Draft Decision Notice and Finding of No Significant Impact for
Hazardous Fuel Reduction and Ecosystem Restoration

Responsible Official:
District Ranger

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Proposed Action

The Proposed Action consists of the following activities to meet the desired conditions along with the purpose and need for this project (hazardous fuel reduction and ecosystem restoration):

- prescribe burning on varying return intervals associated with the needs of ecological communities
- permanent fuel breaks
- historic and new firelines

Proposed Actions, Approximate Average Amounts, and Timeframe

<table>
<thead>
<tr>
<th>Proposed Activity</th>
<th>Amount</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribed Burning</td>
<td>65,000 acres*</td>
<td>Annually</td>
</tr>
<tr>
<td>Fuel Breaks</td>
<td>25 miles</td>
<td>Annually (Periodically Maintained)</td>
</tr>
<tr>
<td>Firelines</td>
<td>250 miles</td>
<td>Annually Established &amp; Rehabilitated</td>
</tr>
</tbody>
</table>

*The De Soto Ranger District is likely to average 65,000 acres per year but will pursue the objective of 84,000 acres per year listed in the Forest Plan. The potential decrease from the Forest Plan objective is a realistic consideration of changes taking place over the last several years. These changes include increased development on the edges of the Forest, increases in traffic and population, and increasingly complex smoke management procedures. All Forest Plan objectives would be worked toward based on prioritization of ecosystem restoration and maintenance needs, capacity, funding, fuel conditions, and weather patterns.

The management activities in this alternative would begin in Fiscal Year 2017. The entire project area would not be burned all at one time. Burn areas would be sub-divided into more manageable burn units usually ignited on separate days. On a rotational basis, specific units would be identified to burn based on Forest Plan (USDA Forest Service 2014) objectives and guidelines, safety considerations, funding, capacity, and fuel and weather conditions. Burn units would be burned multiple times through the life of this decision to mimic the natural fire regime and meet management objectives. Where no natural barriers exist, firelines would be constructed, generally along boundaries with private land, in the same locations where firelines have been constructed many times in the past. Where suitable firelines are not already in place, construction of new prescribed fire control lines may be required. Historically, firelines have been constructed in new locations at a rate of 1-2 miles per year, and sometimes none, during a burning season.

Prescribe fire control lines may be constructed with a bull dozer or with hand tools or leaf blowers. Firelines or fuel breaks are approximately 1 to 12 feet wide depending on the method utilized. Hand tools or leaf blowers would be used where mechanically constructed line is unsuitable in unstable soils. Some lines may be used repeatedly over the course of years while some may be used just once.

Permanent fuel breaks would be created by utilizing old dozer lines or trails that have received previous disturbance. These breaks would be cleared and maintained periodically by dozer or farm tractor with brush-hog.

An Environmental Assessment (EA) was prepared by the interdisciplinary team (IDT) to address the environmental effects of implementing the Proposed Action and Alternative I (No Action). The EA is available for public review in the De Soto Ranger District Office in Wiggins, Mississippi and online at http://www.fs.usda.gov/project/?project=46498

Below is a map of the project area.
Decision
Based on the analysis documented in the EA, it is my decision to implement the Proposed Action identified above for the Hazardous Fuel Reduction and Ecosystem Restoration project. My decision is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgement of incomplete or unavailable information. See Relevant Planning Documents (EA Chapter 1 p. 7), Mitigations (EA Chapter 2 p. 9-15), and Literature Cited (EA Chapter 6 p. 60-67).

Reasons for the Decision
The Proposed Action was chosen over Alternative I (No Action) because the No Action Alternative would not meet the identified purpose and need for this project as stated in the EA beginning on page 5. Specifically, the Proposed Action would best meet the following project objectives (EA, p. 6):

- Reduce hazardous fuels
- Ensure ecological communities are restored, present and functioning
- Protect private inholdings from catastrophic fire
- Reduce non-native species
- Maintain viability and restore endangered or rare species
- Maintain and restore longleaf pine forests

Role of the Interdisciplinary Team and Public Involvement
The Project was listed in the Schedule of Proposed Actions in March of 2015. On May 26, 2015 a “scoping” letter and email was sent out with a proposed activity map. The letter and map was sent to local landowners, forest users, forest user groups, agencies, Tribes, local government, industry representatives, and outfitters. The 30-day scoping period ran from May 26 to June 30, and all parties were informed that comments would be accepted after that date. A flyer describing the project and asking for feedback was also distributed at 20 sites on the District. Anyone who responded to the flyer was sent a scoping letter and proposed activity map. A total of 105 forest stakeholders were consulted via letters and email. Eleven responses were received to the scoping letter. The comments and forest service responses are part of the project file and may be viewed at the district office.

