

August 14, 2014

**MEMORANDUM**

To: Jennifer R. Baxter, Industrial Economics, Incorporated (IEc)

From: Stephen Ricks, Field Supervisor, Mississippi Ecological Services Field Office

Subject: Incremental Effects Memorandum for the Economic Analysis of the Proposed Rule to Designate Critical Habitat for the Black Pinesnake

The purpose of this memorandum is to provide information to serve as a basis for conducting an economic analysis for the proposed designation of critical habitat for the black pinesnake. Section 4(b)(2) of the Endangered Species Act (Act) requires the Secretary of Interior (Secretary), and therefore by delegation the U.S. Fish and Wildlife Service (Service), to consider the economic, national security, and other impacts of designating a particular area as critical habitat. The Secretary may exclude an area from critical habitat if she determines that the benefits of exclusion outweigh the benefits of including the area as critical habitat, unless the exclusion will result in the extinction of the species. In part to comply with section 4(b)(2) of the Act and consider the economic impacts of a proposed critical habitat designation, the Service prepares an economic analysis that describes and monetizes, where possible, the probable economic impacts of the proposed regulation. The data in the economic analysis may be used in the discretionary balancing evaluation under section 4(b)(2) of the Act to consider any particular area for exclusion from the final designation.

Determining the economic impacts of a critical habitat designation involves evaluating the “without critical habitat” baseline versus the “with critical habitat” scenario, to identify those effects expected to occur solely due to the designation of critical habitat and not from the protections that are in place due to the species being listed under the Act. Effects solely due to the critical habitat designation equal the difference, or increment, between these two scenarios, and include both (1) the effects of changes in the action to avoid destruction or adverse modification of critical habitat and (2) the costs of increased administrative efforts that result from the designation. These changes can be thought of as “changes in behavior” or the “incremental effect” that would most likely result from the designation if finalized. Specific measured differences between the baseline (without critical habitat) and the designated critical habitat (with critical habitat) may include, but are not limited to, the economic effects stemming from changes in land or resource use or extraction, changes in environmental quality, or time and effort expended on administrative and other activities by Federal landowners, Federal action agencies, and in some instances, State and local governments or private third parties. These are the incremental effects that serve as the basis for the economic analysis.

There are a number of ways that designation of critical habitat could influence activities, but one of the important functions of this memorandum is to explain any differences between actions required to avoid jeopardy to the species versus actions that may be required to avoid destruction or adverse modification of critical habitat. The Service is analyzing whether destruction or

adverse modification would occur based on whether the Federal agency's action is likely "to result in the destruction or adverse modification of habitat which is determined by the Secretary... to be critical." To perform this analysis, the Service considers how the proposed action is likely to affect the function of the critical habitat unit in serving its intended conservation role relative to the entire designation. The information provided below is intended to identify the possible differences for this species under the two different section 7 standards (i.e., jeopardy to the species and adverse modification of critical habitat). Ultimately, however, a determination of whether an activity may result in the destruction or adverse modification of critical habitat is based on the effects of the action to the designated critical habitat in its entirety. The information provided below is intended to identify the possible differences for the black pinesnake under the different section 7 standards for jeopardy to the species and destruction or adverse modification of critical habitat.

The Service recognizes that the "geographical area occupied by the species" at the time of listing as stated under section 3(5)(A)(i) of the Act as the geographical area which may generally be delineated around the species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals). The species may or may not be present within all areas of the geographical area occupied by the species. Thus, the "geographical area occupied by the species" can, depending on the species at issue and the relevant data available, be defined on a relatively coarse scale.

Section 7 consultation is required whenever there is a discretionary Federal action that may affect listed species or designated critical habitat. Section 7(a)(3) also states that a Federal agency shall consult with the Secretary on any prospective agency action at the request of, and in cooperation with, the prospective permit or license applicant if the applicant has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action will likely affect such species. The initiation of section 7 consultation under the jeopardy standard takes place if the species may be present and the action is likely to affect the species.

