

**Biological Evaluation
of
Proposed, Threatened, Endangered and Sensitive Species
Wildlife Habitat Improvement and Fuels Reduction Project
Proposed Action within Winston County, Alabama**

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

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Summary

The proposed project will reduce midstory and understory trees and shrubs in two sites, totaling approximately 47 acres, noted on the attached maps. The project sites are located in the Black Pond and Hickory Grove communities. They are found in Forest Service management compartments 163 and 19. The sites proposed for treatment are loblolly pine stands. They were thinned in 2005 and 2006, respectively.

Selected vegetation between 1 inch and 6 inches DBH will be removed in upland pine-dominant habitat. In compartment 163, the result will be an open pine stand with reduced fuel loading and advanced hardwood regeneration. In compartment 19, the result will be an open pine stand with reduced fuel loading. The result will allow for restoration and maintenance of native forest communities, including upland oak-hickory forest in compartment 163 and fire dependent pine woodlands in compartment 19.

The purpose and need for the project is to improve wildlife habitat, improve conditions for native upland plants, restore and maintain native forest communities, and to decrease the risk of catastrophic wildfires by reducing fuels.

Based upon the findings of this evaluation, this project will have **no effect** on the plants and animals that are federally listed on the Bankhead National Forest and will have **no impact** on the species listed as sensitive for the Bankhead.

Due to the findings of this assessment, further concurrence with the U.S. Fish and Wildlife Service is not required.

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INTRODUCTION

The purpose of this Biological Evaluation (BE) is to determine whether the proposed action is likely to affect an endangered, threatened, proposed, or sensitive species. Forest Service Manual 2672.4 provides guidance to review programs and activities for possible effects to proposed, endangered, threatened, and sensitive species and to document findings.

The purpose and need for the project is to improve wildlife habitat, improve conditions for native upland plants, accelerate native forest community restoration, and decrease the risk of catastrophic wildfires by reducing fuels.

The project will reduce selected midstory and understory trees and shrubs from two sites. The sites proposed for treatment are loblolly pine stands. The midstory and understory will be reduced by cutting with chainsaws. The sites are proposed for treatment in 2007. In compartment 163, the result will be an open pine stand with reduced fuel loading and advanced hardwood regeneration. In compartment 19, the result will be an open pine stand with reduced fuel loading. The result will allow for restoration and maintenance of native forest communities, including upland oak-hickory forest in compartment 163 and fire dependent pine woodlands in compartment 19.

The objectives of this 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.

The sites proposed for treatment are located within Winston County in the Bankhead National Forest (BNF). The compartment 163 (C613) site is located in the Black Pond community. The compartment 19 (C19) site is located in the Hickory Grove community. All sites are loblolly pine stands. All sites were thinned through the Bankhead's Forest

Health and Restoration Project. The compartment 163 site is in Management Prescription 9C3 – Southern Cumberland Plateau Native Ecosystem Restoration and Maintenance – as identified in the Revised Land and Resource Management Plan (RLRMP). It is also in Area 3 as identified in the Bankhead’s Forest Health and Restoration Project’s Final Environmental Impact Statement (FHRP). The compartment 19 site is in Management Prescription 7E2 – Dispersed Recreation Area with Vegetation Management in the RLRMP. It is in Area 2 in the FHRP. C 163 has a desired future condition of oak-hickory forest and C 19 has a desired future condition of shortleaf pine woodlands. C19 is located within an established prescribed burn unit (Gene Hill Burn). Maps of the sites are included at the end of this document.

C163 (34 acres) includes part of Compartment 163, Stands 30 and 39 which are loblolly pine stands age 36. C19 (13 acres) includes part of Compartment 19, stand 3 which is a loblolly pine stand age 26.

All areas included in this biological evaluation are fairly similar in forest type, midstory and understory composition, and terrain. Midstory and understory are composed primarily of hardwood saplings (tulip poplar, various oak species, red maple, hickories, sassafras, black cherry, dogwoods, sourwood, persimmon); shrubs (*Vaccinium* sps., sumac, holly, oak leaf hydrangea); and vines (*Smilax* sps., *Vitis* sps., *Rubus* sps., Virginia creeper, poison ivy). Sites to be treated are on ridge tops and do not include streams or riparian areas.

The treatment units are located in the Upper Brushy and Clear 5th level watersheds. The Clear Creek watershed is characterized by broad ridges and pronounced valleys. Smith lake has inundated the lower portion of the main channel. National Forest land occupies about 1/7th of the land area in the watershed. The Upper Brushy watershed is characterized by gently sloped ridges and pronounced valleys. Many of the larger streams are incised in picturesque gorges. Virtually the entire watershed is forest with National Forest land occupying about 8/10th of the area.

CONSULTATION HISTORY

The Forest Health and Restoration Project and Environmental Impact Statement which outlines restoring native community types through reforestation and commercial thinning on almost 9,452 acres of the Bankhead was reviewed by the Fish and Wildlife Service during 2003. This project included the use of commercial thinning operations. In that project, surveys were conducted on thousands of acres of loblolly pines stands including the stands proposed for treatment by this project. The Fish and Wildlife Service has participated on the Bankhead Liaison Panel. Native forest community restoration on the Bankhead has been the primary discussion topic of the liaison panel for the past several years.

The Fish and Wildlife Service (FWS) has reviewed and concurred with many past projects that were similar in treatment method and project goals. Examples include a

2001 roadside fuels management project, annual prescribed burning program, thinning, Hurricane Rita salvage timber removal, and shortleaf and longleaf pine planting.

The project tiers to the National Forests in Alabama's Revised Land and Resource Management Plan and associated Biological Assessment and Evaluation. The sites are in Management Prescription 9C3 and 7E2 as identified in the Revised Land and Resource Management Plan. This project tiers to the BNF Forest Health and Restoration Project and associated Biological Assessment and Evaluation. All sites are in Areas 2 and 3 as identified in the Forest Health and Restoration Project's Final EIS.

PROPOSED MANAGEMENT ACTION

The proposed project will reduce selected midstory and understory trees and shrubs in the two sites, totaling 47 acres, noted on the attached maps. Selected hardwood and pine vegetation between 1 and 6 inches DBH will be reduced in upland pine-dominant habitat, except as follows. In site C19 all shortleaf pine and dogwood greater than 4 inches DBH in the understory and midstory will be retained. In site C163 oak, hickory, cherry, persimmon and dogwood will be released from competition. On all sites, the midstory and understory will be reduced by chainsaw. Herbicides will not be used. The project is not ground disturbing as vegetation identified for treatment will be sawed off at the stump and scattered on the ground. Snags and den trees will not be treated. Riparian areas and wetlands will not be treated. Glades and rock outcrops will not be treated.

