February 25, 2002

MEMORANDUM

TO: ARD, Ecological Services, Southeast Region

FROM: Field Supervisor, Raleigh Field Office, Raleigh, North Carolina

SUBJECT: Biological Opinion on Issuance of a Permit to Mrs. Clarine Cooper and Mrs. Canzata Turner for Incidental Take of the Red-cockaded Woodpecker, Gates County, North Carolina (**TE048566-0**)

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the proposed incidental take permit (ITP) application for a single group of red-cockaded woodpeckers located in Gates County, North Carolina and its effects on the red-cockaded woodpecker (RCW) (*Picoides borealis*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.S. 1531 et seq.). The habitat conservation plan (HCP) and associated ITP application were received on September 29, 2001.

This biological opinion is based on information provided in the HCP, ITP application, telephone conversations, field investigations, and other sources of information. An administrative record of this consultation is on file in the Service's Raleigh, North Carolina, Field Office.

CONSULTATION HISTORY

October 30, 2000 - Mr. John Hammond of the Service's Raleigh Field Office met onsite with the Applicants and Mr. Paul Simpson of Gerald W. Frazier Consulting Foresters to discuss options for conducting a timber sale on the applicant's property.

December 15, 2000 - the Service's Raleigh Field Office received a letter from Gerald W. Frazier Consulting Foresters requesting guidance for helping the Applicants legally conduct the proposed timber sale.

January 17, 2001 - the Service issued a letter outlining the process to be followed in accordance with Section 10(a)(1)(B) of the Act and provided guidance for the consultant to prepare a HCP for the proposed timber sale.

May 7, 2001 - The Service's Raleigh Field Office received a draft HCP and application with a check for $25.00 from Gerald W. Frazier Consulting Forester.

August 21, 2001 - The Raleigh Field Office faxed the Service's proposed changes to the draft HCP to the consultant.

September 6, 2001 - The Raleigh Field Office received a revised draft HCP from the consultant.

September 14, 2001 - Following a telephone conversation between Mr. Hammond and Mr. Gerald W. Frazier, the consultant faxed acknowledgment of additional agreed upon changes.

December 18, 2001 - The Raleigh Field Office faxed further recommended changes in the HCP regarding mitigation and funding to the consultant.

December 21, 2001 - The consultant indicated that the Applicants would not agree to the proposed changes and suggested that the Applicants would be willing to contribute $13,000 to a fund for mitigating impacts to RCWs in lieu of arranging for the mitigation of take with a third party. The Service indicated that this alternative would be acceptable.

January 2, 2002 - The Raleigh Field Office received a letter from the consultant indicating that the Applicants would agree to contribute $13,000 from timber sales receipts to the Service for the purpose of mitigating take of red-cockaded woodpeckers.

BIOLOGICAL OPINION

Description of the Proposed Action

The Applicants propose to harvest 86 acres of merchantable pine timber (approximately 480,989 board feet) containing one active RCW group located on family-owned land in Gates County, North Carolina. The timber sale is expected to result in the loss of this RCW group. Thus, the Applicant is seeking to obtain an ITP for one group of RCWs on their property in exchange for mitigation elsewhere.

A complete project description can be found in "A Habitat Conservation Plan," submitted by Gerald W. Frazier Consulting Foresters for Mrs. Clarine B. Cooper of Norfolk, Virginia and Mrs. Canzata B. Turner of Petersburg, Virginia and is incorporated by reference. The Applicant has developed an HCP pursuant to the ITP requirements provided in the Act and implementing regulations. Implementation of the HCP would minimize and mitigate the impact of the proposed take. The possible loss of one group of RCWs and the habitat required for its survival will be compensated for by implementation of the following activities:

To minimize impacts to the RCW from the proposed timber sale, the Applicant will incorporate the following measures in the project:

1. The Applicant agrees to allow Fish and Wildlife Service, North Carolina Wildlife Resources Commission and their designees to enter the property for general

purposes, determine status of the cluster, and perform RCW group checks.