Because of the relatively coarse scale of analysis allowed by the definition of "critical habitat," the species may or may not be present within all portions of the "geographical area occupied by the species" or may be present only periodically. Therefore, at the time of any consultation under section 7 of the Act, the species of interest may not be present within the action area for the purposes of the section 7 consultation, even if that action area is within the "geographical area occupied by the species." This possibility however, does not change the "geographical area occupied by the species" as stated under section 3(5)(A)(i) for the species. It must however, be reflected in our analysis of the economic impacts of a critical habitat designation. How we implement each critical habitat designation under section 7 is important because even when an area is determined to be within the general geographical area occupied by the species at the time of listing, the specific area where a consultation may occur is based on the presence of the species with the action area and the effects to that species. If a species is not present and the action is not likely to adversely affect the species within a particular area designated as critical habitat at the time of consultation, the economic effects of the consultation would likely be

considered an incremental effect of the critical habitat because in almost all cases, the consultation would not have occurred absent the critical habitat designation<sup>1</sup>. These incremental economic effects would derive both from changes in management, such as costs resulting from restrictions on development and other activities due solely to critical habitat, and changes in the scope of administrative review, i.e., the added costs of considering effects to critical habitat during consultation. Additional administrative costs would also occur in *occupied* areas due to the need to analyze destruction or adverse modification of critical habitat along with jeopardy to the species. In this memorandum, when we describe occupancy for purposes of estimating the probable incremental impacts and therefore, potential economic costs of critical habitat designation, we are referring to the occupancy status within the action area of a particular Federal action at the time of a consultation under section 7 of the Act. In this context the “geographical area occupied by the species” under section 3(5)(A)(i) and the area where a species may be present or may be affected by a particular Federal action under a section 7 consultation may differ. The difference lies in the implementation of the critical habitat designation for purposes of the section 7 consultation, although within the geographical range occupied by the species under 3(5)(A)(i), the species may or may not be present at the time of consultation. The purpose of this memorandum is to describe how the Service will implement the critical habitat designation. In the case of the black pinesnake, we consider the species to be present throughout the critical habitat area for the purposes of Section 7 consultations.

## **I. BACKGROUND**

### **Black pinesnake**

The black pinesnake is one of three subspecies of pinesnakes distributed across the eastern United States. The black pinesnake is endemic to the upland longleaf pine forests that once covered the southeastern U.S. This species historically occurred in Louisiana and current populations are known from 12 counties in Mississippi (Forrest, George, Greene, Harrison, Jackson, Jones, Lamar, Lawrence, Marion, Perry, Stone, and Wayne) and 3 counties in Alabama (Clarke, Mobile, and Washington).

This species occurs on sandy, well-drained soils with an open-canopied overstory of longleaf pine, a reduced shrub layer, and an abundant herbaceous ground cover. Surveys have shown that black pinesnakes spend more than half of their time underground, usually in the trunks or root channels of rotting pine stumps.

The purpose of this regulation is to conserve the black pinesnake and its habitat under the Act. The proposed critical habitat is located in Mississippi in Forrest, George, Greene, Harrison, Jones, Marion, Perry, Stone, and Wayne Counties; and Clarke County, Alabama.

The primary threat to the black pinesnake is the loss or degradation of the longleaf pine habitat. This habitat has been reduced to less than 4 percent of its original extent. The loss of habitat due to silviculture, urbanization, and agriculture was a significant historical threat and remains a current threat to existing black pinesnake populations. Most of the remaining black pinesnake

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<sup>1</sup> (If the area is not currently occupied and there is no critical habitat designated, it is unlikely that a Federal Agency would consult under section 7 in the first instance unless it is clear that activities in the unoccupied areas “may affect” nearby occupied areas.)

habitat exists as fragmented patches and many of the areas are continuing to be degraded due to: fire suppression; forestry practices such as increased stocking densities, bedding, and removal of downed trees and stumps which serve as underground refugia for the snakes; and encroachment of invasive plant species such as cogongrass. Additional threats include increases in the number and width of roads which lead to road mortality and fragmentation; and the intentional killing of snakes by people.

Designation Objectives: The proposed critical habitat units for black pinesnake are based on known occurrence records for the species. The geographic distribution of the nine proposed critical habitat areas, all of which are occupied by the species, were chosen based on several conservation principles including: (1) protection of existing occupied habitat; (2) conservation of genetic diversity; (3) connectivity of habitat; (4) conservation of habitat sufficient to support population viability; and (5) existing threats.