The sites proposed for treatment are loblolly pine stands. Scattered hardwoods are present in the overstory of all stands. C19 stand was thinned in fall of 2006. C163 was thinned in 2005. Both were first thinnings for forest health objectives through the FHRP project. The expected result of this project in C19 is that midstory and understory treatment will open up the stand allowing it to be maintained through prescribed burning to begin restoration of an open pine woodland. The expected result of this project in C163 is that the treatment will release and promote advanced hardwood regeneration aiding in achieving the long-term desired future condition of oak-hickory forest. The project will also improve wildlife habitat and reduce fuels.

SPECIES CONSIDERED AND SPECIES EVALUATED

District wildlife staff have conducted literature reviews and field reviews of the project sites for presence of listed species and suitable habitat. Field surveys were performed on all sites during the FHRP EIS preparation by contract botanists and wildlife biologists. The sites and adjacent areas have been surveyed and monitored in the past for thinning, prescribed burning, southern pine beetle control, and non-native invasive species control activities. The BNF district office keeps current records of locations of known listed species throughout the area, which were reviewed as part of this evaluation. All areas which may be disturbed or impacted, by this project have been surveyed for presence of protected species. One sandstone outcrop/bluff is along the boundary of the C163 site.

All currently listed threatened, endangered, protected (as of 7/03) and sensitive species (Regional Forester's Sensitive Species list – 8/7/2001) were considered during this evaluation. 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 the following table for a listing of species considered.

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.
<i>Myotis sodalis</i>	Indiana bat	E	1	Known from Lawrence County.	No. Sites are distant from known occupied habitat. Species not known to occur in Winston County.
<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	11	Known sites occur on Smith Lake.	No. Nest habitat along Smith 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.	Habitat within the project watersheds.
<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.
<i>Epioblasma turgidula</i>	Turgid blossom pearly mussel	E	A	Does not occur on Bankhead and may be extinct.	No.
<i>Lampsilis altilis</i>	Fine-lined pocketbook	E	A	Occurs on Bankhead.	Habitat within the project watersheds.
<i>Lampsilis perovalis</i>	Orange-nacre mucket	T	A	Occurs on Bankhead.	Habitat within the project watersheds.

<i>Medionidus acutissimus</i>	Alabama moccasinshell	T		A		Occurs on Bankhead.	Habitat within the project watersheds.
<i>Medionidus parvulus</i>	Coosa moccasinshell	E		A		Has not been recorded on Bankhead in recent years.	Habitat within the project watersheds.
<i>Pleurobema furvum</i>	Dark pigtoe	E		A		Occurs on Bankhead.	Habitat within the project watersheds.
<i>Pleurobema perovatum</i>	Ovate clubshell	E		A		Has not been recorded on Bankhead in recent years.	Habitat within the project watersheds.
<i>Pleurobema plenum</i>	Rough pigtoe	E		A		Does not occur on Bankhead.	No.
<i>Ptychobranhus greeni</i>	Triangular kidneyshell	E		A		Occurs on Bankhead.	Habitat within the project watersheds.
<i>Lampsilis orbiculata (L. abrupta)</i>	Pink mucket pearlymussel	E		A		Does not occur on Bankhead.	No.
<i>Dalea foliosa</i>	Leafy prairie clover	E			6	Species not documented on Bankhead.	No.
<i>Lesquerella lyrata</i>	Lyrate bladder-pod	T			6	Species not documented on Bankhead.	No.
<i>Marshallia mohrii</i>	Mohr's Barbara's Buttons	T			2	Species not documented on Bankhead.	No.
<i>Sagittaria secundifolia</i>	Kral's water-plantain	T		A		Occurs on Bankhead.	No.
<i>Thelypteris pilosa var al.</i>	Alabama streak-sorus fern	T			7	Occurs on Bankhead.	No.
<i>Xyris tennesseensis</i>	Tennessee yellow-eyed grass	E			11	Species not documented on Bankhead.	No.
<i>Apios priceana</i>	Price's Potato Bean	T			11 & 7	Species not documented on	No.

						Bankhead.		
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¹E = endangered; T = threatened

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

Forest Service Sensitive Species of the Bankhead National Forest

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>Helianthus eggertii</i>	Eggert's sunflower		S				8	No. Potential habitat may be affected.	
<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> var. <i>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	Not known from the project area. Potential habitat may be created.	
<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	Not known from the project area. Potential habitat present.	
<i>Rudbeckia triloba</i> var. <i>pinnatiloba</i>	Pinnate-lobed Black-eyed Susan		S		S2S3G4T2		7	No	
<i>Scutellaria alabamensis</i>	Alabama skullcap		S		S2G2		7	No	
<i>Sedum nevii</i>	Nevius' stonecrop		S		S3G3		7	No	
<i>Silene ovata</i>	Blue Ridge catchfly		S		S1G2G3		7	Not known from the project	

								area.	
<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	Not known from the project area.	
<i>Trillium simile</i>	Jeweled Trillium		S		G3		18	No	
<i>Speyeria diana</i>	Diana Fritillary		S		S3G3		11	Not known from the project area. Potential habitat.	
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared bat		S				10	Not known from BNF.	
<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		Habitat within the project watersheds.	
<i>Villosa nebulosa</i>	Alabama rainbow		S		S3G3	A		Habitat within the project	

									watersheds.
<i>Etheostoma bellator</i>	Warrior darter		S		S2G2		A		Habitat within the project watersheds.
<i>Etheostoma douglasi</i>	Tuskaloosa darter		S		S2G2		A		Habitat within the project watersheds.
<i>Etheostoma phytophyllum</i>	Rush darter		S		S2G2		A		Habitat within the Clear watershed.
<i>Etheostoma tuscumbia</i>	Tuscumbia darter		S		S1G1		A		No
<i>Percina sp.cf.macrocephala</i>	Warrior Bridled Darter		S		G3		A		Potential habitat within the project watersheds.
<i>Necturus alabamensis</i>	Black Warrior waterdog		S		S2G2		A		Habitat within the project watersheds.

