Candidate Conservation Agreement with Assurances for Multiple At-Risk Species in North Florida

Camp Blanding Joint Training Center
Clay County, FL

Prepared by the U.S. Fish and Wildlife Service, Florida Armory Board, and the Florida Fish and Wildlife Conservation Commission in cooperation with the Army National Guard

November 14, 2016 (draft)

EXECUTIVE SUMMARY

In the Southeast Region of the U.S. Fish and Wildlife Service, there are 470 Federal candidate species and other at-risk species ranging from narrow endemics to wide-ranging mammals and birds. Given the number and diversity of these species, it is clear that a monumental effort is needed for their conservation. Approaching such a task with a single-species mindset would be both ineffective and inefficient.

The need to develop Candidate Conservation Agreements with Assurances that cover large geographic areas and address the needs of multiple species was emphasized in the Southeast Region's Ecological Services Work Plan for fiscal year 2013 and beyond (Service 2013). To further the Work Plan's "Desired Future Condition of At-Risk Species Conservation," this Candidate Conservation Agreement with Assurances is designed to deliver conservation at the habitat scale. The premise of this strategy is that most candidate and at-risk species face threats associated with loss and/or degradation of habitat (a description of the substantive habitats addressed in this CCAA is discussed in the Description of the Enrolled Lands section below).

Through this Candidate Conservation Agreement with Assurances, the State of Florida Armory Board will implement conservation actions on portions of the Camp Blanding Joint Training Center to effectively protect, restore, and manage the candidate and at-risk species' (Covered Species) habitat so as to eliminate or reduce threats to a level that precludes or removes the need to list a species under the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*). Three conservation objectives and multiple conservation actions are presented in this Agreement to accomplish this goal. Where threats other than habitat loss and degradation are known, this Candidate Conservation Agreement with Assurances addresses specific actions to reduce or eliminate them.

This Candidate Conservation Agreement with Assurances is unique in that the Covered Species are Federal candidates and/or species that are listed by the Florida Fish and Wildlife Conservation Commission (Commission) as State-threatened species or species of special concern. Through this Agreement and the associated Enhancement of Survival Permit, the Armory Board will receive regulatory assurances from the Service in the event a Covered Species is Federally-listed in the future as well as from the Commission for the Covered Species that are State-listed as of the effective date of this Agreement.

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Agreement Number 1448-XXX-XXX

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1.0 INTRODUCTION

Candidate Conservation Agreements with Assurances, ("Agreement" or "CCAA") are voluntary commitments made by non-federal partners to undertake actions that will remove or reduce threats to candidate and other at-risk species. Conservation actions included in a CCAA must significantly contribute to the elimination of the need to list species identified in the CCAA. Correspondingly, the goal of any CCAA is to preclude the need to list species under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*). This Agreement is part of the State of Florida Armory Board's application to the U.S. Fish and Wildlife Service, a bureau of the U.S. Department of the Interior, for an Enhancement of Survival Permit. The conservation actions specified in the Agreement will be implemented in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(ESA), the U.S. Fish and Wildlife Service's Final Policy for Candidate Conservation Agreements with Assurances (64 Federal Register 32726-32736) (Final Policy), and 50 C.F.R. §§ 13 and 17, and in accordance with the Florida Fish and Wildlife Conservation Commission's rules relating to Endangered or Threatened Species, Chapter 68A-27. The goals and objectives of this Agreement will be accomplished through implementation of the conservation actions set forth in this Agreement. Successful implementation of this Agreement will protect and enhance the habitat of the covered species, which is the single-most common threat to all the species.

This Candidate Conservation Agreement with Assurances is effective and binding on the date last signed below ("Effective Date"). This Agreement is between the State of Florida Armory Board (Armory Board), the Florida Fish and Wildlife Conservation Commission (FWC), and the U.S. Fish and Wildlife Service (Service), with cooperation and concurrence from the Army National Guard. As required by CCAA policy, the signatories to this CCAA are non-federal entities. Therefore, the Armory Board, FWC, and the Service are collectively the "Parties" to this agreement. However, the Department of Defense (DoD), through the Army National Guard, is named as a cooperator and concurring party because the predominant land use of the property enrolled in this CCAA is readiness training for various branches of the armed services under the DoD. In addition, DoD funding supports many of the environmental staff responsible for implementing the conservation actions identified in this CCAA. Although the FWC is a signatory to this Agreement, they are also considered a cooperator since they do not require the ESA regulatory assurances provided under the Final Policy for Candidate Conservation Agreements with Assurances.

CCAA Tracking Number: TE 72196B

The following lands are enrolled under this Agreement:

The enrolled lands ("Enrolled Lands"), which are owned by the State of Florida and depicted in Figure 1, below, are 46,494 acres of the 73,000-acre Camp Blanding Joint Training Center ("CBJTC" or "Installation") located in Clay County, Florida. Federal lands were transferred to the Armory Board, State of Florida, in order to consolidate ownership and perpetuate the availability of Camp Blanding for military training and use, Public Law 493 (H.R. 9340, 1954). The Installation is a State Property but in the event that the State of Florida or board shall at any time use for other than military purposes, sell, convey, or otherwise dispose of all or any part of the State or Federal land, all of the right, title, and interest in and to the Federal land shall revert to the United States (Public Law 493, 1954). The Enrolled Lands are comprised of six different habitat types, including flatwoods, Sandhill, scrub, ephemeral wetlands, forested wetlands, and surface waters (Table 1). These lands are portions of CBJT that support natural habitat and are not at risk of future development or intensive military operations (Figure 1).

The following species are covered by this Agreement:

The twenty-two species listed in Table 2, below, are the covered species ("Covered Species").

Agreement and Enhancement of Survival Permit Durations:

Unless suspended, revoked or terminated, the duration of this Agreement is fifteen (15) years from its Effective Date. The duration of the Enhancement of Survival Permit ("Permit"), which will be issued in conjunction with this Agreement, shall be fifteen (15) years or until the Agreement is suspended, revoked or terminated. The Permit shall become effective as to a Covered Species on the date of the Service's final rule listing the species as "threatened" or "endangered" under the ESA.

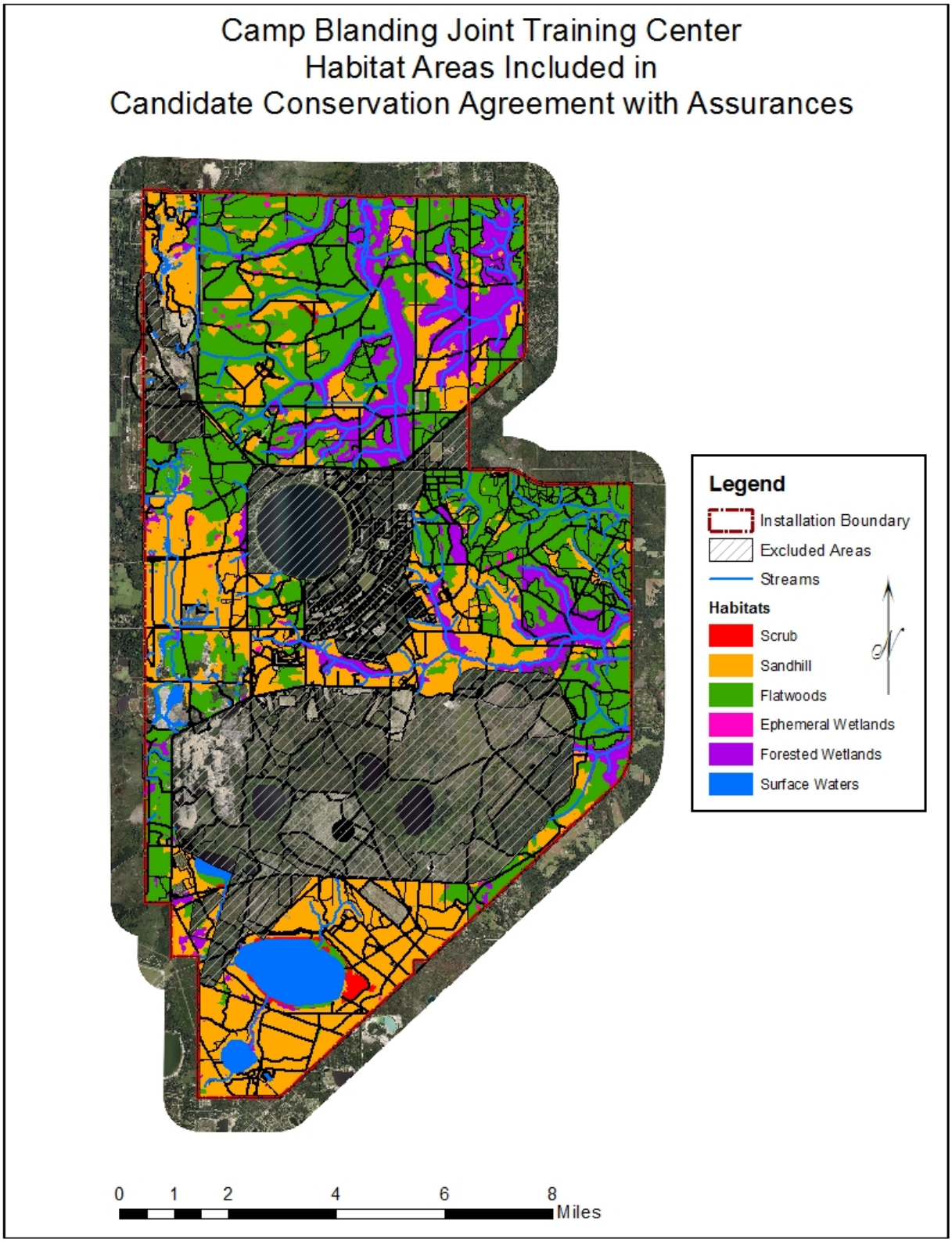

Figure 1. Map of the Enrolled Lands and Breakdown by Habitat Types.

