

**BIOLOGICAL EVALUATION OF
REGIONAL FORESTER'S SENSITIVE SPECIES**

**Upper Brushy Stewardship Project
Commercial Thinning**

**Bankhead National Forest
Winston County, Alabama**

Deciding Officer: District Ranger Glen D. Gaines
Biological Evaluation Prepared by Biological Scientist Allison Cochran
PO Box 278
Double Springs, AL 35553
205-489-5111
ggaines@fs.fed.us
jacochran@fs.fed.us

SUMMARY: The purpose of the project is to commercially thin a loblolly pine plantation in the Upper Brushy Watershed in Winston County. The area to be thinned is approximately 26 acres in size. The project site is located on Forest Service Road 250 in the Moreland Community. The purpose and need of the project is to improve forest stand health; to reduce the risk of southern pine beetle infestation; and to facilitate restoration of native forest communities, specifically fire adapted pine woodlands. This project is part of the Upper Brushy Stewardship Project.

This project will have no impact on the Regional Forester's Sensitive species for the Bankhead National Forest.

INTRODUCTION: This Biological Evaluation (BE) addresses the effects of the following activity on federally-listed Proposed, Endangered, Threatened and Sensitive species on the Bankhead National Forest. The project proposal is to commercially thin a loblolly pine plantation. The purpose and need of the project are to improve forest health, to reduce the risk of insect and disease (southern pine beetle infestation), and to facilitate restoration of native forest communities, specifically fire adapted pine woodlands. This biological evaluation addresses commercial thinning in one stand (Compartment 32, Stand 16) in the Upper Brushy Watershed. This site was inadvertently left out of the Forest Health and Restoration Project Environmental Impact Statement (FHRP EIS) but meets the same criteria that were used in selecting stands for thinning under that project. In that project, commercial thinning was to be completed on 9,452 acres. The Environmental Impact Statement was completed for the Forest Health and Restoration Project (FHRP) in 2003. This stand, in addition to others evaluated in the FHRP EIS, will be part of the Upper Brushy Stewardship Project.

Compartment	Stand	Acres	Treatment Method
32	16	26	Commercial Thinning

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 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; and 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.

Compartment 32, Stand 16 will be commercially thinned as part of the Upper Brushy Stewardship Project. The area is an unthinned loblolly pine forest, which was planted in 1988. The stand is managed with regular short-rotation prescribed burning. The area is proposed for thinning between 2009-2012. The result will be an open pine stand with improved resistance to insect and disease outbreak. The stand will be managed to restore pine woodland structure and function over time. Thinning is the first step in restoring the woodland structure. The result will allow for restoration and maintenance of native fire adapted woodlands. The treatment area is located in the uplands and does not include streams. No rare communities will be treated by this project. A small disturbed wetland is present. Mechanical equipment will not operate in that area.

The area proposed for thinning is in Section 17, Township 9 South and Range 7 West in Winston County. It is located on Forest Service Road 250 in the Moreland Community, south of Grayson. The area drains into Collier Creek. See the Biological Evaluation for federally listed species for a map of this project.

The treatment stand is within the Upper Brushy Stewardship Project Area and the Upper Brushy Creek 5th level watershed (HUC watershed). The Upper Brushy watershed is characterized by gently sloped ridges and pronounced valleys. Many of the larger streams are incised in picturesque gorges. Landscape character includes rural and naturally appearing landscapes. Virtually the entire watershed is forested. National Forest land occupies about 8/10th of the area.

The Upper Brushy Stewardship Project Area is within Management Prescription 7E2, Dispersed Recreation Areas with Vegetation Management, as defined in the Revised Land and Resource Management Plan for the National Forests in Alabama (RLRMP), 2004. The emphasis in 7E2 is on management that provides a variety of dispersed recreation opportunities, improving settings for outdoor recreation, and enhancing visitor experiences, in a manner that protects and restores the health, and diversity of the land. Timber harvest and vegetative manipulations are used to achieve recreational, wildlife, ecosystem restoration, or aesthetic values. The compartment 32, Stand 16 thinning unit is within Area 2 as identified in the Bankhead’s Forest Health & Restoration Project (FHRP) Environmental Impact Statement, 2003. The desired conditions in the uplands in Area 2 are shortleaf pine woodlands and oak and oak-pine woodlands.