An environmental assessment dated November 2016 was released for public review and comment on December 1, 2016; a legal notice of the 30-day comment period was published in the Clarion Ledger of Jackson, MS. Four responses were received:

2. Nicole Hodges, Natural Heritage Program Coordinator, MS Department of Wildlife, Fisheries, and Parks
3. Thomas Price
4. Patrick Chubb, Sr. Environmental Specialist, Mississippi Power

The district took the following actions regarding comments:

1. Added Appendix G (Response to Comments) to the February 2017 Environmental Assessment (EA).
2. Added a statement on page 6 of the February 2017 EA clarifying average burning acres (see footnote of the Proposed Actions, Approximate Average Amounts, and Timeframe table on page 3 of this Decision Notice).
3. For additional information, added a Dusky gopher frog-prescribed burn matrix to pg. 14 of the February 2017 EA (see table aa of this Decision Notice on pg. 12).
Issues Identified
1. Whether or not smaller burn units should be utilized.
2. Whether or not the timing of prescribe burns impact ground nesting species of birds, and other wildlife when conducted in the spring during nesting season.

Alternatives Eliminated From Detailed Study
The interdisciplinary team considered the following two alternatives, but eliminated them from further study:

Smaller Burn Blocks (Issue #1)
This alternative was considered, but the ID Team determined that even though the Proposed Action would include utilizing large burn blocks more often, smaller burn blocks are also part of the overall strategy. Typically, the district utilizes a variety of sizes of burn blocks to meet the purpose and need of particular sites. From 2011 through 2015 the De Soto Ranger District prescribe burned an average of 60,060 acres per year (an average of 35 different burn blocks per year). While the average size of the prescribe burns, during that time period, was around 1700 acres, 21% of the burn blocks were less than 500 acres. It should also be noted that, on all prescribe burns, there is an estimated 15-20% of the total area that does not burn.

An alternative that utilizes only smaller burn blocks would not meet the purpose and need of this project (conduct hazardous fuel reduction and ecosystem restoration on land areas that cover approximately 318,000 acres of National Forest lands throughout the district). Typically, weather conditions, Forest and Regional parameters, fire suppression, and other factors limit available days for prescribe burning to about 40 per year. Most prescribe burns, regardless of size, require about the same resources for planning and implementation. Therefore, limiting the size of prescribe burns to 500 acres or less, for example, would in turn limit the total prescribe burning per year to 25,000 acres or less. Time, personnel, and costs would be prohibitive to treating the number of acres needed to burn for this project if only small burn blocks are used.

Limited Nesting Season (growing season) Burning (Issue #2)
This alternative was considered, but the ID Team determined that this alternative would not meet the purpose and need (conduct hazardous fuel reduction and ecosystem restoration on land areas that cover approximately 318,000 acres of National Forest lands throughout the district). This alternative was eliminated from further study based on availability of burn days to meet objectives, the percentage of burning historically done in the growing season, the mosaic effect of utilizing burn blocks, burning smaller blocks on average in the growing season, and the best available science on nesting success in fire shaped ecosystems.

Conditions in south Mississippi are not always conducive to prescribe burning due to weather and other factors, so limiting the available days for prescribe burning even further would prohibit the purpose and need being met. During spring months, from 2011-2015, the De Soto Ranger District prescribe burned an average of 18,800 acres (31% of the total acres burned) per year, in 16 different burn blocks per year. During this time of year the average burn block size was reduced to less than 1,200 acres, with 35% of the burns being under 500 acres.

The smaller burn unit size during the spring is intended to limit the impacts to ground nesting species in addition to making burns more manageable during warm season weather patterns. The complete loss of spring burning would reduce the total acres burned by 18,000 – 20,000 acres. Spring burns are also more effective in reducing the hazardous live fuels that are present on the De Soto Ranger District, and in creating a more open habitat that is preferred by many species.
While growing season fire does destroy some nests, the benefits of the high quality wildlife habitat created by the burns outweighs the destruction of nests that are lost. If a nest is destroyed by fire, the female will often re-nest. Many of the ground nesting species in this area require frequent fires (Abernethy 2005). For the ground nesting Bachman’s sparrow, its longleaf pine forest habitat should burn at least every 3 years, regardless of season because no breeding is detected in habitats that go 4 years without fire, with reproductive success being positively correlated with habitat quality (Tucker et al. 2006).

