Voluntary Smoke Management Guidelines

Revised 2012

TABLE OF CONTENTS

Introduction 1
Objectives 1
Responsibilities 1
Burning Permit System 1
Permit Criteria 2
Stagnation Indices 3
Weather Information (Availability And Format) 3
Smoke Management Guidelines 4
Prescribed Burning Plan 4
Smoke Management Screening System 5
Step One: Plot Direction of the Smoke Plume 6
Step Two: Identify Smoke-Sensitive Areas 7
Step Three: Identify Critical Smoke-Sensitive Areas 7
Step Four: Determine Fuel Type 7
Step Five: Minimize Risk 8
A Smoke Manager's Checklist 9
Mississippi Prescribed Burning Statutes 9
Appendix 11
Appendix A 12
Air Quality Regulations 12
Section 3. Specific Criteria for Sources of Particulate Matter 12
Appendix B 14
Mississippi Forestry Commission's Dispatch Map and Telephone Directory 14
Appendix C 15
National Weather Service Fire Weather Report Zones 15
National Weather Service Forecast and Sample Formats 16
Appendix D 18
Sample Prescribed Burning Plans 18
Basic Prescribed Burning Plan 18
Simple Understory Prescribed Burning Unit Plan 20
Understory Prescribed Burning Unit Plan 22
Postharvest Prescribed burning Unit Plan 24
Appendix E 27
Sample Notarization Form For A Prescribed Burning Plan 27

Appendix F 28
Mississippi Prescribed Burning Act and Other Fire-Related Laws 28
§49-19-301 may be cited as the "Mississippi Prescribed Burning Act." 28
§49-19-305. Definitions. 29
§49-19-307. Regulation of prescribed burns; liability. 29
§95-5-25. By firing woods. 29
§97-17-13. Arson-willfully or negligently firing woods, marsh, meadow, etc. 30
Appendix G 31
Criteria For Certification of Prescribed Burn Managers 31
Appendix H 33
Glossary 33

INTRODUCTION

Prescribed burning is one of the most efficient and cost effective tools available to foresters in the Southeast for understory management, fuel reduction, site preparation and wildlife habitat improvement. It is relied upon and utilized heavily throughout the southern Pine Belt.

For all of its positive and beneficial effects, burning also has a potential negative effect associated with it — smoke. Burning cannot be done without producing some level of smoke. This smoke will impact the area downwind of the burn site or down drainage in the absence of wind. The degree of this impact depends on how much consideration the burner has given to potential problems and any mitigation.

In Mississippi, tens of thousands of acres are planted in pine each year. This acreage, along with the acres previously planted and natural stands, adds up to an enormous amount of acreage that could be burned each year.

In meeting this need, burners must consider the impact of smoke and take steps to manage its impact as much as possible. To do less would open the door for possible regulations severely restricting prescribed burning or banning it completely.

These possibilities cannot be taken lightly. Bans and restrictions on prescribed burning have been considered by the legislatures of other states. Being able to burn as much as is needed is important. Being able to burn at all is more important.

Objectives

This document is intended to provide guidelines forest resource managers which, if properly applied, can reduce the risk of adverse impacts of smoke from forestry or agricultural-related burns on smoke-sensitive areas.

Responsibilities

Maintaining the air quality of Mississippi is the responsibility of the Mississippi Department of Environmental Quality (DEQ). By virtue of their regulations (see Appendix A, page 12), all open burning of waste is prohibited in Mississippi except for "infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land clearing debris, debris from emergency clean-up operations and ordinance."

To conduct an agricultural or forestry burn legally you must:

1. Obtain a burning permit from the Mississippi Forestry Commission.
2. Burn within the time limits specified by the Stagnation Indices (see page 3), which are provided by the Mississippi Forestry Commission when issuing a permit.
3. Not use a starter or auxiliary fuels that produce excessive visible emissions (i.e., do not use rubber tires, plastic materials, etc.).

If these three conditions are met and no local ordinance or burning ban prohibits burning, a burn for a recognized forestry or agricultural practice can be carried out.

BURNING PERMIT SYSTEM

The burning permit system administered by the Mississippi Forestry Commission (MFC) consists of a verbal authorization to burn. A permit is obtained by calling the MFC's District Offices' central radio dispatch (See

Appendix B, page 14.) DEQ's air quality regulations require that anyone conducting a burn for a forestry or agricultural purpose in the State of Mississippi obtain a burning permit. This includes MFC personnel.

The permits issued by the MFC are not "permission to burn". They relate only to air quality. If you receive a permit, it means that at least the minimum atmospheric conditions are present for adequate dispersal of your smoke.

The burner is still responsible for conducting their burn in a reasonable and prudent manner. Regardless of whether you have a permit or not, if an individual smokes in a highway because they burned too close to it or did not pay attention to wind direction, they are still responsible, even though they had a permit. *If you produce smoke, it's yours no matter where it goes or what it does"*

If atmospheric conditions are at the minimum level for adequate smoke dispersal, a permit number will be given to the caller. A written record of the following information is made at the time of the permit request and maintained as a state document.

1. The type burn (agricultural or forestry) and the number of acres involved.
2. The purpose of the burn, if it is a forestry burn.
3. The name of the landowner, and the name, address and phone number of the person responsible for the burn.
4. The legal location of the burn site (40 #, section, township and range).
5. The time period covered by the permit.
6. The permit number.

The first five items must be recorded before a permit will be issued.

Permit Criteria

Permit issuance is based on daily guides consisting of the *mixing height* and *transport wind speed*. (See Glossary, page 33, for definitions.) This information is available through the Internet at http://www.srh.noaa.gov/JAN/. This is the National Weather Service's office in Jackson home page. When it comes up, click on Fire Weather, and then click on Jackson. This information is calculated from upper atmosphere readings utilizing weather balloons released by National Weather Service (NWS) offices. If either of the following two minimum criteria are met a permit number can be given: mixing height and transport wind speed values are 890 meters and 3.0 meters per second or greater respectively, or 500 meters and 3.5 meters per second or greater.

NWS fire weather forecast should be posted by 0700 every morning. No permit can be given before this information has been received. No permits will be issued, if either the mixing height or the transport wind speed do not reach the minimum values. Issuance of permits may be stopped during periods of extreme wildfire weather conditions or wildfire occurrence. Local county governments may also ban burning in their administrative areas during extreme wildfire conditions. The Governor can implement a statewide burning ban, if conditions are warranted. Local ordinances and bans on burning take precedence over a permit. All permits may be revoked, if DEQ notifies the MFC of an air pollution episode.

Another factor that has become a matter of concern to DEQ is ozone. Ozone is a criteria pollutant or one that can affect human health. If an "Ozone Action Day" is declared by DEQ's Executive Director for DeSoto, Hancock, Harrison or Jackson counties, burning is prohibited.

High ozone concentrations are problem is during the hotter months of the year, May through September. This should have little or no effect on understory burning with possibly some impact on site prep burns. The stagnant conditions in which ozone concentrations would present a problem would also have low mixing heights or low transport wind speeds that would make issuing a permit unlikely.

The result of ozone or other pollutant concentrations that exceed EPA standards is that an area being designated non-attainment. If this happens, further development becomes more difficult. No actions that would further degrade air quality are allowed. Industries that produce ozone will not be allowed to build unless the ozone producers in place reduce their ozone emissions so there is “no net gain”. Highway projects have to go through additions levels of evaluation and approval. Economic development could be severely curtailed.

Stagnation Indices

The Stagnation Indices (“Stag Index”) readings are divided into a Daytime Stag Index and a Nighttime Stag Index. They provide information on how long atmospheric conditions will be satisfactory for adequate smoke dispersion, placing a time limit on how long a permit will be valid. The Daytime Stag Index covers the period from sunrise to sunset; the Nighttime Stag Index is for sunset to sunrise and also is used as a basis for issuing permits for night burning. Mixing height and transport wind speed information is not applicable during the night period.

