

U.S. Forest Service
Bankhead National Forest
Biological Evaluation for Site Preparation to Establish Shortleaf Pine

BIOLOGICAL ASSESSMENT/BIOLOGICAL EVALUATION

of

Proposed, Endangered, Threatened, and Sensitive Species

**Site Preparation for Shortleaf Pine Reforestation
Winston County, Alabama**

Bankhead National Forest

Compartment 31, Stand 30

**Responsible Agency:
USDA Forest Service
National Forests in Alabama
William B. Bankhead Ranger District**

Contact:

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Summary

This project will prepare a 60 acre for the planting of shortleaf pine seedlings. Roller drum chopping and prescribed burning will be used to prepare the sites. The sites to be treated are located in Forest Service Management Compartment 31, in Section 09 of Township 09 South and Range 7 West in Winston County. The site to be treated was previously manually site prepared and a prescribed burn conducted during 2002 and 2003. Due to a mix-up by the nursery of planting stock, Virginia pine was inadvertently planted instead of shortleaf pine. This is unacceptable as the site is targeted for shortleaf pine woodland conditions in the Forest Health and Restoration Project. The site is currently in an early successional stage with mixed species of hardwood and pine along with native herbaceous species regenerating on the site.

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The project purpose and need are to reforest areas to restore native community types (shortleaf pine), and maintain or improve forest health. The purpose of this evaluation is to address the potential for impacts to selected biological resources from the project.

Based upon the findings of this evaluation, this project “may affect, but not likely to adversely effect” Eggert’s sunflower, flattened musk turtle and five mussel species; will not result in adverse modifications of designated critical habitat for specified mussels; will have “no effect” the other plants and animals that are federally listed for the Bankhead; “may impact individuals but will not cause a trend to federal listing or loss of viability” for Diana fritillary and the Black Warrior Waterdog; and will have no impact on the other species listed by Forest Service as sensitive for the Bankhead National Forest. Concurrence with the U.S. Fish and Wildlife Service is required.

INTRODUCTION

The purpose of this Biological Assessment/Biological Evaluation (BA/BE) is to determine whether the proposed action is likely to affect an endangered, threatened, proposed, or sensitive species. The project purpose and need are to reforest areas impacted by southern pine beetles, restore native community types, and maintain or improve forest health. The project will prepare one site of 60 acres for planting of shortleaf pine seedlings.

This project will involve roller drum chopping, followed by a site preparation prescribed burn. Shortleaf pine seedlings will be planted during the following planting season. Standards are identified in the Revised Land and Management Resource Plan regarding equipment limitations in riparian areas and on slopes and fire line construction.

Area description

Bankhead National Forest is located within the northwest corner of Alabama and lies within Lawrence, Winston and Franklin counties. It is comprised of approximately 181,470 acres of forestland. The forest cover varies in both cover type and age class but is mostly a mixture of mature hardwoods with a variety of pine species including longleaf, shortleaf, Virginia and loblolly.

The proposed project is located in the central portion of Bankhead National Forest, and is approximately 1 mile south of Brushy Lake in Winston County. These areas proposed for site preparation have previously been treated to control southern pine beetle during 2000 and 2001. The existing forest cover is a sparse stocking of loblolly or Virginia pine with scattered hardwood brush along with a strong component of herbaceous vegetation commonly found in early successional upland stands. The tract is located in Forest Service management compartment “31” and is within section 9, township 9 south, range 7 west. It is just off Forest Service road 258 and can be found on the Grayson topographic map. The map in the project file depicts the location of the site.

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The areas surveyed for this evaluation did not contain glades, rock outcrops, aquatic areas or wetlands, which are habitats where protected, threatened, endangered, sensitive, or locally rare plant species are typically found. No wetlands or streambeds will be disturbed by this project.

The objectives of this Biological Assessment/Biological Evaluation are:

- to ensure that Forest Service actions do not contribute to loss of viability of any native or desired non-native plant or animal species or contribute to trends toward Federal listing of any species.
- to comply with the requirements of the Endangered Species Act that actions of Federal agencies not jeopardize or adversely modify critical habitat of Federally listed species.
- to provide a process and standard by which to ensure that threatened, endangered, proposed, and sensitive species receive full consideration in the decision-making process.

CONSULTATION HISTORY

Effects to threatened and endangered species from prescribed burning activities, treatment for southern pine beetle control, and reforestation have been topics of past consultation with the US Fish and Wildlife Service (FWS). Several biological surveys and evaluations have been conducted on this area within the past few years for a variety of projects. A Biological Evaluation was conducted on this site (Brushy Lake Site) during 2002 as part of the Prescribed Burning plan for 2002-2007. A similar Biological Evaluation was conducted on this same site during September 2002 for manual site preparation. That project involved the use of chainsaws and hand tools to reduce the larger stems. The determination of that evaluation was that of no effect to federally listed species and no impact on Forest Service Sensitive species. It was noted that the project may have a benefit potential habitat for Eggert's sunflower. No federally protected or sensitive species were identified during on site surveys of the site. A letter of concurrence regarding the findings of the prescribed burn Biological Evaluation was made from the Fish and Wildlife Service on August 15, 2002, and an additional letter of concurrence was received on October 2, 2002 regarding the site preparation project to restore native ecosystems.

No plants or animals, which would be considered to be protected, threatened, endangered or sensitive, are known to occur on these sites and none were found during surveys. No incidental take of any federally listed species is expected or anticipated with this proposed action. The area is in the watershed of Brushy Creek, which is potential habitat for aquatic species of concern such as mussels, Black Warrior waterdog and the flattened musk turtle. This portion of Brushy Creek is designated critical habitat for several species of mussels.

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The FWS is a participant on the Bankhead Liaison Panel. This group was actively involved in the development of the Forest Health and Restoration Project and Environmental Impact Statement which outlines reforesting southern pine beetle killed areas and restoring native community types on the Bankhead. Thus, the agency has a general awareness of projects such as this.

PROPOSED MANAGEMENT ACTION

The proposed project will prepare a site of approximately 60 acres for planting of shortleaf pine seedlings. This project will involve roller drum chopping, followed by site preparation burning. The project will likely be conducted between July and October. Shortleaf pine seedlings will be planted during the following planting season of December through March.

Roller drum chopping involves pulling a large metal drum with cutting blades over areas to prepare the site for reforestation by chopping existing vegetation. Drums are pulled by vehicles that include crawler-type or rubber-tired skidders or dozers. The second portion of the site preparation involves establishing fire control lines and prescribed burning.

In fireline establishment, it is the standing procedure on Bankhead National Forest, to avoid glades, rock outcrops, wetlands, riparian areas and aquatic areas which are habitats where protected, threatened, endangered or sensitive plant species are typically found. Existing natural and man made barriers will be utilized where possible. Areas where firelines are to be established were evaluated for potential impacts to protected, endangered, threatened, sensitive and locally rare species of animals, plants and their habitats. Construction of firelines will be accomplished by hand crews or with heavy equipment. Streamside Management Zones (SMZ's) are in place, that have been deemed suitable by the U.S. Fish and Wildlife Service to provide water quality objectives necessary for aquatic species. Areas of any fireline, which are deemed to be a potential erosion hazard will be treated with hay mulch as a method of erosion control. This will be done immediately following the burning operations.

SPECIES CONSIDERED AND SPECIES EVALUATED

District Biological Science Technician Allison Cochran and District Wildlife Biologist Tom Counts have conducted field reviews of the project sites on 2002 and on 2005. The BNF district office keeps current records of locations of known listed species throughout the area which were reviewed as part of this evaluation. This site was previously surveyed for PETS species when they were treated for Southern Pine Beetle control during 2000. All areas which may be directly disturbed by this project were surveyed for presence of protected species. None were found.

All currently listed threatened, endangered, protected and sensitive species (Regional Forester's Sensitive Species list) were considered during this evaluation as well as designated critical habitat. Some of the species are not known to occur on the BNF at the present time but potential habitat was assessed for effects. This evaluation considered species range, life history information, available habitat information, and known locations to determine which species to evaluate. See table 1 for a listing of species considered.

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Table #1.
Federally Listed Species of the Bankhead National Forest

| Scientific Name | Common Name | Status ¹ | Habitat | Notes | Within Affected Area? May be affected by the project? |
|---------------------------------|-------------------------|---------------------|---------|---|---|
| <i>Myotis grisescens</i> | Gray Bat | E | 1 | Known from Lawrence County. | No. Species not known to occur in Winston County. Caves not known to occur surrounding the project sites. |
| <i>Myotis sodalis</i> | Indiana bat | E | 1 | Known from Lawrence County. | No. Species not known to occur in Winston County. Caves not known to occur surrounding the project sites. |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | T | 11 | Known sites occur along Smith Lake. | No. Nest habitat along lake will not be affected. |
| <i>Picoides borealis</i> | Red-cockaded woodpecker | E | 17 | Does not occur on Bankhead | No. |
| <i>Sternotherus depressus</i> | Flattened musk turtle | T | A | Occurs on Bankhead. | Yes. This aquatic species may be affected by the project. Protective measures are in place. |
| <i>Epioblasma brevidens</i> | Cumberlandian combshell | E | A | Does not occur on Bankhead. | No. |
| <i>Epioblasma metastrata</i> | Upland combshell | E | A | Has not been recorded within the Black Warrior drainage since the 1900's. | No. This aquatic species will not be affected by the project. |