Many ground-nesting birds that could be affected by burns prefer to nest in areas that have been burned recently (i.e. with the past 18-24 months), so the number of nests located in areas typically scheduled for lightning season (growing season) burns will be small relative to the total number acres burned and the number of nests constructed each year. Birds often renest following the loss of a nest, and improved habitat conditions from prescribed burning may improve adult and juvenile survival, effectively offsetting the loss of some nests (Cox and Widener 2008). For a mature pine forest study of wild turkey in Georgia, both hens and gobblers used savannas that had been burned within 18 months but began avoiding stands that had not been burned in the past 2 years (Martin et al. 2012). Wild turkey hens in a mature pine forest in Mississippi preferred areas burned that spring and used stands burned within 1 to 2 years while avoiding stands not burned for over 2 years (Palmer et al. 1996).

A University of Georgia study conducted in parts of a 29,000 acre tract of longleaf pine forest burned every two years (dormant and growing combinations) monitored 52 turkey nests during consecutive nesting seasons of 2011 and 2012. Overall nest survival for turkeys was 56%. Most (32.7%) nests were lost to predation, whereas growing season fire contributed to the loss of 11.5% of nests and only 1 brood was lost to a growing season fire, indicating that growing season fire had a minimal direct impact on poult survival. The renesting rate for the females with initial nests lost to fire was 75%, which seems to mitigate loss to fire (USDA REEIS 2014).

Dormant season versus growing season burning effects on nesting success for eastern towhees, indigo buntings, yellow-breasted chats, Bachman’s sparrows, prairie warblers, red-cockaded woodpeckers, and northern cardinals were studied at Fort Benning, Georgia. Apparent nest success for avian species in fire-maintained pine communities either benefitted or was not affected by growing season prescribed fires (Howell et al. 2008).

**Alternatives Considered in Detail**

**Proposed Action** – This alternative is described on page 3 of this document. (Also, see EA, pp. 19-20).

**Alternative I (No Action)** - Under the No Action Alternative neither the Proposed Action nor any action alternative would be implemented. Fuels reduction activities would be deferred. However, ongoing Forest Service approved activities would continue in the project area. The National Environmental Policy Act of 1969 (NEPA) requires this alternative. Actions would continue associated with other Management Areas within this project area that would not normally need a decision.

**Mitigations** (EA, p. 10)

**FOREST PLAN**
The Forest-wide Design Criteria for the different ecological units is incorporated by reference as mitigating measures into the Proposed Action by smart design and are located on the website (as of 04/30/15) at http://prdp2fs.ess.usda.gov/Internet/FSE_DOCUMENTS/stelprd3814664.pdf in the Forest Plan (USDA Forest Service 2014). Mitigation measures are defined as actions taken to avoid, minimize, reduce, eliminate, or compensate for adverse effects of implementing the Proposed Action or Alternative Action. The Forest Plan management requirements and standards and guidelines are incorporated into the design of the proposal and
alternatives as mitigation measures. These include the forest-wide standards and guidelines for known habitat communities on the De Soto Ranger District.

**FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)**

The Final Environmental Impact Statement (FEIS - USDA Forest Service 2014b) for the Revised Land and Resource Management Plan for the National Forests of Mississippi was prepared to analyze and select the preferred mix and projected levels of vegetation management methods and tools needed to achieve the goals and objectives identified in the Forest Plan (USDA Forest Service 2014). The proposed actions would adhere to all applicable management requirements and mitigation measures; the analysis in this document tiers to the FEIS (USDA Forest Service 2014b) and Forest Plan (USDA Forest Service 2014).


**FOREST PLAN AND PROJECT SPECIFIC CRITERIA**

The National Forests in Mississippi follow the Forest Service directive system that consists of Forest Service manuals and handbooks, which codify the agency’s policies, practices, and procedures. Forest level standards and guidelines supplement this direction for National Forest specific conditions.

Forest Plan (USDA Forest Service 2014) guidelines do not approve or force actions but describe recommended parameters or technical scientific specifications for use in designing projects and activities. Rationale for deviation from any guideline must be documented in project level decisions. No deviations from soil and water or prescribed burning guidelines are proposed. There is a proposed deviation to a guideline for invasive species. Standards are specific management directions required for achieving resource protection. Project specific deviations require Forest Plan (USDA Forest Service 2014) amendment. No deviations to any standards are proposed.