1. Allow capture and translocation of the RCWs from the group residing on the Cooper-Turner Tract to a suitable recipient population.

2. Allow Fish and Wildlife Service, North Carolina Wildlife Resources Commission and The Nature Conservancy personnel to check the cluster following timber harvest to determine if the site is still active. Data from this monitoring will be recorded and made available in an annual report.

To mitigate for effects of the proposed taking of the RCW group and it's habitat, the Applicant will contribute the sum of $13,000 into an existing National Fish and Wildlife Foundation fund for the expressed purpose of establishing mitigation for incidental take of the red-cockaded woodpecker. The funds provided by the applicant will be used specifically for the formation and conservation of a new group, within the Northeast North Carolina/Southeast Virginia essential support population, by trans-locating juvenile RCWs from a donor population into an area of better habitat within the population.

Status of the Species/Critical Habitat

Species/critical habitat description

The U.S. Department of the Interior identified the RCW as a rare and endangered species in 1968 (U.S. Bureau of Sport Fisheries and Wildlife 1968). In 1970, the RCW was officially listed as endangered (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 for the RCW. The current distribution of this non-migratory, territorial species is restricted to the remaining fragmented parcels of suitable pine forest in 11 southeastern states; it has been extirpated in New Jersey, Maryland, Tennessee, Missouri, and Kentucky.

Although populations have become more fragmented and isolated, the RCW is still rather widely distributed. RCWs survive as very small (1-5 groups) to large (groups of 200 or more) populations. Small populations in the interior are found in Southeastern Oklahoma, Southern Arkansas, and Southeastern Virginia. The small population in Northeastern North Carolina is the subject of this biological opinion. The majority of the largest populations remaining are located in the longleaf pine forests of the Sandhills of North and South Carolina, and the Coastal Plain longleaf pine forests of North and South Carolina, Georgia, Florida, and Louisiana; a relatively large population also occurs in the loblolly/shortleaf pine forests of Eastern Texas.

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 roost and nest cavities 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 until 90-100 and 75-90 years of age, respectively (Clark 1992a; Clark 1992b). Each group member has its own cavity, although there may be multiple cavities in one 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.

RCWs live in social units called groups; this family unit usually consists of a breeding pair, the current years offspring, and one or more helpers (adults, normally male offspring of the breeding pair, from previous year) (Walters 1990). Walters (1990) and Delotelle and Epting (1992) have documented instances of female helpers. A group may contain from 1-9 birds, but never more than one breeding pair. Groups maintain year-round territories near their roost and nest trees. Juvenile females from the current years breeding season normally disperse on their own, prior to the next breeding season, or are driven from the group's territory (see Walters et al. 1988, for additional RCW sociobiological/cooperative breeding information).

Excavation of cavities in living pines is a difficult process which may take 10 months to several years to complete (Hooper et al. 1980, Walters 1991). Because suitable trees are scarce and cavity construction is a significant investment of time and energy, cavities are a critical determinant of habitat quality, and are the ecological basis of group formation (Copeyon et al. 1991).

Although, in some habitat types they will use smaller pine trees as foraging substrate (Delotelle et al. 1987) they prefer pines greater than 10" diameter at breast height (DBH) (USFWS 1985; Hooper and Harlow 1986). Determining the number of pines required to provide the arthropod biomass needed to meet their year-round dietary requirements is still being researched. Many complex and interrelated factors undoubtedly contribute to the answer, including condition of understory plant community, annual weather fluctuations, forest type, soils, physiographic province, season-of-year, fire frequency, and intensity, etc. Currently, following the biological needs of the species, the number of acres required to supply adequate foraging habitat depends on the quantity and quality of tree stems available.