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|-------------------------------|------------------------------|---|---|--|--|
| <i>Epioblasma turgidula</i> | Turgid blossom pearly mussel | E | A | Does not occur on Bankhead and may be extinct. | No. This aquatic species will not be affected by the project. |
| <i>Lampsilis altilis</i> | Fine-lined pocketbook | E | A | Occurs on Bankhead. | Yes. This aquatic species may be affected by the project. Protective measures are in place. |
| <i>Lampsilis perovalis</i> | Orange-nacre mucket | T | A | Occurs on Bankhead. | Yes. This species may be affected by the project. Protective measures are in place. |
| <i>Medionidus acutissimus</i> | Alabama moccasinshell | T | A | Occurs on Bankhead. | Yes This aquatic species may be affected by the project. Protective measures are in place. |
| <i>Medionidus parvulus</i> | Coosa moccasinshell | E | A | Has not been recorded on Bankhead in recent years. | No. This aquatic species will not be affected by the project. |
| <i>Pleurobema furvum</i> | Dark pigtoe | E | A | Occurs on Bankhead. | Yes. This aquatic species may be affected by the project. Protective measures are in place. |
| <i>Pleurobema perovatum</i> | Ovate clubshell | E | A | Has not been recorded on Bankhead in recent years. | No – historic habitat present. Aquatic species may be affected by the project. Protective measures are in place. |
| <i>Pleurobema plenum</i> | Rough pigtoe | E | A | Does not occur on Bankhead. | No. This species will not be affected by the project. |
| <i>Ptychobranthus greeni</i> | Triangular kidneyshell | E | A | Occurs on Bankhead. | Yes. This species may be affected by the project. Protective measures are in place. |

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| <i>Lampsilis orbiculata (L. abrupta)</i> | Pink mucket pearlymussel | E | | A | Does not occur on Bankhead | No. This aquatic species will not be affected by the project. |
| <i>Dalea foliosa</i> | Leafy prairie clover | E | | 6 | Species not documented on Bankhead. | No. Glade species will not be affected by this project. |
| <i>Helianthus eggertii</i> | Eggert's sunflower | T | | 8 | Species not documented on Bankhead. Potential habitat present. | No. Potential habitat may be affected by the project. |
| <i>Lesquerella lyrata</i> | Lyrate bladder-pod | T | | 6 | Species not documented on Bankhead. | No. Glade species will not be affected by this project. |
| <i>Marshallia mohrii</i> | Mohr's Barbara's Buttons | T | | 2 | Species not documented on Bankhead. | No. Potential habitat is not present within project area. |
| <i>Sagittaria secundifolia</i> | Kral's water-plantain | T | | A | Occurs on Bankhead. | No. Aquatic species will not be affected by the project. |
| <i>Thelypteris pilosa var al.</i> | Alabama streak-sorus fern | T | | 7 | Occurs on Bankhead. | No. Potential habitat is not present and will not be affected. |
| <i>Xyris tennesseensis</i> | Tennessee yellow-eyed grass | E | | 11 | Species not documented on Bankhead. | No. Potential habitat is not present within the project area. |

¹E = endangered; T = threatened

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Habitat Code for Table #1.

- 1 = Cave Habitats 2 = Wetland (Bog) Habitats
- 6= Wetland (bog) habitats
- 11 = Forest Riparian Habitats
- 12 = Habitat Generalist
- 13 = Area Sensitive Mid - to Late - Successional Deciduous Forest Habitats
- 17 = Southern Yellow Pine Forests and Woodland Habitats
- 18 = Mixed Mesic Forest Habitats
- 19 = Mixed Xeric Forest Habitats
- 20 = Shrub/Seedling/Sapling Habitats
- 21 = Seeps and Springs Habitats
- A = Aquatic Species

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**Table #2.
Forest Service Sensitive
Species**

| Scientific Name | Common Name | Status ¹ | Rank | Habitat | Within Affected Area? May be affected by the project? |
|---|---------------------------------|---------------------|----------|---------|---|
| <i>Aesculus parviflora</i> | Small flowered buckeye | S | S2S3G2G3 | 18 | No. |
| <i>Astragalus tennesseensis</i> | Tennessee Milkvetch | S | S1G3 | 6 | No. |
| <i>Aureolaria patula</i> | Spreading yellow false foxglove | S | S1G2G3 | 7 | No. |
| <i>Carex brysonii</i> | Bryson's sedge | S | S1G1 | 18 | No. |
| <i>Delphinium alabamicum</i> | Alabama larkspur | S | S2G2 | 6 | No. |
| <i>Diervilla rivularis</i> | Riverbank bush-honeysuckle | S | S2G3 | 11 | No. |
| <i>Hymenophyllum tayloriae</i> | Gorge filmy fern | S | S1G1G2 | 7 | No. |
| <i>Jamesianthus alabamensis</i> | Alabama jamesianthus | S | S3G3 | 11 | No. |
| <i>Juglans cinerea</i> | Butternut | S | S1G3G4 | 18 | No. |
| <i>Leavenworthia alabamica</i> <i>var. alabamica</i> | Alabama Gladecress | S | T2T3G2G3 | 6 | No. |
| <i>Leavenworthia crassa</i> | Fleshyfruit Gladecress | C&S | S1G2 | 6 | No. |
| <i>Lesquerella densipila</i> | Duck River Bladderpod | S | SHG3 | 6 | No. |
| <i>Monotropsis odorata</i> | Sweet pinesap | S | G3 | 10 | No. |
| <i>Asplenium x ebenoides</i> | Scott's Spleenwort | S | HYBS1 | 7 | No. |
| <i>Marshallia trinervia</i> | Broadleaf Barbara's buttons | S | S3G3 | 11 | No. |
| <i>Minuartia alabamensis</i> | Alabama Sandwort | S | S2G2Q | 6 | No. |
| <i>Neviusia alabamensis</i> | Alabama snow-wreath | S | S2G2 | 6 | No. |
| <i>Platanthera intergrilabia</i> | White fringeless orchid | C&S | S2G2G3 | 2 | No. |
| <i>Polymnia laevigata</i> | Tennessee Leafcup | S | S2S3G3 | 18 | No. |
| <i>Robinia viscosa</i> | Clammy Locust | S | G3 | 17 | No. |
| <i>Rudbeckia triloba</i> <i>var. pinnatiloba</i> | Pinnate-lobed Black-eyed Susan | S | S2S3G4T2 | 7 | No. |
| <i>Scutellaria alabamensis</i> | Alabama skullcap | S | S2G2 | 7 | No. |

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|-----------------------------------|--|---|---------|-----|--|------------------------------------|
| <i>Sedum nevii</i> | Nevius' stonecrop | S | S3G3 | 7 | No. | |
| <i>Silene ovata</i> | Blue Ridge catchfly | S | S1G2G3 | 7 | No. | |
| <i>Talinum calcaricum</i> | Limestone Fameflower | S | S2G3 | 6 | No. | |
| <i>Talinum mengesii</i> | Menge's fameflower | S | S2S3G3 | 6 | No. | |
| <i>Thalictrum mirabile</i> | Little mountain meadow rue | S | QS1G2G3 | 7 | No. | |
| <i>Trillium lancifolium</i> | Lanceleaf Trillium | S | S2S3G2 | 11 | No. | |
| <i>Trillium simile</i> | Jeweled Trillium | S | G3 | 18 | No. | |
| <i>Speyeria diana</i> | Diana Fritillary | S | S3G3 | 11? | Potential habitat may be affected.(beneficial) | |
| <i>Corynorhinus rafinesquii</i> | Rafinesque's Big-eared bat | S | | 10 | No. | |
| <i>Cheilolejeunea evansii</i> | A liverwort | S | S1G1 | 11 | No. | |
| <i>Aneura maxima</i> | A liverwort | S | G1G2 | 11 | No. | |
| <i>Pellia X appalachiana</i> | A liverwort | S | G1G2 | 11 | No. | |
| <i>Nardia lescurii</i> | A liverwort | S | | 11 | No. | |
| <i>Plagiochila echinata</i> | A liverwort | S | G2 | 11 | No. | |
| <i>Radula sullivantii</i> | A liverwort | S | G2 | 11 | No. | |
| <i>Riccardia jugata</i> | A liverwort | S | G1G2 | 11 | No. | |
| <i>Hydroptila paralatosa</i> | A caddisfly | S | S2G2 | A | No. | |
| <i>Rhyacophila carolae</i> | A caddisfly | S | S1G1 | A | No. | |
| <i>Elliptio arca</i> | Alabama spike | S | S2G3 | A | No. | |
| <i>Obovaria jacksoniana</i> | Southern Hickorynut | S | S2G1G2 | A | No. | |
| <i>Obovaria unicolor</i> | Alabama Hickorynut | S | S2G3 | A | No. | |
| <i>Strophitus subvexus</i> | Southern creekmussel | S | S2G3 | A | No. | |
| <i>Villosa nebulosa</i> | Alabama rainbow | S | S3G3 | A | No. | |
| <i>Etheostoma bellator</i> | Warrior darter | S | S2G2 | A | No. | |
| <i>Etheostoma douglasi</i> | Tuskaloosa darter | S | S2G2 | A | No. | |
| <i>Etheostoma phytophyllum</i> | Rush darter | S | S2G2 | A | No. | |
| <i>Etheostoma tuscumbia</i> | Tuscumbia darter | S | S1G1 | A | No. | |
| <i>Percina sp.cf.macrocephala</i> | Longhead darter (Warrior Brinled Darter) | S | G3 | A | No. | |
| <i>Necturus alabamensis</i> | Black Warrior waterdog | S | S2G2 | A | Yes | Potential habitat may be affected. |

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Key to Codes for Table #2.