The burning times associated with the Stag Index values are as follows:

Daytime Stagnation Index
0 - Burning permitted from sunrise until sunset
1 - Burning permitted from 1 hour after sunrise until sunset
2 - Burning permitted from 2 hours after sunrise until sunset
3 - Burning permitted from 2 hours after sunrise until l hour before sunset

Nighttime Stagnation Index
0 - Night burning permitted from sunset until sunrise
1 - Night burning permitted until 2 hours before sunrise
2 - Night burning permitted until 4 hours after sunset
3 - Night burning not permitted

The values of both Stag Indices range from zero to three. A value of zero indicates the best conditions for smoke dispersion and therefore has a longer burning period. A Stag Index of three indicates stagnant conditions, with the worst smoke dispersion conditions and has a correspondingly shorter burning time.

A burn must be concluded, the fire substantially burned out and little or no smoke being produced by the cutoff time indicated.

Weather Information (Availability And Format)

Mixing heights and transport wind speeds are calculated from weather computer models. TWS can also be obtained from Doppler radar readings. This information is interpolated with adjacent states' readings and forecast for each zone. The Stagnation Indices are also made available.

Changes in the NWS have moved responsibility for the forecast for North and South Mississippi from Jackson and distributed it to the Mobile, AL, New Orleans/Baton Rouge, LA and Memphis, TN offices of the NWS (See

Appendix C on page 15). Forecast emphasis has shifted more to severe weather and emergency forecasting. Although some weather information is only made available for federal agencies, forestry fire suppression and smoke management forecasts are still available to prescribed burners.

This forecast includes mixing heights and transport wind speed. These measurements indicate the level of atmospheric stability, which affects fire intensity. The stagnation index portion of the forecast also is an indicator of the level of atmospheric stability.

The mixing height and transport wind speed is used for permit issuance. Other information in the Forestry Fire Forecast includes typical weather elements, such as cloud conditions, temperature, relative humidity; morning and afternoon wind speed and wind shifts; the chance, duration, type and amount of precipitation, as well a beginning and ending time for forecast precipitation. Information relating to the mixing height and transport wind speed, specifically the 500-meter mixing-height temperature, 500 meter transport wind speed, transport wind direction and 500 meter transport wind direction are also forecast. Mixing height and transport wind speed information is given in both English and Metric values.

The 500 meter mixing height temperature is the air temperature at which the early morning temperature inversion has lifted to the minimum mixing height of 500 meters, necessary for permit issuance. When that same temperature is reached in the late afternoon or early evening, as daytime temperatures cool, the mixing height falls back to 500 meters from its maximum height predicted in the forecast.

The significance is that smoke dispersion conditions usually improve from morning to mid-afternoon and worsen from late afternoon into the evening and after nightfall. The 500 meter transport wind speed given in conjunction with the 500 meter mixing height temperature is the transport wind speed when 500-meter mixing-height temperature is reached. The direction of the transport wind speed at the 500 meter level and at the forecast mixing height is also given.

When the National Weather Service split the forecasting responsibilities for Mississippi, one condition was that each forecast office would provide all of the weather information that the office previously forecasting for an area had provided. As their areas of responsibilities included portions of the surrounding states, there are several pieces of information that are not currently used in Mississippi. These include the ventilation index, category day, LASI and stability.

SMOKE MANAGEMENT GUIDELINES

Prescribed burning to varying degrees does contribute to air pollution. If applied carelessly, it can result in damage to timber resources or a “smoke incident.”

Prescribed Burning Plan

The use of prescribed burning carries with it the obligation and responsibility to minimize adverse effects to air quality and the chance of a smoke-related accident from occurring. This is best accomplished by utilizing a prescribed burning plan.

A prescribed burning plan should fit the complexity of the site on which it is being used. It does not need to be overly complex, but should cover the essentials of weather, terrain and fuels that allow a burn to accomplish its objectives without incident. (See Appendix D, page 18, for examples.) The minimum requirements for information that a prescribed burning plan should contain are as follows:

1. Personal information to include:
    a. Name of property owner
    b. Owner's mailing address
    c. Owner's phone number
    d. Same information (above) on the individual preparing the plan and/or executing the burn
    e. Date prescription was prepared
2. Stand Description to include:
    a. County in which site is located
    b. Location to 40#, section, township and range
    c. Number of acres to be burned
    d. Type and size of overstory
    e. Type and size of understory
    f. Fuel type
    g. Topography
3. Management objective of the burn
4. Pre-burn information to include:
    a. Estimate of needed manpower and equipment
    b. Firing techniques to be used
    c. List of areas around site that could be adversely impacted by smoke from the burn (As delineated by the smoke management screening system explained on page 6.
    d. An additional source of information is *A Guide to Prescribed Fire in Southern Forests*, USDA Forest Service Publication R8-TP11.)
5. Range of desired weather to include:
    a. Surface wind speed and direction
    b. Minimum and maximum relative humidity
    c. Maximum temperature
    d. Transport wind speed
    e. Mixing height
    f. Stagnation Index

The prescribed burning plan must be prepared before carrying out a prescribed burn. Also, the date of the plan must be documented by having the plan notarized before doing the burn. (See Appendix E, page 27, for a sample notarization form.)

On the day the burn is done, the following information must be recorded on the burning plan:

- Burning permit number
- Time of day the permit is in effect as determined by the Stagnation Index reading.

Smoke Management Screening System

An integral part of any prescribed burning plan should be consideration for managing the smoke. Smoke management is a complex problem, but applying the smoke screening system explained below can indicate potential smoke-sensitive areas. No system (at this time) can provide exact predictions on what smoke may do. The screening system does not consider all variables, but does offer broad guidelines.

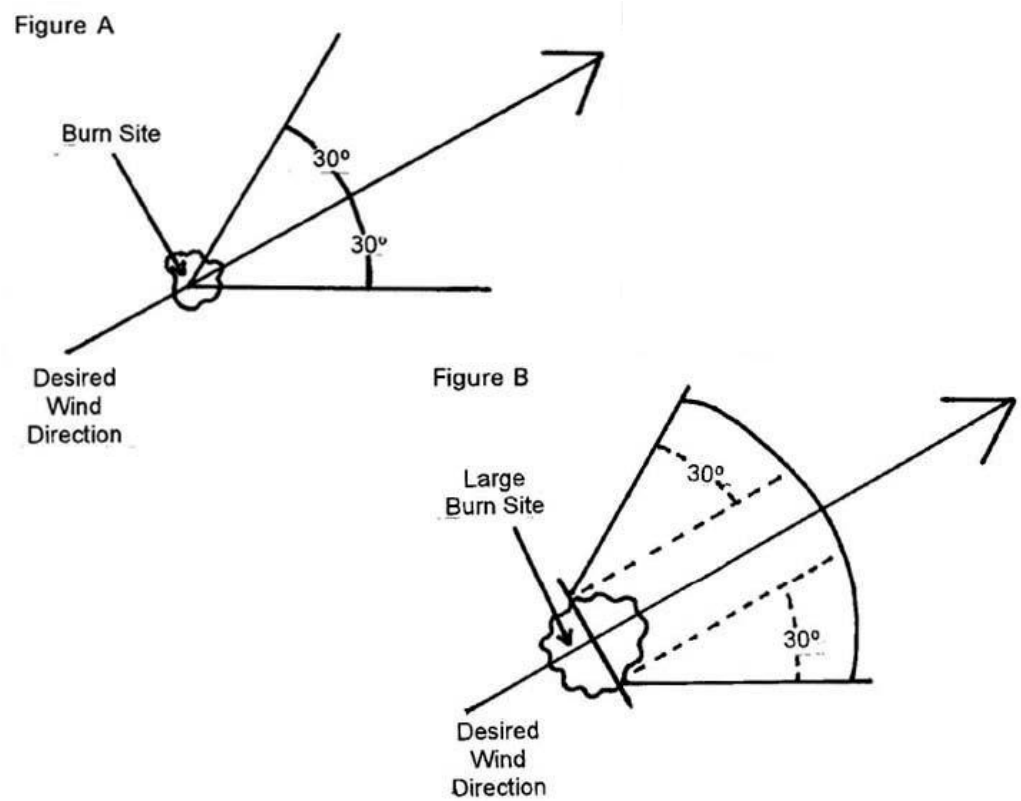
The screening system's intent is to minimize the impact of smoke downwind from the burn site and indicate when the resource manager should be able to burn without causing a smoke problem. The screening system has five steps:

