Decision Memo
Site Prep, Planting and Mechanical Release Project, Payne Demonstration Area FY 2007

USDA Forest Service
Bankhead National Forest
Bankhead Ranger District
Winston County, Alabama

Decision and Rationale for the Decision

I have decided to proceed with the proposal to perform site preparation followed by artificial regeneration by planting shortleaf pine seedlings, on six acres, located in Sections 27 and 34, T9S, R8W. The methods by which the site preparation will be accomplished include roller drum chopping and prescribed burning. Furthermore, manual release with hand tools and other mechanical means such as chainsaws will be performed, as needed, throughout the duration of the demonstration. These actions will take place during the fiscal year 2007 on a total of less than six regeneration acres.

The project area is currently a loblolly pine stand in need of regeneration after having been affected by southern pine beetle. The area is currently six acres of standing as well as down and dead trees. The purpose of this project is to restore native shortleaf pine/bluestem ecosystems. This site will be managed as a demonstration area for educational outreach.

The objectives of this project are to reduce competition and, therefore, provide for the establishment of native species for the purpose of research. This project will accomplish the goals and objectives of the Revised Land and Resource Management Plan by promoting the restoration of upland forest communities native to the Cumberland Plateau Region. The project areas are managed under Prescription 9.C.3. (Southern Cumberland Plateau Native Ecosystem Restoration and Maintenance) as outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. This particular prescription emphasizes restoration of "a mix of hardwood…forest communities based on historic conditions" (RLRMP).

This action is categorically excluded from documentation in an EIS or EA because it is consistent with the following category from Forest Service Handbook 1909.15-2004-3, dated 07/06/2004:

Section 31.2 (6)
–Regeneration of an area to native trees species, including site preparation which does not involve the use of herbicides or result in vegetation type conversion."

I find that this project is appropriate for categorical exclusion within these categories because no extraordinary circumstances exist as defined in FSH 1909.15, 30.3.2.

Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species. – The project area has been surveyed for threatened, endangered or sensitive plants and animals (TES), the biological evaluation (BE) was completed and the determination was "No Effect", on T & E species requiring no further consultation, and "No Impact" on Sensitive species.

Flood plains, wetlands, or municipal watersheds. – The proposed action is not in a floodplain, wetland, or municipal watershed, and forest plan standards are implemented to prevent off site impacts.

Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas. – No congressionally designated areas are within the project area.

Inventoried roadless areas. – No part of the project area is designated as inventoried roadless area or research natural area.

American Indians and Alaska Native religious or cultural sites or Archaeological sites, or historic properties or areas. – A cultural resource survey has been conducted on the project area and reports were sent to the State Historic Preservation Officer who concurred with the findings. Since the road corridor is located in a previously disturbed area, no sites eligible for the National Register of Historic Places will be affected by the activity.

Mitigation measures that are listed in the Revised Land and Resource Management Plan of the National Forests in Alabama (RLRMP) will be followed.

Public Involvement

A legal notice of formal notice and comment period being established for this project was published in *The Northwest Alabamian* on October 14, 2006. Three responses were received. Each expressed support of the project proposal.

Findings Required By Other Laws and Regulations

The project follows Forest-Wide Goals and Objectives listed in the Plan (pp. 2-9 through 2-60) including, but not limited to: Goal 1, Objective 1.3; Forest Wide Standards and Guides FW-9, 10, 12-15, and 17. Management Area Direction, state-approved Best Management Practices would be implemented and the actions would comply with the Clean Water Act, Clean Air Act, and with the seven requirements of 36 CFR 219.27 (b). I have also determined that this action is consistent with the intent and requirements of the Endangered Species Act, The National Preservation Act, the National Environmental Policy Act, and the National Forest Management Act.

Implementation

Implementation of this decision may begin immediately upon publication of the Notice of Decision in the paper of record (*Northwest Alabamian*).

Administrative Review or Appeal Opportunities
Pursuant to the 2002 version of 36 CFR 215.12, this decision is not subject to appeal.

Contact Person
For further information, contact Glen Gaines, Bankhead National Forest, PO Box 278, Double Springs, AL or at (205) 489-5111.

/s/ Glen D. Gaines
GLEN D. GAINES
District Ranger

November 16, 2006
Date

BIOLOGICAL EVALUATION

of

Proposed, Endangered, Threatened, and Sensitive Species

Site Preparation for Shortleaf Pine Reforestation
Winston County, Alabama

Bankhead National Forest

Compartment 123

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

Contact:
Deciding Officer: District Ranger Glen D. Gaines
BE Preparer: Biological Scientist Allison Cochran
P. O. Box 278
Double Springs, Alabama 35553
Telephone 205-489-5111
FAX 205-489-3427
E-mail ggaines@fs.fed.us
jacochran@fs.fed.us

Categorical Exclusion - Biological Evaluation (BE)

Summary

This project will prepare one site for the planting of shortleaf pine seedlings. Roller drum chopping and prescribed burning will be the methods used to prepare the site for planting. The total acreage to be treated is approximately six acres. The site is located in the Payne Creek Demonstration Area in Management Compartment 123. The treatment unit is located in Section 27 and 34, T9S, R8W. The stand was impacted by southern pine beetle during the 1990's. The site was not treated for Southern Pine Beetle control. The site is currently in an early successional to sapling stage with remnant loblolly and shortleaf pine in the overstory. The primary species that are regenerating in the stand are mixed hardwood species.

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

Based upon the findings of this evaluation, this project will not effect the 24 plants and animals that are federally listed for the Bankhead; may impact individuals but will not cause a trend to federal listing or loss of viability for sweet pinesap, clammy locust, and Diana fritillary; and will have no impact on the 49 other species listed as sensitive for the Bankhead.

Concurrence with the U.S. Fish and Wildlife Service is not required.