The key physical and biological habitat features identified for this species include:

(1) *Tract size and habitat structure.* A longleaf pine-dominated forest maintained by frequent fire, and primarily having the following characteristics:

- a) Open canopy ( $\leq 70$  percent canopy);
- b) Average pine basal area (20 to 70 ft<sup>2</sup>/ac (4.6 to 16.1 m<sup>2</sup>/ha) per stand;
- c) Reduced woody mid-story ( $< 10$  percent cover);
- d) Abundant, diverse, native groundcover (at least 40 percent cover);
- e) Minimum of 5,000 ac (2,023 ha) of mostly unfragmented habitat.

(2) *Refugia sites and topographic features.* Naturally burned-out or rotted-out pine stumps and their associated root systems, in longleaf pine forests on ridges with elevation of 150 ft (46 m) or greater.

(3) *Soils.* Deep sandy, well-drained soils of longleaf pine forest, characterized by: (a) no flooding or ponding; (b)  $< 15$  percent medium and coarse gravel fragments; (c)  $> 60$  in (152 cm) depth to seasonal high water table; (d)  $> 60$  in (152 cm) depth to the hardpan; (e) textural components equaling  $> 30$  percent sand and  $< 35$  percent clay; and (f) a slope  $< 15$  percent.

Designation Summary: In total, we are proposing nine critical habitat areas encompassing approximately 338,100 ac (136,824 ha) in two states. The proposed critical habitat is located in Mississippi including parts of Forrest, George, Greene, Harrison, Jones, Marion, Perry, Stone, and Wayne Counties; and in Clarke County, Alabama. Unit name, location, ownership, and the approximate area of each proposed critical habitat unit are shown in Table 1. Included lands are under Federal, State, local, and private ownership and subject to different levels of threat from forestry practices; loss of habitat from urbanization or agriculture; fragmentation; fire suppression; and encroachment from noxious weeds such as cogongrass.

We have determined that all of the proposed critical habitat units/subunits are within the area occupied by the black pinesnake at the time of listing and are essential to the conservation of the species. Federal land is predominant in six units/subunits (Unit 1-3, 4A, 4B, 5). Of these six units, Federal lands make up from 58 to 90 percent of the acreage, which accounts for

approximately 70 percent of the total proposed critical habitat acreage. Privately-owned land is present in all nine units/subunits and ranges from 8 percent to a high of 100 percent in one unit and overall accounts for approximately 27 percent of the total proposed critical habitat acreage. In six units/subunits, acreage on U.S. Forest Service lands (De Soto NF) is managed for some or all of the following federally-listed longleaf pine specialists: the threatened gopher tortoise endangered red-cockaded woodpecker, and critical habitat for the endangered dusky gopher frog.

We are not currently proposing to designate any areas outside the geographical area occupied by the species because we have determined unoccupied areas are not essential for the conservation of the species.

TABLE 1. Proposed critical habitat units for black pinesnake.  
 [Area estimates reflect all land within critical habitat unit boundaries.]

Unit	County	Ownership				Total Area
		Federal	State	Local	Private	
<b>MISSISSIPPI</b>						
1 - Ovett	Jones, Wayne	40,637 ac (16,445 ha)			6,540 ac (2,647 ha)	47,177 ac (19,092 ha)
2 - Pineywoods Creek	Perry, Wayne	17,744 ac (7,181 ha)			4,645 ac (1,880 ha)	22,389 ac (9,061 ha)
3 - Cypress Creek	Perry, Greene, George, Forrest	131,045 ac (53,032 ha)	1,768 ac (715 ha)	41 ac (16 ha)	12,289 ac (4,973 ha)	145,143 ac (58,737 ha)
4A - Maxie	Forrest, Stone	8,883 ac (3,595 ha)			6,334 ac (2,563 ha)	15,217 ac (6,158 ha)
4B - Maxie	Forrest, Perry, Stone	28,233 ac (11,425 ha)			16,078 ac (6507 ha)	44,311 ac (17,932 ha)
5 - Howison	Stone, Harrison	9,371 ac (3,792 ha)		640 ac (259 ha)	2,938 ac (1,189 ha)	12,949 ac (5,240 ha)
6 - Marion County WMA	Marion		5,587 ac		6,270 ac	11,857 ac

			(2,261 ha)		(2,537 ha)	(4,798 ha)
ALABAMA						
7- Scotch WMA	Clarke				33,395 ac (13,514 ha)	33,395 ac (13,514 ha)
8 - Fred T. Simpson WMA	Clarke		2,547 ac (1,031 ha)		3,114 ac (1,260 ha)	5,661 ac (2,291 ha)
Total Area		235,915 ac (95,471 ha)	9,902 ac (4,007 ha)	681 ac (276 ha)	91,603 ac (37,070 ha)	338,100 ac (136,824 ha)

Note: Area sizing may not sum due to rounding.