Population dynamics

Reduction in population size may jeopardize the continued existence of any endangered species because the longer a species remains at low population levels, the greater the probability of extinction from chance events, inbreeding depression, or additional environmental disturbance (Gilpin and Soule 1986, Goodman 1987a, 1987b, Pimm 1991, Shaffer 1987, Underwood 1989). Although population size has a clear relationship to a species' extinction probability, it can be less important than population variability. Large populations may not protect a species from extinction in the face of extreme environmental disturbance (Pimm 1991, Underwood 1989,

Shaffer 1987).

The RCWs currently residing on the Cooper-Turner Tract are to be translocated to a recipient sub-population within the northeastern North Carolina/southeastern Virginia population. This population is presently relatively small, comprised of groups on federal lands: Alligator River and Pocosin Lakes National Wildlife Refuges, Dare County Bombing Range; and private lands, including The Nature Conservancy's Piney Grove Preserve. Successful translocation would help conserve the genetic resource represented within this population, and help stabilize the small at-risk Virginia population.

Long-term viability of a RCW recovery or a support unit, in genetic terms, depends upon the presence of an adequate number of breeding individuals for the natural processes that increase genetic variability (e.g., mutation and recombination) to offset the natural processes that decrease genetic variability (e.g., genetic drift and inbreeding). Any prediction of a population's variability should not only be based upon these genetic factors, but also must consider the population's ability to survive population fluctuations due to population characteristics and environmental fluctuations (Koenig 1988) or environmental catastrophes. Although population models to calculate the population size needed to withstand such irregular events are not well-developed, it is generally agreed that population characteristics and environmental fluctuations necessitate an increased number of breeding individuals to ensure the long-term persistence of a population in an area (Koenig 1988). Because of the cooperative breeding nature of the RCW, their populations may require fewer breeding individuals to meet population characteristic-fluctuations than to withstand genetic changes (Walters, pers. comm 1996).

Fluctuations in species' population over time can affect significantly the probability of its extinction (Pimm 1991). As a population fluctuates, one or more factors can reduce the population to a level from which it may not recover. Consequently, actions increasing a species' population fluctuation may affect the continued existence of the species more significantly than a reduction in population size. Population fluctuation is affected by several characteristics of a species' life history, including: unstable age distributions and reproductive rates; widely variable mortalities resulting from unstable food resources or predation; population density; sex ratios; recolonization rates; and genetic viability (Pimm 1991, Underwood 1989).

Reproductive rates, population density, and recolonization rates may influence RCW population variability more than mortality rates, sex ratios, and genetic viability. RCWs exhibit relatively low adult mortality rates; annual survivorship of breeding male and female RCWs is high, ranging from 72 to 84 percent and 51 to 81 percent, respectively (Lennartz and Heckel 1987; Walters et al. 1988; Delotelle and Epting 1992).

Sex ratios are usually described as 50:50, as reported in LaBranche 1992 and Walters 1990. At least one study (Francis Marion National Forest) reported significantly different fledgling sex ratios than 50:50 (Gowaty and Lennartz 1985). Because most managers and researchers do not report significant differences from the expected 50:50 ratio, it is assumed that they are finding "normal" ratios. Reasons for any differences reported in sex ratios of populations are uncertain,

as are the implications for population variability.

RCW genetic research to date does not suggest that genetic viability is a serious concern at this time; however, genetic variability will decrease in small, isolated populations. Stangel et al. (1992) reported no significant relationship between heterozygosity and population size (when 2 very small populations, of the 26 sampled, were removed from the analysis); additionally, although allelic diversity was correlated with population size and had eroded in some small populations, most populations were still characterized by "normal" levels of genetic variability. Haig and Rhymer (1994) examined the genetic variation among 14 RCW populations, and concluded that RCWs do not appear to have major genetic differences among Regional populations.

Reproductive rates for RCWs are variable. An average of 10 percent of groups within a given population do not nest. The number of groups that fail to nest in a given season ranges from three percent to 21 percent (USFWS 2000). Walters et al. (unpubl.data 1988), based on 8 years (1981-1988) of data for the Fort Bragg RCW recovery unit, found a range of 1.11 to 1.85 fledglings per breeding group; additionally, in some years many groups failed to nest, while in other years most groups attempted to nest.