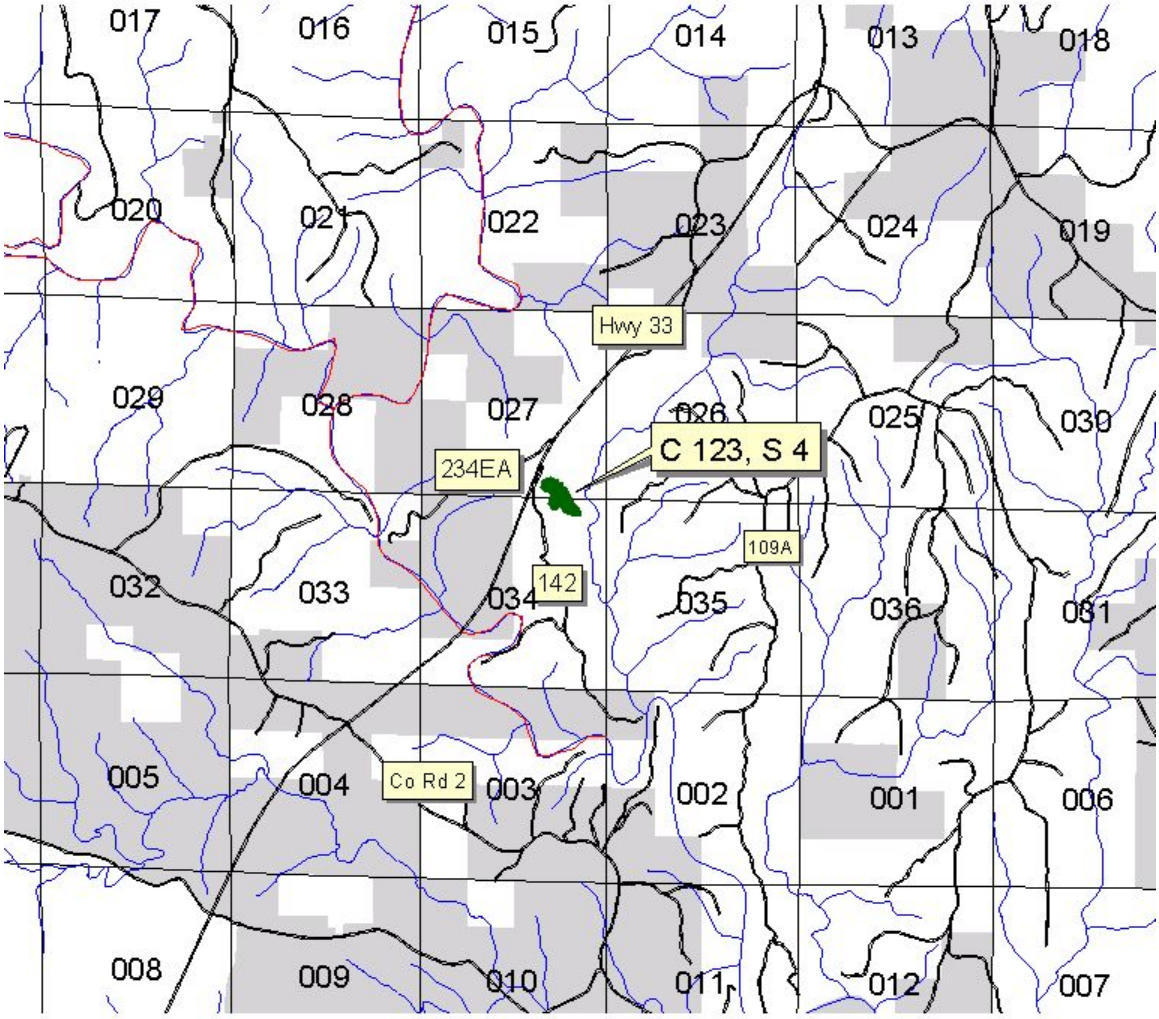
INTRODUCTION

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

This project will involve roller drum chopping, followed by site preparation prescribed burning. The project will be conducted in the fall or winter of 2006, between October and January. The result will be a prepared site for shortleaf pine planting. Shortleaf pine seedlings will be planted during the following planting season. Standards are identified in the Revised Land and Management Resource Plan regarding equipment limitations in riparian areas and on slopes and fire line construction.

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 area is located in the central portion of Bankhead National Forest (BNF), in Area 2 as identified in the Bankhead's Forest Health & Restoration project. The project area is located in Winston County. This shortleaf pine site preparation and planting project is part of the Payne Creek Demonstration Project. Additional restoration projects are scheduled for this area. Those projects are not covered by this Biological Evaluation. A map of the unit is located in the project file at the Bankhead Ranger District office in Double Springs, Alabama. A vicinity map is included here.

Bankhead National Forest
Payne Creek Demonstration Project
Compartment 123, Stand 4
Shortleaf Pine Site Prep & Planting



Legend
- C123_s4_sl.shp
- Roads.shp
- Wilderness.shp
- Critical habitat (mussels).shp
- Streams.shp
- Sections.shp
- Private land.shp

Scale 1:62,000

N

jabc 10/2006

Payne Creek Demo Area

The Payne Creek site preparation unit is located in Compartment 123, stand 4. It is within sections 27 and 34, T9S, R8W. The area to be treated is approximately six acres in size. The site was impacted by Southern Pine Beetle (SPB) during the late 1990's. The stand contains remaining loblolly and shortleaf pine trees not impacted by SPB mixed with upland hardwoods. The midstory and understory vegetation consists of upland hardwood species. Abundant species regenerating on this site include tulip poplar, red maple, big leaf magnolia, dogwood, sourwood, and various red oak species. The majority of the trees to be treated by roller drum chopping are hardwoods between 1 and 9" DBH with an average size of 3.5" DBH. Very little herbaceous vegetation exists within the stand. *Carex* sps. (wood sedges) are present along the side slopes.

The Payne Creek Demonstration Area is located within the Upper Sipsey Fork watershed. The Upper Sipsey Fork watershed is characterized by gently sloped ridges and pronounced valleys. Many of the larger streams are incised in picturesque gorges. Landscape character includes rural, naturally appearing and naturally evolving landscapes. Virtually the entire watershed is forested. National Forest system lands occupy about 9/10th of the area. There are very few major influences within the watershed. Off National Forest, influences include agriculture practices and logging. On National Forest land, the main influences are a high to moderate degree of recreation use and a history of timber harvesting. The aquatic condition of the Upper Sipsey Fork watershed reflects a diversity of native, endemic and PETS species. The aquatic vulnerability is high.

The areas surveyed for this evaluation did not contain glades, rock outcrops, aquatic areas or wetlands, which are habitats where protected, threatened, endangered, or

sensitive plant species are typically found. No wetlands or streambeds will be disturbed by this project.

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.

CONSULTATION HISTORY

Effects to threatened and endangered species from prescribed burning activities, treatment for southern pine beetle control, and reforestation have been topics of past consultation with the US Fish and Wildlife Service (FWS). Written concurrence dated October 2, 2002 was received from FWS for a manual site preparation project for the restoration of shortleaf pine in Compartment 31. Written concurrence dated February 14, 2002 was received from FWS for a manual site preparation project for the restoration of longleaf pine in Compartments 160 and 161. Written concurrence dated May 19, 2004 was received from FWS for site preparation for the restoration of longleaf pine in Compartments 125 and 149. Written concurrence dated July 1, 2005 was received from FWS for site preparation for the restoration of longleaf pine in Compartments 148, 149, 150, 151 and 160. The FWS provided written concurrence on September 8, 2005 for site preparation for shortleaf pine restoration in Compartment 31. The FWS is a participant on the Bankhead Liaison Panel. This group was actively involved in the development of the Forest Health and Restoration Project and Environmental Impact Statement which outlines reforesting southern pine beetle killed areas and restoring native community types on the Bankhead.

PROPOSED MANAGEMENT ACTION

The proposed project will prepare one site in the Payne Creek Demo Area for planting of shortleaf pine seedlings. This project will involve roller drum chopping, followed by site preparation prescribed burning. The project will be conducted in the fall or winter of 2006, between October and January. Shortleaf pine seedlings will be planted during the following planting season.

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

SPECIES CONSIDERED AND SPECIES EVALUATED

District Biological Scientist Allison Cochran has conducted field reviews of the project sites on October 17, 2006. 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 were surveyed for presence of Federally listed and Forest Service sensitive species. None were found.

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]	Rank	Habitat	Within Affected Area? May be affected by the project?	
Myotis grisescens	Gray Bat	E	G3S2	1	No	
Myotis sodalis	Indiana bat	E	G2S2	1	Potential	
Haliaeetus leucocephalus	Bald Eagle	T	G4S3	11	No	
Picoides borealis	Red-cockaded woodpecker	E	G3S2	17	No	
Sternotherus depressus	Flattened musk turtle	T	G2S2	A	Potential.	Within the watershed.
Epioblasma brevidens	Cumberlandian combshell	E	G1S1	A	No	
Epioblasma metastriata	Upland combshell	E	GHSH	A	Potential.	Within the watershed.
Epioblasma turgidula	Turgid blossom pearly mussel	E	GHSX	A	No	
Lampsilis altilis	Fine-lined pocketbook	E	G2S2	A	Potential.	Within the watershed.
Lampsilis perovalis	Orange-nacre mucket	T	G2S1	A	Potential.	Within the watershed.
Medionidus acutissimus	Alabama moccasinshell	T	G1S1	A	Potential.	Within the watershed.
Medionidus parvulus	Coosa moccansinshell	E	G1S1S2	A	Potential.	Within the watershed.
Pleurobema furvum	Dark pigtoe	E	G1S1	A	Potential.	Within the watershed.
Pleurobema perovatum	Ovate clubshell	E	G1S1	A	Potential.	Within the watershed.
Pleurobema plenum	Rough pigtoe	E	G1S1	A	No	
Ptychobranchus greeni	Triangular kidneyshell	E	G1S1	A	Potential.	Within the watershed.
Lampsilis orbiculata (L. abrupta)	Pink mucket pearlymussel	E		A	No	
Dalea foliosa	Leafy prairie clover	E	G2G3S1	6	No	
Lesquerella lyrata	Lyrate bladder-pod	T	G1S1	6	No	
Marshallia mohrii	Mohr's Barbara's Buttons	T	G3S3	2	Potential	
Sagittaria secundifolia	Kral's water-plantain	T	G1S1	A	Potential	
Thelypteris pilosa var al.	Alabama streak-sorus fern	T	G4T1S1	7	Potential.	Within the watershed.
Xyris tennesseensis	Tennessee yellow-eyed grass	E	G2S1	11	No	
Apios priceana	Price's Potato-Bean	T	G2S2	11 & 7	No	

