Collaborative Forest Landscape Restoration Program (CFLRP)

PROPOSAL

United States Department of Agriculture Forest Service, Region 8
National Forests in Mississippi
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De Soto Ranger District, De Soto National Forest

Forrest, George, Greene, Harrison, Jackson, Pearl River, Perry and Stone Counties, Mississippi

Longleaf Pine Ecosystem Restoration

PROPOSED TREATMENT

The De Soto Ranger District on De Soto National Forest is located in southern Mississippi and positioned on the Gulf Coastal Plain in the historic range of the longleaf pine ecosystem. It is important to note that we have lost nearly 98% of the longleaf pine ecosystem that once dominated the coastal plain of the southeastern United States. Percentage-wise this severe loss ranks the longleaf pine ecosystem as one of the most imperiled ecosystems on the planet. Most of the longleaf pine on lands that make up the De Soto Ranger District was cut down between 1880 and 1930. Local economies and communities were built on the resources provided by the longleaf ecosystem. A sea of stumps and erosion often remained after the "cut out and get out".

The lands that would become the De Soto Ranger District were purchased by the Federal Government in the 1930s. At that time, the Civilian Conservation Corps and the Forest Service began to re-establish pine trees. The lands were saved from degradation. Unfortunately, longleaf pine was not always re-established and this trend continued to some degree over the next 7 decades. Those management decisions along with fire suppression, major hurricanes (e.g. Camille, Katrina), and changes in land use have contributed to the structure of the young man-made forest that now exists, and all of those factors play a role in current management strategies and decisions.

Under the Collaborative Forest Landscape Restoration Program (CFLRP), the De Soto Ranger District proposes to treat approximately 374,000 acres of National Forest Land. This landscape level project encompasses the entire forested area of the De Soto Ranger District. The ownership pattern on the landscape is a continuous block of National Forest System lands surrounded by privately owned and state land with private, federal, and state in-holdings. Camp Shelby, a Mississippi Army National Guard Training Center, is under a 117,000 acre special use permit on Forest Service land. There are 17,000 acres of Department of Defense and State of Mississippi lands within and adjacent to this permit area. All of these ownerships form the Camp Shelby Joint Forces Training Center.

The De Soto National Forest is one of sixteen range-wide significant landscapes identified as a high priority for longleaf pine restoration by the America's Longleaf organization in their Range-wide Conservation Plan for Longleaf Pine. The conservation plan is intended to provide a framework for longleaf pine ecosystem restoration in its historic range. The De Soto Ranger District's long-term restoration goals reflect the direction given by the Range-wide Conservation Plan for Longleaf Pine. These goals include improvement, expansion, and maintenance of healthy longleaf pine ecosystems. Treatments discussed in this CFLRP proposal will move the De Soto Ranger District toward a desired condition that ensures long-term sustainability and resiliency of the diverse longleaf ecosystem along with positive social, economic, and ecological impacts. A review of the complete longleaf pine ecosystem restoration strategy can be found at http://www.americaslongleaf.org. Consistent with the Range-wide Conservation Plan, the Nature Conservancy's East Gulf Coast Ecological Plan identifies the De Soto Ranger District as a stage 1 priority site for ecosystem restoration based on high biodiversity, the high urgency of threat, some level of ecological intactness, and the potential of partnering to achieve conservation objectives.

Restoration Goals & Desired Outcome
Our restoration goals include: maintaining existing longleaf ecosystems in good condition; re-establishing longleaf pine forests, and improving acres classified as "longleaf pine forest type" through return of fire regimes and restoration of native understory plant communities.

The desired outcome is a healthy and diverse collection of native plant and animal communities which support ecological, economic, and social sustainability. Native ecosystems across the landscape will sustain strong, resilient populations of associated terrestrial and aquatic species. The loblolly and slash pine dominated ridges will be re-established as longleaf pine ridges. Dense pine stands will be restored to open conditions. Native herbaceous understory species composition and structure will be restored. Populations of threatened and endangered species, including the red-cockaded woodpecker, gopher tortoise, and Mississippi gopher frog will be growing and thriving in restored habitats. Streams continue to support healthy aquatic habitat. Forests across the landscape become more resilient and adaptive to disturbances such as disease, extreme weather events, and changing climate conditions. Non-native invasive species will be controlled. Southern pine beetle and other insect outbreaks will be suppressed. Fire regimes and fire return intervals move within historic ranges and allow fire-dependent ecosystems to be healthy and function naturally. Hazardous fuel buildup will become manageable, reducing the risk of uncharacteristic wildfires and reducing wildfire management costs. Utilization of woody biomass by-products will offset treatment costs and benefit local economies.

Proposed Treatments, Treatment Objectives & Current Restoration
Treatment amounts proposed under the CFLRP for the next 10 years are shown in parentheses after each listing below.

Pine Thinning (30,716 acres) Stands of pine trees currently growing too densely will be thinned. Thinning will create more open canopy conditions and increase herbaceous vegetation in the forest. Stands that are currently 35 years old and younger were not addressed in the Hurricane Katrina Recovery operations and still contain damaged and leaning trees. Dense pine stands with declining radial growth are highly susceptible to southern pine beetle infestation and high levels of tree mortality. These young stands, in their current state, are threatened by disease, insects, and wildfire. Thinning will alleviate many of those concerns. Relict longleaf pine trees will be retained in stands as part of the old-growth forest component on the landscape. Pine thinning on the De Soto Ranger District occurred on 500 acres during FY 2010. The District has only recently been able to get back on track after being walloped by Hurricane Katrina in 2005. Hurricane Katrina facilitated longleaf pine ecosystem restoration on the De Soto Ranger District through a landscape wide thinning. The De Soto responded to the effects of Hurricane Katrina by removing hazardous fuels (picking up down and leaning trees) on over 100,000 acres of the District in stands 30 years and older. This hazardous fuel reduction/salvage and recovery operation resulted in the clean up and utilization of enough trees to fill over 40,000 log trucks.

Longleaf Re-establishment (13,132 acres) On the De Soto Ranger District, there are currently 51,000 acres of forest dominated by other types of pine overstory species. Longleaf pine will be

re-established in stands that are currently growing in loblolly or slash pine but have a soil type that is better suited for longleaf. Re-establishing longleaf pine in these areas will provide a more resilient forest community that can better withstand the adverse impacts of catastrophic wildfire, insects and disease, wind storms, and climate change. Longleaf pine re-establishment includes harvesting off-site pine species, site preparation, planting longleaf seedlings, releasing seedlings from competing vegetation, and increasing native herbaceous seed capability. All longleaf pine trees will be retained unless growing in dense clumps. These clumps of longleaf will be thinned. Open fire maintained stands are less susceptible to damage from wildfire and herbaceous plant growth increases with more sunlight entering the stand. In FY 2010, De Soto Range District re-established 200 acres of longleaf pine. The goal of re-establishing 13,132 acres of longleaf pine (approximately 25% of potential longleaf re-establishment acres) over the next 10 years is an ambitious task.

