Annual Training Calendar would be scheduled for maneuver damage inspection and repair following all training events. Updated protocols for scheduling of maneuver damage inspections, repairs and other resource management needs on Army and Forest Service lands would be incorporated into JRTC and Fort Polk Regulation 350-10. These protocols would provide enhanced opportunities for damage inspection, corrective actions, and monitoring.

Objectives

- Provide opportunities for maneuver damage inspections, corrective actions and monitoring.
- Comply with SUP/Operating Plan.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Endangered species
- Cultural resource

Roles and Responsibilities

- Assistant Chief of Staff, G3 integrates time on annual training calendar for mandatory inspection, repair and clean-up periods following all training events.

Key Tasks

- Assistant Chief of Staff, G3 schedules sufficient time for maneuver damage inspection and clearance following all training events.

Mitigation Measure 2B

Description

Scheduling of Non-Training Activities During Green Period. Non-training activities such as land rehabilitation and maintenance, prescribed burning, forest thinning, and other forest management activities, and maneuver damage repair would be scheduled at the at the monthly Resource Allocation Conferences (RAC) rather than the subsequent Non-Training Allocation Conferences (NTAC). This would ensure that damage repair and forest management would receive top priority during the Green Period, and that restoration and maintenance activities occur according to schedule. Changes to the existing installation protocols for scheduling of non-training activities would be incorporated into JRTC and Fort Polk Regulation 350-10.

Objectives

- Provide opportunities for forest thinning, natural resource management, land rehabilitation and maintenance on Army and Forest Service lands.
- Comply with SUP/Operating Plan.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Forests/vegetation communities
- Endangered species
- Sensitive and conservation species
- Management Indicator Species (MIS) for longleaf pine landscapes

Roles and Responsibilities

- Garrison Commander ensures that non-training activities receive priority during the Green Period and disciplines the training calendar to ensure adequate opportunities are provided for repair of maneuver damages, land rehabilitation and maintenance, prescribed burning and other forest management requirements on Army and Forest Service lands.

Key Tasks

- Schedule non-training activities at the RAC.

- Integrate training and non-training requirements in time and space.
- Conduct thinning operations on IUA according to schedule.
- Conduct land restoration, natural resource management and maintenance activities according to schedule.

Mitigation Measure 2C

Description

*Scheduling of Non-Training Activities Outside Green Perio*d. Non-training activities such as land rehabilitation and maintenance, prescribed burning and other forest management activities, and maneuver damage repair that would occur outside the Green Period would also be scheduled at the RAC. This would ensure that scheduling for damage repair and forest management activities would be coordinated with scheduling for training activities, and opportunities for resource management, including thinning of upland pine stands on the IUA, would be maximized. Changes to the existing installation protocols for scheduling of non-training activities would be incorporated into JRTC and Fort Polk Regulation 350-10.

Objectives

- Provide opportunities for forest thinning, natural resource management, land rehabilitation and maintenance on Army and Forest Service lands.
- Comply with SUP/Operating Plan.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Forests/vegetation communities
- Endangered species
- Sensitive and conservation species
- MIS for longleaf pine landscapes

Roles and Responsibilities

- Garrison Commander ensures adequate opportunities for non-training requirements are available outside the Green Period on Army and Forest Service lands, including prescribed burning and timber thinning on the IUA, land maintenance, rehabilitation and repair.

Key Tasks

- Schedule non-training activities at the RAC.
- Integrate training and non-training requirements in time and space.

- Conduct thinning operations on IUA according to schedule
- Conduct land restoration and maintenance activities according to schedule.

3. DESIGN AND CONSTRUCTION PROCESS OVERSIGHT

Mitigation Measure 3A

Description

*Environmental Screening/Alternatives Analysis for Construction Project*s. The installation Master Planner would provide project footprint and alternative sites to the Environmental and Natural Resources Management Division (ENRMD) before the plans are presented to the Real Property Planning Board (RPPB) for development of a screening analysis of effects and identification of environmentally preferred siting and design options. The environmentally preferred options would be presented to RPPB, along with other options under consideration, to ensure that environmental factors and concerns are integrated early in the planning process. Potential benefits are reductions in future construction and mitigation costs, reduction or avoidance of adverse cumulative effects to environmental resources, streamlining of design and construction processes, and promotion of sustainability, conservation, and compliance with environmental regulations.

Objectives

- Avoid or minimize impacts to environmentally sensitive resources and promote installation sustainability through early integration of master planning and environmental concerns.
- Streamline design and construction process and reduce future construction and mitigation costs.

Affected Resources

- Soils
- Water resources
- Forests/vegetation communities
- Endangered species
- Sensitive and conservation species
- MIS for longleaf pine landscapes, riparian landscapes, and streams

Roles and Responsibilities

- DPW conducts environmental screening/alternatives analysis during early master planning and sight selection process for all new facilities with potential environmental impacts.