[1]E = 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- Succesional 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

Regional Forester's Sensitive Species List - August 7, 2001

Scientific Name	Common Name	Status[1]	Rank	Habitat	Within Affected Area? May be affected by project?
Helianthus eggertii	Eggert's sunflower	S	G3S1	8	Potential
Aesculus parviflora	Small flowered buckeye	S	S2S3G2G3	18	No
Astragalus tennesseensis	Tennessee Milkvetch	S	S1G3	6	No
Aureolaria patula	Spreading yellow false foxglove	S	S1G2G3	7	No
Carex brysonii	Bryson's sedge	S	S1G1	18	No
Delphinium alabamicum	Alabama larkspur	S	S2G2	6	No
Diervilla rivularis	Riverbank bush-honeysuckle	S	S2G3	11	No
Hymenophyllum tayloriae	Gorge filmy fern	S	S1G1G2	7	No

Jamesianthus alabamensis	Alabama jamesianthus	S	S3G3	11	No	
Juglans cinerea	Butternut	S	S1G3G4	18	No	
Leavenworthia alabamica var.alabamica	Alabama Gladecress	S	T2T3G2G3	6	No	
Leavenworthia crassa	Fleshyfruit Gladecress	C&S	S1G2	6	No	
Lesquerella densipila	Duck River Bladderpod	S	SHG3	6	No	
Monotropsis odorata	Sweet pinesap	S	G3	10	Potential	
Asplenium x ebenoides	Scott's Spleenwort	S	HYBS1	7	No	
Marshallia trinervia	Broadleaf Barbara's buttons	S	S3G3	11	No	
Minuartia alabamensis	Alabama Sandwort	S	S2G2Q	6	No	
Neviusia alabamensis	Alabama snow-wreath	S	S2G2	6	No	
Platanthera intergrilabia	White fringeless orchid	C&S	S2G2G3	2	No	
Polymnia laevigata	Tennessee Leafcup	S	S2S3G3	18	No	
Robinia viscosa	Clammy Locust	S	G3	17	Potential	
Rudbeckia triloba var pinnatiloba	Pinnate-lobed Black-eyed Susan	S	S2S3G4T2	7	No	
Scutellaria alabamensis	Alabama skullcap	S	S2G2	7	No	
Sedum nevii	Nevius' stonecrop	S	S3G3	7	No	
Silene ovata	Blue Ridge catchfly	S	S1G2G3	7	No	
Talinum calcaricum	Limestone Fameflower	S	S2G3	6	No	
Talinum mengesii	Menge's fameflower	S	S2S3G3	6	No	
Thalictrum mirabile	Little mountain meadow rue	S	QS1G2G3	7	No	
Trillium lancifolium	Lanceleaf Trillium	S	S2S3G2	11	No	
Trillium simile	Jeweled Trillium	S	G3	18	No	
Speyeria diana	Diana Fritillary	S	S3G3	11	Potential	
Corynorhinus rafinesquii	Rafinesque's Big-eared bat	S		10	No	
Cheilolejeunea evansii	A liverwort	S	S1G1	11	No	
Aneura maxima	A liverwort	S	G1G2	11	No	
Pellia X appalachiana	A liverwort	S	G1G2	11	No	
Plagiochila echinata	A liverwort	S	G2	11	No	
Radula sullivantii	A liverwort	S	G2	11	No	
Riccardia jugata	A liverwort	S	G1G2	11	No	
Hydroptila paralatosa	A caddisfly	S	S2G2	A	No	
Rhyacophila carolae	A caddisfly	S	S1G1	A	No	
Elliptio arca	Alabama spike	S	S2G3	A	Potential.	Within watershed

Obovaria jacksoniana	Southern Hickorynut	S	S2G1G2	A	No	
Obovaria unicolor	Alabama Hickorynut	S	S2G3	A	No	
Strophitus subvexus	Southern creekmussel	S	S2G3	A	No	
Villosa nebulosa	Alabama rainbow	S	S3G3	A	No	
Etheostoma bellator	Warrior darter	S	S2G2	A	Potential.	Within watershed
Etheostoma douglasi	Tuskaloosa darter	S	S2G2	A	Potential.	Within watershed
Etheostoma phytophyllum	Rush darter	C & S	S2G2	A	No	
Etheostoma tuscumbia	Tuscumbia darter	S	S1G1	A	No	
Percina sp.cf.macrocephala	Warrior Bridled Darter (Longhead)	S	G3	A	Potential.	Within watershed
Necturus alabamensis	Black Warrior waterdog	C & S	S2G2	A	Potential.	Within watershed
Lasmigona complanta alabamensis	Alabama Heelsplitter	S	G5T2	A	No	

[1]S = sensitive; C = candidate for Federal listing

Habitat Code
1 = Cave Habitats
2 = Wetland (Bog) Habitats
6 = Glades, Prairies, and Woodlands Habitats
7 = Rock Outcrop and Cliff Habitats
8 = Grass/Forb Habitats
10 = Mid- to Late- Succesional 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

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

Federally Listed Species (Threatened & Endangered Species)

Gray bat. Small populations of gray bats were found within Bankhead National Forest (BNF) in Lawrence County during 1999. Their presence has been verified in subsequent years in two caves. Winter use of these two caves has been documented (hibernacula). These bats have not been encountered in Winston County. Caves and their associated buffer zones are not present within or adjacent to the treatment area. The closest known hibernacula is over nine miles away from the project site. The nearest unsurveyed cave is over six miles from the project site. No cave is closer than four miles to the Payne Creek Demonstration Area. No known or potential habitat for this species will be impacted by this project.

Bald eagle.
The bald eagle has been observed occasionally during the winter and spring around portions of Bankhead National Forest that border the Lewis Smith Lake. Two inactive bald eagle nests were confirmed on National Forest system lands along Lewis Smith Lake during 2004. The nests were not active during 2004. During 2005 and 2006, both nests were monitored. One nest is active, but unsuccessful. One nest is not active.

Bald eagle breeding habitat includes areas close to large bodies of waters. Large conifer trees are preferred roosts. Bald eagles avoid areas with nearby human activity and development. Current and potential bald eagle habitat is available on National Forest system lands along Lewis Smith Lake. The area to be treated by this site preparation project does not contain potential bald eagle nesting habitat. The Payne Creek Demo Area is located more than five miles from the main body of Smith Lake.

Red-cockaded woodpecker. There has been no record of a red-cockaded woodpecker at the Bankhead National Forest since the early 1990's. Habitat for the red-cockaded woodpecker was not maintained on the Bankhead. Potential habitat is not present within the project site.

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

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

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

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

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

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

The proposed project does not include nor will affect limestone glades or barrens habitat. Because habitat is not available for this plant within the treatment area and because it is not known to occur on BNF, this plant was excluded from further evaluation.

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

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

The proposed project does not include limestone glades or outcrop habitats. Because habitat is not available for this plant within the project site, habitat will not be affected by this project, and because the species is not known to occur on BNF, this plant was excluded from further evaluation.

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

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

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

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.

The habitat Price's potato bean is associated with, floodplain edges, riparian areas, and rocky woods at the base bluffs, will not be included in the treatment area for shortleaf pine site preparation and planting. Therefore, it was excluded from further evaluation.

