

DRAFT

ENVIRONMENTAL ASSESSMENT

**ENDANGERED SPECIES ACT SECTION 4(d) RULE FOR THE TRISPOT DARTER
(*ETHEOSTOMA TRISELLA*)**

November 2019

U.S. Fish and Wildlife Service
South Atlantic-Gulf Region

DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSAL OF A RULE UNDER SECTION 4(d) OF THE ENDANGERED SPECIES
ACT FOR THE TRISPOT DARTER (*Etheostoma trisella*)

November 2019

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Abstract: The United States Fish and Wildlife Service (Service) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) of 1969, and its implementing regulations in the Code of Federal Regulations (CFR) at 40 CFR 1506.6, and Section 4(d) of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq). Under Section 4(d) of the ESA, the Service may publish a rule that modifies standard protections for threatened species with regulations and exceptions tailored to the conservation needs of that species that are determined to be necessary and advisable. The Service proposes a “4(d)” rule to provide conservation measures to protect the trispot darter (*Etheostoma trisella*), while encouraging the continuation of forest management and restoration activities that are beneficial to the species. The trispot darter is a fish native to Alabama, Georgia, and Tennessee in the Coosa River basin that was added to the List of Endangered and Threatened Wildlife as a threatened species on December 28, 2018 (83 FR 67131). Two alternative courses of action are analyzed in this document: Alternative 1 (No action), and Alternative 2 (Implement the 4(d) rule). Alternative 2 is the Service’s preferred alternative.

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1.0 PURPOSE AND NEED FOR ACTION

1.1 Introduction

The trispot darter (*Etheostoma trisella*), a freshwater fish found in the Coosa River System in the Ridge and Valley region in Alabama, Georgia, and Tennessee (Figure 1), was listed as threatened under the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) on December 28, 2018 (83 FR 67131), and the listing rule became effective on January 28, 2019. This fish utilizes distinct breeding and non-breeding habitats. Non-breeding habitat is small to medium river margins and lower reaches of tributaries with slower water flow and is associated with plant matter, logs, small cobbles, pebbles, gravel and often a fine layer of silt. Breeding sites are seasonally wet seepage areas and or ditches with little to no flow, shallow depths, moderate leaf litter covering mixed cobble, gravel, sand, clay and emergent vegetation.

The trispot darter is most susceptible to threats that affect its access to spawning areas, including excessive groundwater withdrawals, drought, or construction of man-made structures like dams and road crossings that can limit or prevent access. In addition, changes in habitat and poor water quality from pollution, sedimentation, agricultural and stormwater runoff can also affect all life stages of the trispot darter. The Service is evaluating different measures to conserve the trispot darter and prevent it from becoming endangered; one of those proposed measures is the promulgation of a rule under section 4(d) of the ESA. The scope of our analysis covers impacts that are reasonably foreseeable, potentially significant, and likely to occur as a result of our issuance of a final 4(d) rule.

Under section 4(d) of the ESA, the Secretary of the Interior, with authority delegated to the Service, has the discretion to issue such regulations as he or she deems necessary and advisable to provide for the conservation of threatened species. The Service has the discretion to prohibit, by regulation with respect to any threatened species of fish or wildlife, any act prohibited under section 9(a)(1) of the ESA. The prohibitions of section 9(a)(1) of the ESA, codified at 50 CFR 17.31 listed prior to September 28, 2019, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. These prohibitions are also extended to threatened wildlife in 50 CFR 17.31, except in cases where the Secretary promulgates a special 4(d) rule. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally.

The courts have recognized the extent of the Secretary's discretion to develop prohibitions, as well as exclusions from those prohibitions, that are appropriate for the conservation of a species. For example, the Secretary may decide not to prohibit take, or to put in place only limited take prohibitions. See *Alesea Valley Alliance v. Lautenbacher*, 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002). In addition, as affirmed in *State of Louisiana v. Verity*, 853

F.2d 322 (5th Cir. 1988), the protective regulation for a species need not address all the threats to the species. As noted by Congress when the ESA was initially enacted, “once an animal is on the threatened list, the Secretary has an almost infinite number of options available to him with regard to the permitted activities for those species. He or she may, for example, permit taking, but not importation of such species,” or he/she may choose to forbid both taking and importation but allow the transportation of such species, as long as the measures will “serve to conserve, protect, or restore the species concerned in accordance with the purposes of the Act” (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

This Environmental Assessment analyzes two action alternatives: Do not implement a rule under section 4(d) of the ESA for the trispot darter (Alternative 1), or create a rule under section 4(d) of the ESA to provide special conservation measures for this species that also allows forest management and restoration activities to continue while protecting the trispot darter (Alternative 2). Alternative 2 would extend all the prohibitions and provisions of 50 CFR 17.31 and 17.32 to the trispot darter, with the exception of certain channel and streambank restoration projects, forest management activities, stream crossings at transportation corridors, and activities under the Working Lands for Wildlife (Natural Resources Conservation Service) that are detailed in the proposed 4(d) rule (83 FR 67185).

1.2 Purpose and Need

The purpose of this Environmental Assessment is to analyze the environmental consequences of Alternatives 1 and 2, and determine whether an environmental impact statement or finding of no significant impact is required. For species listed prior to September 28, 2019, including the trispot darter, implementing a 4(d) rule. Alternative 2, arises from the provisions of the ESA and its implementing regulations that set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The regulations implementing the ESA include a provision that generally applies to threatened wildlife, the same prohibitions and exceptions that apply to endangered wildlife (50 CFR 17.31(a), 17.32), unless a special rule, in accordance with section 4(d) of the ESA is applied to the threatened wildlife species. This Environmental Assessment evaluates the environmental consequences of issuing such a rule under section 4(d) of the ESA.

The final listing rule published on December 28, 2018 (83 FR 67131), identifies destruction or degradation of spawning areas and the habitat connecting those areas as one of the primary threats to the trispot darter. The continued threat of habitat loss highlights the need to evaluate additional conservation measures and assess exemptions to take prohibitions under a 4(d) rule that allow beneficial activities to continue. The predominant cause of this habitat loss or degradation is land conversion for agriculture, urban areas, and forestry, which changes waterflow, modifies stream channels, and reduces connectivity between spawning and non-spawning habitat.