1. Plot direction of smoke plume
2. Identify smoke-sensitive areas
3. Identify critical smoke-sensitive areas
4. Determine fuel type
5. Minimize risk

Step One: Plot Direction of the Smoke Plume

A. Locate the burn on a map upon which smoke-sensitive areas can be identified. Draw a line from the burn site representing the desired wind direction. If burn will last 3 or more hours, draw another line showing predicted wind direction for completion of the burn. Plot the anticipated downwind smoke movement a distance of:
   1. 5 miles for grass fuels regardless of fire type.
   2. 10 miles for palmetto-gallberry fuels when using line-backing or spot fires.
   3. 20 miles for palmetto-gallberry fuels using line-heading fires.
   4. 30 miles for all logging debris fires.
   5. 5 miles for line-backing fires in all other fuel types.
   6. 10 miles for line-heading fires in all other fuel types and for burns of 250 acres or more.

B. To allow for horizontal dispersion of smoke as well as shifts in wind direction, draw two other lines from the burn's location at an angle of 30 degrees from the centerline(s) of the desired wind direction. If the fire location is represented as a spot, draw as in Figure A. If the size of the burn is larger than 250 acres, draw as in Figure B. The result is your probable daytime smoke impact area.



C. Look down drainage for one-half the distance determine above, but do not spread out except to cover any river valleys or creek bottoms. The result is your probable nighttime impact area, providing the burn

will be completed at least 3 hours before sunset, and providing the forecast night winds are light and variable.

Step Two: Identify Smoke-Sensitive Areas

Identify and mark any smoke-sensitive areas (e.g., airports, highways, communities, recreation areas, schools, hospitals and factories) within the impact zone plotted in Step One. These areas are potential targets for smoke from your burn.

A. If no potential targets are found, you may burn as prescribed.
B. If the area to be burned contains organic soils that are likely to ignite, do not burn.
C. If any targets are found, continue this screening system.

Step Three: Identify Critical Smoke-Sensitive Areas

A. Critical smoke-sensitive areas are:
   1. Those that already have an air pollution or visibility problem.
   2. Those within the probable smoke impact area as determined below. If the downwind smoke movement distance determined in Step 1 was:
      a. 5 miles, then any smoke-sensitive area within ½ mile of burn site is critical, both downwind and down-drainage.
      b. 10 miles, then any smoke-sensitive area within 1 mile of burn site is critical.
      c. 20 miles, then any smoke-sensitive area within 2 miles of burn site is critical.
      d. 30 miles, then any smoke-sensitive area within 3 miles of burn site is critical.
B. If any critical smoke-sensitive areas are located, **DO NOT BURN** under present prescription!
   1. Prescribe a new wind direction that will avoid such targets and return to the beginning of this screening system, or
   2. If smoke-sensitive area is in the last half of the distance criteria determined from Step 3 A 2, reduce the size of the area to be burned by approximately one half, complete burn at least 3 hours before sunset, and aggressively mop up and monitor, or
   3. Use an alternative other than burning.
C. If no critical smoke-sensitive areas are found, or criteria B1 or B2 is met, continue the screening system.

Step Four: Determine Fuel Type

The smoke produced may vary greatly by type, amount and condition of fuel consumed.

A. From the list below determine which broad-type fuel applies.
   1. Grass (with pine overstory)
   2. Light brush
   3. Pine needle litter
   4. Palmetto-gallberry
   5. Windrowed logging debris
   6. Scattered logging debris or small dry piles
B. Review fuel categories or combinations.
   1. If the fuel type is described by one of the above categories, continue.
   2. If the fuel type is not comparable to any of the above, pick the fuel type for which fire behavior and smoke production will most nearly compare and proceed with **EXTREME CAUTION.**
C. If the fuel type is windrowed logging debris, and you have identified smoke-sensitive areas, **DO NOT BURN** under present prescription. Smoke production will be great and can last for weeks.
   1. Prescribe a new wind direction to avoid all smoke-sensitive areas and return to the beginning of the system.
   2. If you cannot avoid all smoke-sensitive areas, you will need a better procedure than this simple screening system. Refer to the *Southern Forestry Smoke Management Guidebook* or use computer

software program *PRESMOK*. (Available from the U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station, USDA Forest Service General Technical Report SE-10). **Note: This publication is out of print and may be difficult to obtain.**

D. If the fuel type is scattered logging debris or small, essentially dirt-free, dry piles, the following conditions should be met:
   1. Size of area to burn should be less than 100 acres if hand ignition is used. Aerial ignition would give the capability of burning a larger area in the same or a shorter amount of time. However, no studies have been done to determine how large an area can be safely burned under these conditions. If aerial ignition is used on burns larger than 100 acres, the size of the area, the amount of smoke produced and, most importantly, the allowable burning time as determined by the Stagnation Indices must be considered and due caution used in executing a burn under these circumstances.
   2. There are no major highways within 5 miles down-drainage.
   3. There are no other smoke-sensitive areas within 3 miles down-drainage.
   4. If relative humidity is predicted to stay below 80 percent and surface winds above 4 mph all night, the distances in 2 and 3 above can be cut in half.

E. If your comparable fuel type is one listed in Step 4A, determine your total per-acre fuel loading. (See below or refer to the *Southern Forestry Smoke Management Guidebook* for additional information.)
   1. If fuel volume is less than 10 tons/acre, continue. Generally, the total fuel loading will be less than 10 tons/acre for the given age of the fuel types listed below:
      a. Grass (with pine overstory), any age. Also wheat fields and other agricultural burns.
      b. Light brush, 7 years old or less (10 years if overstory basal area is under 100 square feet per acre).
      c. Loblolly pine with
         1. Palmetto-gallberry understory, 7 years old or less; if overstory basal area is under 150 square feet per acre.
         2. Little or no understory, 15 years old or less if overstory basal area is under 150 square feet per acre.
      d. Slash pine with
         1. Palmetto-gallberry understory, 5 years old or less if overstory basal area is under 150 square feet per acre.
         2. Little or no understory, 8 years old or less if overstory basal area is under 150 square feet per acre.
   2. If fuel volume is greater than 10 tons/acre, refer to the *Southern Forestry Smoke Management Guidebook* or double the distance determined in Step 1A. Use one and a half times (1.5) the distance, if fuel loading is close to 10 tons/acre.

Step Five: Minimize Risk

To meet your smoke management obligations when smoke-sensitive areas may be affected by the burn, all of the following criteria must be met to minimize any possible adverse effects:

- Either/or of the following. Mixing height is 1,650 feet (500 meters) and transport wind speed is 8 mph (3.5 meters per second) or mixing height 2920 feet (890 meters) and transport wind speed is 6.7 mph (3 meters per second).
- Background visibility is at least 5 miles within the plotted area.
- If rough is older than 2 years, use a backing fire. If burn can be completed 3 hours before sunset, or if no smoke-sensitive areas are located in the first half of the impact area, other firing techniques can be used.
- Promptly mop up and monitor to minimize smoke hazards.

- If a smoke-sensitive area is impacted by smoke from two fires, it should be at least a mile from either fire. If one of the fires involves logging debris, the distance should be two miles from either fire.
- For night burns, backing fires with surface wind speed greater than 4 mph and relative humidity under 80 percent should be present.
- Make use of "Smoke Ahead" warning signs to caution motorists (signs should meet the Department of Transportation's regulations for size, shape and color). Make night checks to detect possible smoke problems.
- There should be no fog predicted for the time the burn will take place or during the period that residual smoke may be produced.
- If it appears that stumps, snags, or logs may cause a residual smoke problem, take steps to keep them from burning. If they ignite, extinguish them.
- If the prescribed burn complies with all the conditions outlined, the manager should be able to burn without causing a smoke problem. If the manager has marginal or negative answers that place a burn outside the screening system's guidelines, the final decision of whether or not the burn can be conducted safely should be based on the manager's prescribed burning experience.