¹S = sensitive; C = candidate for Federal listing

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20 = Shrub/Seedling/Sapling Habitats
21 = Seeps and Springs Habitats
A = Aquatic Species

All species listed for the Bankhead National Forest as threatened or endangered by the US Fish and Wildlife Service 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 and Endangered Species)

Gray bat and Indiana bat. Small populations of these two species of bats were found within Bankhead National Forest in Lawrence County during 1999. Their presence has been verified in subsequent years. Indiana and gray bats have been documented to hibernate in two caves on Bankhead. Summer use has not been verified. These two 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 seven miles from the nearest project area (C19 site).

Bald eagle. The bald eagle has been observed during the winter and spring around portions of Bankhead National Forest that border Lewis Smith Lake. Two inactive bald eagle nests were confirmed within the Bankhead during 2004. The nests were not active during 2004, but monitoring has revealed that one nest has been active, but unsuccessful in 2005 and 2006.

The project areas do not contain suitable habitat for bald eagle nest sites. The nearest project area (C163 site) is approximately three miles from known bald eagle nest sites. The project areas are not along Lewis Smith Lake. This midstory removal project will not involve removal or modification of potential nest trees.

This species is threatened throughout its range by habitat loss, disturbance by humans, contaminants, decreasing food supply and illegal shooting.

Red-cockaded woodpecker. There has been no record of a red-cockaded woodpecker at the Bankhead National Forest since the early 1990's.

The project areas do not contain suitable habitat for red-cockaded woodpecker.

Mussels - turgid blossom, pink mucket pearly, rough pigtoe, upland combshell 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 is not known to occur in streams of the Bankhead. The turgid blossom is considered by some to be extinct. 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.

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 habitat for the pink mucket pearly mussel is considered to be larger rivers and their tributaries, such as the Ohio and Tennessee Rivers. 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.

The 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.

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.

None of these species are listed by the US Fish and Wildlife Service within Winston County.

LRMP standards and guidelines are in place to preclude sedimentation or direct impact to streams. Appropriate stream habitat is not included within the proposed project areas. Midstory vegetation will not be removed from riparian areas.

Mohr's Barbara's buttons.

This species occurs in moist to wet prairie-like openings in woodlands and along shale-bedded streams and in meadows in a grass-sedge prairie community. Woodland clearing may be natural or artificial. Some populations are also located in swales on road rights-of-way that are seasonally wet. It has been found in Ketona dolomite glades. Mohr's Barbara's buttons is found in full sunlight or partial shade. Soils are sandy clays, which are alkaline, high in organic matter and seasonally wet. Surrounding forest type is described as mixed hardwoods with Shumard oak, willow oak and pine species. This species is found in a fire-maintained open habitat. It is reported to require an open to slightly shaded area underlain by a calcareous substrate.

One population was reported to have been discovered within the administrative boundary of the Bankhead National Forest. This plant is only known from north-central Alabama to northwest Georgia from 65 very localized sites. According to Nature Serve, it is found in Bibb, Calhoun, Cherokee and Walker counties in Alabama.

Mohr's Barbara's buttons is vulnerable to road widening and right-of-way maintenance including herbicide application, mowing and planting of aggressive competitors. Other threats include habitat conversion to pasture, cropland, pulpwood; encroachment of woody species due to the absence of fire; grazing, and drainage.

A detrimental impact to the species is not expected or anticipated due to the fact that the plant has not been encountered on the forest or the project sites. Direct effects to this species have been minimized by conducting pre-project field surveys. This species was not encountered within the project areas. Moist opening within woodlands are not present within the proposed project areas.

Kral's water plantain. This is an aquatic perennial plant that occurs along Sipsey 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 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.

Appropriate stream habitat is not included within the proposed project areas. LRMP standards and guidelines are in place to preclude sedimentation or direct impact to streams. Midstory vegetation will not be removed from riparian areas.

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.

Habitat for Alabama Streak Sorus Fern is not present within the proposed project areas. Project operations will not be conducted within riparian areas or within or adjacent to rock shelters.

Leafy Prairie Clover. 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.

This species has not been found on the Bankhead National Forest. In Alabama, it is known from Colbert, Franklin, Lawrence and Morgan counties.

The proposed project areas do not include the limestone glade habitat required by leafy prairie clover.

Lyrate bladderpod. This species has not been found on the Bankhead National Forest. 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 areas do not include glades or glade-like habitat required by lyrate bladderpod.

Tennessee yellow-eyed grass. This species has not been found on the Bankhead National Forest. Sixteen extant 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 (hydrological alteration causing substrate to dry out). It is also threatened by right-of-way maintenance and woody and invasive plant encroachment.

Tennessee yellow-eyed grass is restricted to basic or circumneutral soils that thinly cover calcareous substrates with year-round seepage or mineral-rich water flow. It is found in open or thin canopy woods in gravelly seep-slopes or gravelly bars and banks of small streams, springs and ditches. It 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.

No plants were observed within the proposed project areas nor is habitat for them present.

Price's Potato Bean. This threatened plant species is an herbaceous, twining, perennial vine. Based on the habitats in which it is known to occur, Price's potato bean is thought to be an early successional species that is apparently dependant on a moderate level of disturbance. However, excessive habitat modification is threatening the existence of the species.

Price's potato bean is known from Alabama, Kentucky, Mississippi and Tennessee. In Alabama, it is known from Autauga, Dallas, Jackson, Lawrence, Madison, and Marshall counties. It has been reported from private property within the Bankhead National Forest administrative boundary. The location is in the northeast portion of the Bankhead in the Oakville quadrangle. In 2001, approximately 80 plants were observed at this site. It is possible that undiscovered populations of *Apios priceana* exist on Bankhead.

Suitable habitat is described as open, rocky, wooded slopes and floodplain edges. Known sites are usually under mixed hardwoods or in associated forest edges or clearings, often where bluffs or ravine slopes meet creek or river bottoms. Open woods, forest gaps, and low areas near creeks and along stream banks may contain potential habitat for this legume. The species seems to prefer mesic areas and is found along open, low areas near streams or along the banks of streams. It is sometimes found along the base of limestone bluffs. This plant grows well in well drained loams or old alluvium over limestone on rocky, sloping terrain. Populations are known to extend onto road and powerline rights-of-ways. The species can survive a broad range of pH from less than five to greater than eight. Apparently, the species is unable to tolerate deep shade. It is often found in association with chestnut oak, hog peanut, sugar maple, redbud, basswood, slippery elm, white ash, bluebell, spicebush, giant cane, poison ivy, and Virginia creeper.

