United States Department of the Interior

Fish and Wildlife Service
105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

August 19, 2015

Mr. John Ramey
Director of Public Works
Headquarters, United States Army Garrison, Fort Gordon
307 Chamberlain Avenue
Fort Gordon, Georgia 30905-5730

FWS Log Number: 04EG1000-215-F-0876

Dear Mr. Ramey:

The Fish and Wildlife Service is pleased to provide the enclosed Biological Opinion for the implementation of Endangered Species Management Component (ESMC) (U.S. Department of the Army 2015) of the 2013 revision of the Fort Gordon Integrated Natural Resources Management Plan) and its effects on the federally-endangered red-cockaded woodpecker (RCW), in accordance with section 7(a)(2) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Information necessary to initiate formal consultation was provided to our office on April 6, 2015.

This biological opinion is based on information included in the ESMC and the INRMP, Service field investigations, discussions with Fort Gordon Natural Resources Branch biologists, coordination with the Service's RCW coordinator, and other information.

We have concluded that this action is not likely to jeopardize the continued existence of the RCW. The ESMC is intended to enhance RCW habitat and increase the population on Fort Gordon. The Biological Opinion discusses the level of incidental take that could result due to this proactive work.

We appreciate the effort Fort Gordon is expending for endangered species. Please contact Deborah Harris of this office (706-613-9493 ext 224 or Deborah_C_Harris@fws.gov) if you have any questions about our Biological Opinion.

Sincerely

Donald W. Imm, Ph.D.
Field Supervisor

U.S. Fish and Wildlife Service

Biological Opinion

of the effects of

Implementing Fort Gordon's Endangered Species Management Component

on the

The Federally Endangered

Red-Cockaded Woodpecker

Donald W. Imm, PhD.
Georgia Ecological Services Field Supervisor

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INTRODUCTION

A biological opinion is a document that states the opinion of the Fish and Wildlife Service (Service) as to whether or not a federal action is likely to jeopardize the continued existence of a federally-endangered or threatened species or result in the destruction or adverse modification of designated critical habitat (50CFR§402.02). A biological opinion is prepared following the regulations of §7(a)(2) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.) whenever a federal agency determines its actions are likely to adversely affect an endangered or threatened species. This document is the Service's biological opinion of the effects of implementing the Endangered Species Management Component (U.S. Department of the Army 2014) on the federally endangered red-cockaded woodpecker (*Picoides borealis*; RCW) at Fort Gordon, Georgia. The Endangered Species Management Plan (EMC) is part of Fort Gordon's Integrated Natural Resources Management Plan (INRMP) (U.S. Department of the Army 2015).

As part of this evaluation, we will consider not only the effects of the proposed action, but also the interrelated and interdependent actions and the cumulative effects relative to the status of the species. Analyzing all these factors, we will arrive at a Service opinion that the proposed action **is** or **is not** likely to jeopardize the continued existence of the species. Jeopardize the continued existence of the species means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR § 402.02). The Service has not designated Critical Habitat for the RCW; therefore, adverse modification of designated critical habitat will not be addressed in this document.

We evaluated the information included in Fort Gordon's Biological Assessment (BA) (US Department of the Army 2014) and reviewed the INRMP, the US. Department of the Army 2007 Management Guidelines for the Red-cockaded Woodpecker (2007 Army Guidelines), and the U.S. Fish and Wildlife Service 2003 Red-cocked Woodpecker (*Picoides borealis*) Recovery Plan (RCW Recovery Plan) in the formulation of this Biological Opinion. We also considered information gathered from Service site visits to Fort Gordon, discussions with Fort Gordon Natural Resources Branch (NRB) biologists, coordination with the Service's RCW coordinator, and other information. A complete administrative record of this consultation is on file in the Georgia Ecological Services Field Office in Athens, Georgia. This document does not address requirements of other environmental statutes, such as the National Environmental Policy Act.

CONSULTATION HISTORY

November 12, 2008. The Service provided a biological opinion (U.S. Fish & Wildlife Service. 2008) on the Department of the Army's ESMC and INRMP (2008-2013) (U.S. Department of the Army 2008).

2008-2015. The Service attended annual briefings and site visits at Fort Gordon from 2008 through 2015 to observe management practices, preview new projects, and discuss INRMP updates.

August 30, 2013. Service biologist Deborah Harris and RCW Coordinator for the Service, Will McDearman, made a site visit to various training areas to see RCW management. Rob Drumm (Chief of Natural Resources Branch (NRB) and his staff gave presentations about RCW management on Fort Gordon. We discussed the Installation Population Goal, and decided that Fort Gordon should partition (using computer programming to essentially draw circles around) foraging habitat for each active group of woodpeckers within the HMU to get a more accurate representation of how many groups Fort Gordon was capable of supporting.

January 21, 2015. The Service received a copy of the INRMP including the RCW Endangered Species Management Component (ESMC) in the Athens, Georgia Ecological Services Office.

February 20, 2015: The Service signed approval for the INRMP.

April 6, 2015: Fort Gordon provided their BA for the ESMC and requested formal consultation. Fort Gordon determined in their BA that the Proposed Action (implementation of the ESMC) may affect but is not likely to adversely affect the RCW (Page 1.2).

April 22, 2015: The Service sent a letter to Mr. John L. Ramey stating that all information required for initiation of consultation had been received. We initiated formal consultation on April 6, 2015, as requested by Mr. Ramey. Our letter also stated that we expected to provide Fort Gordon with our biological opinion on the proposed action no later than August 19, 2015.

April 23, 2015: During a Service site visit to Fort Gordon, staff from Fort Gordon's Natural Resources Branch gave an overview of their natural resource management including special practices for the RCW. We discussed the formal ESA consultation process including federal agency determinations about effects of the action, incidental take, and timelines. We visited several sites in the field including the following:

- Training Area 31 to see off-site loblolly and timber marking

- Training Area 30 to discuss recent timber harvest, RCW translocation, and herbicide treatments
- Training Area 33 to see timber harvest after storm damage
- Training Area 21 to see gopher tortoise burrow and discuss gopher tortoise management
- Training Area s 21, 22, and 25 to see RCW clusters and discuss RCW management.

April 29, 2015: The Service received an email from Mr. Rob Drumm, now Chief of the Environmental Division. Mr. Drumm stated that Fort Gordon was amending their determination to "likely to adversely affect." They stated that they made this change in determination due to Fort Gordon's inability to manage large areas outside the habitat management unit, such as the cantonment and surrounding training areas and parts of the small arms impact area, and the possibility of loss during prescribed fire. .

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

This biological opinion addresses the effects of implementing the revised and updated ESMC, which is included as part of the 2015 revision of the INRMP. Implementation and updating of the INRMP (2014 through 2018) is required by the Sikes Act Improvement Amendment, Public Law (PL) 105-85, Div. B Title XXIX, Nov. 18, 1997, 111 Stat. 2017-2019, 2020-2022. The purpose of the INRMP is to integrate natural resources management programs at Fort Gordon with other land uses or affecting activities, which ensures good stewardship of Department of Defense lands and complies with all Federal laws and regulations while supporting the military mission (U.S. Department of the Army 2015). The objective of the ESMC is to conserve federally threatened and endangered species while preserving training readiness and other mission requirements on Fort Gordon (U.S. Department of the Army 2014). The ESMC covers a 5-year period from 2014 through 2018.

Background

As part of the 5-year review process for Fort Gordon's INRMP, Fort Gordon has revised the 2008 ESMC to reflect changes in the military mission, the Installation Population Goal (IPG) for RCW, and RCW habitat and population management. Implementation of the 2014 ESMC will have impacts on RCW similar to those of the 2008 ESMC. According to Fort Gordon's 2014 BA, there have been no substantial changes to the ESMC. The 2014 BA provides a summary of those actions and relevant changes to the ESMC and status of the RCW on Fort Gordon.

Location

Fort Gordon is located in east-central Georgia just southwest of Augusta at Latitude $33° 20'\text{North}\ (33.333333)$; Longitude $82° 15'\text{West}\ (-82.25)$. The majority of the training

cantonment area lie within Richmond County, with a small portion of area in Jefferson, Columbia, and McDuffie counties (Figure 1). Installation and the entire Coastal Plain and Piedmont physiographic provinces. Approximately 50,000 acres (90 percent) of Fort Gordon is used for training missions. The Installation is subdivided into 49 training areas, two restricted impact areas, and two cantonment areas (main and industrial). Heavy training impacts on Fort Gordon have been limited to two principal areas. The 7,645-acre Small Arms Impact Area (SAIA) is located in the center of the Installation and encompasses 14 live firing ranges. Heavy artillery detonation occurs in the 5,217-acre Artillery Impact Area (AIA) located on the western end of the Installation (ESMC, Section 3.0). Maneuver and training areas occupy approximately 37,000 acres. According to the ESMC, within the 50,000-acre training area, there are 24,300 acres of current and potential forested area suitable for RCW habitat. The remaining 5,600 acres is occupied by the cantonment, which includes military housing, administrative offices, community facilities, medical facilities, industrial facilities, maintenance facilities, and supply/storage facilities, and lakes, ponds, recreational areas, and some forested areas.

Federally Endangered and Threatened Species and Action Area

The only federally endangered or threatened resident species on Fort Gordon is the RCW. The RCW occurs within Fort Gordon, but does not occur immediately outside the Fort's boundaries. The closest location of other RCW populations is approximately 40 miles away on the Savannah River Site in South Carolina. Therefore, the action area of this project, defined as all areas to be affected directly or indirectly by the proposed action (50 CFR 402.02), includes all of Fort Gordon, except the areas of non-habitat such as wetlands and ponds.