Forest Service Sensitive Species

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

These species were not encountered during field surveys and are not known to occur within the project area. The area to be treated is located in the uplands. Rich mesic woods, calcareous soils, bottomlands and streamsides are not present within the treatment area. Therefore, these two species were excluded from further evaluation.

ALABAMA LARKSPUR

This plant 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 S. Gunn and by R. Stewart in the Oakville quad on cedar glades and adjacent cedar woodlands. Limestone glades and woodlands are not present within the treatment area. They do not occur within the vicinity of the project site. Sandstone outcrops, rocks and associated open woods do occur within the project vicinity. Site specific surveys reveal that the Alabama larkspur nor suitable sandstone outcrops and adjacent woods do not occur within the treatment unit. Therefore, the plant was excluded from further evaluation.

SPREADING YELLOW FALSE FOXGLOVE

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

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

This plant and its habitat were not encountered during field surveys. The project site does not contain habitat for this plant. The restoration of shortleaf pine on the site will not provide an open mature oak woodland setting that is characteristic of this plant's habitat. Therefore, it was excluded from further evaluation.

GORGE FILMY FERN

This species is somewhat to very epipetric in that it is 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. Deeply incised gorges and deeply sheltered moist habitats are not present within the treatment unit. Although, small rock grottos and outcroppings along streams are found along Payne Creek in the project vicinity. 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 gorge filmy fern; therefore, it was excluded from further evaluation.

ALABAMA 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 treatment unit. The project area does not provide suitable habitat for Jamesianthus. 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 Jamesianthus; therefore, it was excluded from further evaluation.

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. The sedge is not limited to a particular soil type, but does include moist, sandy loams. Bryson's sedge is found in rich deciduous woods or on bluffs above streams. Little is known about its life science. Bryson's sedge is apparently narrowly endemic to gorges of a single drainage in the Cumberland Plateau physiographic province in Alabama.

Threats include land-use conversion and habitat fragmentation.

The project area does not contain habitat for this species. Shady, rich deciduous woods are not present within the area to be treated. 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.

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

The proposed project area does not include limestone glades or sandstone outcrop habitats. Because habitat is not available for these plants within the project site and will not be affected by this project, these plants were excluded from further evaluation.

FLESHY-FRUIT and ALABAMA GLADECRESS

Fleshy-fruit gladecress has been encountered on two glades within the Bankhead National Forest. It is endemic to Lawrence and Morgan counties in Alabama and verified from six sites in those two counties. It occurs on limestone glades, fallow fields and along roadsides in sunny, open habitats where it receives full sunlight with limited herbaceous competition. This gladecress is highly threatened by human disturbance, including ATV use and trash disposal on glades. Glade habitats have been reduced to remnants fragmented by agriculture and development.

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 vicinity of the project. Species associated with glades and outcrops have been excluded from further evaluation.

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 habitat is not available within the project area. Agriculture, stream modification, dam construction and competition with grasses all pose threats to this species.

Habitat for this species does not exist within the vicinity of the treatment unit. This bladderpod has been excluded from further evaluation.

NEVIUS' STONECROP AND LIVERWORTS

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

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

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

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 seepy calcareous habitat of broadleaf Barbara's buttons does not occur within the project area. For this reason, this Barbara's buttons was excluded from further evaluation.

ALABAMA SANDWORT

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

Potential glade or rock outcrop habitat for Alabama sandwort does not occur within the project site. Species associated with glades and outcrops have been excluded from further evaluation.

TENNESSEE LEAFCUP

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

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

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

BLUE RIDGE CATCHFLY

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

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

Potential habitat does not occur within the project site. Species associated with glades and outcrops have been excluded from further evaluation.

JEWELED TRILLIUM

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

Appropriate habitat is not available within the project site; therefore, this trillium was excluded from further evaluation.

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.

The project site does not include riparian communities, although riparian areas are in the vicinity of the project area. The project area does not contain habitat for this species. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species. Therefore, riverbank bush-honeysuckle has been excluded from further evaluation.

LITTLE MOUNTAIN MEADOW RUE and SCOTT'S SPLEENWORT

These species are somewhat to very epipetric in that they are usually found on more or less vertical rock faces. Little mountain meadow-rue is restricted to wet sandstone habitats and known only from eastern Kentucky and Tennessee, south to northern Alabama. Like the other epipetric species considered here, habitat is difficult to access; thus limiting threats. Scott's Spleenwort is epipetric. It is found in cool rock crevices (limestone, sandstone, or conglomerate cliffs) with a northern exposure. It is also associated with moist, shady habitats. It is not known from BNF. It has been encountered in Jefferson County, Alabama.

The proposed project will not occur within the appropriate type of habitat for these species. There is no opportunity for impact to the moist, rock habitats where these species are found. Neither of these species nor their habitat were encountered during field reviews. Therefore, these species were excluded from further evaluation.

ALABAMA SNOW-WREATH

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

Alabama snow-wreath is expected to occur within riparian communities on BNF. The project site does not include riparian communities, although riparian areas are in the vicinity of the project area. The project area does not contain habitat for this species. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species.

MONKEY-FACE ORCHID (White Fringeless Orchid)

Habitat for this orchid is generally described as wet, boggy areas, stream heads, or seepage slopes in acidic muck or sand, in flat or at the bottom of sharply sloped streamside in association with species of

Sphagnum moss and Cinnamon fern, chain fern and/or New York fern. Soils are permanently moist, but are not often flooded.

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

Potential habitat for this orchid does not occur within the project site. This species was not found during field reviews of the project site. 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. Therefore, this orchid was excluded from further evaluation.

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

Lanceleaf trillium was not encountered during field surveys of the project site. Moist to wet soils are not available within the project area. Since potential habitat is unavailable, lanceleaf trillium was excluded from further evaluation.

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

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

The project site does not contain rock outcrops, cliffs, riparian areas, or moist slopes. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the National Forests in Alabama. These standards are in place to protect water quality, aquatic species and the terrestrial and aquatic ecosystems associated with streams, seeps, ponds, bogs, and springs. Based on these standards, this project will not affect aquatic or riparian species. Additionally, rock outcrops and cliffs are protected and will be restored and maintained as identified in the rare community management prescription in the RLRMP.

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

This species was not encountered during field surveys; is not known to occur in the Bankhead National Forest; and potential habitat does not exist within the project site. Therefore, Alabama skullcap was excluded from further evaluation.

ALABAMA HEELSPLITTER, SOUTHERN CREEKMUSSEL, SOUTHERN HICKORYNUT, and ALABAMA HICKORYNUT

Potential habitat for these aquatic species exists on BNF. All of these mussel species require habitat stability, including substrate and water quality. These species are sensitive to water quality degradation; sedimentation being an important factor. Ground disturbing activities within a watershed are potential sediment sources. These threats are not currently factors on the Bankhead.

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 has been collected in the northern portion of the BNF by McGregor.

The Alabama hickorynut is restricted to large streams below the fall line 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.

The Alabama heelsplitter is known from the Alabama, Black Warrior, Coosa and Tombigbee rivers. It is found in large rivers in silt and sand substrata in slow to moderate current, and at depths exceeding six meters. This mussel can survive in impounded rivers to a limited extent.

Alabama rainbow has been collected in the northern portion of the BNF by McGregor. According to Nature Serve, it is known from Wheeler Lake, Etowah, and Sipsey Fork watersheds in Jackson, Lawrence, Madison, Marshall, and Winston Counties in Alabama.

These species do not exist within the same watersheds as the proposed project. Streams are not present within the treatment unit. Larger streams and rivers with which these species are associated or not present within the vicinity of the treatment area. 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. These mussels have been 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.

This darter and its suitable habitat do not exist within the proposed project area. Streams are not present within the treatment unit. The darter does not occur in the same watershed as the treatment unit. 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 darter has been excluded from further evaluation.

RUSH DARTER

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 burr weed beds. There are three small known populations of this species. This species is uncommon and vulnerable to habitat alteration and decreases in water quality.