Price's potato bean is currently known from about 25 widely scattered populations, most with fewer than 50 individuals. Range-wide threats include habitat loss and degradation from successional canopy closure, heavy or clear-cut logging, highway right-of-way maintenance, trampling and soil compaction by cattle, residential and commercial development, and non-native invasive species competition.

No plants were observed within the proposed project areas nor is habitat for them present.

Forest Service Sensitive Species

TENNESSEE MILKVETCH and MENGE'S and LIMESTONE FAMEFLOWER
Tennessee Milkvech is found on limestone glades in Morgan County. Potential habitat exists within the BNF. 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 project 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.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species are present along the bluff. Glade habitats will not be treated in this proposed project.

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 were not encountered within the proposed project areas. The project will not treat midstory vegetation within riparian areas.

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.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species have been encountered along the bluff or within the riparian area. These habitats will not be treated by the proposed project.

ALABAMA LARKSPUR

This species is associated with cedar glades, limestone or sandstone outcrops, sandstone cliffs or rocks, and surrounding open woodlands and in prairies. The larkspur is found in prairies, limestone cedar glades or open woods bordering these habitats. It is found thriving on basic clay soils derived from calcareous rocks. This plant has been encountered by Gunn in the Oakville quadrangle on a limestone cedar glade and adjacent cedar woodlands.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species are present along the bluff. Glade habitats will not be treated in this proposed project.

SPREADING YELLOW FALSE FOXGLOVE

This species has been encountered in Cherokee County in Alabama. Other species of *Aureolaria* are found on a variety of sites from upland hardwoods to sandy sites of the coastal plain. This particular species is found on river bluffs in Tennessee.

Threats include destroying overstory shading, allowing invasion of exotic weeds, runoff and erosion.

This species is not known to occur in Bankhead National Forest. The proposed project will not threaten this species as potential habitat is not present within the treatment area nor will it be affected by the project.

RIVERBANK BUSH-HONEYSUCKLE

Diervilla rivularis is a localized Southern Appalachian endemic. It occurs in a few counties in northwestern Georgia and in only a few counties in northeastern Alabama. This species is found along streams in riparian areas. This plant is somewhat threatened range-wide by land-use conversion, habitat fragmentation, and forest management practices.

Stream habitat and associated riparian areas are not included for treatment within the project areas.

GORGE FILMY FERN

This species is somewhat to very epipetric in that they are usually found growing directly on more or less vertical rock faces. Gorge filmy fern grows on moist bluff faces. It is restricted to deeply sheltered, continuously moist habitats in the southern Appalachians, including the ceilings of moist grottos, cliff crevices in narrow stream gorges, and waterfall spray zones on cliffs. This species is considered to be highly threatened throughout its range because of its limited distribution and restricted habitat.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species are present along the bluff.

JAMESIANTHUS

This species is associated with, but not limited to, low wet woods or areas commonly considered as streamside management zones. They need mesic conditions and at least partial shade to survive. *Jamesianthus* is found in silty sand or gravelly margins of streams, especially where streams cut through limestone, in full or partial sun.

This species is known from six counties in Alabama and has been reported in Georgia, where its status is unknown. Threats include grazing, trampling, erosion, silt deposition, land-use conversion, habitat fragmentation, and forest management practices.

Soil disturbance along stream margins may create openings for opportunistic weedy species, which will adversely impact *Jamesianthus* habitat.

A review of existing records of occurrence and field surveys reveal that this species has never been found within or adjacent to the project sites. The project areas do not provide suitable habitat.

FLESHY-FRUIT and ALABAMA GLADECRESS

Fleshy-fruit gladecress has been encountered on two limestone 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 gladecress is highly threatened by human disturbance, including ATV use and trash disposal on glades.

Alabama gladecress 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 areas.

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 areas. Potential habitat is not present within any of the project sites.

Agriculture, stream modification, dam construction and competition with grasses all pose threats to this species.

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 limiting threats.

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.

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, but has been encountered in Jefferson County.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff and riparian area will not be included in or affected by the project. No sensitive species are have been encountered along the bluff feature.

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.

The proposed project areas do not contain the seepy calcareous habitat required by broadleaf Barbara's buttons.

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.

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species are present along the bluff. Glade or rock outcrop type habitats will not be treated in this proposed project.

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 streambanks. 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.

Nature Serve lists potential threats as timber harvesting, recreational development, encroachment by undesirable weedy species, grazing, urban expansion, and forest management practices.

Habitat for this plant is not present within the proposed treatment areas.

WHITE FRINGELESS ORCHID

White fringeless orchid is an obligate wetland species. Habitat for this orchid is generally described as wet, flat, 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. Sites are partially, but not fully shaded.

This species has been encountered in one location within the Bankhead administrative boundary. This location is on private land near the Rocky Plains community. This species of limited distribution is threatened by land-use conversion, habitat fragmentation, succession, pollution, and to a lesser degree by forest management practices according to Nature Serve. Altering the hydrology is the most destructive threat to bog-like habitat. Logging operations, development, road projects, pond construction, and beaver activities can alter sites to become unnaturally wet by damming drainage. These activities disrupt and alter hydrological regimes, which have the most severe and long-term impacts.

Habitat for this orchid will not be treated through this midstory removal project.

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, threat may include logging operations and grazing that result in competition from non-native plants.

This species has not been observed within the project sites. Midstory will not be removed along bluffs or within riparian areas.

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 the state of Alabama.

Range-wide threats include land-use conversion and habitat fragmentation. This species does not tolerate disturbance or over-drying of soils.

This plant has not been encountered at the project sites. Midstory removal will not occur within rock outcrops, cliffs, or riparian areas.

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 plant was not encountered during field surveys and is not known to occur in the Bankhead National Forest.

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, suitable habitat does exist on the BNF, but not within the treatment areas.

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

A rock bluff is present within the riparian area adjacent to Compartment 163, stand 30. The bluff or riparian area will not be included in or affected by the project. No sensitive species are present along the bluff.

TRILLIUMS

Jeweled trillium 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.

Lanceleaf 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.

Trilliums have not been encountered within any of the project sites. The rich and moist soil habitat required by these species is not available within the treatment areas.

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.

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).

Threats and population estimates are not available from Nature Serve for these species.

LRMP standards and guidelines are in place to preclude sedimentation or direct impact to streams. Midstory vegetation will not be removed from riparian areas.