To successfully spawn, the trispot darter must migrate from small to medium sized rivers to seasonally wet areas and ditches. The peak spawning period is January through April. Conversion of these seasonally wet areas, structures that reduce or prevent movement to the areas, and changes to waterflow can prevent this species from spawning. The species range is also fragmented by large reservoirs and dams on the Coosa River. Activities that maintain and/or

restore channel and wetland integrity, allow organism passage at crossings, and protect water quality from sedimentation and nonpoint source pollution will support recovery of the trispot darter.

Work has been conducted and is ongoing to maintain stable channels and streamside areas and provide organism passage at stream crossings, but more work is needed to reverse the overall trend of degradation. Additionally, throughout the trispot darter's range, Federal, State, and non-profit groups have developed conservation efforts, which have benefited the species. Increased efforts, however, are necessary on both public and private lands to address continued habitat loss, degradation, and fragmentation, and it is the intent of this proposed rule to encourage these increased efforts. The purpose of the 4(d) rule would be to allow restoration and stabilization projects for streambanks, stream channels, and wetland systems, forest management practices to occur that would benefit the conservation of the species, and stream crossings for transportation corridors that support fish passage. Special consideration to protect the peak spawning period is also included in the 4(d) rule. The underlying need for these actions is to benefit the trispot darter so that the species can recover to a point where ESA protections are no longer needed.

1.3 Issues and Concerns

A concern is the need to provide protections for this listed species while allowing continuation of land management activities that promote trispot darter habitat and population health.

A specific concern identified is not prohibiting silvicultural and forest management activities that involve trispot darter spawning habitat carried out between May 1 through December 31 in the proposed 4(d) rule. This timeframe was considered to be concerning and may be unnecessary with best management practice compliance. The proposed 4(d) rule identifies actions that would not be prohibited under section (9)(a)(1) of the Act. Silviculture and forest management activities may continue outside of the May 1 through December 31 timeframe with coordination with the Service to ensure that take of the trispot darter will not occur as a result of those activities. Performing silvicultural and forest management activities between May 1 and December 31 will provide additional protection for the trispot darter during spawning, a sensitive time period of its life cycle.

The Service must consider the effects of the proposed 4(d) rule, such as the impact of forestry activities and transportation corridors on the environment, against the alternative of not implementing such a rule. In the proposed 4(d) rule, stream and wetland restoration, streambank stabilization projects, silviculture and forest management activities that implement best management practices, transportation corridors that allow organism passage, and activities carried out under the Working Lands for Wildlife program of the Natural Resources Conservation Service, U.S. Department of Agriculture or similar projects are excepted from the prohibitions and provisions of 50 CFR 17.31 and 17.32. Section 2 of this document analyzes the action alternatives in depth and will explore these issues and concerns further.

1.4 Scoping

Scoping for the proposed action involved coordination with state and federal agencies, as well as with the public and non-governmental organizations. The Service held two webinars on February 14, 2019, to provide stakeholders a better understanding of the listing action, if needed, and the opportunity to ask questions. The invitation was sent to Federal, State, non-profit organizations, and industry groups in Alabama, Tennessee, and Georgia. The webinar, titled “Trispot Darter Final Rule, Proposed Critical Habitat & 4(d) Rule Information Meeting”, covered the final species listing, proposed 4(d) rule and critical habitat rule. The webinars were offered during the proposed 4(d) rule and critical habitat rule comment period. Topics covered included life history and biology of the trispot darter, what a 4(d) rule and critical habitat mean for stakeholders, and how stakeholders can submit comments. The presentation was available upon request, and was uploaded to the Alabama Ecological Services Field Office website. (<https://www.fws.gov/daphne/>)

The proposed ESA listing rule was published in the federal register (82 FR 46183) on October 4, 2017. Public comments from all interested parties were accepted for 60 days, and the comment period closed on December 4, 2017. A final listing rule was published in the federal register on December 28, 2018, and took effect on January 28, 2019 (83 FR 67131). A proposed 4(d) rule was also published in the federal register on the same date as the final listing rule, with a 30-day public comment period that closed on February 26, 2019. The Service has received comments related to the proposed 4(d) rule and is responding to all relevant comments in its evaluation of that proposed rule. Major themes that emerged during the comment period for the proposed 4(d) rule concerned clarifying the language ‘highest standard’ best management practices for forestry activities and use of certification standards for forest management and fiber sourcing. Commenters also expressed support for a rule that allows typical forest management activities to continue so that they are unencumbered by section 9 take prohibition liability. This Environmental Assessment will also be available for public review through a 30-day comment period, and all public comments received during that time will be reviewed and addressed.

1.5 Decision That Must Be Made

The Secretary must decide whether to implement a 4(d) rule to provide conservation measures for the trispot darter, or to take no action. A decision will be made only after thorough public review and full consideration of all comments. Opportunity for public comment was provided during the advertisement of the proposed 4(d) rule (83 FR 67185) and those comments were reviewed in section 1.6 of this document. Opportunity for comment will also be provided through review of this document. Upon review of all public comments, the Service will determine if a finding of no significant impact or environmental impact statement is necessary.

2.0 ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

NEPA regulations require, among other things, the examination of a reasonable range of alternatives to the Proposed Action (*Preferred Alternative*), including taking *no action* (40 CFR § 1502.14). Specifically, Congress directed and authorized all agencies of the Federal government to interpret and administer their policies in accordance with NEPA, including the

responsibility to “study, develop, and describe appropriate alternatives to recommended courses of action” (42 U.S.C. § 4332). This chapter first discusses Alternative 1 (*No action*). Alternative 2 (*preferred alternative*) is then examined, which describes the implementation of the proposed 4(d) rule. The environmental consequences of each available course of action are analyzed.

2.1 Alternatives Studied in Detail

The alternatives include: (1) Do not implement a 4(d) rule and take no action, and (2) Implement the 4(d) rule.

2.1.1 Alternative 1 – No Action

Under Alternative 1, the Service would not implement the 4(d) rule. The trispot darter would remain listed as threatened under section 4 of the ESA, but the Service would not promulgate a special rule or regulation to provide for the conservation of the species. Section 9 (a)(1) take prohibitions would still be extended to the species under the final listing rule through 50 CFR 17.31(a), but no special rules, exemptions, or conservation measures would be provided under section 4(d).