Key Tasks

- Master Planner provides project footprint and alternative sites to ENRMD before RPPB meeting.
- ENRMD conducts screening analysis of impacts and identifies environmentally preferred options.
- Master planner presents environmentally preferred options and others to RPPB, as appropriate.

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Mitigation Measure 3B

Description

*Construction Process Oversigh*t. Procedures to ensure that environmental compliance requirements and measures to reduce adverse effects to environmentally sensitive resources are included in contract specifications for military construction projects. Contracting Office Representative (COR) would ensure compliance with specified limits of construction, construction sequencing, Section 404 permit conditions, storm water pollution prevention plans (SWPPPs), and other environmental considerations during construction, as specified in construction specifications, National Environmental Policy Act (NEPA) and permit documents. The COR would review environmental requirements before construction, coordinate with the ENRMD NEPA document point-of-contact to ensure compliance, and have authority to halt construction if work is not performed in accordance with environmental requirements.

Objectives

- Ensure that new facilities are designed and constructed to comply with requirements under the Clean Water Act (CWA), Clean Air Act (CAA), Endangered Species Act (ESA), and NEPA.

Affected Resources

- Soils
- Water resources
- Forests/vegetative communities
- Endangered species
- Sensitive and conservation species
- MIS for longleaf pine landscapes, riparian landscapes, and streams

Roles and Responsibilities

- COR ensures compliance with construction sequencing, Section 404 permit conditions, SWPPPs and other environmental considerations during construction, as specified in NEPA and permit documents.

Key Tasks

- COR reviews environmental documents prior to construction.
- COR coordinates with ENRMD point of contact during construction to ensure compliance with environmental requirements.
- COR stops construction if work not performed in accordance with environmental requirements.

Mitigation Measure 3C

Description

*Design Adjustments to Proposed IUA Road*s. Selected pipe culverts as originally proposed would be replaced with arched spans on the proposed IUA east-west roads where the alignments cross larger perennial (third order) streams. In addition, portions of proposed road segments designated as SMC1 and ZH3 would be realigned to minimize effects to RCW clusters located near the alignments. Benefits include reductions in road and stream crossing maintenance costs, minimization of effects to RCW, promotion of responsible environmental stewardship, and compliance with the CWA and ESA.

Objectives

- Reduce impacts to stream hydrology, aquatic communities, and the RCW.
- Comply with requirements under the CWA and ESA.
- Reduce road and stream crossing maintenance costs.

Affected Resources

- Water resources
- Aquatic species
- Endangered species
- MIS for streams

Roles and Responsibilities

- DPW replaces pipe culverts with arched spans or box culverts for stream crossings on IUA east-west roads and adjusts segments of SMC1 and ZH3 roads to minimize effects to the RCW.

Key Tasks

- Redesign selected road segments and stream crossing structures on IUA roads.
- Obtain updated Section 404 permit for stream crossing structures and implement permit terms and conditions.

4. SOLDIER SUSTAINABLE RANGE AWARENESS TRAINING

Mitigation Measure 4A

Description

*Initiation of Sustainable Range Awareness Training Progra*m. Modules and instructional aids would be developed to train soldiers to promote responsible environmental stewardship during field activities. Examples of topics include Louisiana pine snake identification and discourse on its protection status, and other subjects ranging from forest and water quality management to waste minimization. The training program would also educate soldiers involved in the operation of Stryker vehicles on the importance of lower tire inflation settings while driving off-road. Training modules would be available both in a classroom and on-line format, and would be provided to all military units training at Fort Polk down to the squad level unit of organization. Certificates would be disbursed upon completion.

Objectives

- Promote responsible stewardship of the natural and cultural environment.
- Minimize potential for listing of the Louisiana pine snake as a threatened/endangered species.
- Comply with SUP/Operating Plan.

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Forests/vegetation communities
- Endangered species
- Sensitive and conservation species
- MIS for longleaf pine landscapes, riparian landscapes, and streams
- Cultural resources
- Waste minimization and management

Roles and Responsibilities

- Garrison Commander institutes a web- and classroom-based Sustainable Range Awareness training program for soldiers down to squad level.

Key Tasks

- Develop Sustainable Range Awareness modules and instructional aids (including aids to help soldiers identify Louisiana pine snake and encourage its protection).
- Post training modules on intranet and conduct classes at regular intervals.

- Soldiers from all units complete modules/classes and receive certification.

ENVIRONMENTAL MONITORING AND RESOURCE PROTECTION

Mitigation Measure 5A

Description

Development of Stream Gage Network. US Geological Survey (USGS) and Fort Polk ENRMD would establish a network of stream gaging stations to monitor stream flow and water quality parameters, for the purpose of assessing stream responses to changes in training intensity or land use. Six gaging stations would be established to collect baseline data on stream characteristics and water quality. The data collected by the gages would help estimate and mitigate sedimentation rates, a water quality issue of concern because of the highly erodible nature of the native soils and the potential for proposed construction and training activities to increase soil erosion and delivery of sediment to streams.

