

**DEPARTMENT OF THE ARMY**

**DIRECTORATE OF PUBLIC WORKS**

**ENVIRONMENTAL CONDITION OF PROPERTY REPORT**

**EASEMENT OF LAND TO GEORGIA POWER COMPANY FOR THE CONSTRUCTION,  
OPERATION, AND MAINTENANCE  
OF A 30 MEGA WATT SOLAR PHOTOVOLTAIC GENERATING SYSTEM**

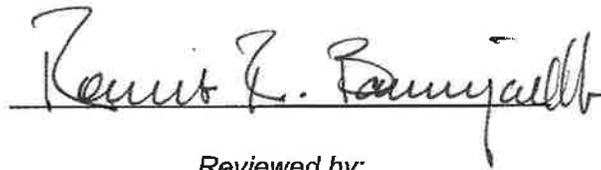
**FORT STEWART, GEORGIA**



**U.S. ARMY**  
**Fort Stewart/Hunter Army Airfield, Georgia**  
**Environmental Division, DPW**  
**December 2014**

**Environmental Condition of Property Report**

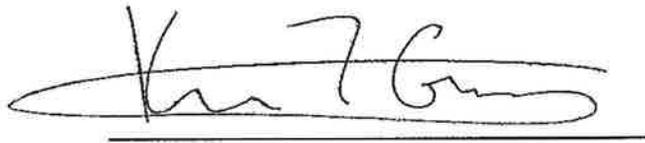
**Easement of Land to Georgia Power Company for the Construction, Operation, and  
Maintenance  
of a 30 Mega Watt Solar Photovoltaic Generating System  
on Fort Stewart, Georgia**



*Reviewed by:*

**FORT STEWART DIRECTORATE OF PUBLIC WORKS**

**Robert R. Baumgardt  
Director**



*Recommended for Approval by:*

**FORT STEWART**

**COL Kevin F. Gregory  
Garrison Commander**



*Approved by:*

**INSTALLATION MANAGEMENT COMMAND-ATLANTIC REGION**

**Davis D. Tindoll, Jr., SES  
Region director**

## Table of Contents

<b>Section 1.0 Introduction</b> .....	<b>1</b>
1.1 Introduction and Background .....	1
1.2 Property Description.....	1
1.3 Limitations .....	4
<b>Section 2.0 Survey Methodology</b> .....	<b>5</b>
2.1 Approach and Rationale.....	5
2.2 Record Review .....	5
2.3 Visual Site Inspection.....	6
2.4 Interviews .....	6
2.5 Reconnaissance of Adjacent Properties .....	6
2.6 Property Classifications.....	6
<b>Section 3.0 Summary of Data for Properties to be Leased</b> .....	<b>8</b>
3.1 Environmental Setting .....	8
3.1.1 Topography .....	8
3.1.2 Geology and Soils .....	8
3.1.3 Surface Water .....	8
3.1.4 Groundwater, Potable Water Wells, and Wellhead Protection Areas.....	12
3.1.5 Protected Species .....	12
3.1.6 Cultural Resources.....	13
3.1.7 Title Search .....	14
3.2 Environmental Management Questionnaire .....	14
3.2.1 Stormwater.....	14
3.2.2 Floodplains .....	14
3.2.3 Wetlands .....	14
3.2.4 Threatened or Endangered Species.....	15
3.2.5 Tree Management.....	15
3.2.6 Timber Sales .....	15
3.2.7 Permits .....	16
3.2.8 Historical and Cultural Resources.....	19

- 3.2.9 Installation Restoration Program..... 19
- 3.2.10 Waste Management..... 23
- 3.2.11 Storage Tanks..... 23
- 3.2.12 Oil/Water Separators ..... 23
- 3.2.13 Water Wells..... 23
- 3.2.14 Asbestos Containing Material ..... 23
- 3.2.15 Lead-based Paint ..... 24
- 3.2.16 Air Emissions ..... 24
- 3.2.17 Polychlorinated Biphenyls ..... 24
- 3.2.18 Pesticides..... 24
- 3.2.19 Unexploded Ordnance ..... 25
- 3.2.20 Medical/Biohazardous Waste and Silver Recover ..... 25
- 3.2.21 Radioactive Materials..... 25
- 3.2.22 Radon..... 25
- 3.2.23 Mold ..... 25
- 3.2.24 Septic Systems ..... 26
- 3.2.25 Other ..... 26
- 3.3 Visual Site Inspection Observations ..... 26
- Section 4.0 Effects from Adjacent Property ..... 27**
- 4.1 Record Search ..... 27
- 4.2 Visual Site Inspection..... 27
- 4.3 Interviews ..... 27
- 4.4 Historical Aerial Photographs..... 27
- Section 5.0 Conclusions..... 28**
- 5.1 Environmental Condition of Property ..... 28
- 5.1.1 Environmental Remediation Sites..... 28
- 5.1.2 Storage, Release, or Disposal of Hazardous Substances..... 28
- 5.1.3 Petroleum and Petroleum Products ..... 28

5.1.4 Polychlorinated Biphenyls ..... 28

5.1.5 Asbestos Containing Material ..... 28

5.1.6 Lead-based Paint ..... 28

5.1.7 Radiological Materials ..... 28

5.1.8 Radon..... 28

5.1.9 Munitions and Explosives of Concern ..... 29

5.1.10 Other Property Conditions ..... 29

5.2 Adjacent Property Conditions ..... 29

5.3 Environmental Remediation Agreements ..... 29

**Section 6.0 References ..... 30**

**Appendix A: Site Environmental Plans, Notices, Restrictions, and Other Lease Provisions ..... 31**

**Appendix B: Visual Site Inspection ..... 37**

**Appendix C: Biological Assessment and USFWS Concurrence Letter ..... 46**

## **SECTION 1.0 INTRODUCTION**

### **1.1 INTRODUCTION AND BACKGROUND**

At Fort Stewart, the Army will grant an easement to construct, operate, and maintain up to 30 Mega Watts (MW) of solar photovoltaic (PV) array on approximately a 250 acre parcel of land and an additional 23 acres +/- will be utilized for transmission and interconnection of the PV system). Land will be granted under an easement. The project will serve the needs of the Army as they will consume the majority of the power, as well as satisfy Federal statutes and Executive Orders.

Fort Stewart, located in southeastern Georgia, is the largest Army Installation east of the Mississippi River. It encompasses nearly 280,000 acres of land located in parts of Liberty, Long, Bryan, Evans, and Tattnall counties (Figure 1).

As required by Department of Defense (DoD) policy, the Environmental Condition of Property (ECP) must be reported before any real property may be sold, leased, transferred, or acquired. This ECP report was prepared to describe the baseline environmental condition of the properties proposed for lease. The Army will use the baseline in decision-making activities associated with future real property transactions. The ECP report is also intended to assist the Army in meeting its obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 120(h), as amended by the Community Environmental Response Facilitation Act (CERFA; Public Law 102-426).

### **1.2 PROPERTY DESCRIPTION**

Approximately 250 acres were identified for development under the solar PV array easement. These 250 acres are comprised of three parcels for the solar PV arrays and land for interconnecting voltage lines in the A-18 training area of Fort Stewart. This area is mostly previously undisturbed, composed of interspersed mature pine trees. The interconnect substation would also be constructed in this area, but closer to the intersection of FS Road 47 and Hero Road. The transmission line (utility corridor) will be constructed to connect from the interconnect substation to run overhead along Hero Road to eventually connect to the Fort Stewart substation in the cantonment area, encompassing roughly 23 acres. These subject properties are identified in Figure 2.

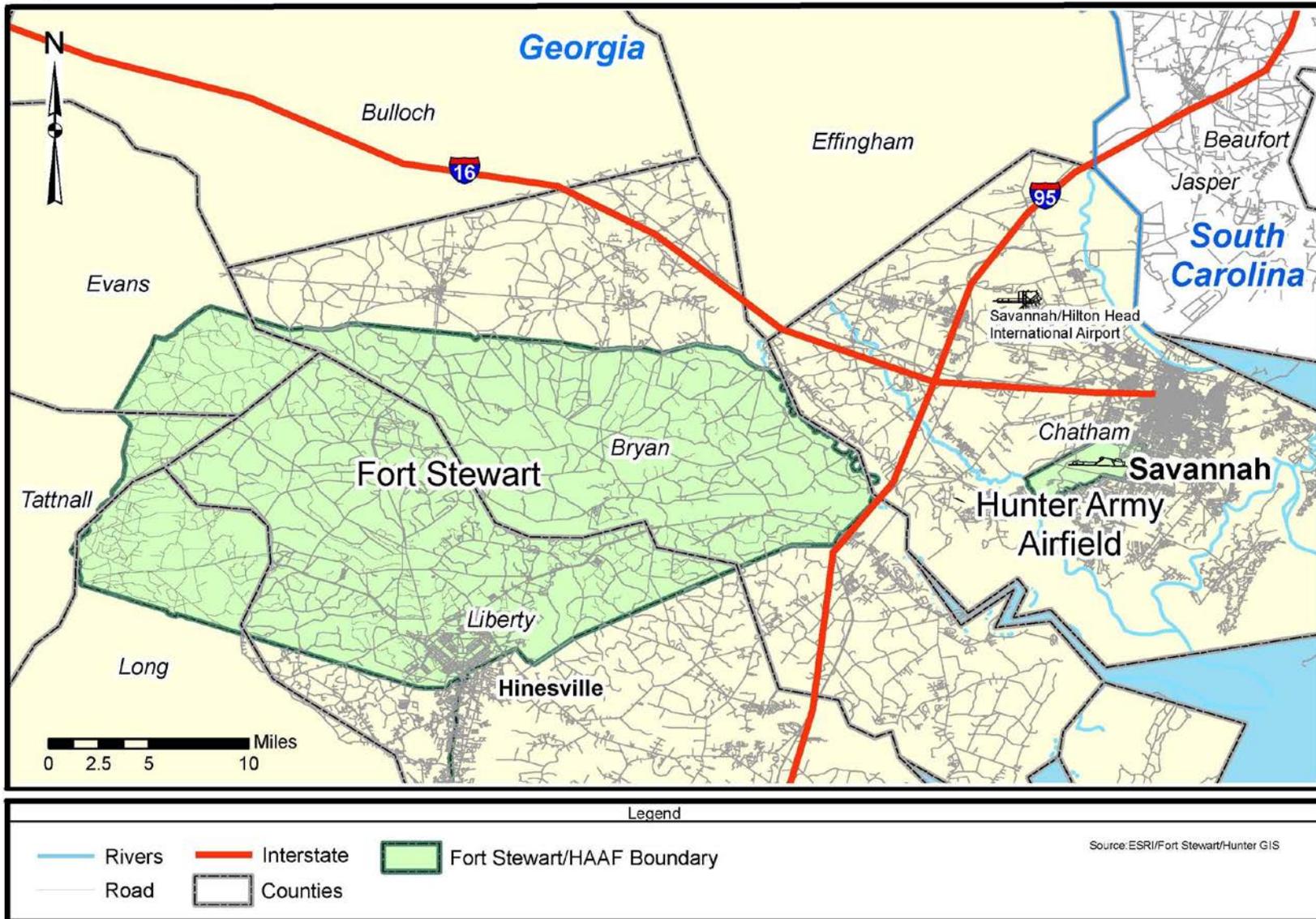


Figure 1. Location of Fort Stewart.



Figure 2. Solar PV array parcels, interconnecting voltage line, and transmission / utility corridor to Fort Stewart substation.

### **1.3 LIMITATIONS**

This ECP report documents the current physical and environmental conditions of the properties selected for easement. To develop the ECP report, the preparers obtained and reviewed relevant information concerning the subject properties. The ECP report relies on information collected from record searches, interviews, and visual inspections performed within a reasonable and practical time frame.

It is possible that unavailable or undisclosed information might indicate environmental concerns on the subject properties that were not apparent to the preparers of this ECP report. Although the preparers made every effort to collect and analyze accessible information, additional information that might affect the conclusions presented in this ECP report could become available over time.

The conclusions presented in this report are based on personnel's visual observations of the subject properties and immediately adjacent properties, interpretation of the readily available historical information, interviews with personnel knowledgeable about the subject properties, and other reasonably ascertainable information, as described above.

A reference list of documentation used to make the conclusions presented herein is provided as Section 6.0.

## **SECTION 2.0 SURVEY METHODOLOGY**

### **2.1 APPROACH AND RATIONALE**

This ECP report has been prepared to document the environmental condition of properties selected for the development of solar PV energy at Fort Stewart, Georgia.

This ECP report was prepared using technical guidance presented in ASTM E1527-05, *Standard Practice for Conducting Environmental Site Assessments: Phase I Environmental Site Assessment Process* (ASTM 2005b); ASTM D6008-05, *Standard Practice for Conducting Environmental Baseline Surveys* (ASTM 2005a); and DoD policy. These guidance documents provide a systematic framework for identifying recognized environmental concerns for real property by using an environmental records review process, visual site inspections (VSIs), and interviews with personnel knowledgeable about present and past uses of the subject properties.

The following readily available sources of information concerning environmentally significant current and historical uses of the subject properties were considered during the development of this ECP report:

- Review of available information and records in the possession of the Army or records made available by the regulatory agencies or other involved Federal agencies to determine the environmental condition of the properties.
- Review of reasonably obtainable Federal, state, and local government records for each adjacent facility at which there has been a release of any hazardous substance or any petroleum product which is likely to cause or contribute to a release or threatened release of any hazardous substance or any petroleum product on the subject properties.
- Interviews with Installation employees involved in operations within the subject properties.
- Visual inspections of the subject properties, including buildings, structures, equipment, utilities, pipelines, or other improvements on the properties, and of properties immediately adjacent to the subject properties, noting sewer lines, runoff patterns, evidence of environmental impacts (e.g., stained soil, stressed vegetation, dead or ailing wildlife), and other observations that indicate actual or potential releases of hazardous substances or petroleum products.
- Intrusive investigations (e.g., collection and testing of soil or groundwater samples) were not conducted during the ECP development process.

### **2.2 RECORD REVIEW**

The record review for this ECP report focused on activities conducted within the subject and adjacent properties. Specific types of records reviewed include internal documentation concerning environmental conditions of the Installation with respect to historical ranges and remedial actions.

### **2.3 VISUAL SITE INSPECTION**

The subject properties were visually inspected as part of this evaluation. The visual inspection included a grounds and perimeter survey, or site walk. Each property was visually assessed by walking transects through and around the perimeter of the grounds, as appropriate. Photographs were taken during the Visual Site Inspection (VSI) to document site conditions; they are presented in Appendix B. The purpose of the VSI was to determine whether there are any readily apparent environmental concerns within the subject properties. Examples of potential concerns that would be readily apparent include historical dumping and landfilling on the site; any unusual and visible discoloration of surface soils; odors; distressed vegetation; and other characteristics that might indicate a previous spill, accident, or release of potentially hazardous materials or petroleum products.

### **2.4 INTERVIEWS**

During the development of this ECP report, the preparers interviewed personnel in Fort Stewart's Directorate of Public Works (DPW) with knowledge of the historical environmental conditions of the properties and the locations and nature of environmental activities on adjacent properties. The Installation was fully active at the time of the site inspections, and the preparers had the opportunity to interview knowledgeable employees about current and past environmental conditions.