¹S = sensitive; C = candidate for
Federal listing

Habitat Code

1 = Cave Habitats

2 = Wetland (Bog) Habitats

6 = Glades, Prairies, and Woodlands Habitats

7 = Rock Outcrop and Cliff Habitats

8 = Grass/Forb Habitats

10 = Mid- to Late- Successional Deciduous Forest Habitats

11 = Forest Riparian Habitats

12 = Habitat Generalist

13 = Area Sensitive Mid- to Late- Successional Deciduous Forest
Habitats

17 = Southern Yellow Pine Forests and Woodland Habitats

18 = Mixed Mesic Forest Habitats

19 = Mixed Xeric Forest Habitats

20 = Shrub/Seedling/Sapling Habitats

21 = Seeps and Springs Habitats

A = Aquatic Species

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All species listed for the Bankhead National Forest as threatened or endangered by the FWS and as sensitive by the Regional Forester were considered, but some were excluded from further evaluation. Potential habitat was assessed for effects. A discussion of the excluded species and the reasons for exclusion follows.

Federally Listed Species (Threatened & Endangered Species)

Gray bat and Indiana bat. Small populations of these two species of bats were found within Bankhead National Forest (BNF) in Lawrence County during 1999. Their presence has been verified in subsequent years in two caves. These bat species have not been encountered in Winston County. No known or potential habitat for these species will be impacted by this project. Known hibernacula are over 8.5 miles away from the project sites. The project site is in early successional stages and there are no large trees on the site that would be potential bat roosts. Thus, habitat for these two species is essentially not present. Caves databases were checked presence within the treatment area vicinity. None were found to be within the primary or secondary protection zones.

Bald eagle. The bald eagle has been observed occasionally during the winter and spring around portions of Bankhead National Forest that border the Lewis Smith Lake. Two inactive bald eagle nests were confirmed on National Forest system lands along Lewis Smith Lake during 2004 and 2005. The nests were not considered successful, but will be monitored for activity.

The bald eagle is threatened throughout its range by habitat loss, disturbance by humans, contaminants, decreasing food supply and illegal shooting.

The project sites do not contain potential bald eagle nesting habitat. They are located more than three miles from Smith Lake.

Red-cockaded woodpecker. There has been no record of a red-cockaded woodpecker at the Bankhead National Forest since the early 1990's. Informal conversations with Ralph Costa of the Fish and Wildlife Service resulted in agreement that the red-cockaded woodpeckers are no longer present here. Habitat for the red-cockaded woodpecker was not maintained on the Bankhead. Potential habitat is not present within the project sites.

Mussels - turgid blossom, pink mucket pearly, rough pigtoe and cumberlandian combshell mussels. Three of these species of mussels (turgid blossom, pink mucket pearlymussel, and rough pigtoe) are listed as having historic range within Lawrence County, Alabama. Their habitat was associated with the Tennessee River and its large tributaries. The turgid blossom mussel is considered to be extinct by the Fish and Wildlife Service and has never been found within the streams of Bankhead National Forest. The rough pigtoe is currently known only to occur in a few sites in the Tennessee, Clinch, Cumberland, Barren and Green rivers. This species is not known to occur within Bankhead. The pink mucket is distributed in Colbert, Lauderdale, Limestone, Madison, Marshall, and Morgan counties in Alabama. The pink mucket is a large river species known from the Mississippi, Tennessee, Ohio and Cumberland river systems and their tributaries. This species has never been recorded within the streams of Bankhead National Forest and is not expected to occur here. The rough pigtoe is found within the Tennessee River proper and thus will not be found within Bankhead National Forest.

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Mussels, continued.

The fourth, cumberlandian combshell, may have had historic range within north Alabama, as the habitat was associated with the Tennessee River. However, records do not indicate that it is currently found in or near the Bankhead National Forest.

None of these four species are listed by the US Fish and Wildlife Service within Winston County. There are no streams within the project sites. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

For the reasons listed above, these mussel species were excluded from further evaluation.

Leafy Prairie Clover. This species has not been found on the Bankhead National Forest. Habitat of the leafy prairie clover in Alabama is described as thin-soiled limestone glades and limestone barrens. In Tennessee, this plant occurs on wet calcareous barrens and moist prairies or cedar glades, usually near a stream or where some seepage from limestone provides seasonal moisture. Leafy prairie clover requires full sun and low competition. Periodic fire is required to maintain these conditions.

This species has declined throughout its range due to habitat destruction and alteration due to development, overgrazing, and fire suppression. It is highly threatened by continued habitat loss due to land use change. Additionally, sites in Tennessee are threatened by exotic, invasive shrubs like privet and bush honeysuckle.

The proposed project does not include glades or barrens habitat. Because habitat is not available for this plant within the project sites and because it is not known to occur on BNF, this plant was excluded from further evaluation.

Lyrate bladderpod. This species has not been found on the Bankhead National Forest or in Winston County. The six known populations of this plant occur in Franklin, Lawrence and Colbert counties, Alabama.

This plant's habitat is described as red soils, limestone outcroppings, disturbed cedar glades and glade-like areas (open pastures, fields, and roadsides in calcareous areas). This species is restricted to shallow soils. This plant requires periodic disturbance to maintain the open cedar glade habitat where it occurs. It is threatened by woody plant succession and habitat loss or modification.

The proposed project does not include glades or outcrop habitats. Because habitat is not available for this plant within the project sites and because it is not known to occur on BNF, this plant was excluded from further evaluation.

Kral's water plantain. This is an aquatic perennial plant that occurs along Sipseey and Caney Creeks. It is only known from three tributaries in northern Alabama and Georgia. Kral's water plantain (also known as Little River Arrowhead) occurs in undammed riverine reaches on exposed shoals or rooted among loose boulders in sands, gravels, and silts in pools up to 1 meter deep. Stream bottoms are

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typically narrow and bounded by steep slopes. Locally distributed, but where suitable habitat exists, the plants grow in nearly pure stands.

Siltation, impoundments, and eutrophication due to sewage are threats to this species.

The proposed project will not be conducted within nor affect aquatic habitats. There are no streams present within the project sites. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

Alabama Streak Sorus Fern. The known range of this plant includes a 5 km stretch of the Sipsey River in Winston County. Where it is found, in rock shelters along the Sipsey, it is locally abundant. Threats to this fern include impoundments, bridge construction, logging of upslope forests, vandalism, and incidental damage from recreational use of the habitat.

No plants occur within the proposed project sites, nor is their habitat present. Streams do not occur within the project sites. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

Tennessee yellow-eyed grass. This species has not been found on the Bankhead National Forest. Twenty populations are known in Alabama, Georgia and Tennessee. This species is vulnerable to land-use conversion and habitat fragmentation resulting mainly from highway construction and alteration of wetlands. It is also threatened by right-of-way maintenance.

Tennessee yellow-eyed grass may be found in moist- to wet places including, on seepage slopes, springy meadows, bogs, and banks of small streams, in open areas or thin woods where calcareous rock is at or near the surface or on thin calcareous soils.

The proposed project does not include Tennessee yellow-eyed grass habitat. The plant is not known to occur on BNF. Therefore, it was excluded from further evaluation.

Mohr's Barbara's buttons. This species occurs in moist prairie-like openings in woodlands and along shale-bedded streams in a grass-sedge community. Some populations are also located within road rights-of-way that are seasonally wet. This plant is known from 32 locations in north central Alabama to northwest Georgia in the Cumberland Plateau and the Ridge and Valley physiographic regions. One population was recently discovered along a stream on private land within the southern administrative boundary of the Bankhead National Forest.

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Threats include road widening, burying utility lines, and right-of-way maintenance activities including mowing during flowering, herbicide application, and planting of aggressive competitors. Habitat conversion and encroachment of woody species in the absence of fire are also threats to populations. Drainage of sites where this plant occurs would be detrimental.

This species appears to maintain itself only in areas that are naturally or artificially cleared and where hardwood and understory shrubs are at low densities. Open conditions may have been maintained by fire historically.

A detrimental impact to the species is not expected or anticipated due to the fact that the plant has not been encountered on National Forest lands. This species was not encountered within the project area. This site preparation project will not have direct, indirect or cumulative effects on Mohr's Barbara's buttons. The rationale for this determination is that the plant and its habitat are not expected to occur within or adjacent to the project sites.

Suitable habitat for this species does not occur on the proposed project site. Thus no further evaluation was conducted on Mohr's Barbara's buttons.

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Forest Service Sensitive Species

SMALL-FLOWERED BUCKEYE and BUTTERNUT

Small-flowered Buckeye is found in rich mesic woods and along creek margins. Butternut is found primarily on, but not limited to, limestone-derived soils, heavy clay-like soils, and well-drained soils associated with bottomlands and floodplain woods, or calcareous mesic woods. Butternut is found in rich hardwoods and streamside margins, especially in calcareous alluvial depositions along the streams. This tree rarely occurs in pure stands. It is shade-intolerant. The major threat to butternut throughout its entire range is the butternut canker disease. Lack of disturbance and shading are also threats to successful reproduction of butternut.

These species and their habitat were not encountered during field surveys and are not known to occur within the project sites.

MENGE'S and LIMESTONE FAMEFLOWER and TENNESSEE MILKVETCH

Tennessee Milkvetch is found on limestone glades in Morgan County. Potential habitat exists within the Bankhead National Forest. Menge's fameflower is associated with cedar glades, limestone or sandstone outcrops, sandstone cliffs or rocks. Menge's fameflower is found in soil pools within expanses of flat sandstone outcrops that are large enough to allow full sunlight or near full sunlight on the outcrop. Although no plants were found during surveys of the proposed areas, these plants are present throughout the Bankhead National Forest in glade type habitats. Limestone fameflower is also associated with glades and rock outcrops. It has not been encountered in the Bankhead National Forest. Limestone fameflower is known from the Nashville Basin and calcareous lowlands of middle Tennessee, from northern Alabama, and from Kentucky. This locally abundant plant is threatened by urban expansion and conversion of some open glades to low-quality pasture across its range.