In addition to the smoke screening system, the following list can also aid in reducing potential smoke impacts.

A Smoke Manager's Checklist

☐Have definite, defensible resource objectives
☐Obtain and use weather and smoke management forecasts.
☐Don't burn during pollution alerts or stagnant atmospheric conditions.
☐Comply with air pollution control regulations.
☐Burn when conditions are good for rapid smoke dispersion.
☐Use caution when burn site is near or upwind of smoke-sensitive areas.
☐Use caution when smoke-sensitive areas are down-drainage.
☐Prior to burning, notify your local fire control office, nearby residents, and adjacent landowners.
☐Use test fires to confirm smoke behavior.
☐Use backing fires when possible.
☐Consider burning in small blocks.
☐Do not ignite organic soils.
☐Be very cautious of nighttime burning.
☐Anticipate down-drainage smoke flow.
☐Mop up along roads.
☐Have an emergency plan.

Mississippi Prescribed Burning Statutes

In the 1993 Legislative Session the Mississippi Prescribed Burning Act was passed. These statutes (see Appendix F, page 28), which became effective March 1, 1993, recognized prescribed burning as a landowner property right and a land management tool. It specifically authorizes and promotes the continued use of prescribed burning.

The statutes go on to say that "No property owner or his agent shall be liable for damage or injury caused by fire or resulting smoke unless negligence is proven." This is in effect if the prescribed burning is accomplished when:

At least one certified prescribed burn manager supervises the burn. (The criteria to become a Certified Prescribed Burn Manager are in Appendix G, page 31.)

1. A written prescription (prescribed burning plan) is prepared and notarized prior to the burn.
2. A burning permit is obtained from the Mississippi Forestry Commission.
3. The burn is considered in the public interest and does not constitute a public or private nuisance when done according to state Air Quality Regulations applicable to prescribed burning (see Appendix A, page 12).

The evaluation of completed burns was not addressed by the legislature. If an evaluation is made, it is at the individual burner's discretion.

APPENDIX

Appendix A 12
Air Quality Regulations 12
Section 3. Specific Criteria for Sources of Particulate Matter 12
Appendix B 14
Mississippi Forestry Commission's Dispatch Map and Telephone Directory 14
Appendix C 15
National Weather Service Fire Weather Report Zones 15
National Weather Service Forecast and Sample Formats 16
Appendix D 18
Sample Prescribed Burning Plans 18
Basic Prescribed Burning Plan 18
Simple Understory Prescribed Burning Unit Plan 20
Understory Prescribed Burning Unit Plan 22
Postharvest Prescribed burning Unit Plan 24
Appendix E 27
Sample Notarization Form For A Prescribed Burning Plan 27
Appendix F 28
Mississippi Prescribed Burning Act and Other Fire-Related Laws 28
§49-19-301 may be cited as the "Mississippi Prescribed Burning Act." 28
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Appendix G 31
Criteria For Certification of Prescribed Burn Managers 31
Appendix H 33
Glossary 33

APPENDIX A

Air Quality Regulations

The Mississippi Department of Environmental Quality monitors the compliance of air quality regulations. Listed below are the air quality regulations pertaining to prescribed burning. This information has been taken from *Air Emission Regulations for the Prevention, Abatement and Control of Air Contaminants* (Regulation APC-S-1, amended November 16, 2006), a publication of the Mississippi Department of Environmental Quality.

Section 3. Specific Criteria for Sources of Particulate Matter

7. Open Burning. The open burning of residential, commercial, institutional, or industrial solid waste, is prohibited. This prohibition does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, debris from emergency clean-up operations, and ordnance; and permitted open burning at hazardous waste disposal facilities subject to regulation under Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA).
   a) Fires set for the burning of agricultural wastes in the field and/or silvicultural wastes for forest management purposes must meet the following conditions.
      1. A Permit must be obtained from the Mississippi Forestry Commission when there is a Forestry Commission tower serving the area in which the burning occurs.
      2. The open burning must occur within a time period allowing adequate diffusion of air pollutants as defined by the permit and the daily weather guides issued by the National Weather Forecast Office.
      3. Starter or auxiliary fuels may consist of dried vegetation, petroleum derived fuels of the gasoline, kerosene, or light fuel oil types (diesel), or a combination thereof. Use of or burning of other combustible material that causes excessive visible emission (e.g., rubber tires, plastic materials, etc.) is prohibited.
   b) Open burning of land-clearing debris must not use starter or auxiliary fuels which cause excessive smoke (rubber tires, plastics, etc.); must not be performed if prohibited by local ordinances; must not cause a traffic hazard; must not take place where there is a High Fire Danger Alert declared by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.
      1. Open burning without a forced-draft air system must not occur within 500 yards of an occupied dwelling.
      2. Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within 50 yard of an occupied dwelling.
      3. Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator.
      4. Permitted open burning at a hazardous waste disposal facility subject to regulation under Subtitle C of RCRA is considered a stationary source of air pollution subject to Mississippi air emission permitting regulations.
      5. Ozone Action Days in DeSoto County, Hancock County, Harrison County and Jackson County. In DeSoto County, Hancock County, Harrison County, or Jackson County, open burning of agricultural wastes and silvicultural wastes described in 7(a) above, open burning of land-clearing debris described in 7(b) above, and permitted open burning at a hazardous waste disposal facility described in 7(c) above are prohibited in said county when an Ozone Action Day

is declared by the Executive Director for the county (ies). Ozone Action Days shall be noticed the evening before on the MDEQ website at http://deq.state.ms.us, and/or with local news media. The Mississippi Department of Transportation, Mississippi State Forestry Commission and local fire officials shall also be notified the evening before an Ozone Action Day.

APPENDIX B

Mississippi Forestry Commission's Dispatch Map and Telephone Directory

twiceTHINK

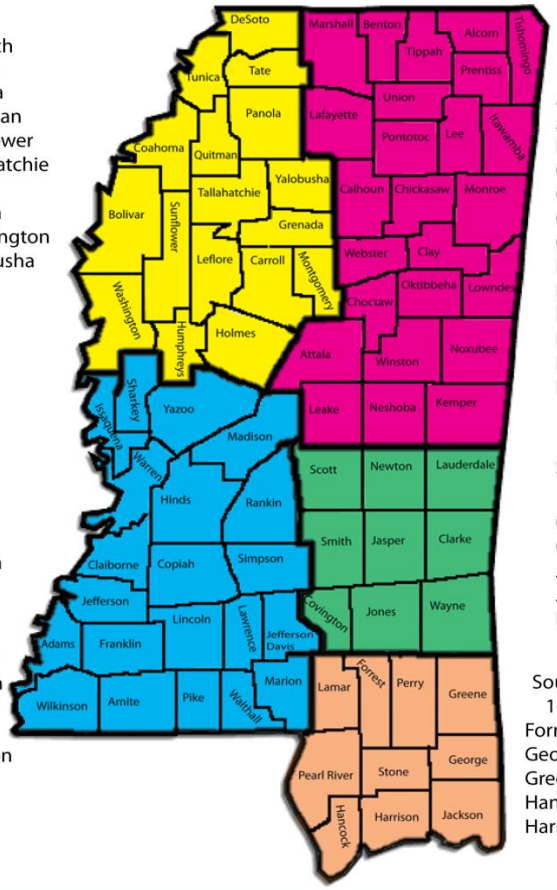
Before You Do Any Outdoor Burning!