This darter and its suitable habitat do not exist within the project area. Streams are not present within the treatment unit. The darter does not occur in the same watershed as the treatment unit. 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. Rush darter has been excluded from further evaluation.

RAFINESQUE'S BIG-EARED BAT

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

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

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

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

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

This bat's presence has not been confirmed on the BNF or surrounding areas. Foraging habitat for Rafinesque's big-eared bat is not present within the project site. Hibernacula are not present within or adjacent to the project site. However, potential roosting habitat is available within and adjacent to the project site. Pine snags with loose sloughing bark are fairly abundant in areas impacted by southern pine beetle. Project provisions for treatment of snags will mitigate impacts to Rafinesque's big-eared bat and potential roost habitat. Snags measuring 9 inches DBH and larger will be retained during site preparation activities. Roosting is unlikely during the time of site preparation activities. Site

preparation will occur between October and January when Rafinesque's big-eared bat will likely be hibernating. Therefore, Rafinesque's big-eared bat was excluded from further evaluation.

CADDISFLIES

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

Caddisflies are confined to water during the majority of their life cycle. Adults of most species are inactive during the day and active during the evening.

The proposed project will not be conducted within nor affect aquatic habitats. There are no streams present within the project site. 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, these caddisfly species were excluded from further evaluation.

EVALUATED SPECIES SURVEY INFORMATION

The following species were evaluated in this BE; Indiana bat, flattened musk turtle, upland combshell, fine-lined pocketbook, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, dark pigtoe, ovate clubshell, triangular kidneyshell, Mohr's Barbara's buttons, Kral's water plantain, Alabama streak-sorus fern, Eggert's sunflower, sweet pinesap, clammy locust, Diana fritillary, Alabama spike, Warrior darter, Tuskaloosa darter, longhead (Warrior brindled) darter and the Black Warrior waterdog.

Indiana bats were documented hibernating in two caves on the Bankhead in 1999. Their presence has been confirmed bi-annually since discovery. Bat monitoring is on-going on Bankhead. Indiana bat summer roosting has not been documented on Bankhead.

Flattened musk turtles occur in the Lower Sipsey Fork watershed. Historically, there was also a population in the Clear Creek watershed. Flattened musk turtles are also known from Lewis Smith lake. 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.

Habitat for the eight federally listed mussel species and five Forest Service sensitive aquatic species occurs in the Upper Sipsey Fork watershed. Alabama streak-sorus fern has also been documented within the Upper Sipsey Fork watershed, but not in Payne Creek.

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." Dr. Jimmy Huntley recorded one location of clammy locust on the Bankhead National Forest within a wildlife opening.

Site specific surveys of the project sites were conducted on October 17, 2006 by Biological Scientist Allison Cochran. No species listed as threatened or endangered by the FWS or as sensitive by the Regional Forester were encountered during field surveys. Additionally, extensive surveys were conducted in surrounding areas and throughout the forest for the Bankhead's Forest Health and Restoration Project and Environmental Impact Statement. Survey methods included walking over the project sites searching for listed plants and animals, as well as potential habitat.

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

Federally Listed Species (Threatened & Endangered Species)

Indiana bat

Environmental Baseline

The Indiana bat is Federally listed as an endangered species and listed by the State of Alabama as a Priority One Species – Highest Conservation Concern. Small populations of Indiana and Gray bats were found in two caves on the Bankhead National Forest in February, 1999. Their presence has been verified by Forest Service cave monitoring efforts conducted bi-annually during 2001, 2003 and 2005. Their presence has also been verified by Forest Service, Alabama Department of Conservation and Natural Resources, and Alabama A&M University biologists bat harp trapping efforts at cave entrances. Many other caves are present within the karst landscape of Bankhead National Forest and may provide habitat for these species. Additional harp trapping, mist netting, and cave surveys conducted on Bankhead National Forest to date have found no other caves used by Indiana or Gray bats. As with other bats of deciduous forests, it is extremely difficult to accurately determine the number of individual Indiana bats present during the summer. Due to apparently small populations, they are difficult to capture by common techniques such as mist netting. Thus it is not known if or to what extent Indiana bats use the Bankhead during the non-hibernating season. No maternity colonies have been documented on Bankhead. Based upon very limited information on the presence and distribution of Indiana bats in Bankhead, there is an assumption that Indiana bats may be present within appropriate habitat on the Bankhead National Forest from spring to fall.

Indiana bats forage in and around the tree canopy of floodplain, riparian and upland forests. Within flood-plain forests Indiana bats show a preference for areas where canopy closure ranges from 30% to 70%. Streams, associated floodplain forests, and impounded bodies of water are preferred foraging habitats for pregnant and lactating Indiana bats, which may fly up to 1.5 miles from upland roosts to feed. In general, Indiana bats forage within the canopy of upland forests, over clearings with early successional vegetation, along the borders of croplands, along wooded fence rows and over farm ponds in pastures. Indiana bats use larger trees with hollows or loose bark for their summer roosts and maternity colonies, but spend their winters hibernating in caves like Gray bats.

There are 13 Indiana bat hibernacula in six states which are designated as critical habitat. Priority One hibernacula are defined as hibernation sites with recorded populations of more than 30,000 bats since 1960. Priority Two hibernacula have record of between 500 and 30,000 bats since 1960. Priority three hibernacula have records of 500 or fewer bats. The hibernacula at Bankhead are within the Priority Three category. Indiana bat populations have declined by about 60% since the 1960's. The total population of Indiana bats was estimated at 353,000 in 1997. The reasons for a continuing decline are not clear.

Information and research about summer roosting sites of Indiana bats is extremely limited south of Tennessee. Recent work has been completed in eastern Tennessee and western North Carolina on Indiana bat maternity colonies. The colonies were found to use primary and secondary roosting sites. In all cases the bats were found under the exfoliating bark of either pine or hardwood trees, with most of the roosts being in snags. The main threats to this species are availability of natural roost structures, loss of winter hibernaculum and human disturbance.

Direct, Indirect and Cumulative Effects – Indiana bat
Consideration of potential impacts to bats including hibernacula, swarming areas and maternity roosts follows.

Hibernacula
Indiana bats hibernate in caves (hibernacula) that meet their temperature requirements. These are caves that trap large volumes of cold air. The information from ongoing surveys indicate that very few caves on Bankhead National Forest are suitable for this activity. Many caves have been surveyed but only two sites have been verified to be hibernacula. Although efforts with Forest Service personnel and volunteers are ongoing, many caves have yet to be surveyed. The hibernacula are important because bats enter the hibernation period with only enough fat reserves to last until spring. Each disturbance within the hibernacula can cause a bat to use as much as 10 to 30 day supply of fat reserves. Disturbance during hibernation is considered to be a potentially fatal event. Most Indiana bats enter hibernation in November and emerge in late March or April.

Direct effects may include disturbance leading to mortality during hibernation. Potential indirect effects include alterations to the cave environment or surrounding habitat resulting in unsuitable hibernacula.

RLRMP standards and guidelines eliminate the potential for take of hibernating bats and the modification to cave habitat. All activities within primary and secondary cave protection zone are coordinated with the US Fish and Wildlife Service (FW-94). Until caves are surveyed for use by federally listed bats, they are assumed to be present and habitat is maintained for them by applying standards for occupied caves (9.F-56). For all caves suitable for supporting cave-associated species, a minimum buffer of 200 feet is maintained around portals and cave associated collapse and sinkholes (9.F-57). Bankhead's database of known caves was reviewed to assess distance to the site preparation unit in the Payne Creek Demonstration Area. Known hibernacula are over nine miles away from the treatment unit. The nearest unsurveyed cave is over six miles from the Payne Creek Demonstration Area.

Swarming Areas
Indiana bats move from their summer habitat towards hibernacula for fall swarming. Over a period of several weeks, bats arrive at hibernacula and fly in and out during the night. The fall swarming period is considered a critical part of the bat's life cycle as they are putting on weight for hibernation and it is a mating season.