Proposed Action

The Proposed Action (as identified in the BA) includes: 1) identification and delineation of the Habitat Management Unit (HMU); 2) determination of Fort Gordon's Installation Population Goal (IPG) for the RCW based on the current and presumed future use of the HMU; 3) ecosystem management of the HMU; and 4) RCW population management. Conservation measures identified in the ESMC are also included in the Proposed Action

1. Identification of HMU

The extent of the HMU has been developed using methods detailed in the 2007 Army Guidelines. HMU delineation is important because it defines the future geographic configuration of the Installation's RCW population. In designating the HMU, Fort Gordon avoided fragmenting nesting habitat and ensured that habitat corridors will connect all nesting areas, allowing for demographic interchange throughout the Installation's RCW population (Figure 2). Delineation of the HMU is affected by the current, planned, and unforeseen needs of the military mission and the ability of lands to support RCW habitat. The HMU includes all areas where habitat exists or could be developed within the Installation boundaries. Military training sites,

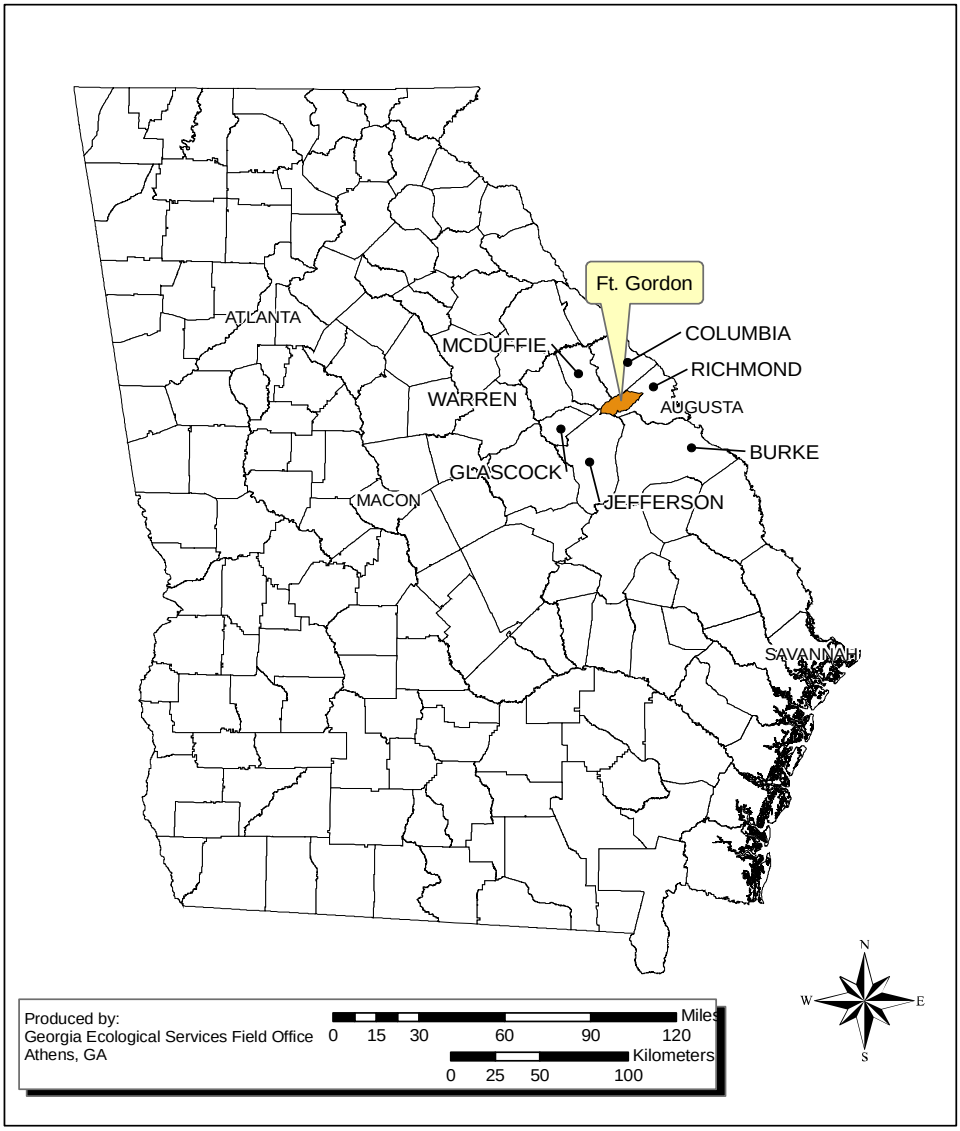

Figure 1. Fort Gordon, Georgia

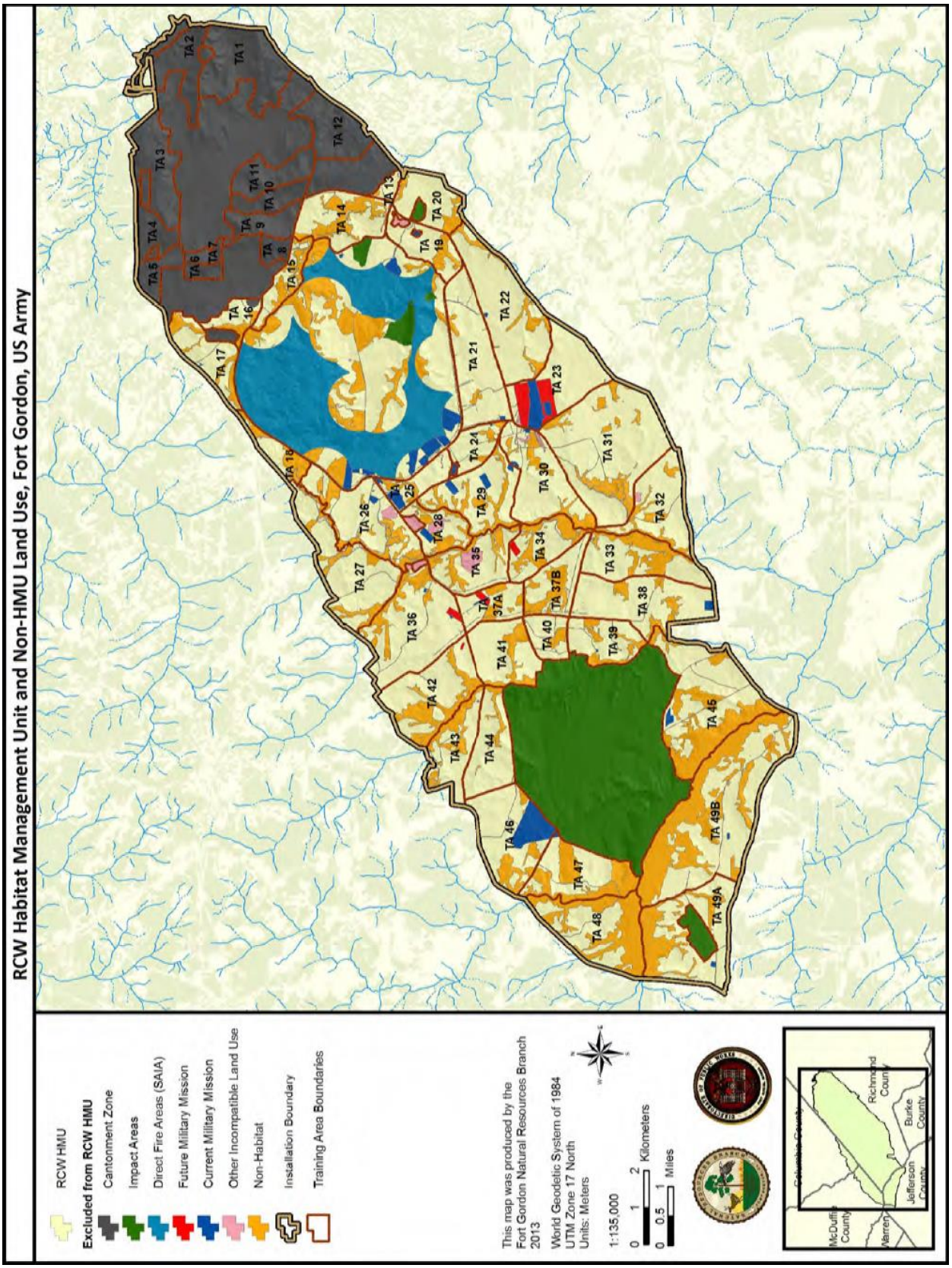

Figure 2. Fort Gordon's red-cockaded woodpecker Habitat Management Unit (2014-2018). From: U.S. Army Garrison, Fort Gordon, 2014 (Page 1-3).

such as sub-training areas and bivouac sites, were kept in the HUM because they provide suitable RCW foraging habitat.

The excluded areas include the Artillery Impact Area (AIA), unexploded ordnance (UXO) areas (dud areas), the cantonment area, and portions of the Small Arms Impact Area (SAIA). Areas of planned and ongoing development for the future and current military mission are also excluded. Natural areas that are not suitable RCW habitat, such as bottomland hardwood, swamps, marshes, and ponds, were not included in the HMU. Areas designated as HMU for all active and recruitment clusters, regardless of training restriction status, must be managed according to the 2007 Army Guidelines.