Table 1. List of Habitat Types and Amounts within the Enrolled Lands.

Enrolled Habitat Type	**Amount of Enrolled Land**
Flatwoods	20,039 acres
Sandhill	16,791 acres
Scrub	242 acres
Ephemeral Wetlands	76 acres
Forested Wetlands	7,540 acres
Surface Waters - Lakes and Ponds - Streams	 1,806 acres 121 miles
Total Enrolled Lands	*46,494 acres*

2.0 AUTHORITY AND PURPOSE

The Service is authorized to enter into this Agreement pursuant to Sections 2, 7, and 10 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)("ESA" or "Act"). Section 2 provides that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is essential to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7(a)(1) of the ESA requires the Service to review and utilize the programs it administers to further the purposes of the ESA. The Service is further authorized to enter into this Agreement pursuant to its "Final Policy for Candidate Conservation Agreements with Assurances" (64 Federal Register 32726-32736) ("Final Policy") and the Service's implementing regulations at 50 C.F.R. §§ 13 and 17 as well as to issue an ESA section 10 (a)(1)(A) enhancement of survival permit for proposed and candidate species as well as for species that might become candidates in the future.

The purpose of this CCAA is to remove or preclude the need to list any of the Covered Species as "endangered" or "threatened" under the ESA via the Armory Board's implementation of the "Conservation Actions" set forth in section 6.0, below, when combined with benefits that would be achieved if the actions were also implemented on other necessary properties. Importantly, this Agreement is a collaborative effort by the Parties to conserve the Covered Species.

A main use of Camp Blanding Joint Training Center is light infantry training, which includes foot traffic, wheeled vehicle traffic, and individual fighting positions throughout the Training

Table 2. List of Covered Species and their associated Habitats within the Enrolled Lands.

Common Name	Scientific Name	FWS Status[1]	FWC Status[1]	HABITAT					
				Flatwoods	Sandhill	Scrub	Ephemeral Wetlands	Forested Wetlands	Surface Waters
Amphibians									
Gopher frog	***Lithobates capito***	P	SSC	X	X	X	X		
Striped newt	***Notophthalmus perstriatus***	C		X	X	X	X		
Birds									
Florida sandhill crane	***Grus canadensis pratensis***	P	T				X		
Little blue heron	***Egretta caerulea***		SSC				X	X	
Southeastern American kestrel	***Falco sparverius paulus***		T		X	X			
Swallow-tailed kite	***Elanoides forficatus***	SSC		X	X		X	X	
Tricolored heron	*Egretta tricolor*		SSC				X	X	
Butterflies									
Dukes' skipper	*Euphyes dukesi calhouni*	P						X	
Caddisflies									
Little Oecetis Longhorn caddisfly	*Oecetis parva*	P							X
Crayfish									
Black Creek crayfish	***Procambarus pictus***	P	SSC						X
Dragonflies									
Purple skimmer	***Libellula jesseana***	P					X	X	X
Say's spiketail	***Cordulegaster sayi***	P			X			X	X
Fish									
American eel	*Anguilla rostrata*	P							X
Mammals									
Florida mouse	***Podomys floridanus***		SSC		X	X			
Sherman's fox squirrel	***Sciurus niger shermani***		SSC	X	X				
Mussels									
Southern lance	*Elliptio ahenea*	P							X
St. John's elephantear	*Elliptio monroensis*	P							X

[1]Status Key: T=threatened, P=petitioned, C=candidate, SSC=species of special concern

Note: Bolded species are known to occur on CBJTC; the remaining species are known to occur in areas immediately surrounding CBJTC and are believed to "likely occur" on CBJTC.

Table 2 (continued). List of Covered Species and their associated Habitats within the Enrolled Lands.

Common Name	Scientific Name	FWS Status[1]	FWC Status[1]	HABITAT					
				Flatwoods	Sandhill	Scrub	Ephemeral Wetlands	Forested Wetlands	Surface Waters
Reptiles									
Eastern diamondback rattlesnake	***Crotalus adamanteus***	P		X	X	X			
Florida pine snake	***Pituophis melanoleucus mugitus***	P	SSC	X	X	X			
Gopher tortoise	***Gopherus polyphemus***	C	T	X	X	X			
Southern hognose snake	***Heterdon simus***	P			X				
Spotted turtle	*Clemmys guttata*	P					X	X	X

[1]Status Key: T=threatened, P=petitioned, C=candidate, SSC=species of special concern

Note: Bolded species are known to occur on CBJTC; the remaining species are known to occur in areas immediately surrounding CBJTC and are believed to "likely occur" on CBJTC.

Areas; hunting is a secondary use. Although not directly benefitting the covered species, light military training and hunting activities are not expected to take the species and are included in this Agreement since they occasionally occur in the enrolled lands. Survival training that requires direct take of covered species is not included.

The use of a Candidate Conservation Agreement with Assurances is appropriate even though several of the covered species are not listed as formal candidate species by the Service. In providing for Candidate Conservation Agreements with Assurances, the Service did not intend to exclude species that are not officially listed as candidate species (see the Final Policy, page 32732). Instead, the Service recognizes that taking steps before a species enters a serious decline is often the most effective way to conserve that species, thereby possibly precluding the need to list the species under the ESA.

All Parties to this Agreement recognize that they have specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of natural resources. Nothing in this Agreement is intended to abrogate any of the Parties' respective responsibilities. This Agreement is subject to, and is intended to be consistent with, all applicable Federal and State laws.

3.0 THREATS TO THE COVERED SPECIES

The success of any conservation or recovery effort depends on reducing or eliminating threats to the continued existence of a species. The Service uses the five criteria of section 4(a)(1) of the ESA to evaluate threats to a species: a) the present or threatened destruction, modification, or curtailment of habitat or range; b) overutilization for commercial, recreational, scientific, or educational purposes; c) disease or predation; d) the inadequacy of existing regulatory mechanisms; and, e) any other natural or manmade factors affecting continued existence.

The main factor threatening nearly all of the Covered Species is the destruction or modification of habitat across their ranges. The aquatic species are being impacted by overall water quality and habitat degradation from impoundments, dredging and channelization, siltation, pollutants, and water temperature changes. Impoundments can cause direct impact to flow regime and substrate conditions as well as result in water temperature fluctuations. Dredging and channelization directly alter habitat and destabilize substrate, increase erosion and siltation, and remove woody debris that serves as cover for fish and basking areas for turtles. New road construction, culvert replacement, and certain agricultural practices, including logging, lead to siltation, runoff, and pollutants entering waterways. Residential and commercial development can also directly or indirectly degrade aquatic habitats through siltation and runoff. Vegetation removal along waterways also directly impacts species such as fish and crayfish by increasing water temperatures.

The Covered Species that occur in upland habitat on the Enrolled lands are impacted by destruction and fragmentation of their habitat from large and small scale development projects, agriculture, logging, mining, and roadways. Areas with high road density lead to the direct mortality of species from vehicle collisions and fragmentation of habitat. Isolated or fragmented habitat also leaves species' populations more vulnerable to disease outbreaks, natural disasters, and reduced gene flow. Fire suppression is another factor that affects many of the upland species. Without a proper fire regime, hardwoods encroach upon upland pine habitats and alter suitable habitat structure for native wildlife such as the gopher tortoise that needs open canopies and adequate sunlight for proper groundcover and foraging.

Disease and/or predation affect several of the Covered Species. For example, gopher tortoises are known to suffer from upper respiratory infections, and an apparent fungal disease impacting muscle tissue has been reported in several Black Creek crayfish. Moreover, amphibians, in general, are at risk from chytrid disease and *ranaviruses*. Invasive plant and animal species are a major threat to native plants and animal species through competition, predation, and/or disease introduction. Exotic red fire ants, armadillos, and coyotes along with raccoons and other scavengers have been shown to depredate tortoise nests and hatchlings. Some predators are also known to eat adult fish, crayfish, and amphibians with feral hogs impacting amphibian and other

aquatic species by disturbing upland habitat and increasing siltation in adjacent streams. Imported red fire ants are known to kill metamorphosing amphibians and juvenile reptiles and birds. Species that occur in or near highly developed urbanized areas are also at risk from depredation by domestic pets. Lastly, many invasive plants, such as water hyacinth and hydrilla, significantly impact aquatic habitats and their native inhabitants. For additional information concerning threats to Covered Species, see Appendix II, appended hereto.