The Bankhead National Forest is located within the northwest corner of Alabama and lies within Lawrence, Winston and Franklin counties. It is comprised of approximately 181,470 acres of forestland. The forest cover varies in both cover type and age class but is mostly a mixture of mature hardwoods and pine. The proposed project is located in the southern portion of Bankhead National Forest, in the Black Pond community, in Winston County. The proposed project area is southeast of Double Springs, AL near Lewis Smith Lake.

SENSITIVE SPECIES EVALUATED:

District Biological Scientist Allison Cochran conducted a field review of the project site on February 20, 2009. The Bankhead National Forest (BNF) district office keeps current records of locations of known listed species throughout the area which were reviewed as part of this evaluation. The project area was surveyed for presence of Federally listed and Forest Service sensitive species. None were present. This evaluation considered species range, life history information, available habitat information, and known locations to determine which species to evaluate.

A list of the Regional Forester’s Sensitive Species (2001, revised 2007) that may occur or are known to occur on Bankhead National Forest (BNF) and must be evaluated for potential effects of management are as follows:

Scientific Name	Common Name	Taxonomic Group	Rank	Habitat	Bankhead NF Distribution
<i>Helianthus eggertii</i>	Eggert's sunflower	Plant	S1G3	6	FP
<i>Aesculus parviflora</i>	Small flowered buckeye	Plant	S3G3	18	F1/FP
<i>Astragalus tennesseensis</i>	Tennessee Milkvetch	Plant	S1S2G3	6	FP
<i>Aureolaria patula</i>	Spreading yellow false foxglove	Plant	S1G3	7	FP
<i>Carex brysonii</i>	Bryson's sedge	Plant	S1G1	18	F1
<i>Delphinium alabamicum</i>	Alabama larkspur	Plant	S2G2	6	F1
<i>Diervilla rivularis</i>	Riverbank bush-honeysuckle	Plant	S2G3	11	F1
<i>Hymenophyllum tayloriae</i>	Gorge filmy fern	Plant	S1G2	7	F1
<i>Jamesianthus alabamensis</i>	Alabama jamesianthus	Plant	S3G3	11	F2
<i>Juglans cinerea</i>	Butternut	Plant	S1G4	18	F1
<i>Leavenworthia alabamica</i> <i>var. alabamica</i>	Alabama Gladecress	Plant	S2G2	6	FP
<i>Leavenworthia crassa</i>	Fleshyfruit Gladecress	Plant	S1G1	6	F1
<i>Lesquerella densipila</i>	Duck River Bladderpod	Plant	S1G3	6	FP
<i>Monotropsis odorata</i>	Sweet pinesap	Plant	S1G3	17	F1
<i>Asplenium x ebenoides</i>	Scott's Spleenwort	Non-vascular Plant	S1	7	FP
<i>Marshallia trinervia</i>	Broadleaf Barbara's buttons	Plant	S3G3	11	F1
<i>Minuartia alabamensis</i>	Alabama Sandwort	Plant	S2G2Q	6	FP
<i>Neviusia alabamensis</i>	Alabama snow-wreath	Plant	S2G2	6	FP

Upper Brushy Stewardship Project – Commercial thinning
Regional Forester’s Sensitive Species BE

<i>Platanthera intergrilabia</i>	White fringeless orchid	Plant	S2G2G3	2	F1
<i>Polymnia laevigata</i>	Tennessee Leafcup	Plant	S2S3G3		FP
<i>Robinia viscosa</i>	Clammy Locust	Plant	SNR G3	17	F1
<i>Rudbeckia triloba var pinnatiloba</i>	Pinnate-lobed Black-eyed Susan	Plant	S2S3G5T3	7, 18, 11	F1/FP
<i>Scutellaria alabamensis</i>	Alabama skullcap	Plant	S2G2	7, 18	F1/FP
<i>Sedum nevii</i>	Nevius' stonecrop	Plant	S3G3	7	F1
<i>Silene ovata</i>	Blue Ridge catchfly	Plant	S2G3	7	FP
<i>Talinum calcaricum</i>	Limestone Fameflower	Plant	S2G3	6	FP
<i>Talinum mengesii</i>	Menge's fameflower	Plant	S2S3G3	6	F1
<i>Thalictrum mirabile</i>	Little mountain meadow rue	Plant	S2G4	7	F1
<i>Trillium lancifolium</i>	Lanceleaf Trillium	Plant	S2S3G3	11	F1/FP
<i>Trillium simile</i>	Jeweled Trillium	Plant	G3	18	FP
<i>Speyeria diana</i>	Diana Fritillary	Insect	S2G4	11	FP
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared bat	Mammal	G3G4S2	10	FP
<i>Cheilolejeunea evansii</i>	A liverwort	Non-vascular Plant	S1G1	11	F1
<i>Aneura maxima</i>	A liverwort	Non-vascular plant	G4	11	F1
<i>Pellia X appalachiana</i>	A liverwort	Non-vascular plant	G4	11	F1
<i>Plagiochila echinata</i>	A liverwort	Non-vascular plant	GNR	11	F2
<i>Radula sullivantii</i>	A liverwort	Non-vascular plant	G3	11	F1
<i>Riccardia jugata</i>	A liverwort	Non-vascular plant	G2	11	F1
<i>Hydroptila parlatosa</i>	A caddisfly	Insect	S2G2	A	F1
<i>Rhyacophila carolae</i>	A caddisfly	Insect	S1G1	A	F1
<i>Elliptio arca</i>	Alabama spike	Mussel	S2G2G3	A	F1
<i>Obovaria jacksoniana</i>	Southern Hickorynut	Mussel	S1S2G2	A	FP
<i>Obovaria unicolor</i>	Alabama	Mussel	S2G3	A	FP