Every critical habitat unit contains all of the physical and biological features for black pinesnake and accommodates all life stages for this species. Therefore, the conservation function of each unit is to provide for all life stages of the species.

*Exemptions Under Section 4(a)(3) and Proposed Exclusion Under Section 4(b)(2) of the Act*

Section 4(a)(3) of the Act provides that: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act, if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.” We analyzed INRMPs developed by military installations located within the range of the proposed critical habitat designation for the black pinesnake to determine if they meet the criteria for exemption from critical habitat under section 4(a)(3) of the Act. We determined that the Camp Shelby INRMP, which covers State and DoD lands within this installation in Perry County, Mississippi, met the criteria for exemption. Thus, we are not including approximately 5,558 ac. (2,249 ha) of habitat in this proposed critical habitat designation because of this exemption.

We are currently considering exclusion of the Camp Shelby Joint Forces Training Center Impact Area which is a 4,647 ac (1.880 ha) area in Unit 3 in Perry County, Mississippi under section 4(b)(2) of the Act due to National Security Concern. We are requesting input from the public on this potential exclusion.

**Table 2: Unit and Co-occurring Listed Species or Existing Critical Habitat**

Unit	Co-occurring Listed Species or Existing Critical Habitat for Listed Species?	Area	Incremental Conservation Efforts Recommended after Critical Habitat Designated?	Major Changes? [refers to conservation recommendations post-CH
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				designation]
1 - Ovett	gopher tortoise and red-cockaded woodpecker	47,177 ac (19,092 ha)	N/A	No
2 - Pineywoods Creek	gopher tortoise and red-cockaded woodpecker	22,389 ac (9,061 ha)	N/A	No
3 - Cypress Creek	dusky gopher frog (critical habitat), gopher tortoise and red-cockaded woodpecker	145,143 ac (58,737 ha)	N/A	No
4A - Maxie	gopher tortoise	15,217 ac (6,158 ha)	N/A	No
4B - Maxie	dusky gopher frog (critical habitat) and gopher tortoise	44,311 ac (17,932 ha)	N/A	No
5 - Howison	gopher tortoise	12,949 ac (5,240 ha)	N/A	No

## II. BASELINE ANALYSIS

### A. Identify conservation plans and regulatory mechanisms that provide protection to the species and its habitat absent the critical habitat designation

#### 1. Conservation Plans/Efforts

The following are ongoing conservation efforts that provide some benefits to the black pinesnake and are considered part of the baseline because these activities will occur with or without critical habitat designation.

The Mississippi Army National Guard (MSARNG) has drafted a Candidate Conservation Agreement (CCA) for the black pinesnake. The purpose of this voluntary agreement is to implement proactive conservation and management measures for the black pinesnake and its habitat throughout the De Soto NF, which includes the MSARNG's Camp Shelby Joint Forces Training Center (Camp Shelby). Parties to the agreement include the U.S. Department of Agriculture, Forest Service; U.S. Department of Defense, Army National Guard; U.S. Department of the Interior, Fish and Wildlife Service; and the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP). The goal of the final agreement will be to significantly reduce the threats to the black pinesnake to improve its conservation status. We are working with the MSARNG, Forest Service, and MDWFP to finalize the CCA. This CCA will

cover conservation needs for the black pinesnake for portions of six of the nine critical habitat areas. The MSARNG is targeting completion of their final CCA by August of 2014.

## *2. Federal Regulations/Acts*

The following Federal laws and regulations provide some benefits to the black pinesnake and are considered part of the baseline because these benefits will continue with or without critical habitat designation.

### *Endangered Species Act*

Concurrent with the proposed designation of critical habitat, the black pinesnake is being proposed for listing as threatened under the Act. Listing provides opportunity for conservation and protection under sections 6, 7, 9, and 10 of the Act. These include cooperative actions with States (Section 6), consultation with Federal agencies for actions that may affect the species (Section 7(a)(2)); protection against take of the species (“take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct) (Section 9); cooperative actions with other entities and landowners for the purpose of scientific or enhancement of survival activities involving take (Section 10(a)(1)(A) permit); and lastly, habitat conservation planning under Section 10(a)(1)(B) of the Act.