SOUTHERN HICKORYNUT, ALABAMA HICKORYNUT, ALABAMA SPIKE
Suitable 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.

Several of these species have been collected by McGregor in the northern portion of the BNF, including Alabama spike and the Alabama rainbow.

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/records. The Alabama spike (*Elliptio arca*) may be the same species as the delicate spike (*Elliptio arctata*). Upper and Lower Sipsey Fork watersheds may support the Alabama spike. This mussel is locally common within the Sipsey River.

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.

These species are not expected to exist within the proposed project areas. No mussels were encountered during field surveys as perennial streams are not present within the project areas. LRMP standards and guidelines are in place to preclude sedimentation or direct impact to streams. Midstory vegetation will not be removed from riparian areas. The project will take place within the Upper Brushy and Clear Creek watersheds. These three mussel species are not known to occur within these watersheds. Therefore, they were excluded from further evaluation.

TUSCUMBIA DARTER

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. Tuscumbia darter is not known from the Clear Creek and Upper Brushy watersheds where this midstory removal project is proposed.

This species does not exist within the proposed project areas. No fish were encountered during field surveys as perennial streams are not present within the project areas. LRMP

standards and guidelines are in place to preclude sedimentation or direct impact to streams. Midstory vegetation will not be removed from riparian areas.

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. 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. Summer roosts may also occur in the twilight zone of caves and mines.

Winter roosts include old mines, caves, cave entrances, cisterns and wells in the northern part of its range. In Kentucky, shallow caves or rock shelters in sandstone formations of the Cumberland Plateau are used.

Foraging habitat for this bat has been described as primarily mature forests in both upland and lowland areas. Rafinesque's big-eared bat is reported to forage in brushy communities, mature bottomland hardwood, swamp forests, and 3 to 5 year old pine plantations in a study of the Savannah River Site (Menzel et. al. 2003).

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, insecticide applications, vandalism of caves and mines, and closing or blasting of mines.

Rafinesque's big-eared bat has never been documented on BNF, although potential habitat is present within the BNF. Roost sites will not be disturbed by this project. Rock shelters, bridges, buildings, cisterns, wells, or caves are not present within, nor will they be impacted by the project. A bluff is adjacent to one treatment area, but will not be disturbed. Trees that provide potential roost habitat including mature trees in the overstory, den trees and snags will not be impacted by this project. Potential foraging habitat, described as mature forests, is present within all project sites. Overstory trees in the stands will not be treated by this project. For these reasons, this species was excluded from further evaluation.

EVALUATED SPECIES SURVEY INFORMATION

Although all species that potentially may occur on the Bankhead National Forest were considered, those with actual or potential habitat within the project areas were evaluated. The following species were evaluated in this BE; flattened musk turtle, fine-lined pocketbook, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, dark pigtoe, ovate clubshell, triangular kidneyshell, Eggert's sunflower, sweet pinesap, clammy locust, Diana fritillary, southern creekmussel, Alabama rainbow, warrior darter, Tuscaloosa darter, rush darter, warrior bridled darter and black warrior waterdog.

Sweet pinesap and clammy locust have been documented on the BNF. Scott Gunn recorded two locations of sweet pinesap in his 1990 report "Sensitive Plants of the Bankhead National Forest." Subsequent surveys for sweet pinesap by The Nature Conservancy and Forest Service have not recorded additional locations on the BNF. Clammy locust has been recorded in one location on the BNF by Dr. Jimmy Huntley during his 2000 – 2001 southern pine beetle epidemic surveys.

Flattened musk turtle surveys have been conducted on the Bankhead in 1986 and 1989 by Kenneth Dodd, US Fish and Wildlife Service; in 1991 by Robert Mount, Auburn University; in 1994 by Karen Schnuelle, Auburn University; in 1999 by Gregory Lein, Alabama Department of Conservation and Natural Resources; and in 2004 by Sherry Rogers and Ken Marion, UAB.

Black warrior waterdog surveys have been conducted by Mark Bailey between 1990 and 1992; Michelle Durflinger in 2001; and Bailey, Durflinger and Craig Guyer in 2002.

Carol Johnston and Kevin Kleiner, Auburn University, conducted status surveys for rush darter in 2001 and 2002.

Potential habitat for the aquatic species evaluated is present within the Upper Brushy and Clear Creek watersheds where this project will occur.

Site specific surveys were conducted by Jimmy Huntley and Wayne Barger in 2003 for Forest Health and Restoration Project thinning. Additionally the sites have been surveyed by Tom Counts and Allison Cochran in 2005 and 2006 for this wildlife habitat improvement project. Field survey methods included walking over the project sites searching for listed plants and animals, as well as suitable habitat.

No species listed as threatened or endangered by the FWS or as sensitive by the Regional Forester were encountered during field surveys. A sandstone outcrop/rock bluff (rare community) is present within the riparian area adjacent to Compartment 163, stand 30.

The following species were considered and identified as having potential habitat within the action area or potentially being affected by the action and were included for further evaluation.

ENVIRONMENTAL BASELINE FOR THE SPECIES EVALUATED IN THIS BE

and

EFFECTS OF PROPOSED MANAGEMENT ACTION ON EACH SPECIES EVALUATED

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, and Caney Creeks and their primary tributaries. The flattened musk turtle is known from the Lewis Smith Lake Reservoir. Historic habitat is present within the Clear Creek watershed.

Threats include overcollection, 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 outside of known flattened musk turtle habitat but is within the same watershed of potential habitat. Perennial streams are not included within the proposed project areas.

Direct effects such as killing individual turtles or crushing eggs will not occur as a result of this project because perennial streams are not within the treatment area. Indirect effects would include altered water quality, sedimentation, temperatures, nutrient cycling, channel structure, flow or blockage of mussel host fish passage. Activities associated with this midstory removal project will not alter any of these stream parameters. Perennial streams are not present within the project sites. Indirect effects to waters of Clear Creek and Rush Creek downstream of the project sites are unlikely to occur as a result of this project as it is not ground disturbing and will not occur in riparian areas. Project mitigations include standards regarding riparian areas, riparian corridors and streamside management zones which are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama (RLRMP). 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. On-going Forest Service activities that may cumulatively affect the flattened musk turtle or potential turtle habitat include thinning of loblolly pine stands and site preparation and planting of shortleaf and longleaf pines through the Forest Health and Restoration Project (FHRP). These thinning and site preparation activities all include the project mitigations described above and identified in the RLRMP and FHRP Environmental Impact Statement. Therefore, those additional Forest Service activities will not cumulatively affect aquatic species. Historic and off-Forest activities will contribute to on-going effects, regardless of Forest Service actions.