Anyone conducting activities (for example, development, recreation, research, etc.) that may result in take of the trispot darter should consult with the Service prior to initiating those activities in order to avoid potential violations of section 9 of the ESA. Under the 4(d) rule certain activities will be excepted from prohibitions, without involving all of the restrictions that apply to endangered species. For Federal agencies, that authorization would be obtained through a section 7 consultation with the Service. For private interests and non-Federal government agencies, incidental take would need to be permitted through section 10 of the Act. These regulatory requirements are currently in effect, and could impose additional costs on land managers such that beneficial forestry activities are delayed or not implemented. With no 4(d) exemptions in place, there is little incentive for landowners to manage habitat suitable for trispot darter because of the regulatory requirements imposed by the December 2018 listing under the ESA.

Under section 10(a)(1)(b) of the Act, take of trispot darter by private or non-Federal government agencies could be authorized by the Service if such taking occurs incidentally during otherwise legal activities. Applicants for an incidental take permit would be required to develop and submit a "habitat conservation plan" that specifies the impacts that are likely to result from the taking and the measures the permit applicant will undertake to minimize and mitigate such impacts. The following criteria will need to be satisfied before an incidental take permit could be issued: (1) taking will be incidental; (2) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking; (3) the applicant will ensure that adequate funding for the plan will be provided; (4) taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) other measures, as required by the Service, will be met. This entire process (that is, approval of habitat conservation plan and issuance of incidental take permit) can take anywhere from 6 to 12 months to complete, and sometimes can take longer.

Under section 7 of the ESA, Federal agencies would be required to consult with the Service for any project that may affect the trispot darter. This process typically takes up to 135 days to complete. The consulting agency will be required to show the Service that they have minimized the level of take associated with their project by avoiding or minimizing impacts to the species and its habitats.

Under the no action alternative, each project would likely need to be reviewed and approved by the Service on a case-by-case basis. This would result in a level of uncertainty regarding the mitigation or minimization requirements that the Service would require of the applicants. In addition, as described above, there would be a considerable amount of time needed by the Service to review and approve projects that may impact the trispot darter. However, this alternative may result in benefits to the darter in the form of additional mitigation and minimization of impacts to the species. This alternative would allow the Service to adapt mitigation and minimization measures to specific projects according to the needs of the species and available science at the time an application for an incidental take permit is submitted or consultation with a Federal agency is initiated.

2.1.2 Alternative 2 – Implement the 4(d) Rule

The Service would implement the proposed 4(d) rule which would encourage beneficial forest management practices and watershed restoration projects. This action entails the Service's support of such practices, but does not signal a shift in any land management practices prior to the listing; rather, the Service would encourage more widespread utilization of existing practices that benefit the trispot darter. These practices include, but are not strictly limited to, those listed in the proposed 4(d) rule (81 FR 67185). In the absence of the proposed rule, those activities that could cause incidental take would be subject to all relevant consultation requirements, including formal consultation, even when they create or enhance trispot darter habitat that provide for the long term benefit of the species.

The proposed 4(d) rule would apply all prohibitions and provisions of 50 CFR 17.31 and 17.32, which codify take prohibitions in section 9 of the ESA, to the trispot darter providing protections for the conservation of the species with some exemptions. These exemptions are outlined below.

Generally, the exemptions take the darter's migration season into consideration due to the higher likelihood of encountering individuals during this time. The specialized spawning habitat is included in multiple exemptions because this ecosystem is required for the species to successfully reproduce. This is not a final list of exemptions, because the public had an opportunity to comment on the proposed rule, and there will also be a public comment period for this document. Those comments will all be addressed, and the Secretary as necessary may apply changes to the list of exemptions.

The proposed 4(d) rule covers the following species restoration, habitat restoration, and forest management activities occurring, which would not be subject to the general prohibitions of 50 CFR 17.31:

(1) Species restoration efforts by State wildlife agencies, including collection of broodstock, tissue collection for genetic analysis, captive propagation, and subsequent stocking into currently occupied and unoccupied areas within the historical range of the species.

(2) Channel restoration projects that create natural, physically stable, ecologically functioning streams (or stream and wetland systems) that are reconnected with their groundwater aquifers and, if the projects involve known trispot darter spawning habitat, that take place between May 1 and December 31 to avoid the time period when the trispot darter will be found within such habitat. These projects can be accomplished using a variety of methods, but the desired outcome is a natural channel with low shear stress (force of water moving against the channel); bank heights that enable reconnection to the floodplain; a reconnection of surface and groundwater systems, resulting in perennial flows in the channel; riffles and pools comprised of existing soil, rock, and wood instead of large imported materials; low compaction of soils within adjacent riparian areas; and inclusion of riparian wetlands. Second to third-order headwater streams reconstructed in this way would offer suitable habitats for the trispot darter and contain stable channel features, such as pools, glides, runs, and riffles, which could be used by the species for spawning, rearing, growth, feeding, migration, and other normal behaviors.

(3) Streambank stabilization projects that utilize bioengineering methods to replace pre-existing, bare, eroding stream banks with vegetated, stable stream banks, thereby reducing bank erosion and instream sedimentation and improving habitat conditions for the species. Following these bioengineering methods, stream banks may be stabilized using live stakes (live, vegetative cuttings inserted or tamped into the ground in a manner that allows the stake to take root and grow), live fascines (live branch cuttings, usually willows, bound together into long, cigarshaped bundles), or brush layering (cuttings or branches of easily rooted tree species layered between successive lifts of soil fill). These bioengineering methods must not include the sole use of quarried rock (rip-rap) or the use of rock baskets or gabion structures, but rip-rap, rock baskets, or gabion structures could be used in conjunction with the bioengineering methods.

(4) Silviculture practices and forest management activities that:

(a) Implement highest-standard best management practices, particularly for Streamside Management Zones, stream crossings, and forest roads; (b) Comply with forest practice guidelines related to water quality standards, or comply with Sustainable Forestry Initiative/Forest Stewardship Council/American Tree Farm System certification standards for both forest management and responsible fiber sourcing; (c) Remove logging debris or any other large material placed within natural or artificial wet weather conveyances or ephemeral, intermittent, or perennial stream channels; and (d) When silviculture practices and forest management activities involve trispot darter spawning habitat, are carried out between May 1 and December 31 to avoid the time period when the trispot darter will be found within spawning habitat.