2. Determination of Installation Population Goal

The revised RCW Recovery Plan established recovery units and population goals for federal, state, and private lands within those recovery units (U.S. Fish and Wildlife Service 2003). The Fort Gordon RCW population is not a primary recovery population as defined in the RCW Recovery Plan due to the Installation's comparatively smaller size and isolation from adjoining RCW populations. However, the Fort Gordon population is identified as a significant support population for the Sandhills Recovery Unit. Maintaining viable populations within each recovery unit is essential to the survival and recovery of RCW as a species across their range. Conservation of populations in all habitats, forest types, and ecoregions within recovery units is critical to species survival and recovery because these varied populations have crucial ecological and genetic values. Fort Gordon's IPG reflects the Installation's contribution to the Regional Recovery Goal, as outlined in the RCW Recovery Plan.

The IPG was developed using the methods detailed in the 2007 Army Guidelines and is based on the area and shape of the HMU. Fort Gordon encompasses 55,600 acres, and the total area excluded from RCW management is 29,940 acres. Thus, the current and potential RCW habitat for the entire Installation is approximately 25,543 acres, which is a 1,143-acre increase over the 2008 estimate. Previous determinations of the number of potential clusters with sufficient area to support foraging within the HMU were made by dividing the total area of the HMU by 200 acres, however, this calculation did not account for the irregular shape of the HMU. During the August 30. 2013, meeting with USFWS and the RCW coordinator, We questioned whether the current IPG could spatially fit into the HMU or not. To answer this question, Fort Gordon used a geographic information system and an iterative process maximizing use of the irregularly shaped HMU to determine the number of potential cluster locations with sufficient area to support foraging. Cluster center points were placed in the HMU no closer than 0.25 mile from other cluster points. The 200-acre area covered by each cluster was determined by creating partitions at 50-foot intervals with a radius between 1,650 feet and 2,650 feet. The partition that included 200 acres of HMU was selected for that cluster. That partition was then removed from use for

further iterations. This process was repeated until no more cluster points could be added that could cover 200 acres of HMU within 0.5 mile of a cluster. The cluster points created through this process represent hypothetical cluster locations and are not actual future locations. Using this approach, it was determined that the IPG for active clusters is 103 (Figure 3). Current 5-year population data shows that 68 percent of active clusters support potential breeding groups (PBGs) so the IPG could be stated either 103 active clusters or 70 PBGs. The number of PBGs could increase as more active clusters are added and therefore this number will be set at a later date. Fort Gordon has stated in the BA that this IPG should be considered long-term, but is subject to change, through consultation with the Service, based upon changing circumstances, changing missions, or new scientific information. In conjunction with the 1-year and 5-year reviews of the ESMC, Fort Gordon will re-examine the IPG to adjust to changing conditions (U.S. Department of the Army 2014. Pages 1: 1-7).

3. Ecosystem management

Ecosystem management within the HMU will develop the habitat necessary to support the RCW IPG using the same specific methods described in the 2008 ESMC (U.S. Department of the Army 2008) and the 2007 Army Guidelines. The priority for timber management over the next 5 years is to develop high-quality foraging habitat as close as possible to existing breeding groups. In general, ecosystem management will include the following:

- prescribed burns and other means (mechanical, manual, or chemical removal) to control hardwood midstory
- regeneration through clear cutting, seedtree, and shelterwood methods where appropriate for generation of native, site-appropriate species
- stand conversions, with a priority of converting to longleaf pine (*Pinus palustris*)
- forest pest and disease management through use of pheromones, cutting and leaving, cutting and removing, or cutting and burning infested areas
- forest inventory conducted Installation-wide every 10 years using recognized plot sampling methods

With the exclusion of portions of the SAIA, where RCW are known to occur, all areas outside of the HMU are not managed for RCW; however, they are managed for ecosystem restoration. The National Resources Branch must coordinate with the Directorate of Plans, Training, Mobilization, and Security to obtain entry into the SAIA to conduct RCW management activities as the mission allows. Otherwise, RCW management activities will be conducted in the SAIA similar to other areas of the HMU (U.S. Department of the Army 2014. Pages 1: 7-9).

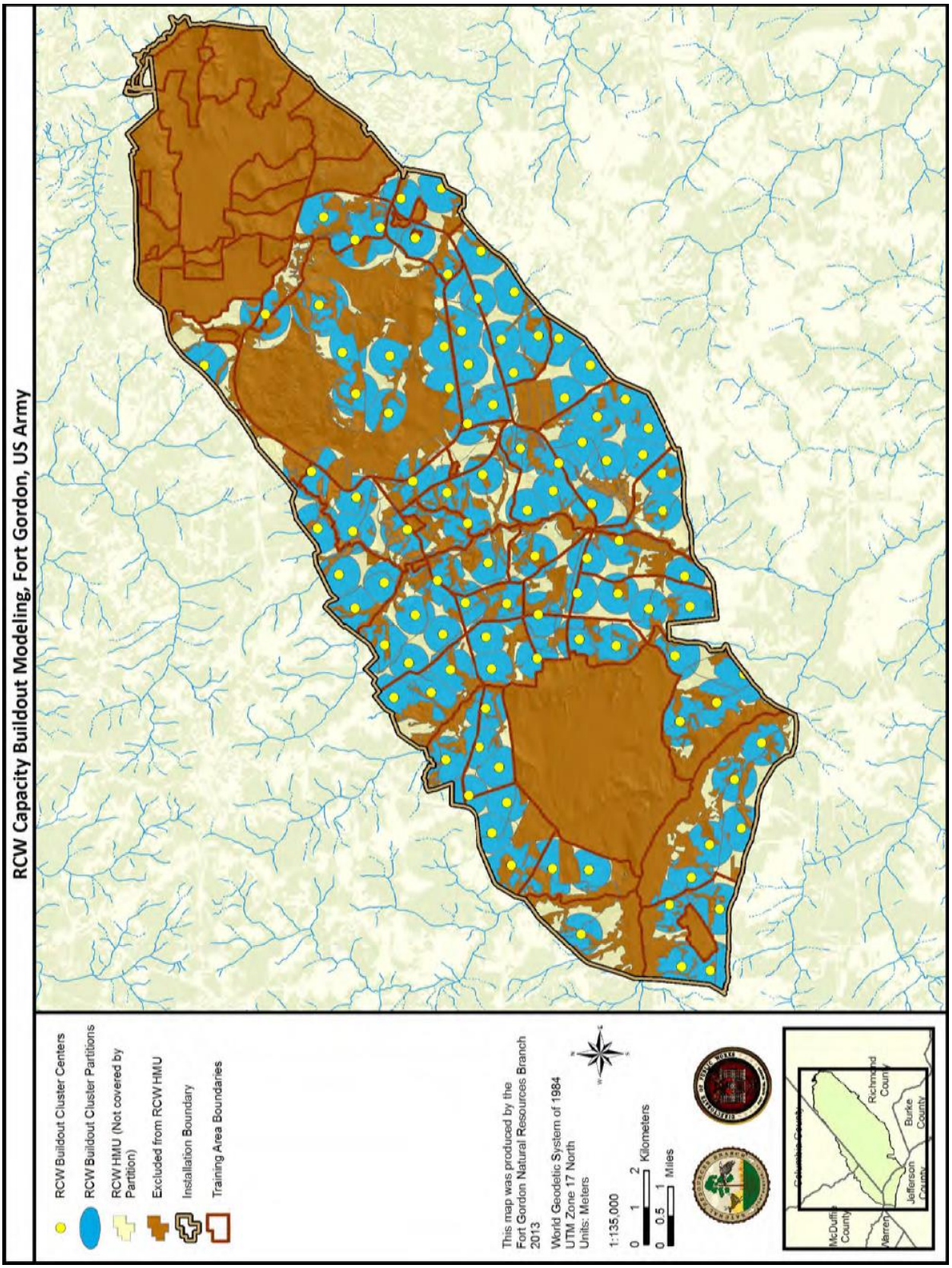

Figure 3. Potential red-cockaded woodpecker clusters on Fort Gordon. From: U.S. Army Garrison, Fort Gordon 2014 (Page 1-8).

Population Management

RCW population management, including monitoring, would be conducted following the same specific methods described in the 2008 ESMC (U.S. Department of the Army 2008) and the Army Guidelines (U.S. Army 2007.

Fort Gordon's goal for the next 5 years is to maintain breeding groups at active clusters, to augment all single-bird clusters, and to create new breeding groups by translocation. They will give maintenance priority to active clusters over both inactive and recruitment clusters. Given current stand conditions, Fort Gordon can potentially provide 33 recruitment clusters over the next 5 years. This number is dependent upon timber stand improvement and availability of suitable habitat. Recruitment clusters that were active in the recent past will be considered high-priority sites for receiving translocated birds. In general, RCW population management may include the following (Department of the Army 2014. Pages 1:9-10):

- Maintenance of cavities, nesting habitat, and foraging habitat around active clusters
- Provisioning of six new recruitment clusters annually over the next 5 years
- Augmentation of all single-bird clusters
- Translocation of three pairs into sites containing six recruitment clusters
- Repair of active and inactive RCW cavity entrances and starts, whether naturally or artificially constructed, found to be in poor condition during periodic inspections
- Placement of artificial cavities or inserts in areas designated for recruitment and in clusters where the number of suitable cavities is a limiting factor
- Reduction of RCW predation through use of squirrel and snake exclusion devices (SQEDs and SNEDs)
- Reduction of competition for RCW cavities through placement of alternate potential roost sites for competitors
- Inspection of breeding habitats and monitoring of populations, including comprehensive surveys for new cavity trees and clusters
- Removal from active management of all clusters where recruitment is not feasible in the next 10 years, where the surrounding area does not support suitable foraging habitat and is not likely to do so in the next 5 years, or where a more suitable cluster can be established elsewhere
- Deletion from management requirements of cavity trees that have been observed to be inactive for 5 consecutive years and for which cavities have been determined unsuitable
- Deletion from management requirements of designated recruitment clusters that have not been occupied for a period of 5 consecutive years
- Cover of existing cavities in clusters removed from management to discourage reactivation

Conservation Measures

The ESMC identifies conservation measures that will avoid or minimize adverse effects on RCW and potential habitat. Conservation measures can be applicable to ecosystem management measures and to activities occurring in or near RCW habitat that are not related to ecosystem management (e.g., training and pine straw harvesting). These conservation measures were reviewed and agreed upon in the 2008 Biological Opinion (U.S. Fish and Wildlife Service 2008) and are summarized below.