Although the relationship between RCW population viability and population density is not well understood, some aspects of population density as it relates to group size, and population trend have been examined. Conner and Rudolph (1991) found that in sparse populations, as fragmentation increased, RCW group size and the number of active clusters decreased. Hooper and Lennartz (1995) suggested that populations with less than 4.7 active clusters within 1.25 miles on average had critically low densities that inhibited population expansion. Beyer et al. (1996) also speculate that low RCW densities (4.8 active clusters within 1.25 miles) on the Wakulla Ranger District, Apalachicola National Forest may be implicated in that sub-population's declining trend.

RCW populations can be increased dramatically because of their ability to "recolonize" unoccupied habitat made suitable (everything else being equal), by providing the limiting resource of cavity trees, via artificial cavities (Copeyon 1990, Allen 1991). Several recent examples of significant population expansions have been documented, (Gaines et al. 1995; Richardson and Stockie 1995, Watson et al. 1995) artificial cavity provisioning has been the common denominator. Walters et al. (1992a) conclusively demonstrated that unoccupied sites remain so because they lack suitable cavities. Walters et al. (1992b) cooperative breeding ecological model for RCWs strongly suggests that individual RCWs are better off from a fitness perspective (first year survival, rate of successful dispersal, reproductive success at early ages) competing for a high-quality territory (i.e., one with cavity trees), than accepting a territory without this critical resource.

Prior to the routine use of artificial cavities for stabilizing and expanding populations, most populations were declining, and many had been extirpated (Baker 1983; Costa and Escano 1989). While acknowledging that most RCW populations have not increased on their own (i.e., in the absence of artificial cavities), it is equally important to point out that the two largest

populations in the 1980's, the Francis Marion National Forest recovery unit and the Apalachicola Ranger District recovery unit, increased by approximately 10 percent between 1980/81 and 1987/88 (Francis Marion National Forest) and 1990/91 (Apalachicola Ranger District) (Hooper et al. 1991; Costa et al., in prep.; and unpubl. USFS data). The common denominators in these landscapes were large (480-500 active clusters)/dense populations, availability of well-distributed relic longleaf pines, and open part-like forests, a result of frequent prescribed fire since the 1940/50's.

Population stability, the ability of a species' populations to resist change, or dramatic fluctuations over time, directly affects a species' sensitivity to the adverse effects of a proposed action. While many RCW populations have been extirpated, many others, some very small and seemingly demographically isolated, have persisted for a remarkable period of time, i.e., 10+ years; although their long-term survival is certainly not secure. This long-term (10+ years) survival (stability is not an accurate description, as most of these populations have been slowly declining) of small populations is probably related to: long life span (10-year old wild birds are not uncommon); predation/exposure protection afforded by a permanent, secure roost chamber; relatively consistent number of fledgling/successful nest; and, cooperative behavior at territory defense and raising young.

Most larger (50+ active clusters) populations are not increasing and can only be classified as stable. The instability of declining populations is frequently related to poor habitat conditions (midstory development, young forests with few potentially suitable cavity trees, habitat loss and landscape fragmentation), and the population isolation of individual groups and/or the intra-population distribution of groups, i.e., density, brought about over time by the gradual loss and degradation of suitable habitat. Intensive management designed to improve habitat conditions at the critical resource, the cluster/cavity tree complex, has contributed to the stability of both large and small populations. Primary management has been the installation of artificial cavities and hardwood midstory control. Additionally, the benefits afforded large/dense populations regarding potential breeding opportunities, accounts in part, for their stability.

Status and distribution

The reasons for the RCWs classification as endangered in 1968 were its perceived rarity, documented declines in local populations, and presumed reductions in available nesting habitat. Although professional opinion was widely solicited to make an objective assessment of the RCWs status, much of the information provided was anecdotal. No systematic censuses have been conducted range wide, and no quantitatively-derived estimates of landscape level population size or distribution, nor of availability and trends of nesting habitat exist.