Mississippi Forestry Commission Central Dispatch Regions

To obtain a burning permit or to report a wildfire, call the appropriate Central Dispatch number

Northwest Dispatch
1-877-226-5414

Bolivar, Carroll, Coahoma, DeSoto, Grenada, Holmes, Humphreys, Leflore, Montgomery, Panola, Quitman, Sunflower, Tallahatchie, Tate, Tunica, Washington, Yalobusha



Northeast District
1-800-681-8760

Alcorn, Attala, Benton, Calhoun, Chickasaw, Choctaw, Clay, Itawamba, Kemper, Lafayette, Leake, Lee, Lowndes, Marshall, Monroe, Neshoba, Noxubee, Okitbbeha, Pontotoc, Prentiss, Tippah, Tishomingo, Union, Webster, Winston

Southwest Dispatch
1-888-823-3473

Adams, Amite, Claiborne, Copiah, Franklin, Hinds, Issaquena, Jefferson, Jefferson Davis, Lawrence, Lincoln, Madison, Marion, Pike, Rankin, Sharkey, Simpson, Walthall, Warren, Wilkinson, Yazoo

South Central Dispatch
1-800-736-9115

Clarke, Covington, Jasper, Jones, Lauderdale, Newton, Scott, Smith, Wayne

Southeast Dispatch
1-800-240-5161

Forrest, George, Greene, Hancock, Harrison, Jackson, Lamar, Pearl River, Perry, Stone

Mississippi Forestry Commission
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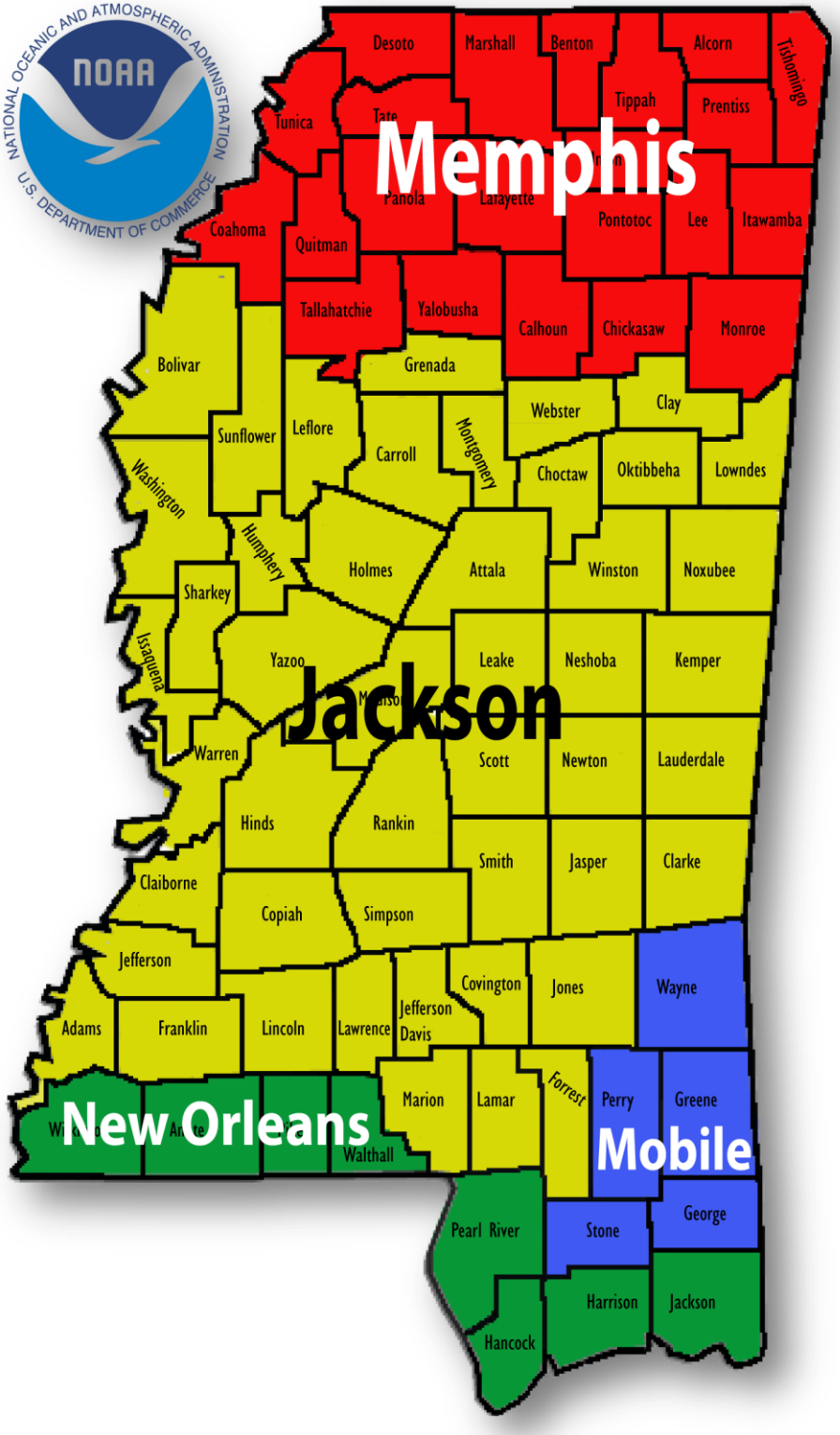
APPENDIX C

National Weather Service Fire Weather Report Zones



National Weather Service Forecast and Sample Formats

Routine Fire Wx Fcst (With/Without 6-10 Day Outlook)

Issued by NWS Memphis, TN

Current Version | Previous Version | Graphics & Text | Print | Product List | Glossary On
Versions: **1** 2 3 4 5 6

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000
FNUS54 KMEG 132100
FWFMEG

FIRE WEATHER PLANNING FORECAST FOR THE MIDSOUTH
NATIONAL WEATHER SERVICE MEMPHIS TN
300 PM CST THU DEC 13 2012

.DISCUSSION...
DRY CONDITIONS ARE EXPECTED TO CONTINUE TOMORROW. AFTERNOON
RH`S WILL DROP INTO THE LOW  30S...POSSIBLY UPPER 20S FOR A
COUPLE OF HOURS.  WINDS WILL REMAIN LIGHT.  MOISTURE WILL
RETURN TO THE AREA OVERNIGHT WITH SHOWERS AND THUNDERSTORMS
EXPECTED ON SATURDAY.  TRANSPORT WINDS WILL REMAIN FROM THE
SOUTH...INCREASING TO 30 MPH ON SATURDAY.


MSZ001-007-008-010>012-020-021-141115-
COAHOMA-DESOTO-PANOLA-QUITMAN-TALLAHATCHIE-TATE-TUNICA-YALOBUSHA-
INCLUDING...NORTHWEST MISSISSIPPI...
SOUTH UNIT HOLLY SPRINGS NATIONAL FOREST
300 PM CST THU DEC 13 2012