Prescribed Burning (995,000 acres*) Fire is the most essential component of natural longleaf pine ecosystems and will be used to maintain, improve, expand, and restore longleaf pine forest. Burning will be accomplished by aerial and hand burning techniques on the forest landscape, with most areas of the forest burned every three years or close to one-third of the District's 374,000 forested acres per year (*****most areas will be burned multiple times over the next 10 years, with an emphasis on growing season burns). The prescribed fire/hazardous fuels reduction program on the De Soto Ranger District averages 90,000 acres per year. In FY 2009, 112,000 acres were prescribed burned with 30% of the acres burned during the growing season. These prescribed burns reduce hazardous fuels and actively restore and maintain the longleaf pine ecosystem including pre-fire suppression old-growth characteristics. Uncharacteristically strong wildfires cause less damage to pine trees when ladder fuels and shrubs are kept in check by thinning and prescribed burning. Hazardous fuel reduction by prescribed burning leads to improvements in wildlife habitat and lower severity wildfires on the District.

Hazardous Fuel Reduction & Wildlife Habitat Improvement w/ Herbicide (8,600 acres) Herbicide will be applied to undesirable understory brush species and midstory ladder fuel species. Approximately 3,800 acres on the District have been treated with herbicide in recent years. These treatments are designed to reduce hazardous fuels, eliminate non-native invasive species if present in treatment areas, and improve overall habitat conditions for threatened and endangered species. Another 4,750 acres of herbicide treatment is contracted for FY 2010.

Non-Native Invasive Species Control (975 acres) Non-native invasive species (NNIS) will be controlled using herbicide. Efforts will focus on eradication of cogongrass and kudzu in threatened, endangered, and sensitive species habitat, forest openings, wildland-urban interface, special use permit areas, and along roads, trails, and landlines. Force account work (Forest Service personnel), spraying done by partners, and a multi-year contract for spraying has resulted in the treatment of nearly 1,000 acres infested with cogongrass from FY 2007 to FY 2010.

Pitcher Plant Bog Restoration (775 acres) Approximately 12,000 acres of pitcher plant bogs are found on the De Soto Ranger District. Some of these bogs were encroached upon by brush and woody species during the period of fire suppression decades ago. Other bogs have been mistakenly planted in pine trees. Brush and undesirable woody species in pitcher plant bogs will

be cut, then limbs will be lopped and scattered to improve, maintain, and restore this unique habitat. Bog restoration work was accomplished on 30 acres in FY2009.

Road Decommissioning (300 miles) Closed roads are often degraded by rogue vehicle use. This causes erosion and sedimentation into nearby drainage areas and streams. Watershed health and wildlife habitat will be improved by decommissioning roads and restoring them to a natural condition. On closed roads, erosion will be stopped, compacted road surfaces will be loosened, and herbaceous species will be planted, allowing the road bed to return to natural succession. These roads will then be blocked to deter rogue vehicle use. No new permanent roads will be created to implement this proposal and all temporary roads used to carry out this plan will be decommissioned after restoration activities are accomplished. A contract for 100 miles of road decommissioning for FY 2010 is nearly complete.

Focus areas, displayed on the treatment maps, are areas designated for thinning and longleaf pine re-establishment. The focus areas were determined by the highest priority of needs for threatened and endangered species habitat improvement and complexity of wildland-urban interface. The years in which these focus areas are planned to be treated are shown in Table 12 of Appendix A and all proposed treatment amounts per fiscal year are displayed in Table 13 of Appendix A. The mechanisms to implement these treatments include District programs of work, visiting (detailed) workers, future stewardship contracts, and existing herbicide, helicopter, silvicultural and timber contracts.

NEPA, Monitoring & Measuring Success

The entire District is covered under local landscape level NEPA decisions for longleaf pine re-establishment, thinning, prescribed burning, fuel reduction and wildlife habitat improvement with herbicide, NNIS control, southern pine beetle suppression, pitcher plant bog restoration, and road decommissioning. No additional NEPA is required to implement this proposal. The NEPA decisions that have been completed and would be utilized to implement this proposal are listed in Appendix B. These NEPA documents incorporate the best available science and scientific application tools.

Monitoring will be done to evaluate if restoration activities were successfully implemented and ecological goals were met. These evaluation outcomes will also provide information for adapting and improving management actions. Some of the monitoring that will occur includes: vegetation assessment for progress towards desired condition; response of birds to restoration activities; red-cockaded woodpecker status and trends; population trend and habitat condition of gopher tortoises; pitcher plant bog health; and success of fire return intervals and seasonality. Photo monitoring will also be done to qualitatively document restoration progress.

Collaborative team review field trips will be conducted to ensure that actions taken under these decisions are implemented, successful, and within the scope of the CFLRP. Additionally, evaluations and feedback from collaborators and stakeholders will be used to gauge progress toward goals and objectives. Success will be measured by acres restored, acres of longleaf pine re-established, acres maintained, acres protected, number of watersheds improved, and threatened and endangered species status and trends.

Ecological Context

Vegetation

During pre-settlement times, the longleaf pine ecosystem occupied an estimated 60 million acres and is believed to have occurred on another 30 million acres in mixed stands. Today, longleaf pine forests are a mere remnant of the past – less than three percent (estimated 3.4 million acres) of the original acreage remains. In Mississippi, longleaf pine forest once covered an estimated 11 million acres. Today in Mississippi, there are an estimated 379,000 acres of longleaf pine, with 250,000 acres on National Forest System lands. The National Forest in Mississippi has the highest potential to re-establish longleaf pine of all of the National Forests in the South. De Soto Ranger District currently contains 150,000 acres of longleaf pine forest but longleaf should occur on approximately 210,000 acres.

Longleaf pine forests are biologically diverse ecosystems. As many as 40 to 50 different plant species can be found in one square meter of healthy longleaf pine savanna. Nearly 900 endemic plant species – species found nowhere else – are found in these systems. One hundred and seventy of the 290 reptiles and amphibians occurring in the Southeast are found in longleaf pine ecosystems, with 30 reptile and amphibians that are specialist to the longleaf ecosystem. Coupled with the extensive decline of this forest type, 29 species associated with longleaf pine ecosystems are federally-listed as threatened or endangered.

Human impacts, mainly logging and fire suppression, have been major factors in determining forest cover associations, structure, and understory species composition on De Soto Ranger District. Historically, uplands on the District were dominated by longleaf pine and a diverse herbaceous groundcover that supported a wide variety of wildlife. Some of the uplands remain as longleaf pine forest today, but many prime upland areas on the District need longleaf pine to be re-established as the dominant overstory tree in the ecosystem.

On the De Soto Ranger District the longleaf pine communities transition to hardwood-dominated floodplain forests, with components of loblolly or slash pine along streams. Often a slope forest community or wetland flat occupies the transition zone between the uplands and floodplain wetlands. Unique habitats like gum ponds, pitcher plant bogs, sandhills, shortleaf pine ridges, and beech-magnolia forest are present on the landscape and compose a small fraction of habitats found on De Soto Ranger District.

In longleaf pine stands, understory species diversity is significantly higher in comparison to stands of loblolly and slash pine. This is likely due to more successful fuel reduction from fires easily moving through the longleaf pine stands, and the resulting increase in light reaching the forest floor. Lengthy fire return intervals allow encroachment of slash and loblolly pine, as well as hardwood trees and shrubs into longleaf communities. Stands of loblolly pine have extensive crown closure resulting in a canopy so dense that reduced light conditions allow for very little herbaceous vegetation in the stand. Without these fine fuels, prescribed fire cannot maintain the stand. In contrast, longleaf pine communities, burned regularly, have varying amounts of canopy

closure and exhibit the greatest herbaceous coverage and diversity with low to moderate shrub coverage.