- Coordination of training and ecosystem management to ensure that training will not adversely affect the RCW
- Enforcement of training restrictions within marked, 200-foot buffer zones around RCW cavity trees
- Monitoring of training within the HMU
- After 40 PBG's are reached, conducting a research and monitoring project to evaluate viability of unprotecting 10% (4) active clusters. The selection of proposed unprotected clusters will be done in close coordination with training leadership to prevent any training conflicts. This information will guide designation of future unprotected clusters.
- Management of cantonment, impact, dud, and Direct Fire Areas, when practicable
- Surveying for RCWs prior to projects that would remove pine trees $\geq$ 30 years of age that could provide potential RCW foraging habitat
- Regional conservation to promote cooperative RCW conservation with other Federal, state, and private landowners in the surrounding area.
- Conservation on adjacent lands to complement Installation RCW conservation initiatives.
- Cooperation with the Service to ensure that proposed actions or significant changes to ESMC are consistent with ESA requirements, report population data and trend analysis, and recover RCW nesting and foraging habitat after any catastrophic events such as tornados or hurricanes.

Detailed descriptions of these conservation actions are located in the Biological Assessment (U.S. Department of the Army 2014. Pages 1:10-18)

STATUS OF THE SPECIES

Species Description

The U. S. Department of the Interior identified the RCW as a rare and endangered species in 1968. In 1970, the RCW included on a list of endangered native fish and wildlife in the Code of Federal Regulations Appendix D (Federal Register 35:16047). With passage of the Act in 1973,

the RCW received the protection afforded listed (endangered) species under the Act. No critical habitat has been designated.

The RCW is a small woodpecker about 8 inches in length, with a wingspan of about 14 inches, weighing about 1.7 ounces (47 grams). Its coloration is black and white, with a ladder back, and is distinguished from other woodpeckers by its black capped head and nape, surrounding large, white cheek patches. Adult males possess a tiny red streak or tuft of feathers, the cockade, in the black cap near each ear and white cheek patch. The small cockade usually is covered by the black crown, except when protruded during excitement, and is not readily visible except upon close examination or capture. Adult males and females are not readily distinguishable in the field. Juvenile males have a red crown patch until the first molt, which can be distinguished from the black crown of juvenile females (U.S. Fish and Wildlife Service 2003).

Life History

The RCW is a territorial, non-migratory, cooperative breeding species (Lennartz et al. 1987; Walters et al. 1988). It is unique in that it is the only North American woodpecker that exclusively excavates its cavities for roosting and nesting in living pines. Usually, the trees chosen for cavity excavation are infected with a heartwood decaying fungus (*Phellinus pini*) (Jackson 1977; Conner and Locke 1982). The heartwood associated with this fungus and typically required for cavity excavation is not generally present in longleaf pine and loblolly pine (*Pinus taeda*) until 90 to 100 and 75 to 90 years of age, respectively (Clark 1992a; Clark 1992b). Large trees also are required because the cavity is constructed and placed entirely within heartwood where pine resin will not flow. Each group member has its own cavity, although there may be multiple cavities in a cavity tree. RCWs chip bark and maintain resin wells on the bole around the cavity; the fresh flow of sticky resin is a deterrent against predatory snakes (Rudolph et al. 1990) and indicates an active cavity tree. The aggregate of cavity trees, surrounded by a 200-foot, forested buffer, is called a cluster (Walters 1990). Cavities within a cluster may be complete or under construction (starts) and either active, inactive, or abandoned. Clusters with one or more active cavity trees are considered active RCW clusters.

Most RCW populations occur where longleaf pine historically dominated the forest community. Populations in other vegetation types occur in the western, northern interior and southernmost regions flanking the longleaf pine ecosystem. RCWs in the West Gulf Coastal Plain occupy loblolly pine forests in parts of southern Arkansas, east Texas, and Louisiana on flatwood terraces and more dissected upper terraces where loblolly pine was dominant or with shortleaf pine (*Pinus echinata*) as a natural community type (e.g., Moore and Foti 2005; Moore and Foti 2008). Shortleaf pine-dominated communities currently with RCWs are in portions of the coastal plain in east Texas, the Ouachita Mountains of Arkansas and eastern Oklahoma, the Piedmont and Cumberland Plateau of Alabama, and the Georgia Piedmont. In south Florida, RCWs persist in hydric pine flatwoods dominated by South Florida slash pine (*Pinus elliottii* var. *densa*). In northeastern North Carolina and southeastern Virginia, small populations remain associated with pond pine (*Pinus serotina*) communities and pocosins. However, the

fundamental ecology of RCWs remains the same -- populations occupy fire-maintained, open pine forests, with trees of sufficient age and size for cavities and foraging

RCWs live in social units called groups. This cooperative unit usually consists of a monogamous breeding pair, offspring of the current year, and 0–4 adult helpers (Walters 1990). Helpers typically are male offspring from previous breeding seasons that assist the breeding pair by incubating eggs, feeding the young, excavating cavities, and defending the territory (Ligon 1970, Lennartz and Harlow 1979, Lennartz et al. 1987, Walters et al. 1988). Some large populations have instances, although very infrequent, of female helpers (Walters 1990; Delotelle and Epting 1992; Bowman et al. 1998). Some clusters are only occupied by a single adult male, and are classified as single bird groups.

The RCW is territorial and each group defends its home range from adjacent groups (Hooper et al. 1982; Ligon 1970). The defended territory includes habitat used for cavity trees and foraging. RCWs feed mostly on variety of arthropods, particularly ants and wood roaches, by foraging predominately on and under the bark of larger and older living pines. Males tend to forage in crowns and branches, while females commonly forage on the trunk. Dead and dying pines are important temporary sources of prey, and hardwoods are used occasionally. Group members forage together each day in parts of their territory.

Studies of home-range size suggest that RCWs require from 100 to 400 acres per group depending on the quality of foraging habitat(U.S. Fish and Wildlife Service 2003. p. 50). Home range size is variable within and between populations, but tends to reflect foraging habitat quantity and quality, boundaries of adjacent RCW territories, and possibly cavity tree availability (Conner et al. 2001; U.S. Fish and Wildlife Service 2003).

Home range size has been related to the area of suitable habitat within 1.24 miles of the cluster, pine basal area, pine density, pine density greater than 9.84 inches dbh, RCW group density, hardwood midstory, and other factors (Hooper et al. 1982; DeLotelle et al. 1987; Bowman et al. 1998; Hardesty et al. 1997a and 1997b; Walters et al. 2000, 2002a). Variation in home range size reflects a response to habitat quality, where more is generally required in low quality habitat, and less is needed in high quality habitat.

Habitat

High quality RCW foraging habitat consists of an open fire-maintained pine forest, with no or a sparse midstory of hardwood or pine, low densities of small pine (less than 10 inches diameter at breast height [dbh]) , moderate densities of medium-sized (10 – 14 inches dbh and large (greater than14 inches dbh) pine, at least low densities of old growth pine, and a well-developed herbaceous plant ground cover (James et al. 2001; Walters et al. 2002b). RCWs selectively forage on larger and older pines more frequently than their availability relative to younger and smaller trees (Zwicker and Walters 1999; Walters et al. 2002b). Overall, RCWs preferentially use pine 12-20 inches dbh, prefer trees greater than 20 inches dbh, use trees less than 20 inches

dbh depending on the availability of larger trees, and avoid trees less than 12 inches dbh when larger trees are available (Walters et al. 2000). RCW group size, productivity (fledglings produced), or both are negatively related to an increasing density of small and intermediate-size pine, as well as the density and height of the hardwood midstory (Conner and Rudolph 1991; Rudolph and Conner 1994; Hardesty et al. 1997a; Engstrom and Sanders 1997; James et al. 1997, 2001; Walters et al. 2002b).

RCWs tend to forage within 0.5 miles of their cluster. Because of this behavior, a 0.5-mile radius is used to conduct survey areas, prior to clearing or removing any potential RCW habitat. The 0.5-mile survey area provides a high probability that any unknown clusters will be identified within that area. A 0.5-mile radius circle around a cluster center encompassed an average of 91% of the actual home ranges of RCW groups in a North Carolina study (Convery and Walters 2003).