                      TONIGHT      FRI          FRI NIGHT    SAT

CLOUD COVER           CLEAR        MCLEAR       MCLDY        MCLDY
PRECIP CHANCE (%)     0            0            60           60
PRECIP TYPE           NONE         NONE         SHOWERS      TSTMS
PRECIP AMOUNT (IN)    0.00         0.00         0.08         0.09
PRECIP DUR (HRS)                                5            9
PRECIP BEGINS                                   6 PM         CONTINUING
PRECIP ENDS                                     CONTINUING   CONTINUING
TEMP (24H TREND)      34 (+7)      60 (+4)      48           66
RH % (24H TREND)      90 (-2)      38 (+12)     94           65
AM 20 FT WIND (MPH)                SE 2-6                    S 10-14 G21
PM 20 FT WIND (MPH)   LGT/VAR      SE 3-7       SE 2-6       S 11-15 G21
MIXING HGT (M-AGL)                 1107                      578
MIXING HGT (FT-AGL)                3633                      1896
MIXING HGT (M-MSL)                 1179                      650
MIXING HGT (FT-MSL)                3868                      2131
TRANSPORT WND (M/S)                S  5                      S 12
TRANSPORT WND (MPH)                S 12                      S 28
VENT INDEX (M2/S)                  5895                      7800
CATEGORY DAY                       3                         3
500M MIX HGT TEMP (F)              58                        62
500M TSPT WIND (M/S)               S  6                      S 13
500M TSPT WIND (MPH)               S 12                      S 29
DISPERSION INDEX      4            34           15           58
LAL                   1            1            1            2
LASI                  4            4            2            2
LVORI                 2            2            0            0
STABILITY             F            C            D            D
STAGNATION INDEX      3            3            0            0
```

.FORECAST FOR DAYS 3 THROUGH 7...

.SATURDAY NIGHT...A CHANCE OF SHOWERS AND A SLIGHT CHANCE OF THUNDERSTORMS. MOSTLY CLOUDY. LOWS IN THE MID 50S. SOUTHWEST WINDS 5 TO 10 MPH.
.SUNDAY...A CHANCE OF SHOWERS. PARTLY SUNNY. HIGHS IN THE MID 60S. MINIMUM RH 66 PERCENT. SOUTHWEST WINDS 5 TO 10 MPH.
.SUNDAY NIGHT...A SLIGHT CHANCE OF SHOWERS. PARTLY CLOUDY. LOWS IN THE MID 40S. WEST WINDS AROUND 5 MPH.
.MONDAY...MOSTLY SUNNY. HIGHS IN THE LOWER 60S. MINIMUM RH 51 PERCENT. NORTHWEST WINDS AROUND 5 MPH.
.MONDAY NIGHT...PARTLY CLOUDY. LOWS IN THE UPPER 30S. NORTH WINDS AROUND 5 MPH.
.TUESDAY...MOSTLY SUNNY. HIGHS IN THE MID 50S. MINIMUM RH 53 PERCENT. NORTH WINDS AROUND 5 MPH.
.TUESDAY NIGHT...MOSTLY CLEAR. LOWS IN THE UPPER 30S. SOUTH WINDS 5 TO 10 MPH.
.WEDNESDAY...SUNNY. HIGHS IN THE LOWER 60S. MINIMUM RH 48 PERCENT. SOUTH WINDS 5 TO 10 MPH.
.WEDNESDAY NIGHT...MOSTLY CLOUDY. LOWS IN THE UPPER 40S. SOUTH WINDS 5 TO 10 MPH.
.THURSDAY...MOSTLY CLOUDY. HIGHS IN THE LOWER 60S. MINIMUM RH 54 PERCENT. SOUTHWEST WINDS AROUND 10 MPH BECOMING WEST IN THE AFTERNOON.

APPENDIX D

Sample Prescribed Burning Plans

Basic Prescribed Burning Plan

Simple Understory Prescribed Burning Unit Plan

Understory Prescribed Burning Unit Plan

Postharvest Prescribed burning Unit Plan

BASIC PRESCRIBED BURNING PLAN

OWNER OR ADMINISTRATING AUTHORITY

Name: _____

Address: _____

City: _____ State: _____ Zip:: _____

BURN PLANNER

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

PURPOSE(S) OF BURN: ☐ Site Prep ☐ Fuel Reduction ☐ Control Undesirable Species ☐ Wildlife ☐ Disease Control ☐ Other _____

STAND INFORMATION:

1. Location: Forty _____ Section _____ Township _____ Range _____
2. Overstory _____
3. Understory _____
4. Fuels _____
5. Topography _____

PRE-BURN INFORMATION:

1. # Acres to be burned _____
2. Fuel Model(s) _____
3. # Personnel _____
4. # Chains to plow _____
5. Estimated Fuel Loading _____ Tons/ac
6. Time of day to start _____
7. # and type of equipment: ☐ Tractor/plows _____ ☐ Engines _____ ☐ ATVs _____ ☐ Other _____
8. List smoke sensitive targets: _____
9. List critical smoke sensitive targets: _____
10. If any of areas in item nine are in the downwind smoke impact area and the burn is to be executed under those conditions, list mitigation measures to reduce smoke impact to acceptable levels.
11. Check firing techniques to be used and detail how they are to be applied. ☐ Backfire ☐ Strip backfire ☐ Strip head ☐ Head fire ☐ Flank ☐ Spot fire ☐ Ring fire ☐ Other _____
    Detail the firing sequences. _____
12. List any special precautions: _____
13. Who to notify (if needed): _____

BASIC PRESCRIBED BURNING PLAN

RANGE OF DESIRED WEATHER:

1. Surface wind speed _____
2. Wind Direction ☐ North ☐N East ☐N West ☐ East ☐ S East ☐ South ☐ S West ☐ West
3. Transport wind speed _____
4. Mixing height _____
5. Stagnation Index _____
6. Relative Humidity _____
7. Temperature _____
8. Drought Index (KDBI) _____
9. 10 hr Fuel Moisture _____

ACTUAL WEATHER:

1. Surface wind speed _____
2. Wind Direction ☐ North ☐ N East ☐ N West ☐ East ☐ S East ☐ South ☐ S West ☐ West
3. Transport wind speed _____
4. Mixing height _____
5. Stagnation Index _____
6. Relative Humidity _____
7. Temperature _____
8. Drought Index (KDBI) _____
9. 10 hr Fuel Moisture _____

BURN PLANNER (signature): _____ **DATE:** _____

SUMMARY OF BURN:

1. Acres burned _____
2. Date burned _____
3. Time Set _____
4. Firing Techniques: ☐ Backfire ☐ Strip Backfire ☐ Stip head ☐ Head fire ☐ Flank ☐Spot fire ☐Ring fire ☐ Other:
5. Permit number _____
6. Time permit expired: _____

BURN PLANNER (signature): _____ **DATE:** _____

SIMPLE UNDERSTORY PRESCRIBED BURNING UNIT PLAN

Landowner: _____ Permit #: _____ Time In Effect: _____

Address: _____ Phone #: _____

Location: S _____ T _____ R _____ Previous Burn Date: _____

County _____ Acres to burn _____

Purpose Of Burn: _____

(Draw map on back or attach)

STAND DESCRIPTION:

Overstory type & size _____ Height to bottom of crown: _____

Understory type &height _____

Dead fuels: description & amount _____

Topography _____

PREBURN FACTORS

Manpower & equipment needs _____

List smoke-sensitive areas & located on map _____

Special precautions _____

Estimated # hours to complete _____ Passes smoke screening system _____

Adjacent landowners to notify _____

WEATHER FACTORS	Desired Range	Predicated	Actual
Surface winds (speed & direction)			
Transport (seed & direction)			
Minimum mixing height			
Stagnation Index			
Minimum relative humidify			
Maximum temperature			
Fine-fuel moisture (%)			

Days since rain _____ Amount: _____

FIRE BEHAVIOR	Desired Range	Actual
Type Fire		
Best month to burn		
Flame length		
Rate of spread		
Inches of litter to leave		

EVALUATION (IMMEDIATE)

Any escapes? ☐Yes ☐No Acreage _____

Objective met? ☐Yes ☐No

EVALUATION (FUTURE)

Evaluation by _____

Date

SIMPLE UNDERSTORY PRESCRIBED BURNING UNIT PLAN

Smoke problems? ☐Yes ☐No _____

% of area with crown discoloration ☐ 5- 25% ☐26-50% ☐51-75% ☐76+

Live crown consumption _____

% understory veg. consumed _____

Technique used ok _____

Insect/Disease dam. _____

Crop tree mortality _____

% understory kill _____

Soil movement _____

Other adverse effects _____

Remarks _____

Remarks: _____

Plan prepared by _____ Date _____

Address (Complete) _____

Phone Number _____

UNDERSTORY PRESCRIBED BURNING UNIT PLAN

Burning Unit # _____ S _____ T _____ R _____ Gross Acres _____ Net Acres _____
Landowner _____ Phone # _____
Address _____

A. RECORD OF PREVIOUS BURNING: Date _____ Fire Type _____ Results _____

B. DESCRIPTION OF STAND

1. Overstory: Type, density, size _____ Height to bottom of crown _____
2. Understory: type, density, height _____
3. Dead fuels: Type, density, age, volume _____
4. Soil type and topography _____

C. PURPOSE(S) OF BURN: _____

(Draw map on back or attach)

D. SPECIFIC OBJECTIVE: _____

E. PREBURN FACTORS:

1. Chains to plow (See Map) _____ Exterior _____ Interior _____ Total _____
2. Chains to fire (See Map) _____ Exterior _____ Interior _____ Total _____
3. Crew Size _____ Equipment Needs _____
4. Estimated tons/acres _____ Total tons to be burned _____
5. Ignition procedure (See Map) _____
6. Passed screening system? _____ Special precautions _____
7. Notify _____
8. Regulations that apply _____
9. List smoke-sensitive areas & critical targets (See Map) _____

F. WEATHER FACTORS

	Desired Range	Predicated	Actual
1. Surface winds (speed & dir.)			
2. Transport (Speed & dir.)			
3. Stagnation Index			
4. Minimum mixing height			
5. Dispersion index			