Upper Brushy Stewardship Project – Commercial thinning
Regional Forester’s Sensitive Species BE

	Hickorynut				
<i>Strophitus subvexus</i>	Southern creekmussel	Mussel	S3G3	A	F1
<i>Villosa nebulosa</i>	Alabama rainbow	Mussel	S3G3	A	F1
<i>Etheostoma bellator</i>	Warrior darter	Fish	S2G2	A	F1
<i>Etheostoma douglasi</i>	Tuskaloosa darter	Fish	S2G2	A	F1
<i>Etheostoma phytophilum</i>	Rush darter	Fish	S1G1	A	F1
<i>Etheostoma tuscumbia</i>	Tuscumbia darter	Fish	S2G2	A	FP
<i>Percina sp.cf.macrocephala</i>	Longhead darter (Warrior Brinled Darter)	Fish	G3	A	F1
<i>Necturus alabamensis</i>	Black Warrior waterdog	Amphibian	S2G2	A	F1
<i>Lasmigona complanta alabamensis</i>	Alabama Heelsplitter	Mussel	G5T2	A	FP
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Bird	S3G5	11	F1
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			
Status - T=Threatened; E= Endangered; C=Candidate; S=Sensitive(USFS Southeast Region, 2001 Revision) CH=Critical Habitat designated. Distribution- FP=Forest Potential, No Known Occurrences;F1=1-5 known occurrences; F2=6-20 known occurrences; f3=21-100 known occurrences; FH = Forest Historic					

This list of Regional Forester’s Sensitive Species to be considered and evaluated for Bankhead National Forest projects was derived from the BA and BE for implementation of the Forest Plan (2004). **Species shaded in dark gray in the above tables will not be affected by the proposed project.** No impacts are expected to these species or their known or potential habitats. Habitats and/or occurrences of the species within the dark gray shaded areas are outside of the project area or will not be affected by the project. These determinations of “no impact” are possible because the proposed action does not include any activity within the habitats where these species are known to occur. No sensitive species were found in the project area during field reviews.

Sensitive Species Analyzed:

Black Warrior Waterdog (*Necturus alabamensis*)

This species is a candidate for federal listing and was analyzed in the Biological Evaluation for this project. The finding is “no impact” and the rationale can be found in the Biological Evaluation for Commercial Thinning in the Upper Brushy Stewardship Project.

**Tuskaloosa Darter (*Etheostoma douglasi*)
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. Potential habitat is available in the Upper Brushy 5th Level HUC watershed, where this project will occur.

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.

Potential Management Effects and Determination

Stream habitat is not present within the area to be thinned. Ground based logging equipment will not be operated in riparian areas or on water saturated soils. There will be no effects to aquatic habitats as a result of this project; therefore there is no opportunity for direct or indirect impacts to Tuskaloosa darter. Indirect and cumulative effects may include the potential for siltation due to erosion. RLRMP standards are in place to prevent, reduce and control erosion. Standards regarding riparian areas, riparian corridors, and streamside management zones are outlined in the Revised Land and Resource Management Plan (RLRMP) and will protect aquatic species.

This project will have no impact on Tuskaloosa darter, based on project plans and RLRMP standards.