In 2005 Hurricane Katrina hit the De Soto Ranger District causing extensive damage. Removal of trees damaged by the Hurricane occurred on approximately 100,000 acres in pine stands that were at least 30 years old. The current condition caused by the Hurricane and after the salvage of damaged trees includes damaged and leaning trees in pine stands less than 35 years old and open or sparse mature stands.

Across the De Soto Ranger District, 51,000 acres have the potential to be re-established to longleaf pine forest. These areas are currently occupied by off-site pine species such as slash and loblolly pine. Also, there are opportunities to thin pine stands to promote forest health and reduce fuel loading. High density stands of young pine species and more mature stands of pines with an unnatural midstory condition reduce the suitability of habitat for all species in the forest. These conditions increase the probability of disease/fungal infections (such as fusiform rust and Annosus root rot), southern pine beetle infestations, and the chances for destructive wildfires. Off-site pine species on uplands are characteristically less vigorous and less resistant to environmental stressors (e.g., drought) than more appropriate species, and are also more highly susceptible to southern pine beetle attack and associated tree mortality. Pine beetle infestations and severe wildfires can destroy entire stands of trees. Without vegetation on the land, erosion occurs and degrades water quality. Longleaf re-establishment, thinning, pine beetle suppression, and prescribed burning activities across the landscape will improve overall forest health and help return the structure and composition of uplands to a fire-maintained old growth condition.

Pitcher Plant Bogs & Flats

Pitcher Plant Bogs are an important component of the fire-maintained longleaf pine ecosystem. Without fire, bogs and flats are encroached upon by pine, hardwood, and brush species. Some bogs on De Soto Ranger District have not recovered from fire-suppression of years past. Other bogs or flats were mistakenly planted and now contain stunted pine trees and brush. Outside of the tropics, pitcher plant bogs are the most species rich habitat for plants in North America. The bogs teem with wildflowers and a host of pollinators during spring and summer. Of the 36 Forest Service sensitive plant species on De Soto Ranger District, half are found in pitcher plant bogs or flats. A few notable species are the small spreading pogonia, yellow fringeless orchid, and pineland bog button. De Soto Ranger District conducts bog restoration work to improve these habitats by cutting, lopping, and scattering encroaching vegetation. This work, combined with an aggressive prescribed fire program, keeps the bogs brush-free and healthy.

Benefits to Wildlife

The federally listed red-cockaded woodpecker (RCW), Mississippi Gopher Frog, and gopher tortoise are historically associated with open, fire-maintained longleaf pine forests. Implementation of this proposal will expand, protect, restore and maintain longleaf ecosystems to promote the recovery of these species. The endangered RCW requires open forest with old-growth pine, and prefers longleaf. More aggressive and integrated management is required to maintain the existing habitat and create additional habitat necessary to achieve species recovery

levels. Increasing the frequency of prescribed burning, particularly growing season burns to restore historic fire regimes, is key to recovery. Longleaf re-establishment and thinning treatments are concentrated on expanding habitat outward from existing active clusters to provide future areas for RCW population expansion. RCW Habitat Management Areas are designated areas that provide sufficient acres of habitat to support population goals and where ecosystem restoration projects for RCW recovery will be focused. Longleaf ecosystem restoration, including bog restoration, will also improve habitat for the black pine snake, which is a candidate for federal listing. Regional Forester's sensitive wildlife species including the Bachman's sparrow and four crayfish species will benefit. Habitat for game species such as the Northern bobwhite quail, Eastern wild turkey, and white-tailed deer will also be improved.

Road Decommissioning & Watershed Health

The single largest contributor of sediment is the road system. No new permanent roads will be added during implementation of this project, and the number of roads on the Forest will be reduced. In addition to roads identified for decommissioning in the next ten years, all temporary roads constructed to carry out this strategy on the District will be decommissioned. Reducing the number of roads on the District will improve existing water quality, increase wildlife and fish habitat, and eliminate upkeep or repair costs of roads damaged by rogue vehicle use.

Non-native Invasive Species

De Soto Ranger District has completed 2 environmental assessments and a multi-year contract is in place for treatment of NNIS with herbicide. Cogongrass is a major concern on the District. This exotic pest negatively affects longleaf pine recruitment and survival, and reduces both diversity and abundance of native groundcover species. The plant is not utilized as forage and is a volatile fuel. General preventive measures include avoidance of infestations, vehicle cleaning to prevent spread by seed or vegetative parts, and other provisions to prevent the introduction of NNIS. Other plants that will be treated include kudzu, privet hedge, and tallow tree.

Climate Change & Ecological Adaptation

Based on current projections, the primary regional-level effects of climate change in the Southeast are expected to include: 1) warmer temperatures and a rising heat index, 2) moisture changes, 3) rising sea level and coastal erosion, and 4) increased extreme disturbance events (such as an increase in frequency and intensity of hurricanes and tornadoes occurring at greater than historical variability). Longleaf pine ecosystems are naturally resilient to climate extremes. Longleaf pine grows under very dry and very wet conditions, is tolerant of and dependent on frequent fire, is better able to weather severe storms, and is more resistant to beetle infestations likely to be exacerbated by warmer and drier conditions. Longleaf ecosystems also seem to be well suited for long-term storage of carbon. In addition, longleaf pine trees live longer than other southern pine species and produce wood more likely to be used in long-lasting structures.

The Harrison Experimental Forest, in coordination with the De Soto Ranger District, has begun implementation of a study that will examine the effects of variable density thinning, re-establishment of longleaf, and the impacts of these treatments on carbon storage and removal. This study will help provide valuable data regarding carbon sequestration and longleaf pine.

COLLABORATION

In addition to scoping for NEPA decisions, collaborative meetings were held in 2007 for the Ecosystem Restoration for Gopher Tortoise and Red-cockaded Woodpecker Habitat (HFRA) project and in 2005 for the Hurricane Katrina Tree Removal and Hazardous Fuels Treatment project. Interest and input was given during collaborative meetings from the following groups: USDI Fish and Wildlife Service, National Wild Turkey Federation, Wildlaw, Mississippi Department of Wildlife, Fisheries, and Parks, Mississippi Museum of Natural Science, University of Southern Mississippi, The Nature Conservancy, and several individual members of the public.

Representatives of interested groups volunteered to do follow up reviews of work proposed in the two collaborative projects listed above once work was underway. Collaborators on the Hurricane Katrina project reviewed work on the ground in 2006. The review indicated success in the project and improved relationships, notably with Wildlaw – an appellant of past decisions on the District. Credibility with researchers and government agencies has also increased because of project review and input from collaborators.

The collaborative meeting for the Ecosystem Restoration for Gopher Tortoise and Red-cockaded Woodpecker Habitat (HFRA) project was a turning point in the management strategy on the De Soto Ranger District. The District had never before proposed a project with ecosystem restoration and hazardous fuel reduction as the main objectives. Timber removal is only a necessary tool for meeting these goals. The collaborative group embraced the project at the first meeting three years ago. Their input helped the De Soto Ranger District prioritize treatment areas for ecosystem restoration activities.