Until very recently, most RCW populations, regardless of location and/or ownership, were considered at best stable, but more likely declining. Jackson (1978a) estimated the distribution of RCWs by ownership to be 83.6 percent Federal, 8.6 percent state/municipal, and 5.6 percent private; and suggested that because of their extensive habitat requirements, the survival of the RCW on most private lands is problematic. Baker (1983) documented the decline (from 11 nests to 0) and extirpation of a private land population between 1970 and 1981. Ligon et al. (1986)

pointed out that nowhere were RCWs known to be increasing in numbers. Costa and Escano (1989) documented RCW population declines in at least 10, and perhaps in as many as 17, populations on National Forests; and they reported the extirpation of five Forest Service populations. James (1991) studying the Wakulla Ranger District, Apalachicola National Forest RCW subpopulation, concluded that this population was probably declining. Costa et al. (in prep.) and unpublished Forest Service data confirms James' findings. More recently James (1995) estimated that between the early 1980's and 1990, the number of active clusters range wide declined 23 percent; with more than 300 fewer active sites in designated recovery populations. All land ownership categories have suffered declines. In James' (1995) survey, a total of 1,017 and 672 active clusters were reported on private lands in 1980 and 1990, respectively, indicating a 34 percent decrease; a total of 185 and 155 active clusters were reported on state lands in 1980 and 1990, respectively, a 16 percent decrease. Numerous other biologists, in Georgia (Baker, 1995), North Carolina (Carter et al. 1995), South Carolina (Cely and Ferral 1995), and Florida (Cox et al.,1995) have documented declining populations on Federal, State, and/or private lands during the past decade in their respective states.

Recently, however, numerous populations, particularly on Federal lands have shown population increases; Savannah River Station, Department of Energy (Gaines et al., 1995), and Marine Corps Base, Camp Lejeune, Forts Stewart, Benning, Jackson and Polk, Piedmont and Carolina Sandhills National Wildlife Refuges, and Davy Crockett, Osceola and Ouachita National Forests (USFS unpubl. data). The Service expects that most populations on Federal properties will eventually increase as proven management techniques and ecosystem management programs are implemented. A complete list of recovery units and component RCW populations is contained in the July 2000 Technical/Agency Draft Revised Recovery Plan (USFWS 2000), from which the following table is adapted.

Recovery Unit	Current Size (# active clusters on public lands)
Cumberlands	10
East Gulf Coastal Plain	1,035
East Gulf Coastal Plain	568
Ouachita Mountains	28
Piedmont	55
Sandhills	899
South Atlantic Coastal Plain	340

South/Central Florida	235
Upper East Gulf Coastal Plain	267
Upper West Gulf Coastal Plain	205
West Gulf Coastal Plain	486
Gulf Coast Prairies/Marshes	9
Total	4,137

The RCW group residing on the Cooper-Turner Tract is part of the Northeast North Carolina/Southeast Virginia population within the Mid-Atlantic Coastal Plain Recovery Unit. Information provided by the North Carolina Natural Heritage Program indicate that seven RCW clusters exist in North Carolina within 12 miles of the Cooper-Turner Tract. The current activity status of these clusters is not known. There are no RCW clusters within 12 miles of the Cooper-Turner tract in Virginia. An inactive cluster containing three cavities and two starts was detected during surveys for an unrelated project in December 1997. That cluster, located approximately ½ mile south of the project cluster, no longer exists. The next closest known cluster is near the intersection of Sand Banks Road and Tinkam Road, approximately four miles south of the Cooper-Turner Tract.

Analysis of the species/critical habitat likely to be affected

The focus of this consultation is the RCW. Currently no other federally-listed species occurs in the project vicinity in Gates County. This request for an ITP does not contemplate nor anticipate the "taking" of any other listed species.