Determination of Effect

Based on the absence of perennial streams within the project sites and project mitigations, there will be no effect on the flattened musk turtle from implementation of the proposed project.

Mussels - Orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, triangular kidneyshell, dark pigtoe, fine-lined pocketbook, 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 Sipsey Fork, Thompson, Flannagin, Borden, Caney, North Fork Caney, Brushy, Capsey, Rush, Brown and Beech Creeks within Bankhead National Forest. Critical mussel habitat is adjacent to the C19 project area.

The Coosa moccasinshell and the ovate clubshell have not been recorded on the BNF in recent years, although it is within their historic range. There are no population estimates for the Coosa moccasinshell on Bankhead. The ovate clubshell is rare throughout its range.

The triangular kidneyshell's current range includes the Sipsey Fork in the Black Warrior River drainage. The species is present within the Upper Brushy watershed. 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 overutilization for commercial, recreational, scientific, and educational purposes.

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. It is present within the Upper Brushy watershed, but unlikely in the Clear watershed. It was recorded upstream of the C19 project area in 1992 in Rush Creek. 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. Potential habitat for this mussel is present within the Upper Brushy watershed. This mussel is not known from the Clear watershed.

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. It is unlikely that a population of the orange-nacre mucket has the potential to exist in the Clear watershed. The orange-nacre mucket was recorded upstream of the C19 project area in 1992 in Rush Creek (Upper Brushy watershed).

The current range of the Alabama moccasinshell includes the headwaters of the Sipsey Fork in the Black Warrior River drainage (Brushy Creek – Upper Brushy watershed) 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. This mussel is not known from the Clear watershed.

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.

Direct, Indirect and Cumulative Effects

Direct effects such as mortality of individuals will not occur as a result of this project because perennial streams are not within the project area. Indirect effects that would negatively affect mussel species include altered water quality, sedimentation, temperatures, nutrient cycling, channel structure, flow or blockage of mussel host fish passage. Activities associated with this manual midstory removal project will not alter any of these stream parameters. Perennial streams are not present within the project area. Project mitigations will alleviate any adverse effects to potential mussel habitat within the Upper Brushy and Clear watersheds. Project mitigations include standards regarding riparian areas, riparian corridors and streamside management zones which are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama (RLRMP). 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. On-going Forest Service activities that may cumulatively affect these mussel species or potential mussel habitat include thinning of loblolly pine stands and site preparation and planting of shortleaf and longleaf pines through the Forest Health and Restoration Project (FHRP). These thinning and site preparation activities all include the project mitigations described above and identified in the RLRMP and FHRP Environmental Impact Statement. Therefore, those additional Forest Service activities will not cumulatively affect aquatic species. Historic and off-Forest activities will contribute to on-going effects, regardless of Forest Service actions.

Determination of Effect

Based on project mitigations and the absence of perennial streams within the project site, there will be no effect on the seven federally listed mussel species from implementation of the proposed midstory removal project.

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. This community persists on roadsides and recently disturbed areas. This plant has not been encountered on the Bankhead National Forest, but suitable habitat exists. This species is not listed as occurring in Winston County by the Fish and Wildlife Service. In Alabama, this species has been recorded in Franklin County in open ridgetop oak savannahs.

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 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. The foreseeable threat with the greatest impact is habitat degradation/loss. This species is threatened by loss of barrens habitat due to lack of periodic fire. Because of fire suppression, sites are threatened by weedy and woody succession. Other threats to this species are conversion of the habitat for other uses, roadside and powerline maintenance including herbicide spraying and inappropriately timed-mowing, invasive exotic plants, and herbivory. The plant is known to respond positively to management activities including burning and mowing. Herbicide applications (using appropriate procedures) may also be beneficial in eliminating invasive species.

Habitat is not currently available for this plant within either of the project sites or adjacent areas.

Potential Management Effects and Determination

A detrimental impact to the species is not expected or anticipated due to the fact that the plant has not been encountered on the forest. This species was not encountered within the project areas; therefore, there will not be direct effects. Indirect and cumulative effects include the potential for increasing the available habitat on the forest over the long term. These effects will not be on individuals, but are effects on the amount of available

habitat. The indirect effects may be realized at the C19 project site which will be restored to a fire-adapted pine woodland over time. The cumulative effects may be realized across the forest landscape. When considering this project 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 of restoring potential habitat for woodland species, including Eggert's sunflower, will be beneficial.

The proposed project will have no impact on Eggert's sunflower.

SWEET PINESAP

Environmental Baseline

This small saprophytic plant is often found in dry sandy (acidic) woods, and is usually found in pine and mixed pine/hardwood stands. 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. It occurs in the south in the mountain foothills and piedmont areas. Given the community association of occurrence, sweet pinesap should be a fire tolerant, if not fire dependent species. The community type, in addition to a frequent fire regime, historically tended to a more open canopy, with occasional gap dynamics creating openings in the canopy cover.

Both project sites provide suitable habitat for sweet pinesap as they are upland pine stands. None of this potential habitat within the project sites is currently occupied by sweet pinesap.

Sweet pinesap has a limited distribution and is rare throughout its range. Loss of forested habitat is a threat to this species.

Potential Management Effects and Determination

No plants were observed in any of the project areas. Actions associated with this project will not be detrimental to sweet pinesap because it is not present. The proposed project in C19 may benefit sweet pinesap in the long term by restoring the pine woodland community it is associated with.

The project will have no impact on sweet pinesap.

CLAMMY LOCUST

Environmental Baseline

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. This shrub has been observed growing in rocky woods in Winston County. 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.

It is reported to be present in a wildlife opening on Bankhead National Forest. Dr. Jimmy Huntley confirmed the presence of clammy locust in the wildlife opening. No other locations of this species are known on the BNF.

Lack of disturbance leading to succession and unknown causes of decline are moderate threats to this species.

Potential Management Effects and Determination

Clammy locust was not observed in any of the project areas. Actions associated with this project will not be detrimental to clammy locust because suitable habitat is not present currently. Management activities used to achieve woodland restoration in C19 should improve habitat conditions for clammy locust and other woodland species.

The project will have no impact on clammy locust.

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 and grasslands for nectar.

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

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.

