

Appendix A

Fire Management Units

- Maps
- Descriptions
- Historical Fires by District

FIRESTAT outputs for Fire History
NFDRS

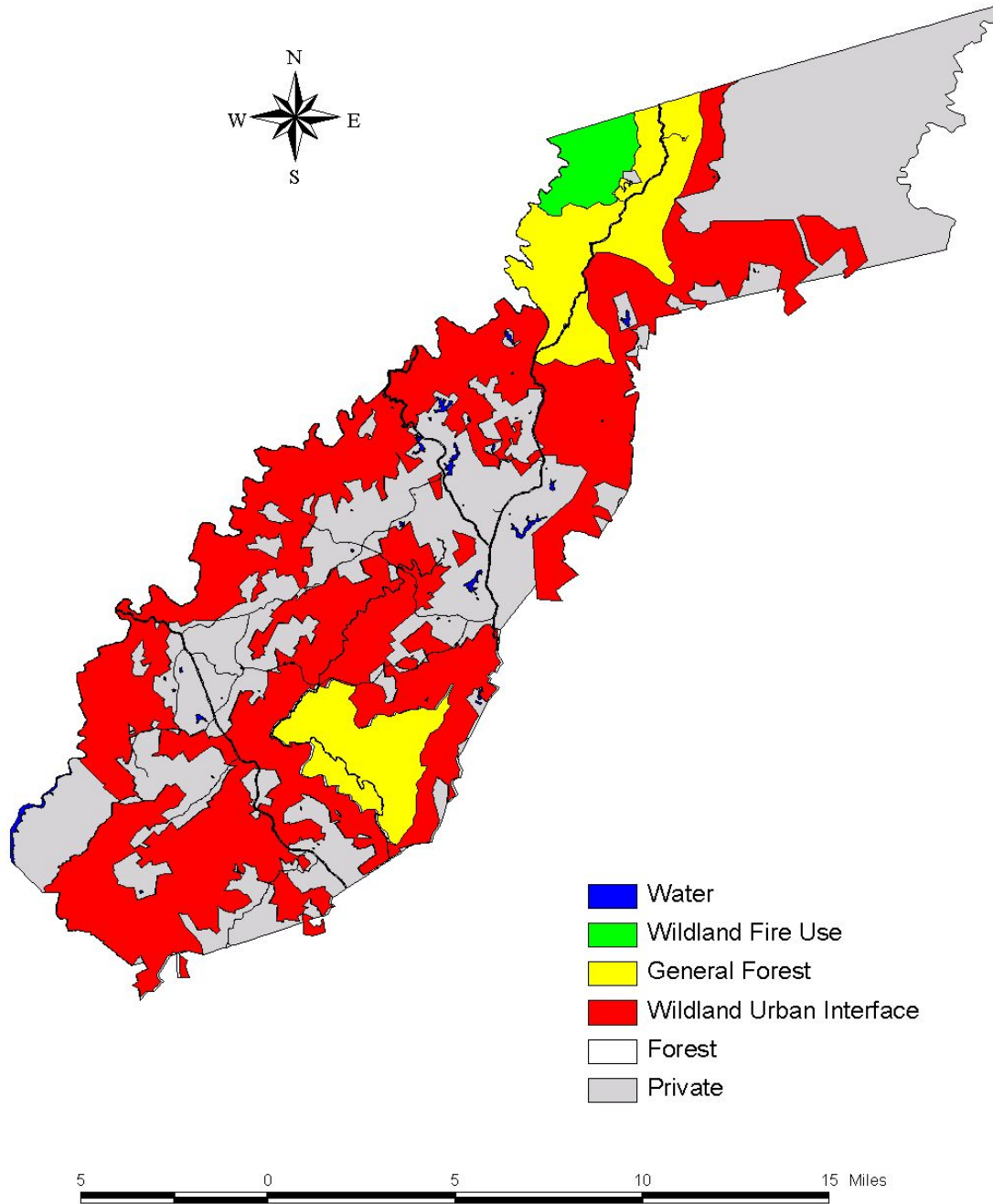
Size Class

A	0 - .25 Acres
B	.26 – 9.9 Acres
C	10 – 99.9 Acres
D	100 – 299.9 Acres
E	300 – 999.9 Acres
F	1000 – 4999.9 Acres
G	5000+ Acres

Cause Class

1	Lightning
2	Equipment use
3	Smoking
4	Campfire
5	Debris burning
6	Railroad
7	Arson
8	Children
9	Miscellaneous

ANDREW PICKENS Fire Management Units



Andrew Pickens General Forest Area

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	AP GA
FMU Number	Yellow 1
General Risk category	Low
Fire Behavior indicator	Burning Index
NFDRS Weather station	Stumphouse Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Virginia, shortleaf pine, several species of oaks and hickories. (Moister sites) Eastern hemlock, yellow poplar, and white pine. (Some locations) Dense understories of mountain laurel and rhododendron.
Administration	Andrew Pickens Ranger District
Fire Management Duty Officer	Andrew Pickens FMO
Management Options to Consider	Full Range of Suppression Responses

2) FMU Characteristics:

The Andrew Pickens Ranger District is located in the Southern Appalachian Mountains of western South Carolina. The General Forest Area FMU is that portion of the district in which the proximity of private homes and other improvements are not usually a factor in fire suppression. Public use along trails and rivers, at campsites, and in other recreation areas is high.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas.

All ignitions are suppressed.

Measurable objective:

Contain wildfires within the first burning period 90% of the time.

Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:
The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.
- Fire season determination:
Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.
- Fuels conditions in the FMU likely to influence fire behavior:
 - A tornado crossed the district from Lake Tugaloo to the office in 1994. The heavy accumulations of downfall and dense stands young stands that resulted from the tornado could cause control problems.
 - A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.
 - Mountain laurel and rhododendron are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.
- Fire regime alteration: Fire regime I, Condition Class 2
- Control problems and dominant topographic features:
Potential control problems:
 - Poor access
 - High rates of spread
 - Snags and downfalls
 - Mountain laurel and rhododendron thicketsDominant topographic features: Slopes up to 50% are common.
- Other elements of the fire environment affecting management:
Smoke Management/Smoke Sensitive Areas:
Cities of Walhalla, Salem, Clayton, Westminster, and Highlands, and several main highways.
- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Thickets of mountain laurel and rhododendron burn intensely and are difficult to walk through.
Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.

Andrew Pickens Ellicott Wilderness and Ellicott Rock Extension (Recommended Wilderness Study Area)

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	AP WFU
FMU Number	Green 1
General Risk category	Low
Fire Behavior indicator	Burning Index
NFDRS Weather station	Stumphouse Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Virginia, shortleaf pine, several species of oaks and hickories. (Moister sites) Eastern hemlock, yellow poplar, and white pine. (Some locations) Dense understories of mountain laurel and rhododendron.
Administration	Andrew Pickens Ranger District
Fire Management Duty Officer	Andrew Pickens FMO
Management Options to Consider	Full Range of Management Responses***

2) FMU Characteristics:

The Ellicott Rock Wilderness and Wilderness Extension is located in the northwest corner of the district, adjacent to the North Carolina and Georgia state lines. The Wilderness extends into both of these states. The highest elevations on the district are located in the Wilderness, with the highest point of 3294 feet found on Fork Mountain. The Wilderness is usually the moistest location on the district, and averages 80 inches of precipitation per year. Improvements that would influence fire management are located in two small areas. The Walhalla Fish Hatchery is located on 80 acres of land owned by the South Carolina Department of Natural Resources. Several facilities are located on this land. The Chattooga Picnic Area is located adjacent to the Fish Hatchery, and consists of an historic picnic shelter and a few other improvements. The other area of improvements is 30 acres of private land along Highway 107 in North Carolina which has several private homes on it. In the remainder of this FMU, improvements are not a factor in fire management. Public recreation use in the Wilderness is high.

3) Strategic and measurable management objectives:

Strategic objective:

-Ecosystems could be restored and maintained through prescribed fire or managed natural ignitions in selected areas, although this is currently not a high priority for the forest.

(***Before natural ignitions could be managed, a Wilderness Fire Plan and Wildland Fire Use Plan need to be prepared).

-At the present time ALL ignitions are suppressed.

Measurable objective:

- Contain unwanted wildfires within the first burning period, 90% of the time.
- Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

- The use of helicopters, air tankers, other aircraft, hand held motorized devices, tractor-plow units, or bulldozers requires Forest Supervisor approval.
- Generally fires are of short duration (1-2 burning periods) and will require immediate decisive responses.
- Use minimum impact suppression tactics on all fire management activities

5) Historical fire occurrence:

Fire occurrence in the wilderness has been extremely low. One fire occurred in the Wilderness Extension in 2001 as a result of a tree falling on a powerline.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity. The Wilderness is generally cooler and wetter than rest of the district.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-Mountain laurel and rhododendron are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

- Poor access
- High rates of spread
- Snags and downfalls
- Mountain laurel and rhododendron thickets

Dominant topographic features: Slopes up to 50% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

Cities of Salem, Clayton, and Highlands, and Highway 107.

Areas of Special Concern:

The Walhalla Fish Hatchery is located on 80 acres of land owned by the South Carolina Department of Natural Resources. Several facilities are located on this land. The Chattooga Picnic Area is located adjacent to the Fish Hatchery, and consists of an historic picnic shelter and a few other improvements. The other area of improvements is 30 acres of private land along Highway 107 in North Carolina, which has several private homes on it. In the remainder of this FMU, improvements are not a factor in fire management.

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Thickets of mountain laurel and rhododendron burn intensely and are difficult to walk through.
Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.
 - Access is difficult.
 - Restrictions in equipment use may cause difficulty in containing fires.

Andrew Pickens Wildland Urban Interface

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	AP WUI
FMU Number	Red 1
General Risk category	High
Fire Behavior indicator	Burning Index
NFDRS Weather station	Stumphouse Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Virginia, shortleaf pine, several species of oaks and hickories. (Moister sites) Eastern hemlock, yellow poplar, and white pine. (Some locations) Dense understories of mountain laurel and rhododendron.
Administration	Andrew Pickens Ranger District
Fire Management Duty Officer	Andrew Pickens FMO
Management Options to Consider	Aggressive Suppression Response

2) FMU Characteristics:

The Andrew Pickens Ranger District is located in the Southern Appalachian Mountains of western South Carolina. The Wildland Urban Interface FMU is that portion of the district in which the proximity of private homes and other improvements is usually a factor in fire suppression. This zone can be up to two miles wide where improvements are located at the top of long, steep mountains. Public use is high.

3) Strategic and measurable management objectives:

Strategic objective:

- Ecosystems are restored and maintained through prescribed fire in selected areas.
- All ignitions are suppressed.
- Prescribed fire is used to reduce potential fire severity in selected areas.

Measurable objective:

- Contain wildfires at ten acres or less, 90% of the time.
- Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-A tornado crossed the district from Lake Tugaloo to the office in 1994. The heavy accumulations of downfall and dense stands young stands that resulted from the tornado could cause control problems.

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Mountain laurel and rhododendron are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfalls

-Mountain laurel and rhododendron thickets

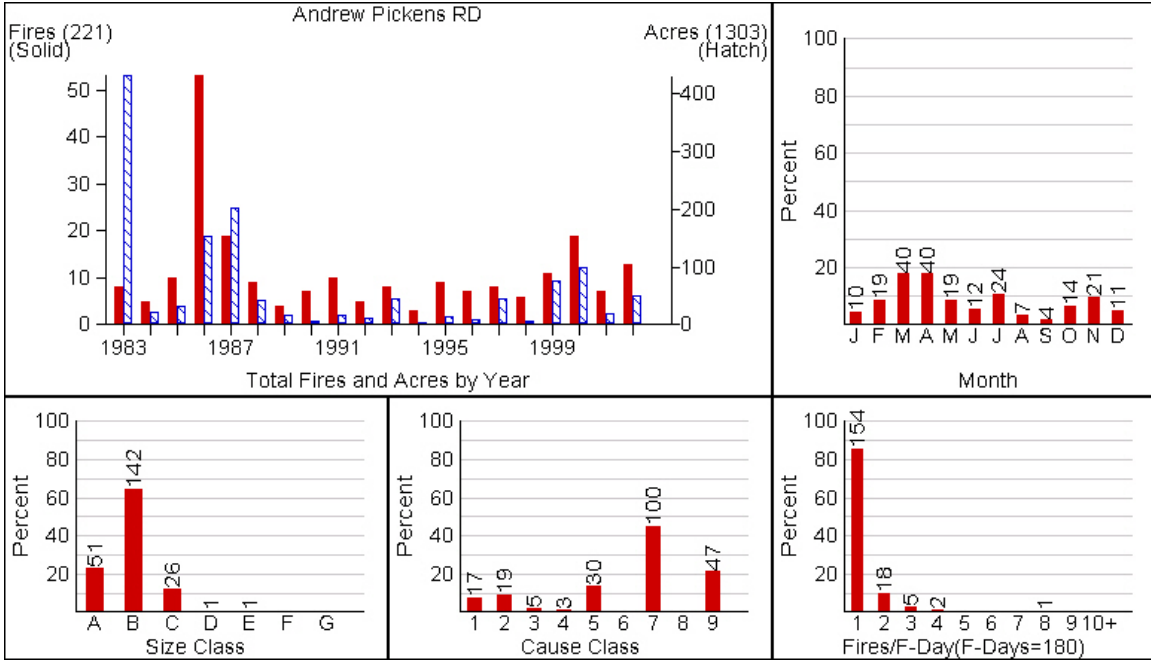
Dominant topographic features: Slopes up to 50% are common.

- Other elements of the fire environment affecting management:

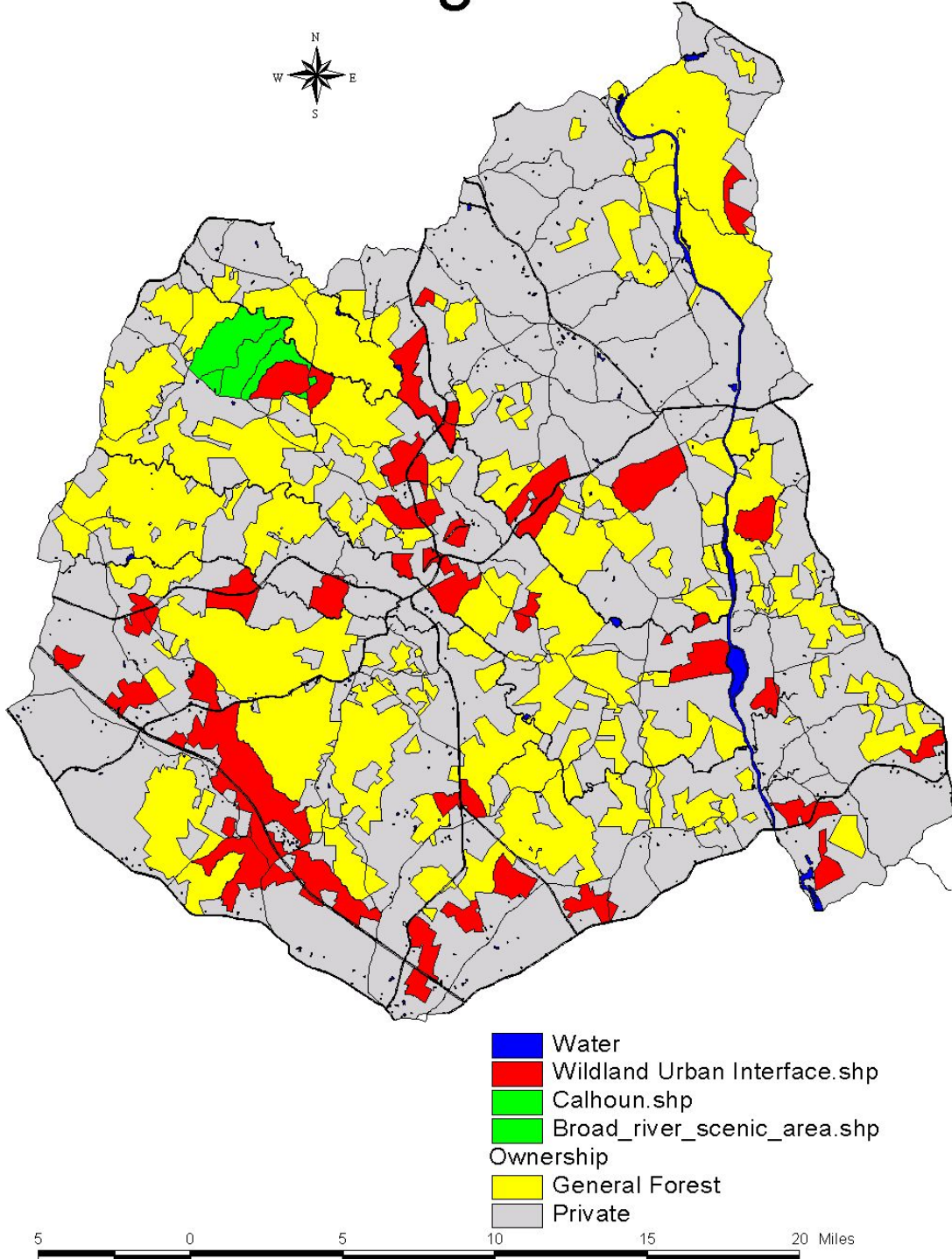
Smoke Management/Smoke Sensitive Areas:

Cities of Walhalla, Salem, Clayton, Westminster, and Highlands, and several main highways.

- Fire fighter and public safety considerations specific to this FMU:
 - Potential need for traffic control and public evacuation.
 - Coordination with County and State Fire Control Agencies increases complexity.
 - When attempting to protect private homes, there is a tendency to feel pressured to take greater risks.
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Thickets of mountain laurel and rhododendron burn intensely and are difficult to walk through.
 - Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.



Enoree Fire Management Units



Enoree General Forest Area

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	EN GA
FMU Number	Yellow 2
General Risk category	Low
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Other locations) Dense understories of muscadine vines, blackberry, switchcane and nettle. Kudzu is present in many locations on the district.
Administration	Enoree Ranger District
Fire Management Duty Officer	Enoree FMO
Management Options to Consider	Full Range of Suppression Responses

2) FMU Characteristics:

The Enoree Ranger District is located in the Piedmont geological province of upstate South Carolina. The General Forest Area FMU is that portion of the district in which the proximity of private homes and other improvements are not usually a factor in fire suppression. Public use along trails and rivers, at campsites, and in other recreation areas is high.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas.

All ignitions are suppressed.

Measurable objective:

Contain wildfires within the first burning period 90% of the time.

Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. As kudzu reaches full green up fire danger decreases. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-An ice storm crossed the district from Clinton to the Union in 1999. The heavy accumulations of downfall and dense stands understory vegetation that resulted from the storm could cause control problems.

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Kudzu and Eastern red cedar are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfalls

-Cedar and Kudzu thickets

Dominant topographic features: Slopes between 20 and 30% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

Cities of Clinton, Laurens, Lockhart, Chester, Union, Newberry, Whitmire, Carlisle, and several main highways.

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Gullies and washouts present access problems and safety hazards, especially at night.
 - Thickets of kudzu and cedar burn intensely and are difficult to walk through. Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.

Enoree Broad River Scenic Area and Calhoun Experimental Forest

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	EN WFU
FMU Number	Green 2
General Risk category	Low
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Some locations) Dense understories of muscadine vines, blackberry, switchcane and nettle.
Administration	Enoree Ranger District
Fire Management Duty Officer	Enoree FMO
Management Options to Consider	Full Range of Management Responses***

2) FMU Characteristics:

The Broad River Scenic Area is a special area on the Enoree RD, which includes specialized ecosystems for the American Bald Eagle and some species of threatened native plant life which occurs only in the Broad River riparian system. It is located in the southern portion of the district. Recreation use in this area is high with bird watching, fishing, boating, canoeing and sight seeing being the highest uses.