**GUIDELINES FOR SOIL AND WATER**

- Mitigation measures and management requirements associated with Mississippi’s Best Management Practices (BMPs in Mississippi, Fourth Edition, 2008) should be followed during ground-disturbing activities. BMPs would be used to prevent erosion on constructed firelines, and/or temporary roads. Seeding and installing water bars on these new lines would be employed as mitigation for erosion. [http://www.mfc.ms.gov/pd/Mgt/WQ/Entire_bmp_2008-7-24.pdf](http://www.mfc.ms.gov/pd/Mgt/WQ/Entire_bmp_2008-7-24.pdf)
- Soil and debris should not be deposited in lakes, streams, wetlands, springs, or seeps.
- Activities that could result in sedimentation or other changes in water quantity and quality should have project level design criteria that maintain or improve the hydrologic function of wetland communities.
- Erosion control measures should be applied in all ground-disturbing activities to reduce movement of bare soil and minimize direct delivery of sediment to streams or other waterbodies. Appropriate erosion control measures (installing water diversion, revegetation, mulch, silt fences, etc.) should be implemented as promptly as practical.
- Construct and maintain water diversions along firelines or other disturbed areas susceptible to scour or erosion. Water diversions (water bars, dips, and lead off ditches) should be properly spaced to disperse runoff before it gains enough velocity to start eroding.
- Historical mechanical firelines should be reused.
- Mechanical firelines should not be placed parallel to a scoured stream channel.
- Firelines should be constructed with turnouts that will allow runoff to be dispersed and absorbed before reaching stream filter strips.
- Filter strips should be used to protect perennial and intermittent streams. Filter strips should be at least 33 feet plus 1.5 times the percent slope. Activities that expose more than 10 percent mineral soil should
be avoided unless the activity occurs at a designated crossing. Site-specific analysis should determine any mitigation measures in addition to standard best management practices needed to protect water quality.

- Mechanical equipment may operate as long as the soils are dry enough to sustain activity without excessive compaction or rutting. In order to minimize resource damage, access may be restricted during wet seasons or following rainfall events. This guideline does not apply to dedicated intensive use areas such as roads, primary skid trails, and logging decks. Ruts should be smoothed to restore hydrology and drainage paths.
- Mechanical equipment should not be allowed to operate in any stream channel except to cross at designated points, except where involved in stream improvement work. Crossings should be at right angles to the stream or riparian area.
- Water should not be diverted from streams (perennial or intermittent) or lakes when an instream flow assessment indicates the diversion would adversely affect protection of stream processes, aquatic (including wetlands) and riparian habitats and communities, or recreation and aesthetic values.

**GUIDELINES FOR PRESCRIBED FIRE**

- The smoke management screening process (*described in the Smoke Management section below*) will be applied to all prescribed fires, especially those within 3 miles of critical smoke-sensitive targets (e.g. schools, churches, hospitals, major highways, and airports).
- Prescribe burns should be scheduled for the appropriate season, weather, fuel, and topographic conditions to achieve objectives.
- Planning and implementation of prescribe burns should include measures to provide protection for known occurrences of threatened, endangered, sensitive, and locally rare species that are susceptible to damage or extirpation from fire injury. This group is referred to as "species sensitive to fire injury."
- When deciduous forest communities on mesic and alluvial site types are included within burning blocks, low intensity fires with less than 2-foot flame length should be employed. Direct firing should be avoided unless needed to secure control lines or to encourage ecological restoration of native communities.
- During prescribe burning, some fires should be allowed to burn in a mosaic pattern resulting from differential influence of topography, fuel loading and moisture, and vegetation type.
- Steps taken to limit soil heating should include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately.
- Existing barriers (e.g., streams, lakes, wetlands, roads, and trails) should be used whenever possible to reduce the need for fireline construction and to minimize resource impacts.
- When rehabilitating tractor firelines, grade dips or other measures should be installed to properly drain water and prevent erosion.

**STANDARDS FOR PRESCRIBED FIRE**

- Slash burns are done so they do not consume all litter and duff and alter structure and color of mineral soil on more than 20 percent of the area. Steps taken to limit soil heating include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately.
- Mechanical firelines which expose mineral soil are not located in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps, unless tying into lakes, streams or wetlands as firebreaks at designated points with minimal soil disturbance. Low-intensity fires with less than 2-foot flame lengths may be allowed to back into the strip along water bodies, as long as they do not kill trees and shrubs that shade the stream. The strip's width in feet is at least 33 plus 1.5 times the percent slope.
- Plowed firelines are not located within savannahs (wet meadows, pitcher plant bogs & flats) except when needed to protect facilities or threatened, endangered, proposed, or sensitive species.
• Fire control lines that tie into travelways (roads and trails) will be obliterated and the topography restored to original conditions as soon as possible following the fire.
• When used for control lines, trails (including tread, structures, and improvements) will be restored to pre-burn conditions as soon as practicable.
• As soon as possible after completion of a burning operation, prescribed fire control lines in highly erodible areas would be seeded with a Forest-approved seed mixture to help speed natural recovery processes and reduce the potential for erosion.
• To limit the potential for a burn to escape and to facilitate safety of prescribe burn personnel, existing snags and some live trees inside the burn unit or within 50-100 feet of burn unit perimeters may need to be felled or pushed over in advance of a scheduled burn, during, or immediately following a prescribe burn operation.