About 90 percent of PBGs nest each year. A PBG is an adult male and female with or without helpers occupying the same cluster. The nesting season occurs from April to July. Females usually lay 3 or 4 eggs in the cavity of the adult male. The short incubation period lasts approximately 10 days, and eggs hatch asynchronously. Nestlings fledge after 24 to 29 days, although rarely do all nestlings survive to fledgling. Partial brood loss of nestlings is common in RCWs, although number of hatchlings successfully fledged tends to increase with group size. About 20 percent of nests will fail completely, without producing a single fledgling. Groups with helpers experience whole brood loss less frequently than breeding groups without helpers. Re-nesting rates are geographically and annually variable. In good years, up to 30 percent of breeding groups will re-nest. Productivity of the second nesting is lower.

Subadult/juvenile females from the current year breeding season normally disperse prior to the next breeding season, or are driven from the group's territory by the group (Walters et al. 1988). Juvenile females remain at their natal territory to assume the breeding vacancy of the female only when the breeding male dies and the breeding female disperses or dies. Breeding females will disperse, creating a breeding vacancy, when her male offspring inherit the male breeding position (incest avoidance). Dispersing juvenile females move to nearby RCW territories in search of a breeding vacancy. These females either become breeders in a territory, or floaters among more than one territory where they are not associated with a single group.

Juvenile males remain in their natal territory or disperse. Those that remain become helpers or, if the breeding male dies before the next breeding season, breeders. Dispersing juvenile males search for positions as breeders in nearby territories where they either become breeders, helpers, or floaters. Most adult male helpers remain on their natal territory as helpers, where about 15 percent will inherit the territory as a breeding male in any given year. Some adult helpers disperse to other territories, becoming breeders, solitary males, helpers, or floaters. However, breeding males are highly territorial and most will remain even without a breeding female. In contrast, about ten percent of breeding females will break the pair-bond between breeding

seasons and disperse to another territory as a breeder with a different male (Walters 1988; Daniels and Walters 2000).

Population Dynamics

Like other species, RCW population size during a given year is affected by birth, death, immigration, and emigration rates. However, RCW population dynamics also are significantly affected by the species' cooperative breeding system and behavior of territorial RCW groups with helpers. The spatial distribution and aggregation of groups affects the likelihood that breeders in a group will be replaced upon their death or dispersal by other RCWs. All of these factors regulate population size, stability, and viability as mediated by the effects of habitat, genetics, demographic and environmental stochasticity, and environmental catastrophes. RCW population size is commonly measured as the number of PBGs. A total count of individuals, including non-breeding helpers, single male groups, and floater adults, would not account for group and territory dynamics or the buffering effect of helpers as a replacement pool for breeders. In the absence of data for the number of PBGs, the number of active clusters is an index estimate of population size (number of groups). An active cluster is one where fresh resin from RCW activity at a cavity occurs on one or more trees. An active cluster may be occupied by a PBG or a single-male group. The number of single-male groups also is important because a large proportion of single-bird groups indicate a declining population.

Demographically, a RCW population is strongly affected by the dispersal distances of males and females from their natal group or birds that search for and compete for breeding vacancies at other groups. At North Carolina study sites (North Carolina Sandhills and Camp Lejeune), dispersing juvenile and helper males rarely assumed breeding vacancies at clusters located more than 2 miles from their natal or group site (Daniels 1997; Walters et al. 1988). The number of RCW group territories increases by two primary processes (1) pioneering, the colonization of a previously unoccupied territory, and budding, the creation of a new group by subdividing an existing group territory and its cavity trees, usually by a group helper or an immigrant male (Conner et al. 2001).

Population Stability

RCW population viability depends on a sufficient number of stable groups to avoid adverse effects of inbreeding, genetic drift, and impacts from stochastic genetic demographic, environmental, and catastrophic events. Small populations are particularly sensitive to exacerbating effects of stochastic factors, which can drive local extirpation or extinction (Gilpin and Soule 1986).

Spatially Explicit Population Models (SEPM) simulate the movement and fate of each individual in a population depending on its status and currently are the most accurate RCW population dynamic and viability models (e.g., Letcher et al. 1998; Daniels et al. 2000). RCW SEPMs have revealed significant effects of spatial structure and distribution of groups on viability, based on the relatively short dispersal distances of male juveniles and helpers (2 miles) and females (3.7

miles) to inherit breeding vacancies in nearby territories (Walters et al. 1988, Daniels 1997). Groups located at greater distances and at lower densities are much less likely to sustain breeding pairs, as they are becoming demographically isolated and more vulnerable to local extirpation.

Letcher et al. (1998) determined, using SEPM analysis with the added effects of demographic stochasticity, that small populations with 49 highly aggregated groups are stable over 100 years, and smaller populations of 25 highly aggregated groups are highly persistent for about 60 years. Highly aggregated groups share common territorial boundaries. Even smaller, highly aggregated populations of 20 and 10 groups have good persistence for 20 years, although population growth rates are less than 1.0 and slowly declining (Crowder et al. 1998). Highly aggregated populations of 49 groups are more stable than minimally aggregated populations of 169 or 250 groups, and non-highly aggregated populations with less than 100 groups decline and are not viable. The strong persistence of highly aggregated RCW populations reflects the demographic effect of the helper birds. Variation in breeder mortality is dampened by helpers that replace breeders. Fluctuating periods of greater breeder mortality tends to reduce the size of the helper class instead of reducing the number of breeding groups (Walters et al. 2002a). Regardless of the aggregation or clumping of the modeled populations in their study (Letcher et al. 1998), populations of 500 groups were viable, as were moderately aggregated groups of 250.

RCW group fitness or reproductive success is directly and indirectly affected by the age and size of available pine, as well as the development of the herbaceous plant ground cover. RCW group size, productivity (fledglings produced), or both is positively related to an increase in the density of old and large pine and the herbaceous ground cover. It is negatively related to an increasing density of small young pine, intermediate-size pine, and the density and height of the hardwood midstory (Conner and Rudolph 1991; Rudolph and Conner 1994; Hardesty et al. 1997a; Engstrom and Sanders 1997; James et al. 1997, 2001; Walters et al. 2002a). Group size affects productivity because the number of fledglings increases with group size, generally with an average of two fledglings in groups of 4-5 adults and helpers, and 1 fledgling on average with groups of just two breeding RCWs (Conner et al. 2001).

Reasons for Listing

The precipitous decline of RCWs was caused by an almost complete loss of habitat. Before European settlement, the number of RCW groups inhabiting longleaf pine forests and all southern pine forests was estimated at 920,000 (Costa 2001) and 1.5 million (Conner et al., 2001), respectively. Fire-maintained old growth pine savannahs and woodlands that once dominated the Southeast (92 million acres pre-European settlement; Frost 1993) no longer exist except in a few small patches (less than 3.0 million acres today; Frost 1993). Longleaf pine ecosystems are now among the most endangered systems on earth (Simberloff 1993; Ware et al. 1993).

Loss of the original pine ecosystems was primarily due to intense logging for lumber and agriculture. Logging was especially intense at the turn of the century (Frost 1993). Two

additional factors in loss of pine systems in the 1800's and earlier were exploitation for pine resins and grazing of free-ranging hogs (Wahlenburg 1946, Frost 1993). Later in the 1900's, fire suppression and detrimental silvicultural practices had major impacts on the status of RCWs (Frost 1993, Ware et al. 1993, Ligon et al. 1986, 1991, Ligon et al. 1991. Additionally, longleaf pine suffered a widespread failure to reproduce following initial cutting, at first because of hogs and later because of fire suppression (Wahlenburg 1946, Ware et al. 1993).

Current Threats and Population Trends

The ultimate recovery goal for the RCW is species viability. This goal is represented by delisting. Using delisting criteria, the RCW Recovery Plan establishes recovery units which are geographic or otherwise identifiable subunits of the listed entity that individually are necessary to conserve genetic robustness, demographic robustness, important life history stage or some feature necessary for long-tern sustainability of the overall listed entity. Most of the recovery units contain one or more core recovery populations and one or multiple support populations. (U.S. Fish and Wildlife Service. 2003.pp 140-161. Evaluation of current threats and populations trends involves analysis of core and support recovery populations. Most of the 39 identified recovery populations in the Recovery Plan are composed of one or more adjacent properties. All of the 39 recovery populations (100%) are either stable or increasing, based on number of active clusters, during the most recent 5-year growth period (2009-2014) for which data are available (U.S. Fish and Wildlife Service 2014. unpublished data).

RCW populations on public lands, as well as those private lands have been stabilized, and many are now increasing. This steady increase can be attributed to various factors, including aggressive prescribed burning programs, installation of artificial cavities (Copeyon 1990; Allen 1991), and translocation (Costa and DeLotelle 2006). In 1993/1994, the range-wide population was estimated at 4,694 active clusters (Costa and Walker 1995). In 2001and 2003, the range-wide population estimates were 5,627 (U.S. Fish and Wildlife Service 2003; Costa 2004) and 5,800 active clusters, respectively (Costa and Jordan 2003); in 2006 it was 6,105 active clusters (U.S. Fish and Wildlife Service unpublished data).

Primary threats to species viability all are related to lack of suitable habitat in a fire-maintained ecosystem. On public and private lands, the quantity and quality of RCW habitat are impacted by past and current fire suppression and silvicultural practices that don’t contribute to the open forest condition with large pines preferred by RCWs (Ligon et al. 1986, 1991, Baker 1995, Cely and Ferral 1995, Conner et al. 2001). Serious threats stemming from this lack of suitable habitat include: (1) insufficient numbers of cavities and continuing net loss of cavity trees (Costa and Escano 1989), (2) habitat fragmentation and its effects on genetic variation, dispersal and demography (Conner and Rudolph 1991), (3) lack of good quality foraging habitat (Walters et al. 2000, James et al. 2001), and (4) fundamental risks of extinction inherent to critically small populations from random demographic, environmental, genetic, and catastrophic events (Shaffer 1987).