The Calhoun Experimental Forest is an original watershed and timber study area that was established along with the Enoree RD in the 1930s. Active research study areas exist on the forest. These studies are administered out of the Southeastern Experimental Station and the Research Department at Clemson University.

3) Strategic and measurable management objectives:

Strategic objective:

-Ecosystems could be restored and maintained through prescribed fire or managed natural ignitions in selected areas, although this is currently not a high priority for the forest.

(***Before natural ignitions could be managed, a Wilderness Fire Plan and Wildland Fire Use Plan need to be prepared).

-At the present time ALL ignitions are suppressed.

Measurable objective:

Contain unwanted wildfires within first burning period 90% of the time.

Stabilize firelines within 3 months.

- 4) Management constraints affecting operational implementation:
 - The use of helicopters, air tankers, other aircraft, motorized devices, tractor-plow units, or bulldozers requires Forest Supervisor and/or Station Director approval.
 - Generally fires are of short duration (1-2 burning periods) and will require immediate decisive responses.
 - Use minimum impact suppression tactics on all fire management activities.

- 5) Historical fire occurrence:

Fire occurrence in the wilderness has been extremely low. Some fuel management burning has been approved and implemented on the Calhoun Experimental Forest.

- 6) Fire Management situation:
 - Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

 - Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. As kudzu reaches full green up fire danger decreases. The normal season is November through April.

 - Fuels conditions in the FMU likely to influence fire behavior:
 - An ice storm crossed the district from Clinton to the Union in 1999. The heavy accumulations of downfall and dense stands understory vegetation that resulted from the storm could cause control problems. This affects primarily the Calhoun.
 - A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.
 - Kudzu and Eastern red cedar are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

 - Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

- Poor access
- High rates of spread
- Snags and downfalls
- Cedar and Kudzu thickets

Dominant topographic features: Slopes between 20 and 30% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

Cities of Clinton, Laurens, Lockhart, Chester, Union, Newberry, Whitmire, Carlisle, and several main highways.

- Fire fighter and public safety considerations specific to this FMU:

- Steep slopes are hazardous for equipment use and are difficult to walk on.
- Gullies and washouts present access problems and safety hazards, especially at night.
- Thickets of kudzu and cedar burn intensely and are difficult to walk through. Fires can move rapidly through leaf litter in some conditions.
- Latter fuels can cause torching and crowning.

Enoree Wildland Urban Interface

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	EN WUI
FMU Number	Red 2
General Risk category	High
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Other locations) Dense understories of muscadine vines, blackberry, switchcane and nettle. Kudzu is present in many locations on the district.
Administration	Enoree Ranger District
Fire Management Duty Officer	Enoree FMO
Management Options to Consider	Aggressive Suppression Response

2) FMU Characteristics:

The Enoree Ranger District is located in the Piedmont geological province of upstate South Carolina. The Wildland Urban Interface FMU is that portion of the district in which the proximity of private homes and other improvements is usually a factor in fire suppression. This zone can be up to two miles wide and occurs along major roadway. The district contains municipal water sources for the cities of Whitmire and Union. These watersheds are Duncan Creek, Enoree river and Broad river. The I-26 interstate highway corridor is present on the SW portion of the district. Numerous ranches and turkey farms are present on the district. Public use is high.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas.
Prescribed fire is used to reduce potential fire severity in selected areas
All ignitions are suppressed.

Measurable objective:

Contain wildfires at ten acres or less, 90% of the time.
Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. As kudzu reaches full green up fire danger decreases. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-An ice storm crossed the district from Clinton to the Union in 1999. The heavy accumulations of downfall and dense stands understory vegetation that resulted from the storm could cause control problems.

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Kudzu and Eastern red cedar are live fuels that are present in some areas in dense thickets, which can burn intensely and are difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfalls

-Cedar and Kudzu thickets

Dominant topographic features: Slopes between 20 and 30% are common.

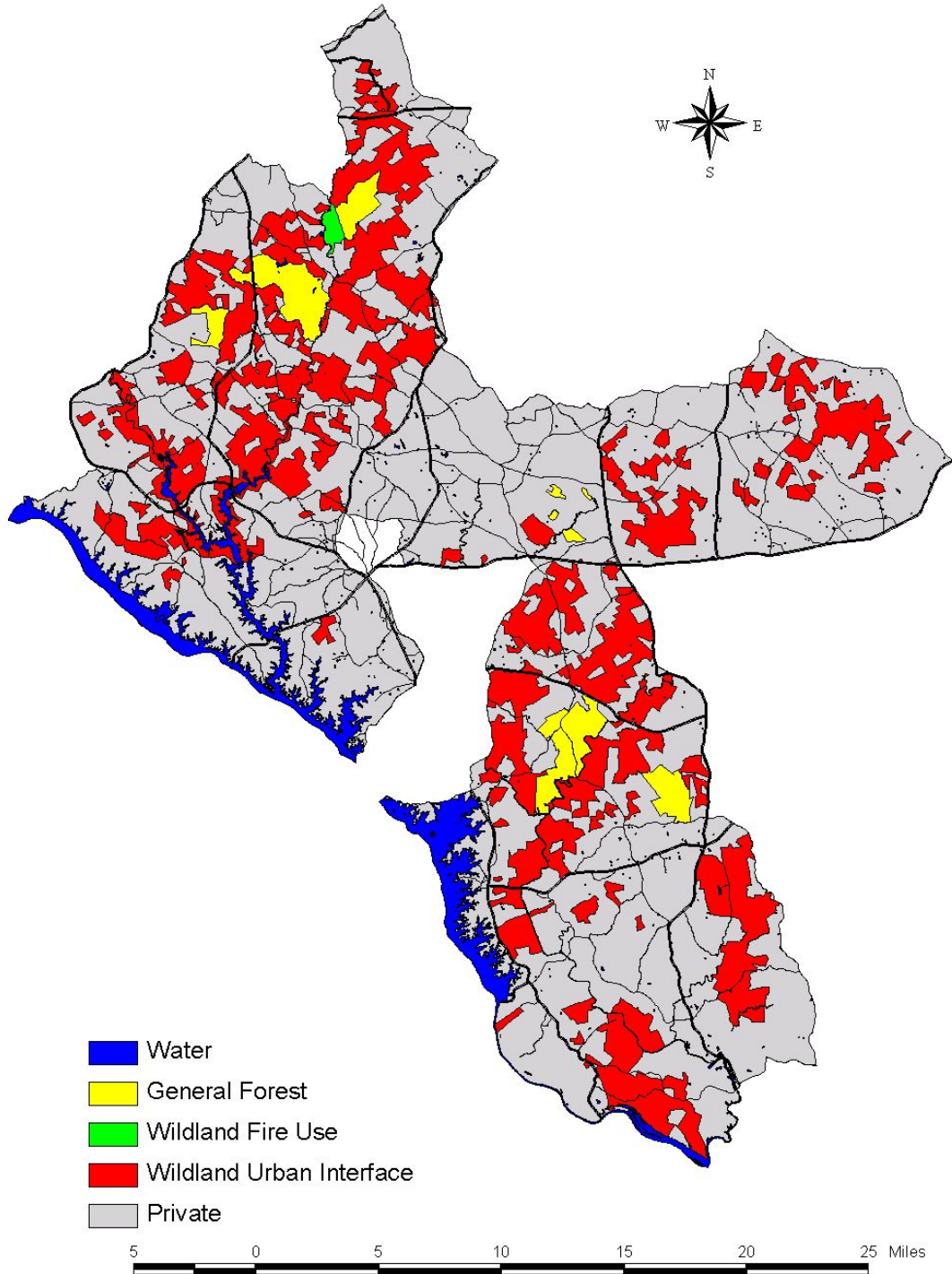
- Other elements of the fire environment affecting management:
Smoke Management/Smoke Sensitive Areas:
Cities of Clinton, Laurens, Lockhart, Chester, Union, Newberry, Whitmire, Carlisle, and several main highways.

Areas of Special Concern:

Loss of investments in ranches and turkey farms within this FMU

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Gullies and washouts present access problems and safety hazards, especially at night.
 - Thickets of kudzu and cedar burn intensely and are difficult to walk through. Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.
 - Potential need for traffic control and public evacuation.
 - Coordination with County and State Fire Control Agencies increases complexity.
 - When attempting to protect private homes, there is a tendency to feel pressured to take greater risks.
 - Thickets of mountain laurel and rhododendron burn intensely and are difficult to walk through.
 - Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.
 - Traffic and traffic accidents on I-26.

LONG CANE Fire Management Units



Long Cane General Forest Area

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	LC GA
FMU Number	Yellow 3
General Risk category	Low
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Some locations) Dense understories of muscadine vines, blackberry, switchcane and nettle.
Administration	Long Cane Ranger District
Fire Management Duty Officer	Long Cane FMO
Management Options to Consider	Full Range of Suppression Responses

2) FMU Characteristics:

The Long Cane Ranger District is located in the Piedmont geological province of upstate South Carolina. The General Forest Area FMU is that portion of the district in which the proximity of private homes and other improvements are not usually a factor in fire suppression. Public use along trails and rivers, at campsites, and in other recreation areas is high.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas.

All ignitions are suppressed.

Measurable objective:

Contain wildfires within the first burning period 90% of the time.

Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Eastern red cedar is a live fuel present in dense thickets in some areas; can burn intensely and is difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfalls

-Cedar thickets and/or Pine plantations

Dominant topographic features: Slopes between 20 and 30% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

-Towns: Greenwood, Abbeville, McCormick, Edgefield and Saluda.

-Communities: Bradley, Troy, Mt. Carmel and Promise Land, Modoc, Plum Branch and Clarks Hill.

-Highways: 72, 28, 23, 378, 230, 178, 10, 221, 283, 823, 25 and 33.

-Multi dwelling developments: Savannah Lakes Village and John de la Howe School, Saddle Hill, Dunganon, Country Meadows, Deer Springs, Hunters Creek, Modoc Shores and Mt. Vintage Plantation.

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Gullies and washouts present access problems and safety hazards, especially at night.
 - Thickets of cedar burn intensely and are difficult to walk through. Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.
 - Pine plantations.

Long Cane Scenic Area

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	LC WFU
FMU Number	Green 3
General Risk category	Low
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Some locations) Dense understories of muscadine vines, blackberry, switchcane and nettle.
Administration	Long Cane Ranger District
Fire Management Duty Officer	Long Cane FMO
Management Options to Consider	Full Range of Management Responses ***

2) FMU Characteristics:

The Long Cane Scenic Area is a special area on the Long Cane RD, which includes the largest shagbark hickory tree in South Carolina and some species of sensitive native plant life. It is located in the northern portion of the district. Recreation use in this area is high with bird watching, fishing, hunting, horseback and mountain bike riding being the highest uses.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas. (***Before natural ignitions could be managed, a Wildland Fire Use Plan needs to be prepared).

At the present time ALL ignitions are suppressed.

Measurable objective:

Contain unwanted wildfires within the first burning period 90% of the time.

Stabilize firelines within 3 months.

4) Management constraints affecting operational implementation:

- Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.
- The use of motorized devices, tractor-plow units, or bulldozers requires Forest Supervisor approval.
- Use minimum impact suppression tactics on all fire management activities.

5) Historical fire occurrence:

Fire occurrence in the scenic area has been extremely low. Some fuel management burning has been approved and implemented.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Eastern red cedar is a live fuel present in dense thickets in some areas; can burn intensely and is difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfall

Dominant topographic features: Slopes between 20 and 30% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

-Towns: Greenwood and Abbeville.

-Communities: Bradley, Troy, and Promise Land.

-Highways: 72, 28, 10, 221, and 33.

-Multi dwelling developments: Saddle Hill, and Country Meadows.

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Gullies and washouts present access problems and safety hazards, especially at night.
 - Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.

Long Cane Wildland Urban Interface

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	LC WUI
FMU Number	Red 3
General Risk category	High
Fire Behavior indicator	Burning Index, KBDI
NFDRS Weather station	Whitmire FWS, Tiger Ranger Station
Acres	
Predominant Vegetation Types	(Uplands) Loblolly pine with some pockets of shortleaf pine, and several species of red oaks, white oaks and hickories. (Moister sites) Yellow poplar, sweetgum, black gum, maple, sycamore, birch, beech and water oak. (Some locations) Dense understories of muscadine vines, blackberry, switchcane and nettle. Kudzu is present in many locations on the district.
Administration	Long Cane Ranger District
Fire Management Duty Officer	Long Cane FMO
Management Options to Consider	Aggressive Suppression Responses

2) FMU Characteristics:

The Long Cane Ranger District is located in the Piedmont geological province of upstate South Carolina. The Wildland Urban Interface FMU is that portion of the district in which the proximity of private homes and other improvements is usually a factor in fire suppression. This zone is scattered over the entire district. Concentrations of homes vary on the district from multi unit developments to single dwellings with out buildings. Several chicken farms are present on the district. Public use is high.

3) Strategic and measurable management objectives:

Strategic objective:

Ecosystems are restored and maintained through prescribed fire in selected areas.

All ignitions are suppressed.

Prescribed fire is used to reduce potential fire severity in selected areas.

Measurable objective:

Contain wildfires at ten acres or less, 90% of the time.

Rehabilitate firelines within 3 months.

4) Management constraints affecting operational implementation:

-Generally fires are short duration (1-2 burning periods) that will require immediate decisive responses.

5) Historical fire occurrence:

Most fires occur in November through April, and coincide with the leaf-off period. Green-up of the overstory hardwoods in April decreases sunlight reaching the leaf-litter, which results in higher fine fuel moisture.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather conditions historically occur in March and April, and are attributable to high wind and low relative humidity.

- Fire season determination:

Fire season is linked to leaf fall and green-up of the overstory hardwoods. The normal season is November through April.

- Fuels conditions in the FMU likely to influence fire behavior:

-A southern pine beetle outbreak in 2001-2002 resulted in large areas of snags and downfalls.

-Eastern red cedar is a live fuel present in dense thickets in some areas; can burn intensely and is difficult to walk through, or see through. Hand line construction through these thickets is also difficult.

- Fire regime alteration: Fire regime I, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

-Poor access

-High rates of spread

-Snags and downfall

-Cedar thickets and/or Pine Plantations

Dominant topographic features: Slopes between 20 and 30% are common.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

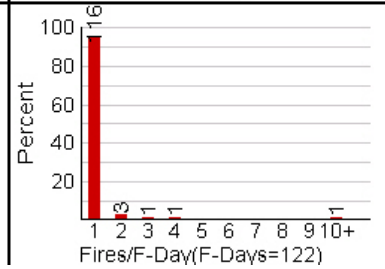
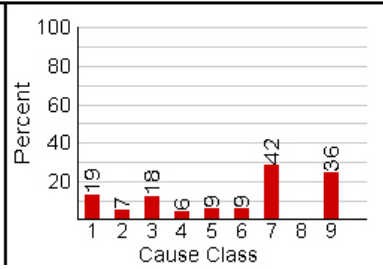
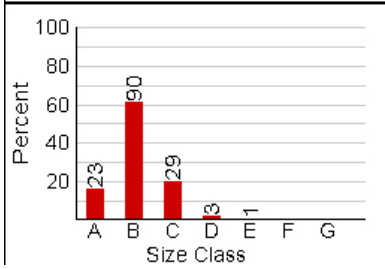
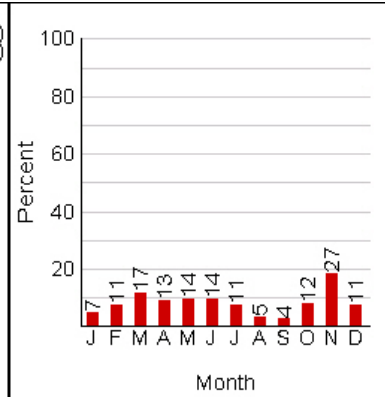
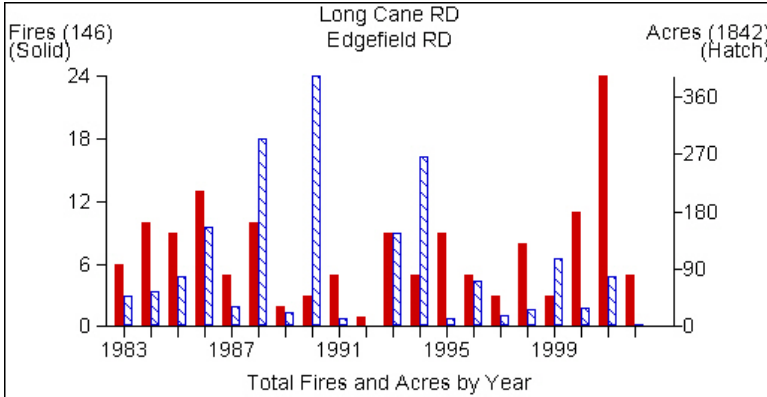
-Towns: Greenwood, Abbeville, McCormick, Edgefield and Saluda.

-Communities: Bradley, Troy, Mt. Carmel, Promise Land, Modoc, Plum Branch and Clarks Hill.

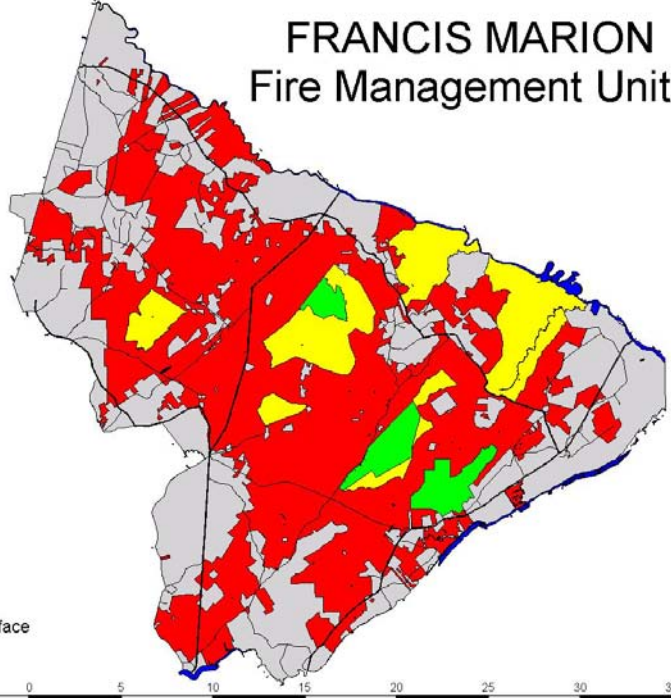
-Highways: 72, 28, 23, 378, 230, 178, 10, 221, 283, 823, 25 and 33.

-Multi dwelling developments: Savannah Lakes Village, John de la Howe School, Deer Springs, Dunganon, Saddle Hill, Country Meadows, Hunters Creek, Modoc Shores and Mt. Vintage Plantation.

- Fire fighter and public safety considerations specific to this FMU:
 - Steep slopes are hazardous for equipment use and are difficult to walk on.
 - Gullies and washouts present access problems and safety hazards, especially at night.
 - Fires can move rapidly through leaf litter in some conditions.
 - Latter fuels can cause torching and crowning.
 - Potential need for traffic control and public evacuation.
 - Coordination with County and State Fire Control Agencies increases complexity.
 - When attempting to protect private homes, there is a tendency to feel pressured to take greater risks.
 - Traffic accidents on major highways due to smoke.
 - Pine plantations are thick and difficult to walk through and have very limited site distance for equipment.