RLRMP standards are in place to avoid possible harassment of swarming Indiana bats. All activities within primary and secondary cave protection zone are coordinated with the US Fish and Wildlife Service (FWS) (FW-94). Until caves are surveyed for use by federally listed bats, they are assumed to be present and habitat is maintained for them by applying standards for occupied caves (9.F-56). For all caves suitable for supporting cave-associated species, a minimum buffer of 200 feet is maintained around portals and cave associated collapse and sinkholes (9.F-57). Bankhead's database of known

caves was reviewed to assess distance to the site preparation unit in the Payne Creek Demonstration Area. There are no hibernacula within nine miles of the treatment unit. There are no unsurveyed caves within six miles of the treatment unit. Trees known to have been used as roosts by Indiana bats are protected from cutting and/or modification until they are not longer suitable as roost trees, unless their cutting is needed for safety. Consultation with FWS is required where roost tree cutting or modification is deemed necessary (FW–96). No trees known to have been used as roosts by Indiana bats are within the project vicinity. Snags are not intentionally felled unless needed to provide for immediate safety. Exceptions may be made for projects such as insect and disease control, salvage harvesting, and facility construction, after coordination with the FWS to determine appropriate protective measures for the Indiana bat (FW-97). Snags will not be felled unless necessary for immediate safety. All trees larger than 9" DBH will be retained during site preparation activities. To avoid harassment of swarming of Indiana bats, tree-cutting is prohibited between September 1 and December 1 within the primary and secondary zones of hibernacula (FW-105). This project will not take place within the primary or secondary zone of any cave. The project area is over nine miles away from any known hibernacula.

Maternity Roosts

Indiana bat maternity roosts are generally considered to be large standing dead trees or other living trees with shaggy bark located in or near floodplain forests. It appears that Indiana bats select maternity roost trees based more upon structure (presence of flaking bark), size and location rather than by tree species. With few exceptions, maternity roosts within the range of Indiana bats, have been found in riparian forests or are within 0.62 miles of permanent streams. Maternity roosts in the southeastern United States are not well documented. In 1999 researchers located a maternity roost in a dead (42 inch diameter breast high - DBH) hemlock tree on Forest Service lands in western North Carolina. This was the farthest south a maternity roost had ever been found and the first report of use of conifers for this purpose. They have since found maternity roosts in eastern Tennessee located in a pine snag (15 inch DBH) in Great Smoky Mountains National Park, TN. Another primary roost was found in a 21 inch DBH pitch pine snag and alternate roost trees including pine snags, red oak snags, and a live sweet birch have also been found in eastern Tennessee. These records represent some of the first descriptions of Indiana bat maternity habitat in the southern United States.

Although Indiana bat maternity roosts have not been documented on Bankhead National Forest, they must be considered. RLRMP are in place to minimize the potential for take of an Indiana bat or loss of potential habitat. All activities within primary and secondary cave protection zone are coordinated with the US Fish and Wildlife Service (FWS) (FW-94). Until caves are surveyed for use by federally listed bats, they are assumed to be present and habitat is maintained for them by applying standards for occupied caves (9.F-56). For all caves suitable for supporting cave-associated species, a minimum buffer of 200 feet is maintained around portals and cave associated collapse and sinkholes (9.F-57). Bankhead's database of known caves was reviewed to assess distance to the site preparation unit in the Payne Creek Demonstration Area. There are no caves within nine miles of the treatment unit. Trees known to have been used as roosts by Indiana bats are protected from cutting and/or modification until they are not longer suitable as roost trees, unless their cutting is needed for safety. Consultation with FWS is required where roost tree cutting or modification is deemed necessary (FW–96). No trees known to have been used as roosts by Indiana bats are within the project vicinity. Snags are not intentionally felled unless needed to provide for immediate safety. Exceptions may be made for projects such as insect and disease control, salvage harvesting, and facility construction, after coordination with the FWS to determine appropriate protective measures for the Indiana bat (FW-97). Snags will not be felled unless necessary for immediate safety. All trees larger than 9" DBH will be retained during site preparation activities. To avoid harassment of swarming of Indiana bats, tree-

cutting is prohibited between September 1 and December 1 within the primary and secondary zones of hibernacula (FW-105). This project will not take place within the primary or secondary zone of any cave. The project area is over nine miles away from any known hibernacula.

Restoration (reforestation) of Southern Pine Beetle impacted areas will provide for early successional forest habitat for a number of years. These early successional areas provide potential foraging habitat for Indiana bats.

A cumulative effects analysis should consider incremental impact of actions when added to past, present and reasonably foreseeable future actions. The analysis includes all actions regardless of who undertakes the actions. Cumulative effects can result from individually minor but collectively significant actions taking place over time. Essentially all Forest Service actions are evaluated for their impact upon federally listed species such as these. Actions that take place off the forest are generally not evaluated to such an extent. These actions are also under no regulatory authority of the Forest Service. Management activities are being conducted that will benefit habitat for these bats in the form of opening overstocked forest stands, conducting prescribed burns to open the understory and mid-story canopy and allow for increased insect production and foraging opportunity, protecting hibernacula and restoring water sources within known bat ranges. It is anticipated that these projects are improving bat habitat on the forest. Indiana bats are not known to occur on private lands within the counties where Bankhead National Forest is located. The Payne Creek Demonstration Area is not typical habitat for the Indiana bat, as the area is predominately pine and is being restored to upland shortleaf pine woodlands. There are no known caves and there are no element of occurrence records there. Cumulative effects include potential increase in available foraging habitat.

Determination of Effect – Indiana bat
There are numerous protective mechanisms built into the Revised Forest Land and Resource Management Plan for the Indiana bat as described above. The Indiana bat has not been documented during the summer on the Bankhead. Indiana bats have been documented during the fall swarm and hibernation periods on Bankhead. RLRMP standards should eliminate the potential for "take" as the project will take place in the late fall to winter, it is over nine miles from any hibernacula, the project is small in nature (less than 6 acres), and Indiana bats are not known from the project area. Thus the determination of no effect is made.

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. It is also found in backwater sloughs of Lewis Smith Lake. Historically, a population existed in Clear Creek.

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

The proposed project is outside of the known habitat but is within the same watershed of existing habitat. Perennial streams are not included within the proposed project area. However, water from the

project site flows into Payne Creek, which flows into Sipsey Fork. The Sipsey Fork contains flattened musk turtles.

Direct, Indirect and Cumulative Effects – Flattened Musk Turtle
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 site preparation project will not alter any of these stream parameters. Perennial streams are not present within the project site. However, indirect effects to waters of Payne Creek could occur as a result of this project. Therefore, project mitigations are required to alleviate any adverse effects to potential flattened musk turtle habitat in Payne Creek or downstream in Sipsey Fork. 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 – Flattened Musk Turtle
Based on project mitigations and the absence of perennial streams within the project sites, there will be no effect on the flattened musk turtle from implementation of the proposed site preparation project.

<u>Mussels</u> - fine-lined pocketbook, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, dark pigtoe, upland combshell, ovate clubshell and triangular kidneyshell
Environmental Baseline
The current distribution of the fine-lined pocketbook is believed to be limited to the headwaters of the Sipsey Fork of the Black Warrior River drainage; Tatum Creek in the Alabama River Drainage; Little Cahaba River in the Cahaba River Drainage; Conasuaga River in the Coosa drainage and one site in the main channel; and Chewacla and Opintlocco Creeks in the Tallapoosa River drainage. Threats to this species include habitat modification, sedimentation and water quality degradation. Historically this species was spread throughout the Mobile River Basin, but currently there are only eight records for this species within the historic range. The population status of the fine-lined pocketbook in the Upper Sipsey Fork watershed is unknown, but potential habitat is present.

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. There are 27 river miles of potential habitat for this species in the Upper Sipsey Fork watershed.