GUIDELINES FOR INVASIVE SPECIES
• All ground-disturbing activities should be designed and implemented using practices for prevention of spread of nonnative invasive species.*
• Treatment of invasive species should be considered in all project planning.

*Infestations of nonnative invasive cogongrass exist on some historic firelines and fuel breaks. Plowing firelines and maintaining fuel breaks that may contain cogongrass or other NNIS is necessary to provide safe control lines used to reduce hazardous fuels and to safely provide the historic disturbance type conducive to longleaf pine and associated ecosystem maintenance and restoration.

Mitigations:
• Existing NNIS infestations and any associated spread of NNIS along and near firelines and fuel breaks will be surveyed, mapped, and treated.
• Equipment washing procedures will be followed to prevent the spread of cogongrass or other NNIS encountered.

SMOKE MANAGEMENT
For each burn unit, a prescribe burn plan would be developed. Burning operations would follow the guidelines of the Mississippi Voluntary Smoke Management Guidelines (Revised 2012), and be monitored to ensure project design criteria and smoke management activities are properly executed. http://www.mfc.ms.gov/pdf/Protection/Voluntary_Smoke_Management_Guidelines_2012.pdf

Prescribe burning activities would not be conducted on days if the Air Quality Index (AQI) is not considered “Good” or “Moderate” according to air quality forecasts (Environmental Protection Agency, www.AirNow.gov) or if a smoke dispersion modeling analysis conducted before any scheduled burning operation begins indicates that smoke sensitive targets may be impacted and mitigation measures would not lessen or significantly reduce the impact. Smoke sensitive targets include; airports, schools, hospitals, highways, and individuals previously identified with respiratory conditions.

Prior to ignition, a contingency plan would be in place outlining actions to immediately address any change in meteorological conditions that fall outside the appropriate parameters and/or spotting outside the burn area. Key weather variables such as transport winds and mixing heights would be continuously monitored to avoid smoke impacts to major metropolitan areas downwind. This would be accomplished in coordination with the Mississippi State Forestry Commission and the National Weather Service.
Signs may be placed along public roads to warn the public of potentially smoky conditions. Should visibility along any road become impaired, motorists may be stopped and warned of the conditions. If conditions warrant, pilot cars may be utilized to lead vehicles through the area or roads may be temporarily closed.

The smoke management screening process will be applied to all prescribe fires, especially those within 3 miles of critical smoke-sensitive targets. This may include using smoke signs and deterring traffic. When a burn is tentatively scheduled for implementation, public notification efforts would be made in accordance with the prescribe burn plan. This may include:

- Persons who have previously notified the District Office that they have a specific smoke sensitivity (reasonable attempts)
- County Sheriff’s Office
- Mississippi State Forestry Commission
- County Bus Barns
- Military
- Mississippi Department of Environmental Quality (MDEQ)
- Mississippi Department of Transportation
- Pipeline Companies
- Mississippi Highway Patrol

HERITAGE RESOURCES
There is no Programmatic Agreement between the National Forests in Mississippi, the Mississippi Department of Archives and History, and relevant federally recognized Tribes. In lieu of an agreement, any new fire lines and any old fire lines not previously surveyed would be inspected for the presence of cultural resources and, if any are found, mitigation measures would be prescribed in consultation with the State Historic Preservation Office (SHPO) and Tribes.

The project has been designed so that all sites that may be eligible for the National Register of Historic Places, or that are of undetermined eligibility, lie outside of planned ground disturbing activities. Historic site areas which contain no organic cultural material would undergo prescribe burning. Past research has shown that sites such as these would not be affected by low-intensity prescribe burns. Should any additional sites be found during pre-burn preparation activities which are usually done within a few months up to the day preceding implementation, they would be examined by a professional archeologist who would prescribe necessary mitigation measures. Based on the findings, all sites would be preserved intact and no significant effects would be produced upon significant historical or prehistoric sites that may be eligible for nomination to the National Register of Historic Places. If previously undocumented cultural resources are encountered during ground-disturbing activities, those activities should be halted until site significance is determined (USDA Forest Service 2014, Cultural Resources Guideline).