Collaboration for the HFRA ecosystem restoration project is in full swing. Implementation of the project began this fiscal year and a collaborative team field trip and evaluation is planned for the summer of 2010 to review our progress. This will mark the first annual Ecosystem Restoration Collaborative Team Review. Comments during the field trips and evaluation forms completed afterward will help us shape the priorities and direction of our ecosystem restoration project treatments in the coming years. The Desoto Ranger District is currently drafting an end-results stewardship proposal. We hope to garner additional support for potential stewardship projects during the upcoming collaborative team review. De Soto Ranger District end-results stewardship contract implementation is planned for FY 2012.

Mississippi Gopher Frog Working Group

Another collaborative team is the Mississippi Gopher Frog Working Group. The Mississippi gopher frog is a federally listed endangered species. This frog is the most imperiled amphibian species in the Southeastern US with an estimated 100 adults remaining in its entire population. The species lives near and breeds in a single pond in south Mississippi, and this pond is located on the De Soto Ranger District. The endangered frog has unique habitat requirements, including prescribed burning of its ephemeral breeding pond site and surrounding pine uplands. Herbaceous vegetation along with open canopy must be maintained for breeding and foraging.

The Forest Service ensures the pond and surrounding habitat are carefully burned so that the desired habitat type is maintained. The working group collaborates for recommendations on suitable habitat, research needs, and population expansion for the recovery of this federally endangered species. The team supports and recommends the restoration and maintenance of longleaf pine ecosystem and ephemeral ponds. The area near the only known Mississippi gopher frog pond was the first area prioritized for treatment by collaborators and partners for the Ecosystem Restoration of Gopher Tortoise and Red-cockaded Woodpecker Habitat (HFRA) project. Thinning and re-establishment of longleaf pine has begun in areas near the frog pond in order to expand suitable habitat for the endangered frog.

The collaborative team is comprised of the USDA Forest Service, USDI Fish and Wildlife Service, Mississippi Department of Wildlife, Fisheries and Parks – Mississippi Museum of Science, The Nature Conservancy, USDA Forest Service, Southern Research Station, University of Southern Mississippi, University of Southern Mississippi - Gulf Coast Research Lab, Western Carolina University, The Nature Conservancy, Camp Shelby Field Office, Audubon Nature Institute, Memphis Zoo, Detroit Zoo and Mitchell Ecological Research. Additionally, the USDI Fish and Wildlife Service contributes to recovery efforts on De Soto Ranger District and contracts approximately $30,000 per year toward Mississippi gopher frog monitoring and habitat use studies on National Forest Land.

Camp Shelby Joint Forces Training Center

The De Soto Ranger District and the Mississippi Army National Guard have a long history of working together to ensure protection of the Forest on the 117,000 acres of land utilized under special use permit for training troops. Collaboration between agencies has provided valuable data on the federally threatened and endangered species as well as Forest Service sensitive species on the De Soto Ranger District. The Nature Conservancy Camp Shelby Conservation Program provides rare species and habitat monitoring services for the Mississippi Army National Guard on Forest Service, Department of Defense and state of Mississippi lands included within the Camp Shelby Joint Forces Training Center boundaries.

The Nature Conservancy monitoring focuses on the following species and their habitat: Louisiana quillwort (federally listed as endangered), gopher tortoise (federally listed as threatened), black pine snake (candidate for federal listing), Camp Shelby burrowing crayfish (monitoring required as part of US Fish and Wildlife Service agreement to remove from candidate status), and cogongrass and kudzu (invasive species). This monitoring is funded by the Department of Defense National Guard Bureau.

Examples of monitoring include: training areas surveyed annually to enforce protection measures for the federally threatened gopher tortoise and streams on the training sites monitored annually for potential effects to the endangered Louisiana quillwort plant. Consequently, some of our best data for threatened and endangered species on the De Soto Ranger District is a product of this relationship. Monthly meetings and annual reports allow the Forest Service and the Mississippi Army National Guard to make the best management decisions for species of concern and their habitat within the Camp Shelby special use permit area.

WILDFIRE

Fuels
The forest type is primarily pine, including longleaf, loblolly and slash. Loblolly and slash pine are not as well adapted to fire as longleaf pine. Many of these loblolly and slash pine stands occur on longleaf pine sites. In addition, many stands, within the project area, have an immature pine poletimber overstory with little or no sunlight reaching the forest floor, producing very few grasses or forbs and often an abundance of shade tolerant brush species (ladder fuels).

Based on soils, historic information and the Forest vegetative database, this project area is generally considered Fire Regime I, which would naturally have frequent fires of low to moderate severity. Much of the District is currently considered Condition Class 2. In Condition Class 2, the fire regime and vegetation attributes have been moderately altered and the risk of losing key ecosystem components is moderate.

The Fuel Models on the De Soto Ranger District are, **7** (southern rough – shrub fuel model: gallberry and yaupon understory), Fuel Model **4** (heavy brush - with similar species as FM 7 but higher live and dead fuel loadings) and Fuel Model **2** (Open pine overstory with fine herbaceous material on the forest floor). Fuel Model 2 is the desired condition.

Wildfire
The De Soto Ranger District has an average of 90 wildfires per year which burn an average of 5,300 acres. During normal fire seasons the fuels within the proposed project area produce moderate to fast moving wind-driven fires. These fires are typically too intense for direct attack. Heavy equipment is normally required. Spotting and some torching are common with flame lengths from 5 – 25 feet. Some forest overstory mortality is expected. During drought years, such as 2005 – 2006, fire intensity and severity are greatly increased. Crown fires are possible. Off site pine stands (slash & loblolly) usually suffer 80 - 100% mortality under these conditions.

Values at Risk
The De Soto Ranger District is bordered by the City of Hattiesburg to the north and the city limits of Biloxi and Gulfport to the south. This area is the fastest growing in Mississippi. New developments, homes, and businesses are located or planned in almost every private tract adjacent to Forest Service land. There are 10 major highways intersecting the District and highway construction is a continuous process. There are also four major pipelines and five major power transmission lines crossing the District. As an example of the values at risk that are widespread across the district, almost every prescribed burn unit has power distribution lines, telephone lines and junction boxes, plastic culverts and wooden bridge headwalls, fiber optic lines, mailboxes, road markers, and recreational improvements.

There are hundreds of special use permits on the District, but the most complex one may be the 117,000 acre permit used by the Mississippi National Guard, Camp Shelby. This National Guard training facility currently plays a major role in the training and deployment of the United States military. The Camp Shelby permit area contains thousands of ranges, targets, firing points,

bivouac areas, towers, communication sites, etc., which must be protected from fire. Forest values at risk include: two wilderness areas, two seed orchards, numerous recreation areas, the general Forest area and the longleaf ecosystem we currently maintain. The Harrison Experimental Forest lies within the boundaries of the De Soto Ranger District and contains many long term research studies that could be damaged or destroyed by fire. It is important to note that many of the Forest's values are at risk from, not only wildfire, but also non-native invasive species and increased unmanaged visitor use.

Hazardous Fuel Reduction

Prescribed fire is planned on 100,000 acres in each year of the proposed project. Prescribed fire, along with thinning and longleaf re-establishment will create more open stands and more favorable conditions for grasses and forbs to grow. This will change the Fuel Models from 4 and 7 to Fuel Model 2. Another benefit to this aggressive prescribed fire program would be the establishment of fuel breaks along landlines and in critical wildland-urban interface areas.