FRANCIS MARION Fire Management Units



- Forest
- Private
- Water
- FMU General Forest
- FMU Wildland Fire Use
- FMU Wildland Urban Interface

5 0 5 10 15 20 25 30 35 Miles
L.Barrett 2/2004
\\unit\fm\Fire&Aviation\5190 Management\Fire Planning\Fire Management Plan\Appendixes\Appendix A\FMUSGIS\data\fm_fm_u.jpeg

Francis Marion General Forest and Non-WUI Areas

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	FM GA
FMU Number	Yellow 4
General Risk category	Moderate to High
Fire Behavior indicator	Burning Index
NFDRS Weather station	Witherbee
Acres	
Predominant Vegetation Types	Southern Rough (Fuel Model 7), Pocosin (Fuel Model 4 or 6), Hardwood Swamp
Administration	Witherbee Ranger District
Fire Management Duty Officer	FM FMO/Fire Program Manager (Twomey)
Management Options to Consider	Full Range of Suppression Responses

2) FMU Characteristics:

These areas are generally isolated tracts located away from heavy urban interface and high use paved roads.

3) Strategic and measurable management objectives:

Strategic objective:

- Restore, expand and maintain the longleaf pine/fire ecosystem and other fire dependant communities.
- All ignitions are suppressed.

Measurable objective:

- Utilize contain and confine suppression strategies wherever possible.
- Fire size will be kept as small as possible while utilizing natural features such as hardwood drains and/or FS gravel roads.
- Use of tractor/plows will be kept to a minimum wherever possible.

4) Management constraints affecting operational implementation:

- The South Carolina Smoke Management Guidelines will be followed when determining suppression strategy.

5) Historical fire occurrence:

- Fire occurrence has typically been high for most of the FMU. Most fires are caused by Arson.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather begins in late February and continues through the early green up period in May. This period is characterized with high winds, dry humidity, warming temperatures and low live fuel moistures.

- Fire season determination:

Fire season is linked to the curing of live fuels in the November and green up in the May. A typical fire season begins in November, when live woody fuel moisture approaches 100% and runs through the early green up period in May when live woody fuel moistures are greater than 200%.

- Fuels conditions in the FMU likely to influence fire behavior:

-Most of this FMU has been consistently prescribed burned on a 2-3 year rotation so that fuels are at a manageable level. The majority consists of pine uplands and flatwoods dominated by open understories with grass/sedge and herbaceous vegetation, low shrubs and very little ladder fuels. However, there are areas with dense pocosins and southern rough vegetation that can burn very intensely under the right conditions.

-High 1000 hr fuel loading in some areas will increase the chance of spotting across control lines. Ground fuels in the form of organic soils and peat will be involved during drought periods.

- Fire regime alteration: Fire regime I, Condition Class 1

- Control problems and dominant topographic features:

Potential control problems:

-Hardwood drains and swamps may not have enough water in them during dry years to contain the fire.

-Snags and large woody debris in some areas may cause spotting problems and difficult mop up operations.

-Dense shrub thickets.

Dominant topographic features: Low pine ridges interspersed with pocosins and hardwood swamps.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

Down wind smoke sensitive areas may be impacted. SC Smoke management guidelines will be used to determine appropriate suppression strategy and containment size.

Areas of Special Concern:

Hwy 45 borders two of the FMU 2 units. Nighttime residual smoke as well as smoke during the combustion phase may impact visibility on the highly traveled paved road.

- Fire fighter and public safety considerations specific to this FMU:

-Brush thickets make access difficult and can burn readily

-Snags and large woody debris

-Rapid moving fires through open grass understories and shrub vegetation.

-Nighttime residual smoke along Highway 45.

**Francis Marion Wilderness Areas:
Hellhole Bay, Wambaw Creek, Wambaw and Little Wambaw Swamps**

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	FM WFU
FMU Number	Green 4
General Risk category	Low, Moderate to High for eastern portion of Little Wambaw
Fire Behavior indicator	Burning Index
NFDRS Weather station	Witherbee
Acres	
Predominant Vegetation Types	Southern Rough (Fuel Model 7), Pocosin (Fuel Model 4 or 6), Hardwood Swamp
Administration	Witherbee Ranger District
Fire Management Duty Officer	FM FMO/Fire Program Manager (Twomey)
Management Options to Consider	Full Range of Management Responses***

2) FMU Characteristics:

Wilderness areas are predominantly cypress tupelo swamps that are wet during most of the year. These swamps contain upland pine ridges, pond pine woodlands and pocosins on the fringes and/or interspersed within the wilderness areas. During droughts, fires starting on the upland pine forests or pocosins can burn well into the swamps involving heavy dead fuels that were not salvaged from Hugo as well as deep organic soils. Little Wambaw Swamp borders private property on the Eastern boundary. Many fires that encroach into this wilderness are from escaped debris burns on private property.

3) Strategic and measurable management objectives:

Strategic objective:

- Preserve examples of large, relatively undisturbed hardwood swamp ecosystems and provide opportunities for a wilderness experience. Allow natural processes to operate to the extent there is no loss of wilderness values nor unacceptable damage to resources on adjacent National Forest land. (***Before natural ignitions could be managed, a Wildland Fire Use Plan needs to be prepared).
- At the present time ALL ignitions are suppressed.

Measurable objective:

- Contain wildfires using natural boundaries without the use of mechanical equipment.
- Fires in Little Wambaw Swamp next to private property will be contained as small as possible within the first burning period using hose lays and hand crews

4) Management constraints affecting operational implementation:

- Use of chainsaws, bulldozers and other motorized devices require Regional Forester approval.
- Use minimum impact suppression tactics on all fire management activities

5) Historical fire occurrence:

- Fire occurrence in Hellhole Bay, and Wambaw Creek Wilderness areas has been low.
- Fire occurrence in Wambaw Swamp wilderness has generally been from arson starts along Halfway Creek Road which borders this Wilderness on the SW boundary.
- Fire occurrence in Little Wambaw Swamp wilderness has been from escaped debris burns from private land on the SE boundary.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather begins in late February and continues through the early green up period in May. This period is characterized with high winds, dry humidity, warming temperatures and low live fuel moistures. During most years with typical rainfall, the hardwood swamps are filled with water and will not burn. However, the pocosins and upland pine forests in these areas will burn very well during this period, even with significant moisture in the swamps.

- Fire season determination:

Fire season is linked to the curing of live fuels in the November and green up in the May. A typical fire season begins in November, when live woody fuel moistures go below 100% and runs through the early green up period in May when live woody fuel moistures go above 200%.

- Fuels conditions in the FMU likely to influence fire behavior:

-Dense shrub thickets of the pocosin and southern rough vegetation can burn very intensely under the right conditions. Control using hand lines and hose lays will be very difficult and impractical in most cases.

-The hardwood swamps and drains will contain enough moisture in typical rainfall years to contain fires. However, during drought years, these swamps will also burn. High 1000 hr fuel loading in these swamps will make suppression difficult during drought years. Also, organic soils containing peat will be involved during drought periods.

- Fire regime alteration: Fire regime III, Condition Class 2

- Control problems and dominant topographic features:

Potential control problems:

- | | |
|---------------------------------|--|
| -Poor access | Snags and large woody debris from Hugo |
| -Dense shrub thickets | Policy restricting suppression resources |
| -Organic and Peaty ground fuels | Long Range Spotting |

Dominant topographic features: Low flat, moist to wet, swamps with occasional pine low ridges.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

There is a high risk of nighttime residual smoke resulting from the burning of large 1000 hr fuels left after hugo. The risk to public safety is greatest in Little Wambaw Swamp wilderness, which is in close proximity to the Buck Hall community and Hwy 17. Public safety is also a concern in Wambaw Swamp wilderness, which borders Halfway Creek Road. Nighttime residual smoke can impact this highway as well.

Areas of Special Concern:

Buck Hall community and Hwy 17, which border Little Wambaw Swamp on the SE boundary.

- Fire fighter and public safety considerations specific to this FMU:
 - Brush thickets make access difficult and can burn readily
 - Access can be difficult
 - Snags and large woody debris
 - Ladder fuels can increase crownfire potential
 - Rapid moving fires through shrub types
 - Nighttime residual smoke
 - Restrictions in equipment use may cause difficulty in containing fires.

Francis Marion WUI and some general forest areas:

Fire Management Unit Description Outline

1) FMU Description:

FMU Identifier	FM WUI
FMU Number	Red 4
General Risk category	High
Fire Behavior indicator	Burning Index
NFDRS Weather station	Witherbee
Acres	
Predominant Vegetation Types	Southern Rough (Fuel Model 7), Pocosin (Fuel Model 4 or 6), Hardwood Swamp
Administration	Witherbee Ranger District
Fire Management Duty Officer	FM FMO/Fire Program Manager (Twomey)
Management Options to Consider	Aggressive Suppression Response

2) FMU Characteristics:

The general forest area is interspersed with private property, small communities and individual residents. Most of this Fire management unit is within 2 miles of a state paved road.

3) Strategic and measurable management objectives:

Strategic objective:

- Restore, expand and maintain the longleaf pine/fire ecosystem on the upland and flatwoods pine sites.
- Restore and maintain other fire dependant communities such as pond pine pocosins, savannas, pitcher plant bogs, and Carolina bays.
- Maintain hardwood bottoms and swamps in pristine condition.
- All ignitions are aggressively suppressed.

Measurable objective:

- Contain wildfires as small as possible within the first burning period by utilizing tractor plow units, helicopters, air tankers and engines.

4) Management constraints affecting operational implementation:

- Heritage surveys will be conducted on any constructed dozer line after the fire is controlled.
- Tractor/Plow operations must not disturb endangered plant communities or damage RCW nesting cavities trees.

5) Historical fire occurrence:

- Fire occurrence has typically been high for most of the FMU. Most fires are caused by Arson.

6) Fire Management situation:

- Weather patterns influencing fire behavior and historical weather analysis:

The most severe fire weather begins in late February and continues through the early green up period in May. This period is characterized with high winds, dry humidity, warming temperatures and low live fuel moistures.

- Fire season determination:

Fire season is linked to the curing of live fuels in the November and green up in the May. A typical fire season begins in November, when live woody fuel moisture approaches 100% and runs through the early green up period in May when live woody fuel moistures are greater than 200%.

- Fuels conditions in the FMU likely to influence fire behavior:

-Approximately 25% of this FMU has been consistently prescribed burned on a 2-3 year rotation so that fuels are at a manageable level.

-The rest of the FMU has roughs that vary in age from 2 years to over 10 years. Therefore fuel conditions range from open under stories dominated by grass/sedge and herbaceous vegetation, low shrubs and very little ladder fuels to heavy fuel loads and thick flammable ericaceous shrubs of pocosin and southern rough vegetation that can burn very intensely under the right conditions.

-High 1000 hr fuel loading in most areas will increase the chance of spotting across control lines. Ground fuels in the form of organic soils and peat will be involved during drought periods.

- Fire regime alteration: Fire regime I, Condition Class 2-3

- Control problems and dominant topographic features:

Potential control problems:

-Hardwood drains and swamps may not have enough water in them during dry years to contain the fire.

-Snags and large woody debris in some areas may cause spotting problems and difficult mop up operations.

-Dense shrub thickets and highly flammable pocosin vegetation.

Dominant topographic features: Low pine ridges interspersed with pocosins and hardwood swamps.

- Other elements of the fire environment affecting management:

Smoke Management/Smoke Sensitive Areas:

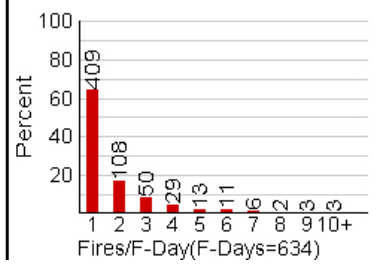
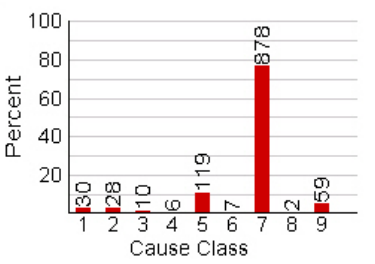
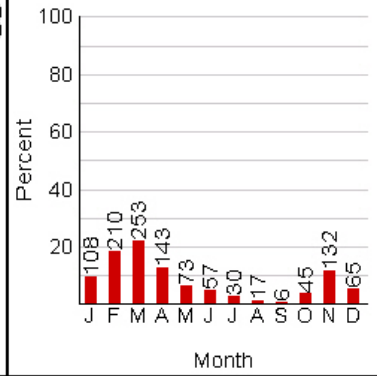
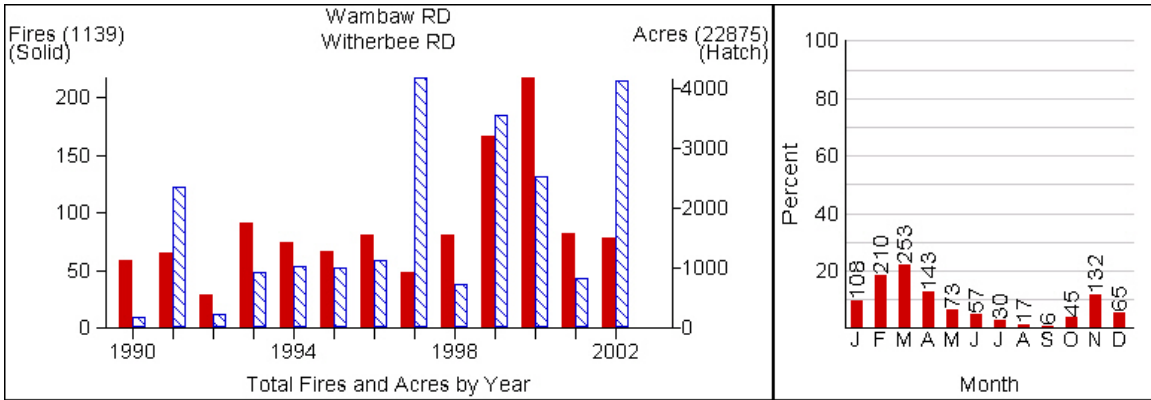
- Down wind smoke sensitive areas may be impacted. Smoke sensitive areas include small communities, paved highways and individual residents who have respiratory ailments.
- Nighttime residual smoke may require DOT and local law enforcement assistance in managing traffic on state highways and paved roads where visibility has been impacted.

Areas of Special Concern:

The urban interface areas.

- Fire fighter and public safety considerations specific to this FMU:

- Brush thickets make access difficult and can burn readily
- Snags and large woody debris
- Rapid moving fires through open grass understories and heavy shrub vegetation.
- Nighttime residual smoke along state highways and paved roads.
- Suppression activities around traffic and special hazards associated with the urban interface



Appendix B

Preparedness Levels

**Francis Marion & Sumter
National Forests**

**Wildland Fire Preparedness
Plan
2004**

**Francis Marion & Sumter National Forests
Wildland Fire Preparedness Plan**

Prepared by: /s/ Dave Kuhn Date: 9/30/03
Dave Kuhn, Coordination Center Manager

Recommended by: /s/ Charles W. Kerr Date: 10/10/03
Charles Kerr, Forest Fire Mgt. Officer

/s/ Stephen E. Wells Date: 11/06/03
Stephen E. Wells, Fire & Lands Staff Officer

/s/ Richard L. Rosemeir Date: 11/21/03
Richard Rosemeir, District Ranger, Enoree

/s/ Michael B. Crane Date: 01/09/04
Michael Crane, District Ranger, Andrew Pickens

/s/ Elizabeth LeMaster Date: 12/08/03
Beth LeMaster, District Ranger, Long Cane

/s/ Orlando Sutton Date: 01/09/04
Orlando Sutton, District Ranger, Francis Marion

Approved by: /s/ Jerome Thomas Date: 01/09/04
Jerome Thomas, Forest Supervisor

Objective:

To ensure timely recognition of approaching critical fire situations, to establish a process for analyzing situations and establishing priorities, and for implementing actions to respond to these situations.

Intelligence:

Wildland fire is influenced by many variables. We must look at and evaluate available data, weigh the input and make decisions. While maintaining enough flexibility to change on short notice if new and/or revised data becomes available.

The following, are sources of intelligence considered in the decision making process:

Weather/Fire Danger:

Automated Weather Station observations from stations located on the Francis Marion, LongCane, Enoree, and Andrew Pickens Ranger Districts.

WIMS---NFDRS

National Weather Service, Fire Weather Forecasts.

Keetch/Byram Drought Index (KBDI)

Emergency Incidents/Prescribed Fire Activity:

Forest Situation Report.

Southern Area Morning Report

National Interagency Situation Report.

Historic/local data, (fire occurrence, when, where, cause).

South Carolina Forestry Commission dispatch center's, daily activity reports.

Local contractors and cooperators resource availability.

Suppression resource availability:

Districts report resource availability daily per Preparation Level.

Environment, Social, Political Considerations:

In house agency specialists.

Environmental Protection Agencies.

Special interest groups.

South Carolina State, County and national representatives.

Analysis:

Through review of the above we determine;

1. The current and potential fire activity at the local, regional, and national levels.
2. The availability of fire suppression resources.
3. The level of prescribed fire activity and resources committed.
4. The environmental, social, and political concerns that impact our fire program.
5. The potential likelihood of fire starts, cause, location, and timing.

Preparedness Levels:

Using the Plan:

For each level of preparedness, specific actions have been assigned to certain positions. When the Preparedness Level (PL) has been reached, each individual with an assignment will either carry out their assignments without further notification or document their reasons for deciding that the assigned action is not necessary. (Remember, common sense and good judgement prevail).

The PL is determined by the Fire Danger and the fire activity, each PL has a descriptive situation that describes the conditions necessary to be at that PL.

Declaring the PL:

The Forest Fire Management Officer or the Coordination Center Manager will determine when the Forest has entered into a PL using the established approved criteria. The PL will be faxed daily by 1330 EST with weather observations and NFDRS indices to all units. At PLII and above, forecasted indices and preparedness level will be broadcasted to the District (s) twice daily with the am/pm Fire Weather Forecasts. Actual 1300 indices, adjective fire danger rating, and current preparedness level will be broadcasted the same.

Common Forest Wide Action Items:

1. Review and update the Fire Prevention Plans by October 1.
(Forest and District FMO's)
2. Complete annual physical fitness testing for all personnel participating in fire management by the Districts designated anniversary date.
(District FMO's)
3. Ensure all engines, dozers, tractor-plow units are fire ready and available for use with trained crews by November 1.
(District FMO's)
4. Inform cooperating and neighboring agencies of fuel treatment plans and accomplishments, road closures, new roads, and industrial operations. (Coordination Ctr. Mgr. on-going)
5. Ensure all industrial operations on national Forest lands are inspected for fire compliance. Follow up inspections as needed and provide assistance where necessary. (FMO's, TSA's, COR's)
6. Check Force Account operations for fire equipment compliance.
(District FMO's, Fire Prevention Technician -- on going) (Forest Fire Staff conduct two Preparedness Reviews Annually)
7. Have a complete Equipment and Supply Plan that identifies the pre-season rental agreements, with a description of what each can provide and their location by October 1.
(Coordination Ctr. Mgr. with help from District FMO's, Contracting/ S.O.).
8. Designated initial attack resources maintain radio contact with SCC at PL II and higher.
(District FMO's thru District Rangers).

Preparedness Level Situation

PL I Situation

Fire danger is low to moderate. Little to no initial attack activity on the Forest or State protected lands. Potential for fire starts is low. Five Day Average BI (0-25 Coast, 0-20 Piedmont/Mtns), days since last .50" storm period 0-7. KBDI 0-150.

PL II Situation

Fire danger is moderate to high. Five day average BI (25-40 Coast, 21-30 Piedmont/Mtns), days since last .50" storm period 8 to 14. Class A or B fires may be occurring on Forest Service and State protected lands. Forest initial attack forces are in place and able to suppress fires as they occur. KBDI 151-350.

PL III Situation

A Fire danger high. Five day average BI (41-50 Coast, 31-41 Piedmont/Mtns), days since last .50" storm period 15-21. Fires are occurring daily with rapid spread rates and are difficult to suppress. KBDI 351-550.

or

B Same as above. With multiple fire starts, Fire Weather Watch or Red Flag Warning issued by the National Weather Service.