The natural growing season fire regime that maintained quality foraging habitat has been lost due to fire suppression and landscape alterations that have altered the availability of lightning-flammable fine plant litter fuels. In the absence of prescribed fire, fire intolerant hardwoods survive and grow to midstory or higher levels in the forest canopy. RCWs, being sensitive to midstory hardwood encroachment, will abandon their cavities and clusters due to hardwood encroachment (Conner and O'Halloran 1987; Costa and Escano 1989).

Catastrophes

Hurricanes, and southern pine beetles are the primary catastrophic events affecting RCW population stability. These events damage or destroy habitat, reducing the number of breeding groups by the loss of cavity trees and foraging habitat. Hurricanes are the greatest catastrophic threat, as indicated by their frequency, widespread distribution, intensity, and effects (Hooper and McAdie 1995). Hurricane Hugo, a category IV storm, destroyed about 87% of RCW cavity trees in the Francis Marion National Forest, reducing the estimated pre-storm population of 477 active clusters to 277 clusters that retained at least one remaining cavity tree (Hooper et al. 1990; Watson et al. 1995). Coastal populations, particularly small populations, are highly vulnerable while the most inland populations are at least at risk. RCW populations in the Croatan National Forest (SC), Francis Marion National Forest (SC), Apalachicola National Forest (FL), DeSoto National Forest (MS), Eglin Air Force Base (FL), and Conecuh National Forest (AL) and nearby regions are the most vulnerable based on hurricane return periods and intensity (Hooper and McAdie 1995).

Southern pine beetle epidemics adversely affect loblolly pine much more than longleaf, which have greater resin production and resistance to attack. The loss of planted loblolly pine, which was planted in much of the historic longleaf pine range, as well as loblolly in its natural habitat, can be locally significant. More than 50 RCW groups lost all loblolly cavity trees in the Sam Houston National Forest in the 1980s, where more than 300 cavity trees were killed by beetles between 1982 and 1984 (Conner et al. 2001). Loss of cavity trees and foraging habitat in small populations can be locally severe, leading to a reduction in breeding groups and potentially threatening local extirpation in small populations (Mills et al. 2004).

Recovery Criteria

Recovery criteria in the Recovery Plan were formulated on the basis of 11 recovery units delineated according to ecoregions (U.S. Fish and Wildlife Service. 2003. Pp 140-164). Populations required for recovery are distributed among recovery units to ensure representation of broad geographic, ecologic, and genetic variation in the species. The wide geographic distribution reduces the threat of catastrophic habitat destruction and population loss by hurricanes. The distribution of populations and recovery units also will facilitate periodic RCW immigration and emigration among populations, which will be required to offset or reduce the loss of potential adaptive genetic variation within populations by genetic drift.

Although Fort Gordon's RCW population does not contribute to the criteria for down-listing or delisting, it is extremely important as a significant support population in the conservation and recovery of the species. Support populations help represent natural variation in habitats occupied by RCWs. Support populations are an important source of immigrants for core populations to increase retention of genetic variation and could provide a buffer against stochastic loss of core populations. These functions are especially critical, because many core populations are still below the population sizes necessary to withstand threats of environmental, demographic and genetic uncertainty.

As a support population, it is important that Fort Gordon continue to provide for increasing population growth until the IPG is reached and then maintained.

ENVIRONMENTAL BASELINE

Status of the species within the action area

Fort Gordon's historic RCW population was determined to be extirpated by 1993. The last confirmed RCW activity on the Installation was in the summer of 1990 in Training Area 22. Six years later, on 23 February 1996, a single male RCW was observed in Training Area 21. The RCW had been banded and was later confirmed as a migrant from the Savannah River Site, approximately 30 to 35 miles southeast of the Installation. To establish a cluster in Training Area 21, single females were moved into the training area during both the 1997 and 1998 breeding seasons. Both attempts were unsuccessful. However, translocation of multiple RCWs (single female and two pairs) in 1998 was successful. By 2000, there were four active clusters (includes all provisioned recruitment clusters) and nine individuals on the Installation. Since 2000, the population has increased steadily (Figure 4). There were 21 active clusters and 16 potential breeding groups observed in 2014 (June 26, 2015, email from Steven Camp, Fort Gordon) (Figure 5).

Fort Gordon predicts that based on a growth rate of 5 percent, the IPG of 103 active clusters will be reached by 2046 (Figure 6). Fort Gordon predicts that they will be able to support 91 clusters for the next 30 years. This is assuming that thousands of acres of offsite species will be converted to native, site-appropriate pines in contiguous blocks. Fort Gordon also states that initial long-term IPG of 40 active clusters should be reached between 2025 and 2030, which is when existing onsite pine will be suitable nesting habitat. The remainder of the HMU and many of the stands that are converted in the next 5 to 10 years should be suitable foraging habitat.

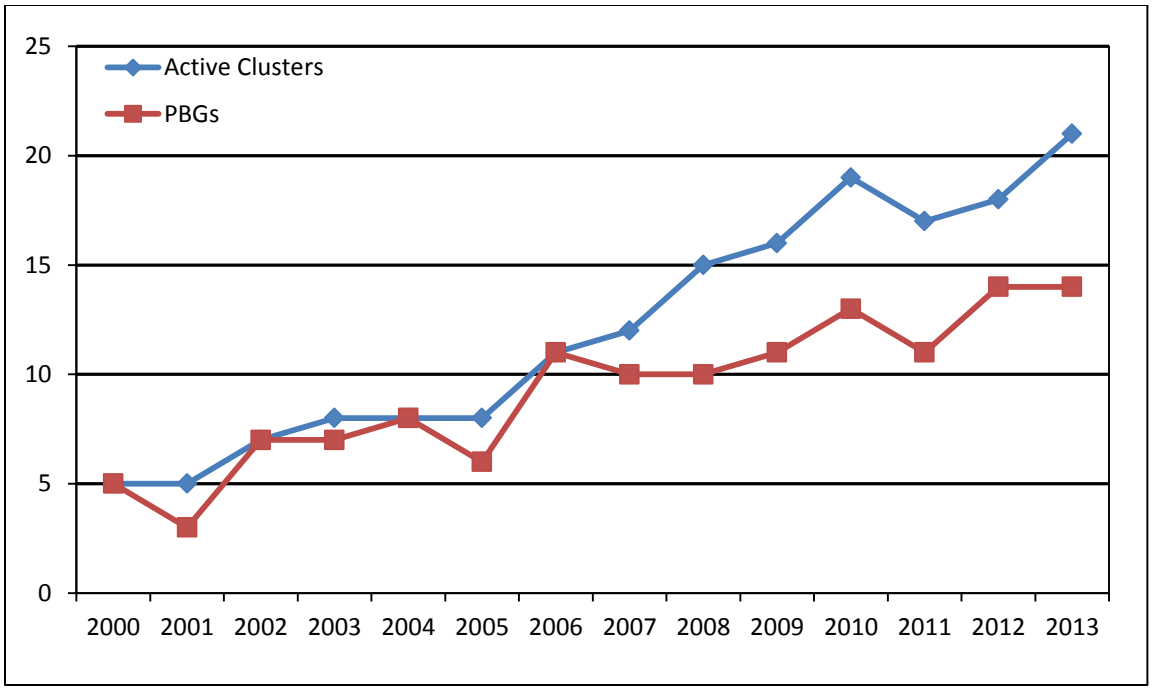

Figure 4. Number of active clusters and potential breeding groups from 2000 to 2013. From U.S. Army Garrison, Fort Gordon. 2014 (Page 3-1).