Fuels in this area, when unchecked by prescribed fire, produce dangerous fires with extreme fire behavior. The common plant species in these fuels are gallberry, yaupon holly, titi and wax myrtle. These native species produce volatile oils which add to the extreme fire behavior. This project proposes an aggressive prescribed fire program to help reduce these hazardous fuels. Additionally, the project will utilize other tools, such as herbicide, for hazardous fuel reduction that may effectively and more permanently reduce these live fuels. The De Soto Ranger District has recently, and successfully, used herbicides to gain an advantage over these waxy leaf species.

After implementation of this proposal, wildfires may have rapid rates of spread but intensity and severity will be low. Flame lengths of 2 – 15 feet are expected. Crown fires or torching would not be expected due to light fuel loads and larger trees. Generally, wildfires would have a positive effect on the landscape and would be easier to contain, even during dry conditions.

Cost of wildfire suppression is reduced as fuel loading decreases. This allows for more cost effective and safer fire fighting. Firefighters will be able to use lighter approaches to contain fires, such as water from engines and burning out areas up to natural landscape features (creeks, gullies) instead of relying on large earth moving equipment to create fire breaks. Fires in light grass fuels cost up to 50% less for suppression and mop-up than fires in heavier brush fuels.

Uncharacteristic, drought year wildfires would be less likely to damage the Forest overstory with implementation of the proposed treatments. In 2006, 271 acres of forested land was destroyed by wildfires. The costs for re-establishment of those Forest areas were $138,210. Successful implementation of this proposal would eliminate these costs in the future.

Community Wildfire Protection Plans (CWPP)

The Mississippi Forestry Commission works with the public and county officials to develop CWPPs through federal grants. Completed plans currently exist for all eight counties in south Mississippi that are occupied by the De Soto Ranger District. This proposal will compliment and improve upon existing CWPPs.

UTILIZATION

Material, Volume, & Value

Size of off-site pine species varies from stand to stand based on age, soils, and moisture regime. Most of the stands will be in the pulpwood (5.0 to 10.5 inch diameter at breast height) to chip-N-saw (7.6 to 12.5 inch diameter at breast height) size classes. Some of the sites will contain larger trees in the pole or sawtimber size class (trees greater than 10.6 inches in diameter at breast height). Diameter at breast height (dbh) is considered to be 4.5 ft from the ground.

Most thinning on the landscape will target stands of small diameter trees, especially since Hurricane Katrina and the resulting salvage & recovery operations occurred in many sawtimber stands on the District. Thinning will occur from below which will usually remove the smaller diameter trees from the stand. Thinning will also remove trees that were damaged from Hurricane Katrina. This will supply local markets for small diameter tree utilization, improve overall forest health, reduce hazardous fuels in the forest and wildland-urban interface, and reduce the threat of attack from several species of bark beetles, including southern pine beetle.

Timber markets in South Mississippi will determine how much material will be used for biomass, wood chips, pulpwood, chip-N-saw, poles, or sawtimber. The use of restoration by-products can offset treatment cost while benefiting local communities and improving forest health. Job opportunities will be maintained or expanded in the local community because biomass facilities are located in the vicinity of the De Soto Ranger District. Companies utilizing biomass in south Mississippi are Piney Woods Pellets, Intrinergy (Coastal Paper Plant), and Mississippi Power Company. Piney Woods Pellets is planning to double its capacity for biomass processing in the next few years. Magnolia Land Contractors is a new business near the De Soto Ranger District that uses a linear grinder for land clearing and has markets for chips and mulch. Local timber purchasers already have existing contracts for utilization of woody biomass and small diameter wood with these biomass industries.

The estimated volume harvested during thinning and re-establishment of longleaf pine at the rate proposed for the next 10 years is approximately 254,184 CCF (CCF divided by 2 = thousand board feet) with an estimated market value of $16.5 million. Also, these treatments have the potential to generate a total of approximately 82,236 tons of biomass in the form of small diameter trees (<5.0 inch dbh) and logging slash (tree limbs, tops, etc) valued at $164,472. Full utilization of forest products will reduce the need and costs associated with heavy mechanical site preparation. This allows more funding to be used for other treatments such as prescribed burning, hazardous fuel reduction and wildlife habitat improvement with herbicide, NNIS control, pitcher plant bog restoration and road decommissioning. In most cases, site preparation will be accomplished by burning and/or herbicide treatment to eliminate undesirable vegetation, or light mechanical site preparation.

INVESTMENTS

As the landscape is restored to its original open and park-like appearance, we anticipate increased use from those who recreate on the National Forest. An increased focus on trail maintenance and maintenance of developed recreation sites will be likely. The anticipated associated costs for these activities will require nominal federal investments, as it is likely they will greatly exceed our current recreation budgets and fee collections.

The Department of Defense (DoD), National Guard Bureau is planning to make investments in their Environmental Division at Camp Shelby that will allow them to begin implementation of longleaf pine restoration by FY 2011. These DoD efforts are a part of the America's Longleaf Initiative. In addition, DoD will continue to seek opportunities to implement their Army Compatibility Use Buffer (ACUB) program. This program allows the DoD to buy properties or easements near high use military areas to ensure that adjacent land uses remain compatible with military training needs. With the assistance of the Nature Conservancy, these acquired tracts of land are placed in the possession of natural resources based agencies with ecosystem restoration and land management objectives. Monitoring and trend analyses continue to be a vital requirement of the Mississippi National Guard's special use permit at Camp Shelby. Increased longleaf pine ecosystem restoration activities will also likely require additional federal investments to meet growing monitoring requirements.

Non-federal investments are anticipated to increase within the landscape as a result of increased woody biomass utilization. There are several entities within the general vicinity of the De Soto National Forest who can utilize small diameter material and other woody biomass which include Mississippi Power Company, Piney Wood Pellets, and Intrinergy (Coastal Paper Plant). When implemented, this landscape strategy will generate over 80,000 tons of material that can be used as an alternative fuel source for the aforementioned companies. A more dependable and steady flow of woody biomass will help to create sustained local markets, as well as a more consistent valuation of products delivered. Consequently, infrastructure would need to be developed or enhanced to capitalize on an expanding market. Mississippi Department of Transportation, Mississippi Power Company, and local counties are expected to continue their treatment of cogongrass along road and powerline rights-of-way within and adjacent to the De Soto National Forest.

The maintenance and restoration of longleaf pine ecosystems depends heavily on the utilization of prescribed fire. Urban sprawl and fragmentation from proposed state highway expansion projects could affect the successful restoration of the landscape. As timber companies continue to remove their lands from timber production and sell to Real Estate Investment Trusts, private lands adjacent to Forest Service lands are being subdivided and developed. In addition, we consistently find that adjacent landowners encroach upon federal lands. This adds to values at risk and reduces our ability to safely and responsibly implement prescribed burns. Initial attack of wildfires is also more complex.