PROJECT SPECIFIC DESIGN CRITERIA FROM THE BIOLOGICAL EVALUATION
1. Careful review of prescribed burn and fuel break creation/maintenance plans will take place by the ecologist and wildlife biologist to ensure all PETS plant and animal species sensitive to fire injury or any
PETS species that could be affected by burning or fuel break operations will be considered and protected in planning and implementation of project work.

2. A gopher tortoise survey will be conducted prior to plowing of fire lines or fuel break construction/maintenance. Equipment shall stay at least 25 feet from gopher tortoise burrows.

3. Handlines will be utilized on short steep slopes that are adjacent to drainages.

4. Where needed to prevent sedimentation from entering streams, water diversions will be installed on firelines or fuel breaks during construction.

5. New plowed firelines or fuel breaks will not be located within open wet savannahs or pitcher plant bogs during prescribed burning operations.

6. Prescribed fires near occupied gopher frog ponds will be timed to when gopher frogs are less likely to be moving during a breeding period. See Table aa.

Table aa. Dusky gopher frog-prescribed burn matrix

<table>
<thead>
<tr>
<th>Forest Service burn conditions**</th>
<th>Burn Uplands</th>
<th>Burn Pond Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use existing standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frog Parameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult frogs not in pond (Jan – Mar)</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Adult frogs in pond</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Adult frogs not in pond (Apr – Sep)</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Burning Oct-Dec</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Most (&gt; 75%) adult frogs left pond (&gt;7 days since last movement at drift fence)</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Tadpoles present and after April 1st</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

** Burn parameters to be defined by Forest Service using existing standards.

7. If gopher tortoises, black pine snakes or other threatened, endangered, or sensitive species are encountered during work they will be avoided.

8. Louisiana quillwort surveys must be conducted 150 feet upstream and 300 feet downstream in an area proposed for prescribed burning if mechanical line is to be constructed across a drainage or tied into the active stream channel. Since Louisiana quillwort may die back and lose their leaves during dry periods of the growing season (i.e., late summer/fall), it may be impossible to determine with certainty whether or not Louisiana quillwort is present where plow lines are to be constructed. If a quillwort site is found, or known to occur in an area proposed for burning, or if the stream cannot be surveyed because the plant is dormant, the firelines must not cross the drainage. A fireline may be plowed to the edge of the floodplain and a handline or wetline must be used to tie into the drainage. When a plow line is constructed on steep slopes adjacent to suitable Louisiana quillwort habitat, waterbars shall be installed when the line is constructed and diversion ditches shall be constructed at intervals as needed to direct surface water out of the plowed line and into undisturbed forest cover for dispersion of water and soil particles.

9. Management requirements for the protection of RCW and RCW habitat include no fireline construction or use of heavy equipment within cluster boundaries, except when topography, protection of other resources and property boundary location dictate the construction of new firelines; no concentrated activity within cluster, avoid nesting season disturbance except as necessary for the continued survival of the RCW which would include activities such as cavity tree protection or replacement of cavities lost or damaged during implementation of the Proposed Action.

10. RCW clusters will be protected by raking to mineral soil and clearing brush from around cavity trees. The distance to be cleared and brushed out around individual cavity trees will depend on tree and fuel. Cavity trees may be individually fired during implementation of the burn if the need is identified during protection inventory. All cavity trees will be checked within 48 hours following execution of the burn.
Monitoring

Proposed actions and applicable Forest Plan monitoring and evaluation requirements would be implemented as directed within budgetary limitations. The effectiveness of Best Management Practices (BMPs) and other mitigation measures would be monitored to ensure compliance with this decision, the Forest Plan, the Clean Air Act (https://www.epa.gov/clean-air-overview/clean-air-act-text), and Clean Water Act. Monitoring would involve formal and informal field measurements, data collection, observations, and inspections, as well as database management, queries, analyses, and reports. The Forest Plan provides evaluation and monitoring questions and performance measures used by the National Forests in Mississippi to evaluate movement toward key forest plan desired conditions (USDA Forest Service 2014). The evaluations and measures in the table below are taken from the Forest Plan and will be incorporated into the monitoring, tracking, and reporting requirements for this decision. This information along with fire and fuels monitoring processes will be used to evaluate and respond to changing needs and conditions on the landscape.