6. Minimum relative humidify			
7. Maximum temperature			
8. Fine-fuel moisture (%)			

9. Day since rain _____ Amount _____
10. Burning index _____ Drought Index _____

UNDERSTORY PRESCRIBED BURNING UNIT PLAN

G. FIRE BEHAVIOR

	Desired Range		Actual
1. Type fire	_____	Type of fire	_____
2. Best month to burn	_____	Date burned	_____
3. Time of day to start	_____	Time set	_____
4. No. hours to complete	_____	Completed	_____
5. Flame length	_____		_____
6. Rate of spread	_____		_____
7. Inches of litter to leave	_____	Litter left	_____

H. EVALUATION

	Immediately after burn:		Future
1. Acres burned	_____		Evaluation by _____
2. Spotting	☐Yes ☐No	Distance _____	Date made _____
3. Any escapes?	☐Yes ☐No	_____	Insect/disease dam. _____
4. Objective met?	☐Yes ☐No	_____	_____
5. Smoke Problems?	☐Yes ☐No	_____	Crop tree mortality _____
6. % understory veg. consumed		_____	_____
7. % of area with crown discoloration			% understory kill _____
☐ 5- 25% ☐26-50% ☐51-75% ☐76+			
8. Live crown consumption		_____	Soil movement _____
9. Adverse publicity		_____	Other adverse effects _____
10. Remarks			Remarks _____
_____			_____

Plan prepared by _____ Date _____

Address (Complete) _____

Phone # _____ Permit # _____ Time in effect _____

POSTHARVEST PRESCRIBE BURNING UNIT PLAN

Landowner _____

Address _____ Phone # _____

Burning unit # _____ S _____ T _____ R _____ Gross Acres _____ Net Acres _____

Purpose of burn _____

(Draw map on back or attach)

A. DESCRIPTION OF AREA:

1. Natural stand or plantation _____ Stand Age _____ Harvest Date _____
2. Clearcut _____ Harvest method _____ Pine basal area removed _____
3. Organic soil _____ Hardwood basal area _____ Hardwoods utilized _____
4. Unmerchantable tree felled _____ Snags felled _____ Debris evenly distributed _____
5. Debris (light, medium or heavy) _____ Brush (light, medium or heavy) _____
6. Herbaceous fuels (light, medium or heavy) _____ Herbaceous fuels continuous _____
7. Herbicide used _____ Date applied _____
8. Drum chopped _____ Single or double pass _____ Date applied _____
9. Windrowed and/or piled _____ Date piled _____ Piled when wet _____
10. Pile or windrow dimensions Height _____ Width (diameter) _____
11. Windrow break interval _____
12. Topography _____

B. PREBURN FACTORS AND DESIRED FIRE INTENSITY:

1. Areas to exclude _____
2. Chains to plow (see map) Exterior _____ Interior _____ Total _____
3. Chains to fire(see map) Exterior _____ Interior _____ Total _____
4. Equipment needs _____
5. Crew size _____ Type of fire _____ Type of ignition _____
6. Ignition procedure (see map) _____
7. No. of hours to complete _____ Tons/acres to consume _____ Litter to leave (in.) _____
8. Special precautions _____
9. Notify _____

_____

10. Regulations that apply _____
11. Passed on screening system? _____ List smoke-sensitive areas, critical targets & locate on map.

_____

C. WEATHER FACTORS	DESIRED RANGE	PREDICATED	ACTUAL
1. Surface winds (speed & dir.)			
2. Transport (speed & dir.)			
3. Stagnation Index			
4. Minimum mixing height			
5. Dispersion index			
6. Minimum relative humidify			
7. Maximum temperature			

POSTHARVEST PRESCRIBE BURNING UNIT PLAN

8. Fire-fuel moisture % _____ _____ _____
9. Days since rain _____ Amount _____
10. Burning index _____ Drought index _____

11. Best month to burn _____ Dates Burned _____
12. Time of day to start _____ Time Set _____

D. SUMMARY OF BURN:

1. Type fire & ignition _____
2. All piles, windrows & logging decks ignited _____
3. % of area burned _____ Did area between piles burn? _____
4. Spotting frequency _____ Distance _____ Firebrand material _____

E. EVALUATION IMMEDIATELY AFTER BURN:

1. Any escapes? Number _____ Adjacent to burn area? _____ Acres involved _____
2. Hours to burnout: Active flaming _____ Smoldering _____ Total Hours _____
3. % understory veg. consumed _____ Depth of litter remaining (in.) _____
4. % materials <3" dia. consumed _____ Did piled debris burn down? _____
5. Objective met _____
6. Adverse publicity _____
7. Smoke problems _____
8. Remarks _____

F. Future Evaluation (Remarks) _____

_____

_____

Plan Prepared By: _____ Date _____

Address: _____

Phone _____ Permit# _____ Time in effect _____

APPENDIX E

Sample Notarization Form For A Prescribed Burning Plan

STATE OF MISSISSIPPI

COUNTY OF _____

On this, the _____day of _____, 20___, personally appeared _____ before me, a Notary Public in and for the State of Mississippi, and acknowledge to me that the Prescribed Burning Plan attached, which was prepared by _____for the tract located at _____ was completed on or before this date AND before the execution of the burn described in said plan.

(SEAL) _____

Notary Public

My Commission Expires: _____

APPENDIX F

Mississippi Prescribed Burning Act and Other Fire-Related Laws

§49-19-301. Short Title.

§49-19-301 may be cited as the "Mississippi Prescribed Burning Act."

§49-19-303. Legislative findings; purpose.

1) The application of prescribed burning is a landowner property right and a land management tool that benefits the safety of the public, the environment and the economy of Mississippi. Pursuant thereto, the Legislature finds that:

    a) Prescribed burning reduces naturally occurring vegetative fuels within wildland areas. Reduction of the fuel load reduces the risk and severity of major catastrophic wildfire, thereby reducing the threat of loss of life and property, particularly in urbanizing areas.

    b) Most of Mississippi's natural communities require periodic fire for maintenance of their ecological integrity. Prescribed burning is essential to the perpetuation, restoration and management of many plant and animal communities. Significant loss of the state's biological diversity will occur if fire is excluded from fire-dependent systems.

    c) Forest lands constitute significant economic, biological and aesthetic resources of statewide importance. Prescribed burning on forest land prepares sites for reforestation, removes undesirable competing vegetation, expedites nutrient cycling, and controls or eliminates certain forest pathogens.

    d) The state manages hundreds of thousands of acres of land for parks, wildlife management areas, forests, and other public purposes. The use of prescribed burning for management of public lands is essential to maintain the specific resource values for which these lands were acquired.

    e) Proper training in the use of prescribed burning is necessary to ensure maximum benefits and protection for the public.

    f) As Mississippi's population continues to grow, pressures from liability issues and nuisance complaints inhibit the use of prescribed burning.

2) It is the purpose of Sections 49-19-307 to authorize and promote the continued use of prescribed burning for ecological, silvicultural and wildlife management purposes

§49-19-305. Definitions.

1) "Prescribed burning" means the controlled application of fire to naturally occurring vegetative fuels for ecological, silvicultural and wildlife management purposes under specified environmental conditions and the following of appropriate precautionary measures which cause the fire to be confined to a predetermined area and accomplishes the planned land management objectives.

2) "Certified prescribed burn manager" means an individual or county forester who successfully completes the certification program approved by the Mississippi Forestry Commission.

3) "Prescription" means a written plan for starting and controlling a prescribed burn to accomplish the ecological, silvicultural, and wildlife management objectives.

§49-19-307. Regulation of prescribed burns; liability.

1) No property owner or his agent, conducting a prescribed burn pursuant to the requirements of this section, shall be liable for damage or injury caused by fire or resulting smoke, unless negligence is proven.

2) Prescribed burning conducted under the provisions of this section shall:

   a) Be accomplished only when at least one (1) certified prescribed burn manager is supervising the burn or burns that are being conducted;

   b) Require that a written prescription be prepared and notarized prior to prescribed burning;

   c) Require that a burning permit be obtained from the Mississippi Forestry Commission; and

   d) Be considered in the public interest and shall not constitute a public or private nuisance when conducted pursuant to state air pollution statutes and rules applicable to prescribed burning.