Mussels

Alabama Spike (*Eliptio arca*)

Southern Creekmussel (*Strophitus subvexus*)

Alabama Rainbow (*Villosa nebulosa*)

Environmental Baseline

The southern creekmussel occurs in a variety of habitats, ranging from small creeks to large rivers, where it may be found in pools or areas with moderate current. It 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. This mussel may occur in sandy mud, sand and sandy gravel. It appears to be confined to the Black Warrior and Tombigbee River drainages of Alabama and Mississippi. The southern creekmussel has been documented by McGregor in the northern portion of Bankhead. It has been collected in the Upper Brushy watershed in the vicinity of the Upper Brushy Stewardship Project area.

The Alabama rainbow primarily inhabits small headwater streams. This species probably requires clean gravel riffles, low turbidity, and some water flow. Potential and occupied habitat for this mussel is available on Bankhead. It has been collected in the northern portion of the Bankhead by McGregor. There is an element of occurrence record for Alabama rainbow in the Upper Brushy watershed in the vicinity of the project area. It is known to occur in Winston, Lawrence, Madison, Marshall and Jackson counties in Alabama. The species was historically widespread in the Black Warrior, Cahaba and Coosa River drainages above the Fall Line. This mussel is extant in a few isolated tributary populations, including headwaters of Sipsey Fork in the Bankhead and scattered tributaries of the Coosa River.

The Alabama spike has also been collected in the northern portion of the BNF by McGregor. This species 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. The Alabama spike (*Eliptio arca*) may be the same species as the delicate spike (*Eliptio arctata*). This mussel is locally common within the Sipsey. Potential habitat is available within the project watershed.

Potential Management Effects and Determination

The proposed project will not be conducted within nor affect aquatic habitats. There are no streams present within the areas proposed for thinning; therefore, there is no opportunity for direct impacts to these aquatic species. Indirect and cumulative effects may include the potential for siltation from erosion as a result of this

project. Project plans and mitigations will alleviate any adverse effects to potential habitat within the project watershed. Project plans include not operating logging equipment within riparian areas or on water saturated soils. 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 project plans and RLRMP standards, this project will have no impact on southern creekmussel, Alabama rainbow or Alabama spike.

**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 the project site.

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 at the project site; 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 treatment stand. The cumulative effects may be realized across the forest landscape. When considering these project site 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, the 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.

The proposed thinning stand provides potential habitat for sweet pinesap as it is an upland pine stand. None of this potential habitat within the project site 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 the project area. Actions associated with this project will not be detrimental to sweet pinesap because it is not present. The proposed project 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

No plants were observed in the project area. 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 should improve habitat conditions for clammy locust and other woodland species.

The project will have no impact on clammy locust.

Rafinesque’s Big-eared Bat

Environmental Baseline

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

Foraging habitat for this bat 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.

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.

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

Potential Management Effects and Determination

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. Den trees and snags that may provide potential roost habitat should not be removed during project operations. Potential foraging habitat, described as mature forests, should be improved upon project completion. The resulting stand will be more open, allowing for use of the stand by bat species.

There will be no impact to Rafinesque’s big-eared bat.

Regional Forester’s Sensitive Species with Determinations:

<i>Regional Forester’s Sensitive Species Determinations for Implementation of the Proposed Action.</i>		
<i>Scientific Name</i>	<i>Common Name</i>	<i>Determinations of Effect</i>
<i>Aesculus parviflora</i>	Small flowered buckeye	No Impact
<i>Astragalus tennesseensis</i>	Tennessee Milkvetch	No impact
<i>Aureolaria patula</i>	Spreading yellow false foxglove	No Impact
<i>Carex brysonii</i>	Bryson’s sedge	No Impact
<i>Delphinium alabamicum</i>	Alabama larkspur	No Impact
<i>Diervilla rivularis</i>	Riverbank bush-honeysuckle	No Impact
<i>Hymenophyllum tayloriae</i>	Gorge filmy fern	No Impact
<i>Jamesianthus alabamensis</i>	Alabama jamesianthus	No Impact
<i>Juglans cinerea</i>	Butternut	No Impact