PL IV Situation

Fire danger high to very high. Five day average BI (50-60 Coast, 42-49 Piedmont/Mtns), days since last .50" storm period 22-30. Fires may be occurring requiring assistance from off-forest. KBDI 551-625.

PL V Situation

Fire danger very high to extreme, five day average BI (61+ Coast, 50+ Piedmont/Mtns), days since last .50" storm 31+. Multiple fires are occurring, with potential for one or more project fires. KBDI 626 +.

Preparedness Level

I

	Specific Action	Assigned To:
1.	Continue ongoing use of NFDRS. Acquire daily weather observations and fire weather forecasts.	Forest Dispatcher
2.	Identify suppression resources available.	District FMO
3.	Advise District and Forest FMO of any expected changes in the PL.	Coordination Ctr. Mgr.
4.	Keep District Rangers, Forest FMO, Fire Staff Officer and Southern Area Coordinator informed of any changes in situation or PL.	Coordination Ctr. Mgr.

Preparedness Level

II

	Specific Action	Assigned To:
1-4.	Continue as in PL I	As assigned
5.	Consider supplemental aerial detection (R8 CWN Contract) if conditions warrant.	District FMO/ Coordination Ctr. Mgr.
6.	Districts send daily initial attack lineup to SCC by 1000.	District FMO
7.	Keep District Rangers, Forest FMO, Fire Staff Officer, and Southern Area Coordinator informed of any changes in situation or PL.	Coordination Ctr. Mgr.
8.	Radio broadcast fire weather forecasts (am/pm), and forecasted NFDR indices, adjective fire danger rating, and preparedness level to Districts in PLII and above.	Dispatchers
9.	Radio broadcast actual 1300 NFDR indices, adjective fire danger rating, and preparedness level to Districts in PLII and above.	Dispatchers

Preparedness Level III

Specific Action	Assigned To:
1-9. Continue as in PL I, II	As assigned
10. Insure thru District FMO's the availability of district resources for initial attack (type resource, location, number).	Coordination Ctr. Mgr./ Dispatchers
11. Consider Forest-wide need for prepositioning of aviation, and fire suppression resources.	Forest FMO/ Coordination Ctr. Mgr.
12. Consider need for severity funding should weather forecasts and conditions indicate a need.	District FMO's
13. Stay abreast of location and availability of aviation and other fire suppression resources within the Southern Area.	Coordination Ctr. Mgr./ Dispatchers
14. Determine specific Fire Prevention needs, coordinate with Forest FMO and Public Affairs Staff Officer.	District Rangers/ District FMO
15. Review District Staffing and Specific Action Guides for PL's IV and V.	District Rangers/ District FMO
16. Forest Supervisor, District Rangers, Fire Staff, and all FMO's keep SCC informed of method of contact outside working hours (if other than usual).	Each listed
17. Coordinate Law Enforcement needs with LE Special Agent	District Ranger/ Forest Supervisor
18. Consider suspending RX Fire Program.	District Rangers
19. Consider ordering additional initial attack & support resources.	District Rangers
20. Keep District Rangers, Forest FMO, Fire Staff Officer and SACC informed of any changes in situation or PL.	Forest FMO/ Coordination Ctr. Mgr./ Dispatchers

Preparedness Level IV

Specific Action	Assigned To:
1-20. Continue as in PL I, II, III.	As Assigned
21. Order additional initial attack and support Resources. (ie: operations, logistics, finance, planning or type 3 IMT)	District Rangers District FMO's
22. Increase prevention activities. If situation warrents, order an Interagency Fire Prevention and Public Education Team. Coordinate thru Forest FMO & Fire Staff Officer.	District Rangers District FMO
23. Replenish District fire cache's inventory, maintain established stocking levels.	District FMO's
24. Consider extended staffing of District Offices.	District Rangers
25. Coordinate with SCFC re: Local public announcements, etc.	District Rangers/ Forest PAO
26. Suspend prescribed fire activity.	Forest Supervisor
27. Have additional aviation resources in place for initial attack.	Coordination Ctr. Mgr.

Preparedness Level V

Specific Action	Assigned To:
1-27. Continue as in PL I, II, III, IV.	As Assigned
28. Alert local businesses of situation (ie; motels, restaurants). If necessary, arrange for possible acquisition of identified facilities, and other logistical support.	District Rangers/ Contracting Officer/ Support Service Specialists.
29. Staff District offices beyond normal business hours	District Rangers
30. Insure facilities have been identified or secured with telephone communications for Incident Management Team operations.	District Rangers/ Forest Com. Tech.

PREPAREDNESS LEVEL CHECKLIST

Date:	Date:	Date:	Date:
-------	-------	-------	-------

PL-I

FDR: Low-Moderate
 KBDI: <150
 Avg BI: 0-25 Coast
 0-20 Pdmnt/Mtns
 AND/OR Last 1/2" Rain: 0-7 Days
 *

WB	AP	TY	WB	AP	TY	WB	AP	TY	WB	AP	TY

*No initial attack activity on Forest or State protected lands. Potential for fire starts is low.

PL-II

FDR: Moderate-High
 KBDI: 150-350
 Avg BI: 25-40 Coast
 21-30 Pdmnt/Mtns
 AND/OR Last 1/2" Rain: 8-14 days
 *

WB	AP	TY	WB	AP	TY	WB	AP	TY	WB	AP	TY

*Class A or B fires may be occurring on Forest and State protected lands. Forest initial attack forces are in place and able to suppress fires as they occur.

PL-III (A)

FDR: High
 KBDI: 351-550
 Avg BI: 41-50 Coast
 31-41 Pdmnt/Mtns
 AND/OR Last 1/2" Rain: 15-21 days
 *

WB	AP	TY	WB	AP	TY	WB	AP	TY	WB	AP	TY

*Fires spread rapidly and are difficult to suppress.

PL-III (B)

SAME AS ABOVE

*With multiple fire starts or Red Flag Alert / Warning in effect from the National Weather Service or SCFC.

PL-IV

FDR: High-Very High
 KBDI: 551-625
 Avg BI: 50-60 Coast
 42-49 Pdmnt/Mtns
 AND/OR Last 1/2" Rain: 22-30 days
 *

WB	AP	TY	WB	AP	TY	WB	AP	TY	WB	AP	TY

*Fires may be occurring requiring off-Forest assistance.

PL-V

FDR: Very High-Extreme
 KBDI: 626+
 Avg BI: 61+ Coast
 50+ Pdmnt/Mtns
 AND/OR Last 1/2" Rain: 31+ Days
 *

WB	AP	TY	WB	AP	TY	WB	AP	TY	WB	AP	TY

*Multiple fires are occurring, with one or more project fires in progress.

WB/AP/TY are weather stations in order: Witherbee, Andrew Pickens, and Tyger

Appendix C

Incident Action Record

Francis Marion & Sumter National Forests Incident Commanders Incident Action Record

Initial Attack Size-Up

Date:

Time of Dispatch:

Time of Arrival on Scene:

1. Fire Name:

2. Incident Commander

3. Fire Location: (degrees-decimal-seconds)
 LAT: N
 LONG: W
 Land ownership:

4. Size

5. Fuels Burning: (Circle One)
 Grass Hardwood Pine Plantation
 Bay Mature Pine Hdwd/Pine

6. Character of Fire:
 Smoldering Creeping Running
 Torching Crowning Spotting

7. Flame length:

8. Position on slope:
 Bottom 1/3 Middle Top 1/3

9. Percent slope:

10. Aspect:

11. Wind: Speed
 Direction

12. Spread Potential:
 None
 Low, 0-5 Acres
 Moderate, 6-10 Acres
 High, 10-50 Acres
 Very high, 50+ Acres
B---R---E---A---K

13. Values at Risk: (circle those that apply)
 Houses
 Improvements
 Cultural/Historical
 Other:

14. Hazards: (circle those that apply)
 Snags HazMat
 Power lines Smoke on Hwy
 Urban Interface Other:

15. Cause: (circle one)
 Arson
 Lightning
 Trespass Fire
 Other

16. Law Enforcement Needed:
 YES / NO

17. Additional Resources Needed:

18. Smoke Mitigation Needs:

Safety Checklist

(If you answer **NO** to any of these questions, take corrective action immediately!)

Yes	No	Do you have a current forecast?
Yes	No	Is observed weather consistent with forecast?
Yes	No	Can you control the fire with resources available under expected conditions?
Yes	No	Have you developed a plan to attack the fire? (Direct or indirect, anchor points, escape routes, head OR flank attack, priority areas?)
Yes	No	Have you communicated your plan to everyone on the incident?
Yes	No	Lookouts in place or can you see the entire fire area?
Yes	No	Can you communicate with everyone on the fire and with dispatch?
Yes	No	Escape routes and safety zones established? If you are using black, is it completely burned with no reburn potential?
Yes	No	Are the 10 standard fire orders being followed and the 18 Watchout situations being mitigated?
Yes	No	Have you reported the status of the fire to dispatch?
Yes	No	Will you contain the fire before the next operational period?
Yes	No	Do you have a complete list of assigned and ordered resources?
Yes	No	If the fire will not be contained before the next operational period or the size of the organization exceeds the IC's capability to manage, have you informed dispatch?
Yes	No	Is there a potential smoke hazard on nearby Hwys?
Yes	No	Are control lines being constructed with safe anchor points?
Yes	No	Are you still comfortable managing this fire?

Risk Analysis

	LOW	MODERATE	HIGH	EXTREME
Haines Index	1-2	3	4	5-6
Relative Humidity	Over 45	35 to 45	20 to 35	Under 20
Wind Speed	Calm	Under 10	10 to 20	Over 20
Wind Indicators		Developing Cumulus	Thunderheads Present	Cold Fronts or High Wind Aloft
Slope Percent	Flat	Under 15	15 to 30	Over 30
Flame Length	Under 2'	2' to 4'	4' to 8'	Over 8'
Resistance to Control	None	Some	Moderate	High
Spotting	None	Little	Some	Frequent
Time of Day	2000-1000	1600-2000	1000-1200	1200-1600
Public Safety / Evacuation	No	Limited	Yes	In Process
Structure Loss Potential	None	Possibly	High	Already Involved
Have Enough Resources?	Yes	To be determined	Not sure	No
Probability of Success	High	Moderate	Low	Poor

LCES:
Lookouts
Communications
Escape Routes
Safety Zones

Weather Observations

Location	Elevation	Obs Time	Eye Level Ws (dir/vel)	Temp Dry / Wet: RH	Remarks (clouds, etc)
				/ :	
				/ :	
				/ :	
				/ :	

Spot Forecast

Time	Temp	RH %	Wind Speed	Wind Direction	Smoke Dispersion
Today					
Tonight					
Tomorrow					

Fire Report Information

Time of Origin:

Time of Discovery:

Detection by:

P-Code:

District #:

SO#:

Fire Contained:

Fire Controlled:

Fire Out:

Final Acreage:
 NFS PVT TOTAL

Complexity Analysis

This is a minimum complexity analysis. Any locally developed analysis will address these items as a minimum. The complexity analysis should be reviewed periodically to determine the level of management required.

	DATE / TIME		DATE / TIME		DATE / TIME	
	YES	NO	YES	NO	YES	NO
Safety						
Exposure of personnel to unusually hazardous conditions	___	___	___	___	___	___
Accidents have occurred	___	___	___	___	___	___
Multiple aircraft are involved or anticipated	___	___	___	___	___	___
Potential for public evacuations	___	___	___	___	___	___
Terrain adversely affects tactical capability / limits safety zones	___	___	___	___	___	___
Fire fighter performance affected by cumulative fatigue	___	___	___	___	___	___
External / Political Factors						
Potential for numerous damage claims	___	___	___	___	___	___
More than one jurisdiction involved	___	___	___	___	___	___
Fire policy is controversial	___	___	___	___	___	___
Sensitive public/media relationships	___	___	___	___	___	___
Lack of cohesive organizational structure	___	___	___	___	___	___
Resource Issues						
Structures	___	___	___	___	___	___
Cultural values	___	___	___	___	___	___
Recreational developments	___	___	___	___	___	___
Urban interface	___	___	___	___	___	___
Critical watershed	___	___	___	___	___	___
T & E Species	___	___	___	___	___	___
Fire Behavior						
Current or predicted fire behavior dictates indirect strategy	___	___	___	___	___	___
Fuels are extremely dry (90 th percentile)	___	___	___	___	___	___
Red Flag Warnings present or predicted	___	___	___	___	___	___
Extreme fire behavior exhibited	___	___	___	___	___	___
Current or predicted winds above 20 MPH	___	___	___	___	___	___
Severe fire weather predicted for next two burning periods	___	___	___	___	___	___
Personnel / Equipment						
100 or more personnel assigned to incident	___	___	___	___	___	___
Variety of special support personnel or equipment	___	___	___	___	___	___
Resources unfamiliar with local conditions and accepted tactics	___	___	___	___	___	___
Heavy commitment of local resources to logistical support	___	___	___	___	___	___
Local Initial forces nearly depleted	___	___	___	___	___	___
Two operational periods worked with limited success	___	___	___	___	___	___
Communication challenges are present	___	___	___	___	___	___
Total number of elements checked:	___	___	___	___	___	___

Complexity Analysis Rating:

1-3 Current management sufficient. Type 3 organization should be considered.

4-6 Complexity level suggests a Type 3 team.

7-10 Complexity level suggests a Type 2 or higher team. Additional analysis is warranted. WFSA may be required.

Prepared by: _____ Date: _____ Time: _____

Reviewed by: _____ Date: _____ Time: _____

Reviewed by: _____ Date: _____ Time: _____

Remarks / Decision Rationale.

Briefing Checklist

SITUATION

Fire Name _____
Location _____
Other Incidents in the Area _____
Fuel Type _____
Current Fire Weather _____
Expected Fire Weather _____
Fire Behavior _____

MISSION

Incident Commander _____
Strategy/Objectives _____

Tactical Assignments _____

Contingency Plans _____

COMMUNICATIONS

Tactical Frequency _____
Command Frequency _____
Air To Ground Frequency _____
Cell Phone Numbers _____
Medivac Plan _____

LOGISTICAL SUPPORT

Aviation operations _____
Logistics _____

RISKS/HAZARDS

Anchor Point _____
Look outs _____
Escape Routes _____
Safety Zones _____
Hazards _____
Trigger Points for Disengagement _____

Map Sketch



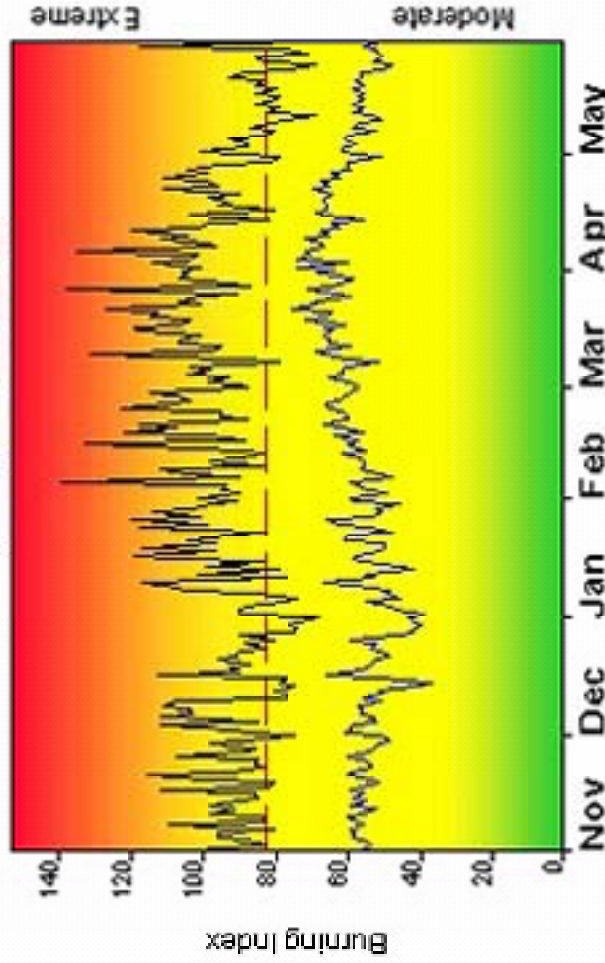
Directions to fire:

Appendix D

Fire Danger Pocket Cards

FIRE DANGER -- Francis Marion NF - Coast

Maximum, Average, and 90th Percentile



Fire Danger Area:

- SC Coastal Plain
- Coastal Plain
- Witherbee NFDRS



Fire Danger Interpretation:



EXTREME -- Use extreme caution
(Caution) -- Watch for change
Moderate -- Lower Potential, but always be aware

Maximum -- Highest Burning Index by day for 1970 - 2002

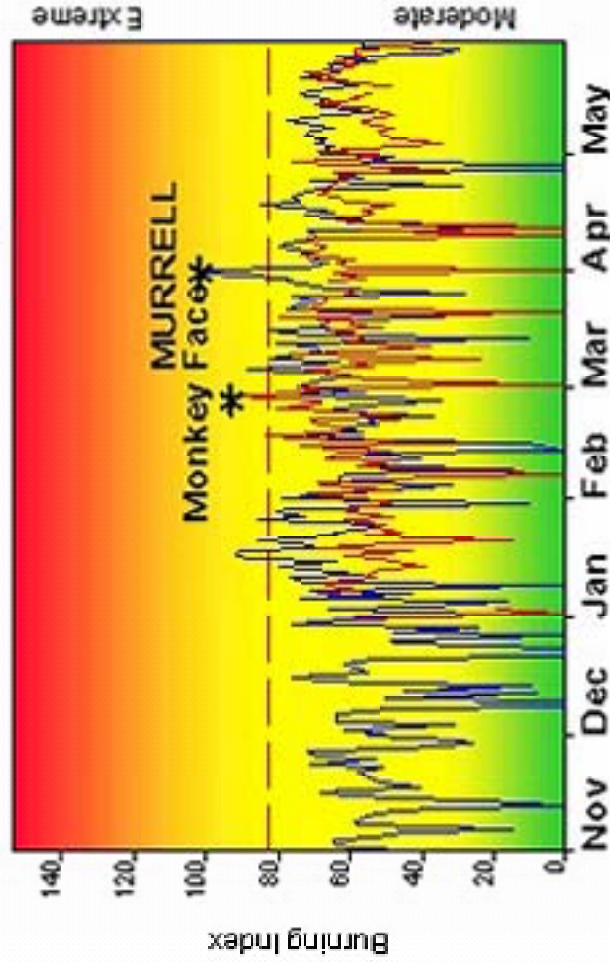
Average -- shows peak fire season

90th Percentile -- Only 10% of the days from 1970 - 2002 had an Burning Index above 82

Local Thresholds - Watch out:

Combinations of any of these factors can greatly increase fire behavior:
 20' Wind Speed over 12 mph, RH less than 40%,
 Temperature over 75

Years to Remember: 1997 2002



Remember what Fire Danger tells you:

- ✓ Burning Index gives day-to-day fluctuations calculated from 2 pm temperature, humidity, wind, daily temperature & rh ranges, and precip duration.
- ✓ Wind is part of BI calculation.
- ✓ Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- ✓ Listen to weather forecasts -- especially WIND.

Past Experience:

Fire behavior generally intensifies in February, March and April. During this period, fire behavior is particularly intense in the Carolina Bays (evergreen shrub communities).