### **2.5 RECONNAISSANCE OF ADJACENT PROPERTIES**

The preparers conducted automobile and walking tours to determine whether any activities taking place on the adjacent properties pose an environmental threat to the subject properties. Items subject to observation included types of businesses in the area, indicators of aboveground and belowground storage of chemical or petroleum products, stressed vegetation, and land use practices that might directly affect the subject site. Observations were made from the right-of-way and did not include access to buildings. Photographs were taken during the field investigation to document environmental conditions at the adjacent sites. The photographs are provided in Appendix B.

### **2.6 PROPERTY CLASSIFICATIONS**

Representatives from the Office of the Secretary of Defense, the Military Services, the U.S. Environmental Protection Agency (USEPA), and the California Environmental Protection Agency jointly developed environmental categories to describe the environmental condition of DoD property. DoD requires that these classifications be used during property transfer or lease activities and mandates the use of maps with specific colors for each of seven environmental condition categories. After an analysis of the available data, parcels may be classified into one of the following seven categories:

- *Category 1 (WHITE)*: areas where no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). The area might have been used to store hazardous substances or petroleum products.

- *Category 2 (BLUE)*: areas where only a release or disposal of petroleum products and/or their derivatives has occurred (including migration of petroleum products from adjacent areas).
- *Category 3 (LIGHT GREEN)*: areas where a release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require a removal or remedial action.
- *Category 4 (DARK GREEN)*: areas where a release, disposal, and/or migration of hazardous substances has occurred and all remedial actions necessary to protect human health and the environment have been taken.
- *Category 5 (YELLOW)*: areas where a release, disposal, and/or migration of hazardous substances has occurred and removal or remedial actions are under way, but all required remedial actions have not yet taken place.
- *Category 6 (RED)*: areas where a release, disposal, and/or migration of hazardous substances has occurred, but required actions have not yet been implemented.
- *Category 7 (GRAY)*: areas that are not evaluated or require additional evaluation.

## **SECTION 3.0**

### **SUMMARY OF DATA FOR PROPERTIES TO BE LEASED**

#### **3.1 ENVIRONMENTAL SETTING**

The subject solar PV array parcels proposed within the A-18 training area are currently considered an operational land-use category and are utilized as a dismantled training area within the Fort Stewart boundary. It is presently wooded and is previously undisturbed. The utility corridor to be constructed along Hero Road is within the cantonment area and is near stormwater conveyance systems, along the existing road right-of-way and portions of previously undisturbed land.

##### **3.1.1 Topography**

Fort Stewart is located within the Coastal Plain Province on the southeastern Georgia coast. It is characterized by gently rolling hills to the west to nearly flat terrain in the southeast. Elevations at Fort Stewart training areas range from nine feet (in the vicinity of wetlands) to 183 feet (near the western boundary) above sea level. The center portion of Fort Stewart contains the primary impact area, while the south-central portion contains the cantonment area and dismantled training area which contains the subject properties. The subject properties are on nearly level terrain.

##### **3.1.2 Geology and Soils**

Fort Stewart is located in the Coastal Marine Flatlands region of the Atlantic Coastal Plain physiographic province. Soils on Fort Stewart are derived from unconsolidated marine sediments exposed to climatic and hydrologic fluctuations over time. The mild climate prevents freeze-thaw cycles from having much influence on soil weathering. Soils on the summits of small terraces and inter-stream divides may be excessively drained, highly acidic, nearly pure sand that is low in nutrient holding capacity and natural fertility. Many of the soils on Fort Stewart are subject to seasonal high water tables due to the lack of topography and elevations near sea level. Soils in low lying, poorly drained areas are typically high in organic matter content and may remain saturated or inundated for eight months or more annually. These poorly drained soils are generally unsuitable for use by mechanized equipment. The majority of the soils on Fort Stewart (to include the subject property) are classified as sandy, infertile, and highly susceptible to erosion, especially when stabilizing vegetation is removed and the soils are mechanically disturbed. This is consistent with soils on the subject properties.

##### **3.1.3 Surface Water**

The Fort Stewart Integrated Natural Resources Management Plan identifies 1,454 acres of ponds, reservoirs, and borrow pits (that regularly fill with water), 265 miles of freshwater rivers and streams, and an additional 12 miles of brackish water streams on Post (Fort Stewart, 2005). There are two primary watercourses that flow through or adjacent to Fort Stewart, the Canoochee River and the Ogeechee River, in addition to numerous smaller creeks and streams throughout the Installation. Most notable are Canoochee Creek, Taylors Creek, Mill Creek, Savage Creek, Malden Branch, Peacock Creek, and Clyde Creek. There are a total of

approximately 265 miles of freshwater rivers and streams and an additional 12 miles of brackish water streams on Fort Stewart/Hunter Army Airfield.

Approximately 120,000 acres of Fort Stewart is located within a floodplain, which are low-lying lands subject to inundation from floodwaters, are a link to adjacent streams and rivers, and serve various functions, including water storage and conveyance, filtration of nutrients and other pollutants from runoff, erosion control, groundwater recharge, fish and wildlife habitat, and recreation.

The northern-most solar PV array parcel and the interconnect substation area proposed in the A-18 training area drain to Taylor's Creek, approximately 2 miles northwest. The utility corridor, proposed within the cantonment area, also drains to Taylor's Creek in a northwesterly direction. The two southern-most solar PV array parcels in the A-18 training area discharge to the Peacock Creek, approximately 2 miles southwest. Peacock Creek is considered an impaired water body by the Georgia Environmental Protection Division, specifically impaired by dissolved oxygen and fecal coliform. Refer to Figure 3 for a depiction of the areas described.

The utility corridor proposed within the cantonment area contains a portion of its footprint within the 100-year floodplain (Figure 4). The remaining subject property areas are not within the 100-year floodplain.

The areas proposed for outgrant will avoid surface water impacts and wetlands via a 25-foot undisturbed vegetative buffer. It is possible, however, that various trees within a wet area could cause shading that would prevent some solar panels from gaining the sunlight needed to generate solar energy. If the trees within the 25-foot buffer of surface waters or wetlands cause shading, they will be removed without disturbance to the root system which would prevent silts and sediments from entering wet areas.

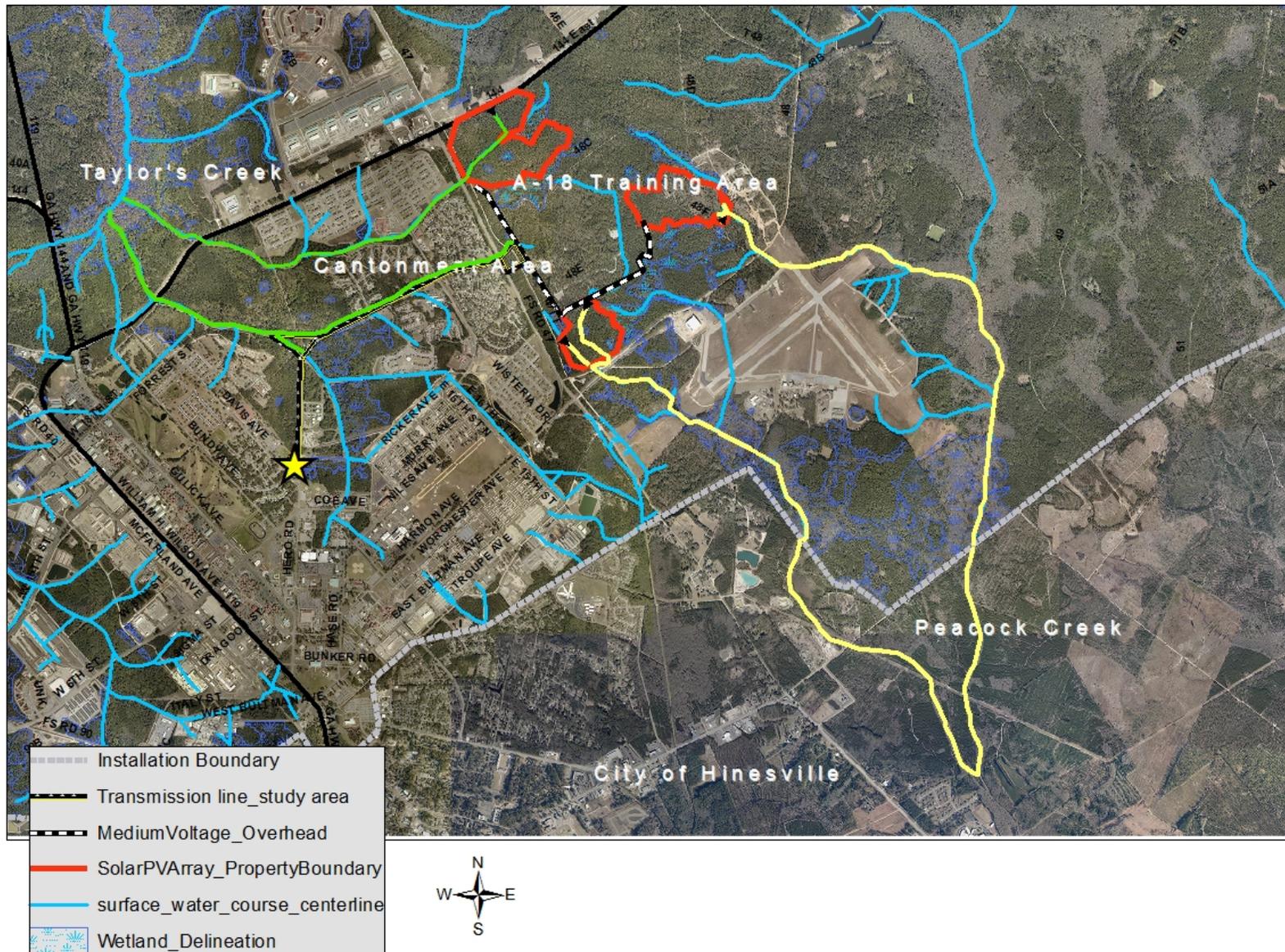


Figure 3. Surface water drainage from areas proposed for outgrant.

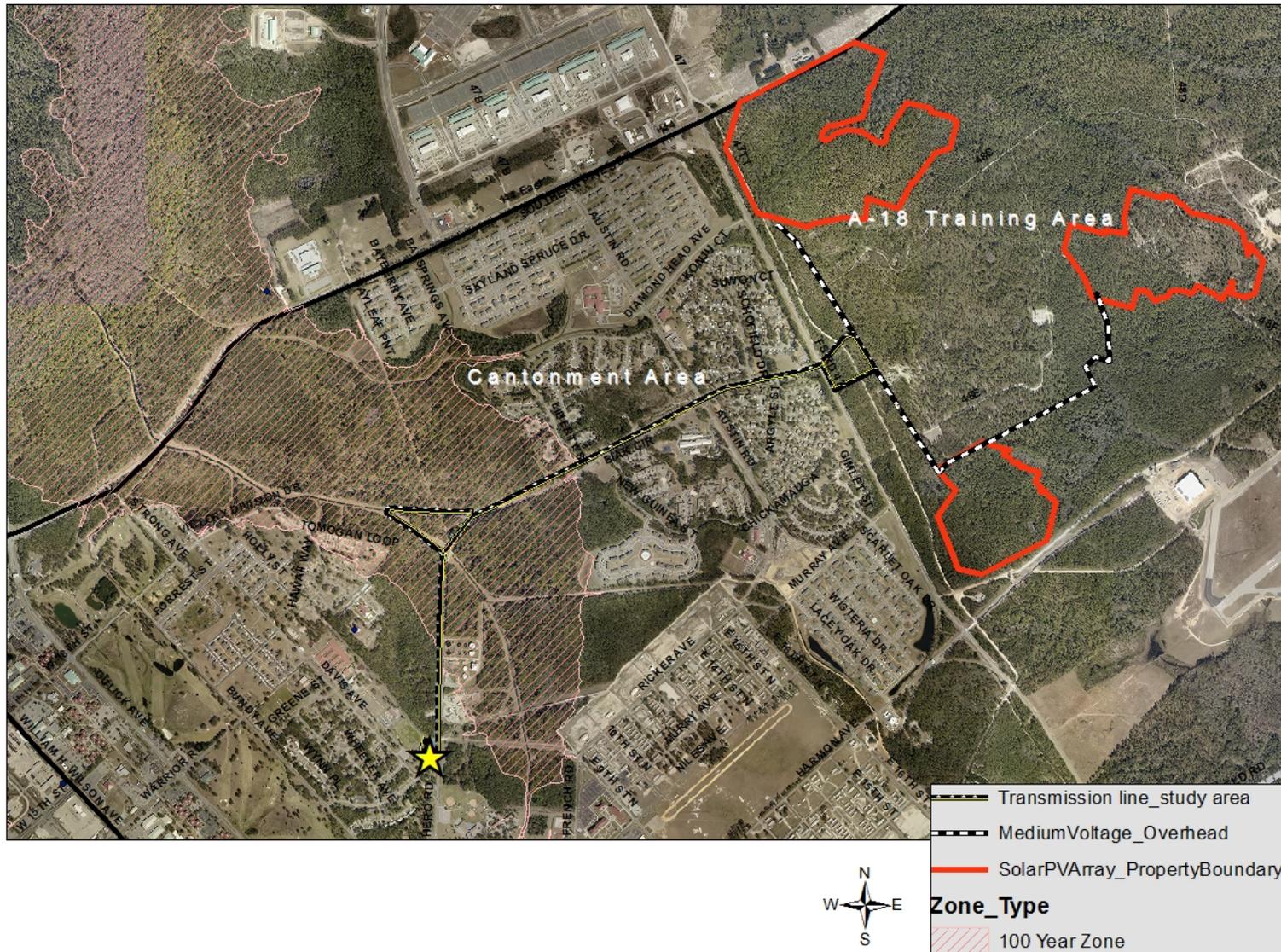


Figure 4. Portion of utility corridor within the 100-year floodplain.

### **3.1.4 Groundwater, Potable Water Wells, and Wellhead Protection Areas**

#### **3.1.4.1 Groundwater**

The groundwater resources of coastal Georgia are recognized as some of the most productive in North America. The surficial aquifer is closest to the soil surface and is intricately connected to surface waters on Fort Stewart, such as ponds and streams. This aquifer is the only one recharged directly by water percolating directly through the soil, rendering it susceptible to contamination from surface or shallow subsurface pollution sources. The Brunswick aquifer lies directly below the surficial aquifer. The Installation does not withdraw potable (drinking) water from the surficial or Brunswick aquifer, although it does utilize the both as sources of irrigation water on some parts of the Installation (but not at the subject or adjacent properties). A thick confining layer of clay is located between the surficial and Brunswick aquifers, and an additional confining layer of clay separates the two from the deeper-lying Upper and Lower Floridan aquifers, which are currently treated and managed as one aquifer by the Georgia Department of Natural Resources (hereafter, the Floridan Aquifer System). It is from the Floridan aquifer system that Fort Stewart, and most of the cities and communities throughout southeastern Georgia, withdraw their groundwater supplies through a series of wells, which is then treated and utilized for potable (drinking) water.

Groundwater withdrawal within the subject properties is not expected to occur during construction and will not be necessary for operation. If potable water is necessary for cleaning of the solar PV array panels, it will be trucked in from an existing source and will not involve the creation / drilling of new potable water wells.

#### **3.1.4.2 Existing Potable (Drinking) Water and Wells**

There are no potable (drinking) water wells located on the subject properties.

#### **3.1.4.3 Wellhead Protection Area**

In accordance with Section 391-3-5-.02(135) of the Safe Drinking Water Act, a wellhead protection area is defined as an area of potential groundwater recharge around a well that should be protected from surface and subsurface sources of manmade pollution in order to protect the quality of drinking water supply.