These species and their habitat were not encountered during field surveys and are not known to occur within the project sites.

BRYSON'S SEDGE

This species is associated with, but not limited to, low wet woods or areas commonly considered being riparian areas within streamside management zones. It needs mesic conditions and at least partial shade to survive. They are not limited to a particular soil type, but do include moist, sandy loams. Bryson's sedge is found in rich deciduous woods or on bluffs above streams. It is a newly identified plant (1993) and little is known about its life science. Bryson's sedge is apparently narrowly endemic to gorges of a single drainage in the Cumberland Plateau physiographic province in Alabama.

Threats include land-use conversion and habitat fragmentation.

The project sites do not contain habitat for this species. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

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FLESHY-FRUIT and ALABAMA GLADECRESS

Fleshy-fruit gladeblossom has been encountered on two glades within the Bankhead National Forest. It is endemic to Lawrence and Morgan counties in Alabama and verified from six sites in those two counties. It occurs on limestone glades, fallow fields and along roadsides in sunny, open habitats. This gladeblossom is highly threatened by human disturbance, including ATV use and trash disposal on glades.

Alabama gladeblossom is associated with limestone glades and is known from Franklin and Lawrence counties.

Limestone glades, from which these species are known, are not present within the project sites.

DUCK RIVER BLADDERPOD

This species is only known from four counties in Alabama and from approximately fifty occurrences in seven counties in Tennessee. This species is known to occur in Franklin and Marshall counties in calcareous fields and pastures. It has not been encountered within the BNF and is not expected to occur within the project sites. Agriculture, stream modification, dam construction and competition with grasses all pose threats to this species.

Habitat for this species does not exist within the project sites.

LITTLE MOUNTAIN MEADOW RUE, NEVIUS' STONECROP, LIVERWORTS AND SCOTT'S SPLEENWORT

These species are somewhat to very epipetric in that they are usually found on more or less vertical rock faces.

Little mountain meadow-rue is restricted to wet sandstone habitats and known only from eastern Kentucky and Tennessee, south to northern Alabama. Like the other epipetric species considered here, habitat is difficult to access; thus limiting threats.

Nevius' stonecrop is most likely on rock faces or bluffs above creeks and rivers on limestone or shale, and on limestone outcrops in woodlands growing amongst various mosses under light to heavy shade. It is restricted to a total of 8 counties in north-central Alabama, west-central Georgia and southeastern Tennessee. Nevius' stonecrop is threatened primarily by factors that dry out its habitat or intensively shade it. The rocky, bluff habitats of this species make it difficult to access; therefore, it is not severely threatened range-wide.

Liverworts are moss-like, non-vascular plants that grow on damp ground, rock outcrops, spray cliffs, and downed wood. These species are found in late successional riparian forests. *Plagiochila echinata* is reported to occur on rocks and stream banks in humid gorges and in the spray zone of waterfalls when encountered in North Carolina. *Cheilolejeunea evansii* is known from eleven extant occurrences in the southern Appalachians in western North Carolina, western South Carolina and north central Alabama. This liverwort is found at lower elevations on the bark of trees in moist gorges and gorge-like habitats. It may occur on standing trees at just above ground level to 3 meters up the trunk on a variety of mesic to dry-mesic hardwoods. Threats to this liverwort include clear cutting or activities that would result in the removal of trees in the vicinity of the bryophyte.

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Scott's Spleenwort is epipetric. It is found in cool rock crevices (limestone, sandstone, or conglomerate cliffs) with a northern exposure. It is also associated with moist, shady habitats. It is not known from BNF. It has been encountered in Jefferson County, Alabama.

The proposed project will not occur within the appropriate type of habitat for any of these species. There is no opportunity for impact to the moist, rock habitats where these species are found. None of these species were found during field reviews.

BROADLEAF BARBARA'S BUTTONS

Broadleaf Barbara's buttons is endemic to the southeast and is known from several states, but is not common. This species is restricted to specialized seepy calcareous habitats. This species has been described as being found in pinelands and damp woods. It is not known from the Bankhead. Habitat for this plant is generally unsuitable for other uses, but land-use conversion and fragmentation are considered threats.

Potential habitat for broadleaf Barbara's buttons does not occur within the project sites.

ALABAMA SANDWORT

Alabama sandwort is not currently known from any locations on the Bankhead, although it has been found within one mile of the administrative boundary. This species is an Alabama endemic and is associated with glades, barrens, and rock outcrops.

Potential habitat for Alabama sandwort does not occur within the project sites.

ALABAMA SNOW-WREATH

This plant is rare throughout its range, with widely scattered populations that are mostly or entirely clonal. It is known to occur on forested bluffs, talus slopes, and stream banks. It occurs on a variety of geologic substrates, soils and aspects, and under open- to completely closed-canopy conditions. This species has not been recorded in BNF, or in Winston, Lawrence or Franklin counties. It has been recorded from DeKalb, Jackson, Madison, and Tuscaloosa counties.

Alabama snow-wreath and its habitat do not occur within the project sites.

MONKEY-FACE ORCHID (White Fringeless Orchid)

Habitat for this orchid is generally described as wet, boggy areas, stream heads, or seepage slopes in acidic muck or sand, in flat or at the bottom of sharply sloped streamside in association with species of Sphagnum moss and Cinnamon fern, chain fern and/or New York fern. Soils are permanently moist, but are not often flooded.

This species has been encountered in one location on the Bankhead. This species of limited distribution is threatened across its range by land-use conversion, habitat fragmentation, succession, pollution, and to a lesser degree by forest management practices.

Potential habitat for this orchid does not occur within the project sites. This species was not found during field reviews of the project sites. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the

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National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

TENNESSEE LEAFCUP

Tennessee leafcup occurs mainly on rich wooded slopes in light to dense shade of mixed mesophytic woods on moist loamy and rocky substrates. In Tennessee, habitat includes limestone bluffs, ridges, rocky creek bottoms, and mixed mesophytic forest slopes on the Cumberland Plateau. In Kentucky, it occurs on rich, mesic wooded slopes on loess or alluvial slopes. In Florida, it occurs on thin moist soils directly over limestone bedrock.

Across its range, threats may include logging operations and grazing that result in competition from non-native plants.

Tennessee leafcup is not known from the Bankhead National Forest. Rich mesic woods and limestone bluffs, ridges, glades, outcrops or creek bottoms are not present within the project area.

PINNATE-LOBED BLACK-EYED SUSAN

This species may be found in riparian areas, on moist shaded hardwood slopes, on rich soils, and in association with rock outcrops and cliffs. It is known from 27 sites in Alabama. It was not encountered during field surveys of the project site.

Range-wide threats include land-use conversion and habitat fragmentation.

The project sites do not contain rock outcrops, cliffs, riparian areas, or moist slopes. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

ALABAMA SKULLCAP

This species is known to occur in Calhoun, Cullman, Etowah, Jefferson and St. Clair counties. It is associated with moist clearings in oak-pine flats. Habitat is described as moist shaded hardwood slopes and rich soils; mixed pine-hardwoods; and forest margins.

This species was not encountered during field surveys, is not known to occur in the Bankhead National Forest, and potential habitat does not exist within the project sites.

BLUE RIDGE CATCHFLY

Silene ovata is associated with cliffs, rock barrens, sandstone outcrops and rock houses in rich woods. Although it has been recorded only from Dallas, Geneva, and Marengo counties, potential habitat does exist on the BNF, but not within the project sites.

Range-wide threats include heavy logging, grazing, flooding by impoundment, clearcutting, construction and quarrying projects that destroy this species habitat.

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Potential habitat does not occur within the project sites. This plant was not encountered during field surveys.

SWEET PINESAP

This small saprophytic plant is often found in dry sandy (acidic) woods, and is usually found in pine and mixed pine/hardwood stands. It has been cited as an associate of mature southern yellow pine forests, and open woodland or savannah settings. Additional habitat has been described as open mature oak woodlands, with a pine component. It is most often found under pines, giving rise to the common name. It has been reported as being saprophytic on pine roots, and the bases of pine trees. It has also been reported to occur in mixed deciduous hardwood pine stands. In the south, it occurs in the mountain foothills and piedmont areas.

Sweet pinesap has a limited distribution and is rare throughout its range. As this area has been cleared of most pine trees due to treatment to control southern pine beetles, followed by manual site preparation this plant is not likely to be present. Sweet pinesap was not observed on the survey of the project area and its presence is very unlikely. No impact is anticipated.

SPREADING YELLOW FALSE FOXGLOVE

Spreading yellow false foxglove has been reported from a single location on the Bankhead. This species has been encountered in Cherokee County. It is found in Tennessee, Alabama and northwestern Georgia. It is reported to occur in an open mature oak woodland setting. This particular species, *Aureolaria patula*, has been found on river bluffs in Tennessee. Other species of *Aureolaria* are found on a variety of sites from upland hardwoods to sandy sites of the coastal plain.

Threats include destroying overstory shading, allowing invasion of exotic weeds, runoff and erosion according to NatureServe. This species will tolerate canopy gap creation and low fires.

Site preparation activities will have no impact on spreading yellow false foxglove. This plant and its habitat were not encountered during field surveys. The project site does not contain habitat for this plant. The restoration of shortleaf pine on the sites will not provide an open mature oak woodland setting that is characteristic of this plant's habitat. No impact is anticipated.