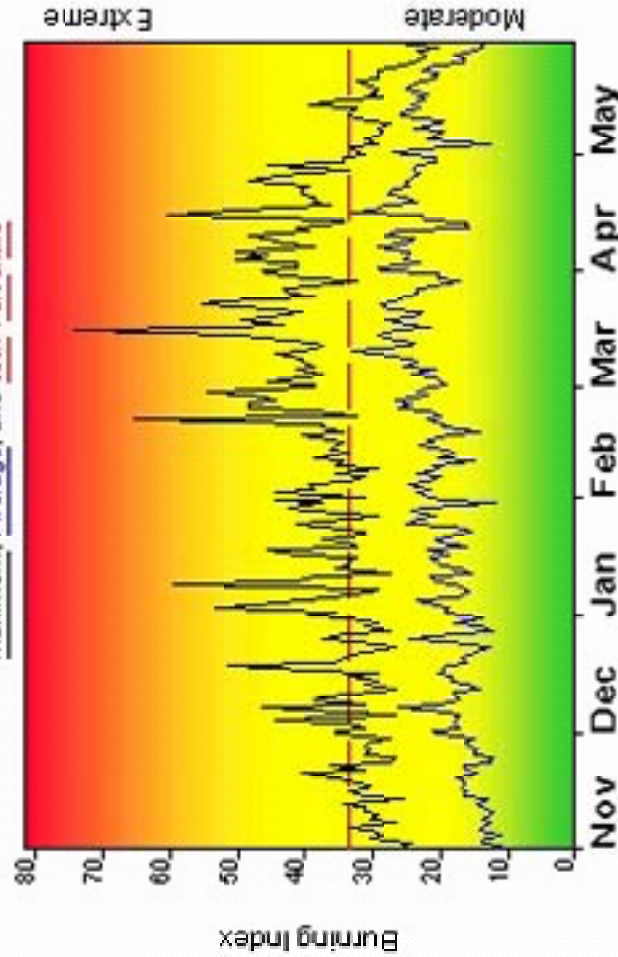
- L -- Lookouts
- C -- Communications
- E -- Escape Routes
- S -- Safety Zones

August 2002

Developed by NAGFDR--National Advisory Group for Fire Danger Rating

FIRE DANGER -- Sumter NF - Mountains

Maximum, Average, and 90th Percentile



Fire Danger Area:

- ♦ SC Mountains
- ♦ Mountains
- ♦ Andrew Pickens NFDRS

Fire Danger Interpretation:



EXTREME -- Use extreme caution
(Caution) -- Watch for change
Moderate -- Lower Potential, but always be aware

Maximum -- Highest Burning Index by day for 1979 - 2002

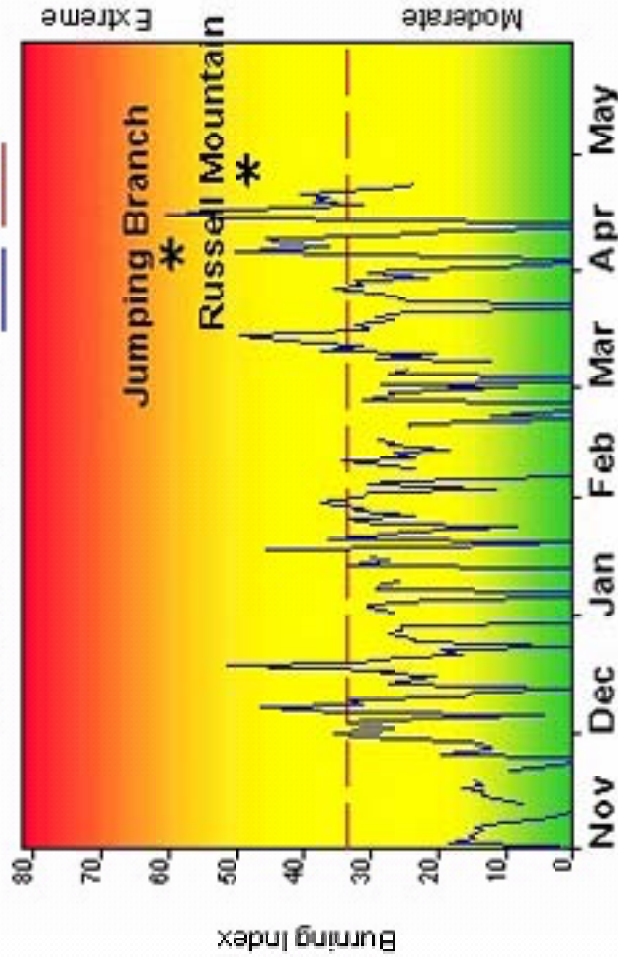
Average -- shows peak fire season

90th Percentile -- Only 10% of the days from 1979 - 2002 had an Burning Index above 33

Local Thresholds - Watch out:

of any of these factors can greatly increase fire behavior:
20' Wind Speed over 15 mph, RH less than 30%,
Temperature over 75

Years to Remember: 1979 1983

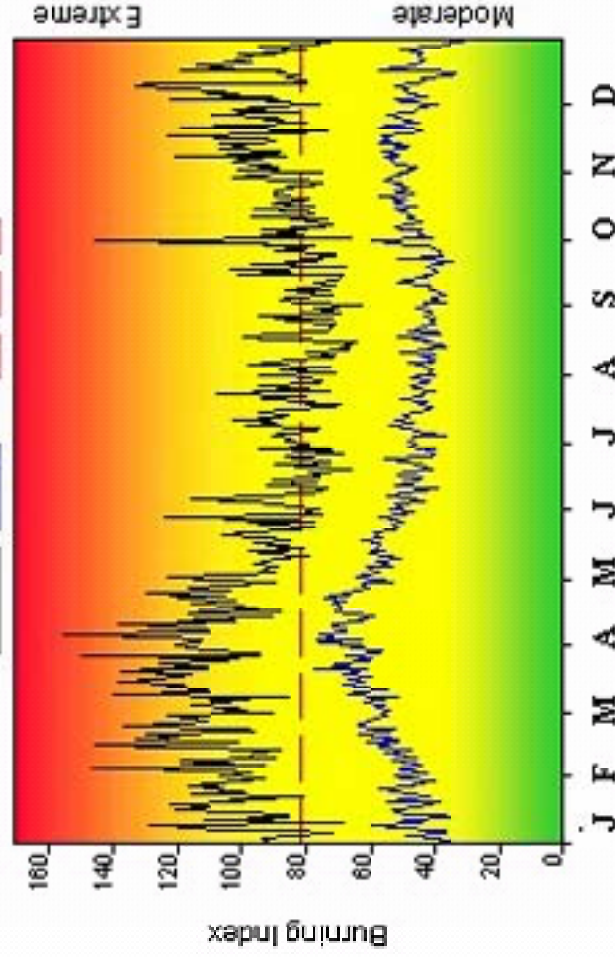


Fuel Model: E - Hardwood Litter (Winter)

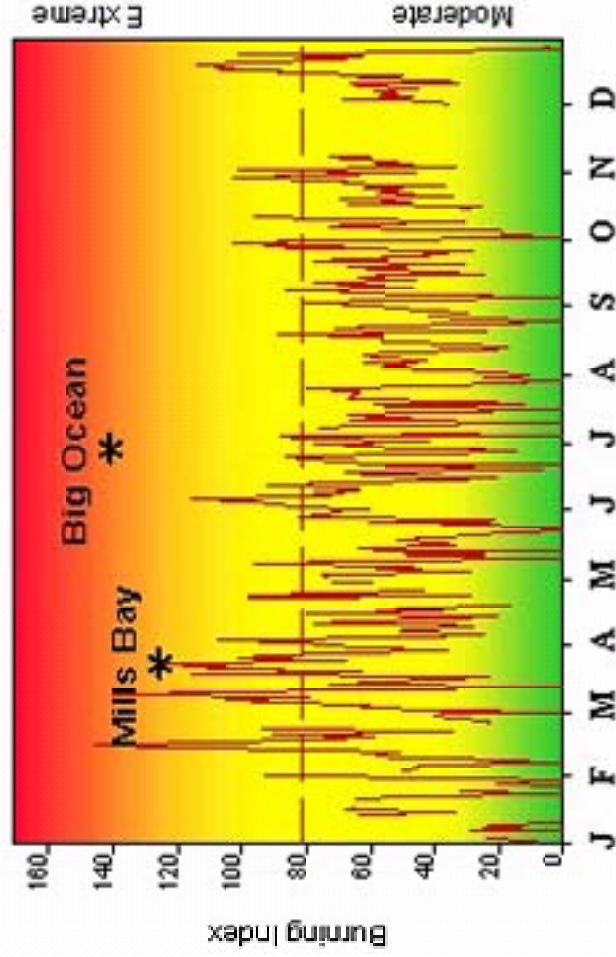


FIRE DANGER -- Francis Marion NF

Maximum, Average, and 90th Percentile



Years to Remember: 1988 1991



Fuel Model: O - High Pocosin

Fire Danger Area:

- ◆ SC Coast
- ◆ Coastal Plain
- ◆ Witherbee NFDRS

Fire Danger Interpretation:



EXTREME -- Use extreme caution
(Caution) -- Watch for change
Moderate -- Lower Potential, but always be aware

Maximum -- Highest Burning Index by day for 1970 - 2002

Average -- shows peak fire season

90th Percentile -- Only 10% of the days from 1970 - 2002 had an Burning Index above 81

Local Thresholds - Watch out:

Combinations of any of these factors can greatly increase fire behavior:
20' Wind Speed over 12 mph, RH less than 40%,
Temperature over 75

Remember what Fire Danger tells you:

- ✓ Burning Index gives day-to-day fluctuations calculated from 2 pm temperature, humidity, wind, daily temperature & rh ranges, and precip duration.
- ✓ Wind is part of BI calculation.
- ✓ Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- ✓ Listen to weather forecasts -- especially WIND.

Past Experience:

Fire behavior generally intensifies in February, March and April. During this period, fire behavior is particularly intense in the Carolina Bays (evergreen shrub communities).

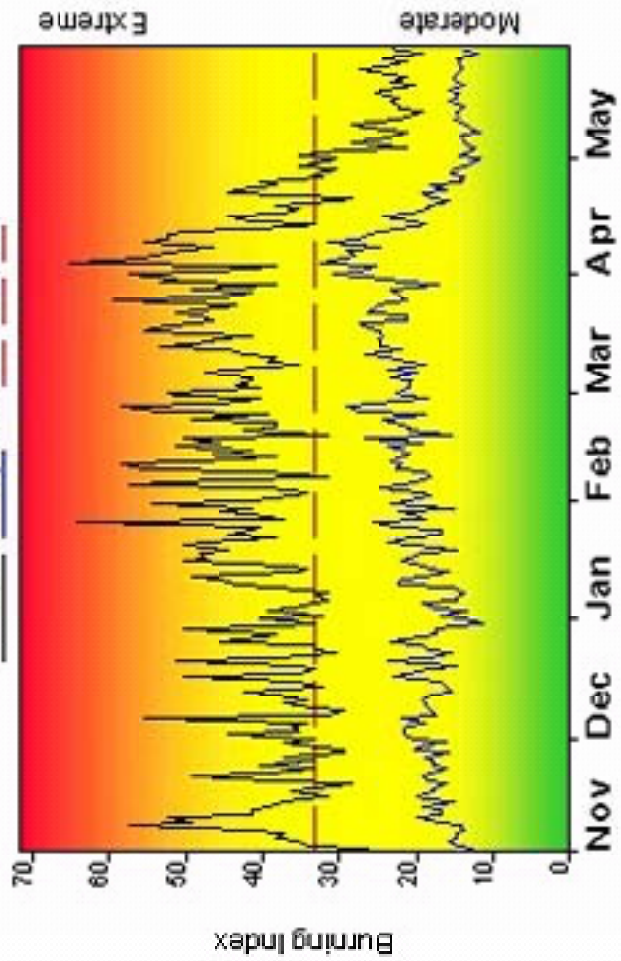
- L -- Lookouts
- C -- Communications
- E -- Escape Routes
- S -- Safety Zones



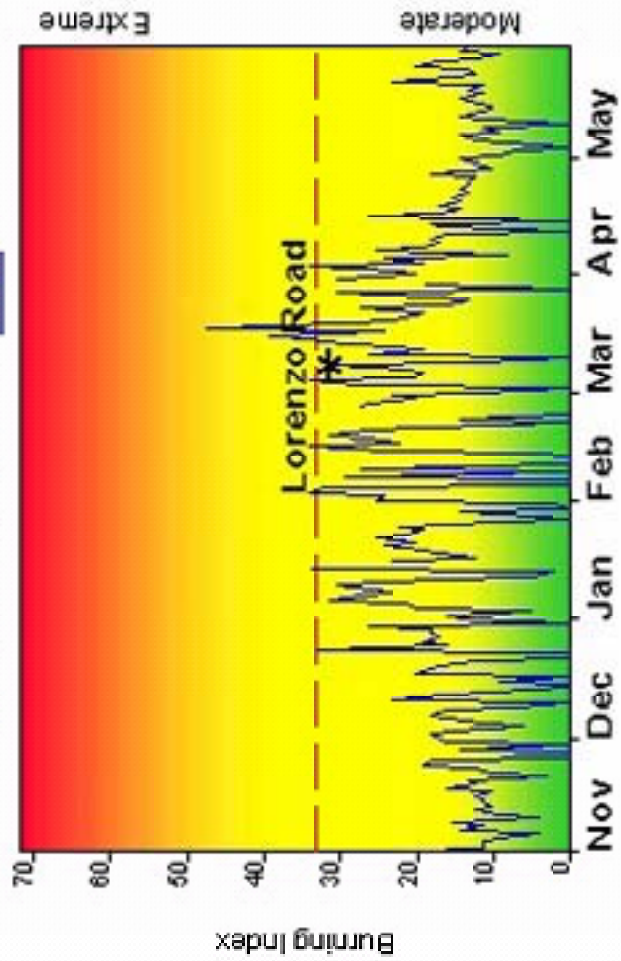
November 2002

FIRE DANGER -- Sumter NF - Piedmont

Maximum, Average, and 90th Percentile



Years to Remember: 1994



Fuel Model: E - Hardwood Litter (Winter)

Fire Danger Area:

- ◆ SC Piedmont
- ◆ Piedmont
- ◆ Whitmire NFDRS

Fire Danger Interpretation:



EXTRBME -- Use extreme caution
(Caution) -- Watch for change
Moderate -- Lower Potential, but always be aware

Maximum -- Highest Burning Index by day for 1970 - 2002

Average -- shows peak fire season

90th Percentile -- Only 10% of the days from 1970 - 2002 had an Burning Index above 33

Local Thresholds - Watch out: Combinations

of any of these factors can greatly increase fire behavior:
 20' Wind Speed over 15 mph, RH less than 30%,
 Temperature over 80

Remember what Fire Danger tells you:

- ✓ Burning Index gives day-to-day fluctuations calculated from 2 pm temperature, humidity, wind, daily temperature & rh ranges, and precip duration.
- ✓ Wind is part of BI calculation.
- ✓ Watch local conditions and variations across the landscape -- Fuel, Weather, Topography.
- ✓ Listen to weather forecasts -- especially WIND.

Past Experience:

Fire cause was railroad. Spread rapidly through fine fuels in pine plantation. In general fire intensities are lower on the Piedmont units. Fires can move rapidly when wind driven. Terrain is gently rolling hills. Ownership is dispersed among pastoral private lands.

- L -- Lookouts
- C -- Communications
- E -- Escape Routes
- S -- Safety Zones



November 2002

APPENDIX E
DELEGATION OF AUTHORITY

*A format for the line officer's
delegation of authority to the incident
commander.*

DELEGATION OF AUTHORITY

A. INTRODUCTION

The transfer of authority for suppression actions on a wildland fire is accomplished through the execution of a written delegation of authority from the line officer with responsibility for the land area involved to the incident commander who will be assigned responsibility for implementing the agency's strategic direction for management of the incident. In conjunction with the wildland fire situation analysis, the delegation of authority is the most important procedural responsibility the line officer has in managing the wildland fire.

An incident management team will assume the authority to manage suppression actions on a fire only after receiving a signed delegation of authority from the line officer which is definitive enough for the situation and mutually acceptable. The delegation is a part of the briefing package provided by the line officer and appropriate staff to the incident management team.

The term line officer is synonymous with agency administrator.

B. PURPOSE OF THE DELEGATION OF AUTHORITY

A letter delegating authority and assigning responsibilities should be issued by the line officer whenever an incident commander and his or her Team is assigned to manage an incident on the Forest.

Prepare a delegation of authority specific enough to convey to the incident commander your expectations, yet broad enough to allow the team to be responsive to contingencies which develop during the incident. Any constraints that are necessary for the Forest to meet land management objectives, avoid political problems and high levels of public concern, prevent unacceptable environmental impacts, or jeopardize firefighter or public safety should be included in sufficient detail for clear understanding between the line officer and incident commander. Where the team can be given the latitude to carry out the line officer's direction within the WFSA preferred alternative, further constraints only inhibit and reduce the Team's management effectiveness and should be considered carefully.

Consider the delegation of authority as the performance objectives for the team on this incident. If that document is vague, the team cannot be held accountable for specific intentions the agency may have, but failed to clearly communicate in writing. If it is too

restrictive, the team loses the necessary latitude to be responsive to changed conditions in the fire's environment that may require immediate action.

The direction provided in the delegation and the strategic objectives in the WFSA should serve as the basis for evaluating the performance of the incident management team at the conclusion of their assignment.

C. WHO IS RESPONSIBLE?

As in delegating any authority, the delegation for the management of a wildland fire incident can only be made by the person responsible for management of the lands involved. In most cases, on National Forest System lands, that person is the District Ranger, including those lands where the Forest Service is both the jurisdictional agency and the protection agency. For incidents involving more than one Ranger District, or adjacent lands, either public or private, the Forest Supervisor will act as the responsible line officer. The Forest Supervisor will also represent the line officer's role in incident management anytime an area command team is in place during multiple incident situations on the Forest or involving the Forest and cooperating agencies. In this case, the supervisor will issue a single delegation of authority to the area commander, and the area commander will further delegate authority to individual incident commanders specifically for the incidents they are managing.

D. COMPONENTS TO INCLUDE IN THE DELEGATION OF AUTHORITY

The delegation of authority should identify objectives and important issues identified by the Forest, placing performance expectations on the incident management team, and should identify and explain:

- jurisdictional and protection responsibility for the lands involved in the wildland fire, including responsibility for structural protection where relevant.
- the line officer's representative who is authorized to speak for the delegating line officer.
- suppression objectives and their priority.
- specific suppression tactics or areas that require line officer approval.
- initial attack responsibilities and areas that may be assumed by the team.
- resource advisor who will represent the line officer's specific direction to the team.

- basic documents that guide incident management on the agency/unit.
- cost constraints and guidelines.
- property accountability; fire loss/use rate expectations.
- Incident business advisor and required coordination with the team.
- guidelines for media relations and incident information management.
- procedures dealing with threats to other jurisdictions and private property.
- any local logistical considerations, including procurement and supply procedures.
- any other constraints or issues, such as current activities by Forest or other agencies, legal requirements, training opportunities, etc.

In any specified direction, use clear, measureable descriptions to the extent possible.

E. EXAMPLE OF A DELEGATION OF AUTHORITY LETTER

The following is a sample format for the delegation of authority from the line officer to the incident commander.

File Code: 5130

Date:

Subject: Delegation of Authority, _____ Wildland Fire Incident

To: _____, Incident Commander

I hereby delegate authority for the management of the _____ Wildland Fire Incident to you as Incident Commander of the _____ Type _ IMT. This fire is currently burning on _____ lands under the jurisdiction of _____. The local fire protection agencies for private property are _____.

You will report to the _____ Incident Base following the Agency Administrator's briefing on _____ at _____ am/pm at the _____ Office. Your team will assume full command of the incident following shift change at _____ am/pm on _____.

I expect all suppression efforts will be executed in accordance with the selected strategy identified in the the WFSAs prepared for the _____ incident. I or my representative(s) will be available for daily review of the WFSAs throughout this incident.

I have designated _____ as my representative in my absence. I have assigned _____ as the Resource Advisor to the incident.