### Evaluation/Monitoring Questions/Performance Measures for Prescribed Burning that Address Desired Conditions.

<table>
<thead>
<tr>
<th>Question</th>
<th>Plan Component</th>
<th>Performance Measure</th>
<th>Frequency of Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has progress been made toward maintaining and restoring desired conditions so that native ecological systems occupy appropriate sites?</td>
<td>Ecosystem Diversity</td>
<td>Fire return interval and percent of growing-season burns by system.</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are annual average forest wide and ecological system objectives being achieved?</td>
<td>Ecosystem Diversity</td>
<td>Prescribed burning acres by system and percentage of burns by season.</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are annual average T&amp;E species recovery treatment objectives being accomplished?</td>
<td>Species Diversity</td>
<td>Red-cockaded woodpecker habitat improvement - acres of prescribed burning.</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are conditions needed to sustain ecological function and productivity of the land being maintained?</td>
<td>Healthy Watershed</td>
<td>Prescribed fire impacts measured against National Ambient Air Quality Standards</td>
<td>10 Years</td>
</tr>
<tr>
<td>Are forests in healthy condition?</td>
<td>Healthy Forests</td>
<td>Fire condition class within and out of urban interface areas</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are forests in healthy condition?</td>
<td>Healthy Forests</td>
<td>Fire return interval</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are healthy forest objectives being achieved?</td>
<td>Healthy Forests</td>
<td>Longleaf pine (MIS) regeneration prescribed burn acres</td>
<td>5 Years</td>
</tr>
<tr>
<td>Are healthy forest objectives being achieved?</td>
<td>Healthy Forests</td>
<td>Prescribed burning acres by unit and season</td>
<td>5 Years</td>
</tr>
</tbody>
</table>

Fire Effects/Fuels Monitoring

De Soto Ranger District currently utilizes Feat/Firemon Integrated (FFI) and Fuel Treatment Effectiveness Monitoring (FETM) databases to analyze effects of prescribed burning on the landscape. There are nine fire effects monitoring plots on the De Soto Ranger District. These plots have been measured since 2002 and follow the protocols set out for FFI databases. During the life of this EA, a minimum of 4 additional monitoring plots will be added to the landscape. Monitored data from these plots include pre-burn and post-burn measurements and photographs. Fuel loadings, changes in brush species dominance, changes in understory species dominance, changes in tree species and basal area, and fire severity are all measured. Queries and reports on these measurements are used to track and assess the effectiveness of prescribed burn treatments.

Fuel loading is an ecological indicator used for measuring accelerated ecosystem restoration work. Fuel plot monitoring tracks decreases in fuel loading in tons per acre. De Soto Ranger Districts aims to reduce 1 to 6 tons of fuel per acre during prescribed burning operations. A reduction of 2.8 tons per acre is the average calculated for the most recent Collaborative Forest Landscape Ecological Indicator Report (USDA Forest Service 2014c).
FETM is an interagency database used to capture and monitor the success of our fuels treatment activities in protecting firefighters, and the public, from wildfire. It documents the effects of these treatments on wildfire behavior and the damages caused. Every wildfire which starts in, or burns into, a fuels treatment area is evaluated. As an example, data collected indicated that, during the ten year period from 2005 through 2015 that in 98.5% of treatment areas that experienced a wildfire the fire behavior was changed as a result of the treatment. In addition, the data showed that 96% these treatments contributed to the control of the wildfire. Almost all of the fuels treatment areas documented were prescribed burns.

**Post Burn Evaluations**

In addition to formal monitoring protocol, post burn evaluations are conducted and serve as informal site specific evaluation tools used to describe treatment effectiveness and to ensure mitigation measures have been correctly applied during and after burns. Post burn evaluations are also used to provide input on the appropriate return interval and burning season most likely to lead toward accomplishment of management objectives for a particular burn block. This evaluation allows field going subject matter experts and technicians the opportunity to provide site specific assessments, suggestions, and observations that help shape mitigation techniques and burn plans.

**Findings Required by Other Laws and Regulations**

I have determined that actions included in this decision are consistent with the Revised Land and Resource Management Plan, National Forests of Mississippi because the selected alternative has been planned and will be implemented in accordance with all applicable design criteria of the Revised Forest Plan (EA, p. 7). The actions described in the selected alternative are typical of those projected for implementation in the Revised Land and Resource Management Plan and for which the environmental effects are disclosed in the Final Environmental Impact Statement (FEIS) for the Land and Resource Management Plan, National Forests of Mississippi, 2014. This environmental assessment tiers to the FEIS (EA, p. 7). The forest plan was developed in accordance with the following laws and regulations:

- National Forest Management Act (NFMA),
- Endangered Species Act (ESA),
- Clean Water Act, Floodplains (EO 11988),
- National Historical Preservation Act (NHPA),
- Archaeological Resources Protection Act (ARPA),
- Native American Graves Protection and Repatriation Act (NAGPRA),
- Environmental Justice (EO 12898),
- Invasive Species (EO 13112) and
- NEPA (40 CFR Part 1500; FSH 1909.15).
**Finding of No Significant Impact (FONSI)**

I have determined that the proposed actions are not a major federal action, either individually or cumulatively, and will not significantly affect the quality of the human environment based on the EA and from past experience with similar forest management activities. The following discussion is organized around the ten (10) significance criteria described in 40 CFR 1508.27, and have been considered in the evaluation of intensity for this proposal.