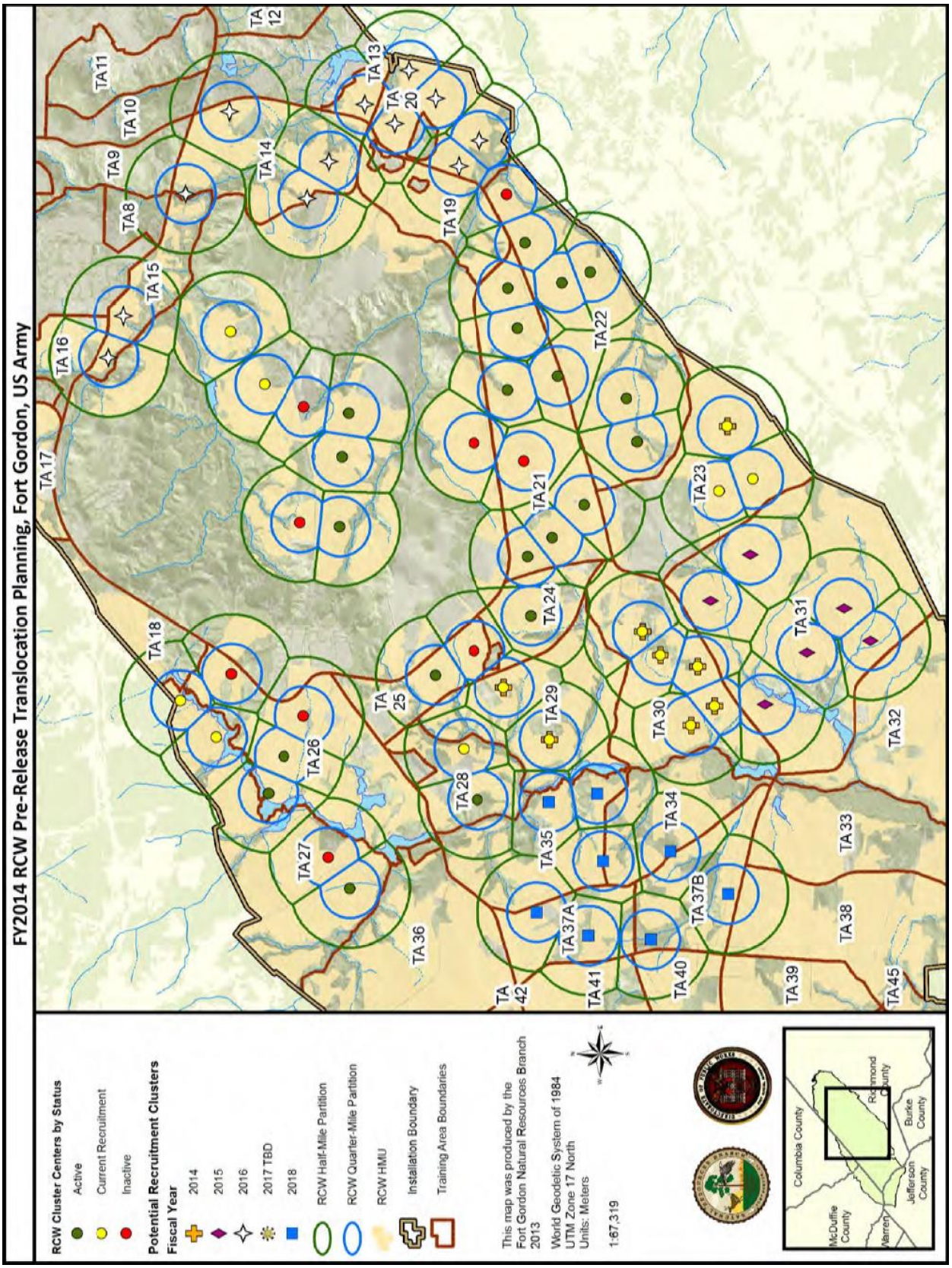

Figure 5. Red-cockaded woodpecker active, inactive, and recruitment clusters on Fort Gordon, Georgia (2014-2018). From U.S. Army Garrison 2014 (Page 3-2).

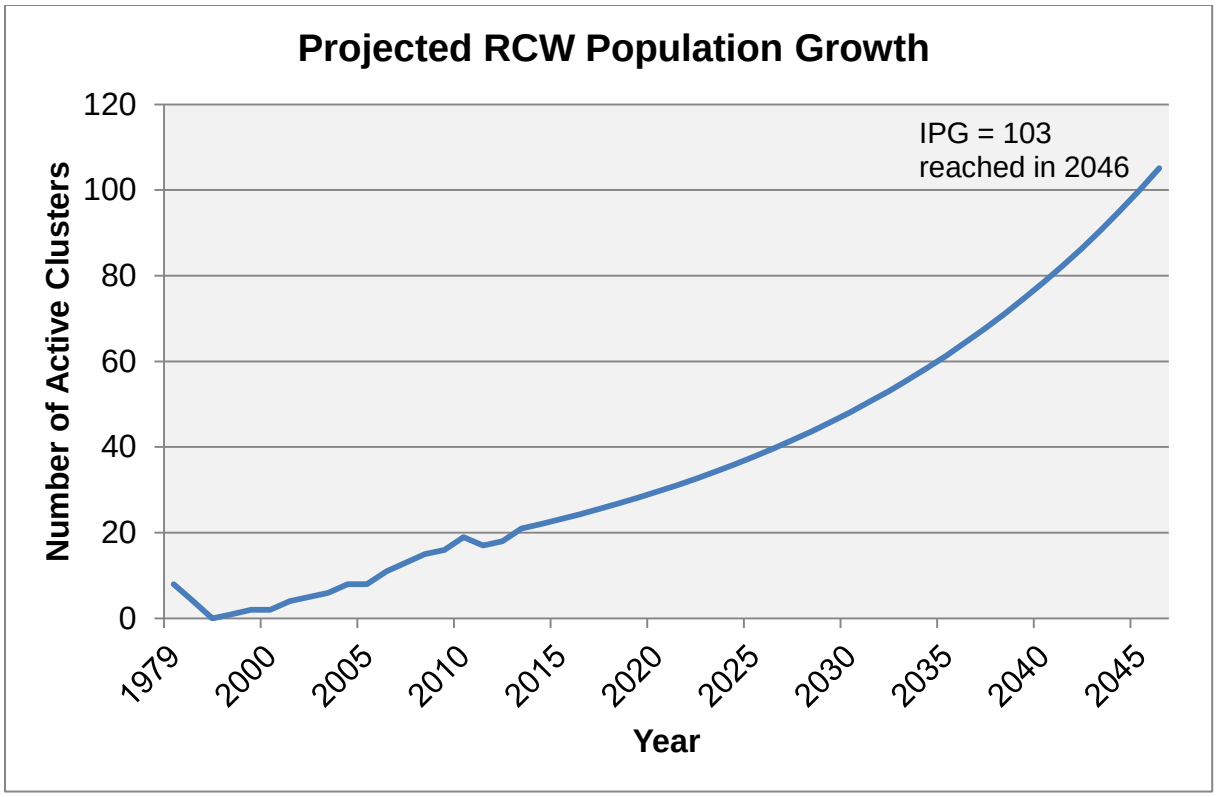

Figure 6. Projected RCW population growth through 2024. From: U.S. Army Garrison, Fort Gordon 2014 (Page 3-3).

Factors affecting species environment within the action area.

Although the Fort Gordon RCW population has grown over the last 15 years, it remains small and vulnerable to several threats on the Installation, including habitat degradation from past land-use management practices, predation, cavity competition from other species, military training activities, possible expansion of the Fort Gordon training mission, and lack of funding to support ongoing and future habitat management.

The Fort Gordon RCW population is vulnerable to natural catastrophes, such as Ice Storm Pax that occurred in February 2014. That storm destroyed or damaged approximately 50% the 18-20 year-old class of longleaf pine, which were important for future foraging habitat.

EFFECTS OF THE ACTION

Under section 7(a) (2) of the Act, effects of the action refers to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated or interdependent with that action, the effects of the proposed action are added to the environmental

baseline to determine the future baseline which serves as the basis for the determinations in this document.

The Service has determined that that there are no interrelated or interdependent actions apart from the action under consideration. The ESMC forms a general planning document that provides management goals and actions for the RCW. All project-level activities will undergo NEPA and section 7 consultations under the Act when proposed.

1. Identification and Delineation of the HMU

The identification and delineation of the HMU is critical to the conservation of the RCW, because, as stated in the BA, the HMU defines the future geographic configuration of the Installation's RCW population (U.S. Department of the Army 2014). Delineation of the HMU is affected by the current, planned, and unforeseen needs of the military mission and the ability of the lands to support RCW habitat. The HMU, as designated in Figure 2, provides a connected habitat that will include enough foraging and nesting areas for 103 active clusters or 70 PBGs. This connectivity also means that necessary RCW management actions such as timber harvest and longleaf pine replanting, mid-story control, and prescribed burning are easier to stage and thus less expensive. Military training sites that contain pine trees, such as sub-training areas and biouvac sites, were kept in the HMU because they provide suitable RCW foraging habitat. The exclusion of portions of the impact areas, unexploded ordnance areas, and the cantonment is reasonable because the limited habitat management options within those areas are of little value to the RCW and their exclusion also reduces conflict between the training mission and the general population areas of the Installation. The official designation of the HMU provides a conservation area that is recognized and respected Installation-wide. Therefore, this action has a **beneficial effect** on the RCW.

2. Determination of the Installation Population Goal

Fort Gordon has followed the method of determining the IPG as recommended by the Service and provided for by the RCW Recovery Plan. Setting a goal and conserving populations within each recovery unit is essential to the survival and recovery of the RCW as a species across its range. Therefore, this action has a **beneficial effect** on the RCW.

3. Ecosystem Management

Implementation of the ecosystem management as described in the BA and the 2014 ESMC follow the 2007 Army Guidelines and the RCW Recovery Plan and will create the habitat necessary to achieve the RCW IPG (as well as benefit other wildlife species dependent on the longleaf pine ecosystem). With the exception of prescribed burning, ecosystem management would not be conducted in the active clusters during the nesting season (April 1 through July 31) and would not directly impact RCW breeding groups. The overall effect of Fort Gordon's ecosystem management , as described in the BA will have a **beneficial effect** on the RCW.