In addition, two federally listed species (gopher tortoise, red-cockaded woodpecker) and critical habitat for the federally endangered dusky gopher frog overlap in range with the black pinesnake and occupy longleaf pine forests which are habitat for the black pinesnake (See Table 2 above). As a result, the black pinesnake receives some collateral benefits in areas of habitat overlap. For example, because an open-canopied longleaf pine forest with an abundant herbaceous component is essential for the gopher tortoise and red-cockaded woodpecker, their habitat requirements can help protect similar black pine snake habitat needs. Habitat management and conservation needs are addressed for these species and critical habitat for the listed dusky gopher frog in six units (1-3, 4A, 4B, 5).

In our proposed listing of the black pinesnake, we have included a 4(d) rule which would exempt prescribed burning and exotic weed control from take under Section 9 of the Act. This will reduce the number of Section 7 consultations on the black pinesnake on projects where a Federal nexus exists.

### *National Forest Management Act*

The largest known expanses of suitable habitat for the black pinesnake are on the De Soto National Forest in Mississippi in six critical habitat areas. The black pinesnake’s habitat is afforded some protection under the National Forest Management Act (NFMA) where it occurs on lands managed by the Forest Service that are occupied by federally listed species such as the gopher tortoise and red-cockaded woodpecker. Forest Service rules and guidelines implementing NFMA require land management plans that include provisions supporting recovery of endangered and threatened species. As a result, land managers on the De Soto National Forest have conducted management actions, such as prescribed burning and longleaf

pine restoration, which benefit gopher tortoises and red-cockaded woodpeckers and provide secondary benefits to the snake.

### *3. Federal Land Management*

The following Federal agencies own and manage lands within some of the areas designated as critical habitat. Their ongoing land management activities are considered part of the baseline because they will provide some benefits to the black pinesnake with or without critical habitat designation. For those future proposed activities that may affect the black pinesnake or its critical habitat, section 7 consultation will occur and any conservation actions would likely be considered part of the listing baseline.

The black pinesnake is a longleaf pine inhabitant with most of its occurrences on Federal lands, specifically two ranger districts of the De Soto National Forest in Mississippi. Much of this area is utilized by the Mississippi Army National Guard for training purposes under a Special Use Permit; however this area is still primarily managed by the U.S. Forest Service. The Forest Service strives to manage land according to the Land and Resource Management Plan for National Forests in Mississippi (Forest Plan) and at this time; it does not include management specifically for the black pinesnake. However, as identified in the Forest Plan, longleaf pine habitat is managed for two other listed species, the gopher tortoise and red-cockaded woodpecker (Units 1-5) and for critical habitat of the endangered dusky gopher frog (Units 3 and 4b). Optimal habitat for these species is the same as for the black pinesnake (e.g. open-canopied pine forest, low density of shrubs, abundant herbaceous layer). Thus, the majority of the acreage proposed for critical habitat designation is under a management plan with objectives that would benefit the black pinesnake.

There are no other conservation plans or protections specifically targeting the black pinesnake that we are aware of at this time.

### *4. Tribal Regulations*

There are no tribal lands included in the proposed designation of critical habitat for the black pinesnake.

### *5. State Laws that may provide protections/conservation*

The following wildlife laws by the states where the black pinesnake occurs provide some benefits to the species and are considered part of the baseline because these benefits will continue with or without critical habitat designation.

The black pinesnake is classified as endangered by the Mississippi Department of Wildlife, Fisheries and Parks. In Alabama, it is protected as a non-game animal. However, the greater problem of habitat destruction and degradation is not addressed by these designations; therefore, there is no protection from projects that would destroy or alter the habitat conditions needed by the species.

## **B. Federal agencies and other project proponents that are likely to consult with the Service under section 7 absent the critical habitat designation**

In the baseline scenario, section 7 of the Act requires Federal agencies to consult with the Service to ensure that any action authorized, funded, or carried out will not likely jeopardize the continued existence of the black pinesnake.