Regional Forester’s Sensitive Species Determinations for Implementation of the Proposed Action.		
Scientific Name	Common Name	Determinations of Effect
<i>Leavenworthia crassa</i>	Fleshyfruit Gladecress	No Impact
<i>Lesquerella densipila</i>	Duck River Bladderpod	No Impact
<i>Monotropis odorata</i>	Sweet pinesap	No Impact
<i>Asplenium x ebenoides</i>	Scott’s Spleenwort	No Impact
<i>Marshallia trinervia</i>	Broadleaf Barbara’s buttons	No Impact
<i>Minuartia alabamensis</i>	Alabama Sandwort	No Impact
<i>Neviusia alabamensis</i>	Alabama snow-wreath	No Impact
<i>Platanthera intergrilabia</i>	White fringeless orchid	No Impact
<i>Polymnia laevigata</i>	Tennessee Leafcup	No Impact
<i>Robinia viscosa</i>	Clammy Locust	No Impact
<i>Rudbeckia triloba var pinnatiloba</i>	Pinnate-lobed Black-eyed Susan	No impact
<i>Scutellaria alabamensis</i>	Alabama skullcap	No Impact
<i>Sedum nevii</i>	Nevius’ stonecrop	No Impact
<i>Silene ovata</i>	Blue Ridge catchfly	No Impact
<i>Talinum calcaricum</i>	Limestone Fameflower	No Impact
<i>Talinum mengesii</i>	Menge’s fameflower	No Impact
<i>Thalictrum mirabile</i>	Little mountain meadow rue	No Impact
<i>Trillium lancifolium</i>	Lanceleaf Trillium	No Impact
<i>Trillium simile</i>	Jeweled Trillium	No Impact
<i>Speyeria diana</i>	Diana Fritillary	No Impact
<i>Corynorhinus rafinesquii</i>	Rafinesque’s Big-eared bat	No Impact
<i>Cheilolejeunea evansii</i>	A liverwort	No Impact
<i>Aneura maxima</i>	A liverwort	No Impact
<i>Helianthus eggertii</i>	Eggert’s Sunflower	No Impact
<i>Leavenworthia alabamica var. alabamica</i>	Alabama Gladecress	No Impact
<i>Potamilus inflatus</i>	Alabama Heelsplitter	No Impact
<i>Pellia X appalachiana</i>	A liverwort	No impact
<i>Plagiochila echinata</i>	A liverwort	No Impact
<i>Radula sullivantii</i>	A liverwort	No Impact
<i>Riccardia jugata</i>	A liverwort	No Impact
<i>Hydroptila paralatosa</i>	A caddisfly	No Impact
<i>Rhyacophila carolae</i>	A caddisfly	No Impact
<i>Elliptio arca</i>	Alabama spike	No Impact
<i>Obovaria jacksoniana</i>	Southern Hickorynut	No Impact
<i>Obovaria unicolor</i>	Alabama Hickorynut	No Impact
<i>Strophitus subvexus</i>	Southern creekmussel	No Impact
<i>Villosa nebulosa</i>	Alabama rainbow	No Impact

Regional Forester’s Sensitive Species Determinations for Implementation of the Proposed Action.		
Scientific Name	Common Name	Determinations of Effect
<i>Etheostoma bellator</i>	Warrior darter	No Impact
<i>Etheostoma douglasi</i>	Tuskaloosa darter	No Impact
<i>Etheostoma phytophilum</i>	Rush darter	No Impact
<i>Etheostoma tuscumbia</i>	Tuscumbia darter	No Impact
<i>Percina sp.cf.macrocephala</i>	Longhead darter (Warrior Brinled Darter)	No Impact
<i>Necturus alabamensis</i>	Black Warrior waterdog	No Impact
<i>Haliaeetus leucocephalus</i>	Bald eagle	No Impact

EXPLANATION OF DETERMINATIONS:

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

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

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

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

PREPARERS:

Biological Evaluation Prepared by:

/s/ Allison Cochran
 Allison Cochran
 Biological Scientist
 Bankhead Ranger District

Biological Evaluation Reviewed and Approved by:

/s/ Tom Counts
 Tom Counts
 District Wildlife Biologist
 Bankhead Ranger District

Date: February 23, 2009

References and Data Sources:

50 CFR Part 17 Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitats for Three Threatened Mussels and Eight Endangered Mussels in the Mobile River Basin; Proposed Rule. Wednesday March 26, 2003. Department of the Interior, Fish and Wildlife Service.

Bailey, M.A. 1992. *Final Report of the Black Warrior Waterdog Status Survey*. Project E-1 Alabama Natural Heritage Program, Montgomery, Alabama.

Biomonitoring in the Mulberry Fork Watershed, 1999-2001. 2001. Thomas E. Shepard, Patrick E. O’Neil, Stuart W. McGregor, and Wiley P. Henderson. Geological Survey of Alabama, Environmental Geology Division. Tuscaloosa, Alabama. 60 pp.