4.0 EXPECTED BENEFITS AND CONSERVATION GOALS AND OBJECTIVES

4.1 Expected Benefits

This CCAA is expected to maintain and/or increase the Covered Species' population numbers and quality of habitat through implementation of best management practices ("BMPs"), reduction and/or elimination of disease transmission, and control of exotic and invasive species within the Enrolled Lands. The conservation actions that will be implemented under this Agreement were derived from the best scientific data available regarding the life history, biology, and known habitat requirements of each of the Covered Species, all of which are known to occur directly on or in the immediate areas surrounding the CBJTC (Table 2). In conjunction with adaptive management, the conservation actions are expected to increase and secure the long-term viability of the Covered Species and, thus, remove or preclude the need to list them as "threatened" or "endangered" under the ESA were it assumed the conservation actions also were implemented on other necessary properties, which is the CCAA standard.

4.2 Conservation Goals and Objectives

The goals and objectives (collectively "Objectives") of this Agreement correlate to three of the five criteria of ESA section 4(a)(1) that the Service utilizes to evaluate threats to a species: factor "a" (the present or threatened destruction, modification, or curtailment of habitat or range); factor "c" (disease or predation); and, factor "e" (any other natural or manmade factors affecting continued existence). The Objectives are as follow:

Objective 1 – To maintain or enhance the quality of habitat for the Covered Species on the Enrolled Lands

Nearly all of the Covered Species have been affected by and are threatened by the destruction or degradation of their habitat. Through the Armory Board's implementation of the Best Management Practices described in the "Conservation Actions" section, below, native habitat will be maintained and/or enhanced on the Enrolled Lands to benefit the Covered Species. Creating a mosaic of well-maintained habitat will ensure the

long-term survival of the Covered Species and contribute to the overall status of the Covered Species' populations as well as non-covered species on properties adjacent to the Covered Lands.

Objective 2 – To reduce or eliminate disease transmission to the Covered Species on the Enrolled Lands

Several of the Covered Species are known to be impacted or threatened by disease. To maintain healthy populations within the Enrolled Lands, the Armory Board agrees to assess the general health status of all Covered Species that might be impacted by disease within a year of the Effective Date of this Agreement. Should any disease be found that poses a significant threat to the health and persistence of a Covered Species or should a Covered Species show signs of such a disease, the Armory Board will consult with the Signatories of this agreement to determine the appropriate steps to reduce or eliminate the spread of the disease.

Objective 3 – To reduce or eliminate exotic and invasive species on the Enrolled Lands

The Armory Board will implement the specific management practices outlined in the "Conservation Actions" section, below, to reduce or eliminate exotic and invasive species on the Enrolled Lands. These management practices will benefit the Covered Species by bettering habitat quality and reducing competition from invasive and exotic species.

5.0 EXISTING CHARACTERISTICS ON AND DESCRIPTION OF THE ENROLLED LANDS

The CBJTC, which is comprised of 73,000 acres in southwest Clay County, Florida, is primarily used by the U.S. Department of Defense's Army National Guard for light military training, including infantry, foot traffic, wheeled vehicle traffic, and individual fighting positioning. A secondary use of the Installation is for hunting. The CBJTC is bounded on the west by the Clay County line and on the southeastern and eastern boundaries by State Road 21. It is located roughly 45 miles equidistant from the cities of Gainesville to the southwest, Jacksonville to the northeast, and St. Augustine to the east. The main gate to the Installation is located on State Road 16, approximately 12 miles east of the city of Starke. The majority of the vegetation on the Installation consists of flatwoods and sandhills.

The Enrolled Lands are comprised of 46,494 acres of the CBJTC that support natural habitat for the Covered Species. Some areas of the Enrolled Lands are periodically used for light military training; however, the Cantonment area, Impact area, and a small area on the northwest portion

of the Installation that is slated for pine straw harvesting are not covered by this Agreement. There also is no risk of future development or intensive military operations occurring within the Enrolled Lands (Figure 1). Hunting also occurs at times on parts of the Enrolled Lands, but neither hunting nor light military training is expected to result in take of the Covered Species. Moreover, direct take of the Covered Species from survival training exercises is not authorized under this Agreement or the associated Permit. In addition to flatwoods and forested wetlands, the other four habitat types within the Enrolled Lands are Sandhill, scrub, ephemeral wetlands, and surface waters (Figure 1). Due to a history of fire suppression, overharvesting, and replanting with unsuitable pine species more than 50 percent of the CBJTC is undergoing a long-term, large-scale restoration of longleaf pine forest primarily in the flatwoods and Sandhill communities.

It is the Parties' intention that implementation of this Agreement will create vegetation appropriate to the soils and hydrology that naturally occur within the ecosystem of the Enrolled Lands. To this end, all river, lake, and creek systems on the Enrolled Lands will be surrounded by functioning riparian zones that continue throughout a watershed and connect to other watersheds by mixed species' corridors. It is further anticipated that the pinelands within the Enrolled Lands will become a mosaic of mature flatwoods, mixed hardwoods stands, and pine plantations. Some of the existing plantations around red-cockaded woodpecker (*Picoides borealis*) and other habitat zones essential to the Covered Species will be managed solely with thinning with the retention of pines with a larger average diameter. Xeric habitats, primarily Sandhill, will consist of both open longleaf pine and mixed pine-oak stands with a substantial reduction in the moderately high densities of turkey oak that currently occupy many areas. This Agreement incorporates measures to slowly phase out, replace and replant the existing sand pine plantations with longleaf pine. The driest habitat type on the Enrolled Lands will be scrub with fire regularly applied throughout the habitats.

5.1 Flatwoods

The Enrolled Lands contain 20,039 acres of flatwoods habitat. Some flatwoods habitat will require significant efforts to restore longleaf pine as the dominant tree species, while others may require minor, but strategic efforts (e.g., prescribed fires) to encourage natural recovery.

Flatwoods (mesic, wet and scrubby) are characterized by low, flat topography and poorly drained acidic sandy soils. Historically, frequent fires would create an open canopy of longleaf pine with saw palmetto and gallberry in the understory and wiregrass in the groundcover. Currently, the flatwoods on the Installation have a longer fire interval, more even-aged overstory, denser understory with a larger shrub component, and fewer herbaceous species in the groundcover. Both fire and seasonal precipitation influence community structure and composition. The four dominant overstory species are longleaf pine, slash pine, loblolly pine, and pond pine. Live oak,

water oak, sweetgum, red maple, and ash are also occasionally found among the overstory species, especially in north and central Florida.

Mesic flatwoods are seldom inundated and typically have slash or longleaf pine in the overstory, a dense understory of saw palmetto, gallberry, rusty lyonia, and wax myrtle, and wiregrass in the groundcover. Wet flatwoods are inundated for 1-2 months per year and have slash pine, pond pine, and/or cabbage palm in the overstory, wax myrtle and gallberry in the understory, and grasses and forbs in the groundcover; the composition of these species varies, however, with fire frequency. Scrubby flatwoods sit at a slightly higher elevation than mesic flatwoods and are the ecotone between flatwoods and sandhills/scrub. The overstory in these flatwoods is variable with a high frequency of shrub oak species in the understory and a sparse herbaceous layering.[1]

5.2 Sandhill

The Enrolled Lands contain 16, 791 acres of Sandhill habitat that occurs on upland sites with an open pine canopy (typically longleaf pine), a sparse mid-story of deciduous oaks such as turkey oak, and a moderate to dense groundcover of herbaceous species and low woody species. Soils in this habitat are deep, well-drained, and relatively infertile. Historically, low-intensity fires occurred every 1-3 years keeping litter accumulation low. These frequent, low-intensity fires, which often occurred during the growing season, maintained the open structure of the forest, reduced the prevalence of hardwoods, and increased the abundance of herbaceous species. The frequency, intensity, and season of fire are the most important factors in Sandhill ecology as they determine community structure and species' composition. Due to the absence of fire and the historical overharvest of longleaf pine, oaks now dominate many of the Sandhill areas on the Installation. Lengthy fire suppression also leads to xeric hammock, turkey oak barrens, or sand pine dominated Sandhill[2, 3].