3) The Mississippi Forestry Commission shall have the authority to promulgate rules for the certification for prescribed burn managers and guidelines for a prescribed burn prescription.

4) Nothing in this section shall be construed to limit the civil or criminal liability as provided in §97-17-13 and §95-5-25, Mississippi Code of 1972.

§95-5-25. By firing woods.

If any person shall set on fire, any lands of another, or shall wantonly, negligently, or carelessly, allow any fire to get into the lands of another, he shall be liable to the person injured thereby, not only for the injury to or destruction of buildings, fences, and the like, but for the burning and injury of trees, timber, and grass, and damage to the range as well; and shall moreover be liable to a penalty of one hundred and fifty dollars in favor of the owner.

§97-17-13. Arson-willfully or negligently firing woods, marsh, meadow, etc.

If any person willfully, maliciously, and feloniously, sets on fire any woods, meadow, marsh, field or prairie, not his own, he shall be guilty of a felony and shall, upon conviction, be sentenced to the state penitentiary for not more than two (2) years, nor less than one year, or fined not less than two hundred dollars ($200.00), nor more than one thousand dollars ($1,000.00), or both, in the discretion of the court.

Provided, however, if any person recklessly or with gross negligence, causes fire to be communicated to any woods, meadow, marsh, field or prairie, not his own, he shall be guilty of a misdemeanor and shall, on conviction, be fined not less than twenty dollars ($20.00), nor more than five hundred dollars ($500.00), or imprisoned in the county jail not more than three (3) months, or both, in the discretion of the court.

APPENDIX G

Criteria For Certification of Prescribed Burn Managers

The requirements to attain certified prescribed burn manager status are as follows:

1. An individual must successfully complete all components of the Prescribed Burning Short Course sponsored by the Continuing Education Department at Mississippi State University.

   or

   An individual must complete a training course or courses comparable to the short course and pass a final exam developed for that course or courses. If the course or courses did not have a final exam, the exam developed for the prescribed burning short course at Mississippi State University must be passed. The qualifications of the instructors, the subject matter presented and the time allotted to each subject must be reviewed and approved by the Mississippi Forestry Commission.

   This shall be accomplished by submitting: 1) a certificate indicating successful completion of the course work; 2) a course agenda which shows the dates of the course, the subject matter presented, the time allotted for each session, the instructors presenting the material and that a final exam was administered.

2. Any individual who has successfully completed the prescribed burning short course presented in a 1987 or later session, will be considered a Certified Prescribed Burn Manager upon the March 1, 1993, effective date of the Mississippi Prescribed Burning Act. Individuals who successfully completed the short course prior to 1987 will be considered a certified prescribed burn manager if they complete or have completed training on smoke management (which included a screening system on managing smoke) and can provide documentation of such training to the Forestry Commission...

   or

   Any individual who has successfully completed a training course prior to the March 1, 1993, effective date of the Prescribed Burning Act which the Forestry Commission approves as being comparable to the currently required short course.

3. Any individual completing Mississippi State University's School of Forest Resources Forest Fire course (which includes the S-290 Fire Behavior course, Smoke Management Screening System, and must pass the Prescribed Burning Short Course final exam) will have met the criteria for Certified Prescribed Burn Manager in Mississippi, if all components of the course have been passed and a final grade of "C" or higher was obtained. A letter from the School of Forest Resources or the Forest Fire course instructor affirming this and a copy of the letter from the Forestry Commission (obtained from the School of Forest Resources) accepting the course as meeting the criteria will serve as documentation that the certification criteria have been met.

   Certificates of completion received from the short course will serve as documentation that the criteria for certified prescribed burn manager have been met for attendees of the 1987 and subsequent sessions. Attendees of short course sessions prior to 1987 must have the course certificate of

completion, documentation of an approved smoke management training course and a letter from the Mississippi Forestry Commission accepting the training.

For training provided by an individual's organization, documentation showing an individual has successfully completed the appropriate training, such as a certificate of completion or a letter from the individual's department supervisor or the organization's training officer stating that they have completed the necessary training, and a letter from the Mississippi Forestry Commission accepting the documentation will serve as proof that an individual has met the criteria for certified prescribed burn manager status.

The individual will be responsible for maintaining the necessary documentation to substantiate their certified prescribed burn manager status.

APPENDIX H

Glossary

Age of Rough
Time in years since the forest floor was last reduced by fire.

Air Pollution Emergency Episodes
A statement issued by the Department of Environmental Quality when atmospheric conditions are stable enough that the potential exists for pollutants to accumulate in a given area.

Backing Fire
A fire spreading or set to spread into (against) the wind, or downhill.

Cold Front
The leading edge of a mass of air that is colder and drier than the air mass being replaced.

Dispersion
The decrease in concentration of airborne pollutants as they spread throughout an increasing volume of atmosphere.

Fire Behavior
A general term that refers to the combined effect of fuel, weather and topography on a fire.

Heading Fire
A fire front spreading or set to spread with the wind or upslope.

Inversion
Defined as a layer of the atmosphere through which the temperature increases with increasing height.

Line Ignition
Setting a line of fire as opposed to individual spots.

Mixing Height
The height to which relatively vigorous mixing of the atmosphere occurs.

Mop-up
Act of extinguishing or removing burning material, especially near control lines, after an area has burned to make it safe or to reduce residual smoke.

Organic Soil
Any soil or soil horizon containing at least 30 percent organic matter; examples are peat and muck.

Relative Humidity
The ratio, expressed as a percentage, of the amount of moisture in the air to the maximum amount of moisture the air is capable of holding under the same conditions.

Rough

The live understory and dead fuels that build up on the forest floor over time.

Site Prep Burn

A fire set to expose adequate mineral soil and control competing vegetation until seedlings of the desired species become established.

Smoke Management

Application of knowledge of fire behavior and meteorological processes to minimize air quality degradation during prescribed burning.

Smoke Plume

The gases, smoke, and debris that rise slowly from a fire while being carried along the ground.

Smoke-Sensitive Area

An area in which smoke from outside sources is intolerable.

Spot Fire

Method of igniting fires in which ignition points are set individually at predetermined spacing with predetermined timing throughout the area to be burned.

Stagnant Conditions

Conditions under which pollutants build up faster than the atmosphere can disperse them.

Strip-Heading Fire

A series of lines of fire upwind (or downslope) of a firebreak or backing fire that will burn with the wind toward the firebreak or backing fire.

Transport Wind Speed

A measure of the average rate of the horizontal movement of air throughout the mixing layer.

Underburning

Prescribed burning under a timber canopy.

Wind Direction

Compass direction from which the wind is blowing.

Windrow

Woody debris that has been piled into a long continuous row.

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