The current range of the Alabama moccasinshell includes the headwaters of the Sipsey Fork in the Black Warrior River drainage (Brushy Creek) where this species is considered to be locally common and the populations stable. There are 27 river miles of potential Alabama moccasinshell habitat within the Upper Sipsey Fork watershed. Threats to this species include habitat modification, sedimentation and water quality degradation.

Coosa moccasinshells historically occurred in the Sipsey Fork of the Black Warrior and it's tributaries in Alabama. Currently, this species may be extirpated from the Black Warrior River basin.

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. But, this mussel species is known to occur within the Upper Sipsey Fork watershed. There are ten river miles of potential habitat within the watershed. This species is sensitive to impoundment, habitat modification, sedimentation, and water quality degradation.

Triangular kidneyshells historically occurred in the Black Warrior River system and its tributaries in Alabama. Small local populations are known from the 10 river miles of potential habitat within the Upper Sipsey Fork watershed.

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. It is considered to be extirpated from the Upper Sipsey Fork watershed. Threats to this species include habitat modification, sedimentation, and other forms of water quality degradation.

The ovate clubshell has not been recorded on the BNF in recent years, although it is within their historic range. The ovate clubshell is considered to be rare throughout its range. On BNF, there are ten miles of potential habitat for this mussel species within the Upper Sipsey Fork Watershed.

Direct, Indirect and Cumulative Effects - mussels
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 site preparation 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 Sipsey 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 - mussels
Based on project mitigations and the absence of perennial streams within the project site, there will be no effect on the eight federally listed mussel species from implementation of the proposed site preparation project.

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

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

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

Direct, Indirect and Cumulative Effects – Mohr's Barbara's buttons
A detrimental impact to the species is not expected or anticipated due to the fact that the plant has not been encountered on National Forest lands. Mohr's Barbara's buttons are associated with riparian and rare communities; therefore its potential habitat is protected and managed under LRMP management prescriptions 9F and 11. Direct effects to this species have been minimized by conducting pre-project field surveys. This species was not encountered within the project area. Sites within the project area do not provide the moisture required by this species. Indirect and cumulative effects of maintaining rights-of-way (through utility lines) and restoring woodland communities (through the BNF FHRP) may be providing potential habitat for this species on National Forests lands. This site preparation project will not have indirect or cumulative effects on Mohr's Barbara's buttons. The rationale for this determination is that the plant and its habitat does not occur within or adjacent to the project site.

Determination of Effect – Mohr's Barbara's buttons
The proposed project for site preparation will have no effect on Mohr's Barbara's buttons.

Kral's water plantain
Environmental Baseline
This is an aquatic perennial plant that occurs along Sipsey, Brushy, and Caney Creeks. It is only known from a few tributaries in northern Alabama and Georgia. This plant is not known from Payne Creek, but does occur in the Upper Sipsey Fork watershed. Kral's water plantain (also known as Little River Arrowhead) occurs in undimmed 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.

Direct, Indirect and Cumulative Effects – Kral's water plantain
The proposed project is outside of known Kral's water plantain habitat. Suitable stream habitat is not included within the proposed project site. Thus, direct physical damage will not occur. To eliminate potential indirect and cumulative effects, erosion control (mitigation measures) will be utilized where indicated by FS personnel to control erosion. 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 and the Forest Health and Restoration Project Environmental Impact Statement. 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.

Determination of Effect – Kral's water plantain
The proposed site preparation for planting shortleaf pine will have no effect on Kral's water plantain.

Alabama Streak-Sorus Fern
Environmental Baseline
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. It is not known from Payne Creek. Threats to this fern include impoundments, bridge construction, logging of upslope forests, vandalism, and incidental damage from recreational use of the habitat.

Direct, Indirect and Cumulative Effects – Alabama Streak-Sorus Fern
Alabama streak-sorus fern does not occur within the proposed project area, nor is their habitat present. Streams and rock shelters do not occur within the project site. Direct effects, such as direct physical damage to habitat, will not occur. The project will occur within the same watershed of known Alabama streak sorus fern populations. Therefore, standards regarding riparian areas, riparian corridors and streamside management zones will be implemented to eliminate the potential for indirect or cumulative effects. These Revised Land and Resource Management Plan 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.

Determination of Effect – Alabama Streak-Sorus Fern
The proposed site preparation project will have no effect on Alabama streak-sorus fern.

Forest Service Sensitive Species

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

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

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

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

Upland pine/oak woodlands or barrens are not currently present within the project site. The demonstration project area is included in areas identified for ecosystem restoration. The project site falls within the 9.C.3. management prescription as described in the Revised Land and Resource Management Plan. The project sites fall within Area 2 as described in the Forest Health and Restoration Project EIS. Oak, pine, and pine/oak woodlands are included among the community types identified for restoration in the upland areas across the Bankhead. Compartment 123, Stand 4 being treated by this project has been identified for upland pine woodland (shortleaf/bluestem) community restoration.

Potential Management Effects and Determination

Direct effects to Eggert's sunflower are not expected because the plant has not been encountered on the forest and potential habitat is not currently available at the project site. Indirect and cumulative effects include the potential for increasing the available habitat on the forest over the long term. The indirect effects may be realized at the project site proposed for site preparation and shortleaf pine woodland restoration. 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 to woodland species, including Eggert's Sunflower, may be beneficial. Additionally, glades and barrens, with which this species is sometimes associated, are identified and protected as rare communities within the RLRMP and will continue to be restored or maintained on BNF.

The proposed project for site preparation 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 has been cited as an associate of mature southern yellow pine forests, and open woodland or savannah settings. Additional habitat has been described as open mature oak woodlands, with a pine component. It is most often found under pines, giving rise to the common name. It has been reported as being saprophytic on pine roots, and the bases of pine trees. It has also been reported to occur in mixed deciduous hardwood pine stands. In the south, it occurs in the mountain foothills and piedmont areas.

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

Potential Management Effects and Determination
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. Management activities used to achieve woodland restoration, such as drum chopping and prescribed burning, may disturb individuals in the short-term, but should improve habitat conditions in the long-term. Woodland restoration efforts may have a beneficial impact for this species.

Sweet pinesap was not observed during field surveys of the project area. Potential habitat is present. Although, it is highly unlikely that individuals are present. It is unlikely because the current condition of the sites is unsuitable. Due to the southern pine beetle epidemic, the site is contains few mature remaining pines. Midstory vegetation and woody understory are abundant. Before the southern pine beetle epidemic, the stand to be treated was a southern yellow pine forest and contained potential habitat for sweet pinesap. The plant is not known from the Payne Creek Demonstration Project area.

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

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.

Clammy locust 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. This site is located in the southern portion of the Bankhead.

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

Potential Management Effects and Determination
Regular prescribed burning and canopy removal should prove beneficial to this species. The project site is an upland site proposed for shortleaf pine woodland restoration through the BNF FHRP. Management activities used to achieve woodland restoration may disturb individuals in the short-term, but should improve habitat conditions in the long-term. Restoration efforts may have a beneficial impact for this species.

Clammy locust was not encountered during field surveys. Potential habitat is present. Although, it is highly unlikely that individuals are present. It is unlikely because the current condition of the site is unsuitable. Due to the southern pine beetle epidemic, midstory and understory vegetation are dense. Clammy locust is not known from the project area.

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

ALABAMA SPIKE

Environmental Baseline

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

Alabama spike is known to occur in high gradient streams. Data are limited on population trends for the Alabama Spike throughout its range. Additionally, some taxonomic confusion and lack of status surveys contribute to the lack of abundance data and records. The Alabama Spike (*Elliptio arca)* may be the same species as the Delicate Spike (*Elliptio arctata)*. This mussel has been collected in the northern portion of the BNF by McGregor, 1992.

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 site. 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 site preparation project will have no impact on the Alabama spike.