5.3 Scrub

The Enrolled Lands contain 242 acres of scrub habitat. Scrub habitat is found on well-drained, infertile, sandy ridges and composed of evergreen oak shrubs with or without an overstory

[1] Paragraph summarized from Abrahamson, W.G. and D.C. Hartnett (1990). Pine Flatwoods and Dry Prairies. In R.L. Myers and J.J. Ewel (Eds.), *Ecosystems of Florida* (pp. 103-149). Gainesville, FL: University Presses of Florida.
[2] Paragraph summarized from Florida Natural Areas Inventory. (2010). *Guide to the Natural Communities of Florida* (2010 ed.).
[3] Paragraph summarized from Myers, R.L. (1990). Scrub and High Pine. In R.L. Myers and J.J. Ewel (Eds.), *Ecosystems of Florida* (pp. 150-193). Gainesville, FL: University Presses of Florida.

usually of sand pine. Scrubs with a sand pine overstory – sparse to dense – are typically found on the highest sandy ridges. The oak species most commonly found in scrub habitat are sand live oak, myrtle oak, Chapman's oak, and scrub oak, which often form a dense thicket intermingled with bare sand and little herbaceous groundcover. Florida rosemary, saw palmetto, and rusty staggerbush often also are present. In contrast to Sandhill, scrub requires infrequent, high intensity fires ranging from every 5 to 100+ years depending on the scrub type. The large range in fire frequency is due to differences in litter accumulation, chance ignitions and the variation among scrubs.[2,3]

5.4 Ephemeral Wetlands

Ephemeral wetlands, which comprise 76 acres of the Enrolled Lands, are small, isolated ponds with spatial and temporal variability in hydroperiod. In Florida, ephemeral wetlands are generally found in flatwoods, Sandhill, and scrub habitats. Given their presence in these habitats, fire is an important factor in the ecology of these wetlands. Ponds are often dry during the early spring and summer when fires once were historically ignited by lightning and would run through the basin, decreasing organic material and controlling invading upland species. Fire also is important to the herbaceous material growing at the edge of the ponds.[4]

5.5 Forested Wetlands

The Enrolled Lands contain 7,540 acres of forested wetlands. Forested wetlands are defined by their hydroperiod, fire frequency, organic matter accumulation, and source of water (i.e., water quality). There are two major categories of forested wetlands: river swamps and stillwater swamps. River swamps have a short hydroperiod and a visible flow for at least part of the year. Stillwater swamps, on the other hand, have longer hydroperiods and no noticeable flow. River swamps are most common in north Florida and similar to the vegetation found in northern temperate swamps. River swamps, such as those associated with blackwater rivers, have water levels that are closely related to rainfall events and tend to rise or fall quickly. In contrast, stillwater swamps are supplied mostly by shallow groundwater. The soils are saturated and inundated for more than six months per year. The most common wetland tree species is cypress, and in Florida, it dominates forested wetlands with variable water levels. Pond cypress and swamp black gum are common in stillwater swamps while bald cypress and water tupelo are common in river swamps. Pines, cedars, palms, and other hardwoods are also found in varying frequencies in forested wetlands.[5] Fire in forested wetlands burns during the dry season

[4] Paragraph summarized from Means, R. (2008). *Management Strategies for Florida's Ephemeral Ponds and Pond-Breeding Amphibians* (FWC Agreement Number 05039).
[5] Paragraph summarized from Ewel, K.C. (1990). Swamps. In R.L. Myers and J.J. Ewel (Eds.), *Ecosystems of Florida* (pp. 281-323). Gainesville, FL: University Presses of Florida.

decreasing the amount of accumulated organic matter. Fire appears to be rare in the river swamps, but occurs occasionally in stillwater swamps.

5.6 Surface Waters

The Enrolled Lands include 121 miles of streams and 1,806 acres of lakes and ponds. Both North Fork Black Creek, with its headwaters in Kingsley Lake, and Bull Creek are located in the northern part of the Installation and are the primary surface water features in the Enrolled Lands. Both of these creek systems drain toward the north-northeast.

South Fork Black Creek, with headwaters in Stevens Lake and located in the CBJTC's Impact Area, is the primary surface water drainage feature in the central part of the CBJTC. This Creek drains toward the east within the Installation boundaries and then turns to the northeast to join North Fork Black Creek near Middleburg, Florida, to form Black Creek. Several small ponds along with other significant surface waters such as Lowry Lake (1,246 acres), Magnolia Lake (198 acres), and a portion of Blue Pond (81 acres) are among the lands enrolled under this Agreement.

6.0 CONSERVATION ACTIONS

The Parties anticipate that the Armory Board's implementation of the Conservation Actions described below as well as in the tables of Appendix III, appended hereto, would remove or preclude the need to Federally-list either of the Covered Species. The Conservation Actions correspond to the respective habitat type in which they will be implemented. The general management practices described in the Florida Department of Agriculture and Consumer Services' *Silviculture Best Management Practices Manual* (FDACS 2008) ("FDACS Manual"), and the *Forestry Wildlife Best Management Practices Manual (FDACS 2014)* which are incorporated herein by this reference, will be implemented in each of the habitat types.

6.1 Flatwoods

The following actions will be performed in the Flatwoods habitat on the Enrolled Lands:

- Prescribed fire will be applied in 2-5 year cycles. Fuel loads will be managed by implementing dormant season burns in units with high fuel loads and maintenance burns, typically during the growing season, in units with low fuel loads.
- To maintain the 2-5 year burn schedule, approximately 4,000 to 10,000 acres must be burned annually. The burn schedule can be frequently disrupted, however, by drought

conditions or intense hurricane activity. Therefore, at least eighty percent of the flatwoods will be burned on a 2-5 year rotation (3,200 to 8,000 acres/year) provided weather conditions are appropriate. There will be an emphasis by the Armory Board to keep restored fire regimes in the maintenance phase.

- Natural stands will be maintained with their uneven-age or several-age structure. Stand density will be allowed to reach a pine basal area of 100 square feet (sq-ft) per acre before being reduced to a basal area of between 60 and 80 sq-ft per acre, unless the Service determines that a different action is required for a Federally-listed threatened or endangered species (e.g., to meet foraging habitat requirements of the red-cockaded woodpecker).
- Pine plantations will undergo two thinnings and a final harvest during the term of this Agreement. The first thinning will occur when it is appropriate to reduce basal areas to between 60 and 80 sq-ft per acre unless the Service determines that a different action is required for a Federally-listed threatened or endangered species (e.g., to meet foraging habitat requirements of the red-cockaded woodpecker). The second thinning will occur again approximately 10-15 years later to reduce the basal areas to between 60 and 80 sq-ft per acre unless otherwise determined by the Service. The final harvest, which shall be site specific according to restoration objectives, will be performed by clearcut, modified clearcut, shelterwood cut, or seed tree cut to bring basal area to that specifically required for Federally-listed threatened or endangered species (e.g., to meet foraging/nesting habitat requirements of the red-cockaded woodpecker). Plantations that need to be replanted after the final harvest will be replanted using non-aggressive site preparation methods (i.e., no bedding) and containerized longleaf pine.
- Clearcut harvests will be limited in individual stands to a maximum size of approximately 100 acres, except where the health of the forest (beetle infestation or wildfire salvage cuts) or restoration efforts (sand pine or hardwood removal) require otherwise.
- Native flora will be managed to return species' composition to natural levels and densities. This shall be accomplished with fire when possible and mechanical and chemical treatment when necessary.
- If gopher tortoise burrows are observed during timber harvest activities and heavy machinery is being utilized, the machinery will be kept at a radial distance of 25 feet or greater from any burrow entrance. Timber within this radius may be cut by hand but must be felled away from and not dragged over a burrow. Loading decks will also be placed at least 25 feet from any burrow.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows

signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.

- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- Soil erosion will be minimized during harvesting by using single tree selection harvesting as the primary harvesting method.
- Roads, natural barriers such as streams, and existing fire lines will be used as primary fire lines, but new lines may be established if necessary to protect other stands or features or to enhance burning logistics.
- Although plows may be necessary to create new fire lines, all plowed lines will be maintained with discs rather than plows to avoid disrupting natural drainage patterns.
- For prescribed fire, all efforts will be made to use firebreaks that already exist on the Enrolled Lands.
- During a wildfire event, there are no restrictions on fire line placement. Placement will occur based upon urgency of suppression and actual fire behavior. If a new fire line is created, however, it will be rehabilitated within 3-6 months after the fire is declared to be extinguished.
- Snags (i.e., standing dead trees), den trees (i.e., live trees with cavities in them), and fallen logs will be left undisturbed unless they pose a safety hazard to personnel or critical infrastructure. In addition, any snags that pose a containment risk during wildland fire operations may be removed. However, if salvage cuts are deemed necessary, a minimum of 10 snags (i.e., standing dead trees) per acre will be left to benefit cavity-nesting birds and other species unless all trees need to be removed due to disease or beetle infestation, the snags are a safety hazard to troop maneuvers, or the area will be replanted for reforestation.
- No new paved roads will be constructed unless needed to support a critical military mission or to improve erosion control. A maximum speed limit of 40 mph will be enforced on any new road, and road maintenance will be implemented as needed.

6.2 Sandhill

The following actions will be performed in the Sandhill habitat on the Enrolled Lands:

- Prescribed fire will be applied in 1-3 year cycles. Fuel loads will be managed by implementing dormant season burns in units with high fuel loads and maintenance burns, typically during the growing season, in units with low fuel loads.