Suppression objectives priorities, as outlined in the WFSAs, are:

1. _____
2. _____
3. etc

Any _____ suppression tactics within the _____ area must be approved by me or my representative. Within the _____ Wilderness _____ is approved. The following areas are designated _____ habitat. Suppression activities within these areas should consider _____.

Effective management of costs commensurate with resource values to be protected and strategic direction of the WFSAs selected alternative is critical. A comptroller will be appointed and available to our staff. Property accountability should demonstrate adherence to National direction on acceptable fire loss/use rates.

_____ will be responsible for Initial Attack within the area _____ from the _____ Incident. The _____ National Forest will assume Initial Attack responsibilities outside the this specified area.

Resources committed to the fire are _____.

Fire information and media relations will be coordinated with _____,
_____ National Forest PAO.

I request that personnel assigned to the incident be sensitive to _____
community(ies) by respecting _____. I also request that as much
purchasing as possible be done through local vendors.

I have included excerpts from the _____ Forest Plan into the briefing
documentation. Other documents that pertinent to fire suppression efforts within the area
are:

I welcome your team to _____ and wish you a safe and successful assignment.
You can reach me at _____ and my representative at _____.

Supervisor Steve
_____ National Forest

APPENDIX E
Agency Administrator's Briefing to Incident Management Team

General Information
Name of Incident:
Type of Incident:
Incident Start Date:
Approximate Size of Incident:
Location:
Time:
Cause:
General Weather Conditions:
Local Weather or Behavioral Conditions:
Land Status:
Local Incident Policy:
Resource Values Threatened:
Private Property or Structures Threatened:
Capability of Unit to Support Team (Suppression and Support Resources):
Command Information/Written Delegation of Authority
Agency:
Agency Administrator's Representative:

Transition
Name of Current Incident Commander:
Timeframe for Team to Assume Command: Date: Time:
Recommended Local Participation in IMT Organization:
Current IC and Staff Roles Desired after Transition:
Other Incidents in Area:
Other Command Organizations (Unified/Area/MAC):
Local Emergency Operations Center (EOC) Established:
Trainees Authorized:
Legal Considerations (Investigations in Progress):
Known Political Considerations:
Sensitive Residential and Commercial Developments, Resource Values, Archeology Sites, Roadless, Wilderness, and Unique Suppression Requirements:
Local Social/Economic Considerations:
Private Representatives Such as timber, Utility, Railroads, and Environmental Groups:

Incident Review Team Assigned (FAST, Audit, Other):
Incident Commander:
Agency Administrator:
Local Public Affairs:
Other:
Unit FMO:
Expanded Dispatch:
Local Public Affairs:
Other:
Safety Information
Accidents and Injuries to Date:
Condition of Local Personnel:
Known Hazards:
Injury and Accident Reporting Procedures:
Planning Section/General Information
Access to Fax and Copy Machines:

Access to Computers and Printers:
Existing Pre-Attack Plans:
Other Nearby Incidents Influencing Strategy/Tactics/Resources:
Training Specialist Assigned or Ordered:
Training Considerations:
Situation Unit
General Weather Conditions/Forecasts:
Fire Behavior:
Local Unusual Fire Behavior and Fire History in Area of Fire:
Fuel Type(s) at Fire:
Fuel Type(s) Ahead of Fire:
Resources Unit /Refer to Attached Resource Orders
Personnel on Incident (General):
Equipment on Incident (General):
Resources on Order (General):
Incident Demobilization Procedures:

Operations Section		
Priorities for Control, Wildland Fire Situation Analysis Approved:		
Current Tactics:		
Incident Accessibility by Engines and Ground Support:		
Air Operations		
Air Tactical Group Supervisor:		
Airtankers Assigned:		
Effectiveness of Airtankers:		
Air Base(s):	Telephone:	
Logistics Section/ Facilities Unit		
ICP/Base Pre-Plans:	Yes	No
ICP/Base Location:		
Catering Service/Meals Provided:		
Shower Facilities:		
Security Considerations:		
Incident Recycling:		
Supply Unit		
Duty Officer or Coordinator Phone Number:		

Expanded Dispatch Organization:			
Supply System to be Used (Local Supply Cache):			
Single Point Ordering:			
Logistics Section /Communications			
NFRC System on Order:	Yes	No	Type:
Local Network Available:	Yes	No	
Temporary:			
Cell Phone Cache Available:	Yes	No	
Landline Access to ICP:	Yes	No	
Local Telecom Technical Support:			
Ground Support Unit			
Route to ICP/Base:			
Route From ICP/Base to Fire:			
Medical Unit:			
Nearest Hospital or Desired Hospital:			
Nearest Burn Center, Trauma Center:			

Nearest Air Ambulance:
Finance Section
Name of Incident Agency Administrative Representative:
Name of Incident Business Advisor (If Assigned):
Agreements and Annual Operating Plans in Place:
Jurisdictional Agencies Involved:
Need for Cost Share Agreement:
Cost Unit
Fiscal Considerations:
Cost Collection or Trespass:
Management Codes in Use:
Procurement Unit
Buying Team in Place or Ordered:
Contracting Officer Assigned:
Copy of Local Service and Supply Plan Provided:
Is All Equipment Inspected and Under Agreement:
Emergency Equipment Rental Agreements

Compensation/Claims Unit
Potential Claims:
Status of Claims/Accident Reports:
Time Unit
Payroll Procedure Established for T&A Transmittal:

APPENDIX E
Briefing Checklist

Situation

- Fire name, location, map orientation, other incidents in area
- Terrain influences
- Fuel type and condition
- Fire weather (previous, current, and expected)
Winds, RH, temperature, etc.
- Fire behavior (previous, current, and expected)
Time of day, alignment of slope and wind, etc.

Mission/Execution

- Command
Incident commander/immediate supervisor
- Commander's intent
Overall strategy/objectives
- Specific tactical assignments
- Contingency plans

Communications

- Communication plan
Tactical, command, air-to-ground frequencies
Cell phone numbers
- Medivac plan

Service/Support

- Other resources
Working adjacent and those available to order
Aviation operations
- Logistics
Transportation
Supplies and equipment

Risk Management

- Identify known hazards and risks
- Identify control measures to eliminate hazards/reduce risk
Anchor point and LCES
- Identify trigger points for disengagement/re-evaluation of operational plan

Questions or Concerns?

Appendix F

Cooperative Agreements

FS agreement No. 02-FI-11081209-010
Cooperator tax ID No. 69-0570001
Cooperator Agreement No. _____

**COOPERATIVE FIRE PROTECTION AGREEMENT
BETWEEN
STATE OF SOUTH CAROLINA, FORESTRY COMMISSION
AND
FOREST SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE
FRANCIS MARION AND SUMTER NATIONAL FORESTS
AND
USDA FOREST SERVICE, SAVANNAH RIVER**

This agreement, made and entered into by the Forest Service, United States Department of Agriculture, acting for and through the Forest Supervisor, Francis Marion and Sumter National Forests and the Forest Manager, USDA Forest Service, Savannah River for the Department of Energy, Savannah River Site, hereinafter referred to as the Forest Service, and the South Carolina Forestry Commission, acting for and through the State Forester, hereinafter referred to as the Commission, under provisions of the Reciprocal Fire and Protection Act of May 27, 1955 (42 USC 1856A, PL 84-46) the Granger-The Act of April 24, 1950 (16 USC 572), the Cooperative Funds and Deposits Act of December 12, 1975 (16 USC 565 a1-a3, Pub. L. 94-148), and the Atomic Energy Act of 1954.

WITNESSETH:

WHEREAS, the Forest Service is responsible for the fire suppression, prevention and detection within the Francis Marion-Sumter National Forests and the Savannah River Site, located in South Carolina, and

WHEREAS, the Commission is responsible for the prevention, detection, and suppression of wildland fires on all lands in the State of South Carolina, except those lands under Federal Ownership and lands within corporate city limits, and

WHEREAS, it is in the mutual interest of both the Forest Service and the Commission to coordinate their efforts in the prevention, detection, and suppression of wildland fires, in and adjacent to their areas of responsibility without duplication, and

WHEREAS, it is in the intent of the parties hereto that Commission firefighters be allowed to assist in the suppression of wildland fires; on the Francis Marion-Sumter National Forests, the DOE Savannah River Site lands on which the Forest Service is obligated to deploy suppression forces, and National mobilization efforts in other states, and

WHEREAS, it is the intent of the parties hereto that the Forest Service be allowed to assist in the suppression of wildland fires on private or state lands which the Commission is committed to protect.

NOW, THEREFORE in consideration of the above premises, the parties hereto agree as follows:

I. DEFINITION OF TERMS

- a. Reciprocal Fire Protection Services - The non-reimbursable fire protection assistance, extended by either party to lands of the other party, as each may be in a position to furnish (Reciprocal Resources).
- b. Reimbursable Fire Protection Services - Ordered resources exceeding reciprocal fire protection services furnished by either party, that are assigned for more than 24 hours or after the First 24 Hours, or required 1 hour or greater travel time.
- c. First 24 Hours - The period of fire suppression from the time of initial attack on a fire to 24 hours hence.
- d. Initial Attack Fire - A fire that is generally controlled by the initial attack forces within a single burning period or operational period.
- e. Primary Protection Area - That area, which by law, or agreement is provided protection by the Commission or the Forest Service.
- f. Boundary Fire - A fire burning within 1/4 mile adjacent to the primary protection area boundary between the Forest Service and Commission protected lands.
- g. Protecting Agency - The agency responsible for providing wildland fire protection to the primary protection area.
- h. Supporting Agency - The agency providing suppression, support, or service resources to the agency possessing primary fire protection responsibility for the area upon which the wildland fire is located.
- i. Direct Costs - Costs directly related to the suppression effort, not including dispatching or other administrative costs.
- j. Annual Operating Plan (AOP) - A plan developed at the Fire Management Staff level for implementing the Cooperative Suppression Agreement for their area of responsibility. (See Appendix)
- k. Local Assignment - Fire suppression or support provided within the State of South Carolina.

II. RECIPROCAL FIRE PROTECTION

A. The Forest Service Will:

Initial attack or assist the Commission with fires burning on Commission protected lands which are considered to be a threat to Forest Service protected lands as shown on maps which are part of the Annual Operating Plan.

B. The Commission Will:

Initial attack or assist the Forest Service with fires burning on Forest Service protected lands which are considered to be a threat to Commission protected lands as shown on maps which are part of the Annual Operating Plan.

C. Both Parties agree:

1. Organization

To use the Incident Command System (ICS) as developed by the National Wildfire Coordination Group (NWCG) in cooperation with the National Association of State Foresters, U. S. Department of Agriculture and U.S. Department of Interior, as published in NWCG Handbook 410-1.

2. Initial Attack Responsibilities

The Commission and the Forest Service agree to initial attack boundary fires upon detection. Notification to the other agency through established dispatch channels will occur immediately following the dispatch of initial attack resources or upon detection. The dispatch of agency initial attack resources to wildfires located outside of agency primary protection boundary will occur upon request by the agency having the primary protection responsibility.

3. Reciprocal Fire Protection Services

Reciprocal assistance will be given at no cost to the protecting agency for suppression of boundary fires, and resources which require less than one hour travel. Because they are initial attack resources of the supporting agency, they should be released as soon as possible. In no case shall they be held beyond the First 24 Hour without consent of the supporting agency. Resources that are held beyond this period, or require more than 1 hour of travel time are no longer Reciprocal and become Reimbursable Resources.

II. RECIPROCAL FIRE PROTECTION

4. Boundary Fires

Either agency can initial attack a fire burning within 1/4 mile of the boundary between Forest Service and Commission protected lands with the exception of the USDA Forest Service, Savannah River, which will request Commission assistance, if needed, for boundary fires burning inside the Savannah River Site perimeter fence. The USDA Forest Service, Savannah River may respond along with the Commission to fires burning up to 1 mile outside the Savannah River Site boundary with notification to the appropriate Commission Dispatch Center. Each agency will bear the cost of its initial attack forces on a boundary fire. Unless the fire is confined to the protection area of the Commission or the Forest Service, a unified command structure will be implemented within the incident organization. The Incident Commanders from both agencies at the fire shall mutually agree upon fire suppression objectives and strategy and commitment of agency suppression resources.

Boundary fires requiring structural fire suppression, which includes exterior and interior actions on burning structures, is the responsibility of State and local fire departments. Forest Service employees will limit structural fire suppression action to exterior attack to prevent structure fires from spreading to the wildland or from the wildland to the structure. Protection measures should be limited to actions such as; foam or water application to the exterior of a structure, fuel removal, and burning out around buildings (FSM 5138.1.2).

5. Facilities, Equipment, and Supplies

It is mutually agreed when beneficial for the protection of Forest Service administrative lands, State and private lands and in conformance with existing laws and regulations, the Commission and the Forest Service may procure, loan, lease, or exchange facilities, equipment, supplies and share support services. This may include such things as fire equipment, weather stations, lightning detection equipment, communication equipment. The Annual Operating Plan will outline specific situations and conditions. Any shared cost or reimbursement will be governed in accordance with existing policy of each agency.

6. Cooperative Training

The Commission and the Forest Service will cooperate in the development of interagency courses and conduct interagency training sessions. Both agencies will cooperate in communication of planned training courses and will assist each other in meeting training needs.

II. RECIPROCAL FIRE PROTECTION

7. Annual Operating Plan

Each year, the Commission and the Forest Service will mutually develop annual Operating Plans (AOP) which will document specific responsibilities of each agency. AOP's will be consistent with Commission and Forest Service policies.

An AOP will be mutually prepared at the Agency Fire Management Staff Level. Copies of the plans will be submitted to the State Forester and the respective Forest Service Line Officer for approval by September 15 or no later than January 1 of each year. If appropriate only the annual revisions need to be submitted, and the approved AOP becomes part of this agreement by attachment.

8. Employment Policy

It is agreed that employees of the parties to this agreement shall at all times be subject only to the laws, regulations, and rules governing their employment and shall not be entitled to compensation or other benefits of any kind other than specifically provided by the terms of their employment.

9. Accident Investigation

Whenever an accident occurs involving the equipment or personnel of a supporting agency, the jurisdiction agency shall take immediate steps to notify the supporting agency that an accident has occurred. The jurisdictional agency shall conduct an investigation of the accident. The investigation shall be conducted by a team made up of appropriate representatives from both agencies.

10. Waiver of Claims

When Forest Service personnel are fighting fires on lands which the Commission has primary protection, the United States of America shall not be liable to the landowner for any damage in the consequence of the performance of work under this section of this agreement. This clause shall not be construed to constitute an agreement by the Commission to indemnify or save and hold the United States harmless from any claims for damages resulting from work performed under this section of this agreement.

When Commission personnel are fighting fires on lands for which the Forest Service has the primary protection, and at such time when they are specifically assigned to the direct supervision of the Forest Service, such Commission personnel, although not Federal employees for any other purposes, will be considered as Commission employees for the purpose of the Federal Employees Compensation Act and the Federal Tort Claim Act, in consequence of their performance under this section of this agreement.

II. RECIPROCAL FIRE PROTECTION

11. Officials not to Benefit

No member of, or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or that any benefit to arise therefrom, unless it is made with a corporation for its general benefit.

12. Duration of Agreement

The terms of this agreement shall commence on the last signatory date, and shall continue in effect through **September 30, 2006**, unless one or both parties terminate it upon written request at which time the agreement will be terminated 60 days from the date of the formal request.

13. Amendments Procedure

This agreement may be amended at any time by written mutual consent of the parties hereto.

III. REIMBURSABLE FIRE PROTECTION SERVICES

All requests for resources which are not identified as Reciprocal Services will be considered Reimbursable Services. All requests for Reimbursable Fire Protection and National Fire Equipment System supplies (NFES) will be formally recorded on the appropriate Resource Order form (NFES# 1470 through NFES# 2216) processed through established dispatch channels. Requests not processed in this manner will not be reimbursed.

1. Aircraft

The ordering agency will be responsible for payment of the hourly flight rate, pilot(s), fuel truck mile, extended standby, helicopter modules, and retardant costs as a Reimbursable Resource, except initial attack boundary fires managed under a unified command structure. Flight rates for Agency owned aircraft will be reimbursable at the rate established by the owning agency. The ordering agency will be responsible for payment of overnight per diem expenses when aircraft are held overnight away from their home base.

III. REIMBURSABLE FIRE PROTECTION SERVICES

2. Accounting for Reimbursable Services

The Commission and the Forest Service will document expenditures incurred for providing Reimbursable Services under the terms of this agreement.

3. Billing Procedures

On fires where costs are incurred pursuant to the terms of this agreement, the billing agency shall submit a bill for reimbursement, in duplicate, within 45 days as identified in the AOP. The bill, identified by the fire name and/or number and Resource Order Number, will be documented listing the reimbursable services provided. For example, supporting documentation should include the following forms: Emergency Firefighters Time Report(s) (SF-261). If the cost is not known at the time of initial billing, then the partial bill, so identified may be submitted. A final bill, so identified will be issued when all costs are known; but in no case should this be more than the time identified in the AOP (ref: Billing and Payment). All bills for services provided will be mailed to the current official and address identified in the AOP.

Upon receipt of bills for services by the paying agency, payment will be due within 60 days, unless specified otherwise in the AOP. If payment cannot be made within 60 days, a 30 day extension may be requested by the paying agency with oral or written justification. Written notice that a bill is contested must be mailed to the respective address within 60 days of issuance of the original bill, and must fully explain the area of dispute. Contested items will be resolved not later than 180 days following control of the fire. The uncontested portion of the bill may be paid pursuant to stated requirements with a notation that the contested portion is being withheld, or the entire bill may be paid with a credit card provided when resolution is made.

For bills remaining unpaid at the close of the respective fiscal years, the billing agency must provide obligational amounts to the other. The Forest Service will submit obligational figures to the Commission by September 15 for the previous calendar year. The Commission will submit obligational figures to the Forest Service by September 15 for the period starting Oct. 1 of the previous calendar year through Sept. the current year.

IV. MISCELLANEOUS CONDITIONS

1. Either party will notify in advance, the other party of prescribed fire operations adjacent to their protection areas to avert unnecessary responses.
2. Each agency will be responsible for the training of their respective fire organizations and will invite appropriate representatives of the other agency to attend and participate in training or meetings for the purpose of promoting closer working relations and better acquaintance.

IV. MISCELLANEOUS CONDITIONS

3. Fire prevention and law enforcement efforts, as it pertains to wildland fire, will be coordinated to the maximum extent possible.
4. Both agencies will furnish each other, or otherwise make available upon request maps, documents, instructions, records, and reports including, fire reports and law enforcement reports which either agency considers necessary in connection with this agreement, subject to the United States Department of Agriculture, Department of Energy, and the State of South Carolina rules and regulations.
5. Each agency may install and maintain radio equipment in the other agency's facilities without charge, as provided for in the Annual Operation Plan.
6. Each agency, when suppressing fires for the other, will adhere to the suppression and mop-up standards of the protecting agency insofar as equipment and personnel are not available to meet standards. If adequate equipment and personnel are not available to meet the standards, the supporting agency will notify the protecting agency at the earliest possible time.
7. Employees of either agency shall, upon discovering or receiving reports of fires on areas protected by the other agency, report such fires promptly to the other agency through established dispatch channels.
8. When the Commission suppresses fire wholly or in part on Forest Service protected lands, a fire report will be forwarded to the Forest Service. The Forest Service will report on form 5100-29 to the Commission all fires on State and Private lands suppressed by the Forest Service. These reports will be forwarded within 30 days of the fire.
9. Equipment owned and used by each agency to suppress fires on lands for which the other is responsible will normally be operated, serviced, and repaired by the owning agency. Exceptions to this practice, where needed, will be agreed to in writing by both parties, in advance.
10. Except as provided for in Clause C10, Section II, personnel dispatched by either agency for the benefit of the other Agency under the terms of this Agreement will be considered as employees of the sending agency, and the said sending agency shall be responsible for the welfare of such personnel, including the treatment of any injuries which may result from, or be incurred enroute to or from or on any fire, as provided by the laws and regulations under which each agency operates.