Objectives

- Monitor stream responses to changes in training intensity, land use, and rehabilitation and maintenance practices through time
- Assess effectiveness of mitigation measures for training land maintenance.

Affected Resources

- Water resources

Roles and Responsibilities

- DPW-ENRMD, with assistance from the USGS, establishes a network of stream gaging stations to monitor stream flow and water quality parameters.

Key Tasks

- DPW-ENRMD and USGS establish 6 gaging stations on selected streams
- DPW-ENRMD and USGS collect baseline data on stream characteristics and water quality.
- DPW-ENRMD and USGS conduct ongoing monitoring and evaluation.

Mitigation Measure 5B

Description

*Bog Mapping and Monitorin*g. ENRMD would digitally map and monitor bogs on Army land to complement a map already developed for the IUA and Limited Use Area (LUA).

Bogs would be inspected for maneuver damage following training exercises and during annual training land inspection events, and corrective action to protect wetlands and rare/sensitive plant species would be implemented as appropriate.

Objectives

- Protect wetlands habitats and rare/sensitive plant species.

Affected Resources

- Bogs
- Water resources
- Sensitive and conservation plant species

Roles and Responsibilities

- DPW-ENRMD maps and monitors bogs on Army and Forest Service land (IUA and LUA).

Key Tasks

- Survey for bogs on Army lands, collect Geographic Positioning System (GPS) locations, and develop Geographic Information System (GIS) data layer.
- Inspects bogs for maneuver damages during post-exercise inspection and/or annual training land inspection.
- Implement appropriate corrective action.

<u>Mitigation Measure 5C</u>

Description

*Louisiana Pine Snake Conservatio*n. To avoid or reduce future construction-related effects to the Louisiana pines snake (LPS), Fort Polk would conduct surveys for the snake and/or pocket gopher mounds within proposed construction footprints for all new construction projects within the range and maneuver training areas. Pocket gopher mounds would be avoided during construction wherever feasible.

Objectives

- Conserve LPS habitat and minimize the potential for listing of the LPS as a threatened/endangered species.

Affected Resources

- Sensitive species
- Candidate species

Roles and Responsibilities

- Garrison Commander considers effects of future actions and management strategies on the LPS.

Key Tasks

- Conduct surveys for LPS and/or pocket gopher mounds at proposed construction sites.
- Where feasible, site and design facilities to avoid LPS locations and pocket gopher mounds.

Mitigation Measure 5D

Description

*Implementation and Effectiveness Monitorin*g. A joint Army-Forest Service committee for implementation and effectiveness monitoring would be established. The purpose of the committee is to evaluate implementation and effectiveness of proposed mitigations, range sustainability, compliance with SUP/Operating Plan conditions, and installation environmental policies and regulations. The committee would identify and report on performance indicators, evaluate performance, and conduct mid-course correction as needed, in accordance with the installation's Environmental Management System. Examples include testing the effectiveness of BMPs by monitoring downstream water quality for total suspended solids, turbidity, dissolved oxygen, temperature, metals, and total nitrogen during base flow periods and storm events. The committee would also publish an annual Sustainability and Environmental Monitoring Report for review by members of the public, federally recognized tribes, state and federal agencies, and other stakeholder groups.

Objectives

- Jointly monitor to document annual progress for the implementation and effectiveness of mitigation measures identified in the Records of Decision for the EIS;

Affected Resources

- Vegetative cover
- Soils
- Water resources
- Forests/vegetation communities
- Endangered species
- Sensitive and conservation species
- Cultural resources
- MIS for longleaf pine landscape, riparian landscapes, and streams

Roles and Responsibilities

- Garrison Commander establishes joint Army-Forest Service committee for implementation and effectiveness monitoring and publishes annual Sustainability and Environmental Monitoring Report.

Key Tasks

- Draft committee charter and appoint members.
- Identify and report on performance indicators, evaluate performance, and conduct mid-course correction as needed, in accordance with installation Environmental Management System.
- Publish results in annual report.

5. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Purpose and Objectives of Monitoring

This section describes the Sustainability and Environmental Monitoring Plan (SEMP, Table A-1) developed by Fort Polk and the KNF. The SEMP identifies measurable goals and objectives for the continuation of sound environmental stewardship and compliance, and for achieving and maintaining sustainability with respect to training land conditions, facilities, and relationships with neighboring residents and communities. It is designed to track the implementation of mitigation measures described in Section 1 above and in the EIS, and to evaluate their effectiveness.