- To maintain the 1-3 year burn schedule, approximately 5,000 to 16,000 acres must be burned annually. This burning schedule can be frequently disrupted, however, by drought conditions or intense hurricane activity. Therefore, at least eighty percent of the Sandhill acreage will be burned on a 1-3 year rotation (4,000 to 12,800 acres/year), with at least 30-40% burned during the growing season, provided weather conditions are appropriate. There will be an emphasis by the Armory Board to keep restored fire regimes in the maintenance phase.
- Manage native flora with the aim of returning species composition to natural levels and densities. This shall be accomplished with fire when possible and mechanical and chemical treatment when necessary.
- Natural stands will be maintained with their uneven-age or several-age structure. Stands will be thinned as needed. Natural stands will be maintained at a pine basal area of between 20 and 60 sq-ft per acre, unless the Service determines that a different action required for a Federally-listed threatened or endangered species.
- Existing sand pine and slash pine stands will be removed and harvested on a large scale while retaining volunteer or original longleaf pines. The stands will then be chopped (after 2-3 years for sand pine stands) and/or burned and replanted using non-aggressive site preparation methods (i.e., no bedding) and containerized longleaf pine.
- The harvest of turkey oak dominated stands will occur based on the availability of markets. These stands are generally under planted with containerized longleaf pine seedlings where natural regeneration is less than 200 longleaf pine seedlings per acre. Combinations of fire and herbicides will be used either for site preparation or after planting to ensure seedling establishment. Routine herbicide applications will only be used as a last resort when fire or other non-chemical methods do not sufficiently control competing vegetation.
- Clearcut harvests will be limited in individual stands to a maximum size of approximately 100 acres, except where the health of the forest (beetle infestation or wildfire salvage cuts) or restoration efforts (sand pine or hardwood removal) require otherwise.
- If gopher tortoise burrows are observed during timber harvest activities and heavy machinery is being utilized, the machinery will be kept at a radial distance of 25 feet or greater from any burrow entrance. Timber within this radius may be cut by hand but must be felled away from and not dragged over a burrow. Loading decks will also be placed at least 25 feet from any burrow.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.

- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- Soil erosion will be minimized during harvesting by using single tree selection harvesting as the primary harvesting method.
- Roads, natural barriers such as streams, and existing fire lines will be used as primary fire lines, but new lines may be established if necessary to protect other stands or features or to enhance burning logistics.
- Although plows may be necessary to create new fire lines, all plowed lines will be maintained with discs rather than plows to avoid disrupting natural drainage patterns.
- For prescribed fire, all efforts will be made to use firebreaks that already exist on the Enrolled Lands.
- During a wildfire event, there are no restrictions on fire line placement. Placement will occur based upon urgency of suppression and actual fire behavior. If a new fire line is created, however, it will be rehabilitated within 3-6 months after the fire is declared to be extinguished.
- Snags (i.e., standing dead trees), den trees (i.e., live trees with cavities in them), and fallen logs will be left undisturbed unless they pose a safety hazard to personnel or critical infrastructure. In addition, any snags that pose a containment risk during wildland fire operations may be removed. However, if salvage cuts are deemed necessary, a minimum of 10 snags (i.e., standing dead trees) per acre will be left to benefit cavity-nesting birds and other species unless all trees need to be removed due to disease or beetle infestation, the snags are a safety hazard to troop maneuvers, or the area will be replanted for reforestation.
- No new paved roads will be constructed unless needed to support a critical military mission or to improve erosion control. A maximum speed limit of 40 mph will be enforced on any new roads, and road maintenance will be implemented as needed.

6.3 Scrub

The following actions will be performed in the Scrub habitat on the Enrolled Lands:

- Prescribed fire will be applied during the growing season (February to July); however, some burns might occur during the dormant season, if needed, to prevent the delay of burning. When necessary and possible, fires will follow mechanical treatments.
- The habitat will be managed through prescribed burning or mechanical means when the average shrub height reaches 6-8 feet. Fire return intervals will occur every 5-20 years but may vary based on individual site conditions.

- Extensive all black burns over large acreages of the habitat will be avoided. Instead, the habitat will be managed as a mosaic to ensure that patches of shrubs are available to provide cover and acorns for wildlife species.
- No area will be mowed or burned two years in a row.
- Scrub vegetation will be maintained at a height of less than eight feet; sand pine canopy cover at a height of less than 15 percent cover; and, bare soil coverage at 10-50 percent.
- If gopher tortoise burrows are observed during timber harvest activities and heavy machinery is being utilized, the machinery will be kept at a radial distance of 25 feet or greater from any burrow entrance. Timber within this radius may be cut by hand but must be felled away from and not dragged over a burrow. Loading decks will also be placed at least 25 feet from any burrow.
- Mechanical treatments to restore long-unburned areas will be implemented preferably in winter when many of the reptilian Covered Species are more likely to be underground and out of harm's way.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.
- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- Roads, natural barriers such as streams, and existing fire lines will be used as primary fire lines, but new lines may be established if necessary to protect other stands or features or to enhance burning logistics.
- Although plows may be necessary to create new fire lines, all plowed lines will be maintained with discs rather than plows to avoid disrupting natural drainage patterns.
- For prescribed fire, all efforts will be made to use firebreaks that already exist on the Enrolled Lands.
- During a wildfire event, there are no restrictions on fire line placement. Placement will occur based upon urgency of suppression and actual fire behavior. If a new fire line is created, it will be rehabilitated within 3-6 months after the fire is declared to be extinguished.
- No new paved roads will be constructed unless needed to support a critical military mission or to improve erosion control. A maximum speed limit of 40 mph will be enforced on any new roads, and road maintenance will be implemented as needed.

6.4 Ephemeral Wetlands

The following actions will be performed in the Ephemeral Wetlands habitat on the Enrolled Lands:

- Prescribed fire will be applied to the surrounding uplands at a return interval appropriate to the surrounding habitat type as described in Section 6 of this Agreement. Ephemeral wetlands will be allowed to burn at the same time as their associated uplands if the wetlands are dry enough to sustain fire. When possible, such fires will occur during the growing season.
- Mechanical and/or chemical treatment will be used, provided wading bird colonies are not present, when fire is not sufficient to maintain an open habitat structure or to prevent woody encroachment.
- Mechanical impacts will be minimized, and fire lines to contain wildfires will be restored and rehabilitated.
- To the extent possible, wetland firebreaks will be avoided.
- Neither foams nor surfactants will be allowed or used during any water-handling operation when water is present.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.
- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- The amount of herbicides used for invasive plant control, particularly in or around surface waters and wetlands, will be minimized, to the extent possible, through the use of mechanical methods so as to avoid impacts to fish and wildlife habitat.
- Natural hydrology will be maintained by prohibiting impoundments, dredging, and channelization.
- Vehicle operation will not be allowed within known wetland areas unless operated on an established and pre-existing road and/or crossing.
- Natural vegetation will be retained for erosion control, water quality, and wildlife habitat.

6.5 Forested Wetlands

The following actions will be performed in the Forested Wetlands habitat on the Enrolled Lands:

- Prescribed burning in adjacent stands will be allowed to extend into pine-bay stands whenever possible and practical so as to reduce the extensive fuel loads and dense understory in transitional communities due to the absence of fire. Burning will not occur in areas with known wading bird colonies during the nesting season.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.
- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- Harvesting will be used only to the extent that it contributes to meeting the objectives set forth in this Agreement and then only as partial harvests that are followed by natural regeneration. None of the mechanized operations undertaken during such harvests will cause adverse impacts, such as sediment loading in adjacent wetlands and watercourses.
- Riparian zones and streamside management zones (SMZs) around water resources will be maintained in accordance with FDACS's *Silviculture Best Management Practices Manual* (FDACS 2008).
- Natural hydrology will be maintained by prohibiting impoundments, dredging, and channelization.
- Avoid roads, trails, or fireline impacts to ecotones.
- Vehicle operation will not be allowed within known wetland areas except on an established and pre-existing road and/or crossing.
- Where there are practicable alternatives, there will be no net loss of the size, function, or value of wetlands or modifications of floodplains and wetlands. In the absence of practicable alternatives, the Armory Board will obtain an Environmental Resource Permit from the St. Johns Water Management District for any unavoidable impacts to wetlands and water resources functions as well as mitigate for such impacts.
- The amount of herbicides used for invasive plant control, particularly in or around surface waters and wetlands, will be minimized, to the fullest extent possible, through the use of mechanical methods so as to avoid impacts to fish and wildlife habitat.

- Pesticide and herbicide use will be minimal and, then, only in adherence to the National Pollutant Discharge Elimination System (NPDES) Florida Pesticide Generic Permit incorporated herein by this reference.

6.6 Surface Waters

The following actions will be performed in the Surface Waters habitat on the Enrolled Lands:

- Riparian zones and SMZs around water resources will be maintained in accordance with FDACS's *Silviculture BMPs Manual* (FDACS 2008).
- Trees within stream channels or on the immediate stream bank will not be harvested.
- To the extent practicable protection will be given to very large trees and/or old trees, snags, cavity trees, and trees where any part of the canopy overhangs the water.
- The aerial application of a pesticide, mist blowing of a pesticide, cleaning of spray equipment or discharging of rinse water from pesticide or fertilizer applications is prohibited.
- Un-buffered site preparation burning on slopes greater than 18 percent is prohibited.
- Plowed pre-suppression fire lines are prohibited.
- To prevent or minimize siltation inputs, the following will be implemented: concrete headwalls, mitered inlets, and/or riprap will be used for culverts with a diameter of 24" or greater; hardened water crossings will be used where appropriate depth is present; roads will be maintained in accordance with the FDACS's *Silviculture BMPs Manual* (FDACS 2008) and, water bars and water turnouts will be utilized.
- Mechanized operations will be performed in a manner so as not to cause adverse impacts, such as sediment loading, in adjacent wetlands and watercourses.
- A cursory health assessment (e.g. as per the Gopher Tortoise Permitting Guidelines, 2015) will be conducted by on-site staff for any Covered Species that is encountered during general field reconnaissance or species' surveys. If any disease is found to pose a significant threat to the health or persistence of a Covered Species or if a species shows signs of any such disease, appropriate steps, as determined after consultation with the Service and the FWC, will be taken to reduce or eliminate the spread of the disease.
- Invasive and exotic plant species and noxious weeds will be monitored and controlled through early detection, isolation of infested areas, and, depending on the species or weed, control of individual plants through physical, chemical, or mechanical means. One percent or less of the Enrolled Lands in this agreement will be dominated by exotic species.
- The amount of herbicides used for invasive plant control, particularly in or around surface waters and wetlands, will be minimized, to the extent possible, through the use of mechanical methods so as to avoid impacts to fish and wildlife habitat.