(5) Development or other activities where transportation corridors cross streams that:

(a) Include the installation of structures engineered to allow organism passage at stream crossings, with specific consideration for fish passage; and (b) Are performed between May 1

and December 31 to avoid the time period when the trispot darter will be found within spawning habitat, if such habitat is affected by the activity.

(6) Activities carried out under the Working Lands for Wildlife program of the Natural Resources Conservation Service, U.S. Department of Agriculture; or similar projects throughout the range of the trispot darter that may be created in the future that: (a) Do not alter habitats known to be used by the trispot darter beyond the fish's tolerances; and (b) are performed between May 1 and December 31 to avoid the time period when the trispot darter will be found within its spawning habitat, if such habitat is affected by the activity.

Although these management activities may result in some minimal level of harm or temporary disturbance to the trispot darter, overall, these activities benefit conservation and recovery of the species by promoting and enhancing habitat. With adherence to the limitations described in the preceding paragraphs 1 – 6, these activities will have a net beneficial effect on the species by encouraging best management practices and restoration activities. This is a reasonable conclusion and therefore meets the standard for applying endangered species prohibitions to threatened species under the second sentence of section 4(d) of the Act (16 U.S.C. 1533(d) [“The Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 1538(a)(1) of this title ... with respect to endangered species.”]). Moreover, even if the “necessary and advisable” standard in the first sentence of section 4(d) applied to regulations adopting endangered species prohibitions for a threatened species, we would find that adopting these prohibitions meets that standard.

These provisions are necessary because, absent protections, the species is likely to become in danger of extinction in the foreseeable future. Applying the prohibitions of the Act will minimize threats that could cause further declines in the status of the species. Additionally, these provisions are advisable because the species needs active conservation to improve the quality of its habitat. By excepting some of the prohibitions, these provisions can encourage cooperation by landowners and other affected parties in implementing conservation measures. This will allow for use of the land while at the same time ensuring the preservation of suitable habitat and minimizing impacts to the species.

When practicable and to the extent possible, the Service encourages managers to conduct such activities in a manner to maintain suitable trispot darter habitat in large tracts; minimize ground and subsurface disturbance; and maintain connectivity to downstream waterways. Timing of activities is important to protect the darter during their peak spawning period. The activities proposed in the rule would correct some of the degradation to habitat and create more favorable habitat conditions.

Anyone undertaking activities that are not covered by the provisions, including the additional conditions, and may result in take would need to: (1) ensure, in consultation with the Service that the activities are not likely to jeopardize the continued existence of the species (where the entity is a Federal agency or there is a Federal nexus), or (2) obtain a permit before proceeding with the activity (if there is no Federal nexus) if exemptions from section 9 prohibitions are desired.

Based on the explanations above, the prohibitions under section 9(a)(1) would apply to the trispot darter, with specific exemptions tailored to the conservation of the species. Nothing in the

proposed 4(d) rule would change in any way the recovery planning provisions of section 4(f) and consultation requirements under section 7 of the ESA or the ability of the Service to enter into partnerships for the management and protection of the trispot darter.

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

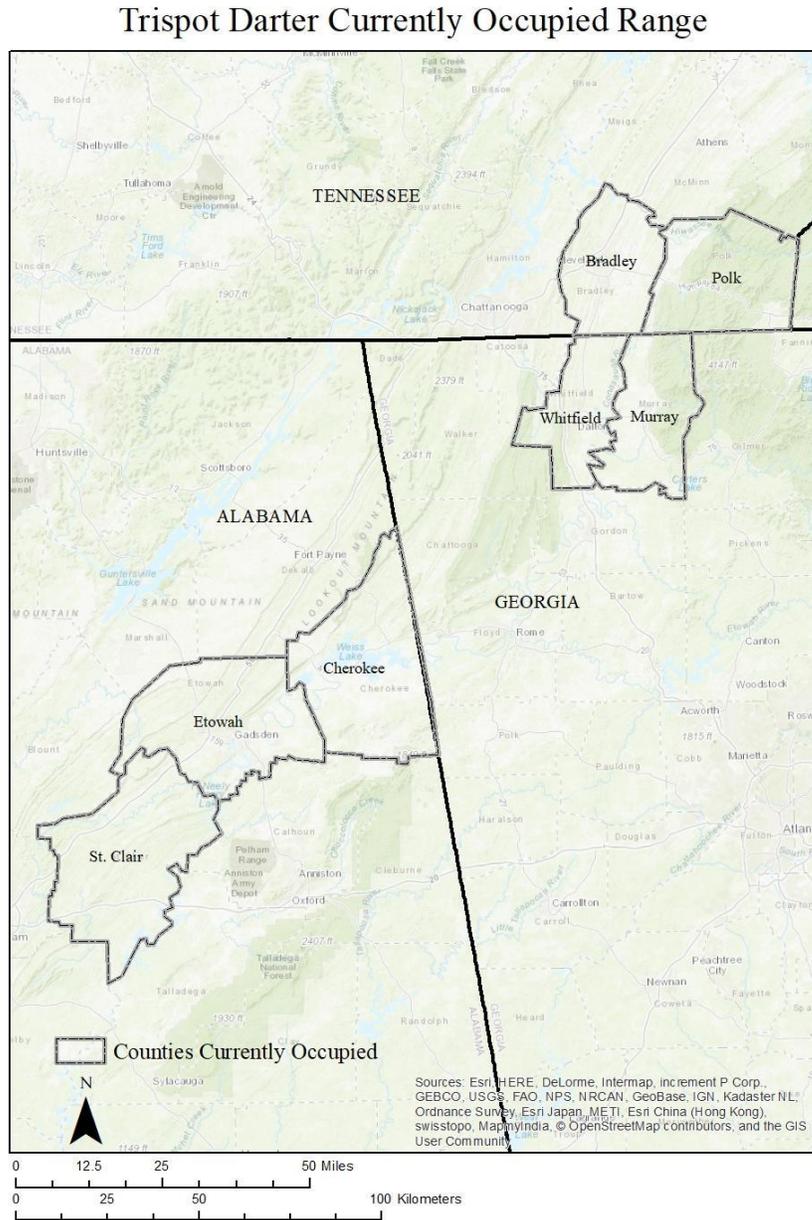
Alternative 1 (No Action), has no specifically identifiable environmental impacts. The trispot darter would remain listed, but no specific management practices would be encouraged. Examples of activities that may violate section 9 under the ESA are given in the final listing rule (83 FR 67131), but that list is not comprehensive. Restoration activities, even those that would improve stream connectivity, could face further restrictions without the exceptions listed in the proposed 4(d) rule.