Butchkowski, Cal, J. Chengler, A. Hicks, R. Reynolds. 2008. Pennsylvania Game Commission. 4294 Eberle Road, Petersburg, Pa. 16669. Spring Indiana Bat Migration Telemetry.

Dean, B.E., A. Mason, and J.L. Thomas. 1973. *Wildflowers of Alabama and Adjoining States*. The University of Alabama Press. Tuscaloosa, Alabama. 230 pp.

Dean, B.E., and A. Mason. 1968. *Trees and Shrubs in the Heart of Dixie*. Southern University Press. Birmingham, Alabama. 246 pps.

Demography and Habitat Requirements of the Black Warrior Waterdog, *Necturus alabamensis*. 2001. Michelle Durflinger, Auburn University. Master’s Thesis, Auburn University. 55 pp.

Dickson, J.G. ed. 2001. *Wildlife of Southern Forests Habitat and Management*. Hancock House Publishers, Blaine, WA.

Distribution, Habitat Use and Population Ecology of the Black Warrior Waterdog, *Necturus alabamensis*. 2002. Durflinger, Michelle, Guyer, Craig, Auburn University. Bailey, Mark, Conservation Services Southeast. 38 pp.

Evaluation of the Suitability of Selected Stream Sites in Bankhead National Forest for Occupation by Populations of Flattened Musk Turtles (*Sternotherus depressus*) and the Potential Effects of Silvicultural Improvements on Habitat Quality. 2004. Sherry R.H. Rogers & Ken R. Marion. University of Alabama at Birmingham.

Evaluation of the Population Status of the Flattened Musk Turtle (*Sternotherus depressus*) in the Sipsey Fork and Brushy Creek Branches of Lewis Smith Lake, Alabama. 2004. Sherry R.H. Rogers & Ken R. Marion. University of Alabama at Birmingham.

Evaluation of Landscape Level Habitat Attributes of Indiana Bat (*Myotis sodalists*) Autumn Home Ranges in the Bankhead National Forest, Alabama. Benjamin L. Battle, unpublished Masters thesis at Alabama A & M University, Normal, Alabama. May 2003.

Hudson, M.K. 2008. Personal Communication.

Final Rule: Endangered and Threatened wildlife and Plants; Endangered Status for Eight Freshwater Mussels and Threatened Status for Three Freshwater Mussels in the Mobile River Drainage. March 17, 1993. Department of the Interior, United States Fish and Wildlife Service.

Final Rule: Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for Three Threatened and Eight Endangered Mussels in the Mobile River Basin. July 1, 2004. Department of the Interior, United States Fish and Wildlife Service (50 CFR Part 17 40084 – 40171).

Florence, S. *Biological Evaluation: Suppression of the Southern Pine Beetle Infestation On the Nantahala and Pisgah National Forests*. Grandfather Ranger District, Nebo, North Carolina.

Harris, S.C., P.E. O’Neil, and P.K. Lago. 1991. *Caddisflies of Alabama*. Geological Survey of Alabama, Biological Resources Division. Tuscaloosa, Alabama. 442 pps.

Hartfield, P. D. 1990. *Status survey for Mussels in the Tributaries of the Black Warrior River, Alabama*. USDI, US Fish & Wildlife Service.

Upper Brushy Stewardship Project – Commercial thinning
Regional Forester’s Sensitive Species BE

Harvey, M.J., J.S. Altenbach, and T.L. Best. 1999. *Bats of the United States*. Arkansas Game and Fish Commission. 63 pp.

Huntley, J. C. 1995. Biological Evaluation for Amendment Number 14, New SMZ Standards to National Forests in Alabama Land and Resource Management Plan. USDA Forest Service. 22 pp.

Indiana Bat, *Myotis Sodalis*, Maternity Roosts in the Southern United States. By Eric R. Britzke, Michael J. Harvey and Susan Loeb. *Southeastern Naturalist*, 2003, vol. 2(2):235-242.

Indiana Bat Recovery Plan – Technical Draft, October 22, 1996. U.S. Fish and Wildlife Service, Indiana Bat Recovery Team.

Lein, G. M. 1999. *An inventory of freshwater mussels and the flattened musk turtle (*Sternotherus depressus*) in selected streams of William B. Bankhead National Forest, Winston County, Alabama*. Challenge Cost Share Agreement #01-CCS-98-006 between USDA Forest Service, National Forests in Alabama and Alabama Department of Conservation and Natural Resources, State Lands Division, Natural Heritage Section.