However, individual cavity trees are sometimes injured or destroyed as a result of prescribed burning. Measures will be taken to prevent these losses including raking or burning around cavity trees and using water and fire retardant materials. Even with these precautions, however, local weather changes, higher-than-estimated fuel loads, and other unforeseen factors may cause escaped prescribed burns. Measures will be taken to extinguish prescribed burns that have gotten out of control. An artificial cavity tree will be constructed within 48 hours if a cavity tree is destroyed in an active cluster or provisioned recruitment cluster. If such an incident does occur, it should be immediately reported to the Service. **Prescribed burning will have an overall beneficial effect** because it will create the type of habitat preferred by RCWs, but it **could inadvertently result in the loss of a small amount of cavities trees, eggs, and/or nestlings.**

4. RCW Population Management

Since reintroduction to Fort Gordon, the RCW population on the Installation has been successfully expanded and population management is expected to continue to have beneficial effects. Through the implementation of RCW population management techniques, such as translocation, augmentation, and restoration and construction of cavities, additional breeding groups have been established and nesting habitat has been improved. The implementation of measures to reduce RCW predation and competition for RCW cavities could further benefit Fort Gordon's RCW population by reducing mortality and improving fecundity. Through the annual breeding habitat inspections and population monitoring, Fort Gordon will be able to effectively allocate limited resources to habitats and populations where management efforts will be most beneficial. The marking of clusters, training of the ECC and education of soldiers, and training restrictions would limit potential impacts on Fort Gordon's RCW population. With the exception of emergency construction of artificial cavities, population management activities will not be conducted in active clusters during the nesting season, April 1 through July 31. Based on the successful reestablishment of the population from 0 to 15 active clusters in the past 10 years due to habitat management and translocation, it can be expected that the same management actions, as detailed in the ESMC will continue to increase the population by the 5% annual goal. Increasing the populations of RCWs on Fort Gordon will have **beneficial effects** for the recovery of the species.

Fort Gordon has a Federal Fish and Wildlife Permit under section 10 (a) (1) (A) of the Act to take (harass, capture, band, translocate, install artificial cavity inserts) RCWs for the purposes of banding and monitoring populations and enhancing species recovery. The permit specifies measures that must be taken to minimize injury and mortality probability during these activities. Therefore, incidental take due to monitoring, translocating birds, and provisioning artificial cavities are not addressed in this biological opinion.

Within protected clusters, active cavity trees are marked and a 200 foot buffer is established. Military training within 200 feet of marked cavity trees is limited to military activities of a transient nature (less than 2 hours occupation). Placing 4 unprotected recruitment clusters in an area of essentially no training other than foot traffic and motor vehicles on roads should have **no effect** on the RCW population.

Increasing the RCW population on Fort Gordon requires a high level of habitat management, translocation work, monitoring, and planning and coordination with the training and command staff. Thus far, Fort Gordon has provided the financial resources needed to do this work. The beneficial effects discussed above are dependent on a commitment by Fort Gordon to continue to provide the staff, funding, and cooperation necessary to reach the Installation recovery goal of 103 active clusters or 70 PBGs.

Indirect effects

Fort Gordon is proactively managing for RCWs in portions of the Small Arms Impact Area that have suitable or potentially suitable habitat. These areas are included in the HMU. However, access and thus management activities are limited and habitat degradation could occur within the active RCW clusters. For instance, if the site is not burned frequently enough due to safety hazards, the birds could abandon the site. The SAIA currently has 3 active clusters that could be **adversely affected** due to lack of habitat management.

As the RCW population increases due to the ESMC and RCW population management, RCWs could disperse into areas outside the HMU, such as the cantonment, dud, AIA, surrounding training areas and parts of the small arms impact area. Management of active clusters in those areas is not practicable or safe. Natural dispersal of the RCW into Installation areas outside the HMU will not be discouraged; however, adverse effects could occur if the training mission requires the removal of habitat or birds in these unmanaged areas. Fort Gordon determined that their plan to expand the RCW population could **adversely affect** the birds that moved into those areas outside the HMU. This determination applies to all those areas currently within Fort Gordon's boundaries but outside the currently-defined HMU..

C**umulative effects**

Cumulative effects include the effects of future State, tribal, local or private actives that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of any cumulative effects in the action area.

There is no State or private land within the action area considered in this consultation. Consequently, the Service did not identify any State or private activities that are reasonably certain to occur within the action area that would constitute cumulative effects.

CONCLUSION

The RCW population status is increasing range-wide, state-wide, and on Fort Gordon. Thus, after reviewing this current status, the environmental baseline including ongoing RCW management and military training activities, the effects of the proposed RCW ESMC, and the cumulative effects, it is the Service's biological opinion that the implementation of the RCW ESMC, as proposed, is not likely to jeopardize the continued existence of the RCW.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation under section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the applicant so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The applicant has a continuing duty to regulate the activity covered by this incidental take statement. If the applicant: (1) fails to assume and implement the terms and conditions; or (2) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the applicant must report the progress of the action and its impact on listed species to the Service as specified in the Incidental Take Statement [50 CFR 402.14 (I) (3)].

AMOUNT OR EXTENT OF TAKE

- The Service anticipates that up to three active RCW groups in the SAIA could be taken incidentally due to habitat degradation, because staff may not have access to some clusters because of safety concerns.

- The Service anticipates that one cavity tree, and/ or nest and eggs, could be taken due to prescribed fire through 2018.
- The Service anticipates that one RCW group that naturally disperses into areas outside the HMU, but within Fort Gordon boundaries could be incidentally taken if located in areas not accessible to NRB staff because of safety concerns or during a capture and relocation action to move the bird/birds to an inactive or recruitment cluster within the HMU.

Incidental take for all circumstances mentioned above may be in the form of harm, harass, wound or kill.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of incidental take of RCWs. The Biological Assessment discusses conservation measures that will be implemented according to ESMC and the 2007 Army Guidelines. The RPMs discussed below are included to emphasize the actions needed to ensure that the conservation measures will take place and thus reduce the incidental take.

1. Provide sufficient staff, funding, and cooperation to ensure that the ESMC is fully implemented and maintained to ensure that the Installation Population Goal can be attained.

2. Maintain close communication among NRB, military training staff, and upper level management to ensure that new projects will not impact RCW management or habitat.

3. Ensure that annual monitoring results are fully evaluated and discussed with the Service. This information will be used to continue to evaluate implementation of the RCW ESMC and levels of incidental take.

4. For any RCWs that naturally disperse and form active clusters on Fort Gordon, outside of the HMU, evaluate the adverse impact of leaving the birds in place vs moving them to an inactive or recruitment cluster within the HMU. If translation to an area within an HMU is determined to be safe and the best option for the RCWs, authorized translocation procedures should be followed.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, Fort Gordon must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. Secure a mechanism to provide the projected annual costs and estimated staffing requirements necessary to implement and maintain this RCW ESMC and ensure population growth and maintenance into the future until the Installation population goal of 103 active clusters or 70 PBGs is attained.

2. Continue to incorporate RCW conservation and education in all of Fort Gordon's military, recreation and cantonment expansion programs and maintain close coordination with NRB staff. Make every effort to place new projects at least 200 feet away from active clusters and recruitment sites.

3. Provide the Service an annual briefing in addition to the written report referenced in the RCW ESMC. The briefing should include, at a minimum, the status of ESMC implementation, progress towards meeting annual goals, training impacts, and a site inspection of active clusters and habitat improvements.

4. Follow Fort Gordon's Federal Fish and Wildlife Permit conditions for translocation of birds on Fort Gordon from outside the HMU to inside the HMU. Only persons authorized by the current permit may translocate birds at the time of day and time of year as specified in the permit. The translocated birds must be monitored and appropriate and reasonable measures should be taken to ensure their survival.

5. If a dead RCW is found on Fort Gordon, personnel should wrap bird and place in freezer immediately and report incident to Fort Gordon's NRB staff. If an injured RCW is found, personnel should immediately report incident to NRB staff and take injured bird to a previously identified licensed bird rehabilitator if deemed appropriate.

6. Report incidental take including destruction of cavity trees and dead or injured RCWs due to training or RCW management activities to the Service office at Athens, Georgia by telephone or email within two working days. Provide a letter with details of the incident within five working days. Provide the final disposition of such incidences in the annual report. Report death or injury due to natural disasters to the Athens Field Office as soon as possible, by mail (105 West Park Drive, Athens, Georgia 30606), phone (706-613.9493) or by email (Deborah_C_Harris@fws.gov).

The Service anticipates that no more than three active RCW clusters in the SAIA, and one cavity tree in the HMU due to prescribed burning, and any active cavity tree that occurs within Fort

Gordon boundaries but outside the HMU may be incidentally taken as a result of the proposed action. The reasonable and prudent measures, along with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If during the course of the action, this level of incidental take is exceeded; such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a) (1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on a listed species or critical habitat, to help implement recovery plans, or to develop information. We recommend implementation of the following conservation recommendations:

1. Continue to participate in the RCW regional recovery translocation and monitoring efforts.

2. Within the next five years, develop protocols and public relations campaigns with Augusta officials, EPA air quality representatives, and others to minimize conflicts between air quality and prescribed burning for RCW management.

3. Assist private landowners adjacent to Fort Gordon in restoring native longleaf pine habitats for the benefit of the RCW.

The Service requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the biological assessment we received on June 3, 2008. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. Also, in accordance with the 2007 Army Guidelines, formal consultation will be reinitiated within 30 days of discovering a 10% decline in active clusters from the previous year or a 10% decline in active clusters over a 5 year period. In instances

consultation will be reinitiated within 30 days of discovering a 10% decline in active clusters from the previous year or a 10% decline in active clusters over a 5 year period. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The above findings and recommendations constitute the report of the Department of the Interior on implementing the 2014 Fort Gordon ESMC. We appreciate the cooperation of your staff in the preparation of this biological opinion. If you have any questions about this opinion or consultation, please contact staff biologist Deborah Harris of our Athens office at (706) 613-9493, extension 224.

Sincerely,

FOR Donald Imm, Ph.D.
Field Supervisor

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