Alternative 2 (Implement the 4(d) Rule), which is the preferred alternative for the trispot darter, would only directly involve the promulgation of a rule under the authority of the ESA, which would exempt certain beneficial forest management practices and restoration activities occurring. It is important to note that Alternative 2 entails the continuation of the management practices listed in section 2.1.2 of this Environmental Assessment, and not a major change in land use practices. These exceptions would seek to promote trispot darter conservation actions while focusing prohibitions on stressors contributing to its threatened status.

3.1 Location

The trispot darter is a freshwater fish found in the Coosa River System in the Ridge and Valley ecoregion of Alabama, Georgia, and Tennessee (Figure 1). This fish has a historical range from the middle to upper Coosa River Basin with collections in the mainstem Coosa, Oostanaula, Conasauga, and Coosawattee Rivers, and their tributaries. Currently, the trispot darter is known to occur in four populations in the Little Canoe Creek and tributaries (Coosa River), Ballplay Creek tributaries (Coosa River), Conasauga River and tributaries, and Coosawattee River and one tributary.

Figure 1: Range of the Trispot Darter in Alabama, Georgia, and Tennessee.



3.2 Physical Characteristics and Land Use of Trispot Darter Range

The trispot darter is a migratory species that utilizes distinct breeding and non-breeding habitats. From approximately April to October, the species inhabits its non-breeding habitat, which consists of small to medium river margins and lower reaches of tributaries with slower velocities. It is associated with detritus, logs, and stands of water willow, and the substrate consists of small cobbles, pebbles, gravel, and often a fine layer of silt. During low flow periods, the darters move away from the peripheral zones and toward the main channel; edges of water willow beds,

riffles, and pools; and mouths of tributaries. In late fall, this migratory species shifts its habitat preference and begins movement toward spawning areas; this is most likely stimulated by precipitation, but temperature changes and decreasing daylight hours may also provide cues to begin migration. Migration into spawning areas begins approximately late November or early December with fish moving from the main channels into tributaries and eventually reaching adjacent seepage areas where they will congregate and remain for the duration of spawning, approximately until late April. Breeding sites are intermittent seepage areas and ditches with little to no flow; shallow depths (12 inches (30 centimeters) or less); moderate leaf litter covering mixed cobble, gravel, sand, and clay; a deep layer of soft silt over clay; and emergent vegetation. All known locations of trispot darter occur on private land.

3.3. Environment

This section presents a general description of the environment that would be affected by the proposed action.

3.3.1. Geology

The trispot darter is found in the Coosa River System in the Ridge and Valley ecoregion of Alabama, Georgia, and Tennessee. Collections of trispot darter are almost exclusively associated with the outcrop of Cambrian-aged rocks in the upper Coosa River system, specifically the Conasauga Formation. This formation is composed of shale, limestone, and dolomite. The mixture and weathering of these formations creates soils that retain water. It is the water retention characteristic of these soils that provides the seasonal spawning areas and their connectivity to permanent waterways (O'Neil, et al. 2017).

3.3.2 Vegetation

The vegetation in the Ridge and Valley ecoregion is composed of mixed forest dominated by oaks and hickories. The landcover is mixed and currently forests cover approximately 50% of the area. Pasture, cropland, and pine plantations are important landuse types in the Ridge and Valley ecoregion.

3.3.3 Wildlife

The wildlife assemblages of trispot darter habitat are very diverse (Table 1). Please refer to corresponding State agencies for a comprehensive account of taxa.

County	Rare Species¹
St. Clair (AL)	31
Etowah (AL)	41
Cherokee (AL)	65
Whitfield (GA)	91
Murray (GA)	143
Bradley (TN)	36
Polk (TN)	123

Table 1. Rare species, including federally listed species, in counties currently occupied by the trispot darter. (Alabama Natural Heritage Database 2019; Georgia Department of Natural Resources 2019; Tennessee natural Heritage Program 2019).

3.3.4 Threatened and Endangered Species

The trispot darter range overlaps with a total of 21 other federally listed aquatic and terrestrial species, including mammals, fish, mussels, and plants.

MAMMALS	MUSSELS	PLANTS
Gray Bat	Finelined Pocketbook	Alabama Leatherflower
Indiana Bat	Ovate Clubshell	Green Pitcher plant
Northern Long-eared Bat	Coosa Moccasinshell	Harperella
	Southern Acornshell	Mohr's Barbara's Buttons
	Southern Clubshell	Tennessee Yellow-eyed grass
FISH	Southern Pigtoe	White Fringeless orchid
Amber Darter	Triangular	
Blue Shiner	Kidneyshell	
Conasauga Logperch	Upland Combshell	
Goldline Darter		

Table 2. Federally listed species overlapping with known trispot darter locations.

3.4 Socioeconomic Environment

Forestry, logging, and development are industries that may be affected by the 4(d) rule. Across all counties in the affected area, there were 25 establishments and 96 paid employees in agriculture, forestry, fishing and hunting and 755 establishments and 12,316 paid employees in

construction, transportation, and warehousing in 2016 according to the U.S. Census Bureau. These are the most recent data provided by the U.S. Census Bureau.

As a region, the affected area has a total population of 380,935. Polk County, Tennessee, is the smallest, with a population of 16,898, and Bradley County, Tennessee, is the largest with a population of 106,727. The mean population of all counties in the affected area is 69,262.

The median household income is \$22,959 across counties in the affected area, which is \$36,080 lower than the 2016 national median household income of \$59,039. Table 3 summarizes the baseline socioeconomic data by county.