We anticipate future restoration unit costs will decrease slightly. Specifically, we anticipate these cost will decline due to increased efficiency in implementation and reduced reforestation costs (i.e. superior planting stock, reduced site preparation cost due to reduced brush from prescribed burns and herbicide, and the district's ability to perform site preparation activities with district personnel and equipment). Although most work may be accomplished by District personnel, we will seek to fully utilize new and existing contracts to accomplish the District's landscape restoration goals. The use of contracting will help to bridge the gap in local employment left by Hurricane Katrina and the unfortunate economic downturn the nation has faced as a whole.

All jobs created will be of a technical nature and small businesses would be highly favored for contracts awarded. We anticipate this proposal will generate an estimated 23 jobs per year. These jobs would be needed for approximately 15-20 years and will require skills in tree harvesting, tree planting, heavy machinery operation, timber sale layout, timber cruising, and herbicide application. Within the first three years of this proposal, we anticipate there will also be a need for help from neighboring districts and forests. These employees will help to bolster the local economy via their lodging and meals needs. Newly created jobs within neighboring communities resulting from this proposal will likely stimulate an otherwise depressed local economy.

Local communities will also benefit from an increase in funds contributed to the 25% payments to states. These payments are associated with the Secure Rural Schools and Community Self-Determination Act of 2000 and provide much needed funding to counties for the benefit of public schools, roads, and other purposes. We anticipate this project could generate approximately $4.1 million to be allocated among eight counties, which include Stone, Perry, Harrison, Forrest, Greene, George, Pearl River, and Jackson Counties.

As a part of our multiparty monitoring, we plan to employ approximately four students per year from the University of Southern Mississippi, Jones Community College, and/or other universities. Students will also be used to supplement the district's timber sale preparation and prescribed burning workforce. These jobs will serve as on the job training and will provide students with invaluable technical skills. Experience gained will also provide students with a practical working knowledge of related subject matter.

FUNDING ESTIMATE

A funding estimate by Fiscal Year is provided below. Due to varying cost and the difficult nature of projecting cost into the future, we suspect that funding estimates may vary by up to ±15% in any given year. Funding estimates contained within this proposal include funding from appropriated funds, permanent and trust funds, partnership funds, in-kind services funds, other funds (Military funds), other public funding, and needed CFLR matching funds.

Appropriated funds are estimated to come from a number of different Budget Line Items. Permanent and trust funds are estimated from expected product revenue that will be generated and required for longleaf re-establishment needs associated with regeneration harvests. The De Soto Ranger District has several entities and stakeholders who have and will continue to contribute to our longleaf restoration efforts. These entities and stakeholders comprise the sources of partnership funds, in-kind services funds, military funds, and other public funds the District plans to receive.

The Nature Conservancy, as funded by the National Guard Bureau, and the US Fish and Wildlife Service provide vital monitoring for federally listed threatened and endangered species. This monitoring is conducted to assess the effects of ecosystem restoration treatments for longleaf pine and these actions are considered to be partnership funds.

Mississippi Department of Transportation and Mississippi Power Company also contribute to longleaf pine ecosystem health and restoration. Combined, the aforementioned companies treat approximately 30 acres of cogongrass infestations along highway and powerline right-of-ways. These treatments are considered to be in-kind services funds.

Military funds come to the De Soto Ranger District from the Department of Defense and National Guard Bureau. The Mississippi National Guard (Camp Shelby) provides funding directly to the De Soto Ranger District to administer an 117,000 acre special use permit. Funding provided includes monies to spray for cogongrass and to ensure ecosystem health is not being degraded.

Other public funding that will contribute to landscape ecosystem restoration is estimated to come from the Mississippi Forestry Commission. These funds will be used on 16th Section Trust Lands, as well as other private lands, to re-establish longleaf pine and treat cogongrass infestations within and adjacent to the De Soto National Forest.

Longleaf Pine Ecosystem Restoration–*Funding Estimate*

Table 1. Summary of estimated funds needed to implement the De Soto Ranger District's CFLRP project by fiscal year.

FISCAL YEAR	Appropriated Funds	Perm and Trust Funds	Partnership Funds	In-Kind Services Funds	Forest Product Value	Military Funds	Other Public Funds	CFLRP Funds
2010	$2,474,759	$276,963	$180,000	$13,500	$0	$63,587	$331,500	$750,000
2011	$2,062,162	$149,000	$180,000	$13,500	$0	$80,000	$331,500	$2,484,662
2012	$1,765,743	$85,824	$180,000	$13,500	$45,000	$80,000	$331,500	$2,170,067
2013	$1,700,937	$116,220	$180,000	$13,500	$49,500	$100,000	$331,500	$2,160,157
2014	$1,590,257	$535,184	$180,000	$13,500	$54,000	$100,000	$331,500	$2,472,941
2015	$1,529,862	$535,184	$180,000	$13,500	$54,000	$100,000	$331,500	$2,412,546
2016	$1,349,642	$1,049,734	$180,000	$13,500	$0	$100,000	$331,500	$2,692,876
2017	$1,434,171	$1,106,473	$180,000	$13,500	$0	$120,000	$331,500	$2,854,144
2018	$1,356,986	$1,106,473	$180,000	$13,500	$0	$120,000	$331,500	$2,776,959
2019	$1,277,293	$1,072,944	$180,000	$13,500	$0	$120,000	$331,500	$2,663,737

Table 2. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2010 to match funding from the CFLRP Fund.

Fiscal Year 2010 Funding Type	Dollars/Value Planned
FY 2010 Funding for Implementation	$2,727,671.00
FY 2010 Funding for Monitoring	$281,138.00
1. USFS Appropriated Funds	$2,474,759.00
2. USFS Permanent & Trust Funds	$276,963.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$63,587.00
FY 2010 Total (total of 1-6 above for matching CFLRP request)	$3,008,809.00
FY 2010 CFLRP request (must be equal to or less than above total)	$750,000.00
Funding off NFS lands associated with proposal in FY 2010 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2010 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 3. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2011 to match funding from the CFLRP Fund.

Fiscal Year 2011 Funding Type	Dollars/Value Planned
FY 2011 Funding for Implementation	$2,294,662.50
FY 2011 Funding for Monitoring	$190,000.00
1. USFS Appropriated Funds	$2,062,162.50
2. USFS Permanent & Trust Funds	$149,000.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$80,000.00
FY 2011 Total (total of 1-6 above for matching CFLRP request)	$2,484,662.50
FY 2011 CFLRP request (must be equal to or less than above total)	$2,484,662.50
Funding off NFS lands associated with proposal in FY 2011 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2011 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 4. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2012 to match funding from the CFLRP Fund.

Fiscal Year 2012 Funding Type	Dollars/Value Planned
FY 2012 Funding for Implementation	$1,830,067.00
FY 2012 Funding for Monitoring	$340,000.00
1. USFS Appropriated Funds	$1,765,743.00
2. USFS Permanent & Trust Funds	$85,824.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$45,000.00
6. Other (specify) Military Funds – Camp Shelby	$80,000.00
FY 2012 Total (total of 1-6 above for matching CFLRP request)	$2,170,067.00
FY 2012 CFLRP request (must be equal to or less than above total)	$2,170,067.00
Funding off NFS lands associated with proposal in FY 2012 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2012 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 5. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2013 to match funding from the CFLRP Fund.