According to Nature Serve, 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

Treatment of midstory and understory shrubs and trees will not directly impact Diana fritillary. Potential breeding habitat along streams will not be disturbed or impacted by this project.

Over the long term, woodland restoration projects across the BNF such as this one may benefit Diana fritillary and other woodlands associates.

There will be no impact to Diana fritillary from the proposed project.

SOUTHERN CREEKMUSSEL and ALABAMA RAINBOW

Environmental Baseline

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 southern creekmussel was observed upstream of the project site in 1992 in Rush Creek. McGregor collected it in the northern portion of Bankhead.

The Alabama rainbow primarily inhabits small headwater streams. This species probably requires clean gravel riffles, low turbidity, and some water flow. Potential habitat for this mussel is available on Bankhead in the Upper Brushy and Lower Sipsey Fork watersheds. It has been collected in the northern portion of the Bankhead by McGregor. It is known to occur in Winston, Lawrence, Madison, Marshall and Jackson counties in Alabama.

Potential Management Effects and Determination

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 have no impact on southern creekmussel or Alabama rainbow.

DARTERS

Environmental Baseline

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. There is potential habitat for this darter in the Upper and Lower Sipsey Fork, Upper and Lower Brushy and Clear watersheds. 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. Threats include timber practices, coal mining, proposed reservoirs, and siltation resulting from increased urbanization.

The warrior darter (sipsey 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.

The warrior bridled darter (longhead 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 from logging and road construction by the timber industry. Implementation of riparian zone protection should reduce threats from logging practices. Additionally, the large amount of truck traffic crossing bridges over the Sipsey Fork present a potential threat in the form of an accidental spill.

Potential Management Effects and Determination

These species do not exist within the proposed project sites. No fish were encountered during field surveys as streams are not present. Project areas are within the following watersheds; Clear Creek and Upper Brushy. 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.

This project will have no impact on these two species of darters.

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 the habitat conditions are degraded in general. Habitat degradation and fragmentation are threats to this species.

Potential Management Effects and Determination

This waterdog does not exist within or adjacent to the proposed project areas. It was not encountered during field surveys as perennial 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.

This project will have no impact on the Black Warrior waterdog.

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, turgid blossom mussel, pink mucket pearly mussel, rough pigtoe, upland combshell, cumberlandian combshell, Mohr’s Barbara’s buttons, Kral’s water plantain, leafy prairie clover, lyrate bladder-pod, Alabama streak-sorus fern, Tennessee yellow-eyed grass, and Price’s potato bean. 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. This project does not jeopardize the continued existence of mussel species or destroy or adversely modify critical habitat.

The proposed activity will have “no effect” on flattened musk turtle, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, triangular kidneyshell, dark pigtoe, fine-lined pocketbook, or ovate clubshell. The rationale for this finding is that the proposed project will not intersect streams or riparian habitats and will not result in a change to water quality or sediment delivery to streams based on Forest Plan standards. This project does not jeopardize the continued existence of mussel species or destroy or adversely modify critical habitat.

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	No effect
<i>Epioblasma brevidens</i>	Cumberlandian combshell	E	No effect
<i>Epioblasma metastrata</i>	Upland combshell	E	No effect
<i>Epioblasma turgidula</i>	Turgid blossom pearly mussel	E	No effect
<i>Lampsilis altilis</i>	Fine-lined pocketbook	E	No effect

<i>Lampsilis perovalis</i>	Orange-nacre mucket	T	No effect
<i>Medionidus acutissimus</i>	Alabama moccasinshell	T	No effect
<i>Medionidus parvulus</i>	Coosa moccasinshell	E	No effect
<i>Pleurobema furvum</i>	Dark pigtoe	E	No effect
<i>Pleurobema perovatum</i>	Ovate clubshell	E	No effect
<i>Pleurobema plenum</i>	Rough pigtoe	E	No effect
<i>Ptychobranhus greeni</i>	Triangular kidneyshell	E	No effect
<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>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
<i>Apios priceana</i>	Price's Potato Bean	T	No effect

¹E = endangered; T = threatened

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 “no effect” for all federally listed species, additional concurrence from the FWS is not 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 determination is “no impact” for the sensitive species of plants, bryophytes and wildlife listed for Bankhead National Forest. The rationale for this finding is that these species or their habitat are not present on the project sites and will not be impacted by the proposed project.

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>Helianthus eggertii</i>	Eggert's sunflower	S	No effect
<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> <i>var. 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>Monotropis 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> <i>var. 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	No impact
<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
<i>Radula sullivantii</i>	A liverwort	S	No impact
<i>Riccardia jugata</i>	A liverwort	S	No impact
<i>Hydroptila parlatosa</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	No impact

¹S = sensitive; C = candidate for Federal listing

Determinations and the Needed Follow-up Actions: 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: Consultation with the FWS is not required for Forest Service sensitive species.