There is a potable water wellhead protection area that extends into the utility corridor property boundary. The proposed activity, however, is not anticipated to conflict with the protective use in this wellhead protection area considering the utility corridor will maintain a minimum 50' setback distance from all potable water wells and manmade pollution sources are not anticipated to result from the construction, operation, or maintenance of the utility.

The solar PV array parcels are not within a wellhead protection area.

### **3.1.5 Protected Species**

Species of concern are defined as those listed by the U.S. Fish and Wildlife Service (USFWS) as endangered or threatened under the Endangered Species Act (ESA); listed by Georgia's Department of Natural Resources (DNR) as rare, unusual, endangered, or threatened; designated as a special species of concern by the Georgia Natural Heritage Program; or proposed for listing by the DNR or USFWS. Management of these species on Fort Stewart is accomplished via the Installation's Integrated Natural Resources Management Plan.

There are seven Federally-listed species known to occur on Fort Stewart; red-cockaded woodpecker (RCW) (*Picoides borealis*), shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), wood stork (*Mycteria americana*), Eastern indigo snake (*Drymarchon couperi*), frosted flatwoods salamander (*Ambystoma cingulatum*), and smooth coneflower (*Echinacea laevigata*).

The RCW is listed by the USFWS and state of Georgia as endangered. The quality of RCW foraging habitat varies depending upon vegetation in the understory, weather, soils, season, and fire frequency and intensity. The highest populations of RCWs occur on areas with active prescribed burning programs that control hardwoods (frequency of every 2-3 years). Fort Stewart reached its RCW recovery goal of 350 potential breeding groups during the breeding season of 2012 and has enough suitable or potentially suitable habitat to support 657 RCW clusters.

The frosted flatwoods salamander (FFS) is listed by the USFWS and the state of Georgia as threatened. Terrestrial adult FFS inhabit low areas in pine flatwoods, where they live in underground burrows that they excavate or in crayfish tunnels. The FFS have been found more than one mile from their breeding ponds. A protective buffer of 492 yards from a wetland's edge is recommended by USFWS and used by Fort Stewart. Isolated pools have been ranked according to their suitability as FFS breeding sites, and protective buffers have been assigned to minimize impacts to the potential breeding sites. The Installation's conservation goal is to maintain five existing populations of FFS; currently, 25 breeding sites are known to exist on Fort Stewart.

The utility corridor is proposed within the cantonment area and therefore not managed for protected species habitat.

The remaining parcels, located within the A-18 training area, are managed for RCW and FFS habitat. The Installation prepared a Biological Assessment (BA) and submitted it to the USFWS to address potential impacts to the RCW and FFS at this location; the USFWS issued their concurrence with the Installation's findings on June 5, 2014 (Appendix C). **Additional coordination will be required to accommodate changes due to final siting and design, to include the utility interconnect substation. This additional USFWS coordination will be conducted by the Installation prior to finalization of the easement and/or site disturbing activities.**

### **3.1.6 Cultural Resources**

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. The Installation's Integrated Cultural Resources Management Plan (ICRMP) incorporates cultural resource laws and regulations into an internal document outlining how Fort Stewart manages its cultural resources. The Installation and the Georgia State Historic Preservation Office (SHPO) developed a Programmatic Agreement (PA) to provide the Installation with a flexible tool to manage its cultural resources, meeting the requirements of cultural resource review of undertakings with no effect or no adverse effect without waiting for the 30-day response from the SHPO. In short, the PA is the cultural resource program's regulatory backbone, guiding and streamlining the program's compliance with Federal laws and regulations while providing a timely, effective method of managing Fort Stewart's cultural resources.

Although 1941 Government Acquisition maps indicate an unmarked cemetery (J. O. Rahn Cemetery) may be located adjacent to the north-northwest of the eastern-most solar PV array parcel, prior surface and subsurface investigations at this location failed to find evidence of the cemetery, which, according to archival records, was not managed in accordance with standard fencing and signage. It is unknown if the cemetery was moved during the 1941 government acquisition or if the markers have deteriorated. As an extra measure of protection, however, ground disturbing activities located near the site of the potential cemetery location shall be monitored by Installation CRM personnel. Should evidence of the cemetery or any other cultural resource be encountered, work must cease immediately and the Installation's Environmental Office must be contacted.

### **3.1.7 Title Search**

Because the properties have belonged to the Army for over 60 years, no title search was performed.

## **3.2 ENVIRONMENTAL MANAGEMENT QUESTIONNAIRE**

The responses to the following questions were provided by the Fort Stewart DPW Environmental Division.

### **3.2.1 Stormwater**

*Does the Installation have a Stormwater Management Plan?*

[yes]

*Will the developer be required to prepare a Stormwater Pollution Prevention Plan (SWP3) for its construction activities?*

[yes]

### **3.2.2 Floodplains**

*Are any of the subject properties located within the 100-year floodplain?*

[yes] **A portion of the footprint proposed for the utility corridor contains 100-year floodplain (Figure 4). Information is based on FEMA 2008 Flood Zone data and a 2011 floodplain modeling report prepared by the Installation.**

### **3.2.3 Wetlands**

*Do the subject properties contain wetlands or waters regulated under Section 404 of the Clean Water Act or falling under the purview of Executive Order 11990?*

[yes] **Wetland systems are located in and near the subject properties. Soil disturbance within these wetlands will be avoided. Outside of the subject properties, it is also anticipated that the wetland areas will remain vegetated with a 25-foot undisturbed buffer. There is the potential that wetland areas within the**

**subject properties will undergo vegetation removal that will not introduce fill material into the wetland systems.**

### **3.2.4 Threatened or Endangered Species**

*Do the subject properties contain, or have the potential to contain, any threatened or endangered flora and/or fauna?*

[yes] The Installation prepared a Biological Assessment (BA) and submitted it to the USFWS to address potential impacts to the RCW and FFS at the solar PV array location; the USFWS issued their concurrence with the Installation's findings on June 5, 2014 (Appendix C). **Additional coordination will be required to accommodate changes due to final siting and design, to include the utility interconnect substation. This additional USFWS coordination will be conducted by the Installation prior to finalization of the easement and/or site disturbing activities.**

The utility corridor proposed in the cantonment area is not managed for threatened or endangered flora and/or fauna.

### **3.2.5 Tree Management**

*Do the subject properties contain trees that are protected under an Installation tree management policy?*

[no]

### **3.2.6 Timber Sales**

*Are there any trees located on the subject properties that may be subject to Installation timber sales policies?*

[yes] It is always anticipated that the Army will remove merchantable timber from a proposed project site. The limits of construction must be clearly delineated on the ground by the proponent with a Fort Stewart Forestry representative. Any "leave trees" on the site will need to be clearly marked by the proponent. Fort Stewart Forestry will require up to 90 to 120 days from the 14-day Notice of Intent (NOI) waiting period date to harvest the merchantable timber. Forestry is not responsible for any site cleanup to include stump removal, logging slash, and non-merchantable timber.

There is a possibility that the remaining logging slash and non-merchantable timber could be suitable for use as fuel at the Fort Stewart Central Energy Plant (CEP). Trees of less than or equal to 24" in diameter would need to be hauled to the Fort Stewart biomass stockpile site for chipping and use at the Installation's CEP. The remaining non-merchantable trees of greater than 24" in diameter must be disposed of off-Post. Stumps may not be delivered to the Fort Stewart biomass stockpile site and would also require disposal off-Post.

**The proponent is prohibited from selling the timber.**

### 3.2.7 Permits

*Does the Installation operate under any environmental permits that will / may affect the actions of the developer?*

[yes] **See below for applicable technical requirements and permitting, 1-4.**

#### 1. Stormwater / Erosion and Sedimentation (E&S) Control:

##### a. Site Disturbing Projects Requiring a Notice of Intent

- i. Construction permitting requires fees in the amount of \$80.00/disturbed acre (site disturbance greater than or equal to 0.75 acre) be paid to the Georgia Environmental Protection Division. Unless paid for and submitted by the Army, a copy of the fee submission should be provided to the Installation Environmental Office along with a prepared and initialed Notice of Intent (NOI) for coverage under the State's NPDES Permit for Stormwater Discharges Associated with Construction Activities and the approved ESPCP.
- ii. Sites with an NOI require continuous maintenance of BMPs until submittal of the Notice of Termination (NOT) to the Georgia Environmental Protection Division.

##### b. Applicable to all Site Disturbing Projects

- i. The proposed action must comply with EISA Section 438 which requires maintaining or restoring the site's predevelopment hydrology with regard to the temperature, rate, volume and duration of flow. Low Impact Development (LID) techniques must be used to implement EISA Section 438, as required by the DoD UFC-3-210-10. E&S control best management practices (BMPs) must be utilized during land disturbance. These technical requirements and BMP recommendations can be found in greater detail at the following web link: [http://www.stewart.army.mil/info.asp?e=DPW/Environmental Division&p=Downloads](http://www.stewart.army.mil/info.asp?e=DPW/Environmental%20Division&p=Downloads).
- ii. Streams in all watersheds within FSGA/HAAF require a minimum 25 foot undisturbed buffer on each side of the stream as measured from top of bank. If the buffer cannot be maintained, a Stream Buffer Variance application request to GA EPD in accordance with the Erosion & Sedimentation Control Act of 1975-as amended O.C.G.A. 12-7-6 (b) (15) is required. This process can take up to, at a minimum of 90 days, and does not ensure variance will be granted by GA EPD.
- iii. At a minimum, a Level 1A E&S Control State Certified trained individual is to be on the site during ANY land disturbance activity.

- iv. **Site dewatering requires prior approval from the Installation Environmental Office.** If approved, dewatering must incorporate BMPs to dissipate or disperse the flows.
- v. Ensure all washouts of trucks and equipment is controlled and is discharged with E&S BMPs. Waste material and/or debris is required to be disposed of properly, and not into streams, ditches, or stormwater conveyance systems.
- vi. For spill prevention, ensure proper drip pans and secondary containment are utilized with construction and demolition equipment.

## 2. Storage Tanks:

### a. Underground Storage Tank Moratorium

- i. The installation of any tank and associated piping for the purpose of containing regulated and/or hazardous substances is strictly prohibited in the case where at least 10% of the total volume (tank + piping) is below the surface of the ground.
- ii. This moratorium was signed into effect by the Installation's Garrison Commander in 2002 and cites inordinate risk and liability from potential leaks into surrounding soil and groundwater as well as historically high cost related to remediation and closure of leaking underground storage tank sites on Fort Stewart and Hunter Army Airfield.

### b. Design Requirements for Aboveground Storage Tanks

- i. Provide appropriate secondary containment (40 CFR 112.8(c)(2))
  - 1) All aboveground storage tanks used for the purpose of storing regulated and/or hazardous substances must be double-walled. In order for a tank to be considered double-walled, the interstitial space between the inner and outer wall must be able to be inspected visually or the interstitial space must be equipped with a sensor capable of alarming in case of liquid in the interstice (access to the interstice must also allow for the periodic removal of liquids).
- ii. Provide tertiary containment (in accordance with 40 CFR 112.8(c)(3))
  - 1) All aboveground storage tanks must be placed on an impervious diked concrete housekeeping pad designed to catch spills caused from transferring substance to/from the tank. This housekeeping pad must come with a valve that allows for the discharge of rainwater from the diked pad after a visual inspection has been done to determine that the water is clean.
  - 2) All aboveground storage tanks that allow for direct manual filling must come equipped with a direct-fill spill container attached to the fill riser on the tank to prevent spills that may occur during manual filling

operations (e.g. pouring oil directly from a vehicle drip pan into a used oil AST).

- 3) The operator must be present and in view of the storage tank during the entire filling process.
- iii. Provide good engineering practices to avoid unwanted discharges (40 CFR 112.8(c)(8))
- 1) All aboveground storage tanks must come with a high liquid level alarm that emits both an audible and visual signal to alert operators that the tank must be emptied before further use.
  - 2) The tank must also be equipped with a level gauge that allows for determining the level of liquid in the tank.
  - 3) In the case of any tank equipped with a pump for the purpose of dispensing of a stored substance, the pump must have an automatic cutoff to prevent overfilling of a container.
  - 4) The operator must be present and in view of tanks during the entire filling process.
- iv. Provide Labeling
- 1) All aboveground storage tanks should be labeled IAW all applicable local, state, federal laws, or industry standard. At a minimum, the tank should display an appropriate hazard warning, material ID, and storage capacity.

### **3. Air Quality:**

#### **a. Generators**

- i. If the proposed project will entail the installation of an emergency generator, prior approval / coordination with the Environmental Office is required. New generators are subject to 40 CFR 60 Subpart IIII. This will require the generators hours of operation to be tracked. The hours of operation must be broken down by maintenance checks or emergency use. Emergency generators are limited to 100 hours for maintenance checks during any rolling 12-month calendar period. These records must be submitted to the Air Quality Program on a monthly basis. Additionally, the following information must be submitted to the Air Program regarding any generator being removed and/or being installed: manufacturer, model #, serial #, kW rating, and type of fuel used. Also, a compliance certification and the order date of the generator are also required. The ENV DIV will also need to be informed when this generator is installed and comes on-line. For generators being installed for purposes other than emergency power generation, this information is needed to determine if the generator will require permitting. Depending on the number and size of generators being installed, this can take 4 months for moderately-sized equipment and up to 2 years for very

large equipment. If a permit is required, it must be obtained before construction begins.

- 4. Recycling / Waste Management:** The contractor must adhere to local contracting clause, 52.000-4061: RECYCLING, SALVAGE, AND DISPOSAL OF MATERIALS FORT STEWART AND HUNTER ARMY AIRFIELD. **All construction and demolition waste must be disposed of in an approved disposal facility off the Installation and in accordance with all Federal, State, and Local regulations. The Contractor must provide a copy of landfill scale tickets to the Environmental Office through the Contracting Officer. Achievement of 50% diversion, by weight, of all non-hazardous construction and demolition waste debris is required.** All recyclables generated through construction or demolition must be separated from other wastes and delivered to the Processing Station/Recycling Center.

### **3.2.8 Historical and Cultural Resources**

*Have any cultural, historic, or archaeological sites been identified on the subject properties?*

[yes] There are no archaeological sites within the subject properties that are eligible for the National Register of Historic Places. There are sites, however, within the A-18 parcel that still remain under protection from unauthorized impacts per the Archaeological Resources Protection Act and the National Historic Preservation Act. Any construction or site disturbing activities beyond what is described in the National Environmental Policy Act document or the description presented in this ECP Report, would require evaluation by the Installation Environmental Office.

Although 1941 maps indicate an unmarked cemetery (J.O. Rahn Cemetery) may be located to the north-northwest, just beyond the eastern-most solar PV array parcel, prior surface and subsurface investigations at this location failed to find evidence of the cemetery. As an extra measure of protection, however, ground disturbing activities located near the site of the potential cemetery location shall be monitored by Installation cultural resources personnel. Should evidence of the cemetery or any other cultural resource be encountered, work must cease immediately and the Installation's Environmental Office must be contacted.

### **3.2.9 Installation Restoration Program**

*Are there any IRP sites located on or near the subject properties that may have an affect on the activity?*

[no] There are no IRP sites located on or near the subject properties that may have an affect on the activity; however, research of the historical land use of the parcels are provided below.

#### **1. A-18 training area parcels**

There is no known history of the parcels' use as an impact or range firing area, although the Land Use Category is Operational and a category change is required. This will be confirmed by the Installation Real Property Office prior to any land disturbing activities on this site, in accordance with AR 350-19.