IV MISCELLANEOUS CONDITIONS

11. Neither the Forest Service nor the Commission shall be bound to make any expenditure under the terms of this agreement, except as funds are appropriated by the Congress of the United States, the Legislature of the State of South Carolina, or which may otherwise be made available.

12. The salary or wages of personnel shall be at the actual cost to the sending unit for work time from the time of departure until the return to official station, including overtime, if and when overtime is earned, under the laws and rules governing the employees of the sending unit. Any exceptions will be documented in the AOP.

13. When either agency requests assistance from the other, the supporting agency will dispatch only personnel who meet or exceed the minimum position qualification standards as governed by their respective agency policy.

14. By accepting this agreement, the Commission agrees to comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by or pursuant to the regulations of the United States Department of Agriculture CFR, Part 15, issued pursuant to that Act, and hereby assures that in the operation and performance of this agreement it will take immediately any measures necessary to effectuate this requirement. If real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the State by the United States Department of Agriculture, this assurance shall obligate the State, or in the case of any transfer of such property, any transferee, for the period during which they retain ownership or possession of the property. In all other cases, this assurance shall obligate the State for the period during which the Federal financial assistance is extended by this agreement. This assurance is given in consideration of the Federal financial assistance in this agreement to the State by the United States Department of Agriculture. The State recognizes and agrees that such Federal assistance will be extended in reliance on the representations and agreements made in this assurance.

The State further agrees that the United States, in addition to any other rights and remedies provided by this assurance, the Civil Rights Act of 1964, or the regulations issued thereunder, shall have the right to enforce this agreement by suit for specific performance or by any other available remedy under the laws of the United States or the State in which this breach or violation occurs.

IN WITNESS WHEREOF, THE PARTIES HERETO HAVE EXECUTED THIS AGREEMENT:

STATE OF SOUTH CAROLINA
South Carolina Forestry Commission

FOREST SERVICE
U. S. Department of Agriculture

By: /s/ Bob Schowalter
BOB SCHOWALTER
State Forester
South Carolina Forestry Commission

By: /s/ David W. Wilson
DAVID W. WILSON
Forest Manager
USDA Forest Service, Savannah River

Date: 10/29/2001

Date: 12/16/2001

By: /s/ Jerome Thomas
JEROME THOMAS
Forest Supervisor
Francis Marion-Sumter National Forests

Date: 10/26/2001

The authority and format of this instrument
has been reviewed and approved for
signature.

/s/ Vinda W. Anderson October 11, 2001

(Name) DATE
Agreements Coordinator

FS agreement No. 02-FI-11081209-010A
Cooperator tax ID No. 69-0570001
Cooperator Agreement No. _____

STATE LEVEL ANNUAL OPERATING PLAN

FOR

COOPERATIVE FIRE PROTECTION AGREEMENT

BETWEEN

STATE OF SOUTH CAROLINA, COMMISSION OF FORESTRY

AND

UNITES STATES DEPARTMENT OF AGRICULTURE - FOREST SERVICE
FRANCIS MARION and SUMTER NATIONAL FORESTS

AND

USDA FOREST SERVICE, SAVANNAH RIVER

I. INTRODUCTION

This is an Annual Operating Plan (AOP) for implementing the current Cooperative Fire Protection Agreement between the South Carolina Forestry Commission (the Commission) and the Francis Marion-Sumter National Forests and the USDA Forest Service, Savannah River (the Forests). The purpose of the AOP is to establish specific procedures for cooperative fire management operations (i.e. prevention, pre-suppression, and suppression). As communications and costs are an essential component of these operations, it will be addressed within each operational function. This plan will be reviewed and updated annually by the participating agencies. The scheduled annual date for accomplishment is September 15th or no later than January 1. Should the plan not be in need of updating, an additional signature page will be attached. This signature page will state that no update was needed and the period covered. Should any appendix be amended during the annual operating period, an additional signature page will be attached. This signature page will state the specifics of the amendment.

II. PREVENTION

In the interest of avoiding duplication of effort, contacts, and distribution of literature, it is agreed that Forest Service District Rangers, Forest or USDA Forest Service, Savannah River Fire Staff, Commission Regional Foresters or State Fire Management Chief's Staff will meet to coordinate their prevention effort in areas of adjacent or reciprocal fire suppression responsibility. Special projects will be dealt with by these same parties on a case-by-case basis.

The Forest Manager, Forest Supervisor and State Forester or their representative will coordinate the dissemination of press releases, TV, and radio spots, etc. prior to fire season to avoid duplication or conflicting efforts.

Other fire prevention activities outside adjacent or reciprocal fire suppression responsibilities may be carried on by each agency without coordination.

It is also within the prerogative of the respective agencies to distribute literature produced solely by their respective agency. Insofar as possible, however, each agency should keep the other informed of their educational efforts. Costs will be borne by each party, unless an agreement to share costs has been reached and approved.

III. PRE-SUPPRESSION

A. Fire Detection

Aerial fire detection for the Francis Marion & Sumter National Forests and the USDA Forest Service, Savannah River will be performed through the use of agency approved aircraft. Aircraft owned or contracted by the Commission may be utilized when both the pilot and aircraft have been approved by the U.S. Forest Service.

The Forest Service will have "Call When Needed" (CWN) contracts with the private sector for aviation services. When ordered, the CWN contract services will be available to the Commission on a reimbursable basis.

B. Reporting Wildfires

1) Francis Marion and Sumter National Forests: Upon receipt of a reported wildfire on Forest Lands by the Commission or the general public, the appropriate Commission Dispatch Center will immediately telephone the South Carolina Interagency Coordination Center (SCICC) or page the "on call" dispatcher (outside office staffing hours) and relay the following size up information as available: Latitude/Longitude, estimated size, observed fire behavior, potential threat to life and property. The dispatcher will make the appropriate calls to dispatch initial attack resources. Boundary fires (within 1/4 mile) of the Forest primary protected boundary will be reported the same.

To enable the Forest to have adequate radio communications with the districts, the Commission agrees to allow radio antennas and radio equipment to be located on State towers at Calhoun and Leesville, South Carolina.

2) USDA Forest Service, Savannah River

Due to Department of Energy (DOE) policy, all aircraft entering the Savannah River site to conduct approved work are requested to contact the Savannah River Site Operations Center (SRSOC) on VHF 123.050 upon entry and departure of the area. The SRSOC call sign is "KMK-4".

Upon receipt of a reported fire on DOE lands by Commission or the general public, the appropriate Commission Dispatch Center will immediately telephone the SRSOC. The SRSOC will contact the USDA Forest Service, Savannah River Coordination Center or page the "on-call" dispatcher (outside office staffing hours) and relay the following size up information as available: Latitude/Longitude, estimated size, observed fire behavior, and potential threat to life and property. The USDA Forest Service, Savannah River Coordination Center Dispatcher will make the appropriate calls to dispatch initial attack resources.

Boundary fires (within 1 mile) of the USDA Forest Service, Savannah River primary protection boundary will be reported in the same manner as above.

III. PRE-SUPPRESSION

C. Fire weather, NFDRS, and Preparedness Levels

1. Francis Marion and Sumter National Forests

The National Weather Service Offices located in Charleston, Columbia, and Greer, South Carolina and Wilmington, NC issue the South Carolina Fire Weather Forecast twice daily around 0600 and 1500 (local Time). These forecasts will provide the general framework for fire management decisions.

Forest Preparedness Levels are determined as stated in the Francis Marion and Sumter NF's Mobilization Guide (Chapter 12.0). All NFDRS computations are accomplished through the use of the 1988 version of the NFDRS. Automated Weather Stations (AWS) located at Witherbee, Tyger, and Andrew Pickens ranger stations are the only Forest designated NFDRS stations for collection of daily observations for determining Forest preparedness levels.

2. USDA Forest Service, Savannah River

The USDA Forest Service, Savannah River has two Automated Weather Stations (AWS) located on site. The 1988 version of the NFDRS is used for computation of fire danger indices. Aerial fire detection may be accomplished through the use of existing Forest Service contracts or through an agreement with the DOE for the use of DOE aircraft.

IV. SUPPRESSION

A. Protection Responsibility and Primary Protection Areas

1. The Forest primary protection will be the green shaded areas on the enclosed administrative maps. The USDA Forest Service, Savannah River primary protection areas are white areas. The Commission's primary protection areas are white areas. The Commission's primary areas are the unshaded areas on the Francis Marion and Sumter maps and brown areas on the USDA Forest Service, Savannah River map (see Supplement E).

2. Radio communications between fire fighting resources are important for efficient and safe firefighting operations. Therefore, both parties agree to share common tactical radio frequencies for fire suppression.

3. For air operations, both parties (except for Commission contracted aerial detection aircraft) will conduct air to air communications on Federal Communications Commission (FCC) approved frequency, VHF 122.925 within the Proclamation boundary of the Forest Service and over incidents requiring use of each agency's aircraft outside the Proclamation Boundary.

IV. SUPPRESSION

4. Reciprocal dispatch areas include all lands within 1/4 mile of the primary protection boundaries, except for fires occurring inside the boundary of DOE lands at the Savannah River Site. The dispatch of Commission suppression resources onto DOE lands will occur upon USDA Forest Service, Savannah River request. The USDA Forest Service, Savannah River will obtain DOE access authorization for Commission personnel and coordinate with the appropriate Commission Dispatch Center. Upon arrival, Commission employees will be assigned a Forest Service liaison while working on site.

5. USDA Forest Service, Savannah River suppression resources may take initial action along with the Commission on fires up to one mile outside the boundary of the Savannah River Site and will provide notification to the appropriate Commission Dispatch Center.

6. Wildfires located wholly within the primary protection area of the Forest or Commission will be initial attacked by the agency having primary protection responsibility. If needed, assistance by Forest or Commission resources will be requested through established dispatch channels.

7. Special management considerations including the use of tractor plow units inside the Wilderness Areas. This use requires Regional Forester approval (see F, Wilderness), prior to the use of mechanized equipment in these areas.

8. Interagency Mobilization will be coordinated by the South Carolina Interagency Coordination Center (SCC) located at the Francis Marion and Sumter National Forest Supervisor's office in Columbia, South Carolina. The Francis Marion and Sumter NFs and Southern Area Mobilization Guides contain procedures to be followed for such mobilization.

B. Operational Procedures

The Forest Service Will:

1. Reimburse the Commission at the actual cost rate for equipment, employee salaries, and aircraft used under in-state fire assignments as requested by the Forest Service under the terms of the Cooperative Fire Suppression agreement.

2. Bill the Commission for actual cost of equipment, supplies, aircraft and personnel for local emergency fire suppression and for supplies needed to equip suppression resources during out of state mobilizations as requested by the Commission under the terms of the Cooperative Fire Suppression Agreement.

IV. SUPPRESSION

B. Operational Procedures

The Forest Service Will:

3. Reimburse the Commission for personnel and equipment use on out-of-state and local fire assignments which exceed the First 24 Hours as requested by the Forest Service. Record equipment use on Emergency Shift Ticket (OF 297) and record cost per piece of equipment on an Emergency Use Invoice (OF 286) or equivalent forms used by the Commission.
 4. Immediately contact the appropriate Commission Dispatch Center when any wildfires are located wholly within the Commission primary protection area, or located on Forest or Station primary protected areas within 1/4 mile of Commission primary protected areas (boundary fire).
 5. When requested provide copies of Individual Fire Reports (Form 5100-29) that contain private land burned directly to the respective County Ranger.
 6. Request Commission Firefighters for out-of-state fire assignments during periods of National or Southern Area Mobilizations per the Francis Marion and Sumter and Southern area Mobilization Guides. The Forest Service will assign a Crew Representative (CREP) for crews provided by the Commission. Out of state assignments are not to exceed 14 days (not including travel) unless approved by the State Forester. Prior to accepting an out of state assignment, Commission employees will select one of two pay plan options available.
7. The Commission Two Pay Plan Options – Non Reciprocal Use
- a. Administrative Determined (AD) Pay Plan

When Commission personnel elect the Administratively Determined Pay Plan option (AD), the employees rate of pay and employment conditions will be those currently in use at the time of dispatch as outlined in the Pay Plan for Emergency Firefighters. The AD rates are all inclusive and no additional pay will be added for hazardous duty. These rates are established annually and appended to the Interagency Fire Business Management Handbook as an Interim Directive (See NWCG Handbook 2, PMS 902-1).

IV. SUPPRESSION

B. Operational Procedures

b. Reimbursement for Time and Expense Plan

When Commission employees are dispatched to a fire under the reimbursement for Time and Expenses Plan, costs for salary, retirement, Social Security are included. In addition, fringe benefits (Health Insurance, Workers Compensation Insurance, and Unemployment Insurance that the state is normally responsible for paying are included. The salary rates, and benefits will be those current at the time of the rendered services. The Commission will be reimbursed for actual cost (including overtime) to the Commission incurred for the dates actually assigned to an incident.

8. Commission employees will be guaranteed 8 hours/day, including travel, staging, and R&R status. The pay rate for staging, R&R and travel will be at the AD rate or the employee's regular hourly rate dependent on which pay option is selected.

9. Transportation to and from the incident will be coordinated by requesting and sending agencies. Proximity to the incident and need will largely determine which agency provides transportation.

10. Reimbursement for Travel

a. Miscellaneous Expenses

While on assignment some personnel (especially single resource) incur personal expenses during mobilization, reassignments, and demob. When Commission personnel must personally pay for expenses such as occasional, meals, taxi, parking fees, and tolls etc., they may be reimbursed by completing a Claim For Reimbursement For Expenditures On Official Business (Form SF-1164). When completed, the claim should be sent through the Commission Fire Management Staff to the US Forest Service, Fire Management Staff Officer. Under this type of reimbursement, meal receipts are not required, but employees are advised to provide receipts of other personal expenditures.

b. Per Diem

In situations where it is not practical to furnish subsistence, Commission employees can be reimbursed at the standard CONUS or locality rate through travel procedures as per diem. The use of per diem is for extraordinary circumstances where the employee incurs substantial costs (one or more days of lodging, meals, car rental etc..) and in this situation, the employee needs to

IV. SUPPRESSION

b. Per Diem

complete an AD-616, Travel Voucher. When completed, the claim should be sent through the Commission Fire Management Staff to the US Forest Service, Fire Management staff Officer. Reimbursement under this type of claim requires all receipts excluding meal receipts.

C. Billing and Payment

Bills for Forest Service assistance to the Commission should be sent to:

Fire Management Chief
South Carolina Forestry Commission
P.O. Box 21707
Columbia, South Carolina 29221

The Forest Service will bill the Commission within 45 days. When the Forest Service participates on Commission fires under this reimbursable part of the agreement, the Commission will pay all expenses such as salaries, overtime, per diem, travel etc. at the normal Forest Service rates.

For both agencies, supplemental documents such as Emergency Firefighter Time Reports (OF 288), Emergency Equipment Use Invoices (OF 286), Emergency Equipment Shift Tickets (OF 297), Flight Use Report (FS 6500-122) or equivalent State emergency use records for personnel, equipment, and aircraft will accompany each bill for auditing purpose.

The Commission will:

1. Bill the Forest Service for equipment and aircraft (except as established for detection) at the actual cost and personnel costs at the employees' actual salary level for in state assignments as requested by the Forest Service under the terms of the Cooperative Fire Suppression Agreement.
2. Reimburse the Forest Service for personnel, equipment and aircraft at the actual cost. Personnel shall be at the employees' actual salary, as requested by the Commission under the terms of the Cooperative Fire Suppression Agreement and the Interagency Incident Business Management Handbook (NWCG Handbook 2 PMS 902-1).

IV. SUPPRESSION

C. Billing and Payment

The Commission will:

3. Immediately contact the South Carolina Interagency Coordination Center or page the on call Forest Dispatcher (outside staffing hours) when any wildfires are located wholly within the Forest primary protection area or areas within 1/4 mile of Forest primary protection boundary.
4. Upon request provide copies of Commission Fire Reports that contain Forest Service lands burned directly to the appropriate Forest Service District Office.
5. Bill Forest Service for employees on the reimbursement for time and expenses pay plan for out of area and local assignments which exceed the First 24 Hours. All travel vouchers and bills for Commission assistance to the Forest Service will be within 45 days after return from detail (or obligation estimate by September 30, if the detail ends less than 45 days before this date) to the following address:

Francis Marion and Sumter National Forests
USDA Forest Service
Fire Management Staff Officer
4931 Broad River Road
Columbia, South Carolina 29212

USDA Forest Service, Savannah River
Forest Manager
P.O. 710, New Ellenton, South Carolina 29809

D. Training

All parties will keep each other informed of pertinent fire management training sessions sponsored by them, locally and state wide, provide opportunities for participation as mutually convenient. All parties will work together to identify needed training and agree on which agency will sponsor, schedule, and coordinate this training.

E. Qualifications

Each agency agrees to operate under the NIIMS concept as developed by the NWCG, and the NWCG or Forest Service fire qualification standards. At a minimum, Forest Service personnel involved in fire suppression will meet the minimum training and qualifications standards as required by FSH 5109.17. Commission personnel will meet the minimum training and qualification standards as required by the NWCG, Wildland Fire Qualification System 310-1.

IV. SUPPRESSION

F. Fire Reports (Initial Action)

1. When the US Forest Service and the USDA Forest Service, Savannah River take sole action they will furnish the Commission the following information on all fires that threaten or involve private lands:

- a. Location - As soon as known
- b. Suppression action taken. This information will be furnished upon resource dispatch, through established dispatch channels.

2. When the Commission takes sole action:

- a. Location - As soon as known
- c. Suppression action taken. This information will be furnished upon resource dispatch, through established dispatch channels.

G. Wilderness

The use of mechanized equipment in wilderness areas will not be undertaken except with expressed approval of National Forests Representative who has acquired the Regional Forester's approval.

Listed below are the permitted suppression strategies and responses per management Area on the Francis Marion and Sumter NF's (FMAP 5120 Pre-suppression). See Supplement F for maps. Use of dozer or tractor/plow units on any area listed below must have prior approval by a Forest Officer.

Designated Wilderness areas Francis Marion NF

Area - Wambaw Creek, Little Wambaw Swamp, Wambaw Swamp, and Hell Hole Bay.

Suppression Strategy - Confine, Contain, and Control

Suppression response - Use of tractor/plow units will be authorized by Regional Forester on a case by case basis.

IV. SUPPRESSION

G. Wilderness

Other Management Areas Francis Marion NF

Area - Santee Experimental Forest, Guilliard Lake Research Area

Suppression Strategy - Control (confine/contain in non-research areas within Santee Experimental Forest)

Suppression Response - Use of tractor/plow authorized, but a Forest Officer must be present for line location authorization.

Area - Guilliard Lake Scenic area, Sewee Shell Mound, Cedar Hill Island, Watahan Plantation, Big Ocean Bay, and Blue Springs and Botanical Gardens.

Suppression Strategy - Contain, Confine, or control

Suppression Response - Control wildfire without use of plowed fire lines (unless necessary for protection of life and property).

Designated Wilderness Sumter NF

Area - Elliot Rock Wilderness

Suppression Strategy - Confine or contain during FIL 1 and 2 (flame length <3 feet), control at FIL (flame length >3 feet).

Suppression Response - Use of tractor/plow units will be authorized by Regional Forester on a case by case basis.

Other Management areas Sumter NF

Area - Chattooga River Corridor

Suppression Strategy - Confine or contain during FIL 1 and 2 (flame length <3 feet), control at FIL 3 (flame length >3 feet).

Suppression Response - Limit mechanized equipment to extreme fire danger periods. Suppression action should be minimize soil disturbance. No dozer or plow use without presence of Forest Officer authorizing it.