Some of the Federal agencies and projects that would likely go through the section 7 consultation process whether or not critical habitat is designated include actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act); actions on lands owned by the U.S. Forest Service or Department of Defense; or actions that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Energy Regulatory Commission, Federal Aviation Administration, or the Federal Emergency Management Agency).

Examples of activities that could significantly fragment or alter the suitability of black pinesnake habitat include, but are not limited to: timber management including clear-cutting, site preparation involving ground disturbance, and conversion to densely-stocked pine plantations; unlawful chemical applications (pesticides and/or herbicides); conversion of timber land to other uses (agricultural, urban/residential development); and constructing new structures or roads.

## **C. What Types Of Project Modifications Are Currently Recommended Or Will Likely Be Recommended By The Service To Avoid Jeopardy (i.e., The Continued Existence Of The Species)?**

There is a close relationship between the health of black pinesnakes and the health of its habitat. Alterations of habitat that diminish the value (e.g., actions which alter forest structure or reduce tract size) and the amount of habitat available for the black pinesnake are likely to affect the population size and distribution, as well as cause further range declines, and could, therefore, appreciably reduce the likelihood of survival in the wild and constitute jeopardy. The results of consultation under the adverse modification and jeopardy standards are likely to be similar because the physical and biological features that define critical habitat are also essential for the survival of the black pinesnake.

Project modifications likely to be recommended by the Service to avoid jeopardy would generally seek to relocate project activities outside of occupied habitat or in close proximity of such areas to avoid ground- or vegetation-disturbance in occupied areas. Specifically, the recommendations would seek to avoid jeopardy by not filling in or destroying underground refuge sites used by black pinesnakes (such as stump holes); and not conduct activities that would limit or eliminate the amount of available herbaceous groundcover necessary to support the prey base of the black pinesnake.

### *1. Provide Examples Representing Typical Recommendations To Avoid Jeopardy.*

Recommendations for avoiding jeopardy include avoiding activities such as: clear-cutting and disking that involve significant ground disturbance; construction or widening of highways,

agricultural conversion, or urban conversion of upland pine forests in occupied habitat; activities that limit or eliminate the open-canopy forest condition, including planting pine plantations at high stocking density; and activities that limit or eliminate the abundant herbaceous native groundcover, including broad-scale herbicide application that is not specifically targeted to eliminate hardwoods or control invasive species.

*2. What Types Of Project Modifications Might The Service Make During A Section 7 Consultation To Avoid Jeopardy?*

Project modifications may include seeking to relocate project activities outside of occupied habitat or in close proximity of such areas to avoid ground- or vegetation-disturbance in occupied areas. Other modifications may include reducing the amount of area impacted or requiring the retention of downed logs as well as other recommendations outlined above in 1.

**IV. ONCE CRITICAL HABITAT IS DESIGNATED, WILL THE OUTCOME OF SECTION 7 CONSULTATIONS IN OCCUPIED HABITAT BE DIFFERENT?**

Once the proposed listing and proposed critical habitat designation for black pinesnake take effect, the Service does not anticipate differences in the outcome of section 7 consultations in occupied habitat because actions that affect occupied habitat and its ability to function normally would typically also adversely affect the snake.

**III. INCREMENTAL IMPACTS ANALYSIS**

**A. ADVERSE MODIFICATION ANALYSIS**

**Explain Additional Recommendations The Service Will Make When Considering Both Jeopardy And Adverse Modification.**

Project modifications requested by the Service to avoid jeopardy to the species are the same as those likely to avoid adverse modification of critical habitat.

*1. What Federal Agencies Or Project Proponents Are Likely To Consult With The Service Under Section 7 With Designation Of Critical Habitat? What Kinds Of Additional Activities Are Likely To Undergo Consultation With Critical Habitat?*

Federal agencies and project proponents that would likely or potentially go through the section 7 consultation process if critical habitat is designated include the same agencies that would go through consultation without designation of critical habitat, as stated above on page 9.

*2. Provide Examples Representing Typical Recommendations to Avoid Adverse Modification of Critical Habitat Applicable Across A Broad Suite Of Projects. Where Significant Uncertainty Exists, Provide Ranges Of Potential Outcomes.*

Examples of recommendations are described above under “Typical Recommendations to Avoid Jeopardy” as presented in Section II, C., above.