These parcels are adjacent to, but not within, the footprint of three former Skeet Ranges and former Rifle Grenade and Rocket Launcher Range "D," all of which present MEC and lead contamination in the soil. Accordingly, although there are no known incidents of finding ammunition, explosives, or chemical weapons on the parcels, it is possible for unexploded ordnance (UXO) to be present on site. Contractors must submit a site-specific safety plan to the Installation Safety Office for review and approval prior to soil disturbance. Adherence to the site-specific safety plan is required and all on-site workers must receive and adhere to UXO awareness training. Refer to Figure 5 which shows the former range areas in relation to the subject properties.

## **2. Cantonment area (utility corridor) parcel**

Research of the utility corridor parcel's historical land use is consistent with its current category of "residential / housing" and there are no features of interest or areas of concern (AOC) within property slated for outgrant.

Located immediately adjacent to the Fort Stewart substation is a Munitions Response Site (MRS) known as the Hero Road Trench Area. This MRS was identified in January 2003 when an Installation staff member reported to the Installation's Environmental Office that materials (i.e., mustard gas) had been buried in a maintenance parking lot located on Hero Road. Initially, the MRS was identified to be a 10-acre parcel. A confirmatory sampling report increased the MRS from 10 to 34.5 acres. There is anecdotal evidence that dilute agent Chemical Agent Identification Sets (CAIS) kits, considered a hazardous waste, may have been disposed of in burial trenches within this MRS.

The Hero Road Trench Area MRS consists of dense forest and substantial undergrowth. It is surrounded by a gated, locked fence. The MRS is kept secured at all times; no activities occur within this MRS. Refer to Figure 6 which shows the MRS in relation to the subject properties.

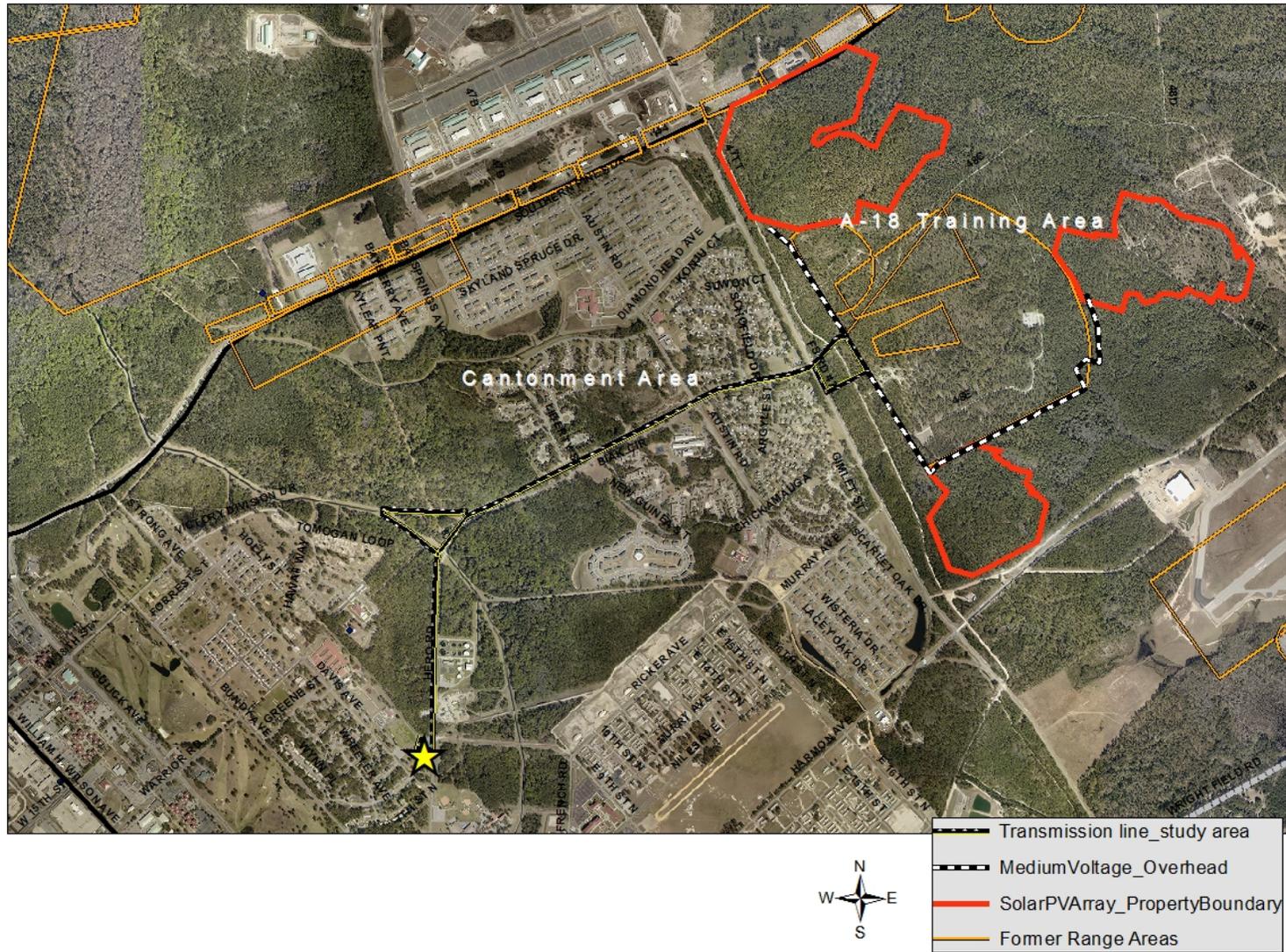


Figure 5. Former range areas in relation to subject properties.

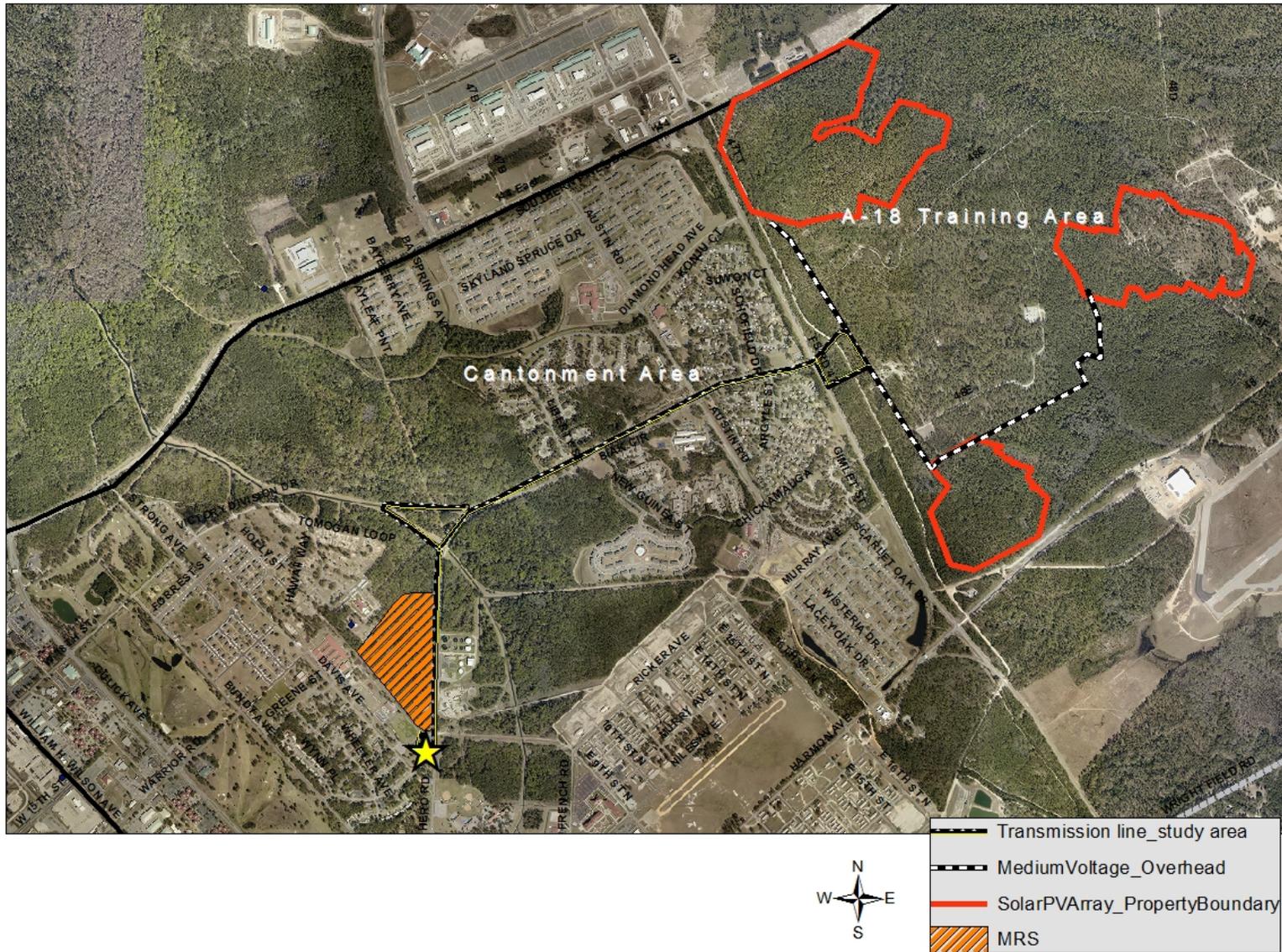


Figure 6. Location of fenced MRS in relation to subject properties.

### **3.2.10 Waste Management**

**Contractors are not approved to use Fort Stewart's on-post landfill. They must dispose of construction and other debris at an off-post landfill. Contractors will be required to comply with the Installation's Hazardous Waste Management Plan.**

### **3.2.11 Storage Tanks**

*Are there any USTs and/or ASTs located within the proposed footprints?*

**[no] There are no known USTs or ASTs located within the parcels.**

*Are there any USTs and/or ASTs located adjacent to the subject property that may have an effect on the environmental condition of property?*

**[no]**

*Are there any heating oil tanks (HOTs) located within the proposed footprints?*

**[no] There are no known HOTs located within the parcels.**

*Are there any USTs and/or ASTs located adjacent to the subject properties that may have an effect on the environmental condition of property?*

**[no]**

### **3.2.12 Oil/Water Separators**

*Are there any oil/water separators located on the subject properties?*

**[no] There are no known oil/water separators located within the parcels.**

*Are there any oil/water separators located adjacent to the subject properties that may have an effect on the environmental condition of property?*

**[no]**

### **3.2.13 Water Wells**

*Are there any known water wells located on the subject properties.*

**[no] There are no known water wells located on the parcels. .**

### **3.2.14 Asbestos Containing Material**

*Is there any known asbestos containing material presently or historically located on the subject properties?*

**[no] There are no structures on the subject properties.**

*Has asbestos been identified in the soils within the subject footprint?*

[no] **No such sampling has been conducted in the parcels, as there is no reason to suspect asbestos contamination in the soil.**

### **3.2.15 Lead-based Paint**

*Is there any known LBP presently or historically on or within structures proposed for transfer (buildings, playgrounds, etc.)?*

[no] **There are no structures on the subject properties.**

*Were paint chips noted on the ground around any of the pre-1978 improvements?*

[no] **There are no structures on the subject properties.**

*Have there been any soil lead studies conducted on the subject properties?*

[no] **No such studies have been conducted in the parcels.**

### **3.2.16 Air Emissions**

*Is the Installation in attainment for all criteria air pollutants?*

[yes]

### **3.2.17 Polychlorinated Biphenyls**

*Is there any PCB containing equipment located on the subject properties?*

[no] **No PCBs were found during the Environmental Baseline Survey for electrical privatization.**

*Have PCBs been release onto subject lands or into subject improvements?*

[no] **There is no evidence to suggest that PCBs are present or that a PCB was ever released at these locations.**

### **3.2.18 Pesticides**

*Have chlorinated pesticides (i.e., chlordane, dieldrin, heptachlor, etc.) been used on the subject properties?*

[no] There is no evidence to suggest that chlorinated pesticides have been used or are present on the subject properties.

Pesticides have been applied at Fort Stewart to control weeds, insects, and other pests. Pesticide use has been in accordance with manufacturer's directions and the Fort Stewart Integrated Pest Management Plan (IPMP). Pesticide treatments are generally specific to the interiors or immediate areas around buildings and facilities such as

parade grounds. It is possible however, that applications of mosquito abatement products may have been applied directly to or may have drifted onto the proposed easement parcel. These pesticides include: Malathion, Pyrethrin, Piperonyl Butoxide, Permethrin, Resmethrin, Methoprene, Orthene, and Cypermethrin.

Both manual and mechanical means may be used to control vegetation. In the event pesticides are required during construction, only those approved for use on the Installation will be allowed. All applications must be performed by certified personnel and in a manner consistent with Federal law and in accordance with DoD and DA policy (DODI 4150.07 and AR 200-1) and the current FS/HAAF Integrated Pest Management Plan. All records of application, QA inspection, etc. must be reported to the Installation Pest Management Coordinator (IPMC) monthly.

### **3.2.19 Unexploded Ordnance**

*Do the subject properties contain any known ammunition, explosives, or chemical weapons?*

[no] **As discussed in Section 3.2.9, records indicate the A-18 parcels are near a former range area. Although there are no known incidents of finding ammunition, explosives, or chemical weapons on these parcels, there is always the possibility that UXO, discarded ammunition, or other training devices might be encountered.**

*Have the subject properties been used as a training or impact range?*

[no] **See explanation above.**

### **3.2.20 Medical/Biohazardous Waste and Silver Recovery**

*Do these subject properties contain any known medical/biohazard and/or silver recovery waste?*

[no]

### **3.2.21 Radioactive Materials**

*Do the subject properties contain any known radioactive materials?*

[no]

*Have the subject properties been used to store radioactive materials?*

[no]

### **3.2.22 Radon**

*Do the subject properties have recorded instances of radon exceeding 4pCi/L?*

[no] **There are no structures on the subject properties.**

### **3.2.23 Mold**

*Is there any evidence of mold existing within the improvements to be transferred?*

[no] **There are no structures on the subject properties.**

### **3.2.24 Septic Systems**

*Are there any septic tanks located on or adjacent to the subject properties?*

[no]

### **3.2.25 Other**

*Are there any other known environmental conditions within the subject properties that may affect the environmental condition of property category?*

[no]

## **3.3 VISUAL SITE INSPECTION OBSERVATIONS**

A VSI of the subject properties was conducted on June 12, 2014 and July 22, 2014. During the VSI, there were various pieces of debris and discarded items within portions of the subject properties. These items included scrap metal and soda cans. Also observed was an underground 25KV line exposed in the eastern-most solar PV array property. There were no physical signs of stressed vegetation, stained soil, dead or ailing wildlife, or any other observation that would indicate actual or potential releases of hazardous substances or petroleum products. As such, the VSI of the subject properties revealed nothing that would affect the environmental condition of the property.