The SEMP provides a framework for conducting monitoring and evaluation to determine whether mitigation measures, environmental stewardship practices, and BMPs are meeting goals and objectives for sustainability, and for compliance with applicable environmental laws, regulations, and SUP/ Operating Plan terms and conditions. Monitoring refers to measuring or observing results for a defined purpose, whereas evaluation interprets or assesses the meaning of results generated from monitoring. Both monitoring and evaluation will be conducted by Fort Polk and KNF staff throughout the year, so that adjustments and corrective actions can be made in a timely manner. Joint agency evaluations will also be conducted each year as part of the publication of an annual *Sustainability and Environmental Monitoring (SEM) Report.* When the results of monitoring are outside the acceptable range of established performance targets, adjustments and corrective actions may be needed as described in the sections below.

In addition to mitigation measures identified in the EIS, the SEMP also incorporates Army and Forest Service commitments for mitigation and monitoring contained in the *Final Environmental Assessment (EA) for Increased Military Training Use of the Vernon Unit, Calcasieu Ranger District, Kisatchie National Forest* and the associated Decision Notice/Finding of No Significant Impact (DN/FNSI) issued in September 2000. That EA and DN/FNSI identified a number of mitigation measures for protection of natural resources, as well as for protection of the quality of life for residents living in the Limited

Use Area (LUA) portion of the Vernon Unit. The EA and DN/FNSI also specified that Fort Polk and the KNF would publish an annual monitoring report to document the implementation of these measures and their effectiveness. Since September 2000, the *Compliance and Effectiveness Monitoring (CEM) Report for the Limited Use Area, Calcasieu Ranger District, Kisatchie National Forest* has been published for fiscal years 2001 and 2002. The CEM report will be published again in 2004 to document mitigation and monitoring activities and results for fiscal year 2003. In subsequent years, the CEM report will be replaced by the annual SEM Report.

Types of Monitoring

The SEMP includes three types of monitoring to be conducted by Fort Polk and the KNF:

- Implementation monitoring;
- Effectiveness monitoring; and
- Validation monitoring.

Implementation monitoring is meant to answer the question: Did we do what we said we would do? It determines if mitigation measures and related environmental stewardship and natural resource management practices are implemented as designed. Evaluation of implementation monitoring may lead to adjustment of installation- or organizational-level management practices, operating procedures, regulations, or other administrative adjustments.

Effectiveness monitoring is meant to answer the question: Did what we said we would do accomplish our goals and objectives – or, did it work? It determines whether mitigation measures and related environmental stewardship practices are effective in achieving established goals and objectives. Evaluation of the results of effectiveness monitoring is used to adjust SEMP objectives, targets, mitigation measures, environmental stewardship practices and BMPs, and could lead to changes to the SUP/Operating Plan or installation planning documents.

Validation monitoring is meant to answer the question: Are our assumptions valid or are there better ways of meeting our goals and objectives? It helps determine whether the initial assumptions used in developing the mitigation and monitoring plan are correct, or if there are betters ways of meeting established goals and objectives. Evaluation of results from this type of monitoring can also be used to adjust management practices or suggest changes to the SUP/Operating Plan or other planning documents.

Monitoring Process

The SEMP process incorporates the concepts of continuous improvement in the internationally recognized ISO 14001 Environmental Management System (EMS)

standard and conforms with the EMS established by JRTC and Fort Polk. The continuous improvement loop consists of four phases:

Phase 1 – Planning. The organization identifies how its operations might adversely impact the environment and develops measures to reduce this impact.

- This phase was accomplished through the environmental impact analysis process, preparation of the EIS, and development of the mitigation and monitoring plan.

Phase 2 – Doing. The organization implements the measures to reduce adverse impacts and conducts them for a designated time period.

- This phase will be accomplished through the 20-year term of the SUP/Operating Plan.

Phase 3 – Checking. The organization assesses whether the measures it is implementing to reduce environmental impacts are proving effective.

- This phase will be accomplished through the implementation, effectiveness and validation monitoring and evaluation practices established by the SEMP.
- This phase will also involve identification of performance metrics and performance targets associated with the monitoring questions found in the SEMP. Performance metrics are contained in the process records for the EIS. Fort Polk and the KNF will also develop “Green”, “Amber” and “Red” performance targets to indicate whether objectives are being met at a satisfactory level.

Phase 4 – Acting. The organization determines what changes are necessary based on the performance assessment of the measures designed to reduce adverse environmental impacts (see Phase 3).

- This phase will be accomplished through annual Fort Polk and KNF joint reviews of monitoring results, as well as through interim evaluations conducted during the year, as needed.

Determinations made during Phase 4 may indicate the need for adjustments to mitigation measures, BMPs or environmental stewardship practices in order to achieve established environmental objectives. As part of the feedback loop, output from Phase 4 is fed back into Phase 1 promote continual improvement of the SEMP and the JRTC and Fort Polk EMS.