1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the quality of the human environment (EA, Chapter 3 Environmental Disclosures).

2. The degree to which public health and safety may be affected is minimal (EA, pp. 12-13, and 24-25).

3. The project will not affect any unique characteristics of the geographic area (historic or cultural resource, wetlands, and floodplains, etc.). This is based on information gathered through records and site specific field inventories (EA, p.13, 35-38, and 51-54).

4. Based on public involvement and the analyses conducted in the EA, the effects on the quality of the human environment are not likely to be highly controversial (EA, p. 6-7 and Chapter 3 Environmental Disclosures).

5. The actions do not involve highly uncertain, unique, or unknown environmental risks to the human environment. All actions described have been conducted before, and district staff members have considerable expertise in carrying out these actions (EA, Chapter 3 Environmental Disclosures).

6. The actions in this decision will not establish a precedent for future actions with significant effects nor does it represent a decision in principle about a future consideration (EA, Chapter 3 Environmental Disclosures).

7. The cumulative effects of the proposed actions have been analyzed with consideration for past and foreseeable future activities on adjacent public and private land, and no significant cumulative effects would result from implementation (EA, p. 19 and Chapter 3 Environmental Disclosures).

8. The actions will not affect any sites listed on or eligible for listing in the National Register of Historic Places nor will they cause loss or destruction of significant scientific, cultural or historic resources. This is based on site specific cultural resource surveys, preparation of cultural resources reports, and consultation with the State Historic Preservation Officer and Federally recognized tribes. (EA, p.13, 51-54).

9. The actions are not likely to significantly affect endangered or threatened plant or animal species or critical habitat under the Endangered Species Act (EA, pp. 14-15, 44, and Biological Evaluation).

10. None of the actions threaten to lead to violation of federal, state, or local laws imposed for the protection of the environment. This will be ensured by carrying out the decision in a way that is consistent with the forest-wide design criteria, management requirements and mitigation measures established in the Revised Forest Plan. For water quality management, State approved Best Management Practices will be used for this project. The project will be monitored to ensure BMPs are implemented. If implementing BMPs on a specific site results in effects significantly higher than anticipated, because of unforeseen site factors or events, appropriate corrective measures will be considered and implemented. This project will fully comply with State approved BMPs and the Clean Water Act (EA, pp. 11-12, and 33-38).
After considering the effects of the actions analyzed, in terms of context and intensity, I have determined that these actions will not have a significant effect on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

**Objection Opportunities**

This decision is subject to objection pursuant to 36 CFR 218 and must meet all of the requirements of 36 CFR 218.8. A written objection, including attachments, must be postmarked or received within 45 days after the date that notice of this draft decision is published in the *Clarion Ledger*. Electronic objections in common formats (.doc, .rtf, .pdf, or .txt) may be submitted to: objections-southern-mississippi@fs.fed.us with Subject: **Hazardous Fuel Reduction and Ecosystem Restoration Project**. Objections may also be faxed to (501) 321-5334 to the attention of “OBJECTION: **Hazardous Fuel Reduction and Ecosystem Restoration Project,**” sent by mail to:

National Forests of Mississippi Forest Supervisor’s Office  
Forest Supervisor  
ATTN: Objections  
Suite 500-N  
200 S. Lamar Street  
Jackson, MS 39201

Objections can be hand-delivered during normal business hours of 8 a.m. to 4:30 p.m., Monday through Friday, excluding holidays to the same address above. If an objection is received, notice of an objection resolution meeting open to the public will be posted on the National Forests of Mississippi website.

**Implementation Date**

As per 36 CFR 218.12, if no objection is received within the legal objection period, this decision may be signed and implemented on, but not before, the fifth business day following the close of the objection filing period. If an objection is filed, this decision cannot be signed or implemented until the reviewing officer has responded in writing to all pending objections.

**Contact**

For further information on this decision, contact: Tate Thriffiley, PO Box 248, Wiggins, MS, 601-528-6160, tatethriffiley@fs.fed.us.

**Responsible Official**

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_DRAFT_  
District Ranger  
DATE