County	Population¹	Per Capita Income (\$)¹	Unemployment Rate (%)²
St. Clair (AL)	88,690	24,686	2.6
Etowah (AL)	102,501	22,278	3.1
Cherokee (AL)	26,032	23,010	2.8
Whitfield (GA)	104,062	22,262	3.7
Murray (GA)	39,921	19,084	4.3
Bradley (TN)	106,727	25,144	3.2
Polk (TN)	16,898	24,247	3.6

1. U.S. Census Bureau QuickFacts (Accessed 08/1/2019)

2. U.S. Department of Labor Bureau of Labor Statistics (Accessed 8/1/2019)

 Table 3: Summary of Population and Area Economy within Counties in the Affected Area.

3.4.1 Study Area

The study area is wherever trispot occurs, but the focus of this document is on the nine counties where the species occurs. This document focuses on those specific areas to provide the most information possible on potential effect; please note that these effects apply wherever the trispot darter may occur. The counties in Alabama are St. Clair, Etowah, and Cherokee. The counties in Georgia are Whitfield and Murray. The counties in Tennessee are Bradley and Polk. Please refer to Figure 1.

3.4.2 Forest Management

Forest area in 2016 in Alabama totaled 23.1 (USDA 2017), 24.6 million acres in 2016 in Georgia (USDA 2018), and 13.9 million acres in 2015 in Tennessee (USDA 2019). Specifically, in the counties where trispot darter occurs, evergreen forest totaled 292,300 acres in 2016 (Yang et al. 2018) (Table 4). Forestry is an important economic activity in the trispot darter range. For example, Georgia’s forest industry provided \$28.9 billion to the state’s economy and was the second largest industry in Georgia based on salaries and wages (Georgia Forestry Commission 2015). Behind Georgia and Oregon, Alabama has the third most timberland acres in the contiguous United States. Similar to Georgia, the forest industry in Alabama is the second largest industry in the state, provided roughly 43,000 jobs, \$2.2 billion in annual wages, \$16.3 billion in product shipments, and \$1.3 billion in forest product exports (AFA 2019).

State	County	Acres Evergreen Land Cover	Total County Acreage
Alabama	St. Clair	65,903	413,463
Alabama	Etowah	28,793	362,812
Alabama	Cherokee	67,980	385,789
Georgia	Whitfield	21,585	184,567
Georgia	Murray	38,491	227,294
Tennessee	Bradley	13,777	212,811
Tennessee	Polk	55,771	281,890

Table 4. Total acres of evergreen land, assumed silviculture land, within the known range of the trispot darter. Yang, L., Jin, S., Danielson, P., Homer, C., Gass, L., Case, A., Costello, C., Dewitz, J., Fry, J., Funk, M., Grannemann, B., Rigge, M. and G. Xian. 2018. A New Generation of the United States National Land Cover Database: Requirements, Research Priorities, Design, and Implementation Strategies, p. 108–123.

3.4.3 Urban Development and Transportation

The human population in the southeastern United States has grown at an average rate of 36.7% since 2000, making it the fastest growing region in the country (U.S. Census 2016). The majority of known localities of trispot darter occur in close vicinity to the growing Atlanta metropolitan area, Chattanooga, Birmingham, and intervening areas with growing populations and increasing development. Increased development results in the demand for more transportation corridors (Table 5).

State	County	Acres Developed Land Cover	Total County Acreage
Alabama	St. Clair	36,376	413,463
Alabama	Etowah	54,415	362,812
Alabama	Cherokee	21,408	385,789
Georgia	Whitfield	156,605,030	184,567
Georgia	Murray	84,538,894	227,294
Tennessee	Bradley	37,761	212,811
Tennessee	Polk	14,043	281,890

Table 5. Total acres of developed land within the known range of the trispot darter. Yang, et al. 2018).

3.4.4. Aquatic Resource Restoration

Section 319(h) of the Clean Water Act (CWA) authorizes federal grant funding to implement U.S. Environmental Protection Agency (EPA) approved state NPS management programs. States use Section 319(h) grant funding to target a wide range of non point source problems and provide for their solutions. In Georgia, approximately \$3.6 million is provided to the state annually to address nonpoint source pollution (GAEPD 2019). Tennessee was awarded \$1.26 million for watershed projects and \$53,573 in education and outreach projects in FY2018 (TNDA 2018). In Alabama, \$3.12 million was awarded through the program in FY2018 (ADEM 2018). County level information for 319 grant funding was not available for this EA.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Alternative 1 – No Action

Under the Alternative 1 (No Action), the Service would not implement a special rule under section 4(d) of the ESA. The Service would apply the general regulatory provisions for threatened wildlife under 50 CFR 17.31 and 17.32 as stated in the final listing rule (83 FR 67131). All purposeful take and incidental take of trispot darter would be prohibited wherever it occurs. Activities that could cause incidental take could still occur, but with legal protection only after consultation with the Service under section 7 of the ESA (federal agencies) or section 10 of the ESA (non-federal agencies). No changes in forest management activities, roadway construction, or stream restoration would be proposed, but land managers conducting activities that could cause incidental take would have to consult with the Service for each action potentially causing that incidental take to be exempted from prohibition. Please refer to the final listing rule (83 FR 67131) for more information on existing land use restrictions.

4.1.1 Physical Characteristics

The physical characteristics of the affected environment are expected to remain unchanged. There is a chance that due to the take prohibitions discussed under section 4.1 of this document, that the increased regulatory pressure could change some forest management, roadway construction, or restoration decisions. Those activities that could cause incidental take would require consultation with the Service to avoid section 9 violations, and those additional constraints have the potential to change decisions. The Service is unaware at this time how those decisions would be affected by the implementation of the no action alternative.

4.1.2 Biological Environment

The biological environment is expected to be unaffected by implementation of the no action alternative.

4.1.2.1 Vegetation

Vegetation is expected to be unaffected by implementation of the no action alternative.

4.1.2.2 Threatened, Endangered, and Candidate Species

As noted in section 3.3.4, the trispot darter range overlaps with a total of 21 federally listed aquatic and terrestrial species including a mixture of mammals, fish, mussels, and plants. No impacts are anticipated under the no action alternative.