TABLE A-1. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Goals & Objectives	Implementation Question	Effectiveness Question	Validation Question
Goal 1 – Ensure that training lands are sustained for long-term use and maintained in world-class conditions. Protect and conserve basic soil, water and land resources so that forest ecosystems endure for future generations.			
Objective 1-1: Minimize or avoid degradation of training lands and long-term damage to soils, vegetation, streams and wetlands, and sensitive environmental resources through identification and correction of maneuver damages and soldier Sustainable Range Awareness education.	Are maneuver damages identified following all home station and rotational training exercises? Are maneuver damages corrected within reasonable time periods?	Are programs for identification and correction of maneuver damages, installation range regulations for environmental protection, and soldier education programs minimizing or avoiding long-term damage to soils, vegetation, streams and wetlands, and sensitive environmental resources?	Is the maneuver damage inspection and repair program adequately identifying and repairing damages that need corrective action? Are maneuver damage inspection and repair procedures adequate?
	Are adequate opportunities for maneuver damage inspections and repairs provided on the training calendar?		
	Are soldiers with all units training at JRTC and Fort Polk provided Sustainable Range Awareness instruction on ways to protect soils, vegetation, streams and wetlands, and sensitive environmental resources during field operations?		
Mitigation Linkages: EIS Mitigation Measures 1A, 1D, 2A, 2B, 2C and 4A; and LUA EA [(1)] Mitigation Measures 12, 13, 14, 18, 19, and20.			
Objective 1-2: Sustain training land conditions and long-term soil productivity. This is accomplished by implementing land rehabilitation and maintenance practices designed to minimize soil erosion and compaction, limit soil loss, restore or maintain vegetative cover, and restore disturbed or degraded areas to natural conditions. Develop and update watershed management plans for Fort Polk and Kisatchie National Forest (KNF) training lands and prioritize land rehabilitation and maintenance activities within and across watersheds based on watershed conditions and training area carrying capacity.	Are land rehabilitation and maintenance practices being implemented to minimize erosion, compaction, and loss of soil productivity?	Are disturbed and degraded areas being restored and revegetated to a natural condition?	Are land rehabilitation and maintenance practices improving or maintaining conditions within training areas and watersheds?
	Are adequate opportunities for LRAM or other training land sustainment activities provided on the training calendar?	Are allowable soil loss rates being exceeded? Are bare or sparsely vegetated areas increasing within some or all training areas?	
	Are watershed management plans completed or in development for all training lands where ground disturbing activities are permitted? Are plans reviewed annually to evaluate the need for updates?		
	Are rehabilitation and maintenance activities prioritized and applied within and across watersheds based on watershed conditions and training area carrying capacity?		
Mitigation Linkages: EIS Mitigation Measures 1B, 2B and 2C; and LUA EA [(1)] Mitigation Measures 12 and 13.			
Objective 1-3: Protect and maintain high water quality and aquatic ecosystems by preventing excessive siltation to surface water resources due to training activities, conserving wetlands and streamside/riparian areas, providing for stream bank stability and natural flow regimes. This is achieved through maintenance of stream and wetland crossing structures, roads and trails; maintenance of sediment basins; and restrictions on training activities within streams, wetlands and riparian areas	Are stream and wetland crossing structures, roads and trails on Fort Polk and KNF lands maintained to prevent siltation to streams and wetlands and to preserve natural flow regimes?	Are maintenance practices for stream and wetland crossing structures, roads and trails preventing siltation to streams and wetlands and maintaining natural hydrology?	Are management practices protecting and maintaining water quality and aquatic ecosystems?
	Are sediment basins inspected and maintained in a functional condition?	Are sediment basins protecting downstream water resources?	
	Are training aids kept current on designated stream/wetland crossing points for military vehicles?	Are troops crossing stream/wetland areas at designated sites only?	
Mitigation Linkages: EIS Mitigation Measures 1A, 1C, 2B, 2C, 4A and 5A; and LUA EA [(1)] Mitigation Measures 13, 16, 17, 33, and 34			
Goal 2 – Manage for biological diversity and ecological integrity. Protect and conserve threatened, endangered and rare species, and restore and maintain ecosystems and ecological processes at landscape and local scales.			