## **SECTION 4.0**

### **EFFECTS FROM ADJACENT PROPERTY**

#### **4.1 RECORD SEARCH**

*Did a record search of reasonably ascertainable Federal, state, and local databases identify any adjacent property environmental concerns that may have an effect on the environmental condition of the subject properties?*

[no]

#### **4.2 VISUAL SITE INSPECTION**

*Did the VSI of the adjacent properties identify any environmental concerns that may have an effect on the environmental condition of the subject properties?*

[no]

#### **4.3 INTERVIEWS**

*Did interviews with Installation personnel reveal any adjacent property environmental concerns that may have an effect on the subject properties?*

[no]

#### **4.4 HISTORICAL AERIAL PHOTOGRAPHS**

*Were historic aerial photos available for the subject properties or immediately adjacent properties?*

[yes]

Historical aerial photographs from 1947 and 1987 were reviewed and are summarized below.

- The 1947 aerial photograph depicts historic ranges in the immediate area of the A-18 training area parcels. The terrain appears mostly denuded with pockets of depression areas. The land comprising the utility corridor within the cantonment area, in the 1947 aerial photograph, appears to be within an existing road's ROW similar to how the parcel exists presently.
- Review of 1966 and 1976 aerial photographs identify what appears to be a Light Assault Weapon (i.e. a shoulder-fired rocket launcher) range which fired upon a moving target berm. The surface danger zone is suspected to be similar to the existing former range area depicted in Figure 5, which is located outside but near the A-18 training area parcels.
- The 1987 aerial photograph depicts the A-18 training area parcels much like it exists presently, but with the adjacent former range areas more clearly defined. The 1987 aerial photograph also shows the utility corridor parcel in the cantonment area as being very similar to what is found present day.

## **SECTION 5.0 CONCLUSIONS**

### **5.1 ENVIRONMENTAL CONDITION OF PROPERTY**

On the basis of the findings of this ECP report, an ECP classification rating was established for the subject properties as defined in Section 2.6.

The absence of observed or reported releases of potentially hazardous materials within the subject properties was the driver for the ECP classification 1/White. The ECP classification 1/White indicates that no release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). The area might have been used to store hazardous substances or petroleum products.

#### **5.1.1 Environmental Remediation Sites**

There are no environmental investigation/remediation sites on the subject properties.

#### **5.1.2 Storage, Release, or Disposal of Hazardous Substances**

There is no observable evidence that hazardous substances were stored, released, or disposed of on the subject properties in excess of reportable quantities specified at Title 40 of the *Code of Federal Regulations* (CFR) Part 373.

#### **5.1.3 Petroleum and petroleum Products**

No evidence suggests the presence or release of petroleum or other petroleum products within the subject properties.

#### **5.1.4 Polychlorinated Biphenyls**

There is no evidence that PCB-containing equipment is located or was previously located on the subject properties.

#### **5.1.5 Asbestos Containing Material**

There are no structures on the subject properties.

#### **5.1.6 Lead Based Paint**

There are no structures on the subject properties.

#### **5.1.7 Radiological Materials**

There is no evidence that radioactive material or sources were stored or used on the subject properties.

#### **5.1.8 Radon**

No radon surveys were conducted on the subject properties.

### **5.1.9 Munitions and Explosives of Concern**

Based on the review of existing records and available information, there is a possibility that Munitions and Explosives of Concern (MEC) may be present on the A-18 training area parcels. This property has been used for munitions-related activities and is considered operational training land. The term "MEC" means military munitions that may pose unique explosives safety risks, including: (A) UXO, as defined in 10 U.S.C. Section 101(e)(5); (B) discarded military munitions, as defined in 10 U.S.C. Section 2710(e)(2); or (C) munitions constituents (e.g., TNT, RDX), as defined in 10 U.S.C. Section 2710(e)(3), present in high enough concentrations to pose an explosive hazard.

There is no evidence that MEC are present on the utility corridor property, within the cantonment area. This parcel has not been used for munitions-related activities.

**Given the Project is located on a military Installation; there is the potential for MEC to be encountered. In the event the Lessee or person should encounter or suspect they have encountered MEC on the Project, they shall not attempt to disturb, remove or destroy it, but shall cease any intrusive or ground disturbing activities being conducted at the Project and immediately notify the local Range Control Office. The Lessor will dispose of such MEC at no expense to the Lessee.**

### **5.1.10 Other Property Conditions**

No other property conditions were observed or reported within the subject properties that would impact its environmental condition of property rating.

## **5.2 ADJACENT PROPERTY CONDITIONS**

The adjacent property conditions were not observed or reported to impact the subject properties environmental condition of property rating.

## **5.3 ENVIRONMENTAL REMEDIATION AGREEMENTS**

There are no environmental remediation orders or agreements applicable to the Properties being outgranted. The easement will include a provision reserving the Army's right to conduct remediation activities if necessary in the future (Appendix A).

## **SECTION 6.0 REFERENCES**

- ASTM (American Society for Testing and Materials). 2005a. *Standard Practice for Conducting Environmental Baseline Surveys*. Designation D6008-05.
- ASTM (American Society for Testing and Materials). 2005b. *Standard Practice for Conducting Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Designation E 1527-05.
- DoD (Department of Defense). 1994. *BRAC Cleanup Plan Guidebook*. Revised with addendum to Section 4.10 (September 1996).
- ERT. 2012. Fort Stewart RCRA Facility Investigation, Final Revised Work Plan. Pg 1-7. July.
- Fort Stewart, 2011. Environmental Condition of Property Report of the Fort Stewart / Hinesville Regional Sewage Treatment Plant Expansion. U.S. Army, Fort Stewart, Georgia. December.
- Fort Stewart GIS. 2011. GIS files for Fort Stewart, Georgia.
- Jones Technologies, Inc., Lanham, Maryland and Gene Stout and Associates, Loveland, Colorado. *Final Integrated Natural Resources Management Plan 2001-2005 for Fort Stewart and Hunter Army Airfield, Georgia*, September 2001.
- Range Operations Report No.1. 2006. Small Arms Range. U.S. Army Corps of Engineers, St. Louis District. FOUO. Pp 69, 76, 77, Appendix D. January.
- United States Code*. 1999. Title 42, Chapter 103—Comprehensive Environmental Response, Compensation, and Liability Act.
- USEPA (U.S. Environmental Protection Agency). 1994. OSWER Directive 9345.0-09. EPA 540/F-94/32, PB94-963249 (4/14/94). U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response.

# **APPENDIX A**

## **Site Environmental Plans, Notices, Restrictions, and Other Lease Provisions**

## ENVIRONMENTAL LEASE PROVISIONS

### FORT STEWART, GEORGIA

The following conditions may be placed in the lease to ensure there will be no unacceptable risk to human health or the environment and no interference with the ongoing Installation Restoration Program (IRP) and to ensure regulatory requirements for the IRP and other compliance programs administered by the Army are met.

**USE OF THE SITE:** The lease will contain a condition that restricts use of the site by the lessee.

**SUBSEQUENT TRANSFERS:** The lease will contain language that restricts the lessee from transferring or assigning the lease or any interest therein, or subletting the leased premises or any part thereof, or granting any interest, privilege, or license whatsoever in connection with the lease without the prior written consent of the Army. Every lease or sublease shall contain the environmental protection lease provisions contained herein.

**REGULATORY OR ENVIRONMENTAL PERMITS:** The lease will contain conditions that require the lessee to be solely responsible for obtaining at their own cost and expense any regulatory or environmental permits required for their operation under the lease, independent of any existing Fort Stewart permits. They (or any sublessee) shall also be required to obtain their own United States Environmental Protection Agency (USEPA) Identification Number, if applicable.

**LESSEE COMPLIANCE:** The lease will contain conditions requiring the lessee to comply with all lawful statutes, regulations, permits, or orders affecting the activity hereby authorized when such are issued by the USEPA; the Georgia Department of Natural Resources – Environmental Protection Division; the Georgia Department of Human Resources – Public Health Division; or any other Federal, State, interstate, or local governmental agency having jurisdiction to abate or prevent pollution. The lease will also prohibit the lessee or any sublessee from disposal of any toxic or hazardous materials within the leased premises.

**INTERFERENCE WITH ON-GOING RESTORATION:** The lessee shall not disrupt, inflict damage, obstruct, or impede on-going environmental restoration work on the leased premises or anywhere else on Fort Stewart. The lessee shall indemnify the Government for any costs incurred as a result of the lessee's breach of this provision.

**LESSOR ACCESS CLAUSE:** The Army's rights under a lease specifically include the right for Army officials to inspect upon reasonable notice the leased premises for compliance with environmental, safety, and occupational health laws and regulations, whether or not the Army is responsible for enforcing them. Such inspections are without prejudice to the right of duly constituted enforcement officials to make such inspections. The Army normally will give the lessee 24 hours prior notice of its intention to enter the leased premises unless it determines the entry is required for environmental, safety, operations, or security purposes. The lessee shall

have no claim on account of any entries against the United States or any officer, agent, employee, or contractor thereof.

**COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA) ACCESS CLAUSE:** The Army and its officers, agents, employees, contractors, subcontractors, and State and Federal regulatory officials will have the right, upon reasonable notice to the lessee, to enter upon the leased premises in any case in which a response action or corrective action is found to be necessary, or is in progress on the leased premises, or such access is necessary to carry out a response action or corrective action on adjoining property, including, without limitation, the following purposes:

**A.** To conduct investigations, and surveys (including, where necessary, drilling, and/or sample collection) and other activities related to Fort Stewart's IRP and other environmentally related programs.

**B.** To inspect field activities of the Army and its contractors and subcontractors with regards to implementing the Fort Stewart and other environmentally related programs.

**C.** To conduct any test or survey related to the implementation of the Fort Stewart IRP or other environmental compliance programs at the leased premises to collect or verify any data required by the USEPA or the State of Georgia relating to the environmental condition of the site.

**D.** To construct, operate, maintain, or undertake any other investigation, corrective measure, response, or remedial action as required or necessary under any Fort Stewart Federal Facilities Agreement (FFA), Record of Decision (ROD), Principle Coordination Point (PCP), or IRP requirement, including, but not limited to monitoring wells, pumping wells, and treatment facilities.

**LESSEE COMPLIANCE DURING RESPONSE OR CORRECTIVE ACTION:** The lessee will agree to comply with the provisions of the appropriate health or safety plan in effect during the course of any of the above-described actions. Any inspection, survey, investigation, or other corrective measure, response, or remedial action will, to the extent practicable, be coordinated with representatives designated by the lessee or any sublessees. The lessee or sublessee shall have no claim, on account of such entries, against the United States or any officer, agent, employee, contractor, or subcontractor thereof. In addition, the lessee and any sublessees shall comply with all the applicable Federal, State, and local occupational safety and health regulations.

**ENVIRONMENTAL MANAGEMENT PLANS:** The lessee shall submit to the Army, and maintain thereafter, an Environmental Management Plan which describes, in detail, the program for environmental management and method of compliance, by the user of any portion of the leased premises, whether the lessee, with all Army, Federal, State, and local laws and regulations for the use, management, generation, storage, treatment, and disposal of all hazardous waste, hazardous materials, and hazardous substances. Each Environmental Management Plan for a portion of the leased premises, or request for waiver of the requirement

for a plan due to the non-hazardous nature of the proposed use, must be submitted and approved in writing by Fort Stewart prior to occupancy of the intended portion of the leased premises. The lessee will be responsible for the overall compliance of its operations. The lessee will be responsible for ensuring the preparation of all documents, records, and reports associated with the environmental compliance of its operation. No liability or responsibility shall attach to Fort Stewart or the Army as a result of the Army's review and approval of the Environmental Management Plan under this paragraph.

**HAZARDOUS WASTE MANAGEMENT:** The lessee will not store or dispose of hazardous materials on the leased premises unless authorized under 10 United States Code (USC) 2692, *Storage, Treatment, and Disposal of Non-Defense Toxic and Hazardous Materials*. The lessee shall strictly comply with the hazardous waste management requirements under the Resource Conservation and Recovery Act (RCRA) and the State of Georgia hazardous waste management rules including proper hazardous waste characterization, labeling, storage, disposal, and documentation requirements. Except as specifically authorized by the Army in writing, the lessee must provide, at its own expense, such hazardous waste management facilities, as needed to maintain compliance with all laws and regulations. Army hazardous waste management facilities will not be available to the lessee.

**EXISTING HAZARDOUS WASTE:** The lessee will not use Fort Stewart's hazardous waste accumulation points. Neither will the lessee permit its hazardous wastes to be commingled with Fort Stewart's hazardous waste. Recyclable materials, which are not waste, may be delivered to the Fort Stewart's Processing Station located on Kilpatrick Road off Wilson Avenue, Building 1384, Fort Stewart, Georgia.

**LESSEE RESPONSE PLAN:** The lessee that establishes operations within the facilities being made available for lease, shall submit to the Army, and maintain thereafter, a plan for responding to hazardous waste, fuel, and other chemical spills prior to commencement of operations on the leased premises. Such plan shall be independent of Fort Stewart's Spill Contingency Plan and, except for initial fire response and/or spill containment, shall not rely on use of Fort Stewart personnel or equipment. Should the Army provide any personnel or equipment, whether for initial fire response and/or spill containment, or otherwise on request of the lessee, or because the lessee was not, in the opinion of the said officer, conducting timely clean-up actions, the lessee agrees to reimburse the Army for its response costs.

**ALTERATIONS, ADDITIONS, AND IMPROVEMENTS TO THE LEASED PREMISES:** The lessee shall not construct, make, or permit any alterations, additions, or improvements to the leased premises in any way which may adversely affect Fort Stewart's investigations, restoration, or human health or the environment without prior written consent of the Army. Such consent may include a requirement to provide the Army with a performance and payment bond to it in all respects and other requirements deemed necessary to protect the interests of the Army.

## **GROUNDWATER RESTRICTION:**

### **A. Restrictions and Conditions:**

The lessee covenants for itself, its successors, and assigns not to access or use groundwater underlying the Property for any purpose unless for the purposes of minimizing water withdrawals from the Floridan Aquifer, and as agreed to in writing by Fort Stewart. For the purpose of this restriction, "groundwater" shall have the same meaning as in Section 101(12) of CERCLA. The written request will clearly reference the Environmental Protection Lease Provisions, providing a copy of the provisions as an attachment to the request, the depth of wells, identification of the aquifer that will be withdrawn Fort Stewart will review the IRP to determine whether institutional control limitations exist or if restrictions may be lifted to grant the request. This may involve consultation with the Georgia Department of Natural Resources – Environmental Protection Division. The lessee, for itself, its successors or assigns covenants that it will not undertake nor allow any activity on or use of the property that would violate the restrictions contained herein. These restrictions and covenants are binding on the lessee, its successors and assigns; shall run with the land; and are forever enforceable.

### **B. Enforcement:**

The restrictions and conditions stated above benefit the public in general and the territory surrounding the Property, including lands retained by the Army, and, therefore, are enforceable by the United States Government. The lessee covenants for itself, its successors, and assigns that it shall include and otherwise make legally binding, the restrictions above in all subsequent lease, transfer, or conveyance documents relating to the Property subject hereto.

### **C. Army Access:**

The Army and its representatives shall, for all time, have access to the property for the purpose of installing and/or removing groundwater monitoring wells, and to perform continued monitoring of groundwater conditions, allowing chemical and/or physical testing of wells to evaluate water quality and/or aquifer characteristics. The property owner shall allow ingress and egress of all equipment necessary to accomplish the same.

**PESTICIDE MANAGEMENT:** The lessee shall comply with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and other legislation supplementary thereto and amendatory thereof that governs the Pest Management Programs on Department of Defense (DoD) lands. DoD Instruction 4150.7, *DoD Pest Management Program*, provides compliance guidance for implementation of the requirements of FIFRA on DoD installations. Army Regulation (AR) 200-5, *Pest Management*, provides Army Pest Management Program policies that meet legal compliance requirements for implementation of FIFRA. The lessee shall comply with DoD Instructions 4150.7 and AR 200-5 and in accordance with the Installation Pesticide Management Plan (IPMP).