4.1.2.3 Other Wildlife Species

No consequences related to other wildlife species are expected as a result of the no action alternative.

4.1.3 Land Use and Socioeconomic Environment

All purposeful and incidental take would be prohibited as a result of taking no action, as those prohibitions are set forth in the final trispot darter listing rule. Economic activities such as forest management that could cause incidental take could still occur, but only after consultation with the Service under section 7 of the ESA (federal agencies) or section 10 of the ESA (private entities). These consultation mechanisms mean that the implementation of activities that could cause incidental take would be delayed by up to 135 days under section 7, and 6 to 12 months under section 10, while consultation is completed and negative effects are minimized or mitigation measures agreed on. There are currently no publicly available data on how exactly these delays would affect local socio-economic conditions because those are related to the decisions of local employers.

The no action alternative is not expected to affect land uses in the trispot darter range. There would be no exemptions to section 9 prohibitions, and land managers would continue consulting with the Service when conducting activities that could cause incidental take if they desire. Landuse types, such as agriculture and industry that could cause incidental take would require consultation with the Service under sections 7 or 10 of the ESA to avoid potential violations of section 9. Each project that could cause incidental take would need to be reviewed and approved by the Service on a case-by-case basis if protection from take prohibition is desired. This involves a considerable amount of time and effort by both the Service and federal action agency or private entity.

4.1.3.1 Residential Use

No effects on residential uses are expected. Landowners seeking to convert wetlands or ephemeral streams into residential uses where there is a potential for incidental take to occur would be required to consult with the Service to avoid potential violations of section 9 of the ESA due to its threatened status.

4.1.3.2 Recreational Use

Recreational values are expected to be unaffected as a result of the no action alternative.

4.1.3.3 Water Usage

No major effects on water usage by either private or government entities are expected as a result of the no action alternative.

4.1.4 Cultural/Paleontological Resources

Alternative 1 would not affect any cultural or paleontological resources because no action would be taken.

4.2 Alternative 2 – Implement the 4(d) Rule

Under Alternative 2, the Service would issue a final rule through section 4(d) of the ESA for the trispot darter that contains targeted prohibitions and exceptions tailored to the conservation needs of the species. The provisions of this proposed rule are specified in section 2.1.2 of this Environmental Assessment.

4.2.1 Physical Characteristics

The practices as described in the 4(d) rule are designed to maintain forested land uses and facilitate habitat characteristics that provide for the conservation of the species. The physical characteristics of the landscape would remain largely the same, and would hopefully improve as more working forest land is managed, transportation corridors are built to encourage organism passage, and an increased number of stream restoration projects are conducted. The practices being excepted from section 9 take prohibitions, listed in section 2.1.2 of this document, are

identified because of their long term beneficial effects to this species and its habitat. These practices are designed to maintain and enhance the physical characteristics of trispot darter habitat and maintain and/or improve connectivity between the spawning and non-spawning habitat.

Alternative 2 does not entail any significant changes to existing landscapes and practices, and thus is not expected to have negative environmental consequences. The Service hopes that the implementation of beneficial forest management practices, stream crossings that support organism passage, and stream restoration actions will help maintain resilient and productive habitat where the trispot darter occurs.

4.2.2 Biological Environment

Through the proposed 4(d) rule in Alternative 2, the Service encourages managers to conduct such activities that provide suitable trispot darter habitat promote migration between spawning and non-spawning habitat. While short term disruption of the biological environment would occur through the forestry activities, stream restoration projects, or stream crossing improvements permitted under the rule, the long term effects are beneficial for the species. The timing window included in the 4(d) rule for certain activities would protect the fish while in the spawning habitat during a vulnerable time period.

One of the main threats to the trispot darter is the loss of connectivity between spawning and non-spawning habitat. Improvements at stream crossings and stream restoration activities that improve fish passage and restore a more natural flow regime will encourage connectivity between the species' habitat types.

4.2.2.1 Vegetation

Practices covered under the proposed 4(d) rule would help maintain and potentially increase the fish passability and between spawning and resting sites of the trispot darter. While short term damage is possible from forestry operations, such as replanting, herbicide application, and renewal (clear) cuts, the long term benefit of maintaining healthy forests and wet weather conveyances, rather than monocultural pine plantations or forest conversion, would help the vegetative associations in the trispot darter range.

4.2.2.2 Threatened, Endangered, and Candidate Species

The federally-threatened trispot darter is not expected to be negatively affected Alternative 2 because the conservation measures listed in the proposed 4(d) rule are specifically designed to encourage beneficial forest management practices and watershed restoration projects. The implementation of Alternative 2 is intended to show the Service's support of such practices and does not promote a shift in land management practices; rather, the Service encourages the widespread usage of these practices that could likely provide a long term benefit to the trispot darter, as well as other aquatic species.

Implementation of the proposed 4(d) rule would provide exemptions for activities that are intended for trispot darter restoration, habitat restoration, and normal forest management practices. These include, but are not limited to, species restoration activities that involve the collection of individuals for genetic analysis or for captive propagation; conducting channel and streambank restoration projects in potential spawning habitats by avoiding the peak spawning period of January and April; by implementing state accepted Best Management Practices (BMPs) while conducting forest management and other silvicultural practices, especially in streamside management zones (SMZs), at stream crossings, or on forest access roads; and activities implemented under the Natural Resource Conservation Service's (NRCS) Working Lands for Wildlife Initiative. Although these activities may result in some minimal level of harm or temporary disturbance to the trispot darter and its habitat, it is the intent of the 4(d) rule that these activities will provide beneficial effects for the long term conservation and recovery of the trispot darter.