Environmental Baseline

The action area for this project is defined as the 86-acre tract owned by Mrs. Clarine B.Cooper and Mrs. Canzata B. Turner. There are four cavity trees, occupied by four RCWs within this site. The action area is mostly loblolly and mixed longleaf-loblolly pine forest.

Effects of the Action

The requested ITP would allow for the proposed harvest of approximately 480,989 board feet of pine timber in the 86-acre tract. No cavity trees will be removed. However, since the stand provides habitat for one RCW breeding group, the removal of foraging and potential nesting habitat is expected to result in the extirpation of this breeding group. Without the planned mitigation and minimization, the timber harvest at the Applicants' property would contribute to the decline of RCW habitat on private land in Northeastern North Carolina/Southeastern

Virginia. Successful relocation of the birds to a recruitment cluster on private land within this population may help attenuate this affect. Translocation of the group would help conserve the genetic resource represented within the northeastern North Carolina/southeastern Virginia population, which is currently considered by the Fish and Wildlife Service as an essential support population (USFWS 2000).

Cumulative Effects

Cumulative effects include the effects of future State, local, or private actions 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 did not identify any State, local, or private activities that are reasonably certain to occur within the action area that would contribute as cumulative effects to the proposed project.

Conclusion

After reviewing the current status of the RCW, the environmental baseline for the action area, the effects of the proposed ITP and the cumulative effects, it is the Service's biological opinion that the ITP, as proposed, is not likely to jeopardize the continued existence of the RCW. No critical habitat has been designated for this species, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to 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, the carrying out of 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 proposed HCP and its associated documents clearly identify anticipated impacts to affected species likely to result from the proposed taking and the measures that are necessary and appropriate to minimize those impacts. All conservation measures described in the proposed HCP, together with the terms and conditions described in the section 10(a)(1)(B) permit or permits issued with respect to the proposed HCP, are hereby incorporated by reference as

reasonable and prudent measures and terms and conditions within this Incidental Take Statement pursuant to 50 CFR §402.14(I). Such terms and conditions are non-discretionary and must be undertaken for the exemptions under section 10(a)(1)(B) and section 7(o)(2) of the Act to apply. If the permittee fails to adhere to these terms and conditions, the protective coverage of the section 10(a)(1)(B) permit and section 7(o)(2) may lapse. The amount or extent of incidental take anticipated under the proposed HCP, associated reporting requirements, and provisions for disposition of dead or injured animals are as described in the HCP and its accompanying section 10(a)(1)(B) permit[s].

AMOUNT OR EXTENT OF TAKE ANTICIPATED

The Service anticipates that one RCW group could be taken as a result of this proposed action. The incidental take is expected to be in the form of harm and harassment. Additionally, as a measure to minimize the impacts to the individuals comprising this RCW group, the Service, and/or a qualified designee may capture and translocate any or all of these individuals to a suitable, protected population.

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 and Terms and Conditions

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. The Applicant's HCP described methods to mitigate impacts, to fund such methods, and to deal with unforseen future circumstances. These actions represent reasonable and prudent measures the Service believes are necessary and appropriate to mitigate impacts. Measures as described in the HCP (and in the Project Description above) constitute non-discretionary, binding terms and conditions of the authorizing permit that the Applicants must implement for the exemptions to the section 9 prohibitions against take to apply.

Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the Fish and Wildlife Service Law Enforcement Office at Post Office Box 33726, Raleigh, North Carolina 27636-3726 (919/856-4786). Additional notification must be made to the Fish and Wildlife Service Ecological Services Field Office at Post Office Box 33726, Raleigh, North Carolina 27636-3726 (919/856-4520). Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. The Service believes that no more than one group of RCWs will be incidentally taken. 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.

REINITIATION REQUEST

This concludes formal consultation on this action as outlined in the HCP. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is exceeded (one group of red-cockaded woodpeckers); (2) new information reveals effects of the action that may impact listed species or critical habitat in a manner, or to an extent not considered in this biological opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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