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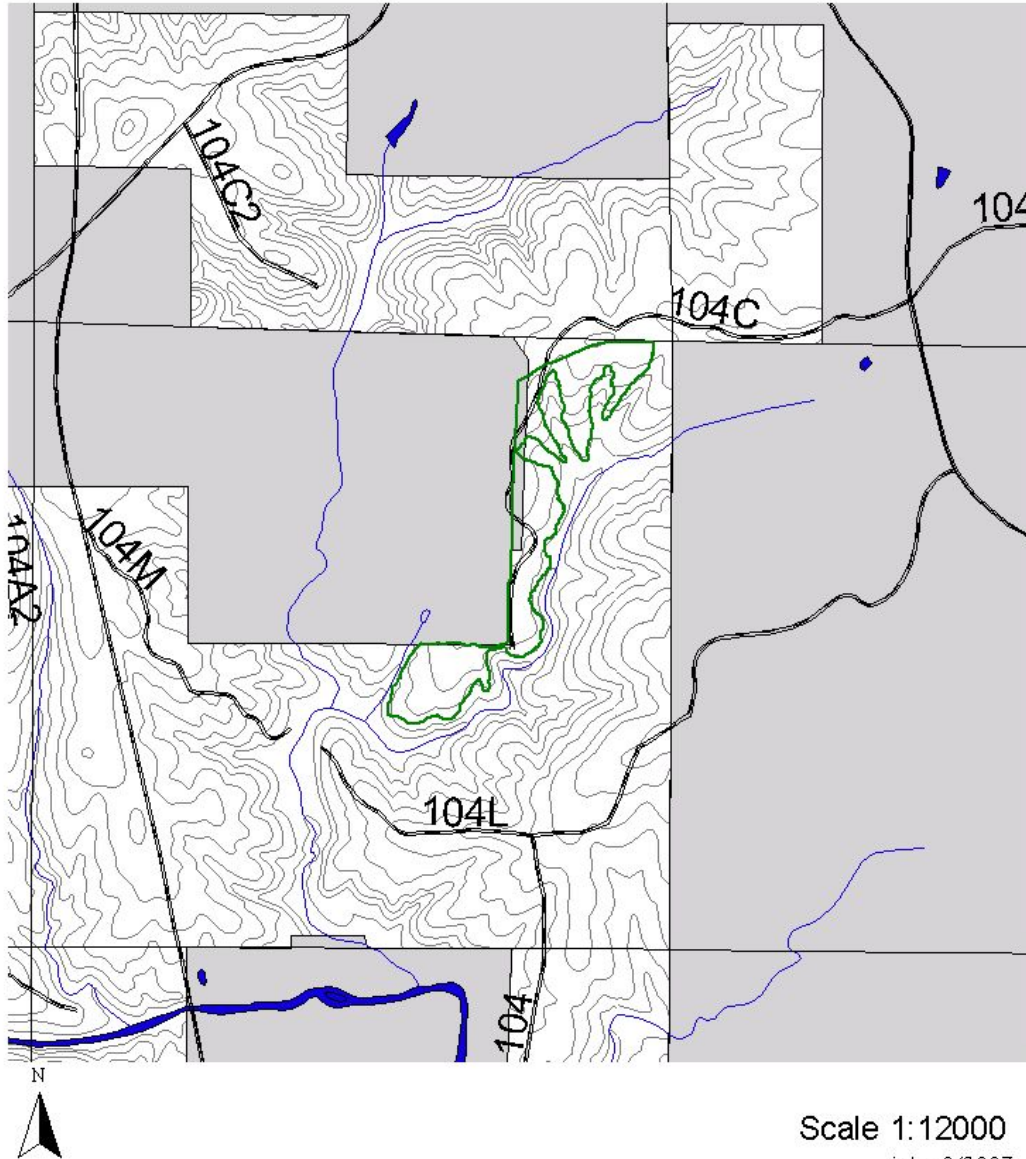
On: 3/6/2007
Date

Biological Evaluation Reviewed and Approved by: /s/ Tom Counts
Tom Counts
District Wildlife Biologist
Bankhead Ranger District

On: 3/15/2007
Date

Wildlife Habitat Improvement Project Area Compartment 163 Biological Evaluation

- Legend**
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 - Sectors.sip
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 - Streams.sip
 - Water.sip
 - Roads.sip
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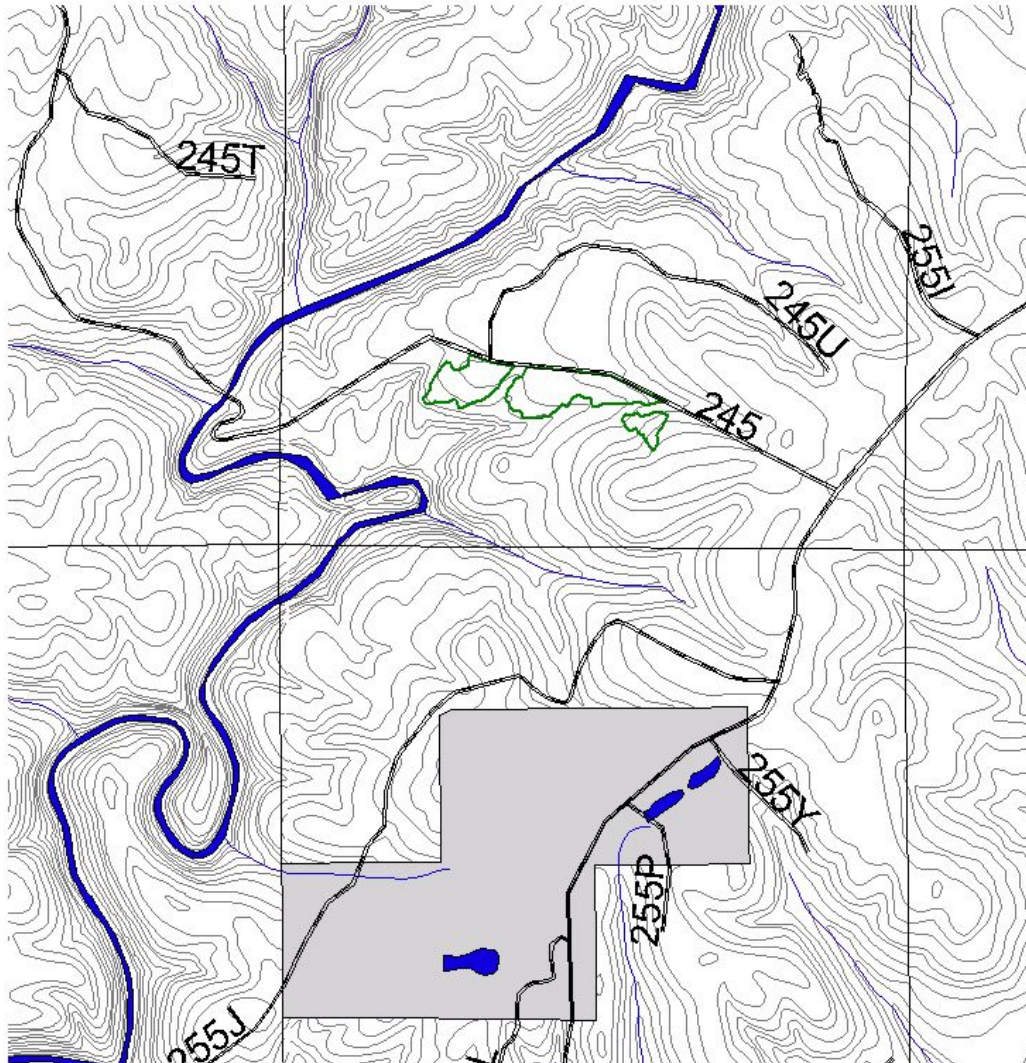


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Wildlife Habitat Improvement Project Area Compartment 19, Stand 3 Biological Evaluation

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-  Streams.shp
-  Water.shp
-  Roads.shp
-  Private land.shp
-  Contours.shp



Scale 1:12000

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