3. *What Types Of Project Modifications Might The Service Make During A Section 7 Consultation To Avoid Destruction Or Adverse Modification Of Critical Habitat That Are Different Than Those For Avoiding Jeopardy?*

None.

4. *If The Species is Only Seasonally Or Sporadically Present Would The Outcome Of The Consultation Be The Same If Present at Time of Section 7 Consultation?*

N/A.

5. *What Project Proponents Are Likely To Pursue HCPs Under Section 10 After The Designation Of Critical Habitat?*

None known at this time.

## **B. UNOCCUPIED AREAS OR AREAS WHERE THE SPECIES IS NOT PRESENT**

**Does the designation include unoccupied habitat that was not previously subject to the requirements of section 7?**

No.

## **C. BEHAVIOR CHANGES**

**Will the designation provide new information to stakeholders resulting in different behavior?**

We do not anticipate any behavior changes as a direct result of the designation.

## **D. ADMINISTRATIVE EFFORTS**

**How Much Additional Administrative Effort Will Be Spent To Address Adverse Modification In Section 7 Consultations With Critical Habitat? Estimate The Difference Compared To Baseline.**

We have no baseline for administrative efforts undertaken by the Service, as critical habitat is being designated concurrent with the listing for this species. Previous studies by IEC have indicated that a range of 10 to 15% increase in administrative costs is generally expected when addressing adverse modification in addition to jeopardy in a consultation.

## **E. PROBABLE PROJECTS**

There are no new probable projects within the proposed critical habitat areas; however, ongoing coordination efforts that will likely result in future Service consultation include two Environmental Impact Statements (EISs) in Mississippi. The first EIS is from the National Guard for renewal of a Special Use Permit (SUP) for military activities on the De Soto National Forest and implementation of installation mission support activities at Camp Shelby, Mississippi. This EIS is for the time period of 2008 to 2028, and was created to document two separate Records of Decision; one by the National Guard Bureau dealing with the authorization, funding, planning, and implementation of the continued military training at Camp Shelby, and the second by the U.S. Forest Service regarding the renewal of the SUP for specific permitted uses of National Forest lands for military activities.

Environmental consequences for the proposed actions (renewal of the SUP and construction, operation, and maintenance of several new project facilities at Camp Shelby) were analyzed. The new construction project proposals described in this EIS have potential direct and/or indirect significant effects on habitat for black pinesnakes. Although these effects were analyzed for the black pinesnake since it was a candidate for federal listing at the time the EIS was prepared, this document will require further consultation since Camp Shelby covers a large percentage of proposed critical habitat in Unit 3.

Current coordination efforts with the U.S. Forest Service may also require additional future consultation to address the EIS for the Land and Resource Management Plan for National Forests in Mississippi (Forest Plan). The proposed action covered under the EIS is to produce a revised plan which will guide resource management activities on the National Forests in Mississippi for the next 10 to 15 years. This EIS and revised Forest Plan are currently under review. Forest plans are required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA). Currently the Forest Plan does not have habitat or management recommendations specifically targeting black pinesnakes; however, the majority of proposed critical habitat units/subunits 1,2,3,4a, 4b, and 5 are located on the De Soto National Forest. There is currently critical habitat designated for the dusky gopher frog on the De Soto NF as well, and the Forest Plan addresses this by recognizing that the establishment of this critical habitat should assist the Forest in further management of this species by creating a focal point for management needs. The continuity of habitat over large areas should focus management, preclude isolation and allow for dispersal of the species across the landscape. The designation of critical habitat for the black pinesnake on the National Forest should initiate similar consideration in the Forest Plan.

To address the current dusky gopher frog critical habitat units located on the De Soto NF, the National Forests in Mississippi have followed a Memorandum of Understanding with the Service and Mississippi Department of Wildlife, Fisheries, and Parks which states that the Forest Service shall cooperate in the monitoring of the species and its habitat; manage timber stands within critical habitat units in a manner appropriate for the protection of the species, with a focus on maintenance and restoration of longleaf pine ecosystem; and cooperate on the development of a plan to create additional habitat.

## **1. Land Use Sectors Within The Critical Habitat Designation Area**

Unit 1 (Ovett): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 2 (Pineywoods Creek): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 3 (Cypress Creek): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 4A (Maxie): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 4B (Maxie): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 5 (Howison): Agriculture, Conservation/Restoration, Development, Forest Management, Silviculture/Timber, Transportation, Utilities.