TABLE A-1. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Goals & Objectives	Implementation Question	Effectiveness Question	Validation Question
Objective 2-1: Promote recovery of the Vernon-Fort Polk Red-Cockaded Woodpecker (RCW) population through cooperative Fort Polk and KNF management and monitoring strategies. Conduct population monitoring in accordance with the Joint Monitoring Plan, educate soldiers on the RCW and its habitat, and maintain RCW cluster resources to minimize the occurrence of unauthorized training activities within cluster boundaries and reduce the threat of cavity tree loss due to military related wildfires.	Are Fort Polk and the KNF cooperating to promote recovery of the Vernon-Fort Polk RCW population? Is RCW population monitoring conducted in accordance with the Joint Monitoring Plan?	Are management practices, installation regulations, and troop educational programs preventing damage or disturbance to RCW clusters due to training activities?	Is the Vernon-Fort Polk RCW population growing? Are population recovery goals being met?
	Are soldiers with home station and rotational units provided instruction on the RCW, its habitat, and restricted activities within RCW clusters?		
	Are RCW cavity trees and cluster boundaries painted and marked with signage so that they are identifiable during daytime and nighttime hours by troops in the field? Are excess fuels removed within RCW clusters to reduce the potential for loss of cavity trees due to military related wildfires?		
Mitigation Linkages: EIS Mitigation Measure 1A and 4A; FWS BO [(2)] Terms & Conditions 1, 6, and 7; and LUA EA [(1)] Mitigation Measures 18, 19, 20,24, 25, 27, 4-4, BO-3, BO-4.			
Objective 2-2: Provide high-quality habitat for the red-cockaded woodpecker (RCW), Louisiana pine snake, and other rare species native to longleaf pine landscapes. Use prescribed fire to maintain open longleaf pine forest conditions and natural plant communities, with an emphasis on growing season burns, and conduct thinning as planned on approximately 21,500 acres of upland pine stands within the Intensive Use Area to achieve Desired Future Conditions. Maintain suitable RCW habitat at the appropriate scale and distribution as identified in the Fort Polk Endangered Species Management Plan (2003) and the Revised Land and Resource Management Plan for the Kisatchie National Forest (1999).	Are open, frequently burned longleaf pine forest conditions being maintained to provide suitable habitat for the RCW and other native species?	Are both Fort Polk and the KNF meeting annual prescribed burning goals? Are sufficient opportunities provided on the annual training calendar for prescribed burning, both inside and outside of designated Green Periods?	Is suitable habitat for the RCW available at the scale and distribution designated in the Fort Polk ESMP and Revised KNF Plan?
		Is the KNF meeting annual goals for thinning of upland pine stands on the IUA? Are sufficient opportunities provided on the annual training calendar for IUA thinning, both inside and outside of designated Green Periods?	
Mitigation Linkages: EIS Mitigation Measures 2B and 2C; FWS BO [(2)] Terms & Conditions 2, 3, 4 and 5; and LUA EA [(1)] Mitigation Measure 24 and 25.			
Objective 2-3: Promote viability of the Louisiana pine snake (LPS) through cooperative management strategies designed to minimize the potential for listing of the LPS as a threatened/endangered species. Minimize or avoid adverse impacts to the snake and its habitat through soldier education, identification of probable LPS habitat, and through integration of LPS habitat/pocket gopher mound survey and monitoring data with project planning.	Are Fort Polk and the KNF conducting management strategies designed to minimize the potential for listing of the LPS as a threatened/ endangered species, in accordance with the Candidate Conservation Agreement for the Louisiana Pine Snake on Federal Land in Louisiana and Texas?	Are Fort Polk and KNF management strategies minimizing or avoiding harm to the LPS and pocket gopher mounds or other areas identified as probable habitat?	Is the LPS population responding positively to Fort Polk and KNF management strategies?
	Are soldiers training at the JRTC and Fort Polk provided instruction on the LPS and ways to identify and protect it and its habitat?		
	Are surveys for LPS and its habitat/pocket gopher mounds conducted at proposed facilities construction sites or sites proposed for other fixed operations or improvements (e.g., LRAM projects, log decks, firing points and assembly areas)?		
Mitigation Linkages: EIS Mitigation Measures 1A, 4A and 5C.			