**ARCHEOLOGICAL PROPERTY AND GROUND LEASE RESTRICTION:** If previously unknown archeological materials or sites are encountered by the lessee during construction or renovation activities, the lessee will stop all activities in that area that could affect the physical integrity of those archeological materials or sites and will immediately notify the Fort Stewart Cultural Resource Manager about the find. The Fort Stewart Cultural Resource Manager will examine the location of the discovered archeological materials and will make a determination about the necessity to conduct additional archeological investigations and National Historic Preservation Act (NHPA) Section 106 consultations with the Georgia State Historic Preservation Officer (SHPO). If formal Section 106 consultations are required, then the Fort Stewart/HAAF Cultural Resource Manager, the Georgia SHPO, and the lessee will consult to arrive at mutually-agreeable and appropriate measures that the lessee will employ to avoid or mitigate for any adverse effects that the undertaking may have on the archeological remains.

# **APPENDIX B**

## **Visual Site Inspection**

**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Southern-most parcel is shown. Photo is representative of the forested landscape within the A-18 training area. There were no physical signs of stressed vegetation, stained soil, dead or ailing wildlife, or any other observation that would indicate actual or potential releases of hazardous substances or petroleum products.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Southern-most parcel is shown and is characteristic of the description provided in the photo above.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Southern-most parcel is shown and is characteristic of the description provided in the photo above.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Eastern-most parcel within a previously cleared area near the end of the runway of Wright Army Airfield. No physical signs of contamination were present.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Eastern-most parcel shown, adjacent to the previously cleared area depicted in the photo above. No physical signs of contamination were present.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Eastern-most parcel is shown. A 25KV line was found on the ground's surface, coming from belowground near trail 48F (see below photo for below grade view).



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Exposed 25KV line,  
below grade as  
referenced in the photo  
description above.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Eastern-most parcel is  
shown. Various bits of  
debris or discarded items  
were discovered within  
the parcel, as shown in  
the next few photos. This  
photo shows a metal  
item.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Photo shows an abandoned piece of metal within the eastern-most parcel.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Northern-most parcel is shown. Photo is representative of the forested landscape within the A-18 training area. There were no physical signs of stressed vegetation, stained soil, dead or ailing wildlife, or any other observation that would indicate actual or potential releases of hazardous substances or petroleum products.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Northern-most parcel is shown and is characteristic of the description provided in the photo above.



**DATE:**  
07-22-2014

**SOLAR PV ARRAY  
PROPERTY**

**DESCRIPTION:**  
Northern-most parcel is shown and is characteristic of the description provided in the photo above.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**  
06-12-2014

**UTILITY CORRIDOR**

**DESCRIPTION:**  
Photo shows a portion of the utility corridor property within the cantonment area, along Hero Road. There is a drainage swale that is expected to be avoided. There were no physical signs of stressed vegetation, stained soil, dead or ailing wildlife, or any other observation that would indicate actual or potential releases of hazardous substances or petroleum products.



**DATE:**  
06-12-2014

**UTILITY CORRIDOR**

**DESCRIPTION:**  
Photo shows another portion of the utility corridor property within the cantonment area, along Hero Road. There appears to be a natural gas line that runs along this corridor as observed by the orange and white stake. There were no physical signs or observations of contamination.



**ENVIRONMENTAL CONDITION OF PROPERTY REPORT  
FORT STEWART, GEORGIA**

**DATE:**

06-12-2014

**UTILITY CORRIDOR**

**DESCRIPTION:**

Photo shows a portion of the utility corridor property just north of the fenced off MRS. There were no physical signs or observations of contamination. There were, however, drainage canals bisecting this area.



# **APPENDIX C**

## **Biological Assessment and USFWS Concurrence Letter**



## United States Department of the Interior

### Fish and Wildlife Service

105 West Park Drive, Suite D  
Athens, Georgia 30606  
Phone: (706) 613-9493  
Fax: (706) 613-6059

West Georgia Sub-Office  
Post Office Box 52560  
Fort Benning, Georgia 31995-2560  
Phone: (706) 544-6428  
Fax: (706) 544-6419

Coastal Sub-Office  
4980 Wildlife Drive  
Townsend, Georgia 31331  
Phone: (912) 832-8739  
Fax: (912) 832-8744

June 5, 2014

Mr. Robert R. Baumgardt  
U.S. Army Installation Management Command  
Directorate of Public Works  
1587 Veterans Parkway  
Fort Stewart, Georgia 31314  
Attention: Mr. Tim Beaty

Re: USFWS Log Number 2014-0660

Dear Mr. Baumgardt:

Thank you for your April 21, 2014, letter and attached Biological Assessment concerning the proposed construction of a 30-megawatt Solar Photovoltaic Panel Array on Fort Stewart, Georgia. The project area covers an area not to exceed 200 acres of forested and non-forested habitat in Training Area A18 in Liberty County, Georgia. We have reviewed the information you provided and submit the following comments under provisions of the Endangered Species Act of 1973 (ESA), as amended; (16 U.S.C. 1531 et seq.).

According to the information you provided, the project may impact foraging partitions of four RCW Clusters (Clusters 10, 43, 53, and 402), but a foraging analysis shows that these clusters will still have adequate foraging habitat post project. The proposed project area lies within the frosted flatwoods salamander Habitat Management Unit, but only 14.3% of the secondary buffer of a highly likely breeding pond will be impacted by the project. The nearest known sighting of an eastern indigo snake (*Drymarchon couperi*) is 1.5 miles east-northeast of the proposed project site and the project will not impact any existing gopher tortoise burrows. The nearest known sighting of foraging wood storks is at least one mile south of the project site. The nearest smooth coneflower population is 18.3 miles northwest of the project area. Therefore, we agree with your determination that this proposed project is not likely to adversely affect any federally listed endangered or threatened species. Also, we believe that the requirements of section 7 of the ESA have been satisfied and no further

consultation is required. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We appreciate the opportunity to comment during the planning stages of your project. If you have any questions, please contact our Coastal Georgia Sub Office staff biologist, Robert Brooks, at 912-832-8739, extension 107.

Sincerely,



Strant Colwell  
Coastal Georgia Supervisor



DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, US ARMY GARRISON, FORT STEWART / HUNTER ARMY AIRFIELD  
DIRECTORATE OF PUBLIC WORKS  
1587 VETERANS PARKWAY  
FORT STEWART, GEORGIA 31314

REPLY TO  
ATTENTION OF

Directorate of Public Works

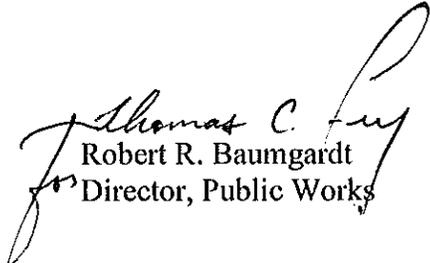
U.S. Department of the Interior  
Fish and Wildlife Service  
ATTN: Strant Caldwell  
4980 Wildlife Drive, NE  
Townsend, GA, 31331

Dear Mr. Caldwell:

Fort Stewart proposes to clear, grub, and grade an area to facilitate construction of a 30-megawatt Solar Photovoltaic Panel Array in Fort Stewart Training Area A-18 in Liberty County, Georgia. A Biological Assessment has been prepared in accordance with the requirements of the Endangered Species Act. The conclusion reached in this Biological Assessment is that the proposed action may affect, but is not likely to adversely affect, the red-cockaded woodpecker, wood stork, eastern indigo snake, or frosted flatwoods salamander. The proposed action will not affect the smooth coneflower, or the Atlantic or shortnose sturgeon. Fort Stewart reached its red-cockaded woodpecker recovery goal of 350 potential breeding groups during the breeding season of 2012 and has enough suitable or potentially suitable habitat to support 657 red-cockaded woodpecker clusters post project.

If additional information is needed, please contact Mr. Tim Beaty, DPW, Fish and Wildlife Branch at telephone (912) 767-7261. Your continued cooperation and assistance are appreciated.

Sincerely,

  
Robert R. Baumgardt  
Director, Public Works

Enclosures

# BIOLOGICAL ASSESSMENT

## Construction of a 30-Megawatt Solar Photovoltaic Array

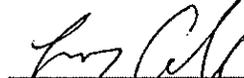
Fort Stewart, Georgia

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Prepared By:

  
GARY C. HART  
Wildlife Biologist  
Fish and Wildlife Branch  
Environmental Division  
Directorate of Public Works  
Fort Stewart, GA

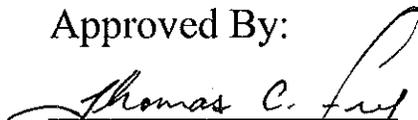
Reviewed By:

  
LAWRENCE D. CARLILE  
Chief, Planning and Monitoring  
Fish and Wildlife Branch  
Environmental Division  
Directorate of Public Works  
Fort Stewart, GA

Submitted By:

*beat*   
TIMOTHY A. BEATY  
Chief, Fish and Wildlife Branch  
Environmental Division  
Directorate of Public Works  
Fort Stewart, GA

Approved By:

  
THOMAS C. FRY  
Chief, Environmental Division  
Directorate of Public Works  
Fort Stewart, GA

## PROJECT DESCRIPTION

Fort Stewart proposes to clear, grub, grade, and maintain a 200-acre area in Fort Stewart Training Area (FSTA) A-18 to facilitate the construction of a 30-Megawatt Solar Photovoltaic Array (SPVA; Figure 1). Construction of access trails to the SPVA and a storm water drainage system will be included in this project. Fort Stewart personnel have selected 2 possible sites (Site A and B; Figure 1). Final site design may select Site A, Site B, or a combination of Sites A and B with an overall footprint not to exceed 200 acres. Assessments for Site A and B are included in this Biological Assessment. After the final site determination, the U.S Fish and Wildlife Service (USFWS) will be notified of the final project area. If upon final design a combination of Site A and B is required the RCW Matrix will be applied to the new site and the USFWS will be provided with the RCW Matrix report based on the new location. The purpose of the proposed action is to help the Army implement its Energy Initiatives Task Force Strategy to reach its goal of deploying 1 gigawatt of renewable energy by 2025. The possible project areas consist of forested and non-forested habitat.

## SITE DESCRIPTIONS

Forested habitat within the proposed action areas comprises a canopy dominated by slash pine (*Pinus elliottii*), longleaf pine (*P. palustris*), loblolly pine (*P. taeda*), and pond pine (*P. serotina*), with a mid-story of sweetgum (*Liquidambar styraciflua*), water oak (*Quercus nigra*), live oak (*Q. virginiana*), wax myrtle (*Myrica cerifera*), and red bay (*Persea borbonia*). The groundcover is characterized by saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), shiny blueberry (*Vaccinium myrsinites*), huckleberry (*Gaylussaccia frondosa*), runner oak (*Q. pumila*), bracken fern (*Pteridium aquilinum*) and Carolina jessamine (*Gelsemium sempervirens*). Wetland systems adjacent to the proposed project are dominated by pond cypress (*Taxodium ascendens*), blackgum (*Nyssa sylvatica*), pond pine, red maple (*Acer rubrum*), and red bay. The soil types within the project areas are Ocilla loamy fine sand, Fuquay loamy sand, Pelham loamy sand, Echaw and Centenary fine sands, Mandarin fine sand, Albany loamy fine sand, and Rutlege fine sand.

## SPECIES CONSIDERED

The following species occur, or may occur, in the proposed action area and were considered in this assessment:

Red-cockaded woodpecker (*Picoides borealis*) – Endangered  
Wood stork (*Mycteria americana*) – Endangered  
Eastern indigo snake (*Drymarchon couperi*) – Threatened  
Frosted flatwoods salamander (*Ambystoma cingulatum*) – Threatened  
Atlantic sturgeon (*Acipenser oxyrinchus*) – Endangered  
Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered  
Smooth coneflower (*Echinacea laevigata*) – Endangered

## DISCUSSION

### Red-cockaded Woodpecker

Fort Stewart Fish and Wildlife Branch personnel surveyed the project area for red-cockaded woodpeckers (RCW) and RCW cavity trees. There were no RCW cavity trees detected in the action area. Site A will affect the foraging partitions of RCW Clusters 10, 43, 53, and 402 (Figure 2). Site A will impact 164.1 acres of existing RCW Habitat Management Unit (HMU; Table 1) and 89.1 acres of existing non-forested habitat as identified in Fort Stewart's Integrated Natural Resources Management Plan (INRMP; Directorate of Public Works 2001; Figure 3). Site B will affect the foraging partitions of RCW Clusters 10 and 43 (Figure 2). Site B will impact 194.0 acres of existing RCW Habitat Management Unit (HMU; Table 2) and 89.1 acres of existing non-forested habitat as identified in the INRMP (Figure 3).

A May 2005 memorandum from Noreen Walsh, Assistant Regional Director, Ecological Services, U.S. Fish and Wildlife Service, Atlanta, GA entitled "Implementation Procedures for Use of Foraging Habitat Guidelines and Analysis of Project Impacts under the Red-cockaded Woodpecker (*Picoides borealis*) Recovery Plan: Second Revision" (USFWS 2003), describes parameters and concepts to be considered when federal properties analyze projects that may affect RCWs. There are potentially 5 levels of analysis to consider in the preparation of biological assessments, with the analyses conducted in the following order: 1) foraging partition, 2) group, 3) neighborhood, 4) population, and 5) recovery unit. The results of each level of analysis predicate the necessity to conduct subsequent analyses.

### Foraging Partition Level Analysis

The RCW Recovery Plan requires that a foraging analysis be performed for all active RCW clusters that may be impacted by a project using the Foraging Matrix (hereafter, Matrix) analysis tool. Federal agencies must perform an analysis of all affected foraging partitions to determine if they meet the RCW Recovery Standard (RS) of Good Quality Foraging Habitat (GQFH). If foraging partitions do not meet the RS, then the foraging partition must be analyzed to determine if it meets the Managed Stability Standard (MSS). The pre-project foraging partitions of Clusters 10, 43, 53, and 402 were analyzed and no stand within the foraging partitions met the RS (i.e., there were no acres of GQFH), therefore we analyzed the post-project stands receiving direct impact (i.e., loss of habitat in a foraging partition) using the MSS. Clusters 10, 43, 53, and 402 exceeded the MSS (Table 3 and 4).

All affected clusters will have adequate foraging resources available to them post-project with the selection of either Site A or B, and will continue to meet the MSS. Fort Stewart reached its recovery goal of 350 potential breeding groups during the breeding season of 2012 and at the end of the 2013 breeding season had increased to 366 PBGs. Fort Stewart has enough suitable or potentially suitable RCW HMU to support 657 RCW clusters post project. Because the foraging partitions pass MSS, the group, neighborhood, and population analyses are not warranted. The proposed action may affect, but is not likely to adversely affect the RCW.

## Wood Stork

No wood storks were observed in the proposed project area, nor have they been observed foraging in the action area. No wetlands will be affected by the proposed action, but the nearest area where foraging wood storks have been observed is approximately 1.0 mile south of the action area in Holbrook Pond (Figure 4). Because of its distance from confirmed wood stork sightings and the implementation of erosion and sedimentation control measures, the proposed action may affect, but is not likely to adversely affect, the wood stork.