CLAMMY LOCUST

Clammy locust is known from the eastern United States and Europe. The shrub is probably native only to the mountains of western North Carolina and Tennessee, and perhaps southern Virginia, Georgia, and Alabama. It has been introduced in other parts of the country. Other habitat descriptions include thin woods, open places, ridgetops, dry rocky mountain longleaf pine forests, and open woodland or savannah settings. Clammy locust occurs on dry sandy soils, rocky slopes, and around small drainheads. It is shade tolerant to some degree.

Clammy locust is reported to be present in one wildlife opening on the southern end of Bankhead National Forest. Dr. Jimmy Huntley confirmed the presence of clammy locust in the wildlife opening although it has not been found on any other sites on Bankhead.

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Clammy locust was not encountered during field surveys. No impact is anticipated.

JEWELLED TRILLIUM

This species is known from the Bee Branch area of the BNF. The habitat of this plant is described as rich coves under mature trees, in rhododendron thickets along streams, and at forest edges, frequently on outcrops partially exposed by road building. The plant is associated with moist, "humusy" soil.

Appropriate habitat is not available within the project sites, and no individuals were encountered during field surveys.

LANCELEAF TRILLIUM

This trillium flourishes in alluvial soils and floodplains. It has been encountered growing in rocky upland woods and brushy thickets. It is commonly associated with moist to wet soils.

Appropriate habitat is not available within the project sites, and no individuals were encountered during field surveys.

RAFINESQUE'S BIG-EARED BAT

This mammal uses abandoned, dilapidated buildings and large hollow trees in or near wooded areas as sites for nursery colonies and summer roosts. According to E. D. Pierson, this species may form roosts under loose sloughing bark of dead and dying trees, in addition to roosts formed in tree cavities (1998). This bat may roost singly, in small clusters, or in large groups of up to 100 or more individuals. Bridges have been shown to be important day-roost sites in some areas.

It hibernates in old mines, caves, cisterns and wells in the northern part of its range. According to Best et al., this species usually is not found hibernating in caves in the southern part of its range (1999). In Kentucky, shallow caves or rock shelters in sandstone formations of the Cumberland Plateau are used.

Foraging habitat for this bat is described as primarily mature forests in both upland and lowland areas.

Despite records of large number of occurrences of this species throughout its range, it has never been considered abundant. This bat roosts in small numbers at scattered locations. It is known or suspected to be declining in more than half of the states within its range. In most other states, data are unavailable to determine population trends. The range of this species approximates the historical range of the great cypress swamps, indicating that it may have relied on these sites for roosting and foraging (Bat Conservation International 2001).

This species is very intolerant of disturbance and may abandon roost sites or hibernation sites if disturbed. Threats to Rafinesque's big-eared bat include forest destruction, hollow tree removal during forest management, decreasing availability of abandoned buildings, possibly insecticides, vandalism of caves and mines, and closing or blasting of mines.

Habitat for Rafinesque's big-eared bat is not present within the project area. This bat's presence has not been confirmed on the BNF or surrounding areas.

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CADDISFLIES

Two sensitive species of caddisflies may be found in the BNF. *Hydroptila paralatosa* is found in small streams of the fall line and has been collected in Winston County. *Rhyacophila carolae* has been collected in a small tributary of Bee Branch in the BNF. Threats and population estimates are not available from NatureServe for either of these species.

Caddisflies are confined to water during the majority of their life cycle. Adults of most species are inactive during the day and active during the evening (Harris et al., 1991).

The proposed project will not be conducted within nor affect aquatic habitats. There are no streams present within the project sites. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

ALABAMA SPIKE, SOUTHERN CREEKMUSSEL, SOUTHERN HICKORYNUT, ALABAMA HICKORYNUT, ALABAMA RAINBOW

Potential habitat for these aquatic species exists on BNF. All of these mussel species require habitat stability, including substrate and water quality. These species are sensitive to water quality degradation; sedimentation being an important factor. Ground disturbing activities within a watershed are potential sediment sources. Reservoirs and other waterway projects, as well as kaolin strip mines have altered Alabama Spike habitat in some areas of this species' range. These threats are not currently factors on the Bankhead.

Several of these species have been collected in the northern portion of the BNF, including the Alabama Spike, Southern Creekmussel and the Alabama Rainbow (McGregor, 1992).

Alabama spike is known to occur in high gradient streams. Data are limited on population trends for the Alabama Spike throughout its range. Additionally, some taxonomic confusion and lack of status surveys contribute to the lack of abundance data and records. The Alabama Spike (*Elliptio arca*) may be the same species as the Delicate Spike (*Elliptio arctata*).

The southern creekmussel is most common in mid-channel river habitats in most of its range. These habitats are threatened by excess sedimentation, channel modifications, impoundments, water withdrawals, urbanization and point and non-point pollution.

The Alabama hickorynut is restricted to large streams in the Mobile Basin. It has been extirpated from most of the historical range by stream impoundment and channelization and water quality degradation. This species is currently declining globally and is generally uncommon. It is relatively tolerant of nondestructive intrusion, but heavy recreational use of habitat could be disruptive.

The Southern hickorynut was historically distributed from Alabama to Eastern Texas and in the Mississippi embayment as far north as southeastern Missouri. Alabama counties included in distribution records include Greene, Pickens, Sumter, and Tuscaloosa counties.

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These species do not exist within the proposed project sites. No mussels were encountered during field surveys as streams are not present. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

DARTERS

Tuskaloosa darter is found in streams with moderate to swift flow. It will be found in cobble, gravel and slab riffles. It has been collected in Sipsey Fork, Borden Creek, Rush Creek and Capsey Creek in the Bankhead. This species was not collected during Biomonitoring in the Upper Mulberry Fork Watershed, 1999-2001 conducted by Geological Survey of Alabama. The Tuskaloosa darter has a small range and limited number of occurrences, but it is abundant where it does occur. The populations are considered to be stable. Range-wide threats include timber practices, coal mining, proposed reservoirs, and siltation resulting from increased urbanization.

The warrior darter is found in small to medium streams with moderate flow. This species will be found in rubble, bedrock, and gravel-filled pools. This species feeds on aquatic insect larvae. Warrior darter has been collected in the following creeks on Bankhead National Forest; Thompson, Borden and Sipsey Fork. This species is restricted to the Black Warrior River system where the species is common but localized. The species is considered to be currently stable, but threats include habitat alteration and modification due to development and impoundments.

Rush darter has been collected in the Clear Creek system in Bankhead National Forest. Collection sites are characterized as relatively low gradient, small streams with sand substrate and burrweed beds. There are three small known populations of this species. This species is uncommon and vulnerable to habitat alteration and decreases in water quality.

Tuscumbia darter is found in limestone spring ponds and runs with aquatic vegetation present. Tuscumbia darter has a narrow range in springs along the Tennessee River in Alabama. Populations are vulnerable to land use changes. Other threats include siltation, changes in the water table, predation, and loss of aquatic vegetation. This species is especially sensitive to changes in physical habitat, such as temperature or turbidity.

The longhead darter, also known as the warrior brinled darter, is known only from the upper Sipsey Fork of the Black Warrior River, where abundance is low. It has been collected within the Bankhead National Forest in the Sipsey Fork. This darter is currently only known from a 10 mile stretch of the Sipsey Fork. This population is believed to be stable. Current threats are reported to be sedimentation. Implementation of riparian zone protection should reduce threats. Additionally, the large amount of truck traffic crossing bridges over the Sipsey Fork present a potential threat in the form of an accidental spill.

These species do not exist within the proposed project sites. No fish were encountered during field surveys as streams are not present. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the

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National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

EVALUATED SPECIES SURVEY INFORMATION

The following from the Federally listed species and Forest Service listed Sensitive species, were fully evaluated in this BA/BE; Eggert's sunflower; flattened musk turtle; Mussels - Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, triangular kidneyshell, dark pigtoe, fine-lined pocketbook, upland combshell, ovate clubshell; Black Warrior waterdog and Diana fritillary.

Eggert's sunflower has an unsubstantiated record of occurrence within Winston county. Flattened musk turtle habitat was documented within the area by a recent study from the University of Alabama at Birmingham. Critical habitat for the Ovate Clubshell, Triangular kidneyshell, Alabama moccasinshell, Orange-nacre mucket and the dark pigtoe mussel has been designated for the Brushy Creek in the vicinity of the project. Auburn University projects have detailed presence of Black Warrior waterdogs in the vicinity of the project. There are no records of the Diana fritillary but records of occurrence indicate that the species is potentially.

Site specific surveys of the project sites were conducted at various times over the past two years on this site by District Wildlife Biologist Tom Counts. No species listed as threatened or endangered by the FWS or as sensitive by the Regional Forester were encountered during field surveys within the actual project area. Additionally, extensive surveys were conducted in surrounding areas and throughout the forest for the Bankhead's Forest Health and Restoration Project and Environmental Impact Statement. None of the species evaluated here were encountered during those surveys. Survey methods included walking over the project sites searching for listed plants and animals, as well as potential habitat. Field notes are located within the project file at the District office in Double Springs.

ENVIRONMENTAL BASELINE FOR THE SPECIES EVALUATED and EFFECTS OF PROPOSED MANAGEMENT ACTION ON EACH SPECIES EVALUATED

Federally Listed Species (Threatened & Endangered Species)

Mussels - Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, triangular kidneyshell, dark pigtoe, fine-lined pocketbook, upland combshell, ovate clubshell.

Environmental Baseline

These are aquatic species with habitat on Bankhead National Forest. The historic and current habitat for many of these include the Sipsev Fork, Thompson, Flannagin, Borden, Caney, North Fork Caney, Brushy, Capsey, Rush, Brown and Beech Creeks within Bankhead National Forest.