Fiscal Year 2013 Funding Type	Dollars/Value Planned
FY 2013 Funding for Implementation	$1,970,157.50
FY 2013 Funding for Monitoring	$190,000.00
1. USFS Appropriated Funds	$1,700,937.50
2. USFS Permanent & Trust Funds	$116,220.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$49,500.00
6. Other (specify) Military Funds – Camp Shelby	$100,000.00
FY 2013 Total (total of 1-6 above for matching CFLRP request)	$2,160,157.50
FY 2013 CFLRP request (must be equal to or less than above total)	$2,160,157.50
Funding off NFS lands associated with proposal in FY 2013 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2013 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 6. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2014 to match funding from the CFLRP Fund.

Fiscal Year 2014 Funding Type	Dollars/Value Planned
FY 2014 Funding for Implementation	$2,280,441.00
FY 2014 Funding for Monitoring	$192,500.00
1. USFS Appropriated Funds	$1,590,257.00
2. USFS Permanent & Trust Funds	$535,184.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$54,000.00
6. Other (specify) Military Funds – Camp Shelby	$100,000.00
FY 2014 Total (total of 1-6 above for matching CFLRP request)	$2,472,941.00
FY 2014 CFLRP request (must be equal to or less than above total)	$2,472,941.00
Funding off NFS lands associated with proposal in FY 2014 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2014 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 7. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2015 to match funding from the CFLRP Fund.

Fiscal Year 2015 Funding Type	Dollars/Value Planned
FY 2015 Funding for Implementation	$2,220,046.00
FY 2015 Funding for Monitoring	$192,500.00
1. USFS Appropriated Funds	$1,529,862.00
2. USFS Permanent & Trust Funds	$535,184.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$54,000.00
6. Other (specify) Military Funds – Camp Shelby	$100,000.00
FY 2015 Total (total of 1-6 above for matching CFLRP request)	$2,412,546.00
FY 2015 CFLRP request (must be equal to or less than above total)	$2,412,546.00
Funding off NFS lands associated with proposal in FY 2015 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2015 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 8. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2016 to match funding from the CFLRP Fund.

Fiscal Year 2016 Funding Type	Dollars/Value Planned
FY 2016 Funding for Implementation	$2,500,376.50
FY 2016 Funding for Monitoring	$192,500.00
1. USFS Appropriated Funds	$1,349,642.50
2. USFS Permanent & Trust Funds	$1,049,734.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$100,000.00
FY 2016 Total (total of 1-6 above for matching CFLRP request)	$2,692,876.50
FY 2016 CFLRP request (must be equal to or less than above total)	$2,692,876.50
Funding off NFS lands associated with proposal in FY 2016 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2016 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 9. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2017 to match funding from the CFLRP Fund.

Fiscal Year 2017 Funding Type	Dollars/Value Planned
FY 2017 Funding for Implementation	$2,509,144.50
FY 2017 Funding for Monitoring	$345,000.00
1. USFS Appropriated Funds	$1,434,171.50
2. USFS Permanent & Trust Funds	$1,106,473.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$120,000.00
FY 2017 Total (total of 1-6 above for matching CFLRP request)	$2,854,144.50
FY 2017CFLRP request (must be equal to or less than above total)	$2,854,144.50
Funding off NFS lands associated with proposal in FY 2017 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2017 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 10. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2018 to match funding from the CFLRP Fund.

Fiscal Year 2018 Funding Type	Dollars/Value Planned
FY 2018 Funding for Implementation	$2,581,959.50
FY 2018 Funding for Monitoring	$195,000.00
1. USFS Appropriated Funds	$1,356,986.50
2. USFS Permanent & Trust Funds	$1,106,473.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$120,000.00
FY 2018 Total (total of 1-6 above for matching CFLRP request)	$2,776,959.50
FY 2018 CFLRP request (must be equal to or less than above total)	$2,776,959.50
Funding off NFS lands associated with proposal in FY 2018 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2018 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

Table 11. Funds to be used on NFS lands for ecological restoration treatments and monitoring that would be available in FY 2019 to match funding from the CFLRP Fund.

Fiscal Year 2019 Funding Type	Dollars/Value Planned
FY 2019 Funding for Implementation	$2,468,737.00
FY 2019 Funding for Monitoring	$195,000.00
1. USFS Appropriated Funds	$1,277,293.00
2. USFS Permanent & Trust Funds	$1,072,944.00
3. Partnership Funds	$180,000.00
4. Partnership In-Kind Services Value	$13,500.00
5. Estimated Forest Product Value	$0.00
6. Other (specify) Military Funds – Camp Shelby	$120,000.00
FY 2019 Total (total of 1-6 above for matching CFLRP request)	$2,663,737.00
FY 2019 CFLRP request (must be equal to or less than above total)	$2,663,737.00
Funding off NFS lands associated with proposal in FY 2019 (does not count toward funding match from the Collaborative Forested Landscape Restoration Fund)	
Fiscal Year 2019 Funding Type	Dollars Planned
USDI BLM Funds	$0.00
USDI (other) Funds	$0.00
Other Public Funding	$331,500.00
Private Funding	$0.00

FUNDING PLAN

The National Forest System (NFS) lands in the southeastern United States offer unique opportunities for restoring the native forests and ecological systems that were once commonly found throughout the region. In many developed areas, the NFS lands are some of the few remaining large, forested landscapes in the South. Restoring and sustaining these lands and doing so in close coordination with our partners and neighboring landowners were a key part in the establishment of the Southern Region national forests and continue to be an emphasis in our management goals for today.

The Collaborative Forest Landscape Restoration Program (CFLRP) will supplement the Southern Region's work priorities very well. The Southern Region has developed a Strategic Framework to guide the important work we do. This Strategic Framework has identified restoration as one of the main areas of emphasis for developing programs of work. The goal for this region-wide focus is "ecological systems are returned to their natural resilience and sustained," which also supports the intent of the CFLRP.

The Southern Region's program of restoration work includes a broad set of management practices designed to control the establishment, growth, composition, health, and quality of forests to meet the diverse needs and values of society on a sustainable basis. In developing our regional funding plans, the integration of multiple programs is the primary driver for budget development. Annual funding requests are made by each national forest based on their integrated capacity to accomplish needed work to support land management goals and objectives. The goals and objectives are guided by Land Management Plans, the Region's Strategic Framework, and other restoration strategies. Our regional program managers (fire, fuels, wildlife, forest health protection, vegetation, and watershed management) work together to develop a seamless regional budget package that takes full advantage of the strengths of each individual program.

Vegetation treatment activities for restoration are designed to protect and restore ecosystems, address energy and other social needs, and protect human communities. The funding identified through the process above is used to plan, implement, and monitor the work activities to be accomplished in each fiscal year. The Southern Region will continue to utilize this process to inform allocation decisions in support of CFLRP requirements and to assure that CFLRP funding allocated in FY2010 and FY2011 will be used on this proposal in the year transferred. The Region has also committed to assuring that funding will be available to support the long-term multiparty monitoring requirement for this proposal. The Southern Region has a proven track record for delivering a very efficient program of work with high integrity for producing results.

USDI FUNDING

The De Soto Ranger District CFLRP proposal does not include this element.