TABLE A-1. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Goals & Objectives	Implementation Question	Effectiveness Question	Validation Question
Objective 2-4: Protect rare plants and unique wetlands habitats through identification, marking and monitoring of hillside seeps and bogs. Develop and maintain GIS locations and data on the condition of high quality seeps and bogs on Fort Polk and KNF training lands, and monitor annually for potential training impacts. Maintain signage marking high quality seeps and bogs "off-limits" to vehicle movement and digging in the Limited Use Area.	Are GIS locations and data maintained on the condition of high quality hillside seeps and bogs on Fort Polk and KNF lands? Are high quality seeps and bogs monitored annually for potential training impacts?		
	Are signs maintained around high quality hillside seeps and bogs in the LUA, including a buffer area, to identify them as off-limits to vehicle movement and digging?	Are management strategies adequately protecting high quality seeps and bogs from adverse impacts due to training?	
Mitigation Linkages: EIS Mitigation Measures 1A and 5B; and LUA EA [(1)] Mitigation Measures 28 and 29.			
Goal 3 – Provide for and maintain functional, healthy, low-impact and cost-effective facilities and infrastructure by integrating master planning, engineering and environmental concerns. Conserve natural resources and energy, and reduce generation of wastes and pollutants by fully incorporating the principles of sustainable design and development.			
Objective 3-1: Avoid or minimize impacts to environmentally sensitive resources and promote installation sustainability through early integration of master planning and environmental concerns.	Are screening/ alternatives analyses conducted as needed during the site selection process for new facilities?	Are new facilities sited to avoid or minimize impacts to sensitive environmental resources?	Are master planning practices helping to promote sustainable facilities and infrastructure in a cost effective manner?
Mitigation Linkages: EIS Mitigation Measure 3A.			
Objective 3-2: Ensure that new facilities are designed and constructed to comply with requirements under the Clean Water Act (CWA), Clean Air Act (CAA), Endangered Species Act (ESA), and National Environmental Policy Act (NEPA). This is achieved by including limits of construction and clearing, Section 401/404 permit requirements, site-specific mitigation measures and other environmental conditions in construction design plans and specifications; ensuring that Storm water Pollution Prevention Plans (SWP3) are implemented for all construction sites one acre or more; and by monitoring during and after construction to ensure adherence to plans and specifications. (Note: initial monitoring to be conducted for transformation MCA projects, other projects to be monitored as determined by joint oversight committee.	Do construction plans and specifications clearly identify environmental protection requirements under the CWA, CAA, ESA and NEPA, including Section 401/404 permit conditions, US Fish and Wildlife Service Biological Opinions, mitigation measures and other environmental requirements?	Are new facilities constructed in accordance with applicable requirements under the CWA, CAA, ESA and NEPA?	Are facility design and construction programs and procedures adequate to ensure compliance with the CWA, CAA, ESA and NEPA?
	Is an SWP3 implemented for each construction site one acre or greater (cumulative acreage for project)?	Are construction practices, including storm water management practices, preventing excessive discharge of pollutants to streams and wetlands?	
	Are construction sites monitored at appropriate intervals during and after construction to ensure compliance with construction plans and specifications and other applicable environmental requirements?		
Mitigation Linkages: EIS Mitigation Measures 3B and 3C; and FWS BO [(2)] Terms & Conditions 8 and 9.			
Goal 4 – Act as "good neighbors" to residents and communities near Fort Polk and the KNF and serve as good stewards of public lands and resources. Manage training lands and resources for public safety and provide fair public access to training lands for recreation and other non-training uses.			
Objective 4-1: Support opportunities for public recreational and other multiple use activities on the Fort Polk and Peason Ridge Wildlife Management Areas (WMAs), the Limited Use Area (LUA) and Special Limited Use Area (SLUA). This is accomplished by providing up-to-date information on area closures, training schedules and activities on the WMAs, LUA, and SLUA; maximizing opportunities for hunting on opening weekends/ special hunts for deer	Is up-to-date information on training schedules/activities in the LUA and SLUA, and on areas open for hunting on the WMAs published on the internet, information kiosks and other media?	Are methods adequate for publicizing information on training schedules/activities in the LUA and SLUA, and on areas open for hunting on the WMAs?	Overall, are hunting and other approved recreational uses of the WMAs, LUA and SLUA adversely affected by military activities?
	Are opportunities provided for hunting during opening weekends/special hunts for deer (modern fire arms), turkey and squirrel seasons?	Have opportunities for hunting on the Fort Polk or Peason WMAs, or in the LUA, been affected by military training activities? Are areas and time periods that are not used for training made available for hunting?	