The Coosa moccasinshell and the ovate clubshell have not been recorded on the BNF in

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recent years, although it is within their historic range. There are no population estimates for the Coosa moccasinshell. The ovate clubshell is considered to be rare throughout its range and it has designated critical habitat within Bankhead National Forest.

The triangular kidneyshell's current range includes the Sipsey Fork in the Black Warrior River drainage. Population estimates for this species are not known. Its range is extremely limited. This limited range, combined with low species numbers make it very vulnerable to threats. Threats include impoundment of habitat and over utilization for commercial, recreational, scientific, and educational purposes.

The upland combshell was historically known from the Black Warrior River drainage in Alabama. This species has not been observed within streams of the Black Warrior since the early 1900's. Threats to this species include habitat modification, sedimentation, and other forms of water quality degradation.

The current distribution of the dark pigtoe is limited to the tributaries of the Sipsey Fork in Winston County, where it is most common, and the North River in Tuscaloosa and Fayette counties. This species is generally rare wherever it occurs. Population estimates are not known. This species is sensitive to impoundment, habitat modification, sedimentation, and water quality degradation.

The current distribution of the fine-lined pocketbook is believed to be limited to the headwaters of the Sipsey Fork of the Black Warrior River drainage; Tatum Creek in the Alabama River Drainage; Little Cahaba River in the Cahaba River Drainage; Conasuaga River in the Coosa drainage and one site in the main channel; and Chewacla and Opintlocco Creeks in the Tallapoosa River drainage. Threats to this species include habitat modification, sedimentation and water quality degradation. Historically this species was spread throughout the Mobile River Basin, but currently there are only eight records for this species within the historic range.

The orange-nacre mucket was historically known from Brushy Creek, Mulberry and Sipsey Forks in the Black Warrior River drainage in the area around Bankhead National Forest. It has disappeared from many streams within its historic range. Population estimates are unavailable for this species, although it is described as being common in a few streams in Bankhead National Forest. And, these populations within Bankhead may be stable, according to Nature Serve records. Threats to this species include habitat modification, sedimentation and water quality degradation. This species is reported to be relatively tolerant of nondestructive intrusion, though heavy recreational use of mussel habitat could be disruptive.

The current range of the Alabama moccasinshell includes the headwaters of the Sipsey Fork in the Black Warrior River drainage (Brushy Creek) where this species is considered to be locally common and the populations stable. Threats to this species include habitat modification, sedimentation and water quality degradation.

Water quality, cool temperatures and continuous flow are major considerations in the viability of these animals. Measures to protect these characteristics are necessary for all actions within the Black Warrior Drainage system. Threats to these species include habitat modification, sedimentation and water quality degradation.

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Direct, Indirect and Cumulative Effects

The northern portion of the project lies less than a 0.25 mile from Brushy Creek while the southern most part is almost 0.5 miles from the stream. Although appropriate stream habitat is not included within the proposed project sites it is within very close proximity and it is directly downhill from the site. Sites to be treated by the project are the less sloping hilltop and hillside areas. Areas with steeper slopes have been omitted from the project. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Erosion control (mitigation measures) will be utilized where indicated by FS personnel to control erosion, with regard to constructed fire lines. The fireline construction portion of this project has previously been evaluated and approved by Fish and Wildlife Service, as noted. Mitigation actions included in the proposed project are primarily focused upon the fire lines constructed with heavy equipment. These actions include the use of erosion control measures on sloping areas where needed and recognition of equipment restrictions within existing FS streamside management zones. The use of firelines constructed by hand tools will be utilized in areas that are close to streams and drains to provide additional protection to water quality.

The project will be conducted in an upland area that does not include habitat for these species. Thus, there will be no opportunity for a direct effect. The potential for indirect effects are present due to the site being directly uphill from the stream course. Project standards and built-in project mitigations as described above will prevent indirect effects or in a worse case scenario, limit any indirect effects to an insignificant or discountable level. Adverse modification of designated critical habitat is not anticipated due to project planning and mitigations.

A cumulative effects analysis should consider incremental impact of actions when added to past, present and reasonably foreseeable future actions. The analysis includes all actions regardless of who undertakes the actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time. Cumulative watershed effects from off-forest sources are of concern given the interspersed private in-holdings on some sections of proposed critical habitat. However, the Forest Service has no authority on private land activities. Continued habitat and watershed protection, monitoring, and restoration will be the primary recovery objectives on Forest lands. This project is to be conducted with a high level of concern and project planning to protect habitat for this species. Thus it is not anticipated to be a part of a negative cumulative effect.

Determination of Effect

Based on these standards as noted above, this project “**may affect, but is not likely to adversely affect**” the above listed mussels and “**no adverse modification of designated critical habitat is anticipated.**”

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Flattened Musk Turtle

Environmental Baseline

The flattened musk turtle is an aquatic species that is found within the upper Black Warrior drainage. This species generally requires clear gravel bottomed streams with rocky outcroppings and pools 3 to 5 feet in depth. Clear streams are necessary for the production of filter feeders (mussels), which are the primary source of food for this species. The rocky crevices and outcroppings provide cover for the turtle. This species is found in the perennial streams of the Sipsey Fork, Brushy Creek, Clear and Caney Creeks and their primary tributaries. It is also found in backwater sloughs of Lewis Smith Lake.

Threats to the flattened musk turtle include over collection, disease, habitat degradation from sedimentation and water pollution, habitat fragmentation and human-caused catastrophes and accidents (for example accidental spills).

Direct, Indirect and Cumulative Effects

The proposed project is near to known habitat and is within the same watershed of existing habitat. Streams are not included within the proposed project area and heavy equipment is excluded from operating there. Thus there will be no direct effects on this aquatic species.

Indirect effects could occur by way of sedimentation induced by erosion of the hillside that could enter the water source. This is prevented by a number of avenues. Initially the project was laid out to not include steeply sloping areas for treatment. The use of a drum chopper is perhaps the least damaging method of mechanical forestry site preparation. Also all phases of fireline construction will be conducted with regard to soil erosion, its prevention and control. Bankhead personnel have an excellent record of conducting burning operations with minimal impact from fire lines. Cumulative effects to this species is negligible in that all Forest Service projects are critically examined and mitigated within the project planning phase to reduce and prevent erosion. The Forest Service has control of much of this watershed although projects on private lands are not regulated.

Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. In general based on these standards, this project will have little or no effect on aquatic or riparian species.

Thus, direct or indirect physical damage is not anticipated to occur or will be of insignificant or discountable levels.

A cumulative effects analysis should consider incremental impact of actions when added to past, present and reasonably foreseeable future actions. The analysis includes all actions regardless of who undertakes the actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time. Cumulative watershed effects from off-forest sources are of concern given the interspersed private in-holdings on some sections of proposed critical habitat. However, the Forest Service has no authority on private land activities. Continued habitat and watershed protection, monitoring, and restoration will be the primary recovery objectives on Forest lands. This project is to be conducted with a high level of concern and project planning to protect habitat for this species. Thus it is not anticipated to be a part of a negative cumulative effect.

Determination of Effect

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Based on these standards as noted above, this project “**may affect, but is not likely to adversely affect**” the flattened musk turtle.

Eggert’s sunflower

Environmental Baseline

This sunflower is known only from the Interior Low Plateaus of Kentucky, Tennessee, and Alabama. This sunflower is found growing in colonies in open oak/pine woodlands, grassy openings and barrens with shallow soils (barrens/woodland ecosystem). Habitat has been described as rocky hills, barrens or open upland oak-pine woods. It is believed to be an early successional species that is shade-intolerant. It is also reported that this sunflower requires disturbance, such as fire, for germination and habitat maintenance. The habitat it is known from is described as a barrens/woodland ecosystem that is maintained by fire and drought. This habitat type was presumably more widespread when fire and free-roaming grazing animals were more common on the landscape.

In the southeast, large areas with scattered trees and abundant stands of native grasses and flowering herbaceous plants are no longer common. Across its range, most of this plant’s natural habitat has been converted to cropland or pasture or developed as residential or commercial sites. This community persists on roadsides and recently disturbed areas.

This plant has not been encountered on the Bankhead National Forest. In Alabama, this species has been recorded in Winston County, within a mile of the Bankhead National Forest administrative boundary, in open ridgetop oak savannahs.

This species is found in disturbed areas such as road rights-of-ways. In these locations, the plants present may be threatened by road maintenance activities. Other known habitat is currently threatened by weedy and woody succession.

Upland pine/oak woodlands or barrens are not present within or adjacent to the project sites. The project sites are included in areas identified for ecosystem restoration. The project site falls within the 7.E.2. management prescriptions as described in the Revised Land and Resource Management Plan. The project sites fall within Area 2 as described in the Forest Health and Restoration Project EIS. Oak and pine/oak woodlands are included among the community types identified for restoration in the upland areas of the Bankhead. Sixty acres are identified for treatment by this proposed project. This sixty acres is identified for upland pine woodland (shortleaf/bluestem) community restoration.

Direct, Indirect and Cumulative Effects

Direct effects to Eggert’s sunflower are not expected due to the fact that the plant has not been encountered on the forest and potential habitat is not currently available in the project sites. Indirect and cumulative effects include the potential for increasing the available habitat on the forest over the long term. The indirect effects may be realized at the project sites (60 acres) by producing a habitat conducive to the establishment for the species. A cumulative effects analysis considers incremental impacts of actions when added to past, present and reasonably foreseeable future actions. The analysis includes all actions regardless of who undertakes the actions. The cumulative effects may be realized across the forest landscape by ultimately producing habitat improvement. When considering these project sites (60 acres) in conjunction with additional sites identified for restoration to upland woodland communities through the Forest Health and Restoration Project (roughly 6000 acres), the cumulative effects to woodland species, including Eggert’s Sunflower, may be beneficial.