7.0 MONITORING, REPORTING AND INDICATORS OF SUCCESS

The manner in which the various habitat types identified in Section 5, above, respond to the Armory Board's implementation of the restoration and management activities in Section 6.0, above, as well as in the tables of Appendix III, appended hereto, will demonstrate the level of effectiveness and the success of this CCAA. The indicator species and/or ecosystem functions in each of the six habitat types will be monitored to determine whether an observed habitat response has a corresponding positive effect on one or more of the Covered Species.

The Armory Board will prepare and submit a written annual Progress Report to the Service and the FWC by January 31st of each year this Agreement is in effect on the activities implemented under this Agreement during the preceding year. The Report will describe the Armory Board's progress or lack thereof in implementing the Conservation Actions for and in each of the six habitat types based on the indicator species or ecosystem functions described in Section 6.0, above. Following submission of the annual Progress Report, the Service, FWC and Armory Board will meet to discuss the report content and coordinate any changes via Adaptive Management, as described in Section 12.0, below, to the Conservation Activities for implementation during the current year.

To follow are the indicators by which success will be measured for each of the habitat types that occur within the Enrolled Lands.

7.1 Flatwoods

The Conservation Actions for the flatwoods communities will be deemed successful if they result in a healthy ecosystem structure and functions. The basal area of pines and hardwoods, groundcover composition, and percent of invasive species will be measured and reported in the annual Progress Report within the vegetation structure described in Section 6.1, above. The Armory Board will take vegetation measurements and photographs at the ten monitoring sites depicted in Appendix IV, Figure 1, which is attached hereto, and representative of the various flatwoods locations throughout the CBJTC. Seven of the monitoring sites correspond to previously established randomly selected plots within a geographic information system that was used by Integrated Training Area Management (ITAM) for Range and Training Land Assessment (RTLA), a monitoring program designed to assess military training impacts to training lands. These plots are proportionate to land cover type/soil type combinations. The remaining three monitoring sites were randomly chosen using a tool in ArcGIS where points are placed on a map in under-represented areas within the flatwoods habitat on the CBJTC. Information regarding fire return interval also will be reported in the annual Progress Report with a fire return of 2-5years being sufficient for this habitat type.

7.2 Sandhill

The gopher tortoise is a keystone species whose populations are good indicators of ecosystem health. Consequently, to determine the success of the Conservation Actions for the sandhill communities, gopher tortoise surveys will be conducted and reported at least once every five years per survey unit (one each on the North Post, East Post, and West Post and two on the South Post). Line Transect Distance Sampling will be used to survey gopher tortoise populations for areas greater than 250 acres in size in each of the five survey units for a total of approximately 1,500 - 2,000 acres per unit. The survey findings will be reported in the annual Progress Report. If gopher tortoise populations remain stable or increase, the CCAA will be considered to be a success as to the Covered Species in this habitat type. The baseline density will be determined during the first year of annual reporting.

The annual Progress Report also will include data on the fire return intervals, vegetation structure (e.g., basal area of pines and hardwoods and groundcover composition), and the percentage of invasive species within the habitat. Vegetation structure must be reported within the parameters of Section 6.2, above. Vegetation measurements and photographs will be taken at the ten designated monitoring sites depicted in Appendix IV, Figure 2, which is appended hereto. Nine monitoring locations were chosen based on previously established plots used for the RTLA program. The remaining site was randomly chosen using the "create random points" tool in ArcGIS to place a point on the map in an under-represented area within the sandhill habitat on the CBJTC. The ten monitoring sites represent the different sandhill locations across the CBJTC.

7.3 Scrub

This Agreement will be deemed successful as to the Covered Species that rely upon scrub habitat if the Conservation Actions in Section 6.3, above, result in a healthy ecosystem structure. The percentage of bare ground as well as vegetation structure and height will be measured at least every five years and reported accordingly in the annual Progress Report. Reported vegetation structure, including percent invasive species, must be within the descriptions outlined in Section 6.3. Vegetation measurements and photographs will be taken at the five monitoring sites randomly chosen by placing points on a map of the scrub habitat areas using a tool in ArcGIS and depicted in Appendix IV, Figure 3, appended hereto. Three of the sites are in the scrub habitat at Lowry Lake and the remaining two in the scrub habitat at Giddens Road and Blue Pond, respectively.

7.4 Ephemeral Wetlands, Forested Wetlands and Surface Waters

This Agreement will be deemed successful as to the Covered Species occurring within ephemeral wetlands, forested wetlands, and surface waters if the temperature, pH, dissolved oxygen, and turbidity in each of these habitat types are within the water quality levels outlined in Florida's surface water quality standards for Class III waters published at F.A.C. 62-302.530. Each of these factors as well as the extent to which invasive species are present in each habitat type will be measured by no later than 6 months after the last signature on this document and reported in the annual Progress Report. Thereafter, measurements will be taken every three years.

Hydrologic measurements will be taken at five monitoring sites within the ephemeral wetlands, forested wetlands, and surface waters, including streams, lakes and ponds, respectively. The monitoring sites for each of the habitat types are depicted in Appendix IV, Figures 4, 5, 6, and 7, respectively, which are appended hereto. The monitoring sites for the ephemeral and forested wetlands were randomly chosen using the "create random points" tool in ArcGIS to place points on a map within each of the habitat types. The monitoring sites for the streams, lakes and ponds were chosen from among sites used in 2010-2011 by the FWC to conduct its Black Creek crayfish survey (Nelson and Floyd 2011). They also were chosen based on access to and the representation of the different water bodies. If drought conditions or intense hurricane activity disrupt the Armory Board's ability to take measurements or conduct surveys, the Board will do so as soon as conditions allow. In addition to the measurements and survey information, the Armory Board will include information regarding the implementation of BMPs practices for construction and forestry activities in each of the three habitat types in the annual Progress Report.

In addition to monitoring for invasive species and water quality, the Armory Board will also survey for Black Creek crayfish using dip netting at the ten sites depicted in Appendix IV, Figure 8, which is appended hereto. The first crayfish surveys shall be conducted by no later than 6 months after the last signature on this document and, thereafter, at least once every five years. These surveys will be one of the tools used to evaluate the success of the Conservation Actions for the Covered Species that use streams. Five of the survey sites will overlap with the monitoring sites for streams depicted in Appendix IV, Figure 6. Black Creek crayfish require high quality streams with cool, unpolluted, flowing water, and the species' presence is a good indicator of a healthy ecosystem. If Black Creek crayfish populations are found to be stable or increasing in reference to baseline data derived during the first reporting year, this Agreement will be deemed successful for Covered Species in stream habitat.

8.0 RESPONSIBILITIES OF THE PARTIES

8.1 State of Florida Armory Board

The Armory Board is responsible for the supervision and control of all Florida National Guard armories, facilities, and real property (also referred to as "military posts" pursuant to Fl. Stat. § 250.01(12)) within the state that are used primarily for housing and training troops, performing administrative duties, or storing military property, supplies, or records. It also accepts and holds title to real property, by deed or long-term lease, from federal, state or local governments, or from private interests, for use as armories or for other military purposes and adopts rules for managing armories and other facilities under the control of the Florida Department of Military Affairs of which the Florida Army National Guard is a branch. The Armory Board is authorized to enter into this Agreement on behalf of the Florida Department of Military Affairs and its unit, the Florida Army National Guard.

In addition to the responsibilities and obligations otherwise set forth in this Agreement, the Armory Board is responsible for implementing all of the "Conservation Actions" set forth in Section 6.0, above, as well as for the monitoring and reporting obligations set forth in Section 7.0, above, including but not limited to, conducting prescribed burns, surveying for Covered Species, and assessing water quality.

8.2 Florida Fish and Wildlife Conservation Commission

In addition to the responsibilities otherwise set forth in this Agreement, the FWC is responsible for conserving, sustaining, enhancing, and protecting Florida's fish and wildlife resources for the benefit of present and future generations. As such, the Commission exercises regulatory and executive powers with respect to wild animal life, fresh water aquatic life and marine life. This Agreement covers species that are located in the state as well as species that the Commission has listed and determined to be at risk.

The FWC has determined that the Armory Board's implementation of the "Conservation Actions" set forth in Section 6.0, above, and monitoring and reporting obligations set forth in Section 7.0, above, would meet the criteria for issuance of permit pursuant to F.A.C. 68A-27.007(2)(b) for incidental take of a state-designated threatened species. The FWC agrees to issue an incidental take permit to the Armory Board for the Covered Species that are state-designated threatened species. Additionally, pursuant to the Gopher Tortoise Permitting Guidelines, revised February 2015, the FWC agreed to categorically exclude and exempt all mission critical military training and other operational activities, as determined by the Florida National Guard, occurring on the CBJTC. The exclusion and exemption do not cover activities associated with the construction of permanent structures or parking lots or the laying of

pavement or gravel on the Installation. The FWC also has issued a state gopher tortoise relocation permit, which compliments this CCAA and is appended hereto as "Appendix I."