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. The Tuskaloosa darter has a small range and limited number of occurrences, but it is abundant where it does occur. The populations are considered to be stable. Range-wide threats include timber practices, coal mining, proposed reservoirs, and siltation resulting from increased urbanization.

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

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

truck traffic crossing bridges over the Sipsey Fork present a potential threat in the form of an accidental spill.

Potential Management Effects and Determination
These species do not exist within the proposed project site. No fish were encountered during field surveys as streams are not present. Standards regarding riparian areas, riparian corridors and streamside management zones are outlined in the Revised Land and Resource Management Plan for the 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 site preparation project will have no impact on these three species of darters.

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

Potential Management Effects and Determination
This salamander and its habitat do not exist within the proposed treatment unit. Aquatic species and their habitat 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.

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

This species is somewhat common in the mountains in a small area from southwestern Virginia to the Great Smokies region and rare and sporadic elsewhere. Forest Service records do not indicate this species presence on the Bankhead. Diana fritillary has the potential to occur on 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. Provision of varied habitats with woodland and savanna components is identified as a primary need for this species.

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

Potential Management Effects and Determination

Areas impacted by southern pine beetle may provide foraging habitat for Diana fritillary. Roller drum chopping and site preparation prescribed burning will preclude nectar plants from the site for a period of time (temporary habitat loss) and may cause mortality to individuals if they are present. This impact is discountable because currently there are approximately 18,000 acres of southern pine beetle killed areas (bug spots) that are ten acres and larger across the BNF. There are additional acres of bug spots spread across the BNF that are less than ten acres in size. These bug spots may be used by Diana fritillary for feeding as well. Additionally, glades and wildlife openings are scattered across the BNF that may be used for feeding.

Breeding habitat, mesic cove forests and bottomlands, are not present within the project site, nor will they be affected by this site preparation project.

Diana fritillary habitat may benefit over the long term through this project and other woodland restoration projects across the Bankhead. Distribution, quality and abundance of woodland habitat are expected to improve under the Revised Land and Resource Management Plan and the Forest Health and Restoration Project. Riparian areas and cove forests will be restored and maintained through riparian, rare community, and canyon corridor prescriptions as described in the RLRMP and will not be affected by this project.

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

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

The proposed activity will have "no effect" on bald eagle, gray bat, red-cockaded woodpecker, cumberlandian combshell, turgid blossom pearlymussel, rough pigtoe, pink mucket pearlymussel, leafy prairie clover, lyrate bladder-pod, Tennessee yellow-eyed grass, or Price's potato-bean. The rationale for this finding is that potential habitat for these species is not available in the project area. Indiana bat, flattened musk turtle, upland combshell, fine-lined pocketbook, orange-nacre mucket, Alabama moccasinshell, Coosa moccasinshell, dark pigtoe, ovate clubshell, triangular kidneyshell, Mohr's Barbara's buttons, Kral's water plantain and Alabama streak-sorus fern also have a determination of "no effect" for this site preparation project. 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. Regarding the aquatic and riparian species evaluated, 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 and erosion control measures. For Indiana bat, the rationale is that the project is over nine miles from any cave and Forest Plan standards for Indiana bat management will eliminate the potential for direct, indirect or cumulative effects.

Federally Listed Species of the Bankhead National Forest

Scientific Name		Common Name		Status	Finding

Myotis grisescens		Gray Bat		E	No effect
Myotis sodalis		Indiana bat		E	No effect
Haliaeetus leucocephalus		Bald Eagle		T	No effect
Picoides borealis		Red-cockaded woodpecker		E	No effect
Sternotherus depressus		Flattened musk turtle		T	No effect
Epioblasma brevidens		Cumberlandian combshell		E	No effect
Epioblasma metastriata		Upland combshell		E	No effect
Epioblasma turgidula		Turgid blossom pearly mussel		E	No effect
Lampsilis altilis		Fine-lined pocketbook		E	No effect
Lampsilis perovalis		Orange-nacre mucket		T	No effect
Medionidus acutissimus		Alabama moccasinshell		T	No effect
Medionidus parvulus		Coosa moccansinshell		E	No effect
Pleurobema furvum		Dark pigtoe		E	No effect
Pleurobema perovatum		Ovate clubshell		E	No effect
Pleurobema plenum		Rough pigtoe		E	No effect
Ptychobranchus greeni		Triangular kidneyshell		E	No effect
Lampsilis orbiculata (L. abrupta)		Pink mucket pearlymussel		E	No effect
Dalea foliosa		Leafy prairie clover		E	No effect
Lesquerella lyrata		Lyrate bladder-pod		T	No effect
Marshallia mohrii		Mohr's Barbara's Buttons		T	No effect
Sagittaria secundifolia		Kral's water-plantain		T	No effect
Thelypteris pilosa var al.		Alabama streak-sorus fern		T	No effect
Xyris tennesseensis		Tennessee yellow-eyed grass		E	No effect
Apios priceana		Price's potato-bean		T	No effect

[1]E = endangered; T = threatened

EXPLANATION OF DETERMINATIONS

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

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

A determination of "**is not likely to adversely affect**" should be used for discountable, insignificant or beneficial effects. If the determination of "is not likely to adversely affect", written concurrence is required from the FWS for both proposed and listed species. *Discountable* effects are those extremely unlikely to occur. Based upon best judgment, a person would not be able to meaningfully measure, detect or evaluate insignificant effects. *Insignificant* effects relate in size of the impact and should

never reach the scale where take occurs. *Beneficial* effects are positive effects without any adverse effect to the species.

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

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

Consultation Implications: Based on the finding of "no effect" for federally listed species, 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 proposed activity "may impact individuals, but is not likely to cause a trend to federal listing or loss of viability" for sweet pinesap, clammy locust, and Diana fritillary. The rationale for this finding is that potential habitat for these species may be available within the project site. Additionally, woodland restoration may enhance habitat for these species over the long-term.

The determination is "no impact" for the remaining sensitive plants and wildlife. The rationale for this finding is that these species and their habitat are not present on the project site 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
Helianthus eggertii	Eggert's sunflower	S	No impact
Aesculus parviflora	Small flowered buckeye	S	No impact
Astragalus tennesseensis	Tennessee Milkvetch	S	No impact

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

Obovaria jacksoniana		Southern Hickorynut		S	No impact
Obovaria unicolor		Alabama Hickorynut		S	No impact
Strophitus subvexus		Southern creekmussel		S	No impact
Villosa nebulosa		Alabama rainbow		S	No impact
Etheostoma bellator		Warrior darter		S	No impact
Etheostoma douglasi		Tuskaloosa darter		S	No impact
Etheostoma phytophyllum		Rush darter		C&S	No impact
Etheostoma tuscumbia		Tuscumbia darter		S	No impact
Percina sp.cf.macrocephala		Longhead darter (Warrior Bridled Darter)		S	No impact
Necturus alabamensis		Black Warrior waterdog		C&S	No impact
Lasmigona complanta alabamensis		Alabama heelsplitter		S	No impact

[1]S = sensitive; C = candidate for Federal listing

EXPLANATION OF DETERMINATIONS

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

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

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

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

MITIGATION MEASURES

Mitigation measures specific to this project include seeding and mulching fire lines where needed; snag retention; riparian and rare community management prescription and associated standards; and Indiana bat management standards.

PREPARERS

Biological Evaluation Prepared by: _/s/ Allison Cochran_____
Allison Cochran
Biological Scienctist
Bankhead Ranger District

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

Date: October 18, 2006

REFERENCES AND DATA SOURCES

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.

Case, F.W. and R.B. Case. 1997. *Trilliums*. Timber Press. Portland, Oregon. 285 pps.

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.

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.

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.

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.

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., 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. 255 pp.

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. 2006. NatureServe Explorer: An online encyclopedia of life [web application]. Version 5.0. 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.

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.

USDA Forest Service. 2004. Revised Land and Resource Management Plan. National Forests in Alabama.

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://daphne.fws.gov/es/specieslst.htm

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.

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 *Heliantuhus 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.

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.