OTHER FUNDING

The Mississippi Forestry Commission is re-establishing approximately 650 acres of longleaf pine annually on 16th Section school trust lands within or adjacent to the De Soto National Forest Proclamation Boundary and re-establishing another 2,100 acres annually on Private Non-Industrial Forest (PNIF) private lands. Re-establishment costs, including containerized seedlings, planting labor, site preparation, release of seedlings from competing vegetation, and administration and monitoring are approximately $510.00 per acre.

The Mississippi Forestry Commission is also treating non-native invasive species (cogongrass) on approximately 2,000 acres of 16th section school trust lands and 300 acres annually on PNIF private lands at a cost of approximately $900 per acre.

MAPS

This proposal includes the following maps:

- Vicinity Map of De Soto Ranger District
- Landscape map of Proposed Treatments for thinning and re-establishment areas (North End) *
- Landscape map of Proposed Treatments for thinning and re-establishment area (South End) *
- Landscape map of Proposed Treatments for hazardous fuels reduction with herbicide and pitcher plant bog restoration areas (North End)
- Landscape map of Proposed Treatments for hazardous fuels reduction with herbicide and pitcher plant bog restoration areas (South End)

*** These maps display total thinning and re-establishment needs in addition to proposed treatment areas contained within a given Focus Area.**

LANDSCAPE STRATEGY

Comprehensively, the America's Longleaf Range-Wide Conservation Plan for Longleaf Pine http://www.americaslongleaf.org, the Red-cockaded Woodpecker Recovery Plan http://www.fws.gov/rcwrecovery/recovery_plan.html, and the De Soto Ranger District's Decision Notice and Environmental Assessment for Ecosystem Restoration for Gopher Tortoise and Red-cockaded Woodpecker Habitat ftp://ftp2.fs.fed.us/incoming/wo_fam/R8/NFM/CFLRP/ all provide the landscape strategy for this proposal. These plans and decision notice provide information and guidance regarding the management and restoration of pine forests and the subsequent improvement of red-cockaded woodpecker and gopher tortoise habitat across the landscape. Integration and implementation of these landscape scale management plans, along with help from collaborative partners, enables effective application of restoration treatments across the landscape.

The America's Longleaf Range-wide Conservation Plan for Longleaf Pine (Conservation Plan) provides the range-wide framework for longleaf pine ecosystem restoration. The De Soto National Forest is identified as one of the sixteen significant landscapes which have a high priority for longleaf pine restoration. The 15-year goal of the Conservation Plan is to increase longleaf acreage from 3.4 to 8.0 million acres. Within the overall goal, the Conservation Plan calls for (1) maintaining existing longleaf ecosystems in good condition, (2) improving acres classified as "longleaf forest types", and (3) restoring longleaf pine forests to suitable sites currently in other forest types or land classifications.

The Red-cockaded Woodpecker Recovery plan (RCW Plan) sets the delisting of the red-cockaded woodpecker as a primary goal. The RCW Plan list five actions that are needed to accomplish the recovery goals; (1) application of frequent fire to both RCW clusters and foraging habitat, (2) protection and development of large, mature pines through the landscape, (3) protection of existing cavities and judicious provisioning of artificial cavities, (4) provision of sufficient recruitment clusters in locations chosen to enhance the spatial arrangement of groups, and (5) restoration of sufficient habitat quality and quantity to support the large RCW populations necessary for recovery.

The site specific components of the landscape strategy for this proposal are contained within the De Soto Ranger District's Decision Notice and Environmental Assessment for Ecosystem Restoration for Gopher Tortoise and Red-cockaded Woodpecker Habitat. This is a fuels reduction decision utilizing the Healthy Forest Restoration Act of 2003 (HFRA). The primary purpose and need is to treat hazardous fuels to protect, restore, and enhance forest ecosystems to promote the recovery of the federally endangered red-cockaded woodpecker and federally threatened gopher tortoise. This HFRA decision identifies and prioritizes ecological restoration treatments on a landscape scale on the De Soto Ranger District for a period longer than 10-years. These treatments were prioritized collaboratively with partners and stakeholders by identifying high priority threatened and endangered species habitat improvement needs and complex wildland-urban interface areas. The treatments utilize small diameter trees, reduce hazardous fuels, restore and maintain longleaf pine ecosystem, and retain old growth trees.

APPENDIX A
Priority Areas and Treatments by Fiscal Year

Table 12. List of priority areas by fiscal year.

Year	Priority Area
FY 2010	Thompson Hill
FY 2011	Thompson Hill B & C and Focus Areas 9 & 16
FY 2012	Focus Areas 10 & 11 West
FY 2013	Focus Areas 2, 11 East, 12 – 14, & 19
FY 2014	Focus Areas 3, 6, & 20
FY 2015	Focus Areas 4 & 7
FY 2016	Focus Areas 8 & 21
FY 2017	Focus Areas 5 & 15
FY 2018	Focus Areas 22 – 24
FY 2019	Focus Area 25

Table 13. Proposed longleaf pine ecosystem restoration treatments by fiscal year.

Year	Thin (acres)	Longleaf Re-establishment (acres)	Prescribed burn (acres)	Fuel Reduction & Habitat Improvement with herbicide (acres)	Restore Bog (acres)	NNIS (acres)	Road Decommission (miles)
FY 2010	504	144	95,000	4,500		250	100
FY 2011	3680	830	100,000	2,500	75	150	50
FY 2012	3019	830	100,000	200	75	150	35
FY 2013	3253	1628	100,000	200	75	100	25
FY 2014	3800	1650	100,000	200	75	75	25
FY 2015	3338	1650	100,000	200	75	50	20
FY 2016	3611	1600	100,000	200	100	50	15
FY 2017	3517	1600	100,000	200	100	50	10
FY 2018	3494	1600	100,000	200	100	50	10
FY 2019	2500	1600	100,000	200	100	50	10
Total	30,716	13,132	995,000	8,600	775	975	300

APPENDIX B

NATIONAL ENVIRONMETAL POLICY ACT DECISIONS

NEPA decisions that have been made to allow implementation of this project include:

- Ecosystem Restoration for Gopher Tortoise and Red-cockaded Woodpecker Habitat on the De Soto National Forest, De Soto Ranger District - Decision Notice – HFRA Project (includes pine thinning, longleaf pine re-establishment, site preparation and tree planting);
- Gopher Tortoise Habitat Improvement with Herbicide on the De Soto National Forest, De Soto Ranger District - Decision Notice (herbicide application);
- Control of Cogongrass through Integrated Pest Management on the Bienville, Chickasawhay, De Soto and Tombigbee Ranger Districts, NF in MS - Decision Notice;
- Renewal of Special Use Permit for Military Activities on the De Soto National Forest and Implementation of Installation Mission Support Activities at Camp Shelby, Mississippi, MS National Guard & USDA Forest Service – Record of Decision (includes pine thinning and longleaf re-establishment in special use permit area);
- District Wide Prescribed Burning on the De Soto National Forest, De Soto Ranger District - Decision Memos;
- Hurricane Katrina Tree Removal and Hazardous Fuels Treatment Project on the De Soto and Chickasawhay Ranger Districts – Decision Notice – HFRA Project (includes pitcher plant bog restoration, watershed restoration – including road decommissioning and mechanical cutting of midstory and understory); and
- Southern Pine Beetle Suppression on the De Soto National Forest, De Soto Ranger District – Decision Notice (includes the suppression methods for southern pine beetle infestations).