Unit 6 (Marion County WMA): Agriculture, Development, Forest Management, Transportation, Utilities.

Unit 7 (Scotch WMA): Agriculture, Development, Forest Management, Transportation, Utilities.

Unit 8 (Fred T. Simpson WMA): Agriculture, Development, Forest Management, Transportation, Utilities.

A federal nexus exists for any actions undertaken by a federal agency which would be the majority of the area in Units 1 through 5 which are primarily owned by the U.S. Forest Service. The specific actions likely to be undertaken by them include: Conservation/Restoration, Forest Management, and Silviculture/Timber. For those inholdings within Units 1 through 5, which are not under federal ownership, conversion of lands for Agriculture or Development may require consultation, if it involves federal funding or requires a federal permit.

Units 6 through 8 are State-owned or private lands. A federal nexus may exist for land conversion to Agriculture and Development but such is unlikely for Forest Management.

Land clearing for roads (Transportation) and Utilities will often have a federal nexus on all lands within the critical habitat units.

**Are there energy supply, distribution, or use sectors that are reasonable likely to be affected by this critical habitat designation?** No

## **2. Consultation History Within The Critical Habitat Designation Area**

Primary consultation history within the proposed critical habitat designation area has involved consultation with the U.S. Forest Service on the EIS for the Forest Plan (detailed above under Probable Projects). Although the black pinesnake was not specifically mentioned in the management recommendations, the Forest Plan included conservation measures for the threatened gopher tortoise, endangered red-cockaded woodpecker, and critical habitat for the endangered dusky gopher frog; all of which also utilize the upland longleaf pine ecosystem. The conservation measures detailed in the Forest Plan were primarily determined to be adequate and not likely to adversely affect listed species. The Service's Biological Opinion did conclude that implementation of the Forest Plan may have direct adverse impacts to some dusky gopher frogs, most likely to be either as injury or death from direct exposure to management actions. However, we do not expect that these adverse impacts will elicit population or species-level responses, and that the action is not likely to jeopardize the continued existence of the species. The impacts of the conservation actions set forth in the Forest Plan are expected to be wholly beneficial to the black pinesnake and its habitat; therefore, no destruction or adverse modification of that critical habitat is anticipated.

## **IV. CONCLUSION**

Because all of the units and subunits being proposed for designation as critical habitat are occupied, we do not expect that the critical habitat designation will result in any additional consultations. The habitat supporting eight populations of the black pinesnake is being proposed for designation as critical habitat but there are a few small scattered occurrences outside of the critical habitat. The selection of proposed critical habitat around these eight populations was based on an analysis of habitat needed to ensure the conservation of the species. The anticipated project modifications to avoid adverse modification to black pinesnake critical habitat will be similar to the management recommendations to avoid jeopardy. Thus, it is unlikely that we would determine that a project would result in adverse modification of critical habitat and not also jeopardy. Furthermore, because the critical habitat and known species range overlap so closely, the implementation of reasonable and prudent alternatives associated with avoidance of jeopardy of the species would also avoid adverse modification of the critical habitat.

In projects where we determine that an adverse modification finding may be likely, we work with the Federal agency involved to identify reasonable and prudent alternatives that would eliminate or reduce those impacts to a point where adverse modification is no longer likely. The resulting project modifications would appropriately be considered to be incremental costs of the critical habitat designation. However, as stated above, we do not expect a situation where a project would result in an adverse modification finding absent a jeopardy finding.

In summary, the probable incremental economic impacts of the black pinesnake critical habitat designation are expected to be limited to additional administrative effort. This finding is based on the following factors: 1) all proposed critical habitat is occupied by the species, thus, the presence of the species already results in significant baseline protection under the Act; (2) project modifications requested by the Service to avoid jeopardy to the species are the same as those likely to avoid adverse modification of critical habitat; (3) critical habitat is unlikely to increase the number of consultations as a result of the existing awareness by Federal agencies of the need to consult due to the listing of the species; and (4) the proposed designation also receives baseline protection from the presence of two other federally listed species (gopher tortoise, red-cockaded woodpecker), and designated critical habitat for the dusky gopher frog in six of the nine units or subunits which equates to approximately 90 percent of the proposed critical habitat designation.