## Eastern Indigo Snake

The project area does not lie within eastern indigo snake HMU. No eastern indigo snakes have ever been detected in the project area. The nearest known occurrence of an eastern indigo snake is 1.5 miles east-northeast of the action area in FSTA B-2 (Figure 4). This project will not affect gopher tortoise habitat or any gopher tortoise burrows. The nearest known gopher tortoise habitat is between both Sites in FSTA A-18 (Figure 4). The proposed project may affect, but is not likely to adversely affect, the eastern indigo snake.

## Frosted Flatwoods Salamander

The entire project area lies within the frosted flatwoods salamander (FFS) HMU. Site A will impact 3 potential dry breeding pond buffers as identified in a FFS habitat review project (Palis 2002). Site B will impact 1 highly likely breeding pond buffer and 5 potential dry breeding pond buffers (Figure 5). If Site B is selected the action would require the possible clear cut of 14.3% of the secondary buffer for the highly likely breeding pond. The proposed project will impact greater than 25% of the buffers for the potential FFS breeding ponds. A ground survey was conducted on the potential breeding ponds and their surrounding buffers. It was determined that due to the lack of graminaceous plants in both the ponds and buffer areas it is unlikely that any FFS are associated with these ponds. Records indicate 1 historical (1970's) road-crossing sighting of a FFS in FSTA B-4 near the project area (Figure 5). Project design will incorporate delineation of wetland areas, a 25-foot vegetative buffer around all wetlands, and protection measures as required by the Clean Water Act and the Georgia Erosion and Sedimentation Control Act to ensure appropriate wetland protection. Therefore, the proposed actions will not result in significant erosion, run-off, or other off-site impacts that might affect FFS habitat or ponds. Due to less than a 25% impact to the highly likely buffer, the findings of the ground survey, the distance of the project area from the confirmed breeding pond, and the implementation of previously mentioned control measures, the proposed action may affect, but is not likely to adversely affect, the FFS or the landscape's ability to support FFS.

## Atlantic and Shortnose Sturgeon

Telemetry and capture data, which was collected as part of Fort Stewart's shortnose sturgeon monitoring program (1991-2000), indicate that these fish do not travel >2 miles up the Canoochee River or 20 miles up the Ogeechee River from the Canoochee/Ogeechee River confluence. The Canoochee River flows diagonally through the Installation while the Ogeechee River forms much of the Installation's eastern boundary. The proposed project lies >15 miles

west-southwest of the nearest Atlantic and shortnose sturgeon occurrences on the Canoochee River. Due to unsuitable habitat and the distance between the proposed project area and documented sturgeon sightings, this project will not affect the Atlantic and shortnose sturgeon.

#### Smooth Coneflower

No smooth coneflowers were observed in the proposed project areas and the soils types are unsuitable for this species (USFWS 1995). Fort Stewart's population of the smooth coneflower is located in FSTA F-11, approximately 18.3 miles northwest of the project area (Figure 6). Because of its distance from the confirmed smooth coneflower population and the acidic soil types present in the action area, the proposed action will not affect the smooth coneflower.

### **CUMULATIVE EFFECTS**

There are no foreseeable state, local, tribal, or private actions that would have a cumulative adverse effect when combined with impacts associated with the proposed action.

### **CONCLUSION**

The proposed action may affect, but is not likely to adversely affect, the RCW, wood stork, eastern indigo snake, or FFS. The proposed action will not affect the smooth coneflower or the Atlantic and shortnose sturgeon because habitat in the action area is not suitable for these species. Critical habitat has been proposed for the FFS, but no FFS critical habitat was proposed for designation on Fort Stewart. Other listed species that occur on Fort Stewart have no critical habitat designated, so no critical habitat will be destroyed or modified adversely. The Army did not draw on the regulatory definition of destruction or adverse modification of critical habitat at 50 CFR 402.02 with respect to the conclusions and analysis made in this BA. Instead, the Army has incorporated into the critical habitat effects analysis the conservation of species principals found in the statutory provisions of the Endangered Species Act.

Figure 1. Location of Proposed A-18 SPVA, Fort Stewart, Georgia.

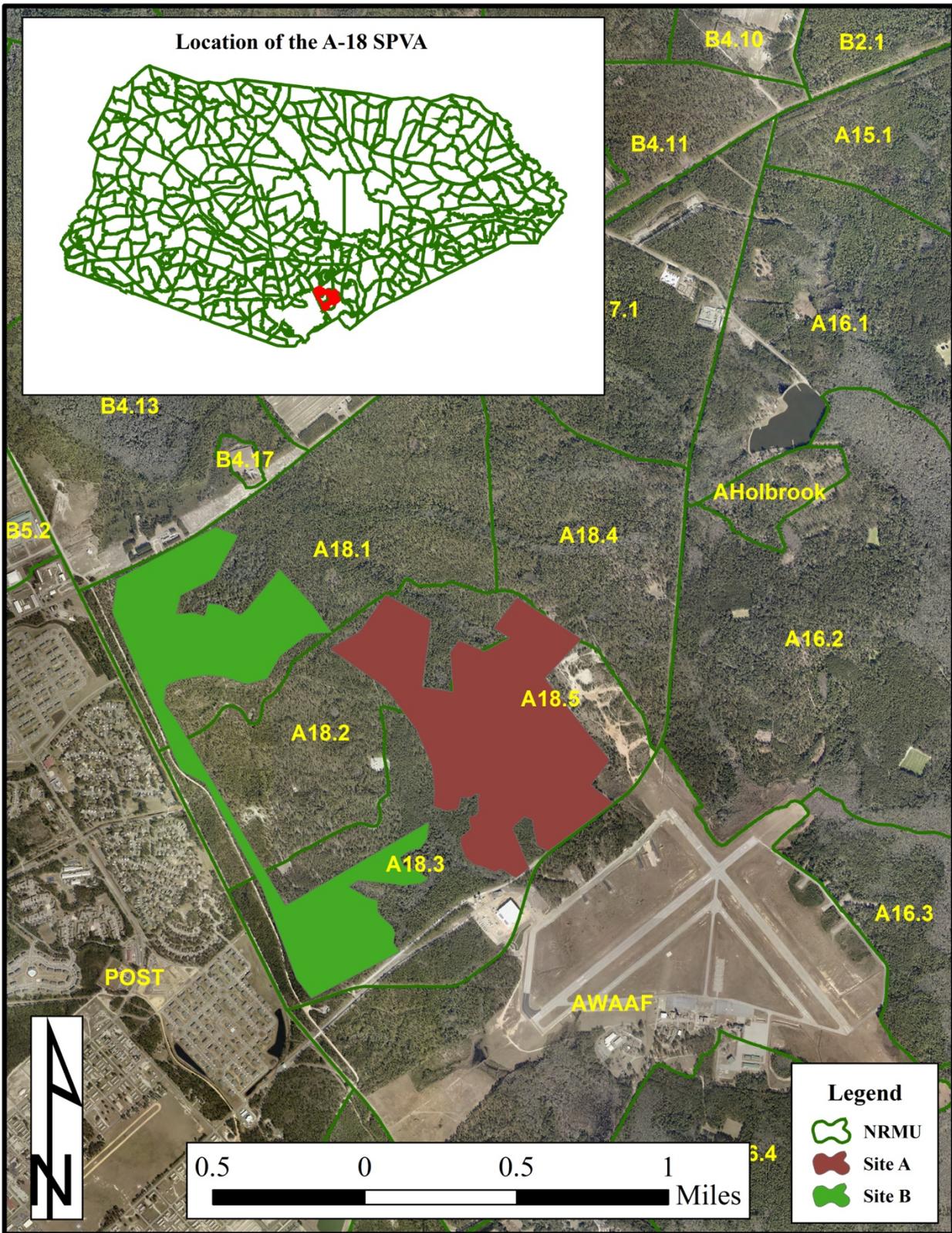


Figure 2. Red-cockaded Woodpecker Clusters Affected by the Proposed Project, Fort Stewart, Georgia.

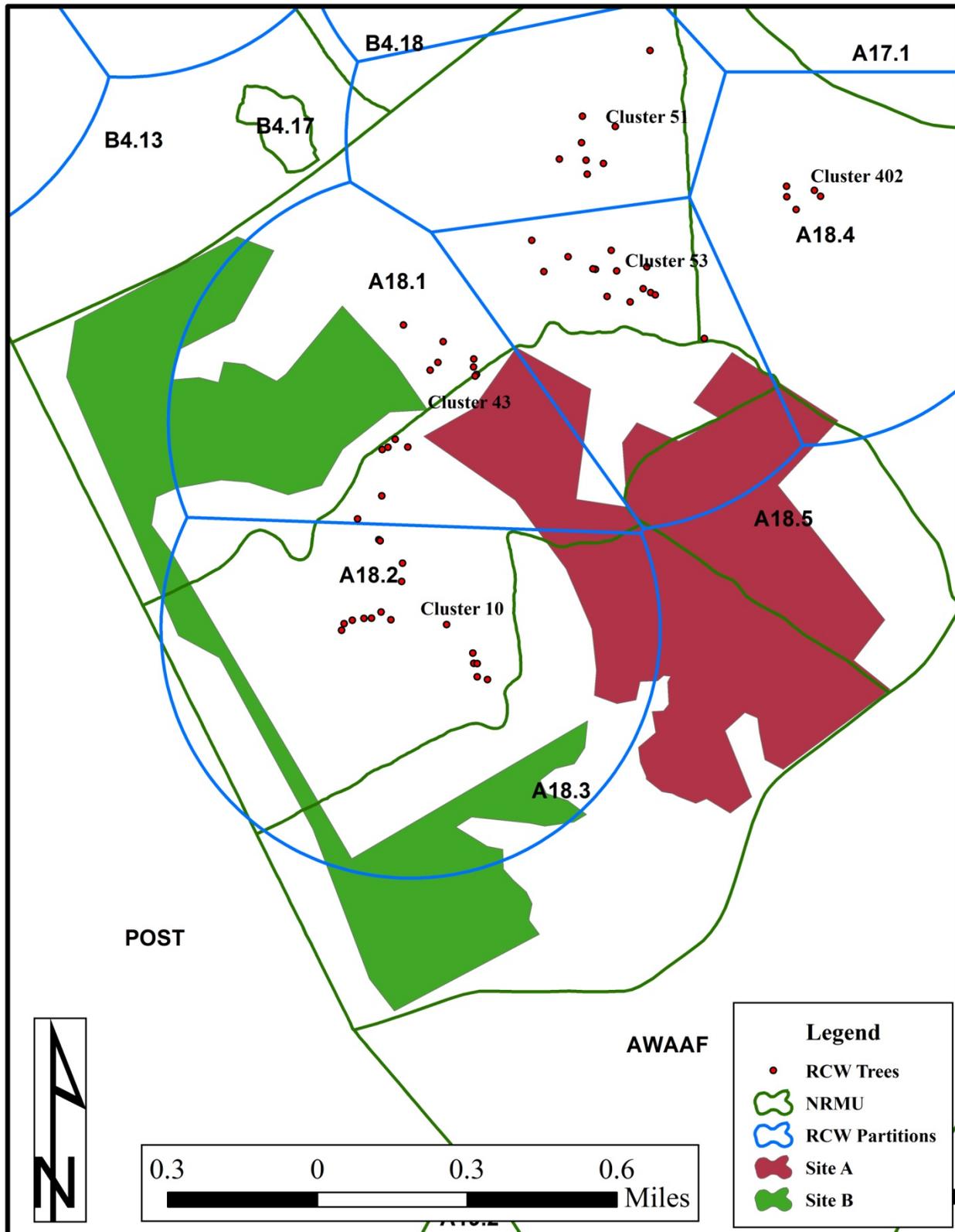


Figure 3. Red-cockaded Woodpecker Habitat Management Unit Affected by the Proposed Project, Fort Stewart, Georgia.

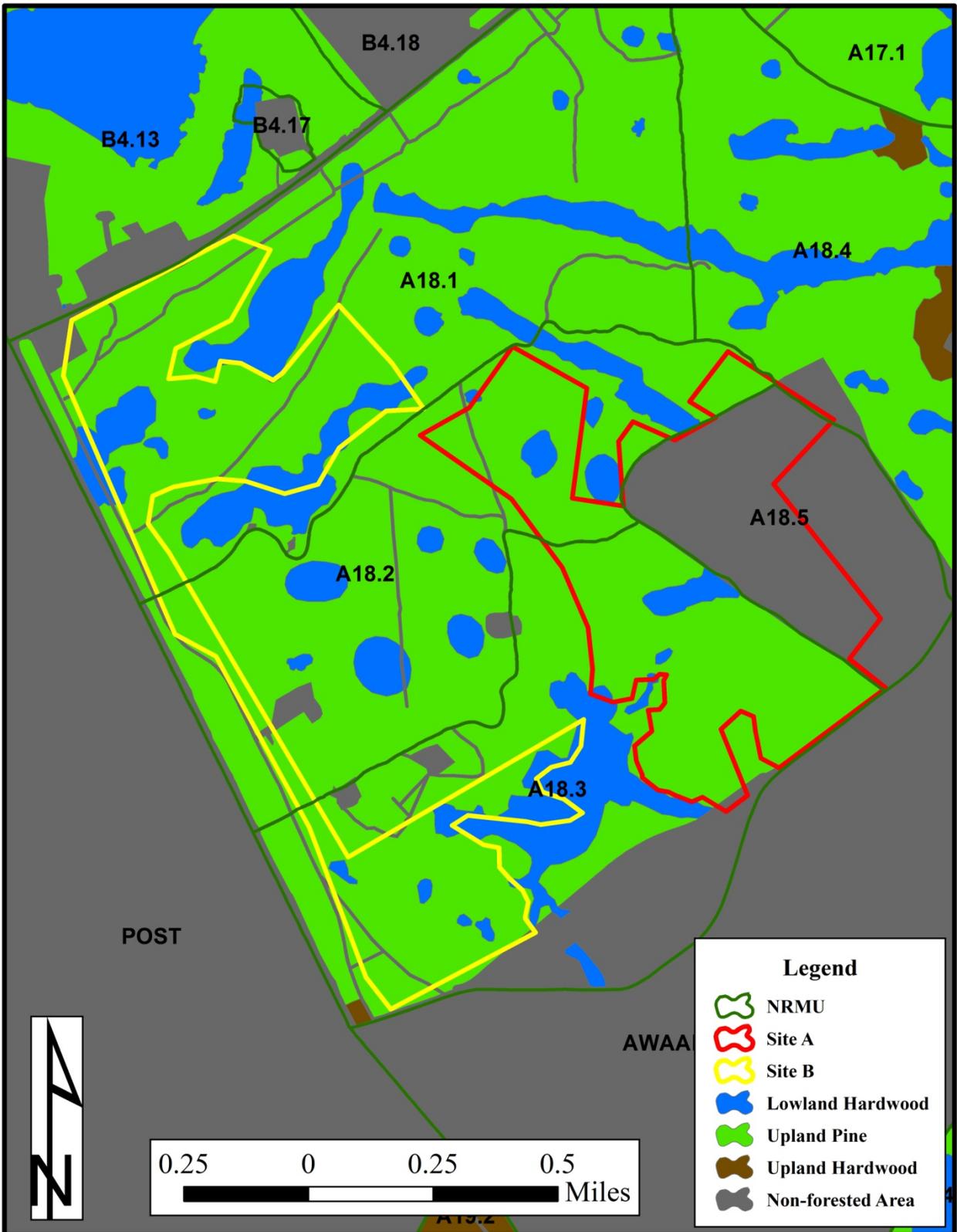


Figure 4. Wood Stork, Eastern Indigo Snake, and Gopher Tortoise Occurrences Near the Project Area, Fort Stewart, Georgia.