Lellinger, D.B. 1985. *A Field Manual of the Ferns and Fern-Allies of the United States and Canada*. Smithsonian Institution Press. Washington, D.C. 389 pp.

Loeb, S.C. and T.A. Waldrop. 2008. Bat activity in relation to fire and fire surrogate treatments in southern pine stands. *Forest Ecology and Management* 255 (2008) 3185-3192.

McGregor, S.W. 1992. *A Mussel Survey of the Streams Draining Bankhead National Forest and the Oakmulgee Division of the Talladega National Forest, Alabama*. Geological Survey of Alabama. Tuscaloosa, Alabama. 29 pp.

Mirarchi, R.E. ed. 2004. *Alabama Wildlife, V. 1. A checklist of vertebrates and selected invertebrates: aquatic mollusks, fishes, amphibians, reptiles, birds and mammals*. The University of Alabama Press, Tuscaloosa, Alabama.

Mirarchi, R.E., J.T. Garner, M.F. Mettee, and P.E. O’Neil, eds. 2004. *Alabama Wildlife, V. 2. Imperiled aquatic mollusks and fishes*. The University of Alabama Press, Tuscaloosa, Alabama.

Mirarchi, R.E., M.A. Bailey, T.M. Haggerty, and T.L. Best, eds. 2004. *Alabama Wildlife, V. 3. Imperiled amphibians, reptiles, birds, and mammals*. The University of Alabama Press, Tuscaloosa, Alabama.

Menzel, M.A., J.M. Menzel, T.C. Carter, W.M. Ford, J.W. Edwards. 2001. *Review of the Forest Habitat Relationships of the Indiana Bat (*Myotis sodalis*)*. USDA Forest Service, Northeastern Research Station General Technical Report NE-284. Newtown Square, Pennsylvania. 21 pp.

Mettee, M.F., P.E. O’Neil, and J.M. Pierson. 1996. *Fishes of Alabama and the Mobile Basin*. Oxmoor House, Birmingham, Alabama.

Mount, R.H. 1975. *The Reptiles and Amphibians of Alabama*. University of Alabama Press, Tuscaloosa, Alabama. pp. 306-308.

NatureServe. 2007. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>.

Pierson, E.D. 1998. Tall Trees, Deep Holes, and Scarred Landscapes: Conservation Biology of North American Bats. *In* *Bat Biology and Conservation*, T.H. Kunz and P.A. Racey, eds., Smithsonian Institution, Washington. pp. 309-325.

Radford, A.E., H.E. Ahles, and C.R. Bell. 1968. *Manual of the Vascular Flora of the Carolinas*. University of North Carolina Press. Chapel Hill, North Carolina. 1183 pps.

Rickett, H.M. 1967. *Wildflowers of the United States, Volume Two*. McGraw-Hill Book Company. New York. 688 pps.

Upper Brushy Stewardship Project – Commercial thinning
Regional Forester’s Sensitive Species BE

Roost Tree Use By Indiana Bats and Northern Bats in the Wayne National Forest, Ohio. Department of Biological Sciences, Eastern Kentucky University, Katrina Schultes and Charles Elliott. A Symposium on The Indiana Bat: Biology and Management of an Endangered Species, Lexington, Kentucky, March 29, 2001.

Roost Site Fidelity by Indiana Bats in Kentucky. Mark W. Gumbert, J.M. O’Keefe, and J. R. MacGregor. A Symposium on The Indiana Bat: Biology and Management of an Endangered Species, Lexington, Kentucky, March 29, 2001.

Schotz, Alfred. 2006. An account of limestone and sandstone glades in William Bankhead National Forest. Alabama Natural Heritage Program, Montgomery, Alabama.

Schotz, A.R. 2001. Threatened and Endangered Species: Eggert’s Sunflower. *Alabama’s Treasured Forests*. Fall 2001. 25.

Simon, S.A. 2000. *Biological Evaluation for Regional Forester’s Sensitive Species and Locally Rare Species: Nantahala and Pisgah Plan Amendment #10, National Forests in North Carolina*.

Status Survey of the Blueface Darter, *Etheostoma* sp. cf. *E. zonistium*, in upper Sipsey (Mobile Basin) and Bear Creek (Tennessee River Drainage) of Alabama. 2002. Bernard R. Kuhajda and Richard L. Mayden, University of Alabama. Submitted to US Fish and Wildlife Service, Jackson, Mississippi.