The FWC has closely coordinated with the Service to ensure that this Agreement is consistent with applicable State laws and regulations. The Commission will continue to work closely with the Armory Board and the Service on the implementation of this Agreement. The FWC has provided funding, personnel, and other in-kind services to further the conservation of the Covered Species.

8.3 Army National Guard

The Army National Guard is a Directorate within the National Guard Bureau (NGB), which is a joint activity of the DoD (10 USC §113; see also Department of Defense Directive 5105.77, *National Guard Bureau (NGB),* dated May 21, 2008). As a Party, the Army National Guard will ensure that this Agreement is implemented consistent with the needs for DoD readiness training on the Enrolled Lands. The Army National Guard's military training activities are deemed "agency actions" per section 7(a)(2) of the ESA, and the Army National Guard completes consultation for federally-listed species in accordance with 50 C.F.R. Part 402. Should a Covered Species become federally-listed as "threatened" or "endangered" in the future, the Army National Guard will be covered for the activities and take addressed in this Agreement, the accompanying Biological/Conference Opinion and the associated Enhancement of Survival Permit. Any activities not covered under this Agreement may need separate consultation should a Covered Species become listed.

8.4 U. S. Fish and Wildlife Service

In addition to the responsibilities otherwise set forth in this Agreement, the Service will:

a) Administer and provide oversight for this Agreement, including oversight and technical assistance related to the monitoring and reporting requirements for Covered Species, management of Covered Species' habitat on the enrolled property, and in augmenting and/or reintroducing the Covered Species, when necessary.
b) Ensure that the proposed management activities meet the applicable regulatory standards and goals of this Agreement.
c) Inform the other Parties of any known Covered Species' mortalities or injuries within five (5) working days of receiving notice of such event.
d) Provide assistance in the development of a unified monitoring protocol.

e) Within 60 days of receipt of annual monitoring reports submitted by the Armory, the Service will review the reports and notify the Armory of any possible issues with or suggested amendments to the CCAA that may warrant consideration.

9.0 FUNDING FOR THE AGREEMENT

The Florida Armory Board shall be responsible for funding all matters pertaining to this Agreement, including but not limited to implementation of the Conservation Actions, monitoring and surveying. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds.

10.0 REGULATORY ASSURANCES TO THE LANDOWNER

The Service's Assurances to the Armory Board

If this Agreement is being properly implemented by the Armory Board, the following assurances apply only with respect to the Covered Species:

(A) Changed Circumstances

1. If the Service determines that additional conservation actions are necessary to respond to changed circumstances, as that term is defined in 50 C.F.R. § 17.3, and these measures are set forth in this Agreement, the Armory Board will implement the actions specified herein.

2. If the Service determines that additional conservation actions not provided for in this Agreement are necessary to respond to changed circumstances, as that term is defined in 50 C.F.R. § 17.3, the Service will not require any conservation actions in addition to those provided for in this Agreement without the consent of the Armory Board.

(B) Unforeseen Circumstances

In the event of unforeseen circumstances, as that term is defined in 50 C.F.R. § 17.3, the Service will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level agreed to herein for the Covered Species without the consent of the Armory Board.

(1) If the Service determines that additional conservation actions measures are necessary to respond to unforeseen circumstances, the Service may require additional

actions of the Armory provided the Agreement is being properly implemented but only if such actions maintain the original terms of this Agreement to maximum extent possible. Any such additional actions will not involve the commitment of additional land, water, or financial compensation or additional restrictions on the use of land, water, or other natural resources otherwise available for development or use under the terms of this Agreement as of its Effective Date without the consent of the Armory Board.

(2) The Service will have the burden of demonstrating that unforeseen circumstances exist based on the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of the Covered Species. The Service will consider, but not be limited to, the following factors:

(a) Size of the current range of the Covered Species;
(b) Percentage of range adversely affected by this Agreement;
(c) Percentage of range conserved by this Agreement;
(d) Ecological significance of the portions of the Covered Species' respective ranges that are affected by this Agreement;
(e) Level of knowledge about the Covered Species and the degree of specificity of the Covered Species' conservation program under this Agreement; and,
(f) Whether failure to adopt additional conservation actions would appreciably reduce the likelihood of survival and recovery of a Covered Species in the wild.

The FWC's Assurances to the Armory Board

Via this Agreement and the F.A.C. 68A-27.007(2)(b) state permit that the FWC will issue to the Armory Board for incidental take of the state-listed species that are identified as Covered Species in Table 2, above, the FWC assures the Armory Board that it will not require additional conservation actions or impose additional land, water, or resource use restrictions beyond those set forth herein provided the permit and this Agreement are being properly implemented.

11.0 INCIDENTAL TAKE AUTHORIZATION

An Enhancement of Survival Permit (Permit) issued to the Armory Board by the Service will authorize incidental take of the Covered Species consistent with this Agreement and the terms of the Permit. The Permit will become effective as to a Covered Species on the date that the species is listed as "threatened" or "endangered" under the ESA. On such date, the Armory Board will be authorized take for the covered species that was listed in conjunction with implementation of the Conservation Actions specified in the Agreement. The take is expected to be in the form of

mortality, harm, and harassment associated with implementing the best management practices as described in the Conservation Actions section and the monitoring provisions in the Monitoring and Reporting section. The Service has determined that the levels of incidental take authorized by the Permit will not jeopardize the continued existence of either of the Covered Species. The Service has further determined that the levels of incidental take authorized by the Permit is consistent with the overall goal of removing or precluding the need to list the Covered Species if the conservation actions were also implemented on other necessary properties.

The Permit will not be revoked for any reason except those set forth in 50 CFR 13.28(a)(l-4) or unless continuation of the permitted activity would be inconsistent with the criterion set forth in 50 CFR 17.22(d)(2)(iii) and the inconsistency has not been remedied in a timely fashion.

The assurances provided apply only to the covered species in-as-much as the Agreement is being properly implemented. The assurances provided shall in no way limit the Service's retention of its obligations and authorities for consultation under section 7(a)(2) of the Endangered Species Act relative to future Federal actions that may occur within the Project Site that may affect the covered species or other listed, proposed, or candidate species.

The Parties agree and understand that entering into this Agreement does not preclude or otherwise remove the Service's authority to list any of the covered species as threatened or endangered species under the ESA should the Service determine that listing any of the covered species is necessary pursuant to section 4 of the ESA.

Through this Agreement, the FWC also provides the Armory Board assurances, via a permit for the state-listed species found in Table 2, that if the Agreement has been implemented in good faith by the Armory Board, the FWC will not require additional conservation measures nor impose additional land, water, or resource use restrictions beyond those the Armory Board voluntarily committed to under the terms of the original Agreement and that are confirmed in the permit.

NOTIFICATIONS

In the event that any of the Parties detect conditions that may adversely affect any of the covered species at the Project Site, such conditions will be reported to the Armory Board, the FWC, and the Service. Such conditions may include, but are not limited to, evidence of fish kills, spills, or releases of materials that may affect streams in the Project Site; invasion of exotic plant or animal species at the Project Site; or significantly increased sedimentation within streams at the Project Site.

The Armory Board agrees to provide the Service with an opportunity to rescue individuals of the covered species before any authorized take occurs as described in the Enhancement of Survival Permit. Such notification that authorized take will occur must be provided to the Service at least 30 days in advance of implementing the action and will include a description of the action to be taken and measures to reduce the authorized take. Rescue actions undertaken by the Service shall not unreasonably interfere with the implementation of Conservation Actions under this Agreement.

12.0 ADAPTIVE MANAGEMENT

The Parties agree that adaptive management provisions are necessary to ensure that this Agreement can be modified to address changing conditions or new information regarding or affecting the conservation of the Covered Species and the ultimate success of this Agreement. The Armory Board will evaluate annually the effectiveness of the Conservation Actions set forth herein and prepare and submit a Progress Report annually to the FWC and the Service as described in the "Monitoring and Reporting" section, above, and recommend changes to increase the effectiveness of this Agreement in conserving the Covered Species and satisfying the CCAA standard. Subject to Section 10.0, above, the Parties may initiate requests to modify the Conservation Actions in the manner provided in Section 14.0, below. Requests to modify the Conservation Actions must remain within the scope of this Agreement. Specific areas in which adaptive management may be utilized include adjustments to survey frequency, sampling techniques, and the frequency of monitoring periods.

These objectives will be accomplished through implementation of the specific conservation actions described below. However, in accordance with the principles of adaptive management, which are discussed herein, the status of this Agreement will be evaluated through monitoring efforts and an annual report to assess the Agreement success.

Although not a specific Objective, the Parties believe that increasing knowledge of all covered species at the Project Site will help guide adaptive management and contribute to the overall conservation of the covered species. To accomplish this, the Parties will encourage and support scientific surveys for all covered species on CBJTC. Increasing distribution knowledge of at-risk species on the Project Site will lead to a better understanding of their life history and habitat requirements, which in turn will lead to better management objectives for these imperiled species.