Determination of Effect

The proposed project for site preparation of two stands is “**may affect, but is not likely to adversely affect**” Eggert’s sunflower, as long term beneficial effects may result from this project.

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Forest Service Sensitive Species

BLACK WARRIOR WATERDOG

Environmental Baseline

The Black Warrior waterdog is an aquatic salamander that is known to occur in the Lower and Upper Sipsey Fork and Lower and Upper Brushy watersheds in the Bankhead. Optimal habitat is described as free-flowing large streams or small rivers with forested streamside zones. Detectable flow and leaf packs within streams are required. Other factors contributing to habitat quality include a low silt load and substrate deposits, low nutrient content and bacterial counts, moderate temperatures, and minimal overall chemical pollution. This salamander is currently known from 10 locations, the populations are highly fragmented, the population densities are low, and habitat conditions are degraded in general. Habitat degradation and fragmentation are threats to this species.

Potential Management Effects and Determination

Recent work by Auburn University found Black Warrior Waterdogs in Brushy and Capsey Creek but not in Rush Creek. This salamander and its habitat do not exist within the proposed project sites but likely inhabit the creeks which are immediately downstream from the project. Sites to be treated by the project are the sloping hilltop and hillside areas. Areas with steeper slopes have been omitted from the project. If this project were conducted without due regard for water quality, there could likely be impacts to the habitat for this species from sedimentation. However, Forest Service standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. There are also standards that regulate the use of site preparation methods on sloping lands. These standards of protection are instituted within the project and are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. The use of a drum chopper is considered to be one of the least damaging methods of mechanical forestry site preparation. Also all phases of fire line construction will be conducted with regard to soil erosion, its prevention and control. Although these protective standards are in place and are planned to provide protection for the species, this project will take place directly above potential habitat for this species and there is ground disturbance on at least two aspects (drum chopping and fire lines) of the project. There is a chance that the project “may impact individuals, but not likely to cause a trend to federal listing or loss of viability” of the Black Warrior Waterdog.

DIANA FRITILLARY

Environmental Baseline

This butterfly is described as a woodland species that is associated with stream habitat and riparian areas. The species uses a variety of habitat components including hardwood woodlands and mixed pine/hardwood woodlands and forests. Breeding habitats are generally described as mesic forests such as cove forests and sometimes bottomland areas. Adults also use adjacent fields, pastures, shrublands, grasslands, meadows, glades and woodlands for nectar.

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This species is somewhat common in the mountains in a small area from southwestern Virginia to the Great Smokies region and rare and sporadic elsewhere. Forest Service records do not indicate this species presence on the Bankhead. Diana fritillary has the potential to occur on Bankhead.

Currently, gypsy moth spraying is the largest threat to this species throughout the range. Other threats to this species include habitat loss and habitat fragmentation. Provision of varied habitats with woodland and savanna components is identified as a primary need for this species.

According to NatureServe, there are no useful estimates of numbers of this species to address global abundance. Again, this species is not known from Bankhead, so there are no estimates of population size to address local abundance either.

Potential Management Effects and Determination

Site preparation activities may impact individuals, but are not likely to cause a trend to federal listing or loss of viability.

Diana fritillary may use the two project sites for feeding as they are currently vegetated with shrubs, saplings, and herbaceous plants. Roller drum chopping and site preparation prescribed burning will preclude nectar plants from the site for a period of time (temporary habitat loss) and may cause mortality to individuals. This impact is discountable because currently there are approximately 18,000 acres of southern pine beetle killed areas (bug spots) that are ten acres and larger. Plus, there are additional acres of bug spots spread across the BNF that are less than ten acres in size, similar to the 20 acres proposed for treatment here. These bug spots may be used by Diana fritillary for feeding as well.

Diana fritillary habitat may benefit over the long term through this project and other woodland restoration projects across the Bankhead. Distribution, quality and abundance of woodland habitat are expected to improve under the Revised Land and Resource Management Plan and the Forest Health and Restoration Project.

DETERMINATION OF EFFECT - *Federally Listed Species (Threatened and Endangered)*

The proposed activity will have “no effect” on Indiana and gray bats, bald eagle, red-cockaded woodpecker, Cumberlandian combshell, Turgid blossom pearly mussel, Rough pigtoe, Pink mucket pearly mussel, leafy prairie clover, Kral’s water plantain, or Alabama streak-sorus fern, lyrate bladder-pod, Mohr’s Barbara’s buttons or Tennessee yellow-eyed grass. The rationale for this finding is that the proposed project does not intersect with potential habitat for these species, thus there is no opportunity for the proposed project to affect the species in a direct, indirect or cumulative manner.

The proposed activity “may affect, but is not likely to adversely affect” flattened musk turtle, upland combshell, fine-lined pocketbook, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, dark pigtoe, ovate clubshell, triangular kidneyshell mussels. The project will not adversely modify designated critical habitat for these mussel species. The rationale for this finding is that the proposed project is to be conducted in very close proximity to streams and riparian habitats. Protective measures will be in place and observed during the project that will not result in a change to water quality or sediment delivery to streams based on Forest Plan standards and erosion control measures.

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Any impact to aquatic habitats would have an insignificant or discountable effect and thus be of a minor nature.

The determination is “may affect, not likely to adversely affect” for Eggert’s sunflower. The rationale for this finding is that woodland restoration may indirectly and cumulatively benefit Eggert’s sunflower by improving the amount and quality of appropriate habitat on the Bankhead.

Table #3.

Federally Listed Species of the Bankhead National Forest

| Scientific Name | Common Name | Status | Finding |
|---------------------------------|------------------------------|--------|---|
| <i>Myotis grisescens</i> | Gray Bat | E | No effect |
| <i>Myotis sodalis</i> | Indiana bat | E | No effect |
| <i>Haliaeetus leucocephalus</i> | Bald Eagle | T | No effect |
| <i>Picoides borealis</i> | Red-cockaded woodpecker | E | No effect |
| <i>Sternotherus depressus</i> | Flattened musk turtle | T | May affect, but is not likely to adversely affect (insignificant/discountable) |
| <i>Epioblasma brevidens</i> | Cumberlandian combshell | E | No effect |
| <i>Epioblasma metastriata</i> | Upland combshell | E | No effect |
| <i>Epioblasma turgidula</i> | Turgid blossom pearly mussel | E | No effect |
| <i>Lampsilis atilis</i> | Fine-lined pocketbook | E | May affect, but is not likely to adversely affect. No adverse modification of designated critical habitat. (insignificant/discountable) |
| <i>Lampsilis perovalis</i> | Orange-nacre mucket | T | May affect, but is not likely to adversely affect. No adverse modification of designated critical habitat. (insignificant/discountable) |
| <i>Medionidus acutissimus</i> | Alabama moccasinshell | T | May affect, but is not likely to adversely affect. No adverse modification of designated critical habitat. (insignificant/discountable) |
| <i>Medionidus parvulus</i> | Coosa moccasinshell | E | No effect |
| <i>Pleurobema furvum</i> | Dark pigtoe | E | May affect, but is not likely to adversely affect. No adverse modification of designated critical habitat. (insignificant/discountable) |
| <i>Pleurobema perovatum</i> | Ovate clubshell | E | May affect, but is not likely to adversely affect historic habitat |
| <i>Pleurobema plenum</i> | Rough pigtoe | E | No effect |
| <i>Ptychobranthus greeni</i> | Triangular kidneyshell | E | May affect, but is not likely to adversely affect. No adverse modification of designated critical habitat |

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|--|-----------------------------|---|---|
| <i>Lampsilis orbiculata</i> (L. <i>abrupta</i>) | Pink mucket pearlymussel | E | No effect |
| <i>Dalea foliosa</i> | Leafy prairie clover | E | No effect |
| <i>Helianthus eggertii</i> | Eggert's sunflower | T | May affect, but is not likely to adversely affect (Beneficial effect) |
| <i>Lesquerella lyrata</i> | Lyrate bladder-pod | T | No effect |
| <i>Marshallia mohrii</i> | Mohr's Barbara's Buttons | T | No effect |
| <i>Sagittaria secundifolia</i> | Kral's water-plantain | T | No effect |
| <i>Thelypteris pilosa</i> var <i>al.</i> | Alabama streak-sorus fern | T | No effect |
| <i>Xyris tennesseensis</i> | Tennessee yellow-eyed grass | E | No effect |

¹E = endangered; T = threatened

EXPLANATION OF DETERMINATIONS

Determinations and the Needed Follow-up Actions: The determination of effects for Federally Listed Species are: 1) No Effect; 2) Is not likely to adversely affect; 3) Is likely to adversely affect. All the possible effects can and should be included within one of the above determinations. The needed follow-up actions vary depending on the type of species and the determination.

A “**no effect**” determination should be used when the proposed actions have no effects on the PETS species or critical habitat. No follow-up action is required for this determination.

A determination of “**is not likely to adversely affect**” should be used for discountable, insignificant or beneficial effects. If the determination of “is not likely to adversely affect”, written concurrence is required from the FWS for both proposed and listed species. *Discountable* effects are those extremely unlikely to occur. Based upon best judgment, a person would not be able to meaningfully measure, detect or evaluate insignificant effects. *Insignificant* effects relate in size of the impact and should never reach the scale where take occurs. *Beneficial* effects are positive effects without any adverse effect to the species.