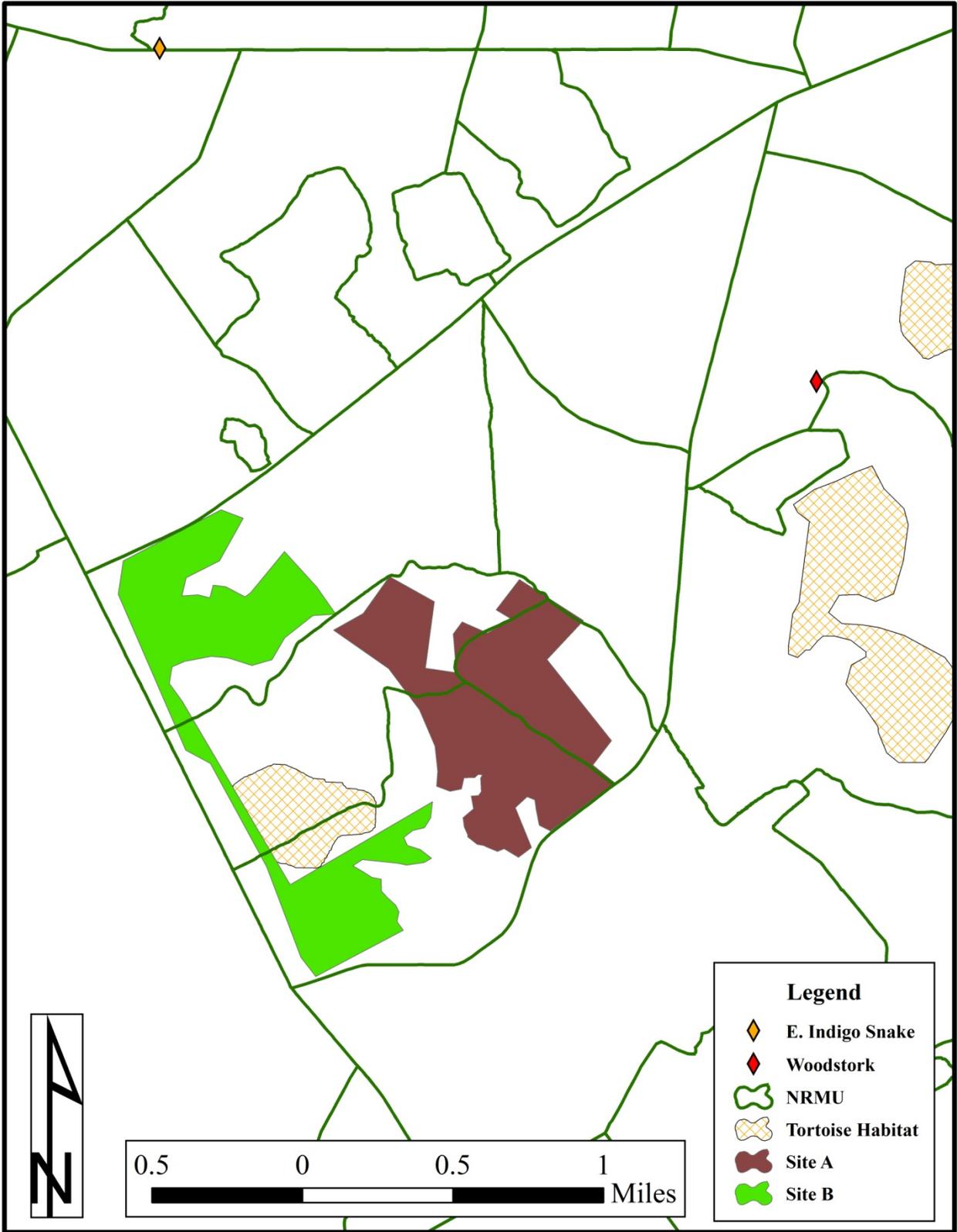


Figure 5. Frosted Flatwoods Salamander Habitat Impacted by Project Area, Fort Stewart, Georgia.

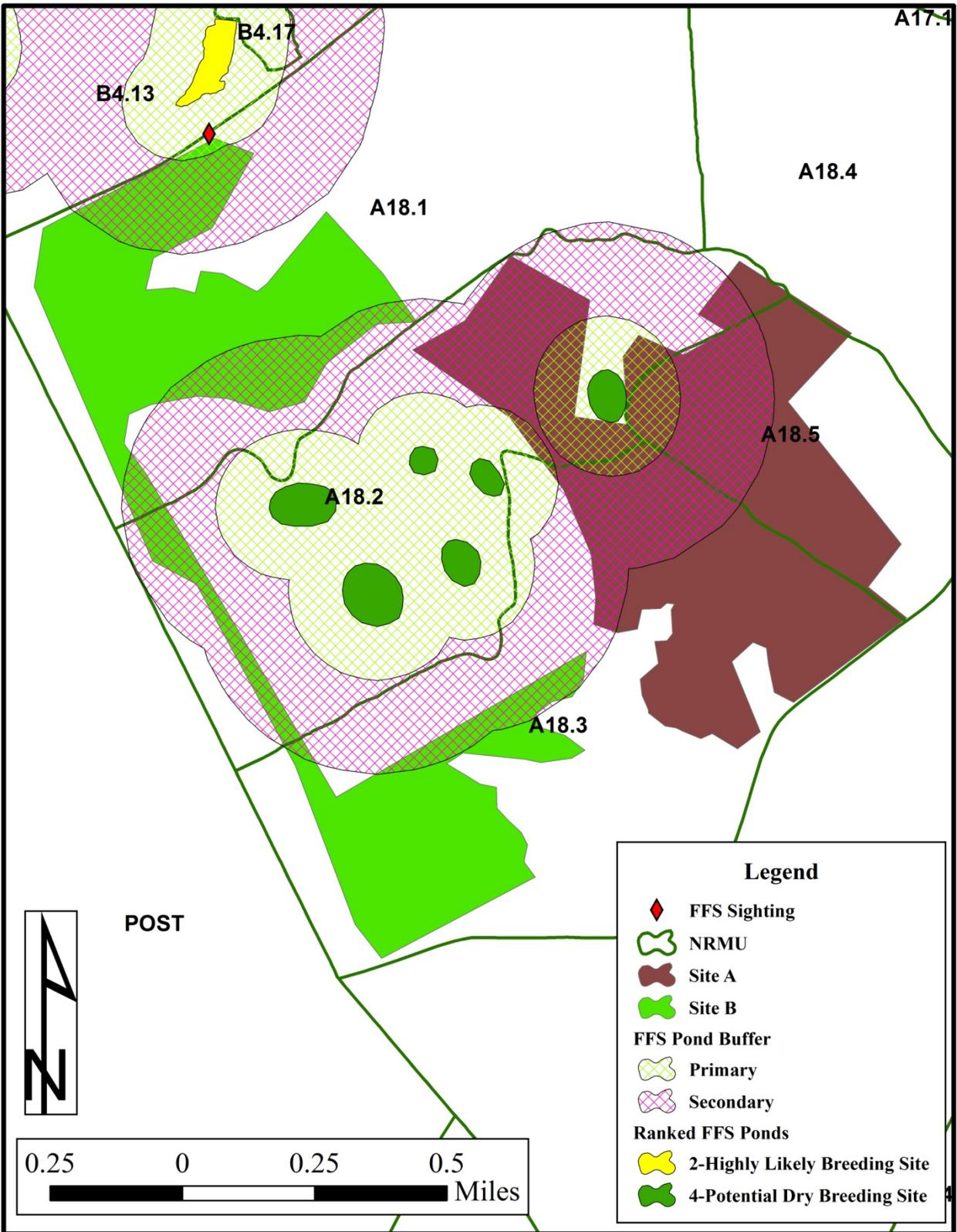


Figure 6. Smooth Coneflower Population, Fort Stewart, Georgia.

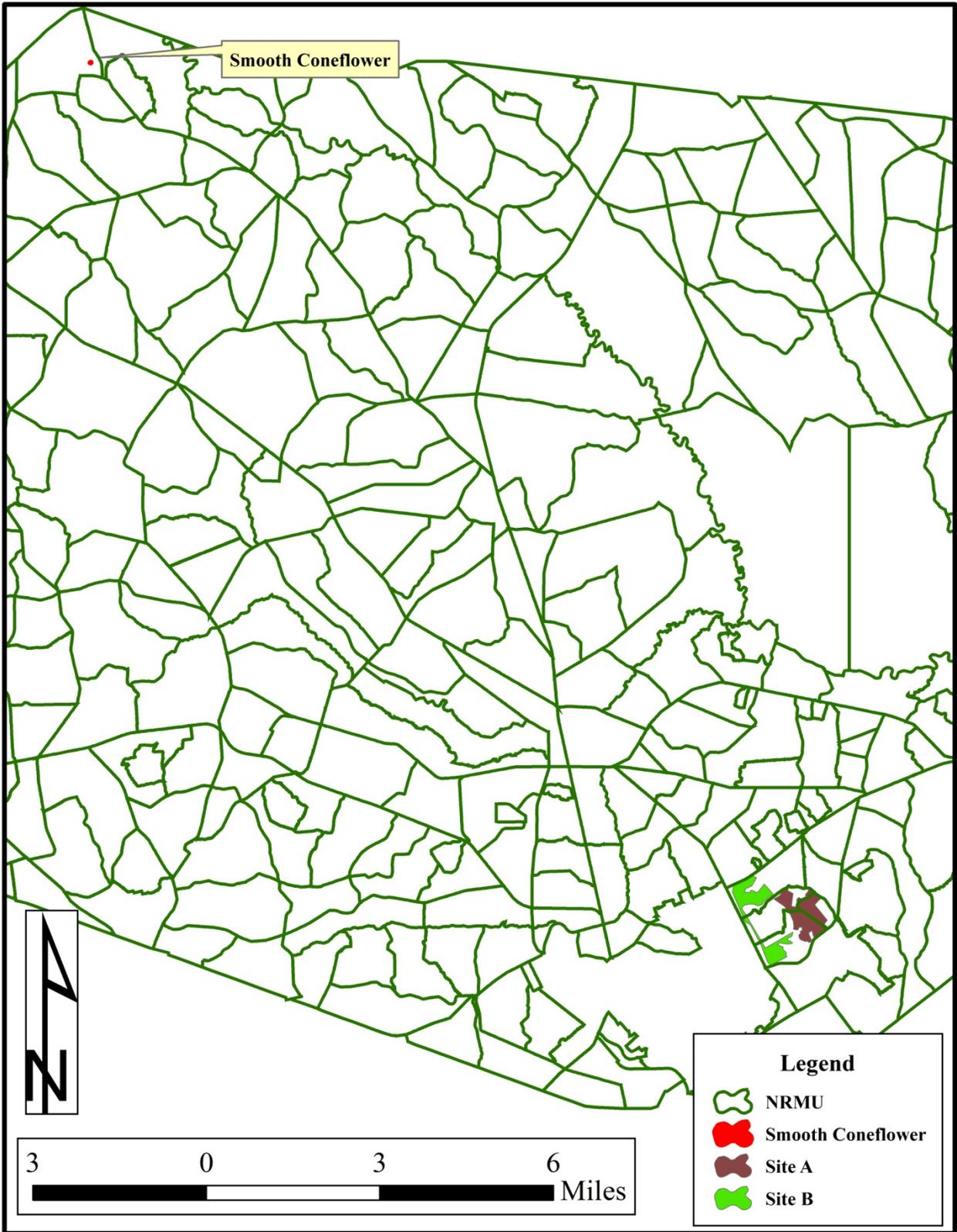


Table 1. Red-cockaded Woodpecker Habitat Management Unit Acres Affected per Partition Site using Site A.

RCW Partition	HMU Acres Affected
10	30.2
43	37.3
53	16.0
402	0.1
Non-Partition	80.4

Table 2. Red-cockaded Woodpecker Habitat Management Unit Acres Affected per Partition Site using Site B.

RCW Partition	HMU Acres Affected
10	39.6
43	65.0
Non-Partition	89.5

Table 3. Site A - Managed Stability Values for Affected Red-cockaded woodpecker Partitions, Post-project.

**Partition 10 - Partition Values (MS)**

04/09/2014  
09:17:07AM

Total size of Partition (acres)	380.00	Total Acres Forage Habitat 1/4-Mile*	5.53
Total Pine BA (sq feet) Pines > 10" dbh	5,937.50	Contiguous Foraging Acres*	95.94
Total Acres Forage Habitat	98.19	Meets Mananaged Stability	Yes

**Partition 43 - Partition Values (MS)**

04/09/2014  
09:18:07AM

Total size of Partition (acres)	274.62	Total Acres Forage Habitat 1/4-Mile*	51.23
Total Pine BA (sq feet) Pines > 10" dbh	7,224.33	Contiguous Foraging Acres*	141.34
Total Acres Forage Habitat	143.45	Meets Mananaged Stability	Yes

### Partition 53 - Partition Values (MS)

04/09/2014  
09:19:10AM

Total size of Partition (acres)	175.88	Total Acres Forage Habitat 1/4-Mile*	72.70
Total Pine BA (sq feet) Pines > 10" dbh	4,264.45	Contiguous Foraging Acres*	87.92
Total Acres Forage Habitat	91.16	Meets Mananaged Stability	Yes

### Partition 402 - Partition Values (MS)

04/09/2014  
09:20:04AM

Total size of Partition (acres)	266.91	Total Acres Forage Habitat 1/4-Mile*	12.00
Total Pine BA (sq feet) Pines > 10" dbh	3,745.16	Contiguous Foraging Acres*	87.19
Total Acres Forage Habitat	87.19	Meets Mananaged Stability	Yes

Table 4. Site B - Managed Stability Values for Affected Red-cockaded woodpecker Partitions, Post-project.

### Partition 10 - Partition Values (MS)

04/09/2014  
09:21:42AM

Total size of Partition (acres)	380.00	Total Acres Forage Habitat 1/4-Mile*	5.53
Total Pine BA (sq feet) Pines > 10" dbh	6,113.58	Contiguous Foraging Acres*	99.60
Total Acres Forage Habitat	100.87	Meets Mananaged Stability	Yes

### Partition 43 - Partition Values (MS)

04/09/2014  
09:22:28AM

Total size of Partition (acres)	274.62	Total Acres Forage Habitat 1/4-Mile*	46.30
Total Pine BA (sq feet) Pines > 10" dbh	5,925.94	Contiguous Foraging Acres*	107.68
Total Acres Forage Habitat	110.98	Meets Mananaged Stability	Yes

## LITERATURE CITED

- Directorate of Public Works. 2001. Integrated Natural Resources Management Plan, 2001-2005. 172 pp. plus appendices.
- Palis, John G. 2002. Distribution of Potential Habitat of the Federally Threatened Flatwoods Salamander (*Ambystoma cingulatum*) on Fort Stewart, Georgia. Contract #DAKF10-01-P-0265.
- USFWS. 2003. Recovery plan for the red-cockaded woodpecker (*Picoides borealis*): second revision. U.S. Fish and Wildlife Service, Atlanta, GA. 296 pp.
- USFWS. 1992. Endangered and threatened wildlife and plants; *Echinacea laevigata* (smooth coneflower) determined to be endangered. 57 Federal Register, pp. 46340-46344.