Trani, M.K., W.M. Ford, and B.R. Chapman. Eds. 2007. *The Land Manager’s Guide to the Mammal’s of the South*. The Nature Conservancy, Southeastern Region, Durham, North Carolina.

USDA Forest Service. 1999. A Watershed Analysis for the National Forests in Alabama.

USDA Forest Service. 2004. Revised Land and Resource Management Plan: National Forests in Alabama. Management Bulletin R8-MB 112A.

USDA Forest Service. 2004. Final Environmental Impact Statement for the Revised Land and Resource Plan: National Forests in Alabama. Management Bulletin R8-MB 112B.

USDA Forest Service. 2004. Appendices: Final Environmental Impact Statement for the Revised Land and Resource Plan, National forests in Alabama. Management Bulletin R8-MB 112E.

USDA Forest Service. 2003. Final Environmental Impact Statement for Forest Health and Restoration Project. Bankhead National Forest.

USDI, US Fish & Wildlife Service. 1991. Kral’s Water Plantain Recovery Plan. Jackson, Mississippi.

USDI, US Fish & Wildlife Service. 1993. Final Rule: Endangered and Threatened wildlife and Plants; Endangered Status for Eight Freshwater Mussels and Threatened Status for Three Freshwater Mussels in the Mobile River Drainage.

USDI, US Fish & Wildlife Service. 1996. Alabama Streak-Sorus Fern Recovery Plan. Atlanta, Georgia.

USDI, US Fish & Wildlife Service. 1996. Indiana Bat Recovery Plan – Technical Draft. Indiana Bat Recovery Team.

USDI, US Fish & Wildlife Service. 2002. Alabama’s Federally Listed Species by County as Updated June 2003. Daphne Ecological Services Field Office web page. <http://www.fws.gov/daphne/es/specieslst.html>

USDI, US Fish & Wildlife Service. Species Profile for federally listed clams. U.S. Fish and Wildlife Service Division of Endangered Species homepage. http://ecos.fws.gov/species_profile/species_profile.html

USDI, US Fish & Wildlife Service. Species Profile for federally listed plants. U.S. Fish and Wildlife Service Threatened and Endangered Species homepage. <http://endangered.fws.gov/i/q.html>

USDI, US Fish and Wildlife Service. 1994. Recovery Plan for Tennessee Yellow-eyed Grass (*Xyris tennesseensis* Kral). US Fish and Wildlife Service, Jackson, Mississippi. 24 pp.

Upper Brushy Stewardship Project – Commercial thinning
Regional Forester’s Sensitive Species BE

- USDI, US Fish and Wildlife Service. 1996. Leafy Prairie-clover Recovery Plan. US Fish and Wildlife Service, Atlanta, Georgia. 74 pp.
- USDI, US Fish and Wildlife Service. 1996. Recovery Plan for the Lyrate Bladderpod (*Lesquerella lyrata* Rollins). US Fish and Wildlife Service, Atlanta, Georgia. 27 pp.
- USDI, US Fish and Wildlife Service. 1998. Technical/Agency Draft Recovery Plan for *Helianthus eggertii* Small (Eggert’s Sunflower). Atlanta, Georgia. 32 pp.
- USDI, US Fish and Wildlife Service. 2000. Mobile River Basin Aquatic Ecosystem Recovery Plan. Atlanta, Georgia. 128 pp.
- Wildlife and Freshwater Fisheries Division, Alabama Department of Conservation and Natural Resources. 2005. Conserving Alabama’s wildlife: a comprehensive strategy. Alabama Department of Conservation and Natural Resources, Montgomery, Alabama.
- Williams, James D., A.E. Bogan, and J.T. Garner. Freshwater mussels of Alabama and the Mobile Basin in Georgia, Mississippi, and Tennessee. The University of Alabama Press, Tuscaloosa, Alabama.
- Wilson, Lawrence A. 1995. Land Manager’s Guide to the Amphibians and Reptiles of the South. The Nature Conservancy, Southeastern Region, Chapel Hill, NC.
- Wilson, L.A. 1995. The Land Manager’s Guide to the Amphibians and Reptiles of the South. The Nature Conservancy, Southeastern Region. Chapel Hill, North Carolina. 360 pp.
- Bailey, M.A., J.N. Holmes, K.A. Buhlmann, and J.C. Mitchell. 2006. Habitat Management Guidelines for Amphibians and Reptiles of the Southeastern United States. Partners in Amphibian and Reptile Conservation Technical Publication HMG-2, Montgomery, Alabama.