A determination of “**is likely to adversely affect**” should be used if any adverse effect to a listed species may occur as a direct or indirect result of the proposed action. If the determination is “likely to adversely affect” and the species is proposed for listing, conference with the FWS is required. If the determination of “is likely to adversely affect” and the species is listed as threatened or endangered, formal consultation with the FWS is required by ESA section 7.

Conference is a legally required “informal consultation” with the FWS. All requests for formal consultation must be sent through the Regional Forester. If applicable, Region or Forest-wide concurrence letters from the FWS can be referenced for site-specific projects.

Consultation Implications: Based on the finding of “not likely to adversely affect” for Eggert’s sunflower, the flattened musk turtle and eight species of mussels, written concurrence from the FWS

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is required.

DETERMINATION OF EFFECT - *Forest Service Sensitive Species*

Some species are of concern although not listed as threatened or endangered by the FWS. They have been ranked Globally as G1, G2 or G3 by the Natural Heritage Network of The Nature Conservancy, which means viability concerns throughout their entire range. This may be due to habitat requirements, range limits or particular vulnerability to activities. These species have been listed by the Regional Forester as Sensitive and require special consideration in order to ensure that viability is not impaired and to preclude any trend toward the necessity of their being proposed for listing as threatened or endangered by the FWS. According to the Natural Heritage Network rankings, G1 species are critically imperiled globally because of extreme rarity (typically less than 6 occurrences, less than 1,000 individuals or very few remaining acres) or because of some factor(s) making them especially vulnerable to extinction. Species ranked G2 are imperiled globally because of extreme rarity (typically 6-20 occurrences, 1,000 to 3,000 individuals or few remaining acres) or because of some factor(s) making them very vulnerable to extinction. Species ranked as G3 are rare or uncommon (typically 21-100 occurrences or 3,000 to 10,000 individuals) throughout its range; or found locally, even abundantly, in a restricted range (e.g. in a single state or physiographic region); or vulnerable to extinction throughout its range because of specific factors. Rankings begin with a T instead of a G are used for subspecies and two rankings together, such as G2G3, indicates uncertainty in the ranking of that species. A question mark (?) indicates some doubt concerning the status of the species or subspecies. Rankings preceded by an S indicate the status inside the state of Alabama as determined by the Alabama Natural Heritage Program. The list of plant and animal species is based upon the Southern Region Sensitive Species, revision August 7, 2001.

The proposed activity “may impact individuals, but is not likely to cause a trend to federal listing or loss of viability” for the Black Warrior Waterdog and the Diana fritillary butterfly. The rationale for this finding is that potential habitat for these species may be available within or directly adjacent to the project sites. Although there is protection for the Black Warrior Waterdog from the provisions of the Revised Land and Resource Management Plan for the National Forests in Alabama, there is a potential for impacts of such a minor nature that no appreciable impact to the species would be realized. Additionally, woodland restoration may enhance habitat for the Diana fritillary over the long-term.

The determination is “no impact” for the remaining sensitive plants, bryophytes, and other listed wildlife. The rationale for this finding is that these species and their habitat are not present on the project sites and will not be impacted by the proposed project.

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Table #4.

Forest Service Sensitive Species of the Bankhead National Forest

| Scientific Name | Common Name | Status ¹ | Finding |
|---|---------------------------------|---------------------|---|
| <i>Aesculus parviflora</i> | Small flowered buckeye | S | No impact |
| <i>Astragalus tennesseensis</i> | Tennessee Milkvetch | S | No impact |
| <i>Aureolaria patula</i> | Spreading yellow false foxglove | S | No impact |
| <i>Carex brysonii</i> | Bryson's sedge | S | No impact |
| <i>Delphinium alabamicum</i> | Alabama larkspur | S | No impact |
| <i>Diervilla rivularis</i> | Riverbank bush-honeysuckle | S | No impact |
| <i>Hymenophyllum tayloriae</i> | Gorge filmy fern | S | No impact |
| <i>Jamesianthus alabamensis</i> | Alabama jamesianthus | S | No impact |
| <i>Juglans cinerea</i> | Butternut | S | No impact |
| <i>Leavenworthia alabamica</i> var. <i>alabamica</i> | Alabama Gladecress | S | No impact |
| <i>Leavenworthia crassa</i> | Fleshyfruit Gladecress | C&S | No impact |
| <i>Lesquerella densipila</i> | Duck River Bladderpod | S | No impact |
| <i>Monotropsis odorata</i> | Sweet pinesap | S | No impact |
| <i>Asplenium x ebenoides</i> | Scott's Spleenwort | S | No impact |
| <i>Marshallia trinervia</i> | Broadleaf Barbara's buttons | S | No impact |
| <i>Minuartia alabamensis</i> | Alabama Sandwort | S | No impact |
| <i>Neviusia alabamensis</i> | Alabama snow-wreath | S | No impact |
| <i>Platanthera intergrilabia</i> | White fringeless orchid | C&S | No impact |
| <i>Polymnia laevigata</i> | Tennessee Leafcup | S | No impact |
| <i>Robinia viscosa</i> | Clammy Locust | S | No impact |
| <i>Rudbeckia triloba</i> var. <i>pinnatiloba</i> | Pinnate-lobed Black-eyed Susan | S | No impact |
| <i>Scutellaria alabamensis</i> | Alabama skullcap | S | No impact |
| <i>Sedum nevii</i> | Nevius' stonecrop | S | No impact |
| <i>Silene ovata</i> | Blue Ridge catchfly | S | No impact |
| <i>Talinum calcaricum</i> | Limestone Fameflower | S | No impact |
| <i>Talinum mengesii</i> | Menge's fameflower | S | No impact |
| <i>Thalictrum mirabile</i> | Little mountain meadow rue | S | No impact |
| <i>Trillium lancifolium</i> | Lanceleaf Trillium | S | No impact |
| <i>Trillium simile</i> | Jeweled Trillium | S | No impact |
| <i>Speyeria diana</i> | Diana Fritillary | S | May impact individuals, but not likely to cause a trend to federal listing or loss of viability (Beneficial) |
| <i>Corynorhinus rafinesquii</i> | Rafinesque's Big-eared bat | S | No impact |
| <i>Cheilolejeunea evansii</i> | A liverwort | S | No impact |
| <i>Aneura maxima</i> | A liverwort | S | No impact |
| <i>Pellia X appalachiana</i> | A liverwort | S | No impact |
| <i>Nardia lescurii</i> | A liverwort | S | No impact |
| <i>Plagiochila echinata</i> | A liverwort | S | No impact |

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|-----------------------------------|--|---|---|
| <i>Radula sullivantii</i> | A liverwort | S | No impact |
| <i>Riccardia jugata</i> | A liverwort | S | No impact |
| <i>Hydroptila paralatosa</i> | A caddisfly | S | No impact |
| <i>Rhyacophila carolae</i> | A caddisfly | S | No impact |
| <i>Elliptio arca</i> | Alabama spike | S | No impact |
| <i>Obovaria jacksoniana</i> | Southern Hickorynut | S | No impact |
| <i>Obovaria unicolor</i> | Alabama Hickorynut | S | No impact |
| <i>Strophitus subvexus</i> | Southern creekmussel | S | No impact |
| <i>Villosa nebulosa</i> | Alabama rainbow | S | No impact |
| <i>Etheostoma bellator</i> | Warrior darter | S | No impact |
| <i>Etheostoma douglasi</i> | Tuskaloosa darter | S | No impact |
| <i>Etheostoma phytophyllum</i> | Rush darter | S | No impact |
| <i>Etheostoma tuscumbia</i> | Tuscumbia darter | S | No impact |
| <i>Percina sp.cf.macrocephala</i> | Longhead darter (Warrior Brinled Darter) | S | No impact |
| <i>Necturus alabamensis</i> | Black Warrior waterdog | S | May impact individuals, but not likely to cause a trend to federal listing or loss of viability |

¹S = sensitive; C = candidate for Federal listing

EXPLANATION OF DETERMINATIONS

Possible Determinations and the Needed Follow-up Actions – The four possible determinations of effects are:

1. “no impact”,
2. “beneficial impact”,
3. “may impact individuals, but not likely to cause a trend to federal listing or loss of viability”,
4. “likely to result in a trend to federal listing or a loss of viability”.

All the possible effects of a proposed action should be included under one of the above determinations. There is no need to consult with the FWS for sensitive species. No action, other than documenting the rationale, is required for determination of “no impact”, “beneficial impact” or “may impact individuals, but not likely to cause a trend to federal listing or a loss of viability”. If the determination is “likely to result in a trend to federal listing or a loss of viability”, the proposed action should be modified to avoid, minimize or rectify the impact.

Consultation Implications for Sensitive Species: Consultation with the FWS is not required for Forest Service sensitive species.

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MITIGATION MEASURES

Mitigation measures specific to this project include seeding and mulching fire lines where needed as determined by Forest Service personnel.

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Date: July 10, 2005

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Errata

BIOLOGICAL EVALUATION OF PROPOSED, ENDANGERED, THREATENED
& SENSITIVE SPECIES

for

SITE PREPARATION FOR SHORTLEAF PINE REFORESTATION in
BANKHEAD NATIONAL FOREST

Compartment 31, Stand 30
Upper Brushy Stewardship Project Area

Eggert's sunflower determination

On August 18, 2005, the US Fish and Wildlife Service published its Final Rule removing Eggert's Sunflower from the federal list of Threatened and Endangered plant species. The BE considered and made a "is not likely to adversely affect" determination for this species based on field surveys performed. The analysis of and determination made for a species subsequently de-listed has no relevance to adequacy of the BE.

/s/ Allison Cochran

Allison Cochran
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1/18/06

Date