As noted in sections 3.3.4 and 4.1.2.2, the trispot darter range also overlaps with a total of 21 other federally listed aquatic and terrestrial species including a mixture of mammals, fish, mussels, and plants. Although several federally listed terrestrial organisms like the gray bat, Indiana bat, northern long-eared bat, Alabama leatherflower, green pitcher plant, harperella, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and white fringeless orchid occur within the general range of the trispot darter, activities to manage these species are not expected to have a negative impact. For the gray, Indiana, and northern long-eared bats, there are no hibernacula in the known range of the trispot darter and there is already a 4(d) rule in place to provide special conservation measures for the northern long eared bat. As long as other karst features (i.e., sinkholes, sinking streams, caves) are protected and tree clearing of suitable roost trees (e.g., live trees and/or snags ≥ 5 inches (12.7 centimeters) and ≥ 3 inches dbh (7.6 centimeters), respectively, that have exfoliating bark, cracks, crevices or hollows) is confined to the recommended period of October 15 to March 31, there should not be any impacts to the Indiana and northern long-eared bats. There are no anticipated effects to the other federally protected terrestrial or aquatic species including, the Alabama leatherflower, green pitcher plant, harperella, Mohr's Barbara's buttons, Tennessee yellow-eyed grass, and white fringeless orchid, amber darter, blue shiner, Conasauga logperch, goldline darter, finlined pocketbook, ovate clubshell, Coosa moccasinshell, southern acornshell, southern clubshell, southern pigtoe, triangular kidneyshell, and upland combshell.

4.2.2.3 Other Wildlife Species

As stated in section 3.3.1, as well as other wildlife species, are believed to benefit from the implementation of the 4(d) rule. Habitat restoration and organism passage that will enhance conditions for the trispot darter will also provide improved habitat conditions and stream connectivity for other aquatic species. The use of best management practices in forestry management is beneficial to both aquatic and terrestrial species.

4.2.3 Land Use and Socioeconomic Environment

Major changes to land use are not expected because implementation of the preferred alternative would allow the implementation of those forestry practices listed in section 2.1.2 of this document. The impact of this alternative is expected to be more widespread use of those practices because they would not be considered a violation of section 9 of the ESA, making it easier for land owners to conduct management activities covered under the 4(d) rule. By exempting some of the prohibitions from section 9 of the ESA, the provisions of the proposed 4(d) rule can encourage cooperation by landowners and other affected parties in implementing conservation measures. This will allow for use of the land while at the same time ensuring the preservation of suitable habitat and minimizing impact on the species. By following that provisions of the 4(d) rule, landowners could realize a potential cost savings through reduced time spent consulting with the Service, and have more certainty that their actions would not be in violation of section 9 of the ESA. Section 7 consultations can take up to 135 days to complete that may affect the trispot darter, and Habitat Conservation Plans under section 10 can take 6 to 12 months to complete. Reducing this regulatory burden on landowners is a major benefit to land managers while also providing for the conservation of the species.

No adverse effects on local socio-economic conditions are expected. The 4(d) rule is designed to encourage restoration efforts and timber production because forest management can provide adequate wildlife habitat when managed in ways specified in the rule. There could potentially be additional costs of adherence to the 4(d) rule in cases where practices covered under the rule are different from existing landowner practices. As these costs would be different on a case-by-case basis, the Service is unable to determine exactly what those costs of 4(d) rule adherence would be. Without the 4(d) rule in place, managers could be liable under section 9(a)(1) prohibitions, which could negatively affect their operations. If land management where take is reasonably certain to occur involves tree clearing and or streams crossings and these activities are done so according to the provisions in the proposed 4(d) rule, the take would be exempt. As managers using practices in the proposed 4(d) rule would be exempt from section 9 take prohibitions, it is expected that those economic activities will continue.

4.2.3.1 Residential Use

No effects on residential uses are expected. Landowners seeking to convert forests into residential uses where there is a potential for incidental take to occur should consult with the Service to avoid potential violations of section 9 of the ESA due to its threatened status.

4.2.3.2 Recreational use

Recreational values are expected to be unaffected as a result of implementation of the preferred alternative, because many of the activities covered under the proposed 4(d) rule are already occurring on private land.

4.2.3.3 Water Usage

No major effects on water usage by either private or government entities are expected as a result of this action. Alternative 2 does not address water usage, nor is it expected to have any effects on water usage.

4.2.4 Cultural/Paleontological Resources

No adverse effects on existing archaeological resources are expected to result from implementation of the 4(d) rule. Any major land use changes would be governed by the existing cultural/paleontological resource laws, such as consultation with the State Historic Preservation Offices in Alabama, Tennessee, and Georgia. Therefore, the proposed action would have no effect on these resources.

5.0 CONSULTATION AND COORDINATION WITH OTHERS

As discussed in section 1.6 of this document, the previous federal actions leading up to the development of the proposed 4(d) involved extensive consultation and coordination with others. Public comments were received in response to the proposed trispot listing rule under the ESA, and those comments were addressed in the final rule. Public comments were also received on the proposed 4(d) rule, and those will be addressed in the event that the Service selects the preferred alternative. Please refer back to section 1.6 of this document for more details on the coordination with others involved in developing the proposed 4(d) rule.

6.0 COMPLIANCE WITH LAWS, REGULATIONS AND POLICIES

This Environmental Assessment was prepared in accordance with the National Environmental Policy Act of 1969. It is consistent with the policy contained in the Service's manual (550 FW 3), and employs a systematic, interdisciplinary approach. The proposed project has been reviewed for compliance with other Federal and state requirements including but not limited to, the Endangered Species Act of 1973, as amended; Archeological and Historic Preservation Act of 1974; National Historic Preservation Act of 1966, as amended; Executive Order 11988 (Floodplain Management); and Executive Order 11990 (Protection of Wetlands).

The Executive Order 12898 on Environmental Justice issued on February 11, 1994, requires all Federal agencies to assess the impacts of Federal actions with respect to environmental justice. The Executive Order states, to the extent practicable and permitted by law, neither minority nor low-income populations may receive disproportionately high and adverse impacts as a result of a proposed project. The impacts of Alternative 2 on human activities in the areas surrounding the affected areas are expected to be minimal.

7.0 PREPARERS

This Environmental Assessment was prepared by Jennifer Grunewald (Primary Author), Fish and Wildlife Biologist at the Service's Alabama Ecological Services Office (ALFO) Tuscaloosa Sub-Office, Tuscaloosa, AL. The document was reviewed by Jeff Powell (Deputy Field Supervisor - ALFO), Bill Pearson (Field Supervisor - ALFO), Brian Evans (South Atlantic-Gulf Regional Office), and a representative from the South Atlantic-Gulf Regional Solicitor's Office.

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