13.0 EMERGENCY SITUATIONS

Emergency situations arising from natural disasters (e.g., tornados, hurricanes, fire, excessive rainfall, extreme drought, insect infestations, or epidemic disease, etc.) may require the initiation

of certain land management actions that could result in incidental take of the Covered Species. The Armory Board agrees to notify the other Parties in writing within 14 days of any such occurrence and to allow the Service and/or FWC to enter onto the Enrolled Property to conduct surveys and/or relocation of individuals of the Covered Species prior to initiation of the emergency land management actions. If it is not possible to provide notice before implementing the actions, the Armory Board agrees to the maximum extent practicable to implement such actions so as to avoid impacting locations on the Enrolled Lands where the Covered Species are known to occur. The Armory Board will notify the Service and the FWC in writing, within ten working days of implementing any such action and report all measures undertaken to avoid impacts to the Covered Species and, if take occurred, the amount of such take as to each Covered Species.

14.0 Modifications

Any Party may propose modifications or amendments to this Agreement, including but not limited to the Conservation Actions set forth herein, by providing written notice to and obtaining the written concurrence of each of the other Parties. Such notice shall include a statement of the proposed modification or amendment, the reason for it, and effects anticipated to result from the modification. The Parties will use their best efforts to respond to proposed modifications within sixty (60) days of receipt of such notice. Proposed modifications will become effective upon the date by which each of the Parties has concurred in writing.

15.0 TERMINATION

The Armory Board may terminate this Agreement prior to the duration of 15 years, with good cause, even if the expected conservation benefits have not been realized. The Enhancement of Survival Permit would also be terminated, however, at the same time thus rescinding, among other things, the Armory Board's authority to incidentally take any Covered Species.
To terminate this Agreement, the Armory Board must submit a (60)-day written notice of its intent to terminate to each of the Parties. The notice also must provide the Service and/or the FWC the opportunity or opportunities, as necessary, to come onto the Enrolled Lands within 60 days of the notice to relocate the Covered Species. Notwithstanding any termination of this Agreement, the Armory Board will remain responsible for implementing any outstanding measures identified in the "Conservation Actions" section, above, that the Board is obligated to perform through the termination date.

The FWC may withdraw from this Agreement by providing 60-day written notice of such intent to each of the other Parties. The FWC will remain responsible for any conservation actions under the Wildlife Management Agreement for which it is responsible.

16.0 ADDITIONAL CONESRVATION ACTIONS

Nothing in this Agreement shall restrain or limit either Party from taking additional conservation actions not described herein at its own expense to protect or conserve a Covered Species, provided the Service deems such measures consistent with the conservation goals and objectives of this Agreement.

17.0 SUCCESSION AND TRANSFER

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and transferees (i.e., new owners) in accordance with applicable regulations (50 CFR 13.24 and 13.25). The rights and obligations under this Agreement shall run with the ownership of the Enrolled Lands and are transferable to subsequent non-Federal property owners pursuant to 50 C.F.R. § 13.25.

The Enhancement of Survival Permit issued to the Armory Board also may be transferred to a subsequent owner of the Enrolled Lands pursuant to 50 C.F.R. § 13.25. If this Agreement and the associated Permit are transferred, the new owner will have the same rights and obligations with respect to the Enrolled Lands as its predecessor. The new owner may also apply to enter into a new CCAA with the Service and FWC to receive its own regulatory assurances and Permit.

The Armory Board agrees to provide written notice to the Service thirty (30) days prior to transferring or conveying, ownership of the Enrolled Lands or any portion of the lands comprising the CBJTC. In the event that the State of Florida or board shall at any time use for other than military purposes, sell, convey, or otherwise dispose of all or any part of the State or Federal land, all of the right, title, and interest in and to the Federal land shall revert to the United States (Public Law 493, 1954). Upon receipt of such notice, the Service will contact the prospective owner to discuss and explain this Agreement and to determine whether the prospective owner is interested in becoming a party to this Agreement or desires to enter into a new agreement. The agreement will be null in the event of the lands reverting to the United States.

In the event that the lands are not reverted to the United States, and should the transferee or conveyee agree to become a party to this Agreement, the Service will regard that person or entity as having the same rights and obligations as the Armory Board such that actions taken by the new party that result in incidental take of a Covered Species would be authorized in accordance with this Agreement. If the transferee or conveyee does not become a party to this Agreement, it would neither incur responsibilities under this Agreement nor receive the regulatory assurances of this Agreement and the Permit.

18.0 PERMIT REVOCATION

The Service may not revoke the Permit issued in association with this Agreement except as provided in this paragraph. The Permit may be revoked for any reason set forth in 50 C.F.R. § 13.28(a)(1) through (4). The Service may also revoke the Permit if continuation of the permitted activity would either appreciably reduce the likelihood of survival and recovery in the wild of any listed species or directly or indirectly alter designated critical habitat such that it appreciably diminishes the value of that critical habitat for both the survival and recovery of a listed species. Before revoking the Permit for either of the latter two reasons, the Service, with the consent of the Armory Board, will pursue all appropriate options to avoid permit revocation. These options may include, but are not limited to: extending or modifying the existing permit; capturing and relocating the Covered Species; compensating the Armory Board to forgo the activity; purchasing an easement or fee simple interest in the Enrolled Lands; or, arranging for a third-party acquisition of an interest in the lands.

19.0 MISCELLANEOUS PROVISIONS

19.1 The Service's regulatory assurances to the Armory Board shall in no way affect the Service's rights, obligations and authorities under the ESA, including but not limited to, consulting under section 7(a)(2) of the ESA relative to this Agreement or to future Federal actions that may affect a Covered Species on the Enrolled Lands or on the CBJTC.

19.2 The FWC's actions under this Agreement shall in no way affect its rights, obligations and authorities under the statutes and rules of the state of Florida.

19.3 The Parties agree and understand that entering into this Agreement does not preclude the Service from listing either or all of the Covered Species as "threatened" or "endangered" under the ESA should the Service determine that such listing is warranted pursuant to section 4 of the ESA.

19.4 The Armory Board agrees to notify the Service and the FWC before take of a Covered Species occurs and to provide the Service with the opportunity to rescue any individual or individuals of the Covered Species prior to the occurrence of any such take. Such notice shall be in writing and provided to the Service and the FWC at least thirty (30) days in advance of the Armory Board engaging in any that would result in such take. The notice shall also include a description of the action that will cause the take, an estimate of the amount of take anticipated to occur, and measures that could be undertaken to reduce or prevent the anticipated take.

19.5 In the event a Party detects conditions on the Enrolled Lands or on the Installation that may adversely affect a Covered Species, such Party agrees to report such conditions to the other Parties immediately. Such conditions may include, but are not limited to, evidence of fish kills; spills or releases of materials or substances that might adversely affect streams on the CBJTC; invasion of exotic plant or animal species on the Enrolled Lands; or, increased sedimentation within streams within the Enrolled Lands.

19.6 The Parties recognize and acknowledge that they have specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of wildlife species and natural resources. Nothing in this Agreement is intended to abrogate any of the Parties' respective responsibilities. This Agreement is subject to and intended to be consistent with all applicable Federal and State laws.

19.7 The Service's implementation of this Agreement is subject to the requirements of the Federal Anti-Deficiency Act (31 U.S.C.S §1341) and the availability of appropriated funds. Nothing herein shall be construed to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that this Agreement does not require the Service to expend any federal appropriated funds unless and until an authorized agency official affirmatively acts to commit such expenditures as evidenced in writing.

19.8 Does the Armory/State of Florida have a law comparable to the Federal Anti-Deficiency Act that it wants to include here?

20.0 NOTIFICATIONS

Communication, reports, and correspondence required by this Agreement should be directed to the persons listed below. The names and contact information may be changed upon written notice to the persons listed below.

Armory Board: Michael A. Calhoun
Major General
Florida National Guard
Adjutant General
St. Francis Barracks
82 Marine Street
St. Augustine, FL 32084

FWC: Thomas Eason, Ph.D.
Director, Division of Habitat and Species Conservation
Florida Fish and Wildlife Conservation Commission

620 South Meridian Street
Tallahassee, FL 32399-1600

Service**:** Leopoldo Miranda
Assistant Regional Director, Ecological Services
U.S. Fish and Wildlife Service
1875 Century Boulevard
Atlanta, GA 30345

21.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE

Survey, collection, or research activities associated with implementation and maintenance of this Agreement will not entail significant Federal actions under the NEPA and will be given a categorical exclusion designation. All other actions will be evaluated prior to implementation and will comply with NEPA regulations.

IN WITNESS WHEREOF, each Party hereto has caused this Agreement to be executed by an authorized official on the date set forth beside their respective signatures.

_____ _____

Erik T. Gordon Date
Colonel, U.S. Army
Chief, Installations & Environment Division
Army National Guard

_____ _____

Nick Wiley Date
Executive Director
Florida Fish and Wildlife Conservation Commission

_____ _____

William M. Myer Date
Colonel, U.S. Army
Chief, Environmental Programs Division
Army National Guard

_____ _____

Cynthia K. Dohner Date
Regional Director, Southeast Region
U.S. Fish and Wildlife Service

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