TABLE A-1. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Goals & Objectives	Implementation Question	Effectiveness Question	Validation Question
(modern fire arms), turkey and squirrel seasons; scheduling training activities to accommodate recreational events and other public activities on the LUA and SLUA; and by educating soldiers on training restrictions for the use of recreational facilities and maintained recreational trails.	Are recreational events or other public activities in the LUA and SLUA accommodated?	Are conflicts that arise between training activities and recreational events in the LUA/SLUA effectively resolved?	
	Are soldiers provided instruction on restrictions for use of recreational facilities and maintained recreational trails in the LUA/SLUA?	Are military activities resulting in damages to recreational facilities or maintained recreational trails in the LUA and SLUA?	
Mitigation Linkages: LUA EA [(1)] Mitigation Measures 2, 4, 5, 8, 11, 18, 19, 20, 30, 32, 4-1, and 4-3.			
Objective 4-2: Protect the quality of life for residents and communities living in the LUA and near the installation boundaries. This is accomplished by monitoring of noise levels in the LUA and near the Peason Ridge Training Area boundary; maintaining land line markings, fire lines and wildfire fire response plans to avoid trespass and damage to private property; repairing military-related damages to public roads in the LUA in accordance with agreements with Vernon Parish Policy Jury, and upgrading LUA roads as required to support military traffic; and responding expeditiously to public concerns and complaints regarding military activities.	Are noise levels monitored continuously in the LUA and adjacent to the NE boundaries of Peason Ridge?	Are Fort Polk guidelines for off-post noise levels exceeded?	Overall, are military activities adversely affecting the quality of life for LUA residents and communities living near the installation? Is Fort Polk experiencing encroachment on its training mission from development or other uses or policies governing private lands?
	Unless otherwise requested by the property owner, are land lines between private property and KNF lands clearly marked on the ground as needed to alert soldiers to avoid private lands?	Are land line markings and other mechanisms adequate to avoid trespass by troops on private lands?	
	Are permanent fire lines maintained around private property in the LUA? Is the use of incendiary devices suspended as needed on "high risk" days for forest fires? Are plans in place to respond to military-related wildfires in the LUA?	Are fire control and response measures adequate to protect public safety, private property and natural resources in the LUA from training-related wildfires?	
	Are maneuver damages to LUA roads repaired in a timely manner? Are LUA roads upgraded when necessary to support increased military use?	Is military traffic adversely affecting the condition of public roads in the LUA? Are military activities causing disruption of civilian traffic in the LUA?	
	Is the Fort Polk PAO complaint hotline operational? Is an initial response to public concerns/complaints regarding training activities in the LUA and SLUA provided within 24 hours of receipt?		
Mitigation Linkages: LUA EA [(1)] Mitigation Measures 6, 7, 14, 16, 17, 21, 22, 23, 37, 38, 39,and 4-1.			
Objective 4-3: Conduct military activities in a manner to avoid risks to public safety or conflicts with other activities in the LUA approved under Forest Service Special Use Permits (SUP) or other authorizations. This is achieved by scheduling military convoys to avoid school bus routes; conducting blackout driving in accordance with SUP/Operating Plan terms and conditions; identifying pipelines and utility lines on the ground and on training maps; scheduling/conducting training activities to provide access for other permitted uses; and by educating soldiers on other permitted uses and activities in the LUA and related training restrictions.	Are military convoys scheduled to avoid school bus routes in the LUA? Is blackout driving in the LUA conducted in accordance with SUP/Operating Plan terms and conditions?	Are conflicts occurring between military convoys and school buses? Have damages or conflicts occurred involving blackout driving in the LUA?	Overall, are military activities compatible with civilian activities and land uses in the LUA?
	Are pipelines and utility lines identified on the ground and on training maps/overlays, as needed? Are training activities scheduled and conducted to avoid conflicts with oil and gas operations or other permitted activities in the LUA?	Have damages or conflicts occurred involving military activities and pipelines, utility lines, or other permitted uses in the LUA?	
	Are soldiers provided instruction on cattle grazing allotments and other permitted activities in the LUA, and related training restrictions?	Are military activities resulting in conflicts between cattle grazing allotments or other permitted activities in the LUA?	
Mitigation Linkages: LUA EA [(1)] Mitigation Measures 5, 36, 37, 38 and39.			

TABLE A-1. SUSTAINABILITY AND ENVIRONMENTAL MONITORING PLAN

Goals & Objectives	Implementation Question	Effectiveness Question	Validation Question
Goal 5 – Monitor to provide feedback regarding progress toward accomplishing mutual Fort Polk and KNF goals and objectives. Evaluate opportunities for continuous improvement of environmental and natural resource management practices and procedures, and adapt management strategies according to new information.			
Objective 5-1: Jointly monitor to document annual progress for the implementation and effectiveness of mitigation measures identified in the Records of Decision for the EIS on 2d ACR transformation, installation mission support, and long-term military use of KNF lands; and the Decision Notice for the EA on increased military use of the LUA.	Are Fort Polk and the KNF preparing and distributing an annual Sustainability and Environmental Monitoring Report?		
Mitigation Linkages: EIS Mitigation Measure 5D; and LUA EA (1) Mitigation Measure 4-2.			
Objective 5-2. Jointly evaluate and report monitoring results, and adapt operations and management accordingly.	Are Fort Polk and the KNF jointly implementing and evaluating mitigation measures and monitoring results? Are operations and management practices adapted through time and identified in the annual Sustainability and Environmental Monitoring Report, and in the Special Use Permit/Operating Plan, as needed?		
Mitigation Linkages: EIS Mitigation Measure 5D; and LUA EA (1) Mitigation Measure 4-2.			

Notes:

1. LUA EA refers to the Final Environmental Assessment for Increased Military Training Use of the Vernon Unit, Calcasieu Ranger District, Kisatchie National Forest Lands dated September 2000, and the associated Decision Notice and Finding of No Significant Impact.

2. FWS BO refers to the Biological Opinion issued by the U.S. Fish and Wildlife Service on December 17, 2003, regarding the effects of proposed Army and Forest Service actions on the red-cockaded woodpecker (see Appendix R of the Final Environmental Impact Statement)

3.