Area - Calhoun Experimental Forest

Suppression Strategy - Confine, contain and control

Suppression Response - Control with hand tools all wildfires which threaten active research areas. Confine or Control appropriate ONLY when threaten non research sites are involved, and FIL 1 or 2. Control at FIL 3. Forest Officer must be present to authorize dozer or plow line location.

Area - Long Cane Scenic Area, Chauga River Scenic Area, White Rock Scenic Area, Broad River Scenic Area, Station Creek Cove Botanical Area, Lee falls, and the Turkey and Stevens Creek Corridors.

Suppression Strategy - Confine, contain, and control

IV. SUPPRESSION

G. Wilderness

Other Management areas Sumter NF

Suppression Response - Use of mechanized equipment will be limited to extreme fire danger periods (FIL 3+). Forest Officer must be present to authorize dozer or plow use.

USDA Forest Service, Savannah River

Within the boundary DOE lands on the Savannah River Site, no suppression action is to occur without prior authorization from a USDA Forest Service, Savannah River Officer and until a Forest Service liaison officer is assigned to the requested equipment.

H. Revisions

This AOP will become effective when fully executed and will be reviewed by October 17, 2002, and annually thereafter. If no revisions are necessary, a letter signed jointly by the State Forester, Forest Manager and the Forest Supervisor will so state. This letter will become an official part of this document. This AOP can be terminated in like manner. Interim revisions, or amendments can be made at any time by mutual consent of all three parties.

V. LAW ENFORCEMENT

Request for law enforcement will be made through established dispatch channels.

VI. ATTACHMENTS

- A. Francis Marion and Sumter National Forest Fire Preparedness Plan
- B. Aerial Detection Route Maps.
- C. Grid Maps.
- D. Francis Marion and Sumter National Forest Wilderness and Special Management Area Maps.

STATE LEVEL ANNUAL OPERATING PLAN

INTERAGENCY RESOURCE USE RATES

FIXED WING – At current contract or Agency Use Rate.

HELICOPTER (Exclusive Use & CWN)- At current contract price or Agency Use Rate.

PERSONNEL – As established by State and Federal Employee Pay Schedules.

EQUIPMENT – As established per current State and Forest Service Equipment Use Rates.

SUPPLIES (National Fire Equipment System)- Per current NFES Catalog price.

TRAVEL and PERDIEM – Per current Federal Travel Regulations (FTR).

INTERAGENCY AGREEMENT
between
USDA FOREST SERVICE,
FRANCIS MARION AND SUMTER NATIONAL FORESTS
and
SAVANNAH RIVER,
and the
DEPARTMENT OF THE ARMY,
GARRISON FORT JACKSON

This INTERAGENCY AGREEMENT is hereby entered into by and between the USDA Forest Service, Francis Marion and Sumter National Forests and the Savannah River, hereinafter referred to as the Forest Service, and the Department of the Army, Garrison Fort Jackson, hereinafter referred to as the Fort Jackson under the provisions of the Economy Act of June 30, 1932 (31 U.S.C. 1535, Pub.L. 97-258 and 98-216).

A. PURPOSE: The purpose of this agreement is to provide for the parties joint participation in the application of prescribed fire within jurisdictional resource management areas and interagency wildland fire suppression operations within the jurisdictional boundaries of parties signatory to this agreement.

B. STATEMENT OF MUTUAL INTERESTS AND BENEFITS: The Forest Service and Fort Jackson have responsibilities for natural resource management and wildland fire suppression on lands administered by each agency. As both parties maintain fire suppression forces for resource protection and the management of natural resources in areas each is responsible for, it is mutually advantageous and in the public interest for the parties to this agreement to coordinate, and assist each other's efforts in the application of prescribed fire and wildland fire suppression in their areas of responsibility.

C. DEFINITIONS

1. **PROTECTING PARTY** - The party responsible for providing for direct wildland fire protection in a given area pursuant to this agreement.
2. **SUPPORTING PARTY** - The party providing direct suppression assistance or other support and resources to the protecting or jurisdictional party for wildland fire suppression or the application of prescribed fire.
3. **JURISDICTIONAL PARTY** - The party having overall land and resource management and/or protection responsibility as provided by law.

C. DEFINITIONS

4. COOPERATIVE FIRE PROTECTION - Specific fire protection services furnished by one party to the other on a reimbursable basis pursuant to this agreement.
5. DIRECT COSTS - Cost directly related to the wildland fire suppression effort or the prescribed fire project. These costs do not include dispatch or other administrative costs. **See DFAS-IN 37-1, paragraphs 37-22 through 37-29; FSH 1509.00 paragraph 43.2.**
6. OVERHEAD COSTS - Costs not directly chargeable to fire suppression effort or the prescribed fire project, but which are part of the overall costs of operation. **See DFAS-IN 37-1, paragraph 37-30; FSH 1509.11 paragraph 43.2**
7. SUPPRESSION - All work of controlling and extinguishing a wildland fire beginning with its discovery.
8. RECIPROCAL FIRE PROTECTION - Wildland fire suppression assistance provided by the supporting party will be provided at no cost to the protecting party for the first 24 hours from the time of dispatch.
9. REIMBURSABLE WORK - Requested assistance exceeding reciprocal wildland fire suppression services (first 24 hours) furnished by either party or work accomplished by the either party in the application of prescribed fire. Reimbursable work shall include direct costs, overhead costs, and other support and resources. Prescribed fire reimbursable work begins at the time of dispatch and ends upon return to the home unit of the supporting party (first 24 hours does not apply).
10. TIME OF DISPATCH - The time supporting party resources begin travel from their home unit to the protecting party's unit.
11. OTHER SUPPORT and RESOURCES - Personnel, equipment, facilities, and supplies made available by the supporting party which may not be utilized for direct wildland fire suppression or prescribed fire ie: logistical support, and National Fire Equipment and Supply (NFES) items, ordered through the National Fire Cache System.

D. FOREST SERVICE SHALL:

1. When requested, provide initial attack forces to suppress wildfires occurring on Fort Jackson protected lands.
2. Provide at the discretion of the unit Fire Management Officer, available personnel and equipment to assist with the implementation of fire training, prescribed and wildland fire suppression operations.
3. Ensure that personnel and equipment provided to Fort Jackson meet Forest Service standards in FSH 5109.17, and NWCG PMS 410-1.
4. Make available, to the extent practicable, training opportunities in Wildland Fire Management to Fort Jackson.
5. Give Fort Jackson, through any authorized representative, access to and the right to examine all books, papers, or documents related to this instrument.
6. BILLING Transfer of Funds to the Forest Service will be through an On-Line Payment and Collection System (OPAC) billing. The OPAC billing document which the Forest Service prepares shall contain the following information as the first line of the description or the reference section:

Agency Agreement or Instrument No. – 03-IA-11081209-060
Agency Cost Account Date - _____
Agency Location Code – 12-40-0001
Budget Object Code – _____

Bills from Fort Jackson will be sent to one or both of the following Forest Service Business & Finance specialists, depending on who provided support:

USDA Forest Service		Savannah River Forest Station
Attn: Claudette Bryant	/or/	Attn: Accounting Officer
4931 Broad River Road		P.O. Box 700
Columbia, SC 29212		New Ellenton, SC 29809

E. FORT JACKSON SHALL:

1. When requested, provide initial attack forces to suppress wildfires occurring on Forest Service protected lands.
2. Provide at the discretion of the Fort Jackson Fire Management Officer, available personnel and equipment to assist with the implementation of fire training, prescribed and wildland fire suppression operations.
3. Ensure that personnel and equipment provided to the Forest Service meet NWCG PMS 310-1 and 410-1 standards.
4. Make available, to the extent practicable, training opportunities in Wildland Fire Management to the Forest Service.
5. Give the Forest Service, Comptroller General, or any authorized representative, access to and the right to examine all books, papers, or documents related to this instrument.
6. Transfer of funds to the Forest Service will be through an On-Line Payment and Collection System (OPAC) billing. The OPAC billing document which the Forest Service prepares shall contain the following information as the first line of the description or the reference section:

Account Data:

FS Account Data -
Job Code -
Instrument No. - 03-IA-11081209-060
Agency Location Code - 12-40-0001
Budget Object Code -

A detailed list of charges incurred will be made available upon request.

F. GENERAL PROVISIONS

1. ANNUAL REVIEW. The parties will meet annually to review this agreement. This agreement will include definitions and procedural guidance for efficient implementation.
2. REQUESTED ASSISTANCE. When requested, the supporting party will within their capability, provide resource support. For wildland fire suppression such requests are reimbursable beyond the first 24 hours from time of dispatch. Prescribe fire requests are reimbursable from the time of dispatch, and ends upon return to the home unit of the supporting party. Requests for assistance and the demobilization of resources will be documented on the appropriate resource order and coordinated through the South Carolina Interagency Coordination Center (SCC).
3. NATIONAL MOBILIZATION. Resources from Fort Jackson will be dispatched to wildland fires located outside of the Francis Marion & Sumter National Forests, or the Savannah River Forest, in accordance with the National Interagency Fire Center Military Use Handbook, NFES 2175, the 1975 Memorandum of Understanding between the Department of Defense and the Departments of Agriculture and the Interior, and the 2002 Army Wildland Fire Policy Guidance.
4. COMMUNICATION SYSTEMS. The Parties agree to share the use of communication systems, radios, and radio frequencies for the execution of this agreement for operations that occur within the area of responsibility for the jurisdictional party.
5. TRAINING. Fort Jackson and the Forest Service will cooperate to conduct interagency training. Both agencies will cooperate in communication of planned training courses and will assist each other in meeting agency training needs.
6. EMPLOYMENT POLICY. Employees of the parties to this agreement shall at all times be subject only to the laws, regulations, and rules governing their employment, regardless of incident or project location, and shall not be entitled to compensation or other benefits of any kind other than specifically provided by the terms of their employment.
7. EXAMINATION OF RECORDS. Each party shall give the other, or their authorized representative, access to, and the right to examine all records, books, papers and documents related to this agreement.
8. NATIONAL INTERAGENCY INCIDENT MANAGEMENT SYSTEM. The parties to this agreement will operate under the concepts defined in the National Interagency Incident Management System (NIIMS) including: Incident Command system (ICS), qualifications system, training system, the management of publications, and participate in the review, exchange, and transfer of technology as appropriate for providing qualified resources, and for the management of incidents covered by this agreement.

F. GENERAL PROVISIONS

9. **EQUIPMENT.** Equipment owned and used by either party to operate on lands for which the other is responsible shall normally be operated, serviced, and repaired by the owning agency. Exceptions shall be agreed in advance and in writing by both parties. The supporting party will provide the standard compliment of personal protective equipment (PPE), and standard ICS equipment components (including personnel) for engines, tractor/plow units and other resources dispatched. Agency owned equipment hourly use rates and mileage is reimbursable as defined by reimbursable work.

10. **AIRCRAFT AND PILOTS.** All aircraft and pilots utilized through this agreement shall be Interagency Fire Carded through the Forest Service or United States Department of Interior, Office of Aircraft Services prior to work. Costs associated with aircraft use including; retardant, daily availability, flight time, extended stand-by, fuel truck mileage, and per diem will be reimbursable at current contract rates from time of dispatch until return to the designated base. An aircraft being reassigned by SCC, to a location other than the designated base, charges will end at the time of dispatch to the alternate base.

11. **FEDERAL EMPLOYMENT COMPENSATION ACT.** Any service performed hereunder by any officer or employee of the United States or any member of any Armed Forces of the United States shall constitute service rendered in the line of duty in such office, employment, or force. The performance of such service by any other individual shall not constitute such individual an officer or employee of the United States for the purposes of the Federal Employment Compensation Act, as amended.

12. **WAIVER OF CLAIMS AGAINST THE PARTIES.** The party's signatory to this agreement hereby waive all claims between and against each other, arising in the performance of this agreement, for compensation for loss or damage to each other's property, and personal injury, including death, of employees, agents and contractors, except that this waiver shall not apply to intentional torts or acts of violence against such persons or property.

13. **NONDISCRIMINATION.** The parties shall comply with all Federal statutes relating to nondiscrimination and all applicable requirements of all other Federal laws, Executive orders, regulations, and policies. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d, 2000e-16), which prohibits discrimination on the basis of race, color, disability, or national origin; (b) Title IX of the education amendments of 1972, as amended (20 U.S.C. 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; and Section 504 of the Rehabilitation Act of 1973 as amended (29 U.S.C. 794) which prohibits discrimination on the basis of disabilities.

14. **INCIDENT COMMANDER.** When a wildland fire is burning on lands protected by either party, the protecting agency will have assigned an Incident Commander. Designation of an Incident Commander from the supporting party may occur when mutually agreed by both parties.

F. GENERAL PROVISIONS

15. **PRESCRIBED BURN BOSS.** The Prescribed Burn Boss is the officer-in-charge of the application of prescribed fire on jurisdictional agency lands. The Prescribed Burn Boss will have overall responsibility for the efficient and safe use of resources assigned to execute the project. The Prescribed Burn Boss will insure all prescribed fire operations are conducted in accordance to agency policy and aerial ignition resources are used in accordance to standards set forth in the Interagency Helicopter Operations Guide, and the Interagency Aerial Ignition Guide.

F. IT IS MUTUALLY AGREED AND UNDERSTOOD BY ALL PARTIES THAT:

1. **FREEDOM OF INFORMATION ACT (FOIA).** Any information furnished to the either agency under this instrument is subject to the Freedom of Information Act (5 U.S.C. 552).

2. **MODIFICATION.** Modifications within the scope of the instrument shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being performed. Neither Party is obligated to fund any changes not properly approved in advance.

3. **PARTICIPATION IN SIMILAR ACTIVITIES.** This instrument in no way restricts the Forest Service or Fort Jackson from participating in similar activities with other public or private agencies, organizations, and individuals.

4. **TERMINATION.** Any of the parties, in writing, may terminate the instrument is whole, or in part, at any time before the date of expiration. Neither party shall incur any new obligations for the terminated portion of the instrument after the effective date and shall cancel as many obligations as possible. Full credit shall be allowed for each Party's expenses and all non-cancelable obligations properly incurred up to the effective date of termination.

5. **OBLIGATIONS.** Nothing herein shall be considered as obligating the Forest Service or Fort Jackson to expend or as involving the United States in any contract or other obligations for the future payment of money in excess of funding approved and made available for payment under this instrument and modifications thereto.

6. PRINCIPAL CONTACTS. The principal contacts for this instrument are:

U.S. Forest Service
Francis Marion and Sumter NF
David H. Kuhn, FAFMO
4931 Broad River Rd.
Columbia, SC.29212
Phone: 803-561- 4057
Fax: 803-561-4085
E-Mail: dkuhn@fs.fed.us

U.S. Army
Garrison Ft. Jackson
John Maitland, Lead Forester .
USATC & Fort Jackson
Ft. Jackson, SC. 29207-5400
Phone: 803-751- 4622
Fax: 803-751- 6821
E-Mail: maitlandj@jackson.army.mil

U.S. Forest Service
Savannah River Forest
Jeff K. Prevey, Asst.Mgr/Fire.
P.O. Box 700 New Ellenton, SC. 29809
Phone:803-725-3866
Fax: 803-725-0517
E-Mail: jprevey@fs.fed.us

Administrative Contacts

U.S. Forest Service
Francis Marion and Sumter NF
Claudette Bryant
4931 Broad River Rd. 29212
Phone: 803-561- 4012
Fax: 803-561- 4004
E-Mail: cbryant@fs.fed.us

U.S. Army
Garrison Ft. Jackson
Mary Stellfox
Ft. Jackson, SC. 29207
Phone: 803-751-3227
Fax: 803-751-7580
E-Mail: stellfoxm@jackson.army.mil

U.S. Forest Service
Savannah River
Vanessa Golden
P.O. Box 700 New Ellenton, SC. 29809
Phone: 803-725-0295
Fax: 803-725-1807
E-Mail: mbracy@fs.fed.us

7. FOREST SERVICE ACKNOWLEDGED IN PUBLICATIONS AND AUDIOVISUALS.
Both agencies support shall be acknowledged in publications and audiovisuals.

8. **AVAILABILITY OF FUNDS**. Funding will be obligated each fiscal year for performance of this instrument through **September 30, 2008**. Both agencies obligation for performance of this instrument is contingent upon the availability of appropriated funds from which payment can be made. No legal liability on the part of the either agency for any payment may arise for performance under this instrument beyond **September 30, 2008**, until funds are made available. Contingent upon each agency approval of continuance of work, a written modification to the instrument shall be issued to include funding for the subsequent performance period as described in the approved operating or financial plan, or budget.

9. **EXTEND TERM**. Both agencies, by written modification to the instrument, may extend the term for subsequent performance periods not to exceed a total duration of 5 years from the execution date of the instrument, including the subsequent performance periods.

10. **RESTRICTION TO DELEGATES**. Pursuant to Section 22, Title 41, United States Code, no member of, or Delegate to, Congress shall be admitted to any share or part of this instrument, or any benefits that may arise therefrom.

11. **COMPLETION DATE**. This instrument is executed as of the last date shown below and expires on **September 30, 2008** at which time it is subject to review and renewal, or expiration.

Interagency Resource Use Rates
USDA FOREST SERVICE
And
DEPARTMENT of ARMY

FIXED WING – At current contract price or Agency Use Rate.

HELICOPTER (Exclusive Use & CWN) –At current contract price or Agency Use Rate.

PERSONNEL – As established by Federal Employee Pay Schedule.

EQUIPMENT – As established per current Agency Equipment Use Rates.

SUPPLIES (National Fire Equipment System)-Per current NFES Catalog price.

TRAVEL and PERDIEM – Per current Federal Travel Regulations (FTR), or joint Federal Travel Regulations (JFTR).

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the last written date below.

U.S. ARMY
GARRISON FORT JACKSON

USDA FOREST SERVICE
FRANCIS MARION AND SUMTER
NATIONAL FORESTS

/s/Brent A. Johnson 7/16/03
BRENT A. JOHNSON DATE
Colonel, AG
Garrison Commander

/s/Jerome Thomas 9/2/03
JEROME THOMAS DATE
Forest Supervisor

USDA FOREST SERVICE, R-8,
SAVANNAH RIVER

DATE

/s/ David Wilson 7/31/03
David Wilson DATE
Forest Manager

The authority and format of this instrument has been reviewed and approved for signature.

/s/ Vinda W. Anderson April 18, 2003
(Coordinator's Name) DATE

**MEMORANDUM OF UNDERSTANDING
BETWEEN
SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
AND
USDA, FOREST SERVICE
FRANCIS MARION NATIONAL FOREST**

This MEMORANDUM OF UNDERSTANDING is hereby entered into by and between the USDA Forest Service, Francis Marion National Forest, hereinafter referred to as the Forest Service, and the South Carolina Department of Transportation, hereinafter referred to as the SCDOT, and under the provisions of Cooperative Funds and Deposits Act of December 12, 1975 (16 U.S.C. 565a1-a3, Pub. L. 94-148) and the Federal Highways Administration Act of August 27, 1958 (23 U.S.C. 308(a), Pub. L. 85-767).

1. PURPOSE: Over the past several years the South Carolina Department of Transportation has worked closely with the United States Forest Service to mitigate smoke related hazards on the roads of Charleston and Berkeley County that pass through the Francis Marion National Forest. These smoke hazards have been the result of controlled burns, arson and wildfires. The DOT has expended significant manpower and material resources by placing portable smoke signs at requested locations. In an effort to further increase public safety, as well as to conserve precious manpower and material resources, a closer and more permanent working relationship is required.

2. STATEMENT OF MUTUAL BENEFIT AND INTERESTS: As a result of a series of meetings between the representatives of District 6, SCDOT and the United States Forest Service, the following provisions were agreed to for improved safety to motorists traveling through Francis Marion National Forest:

- a. A total of 116 specific locations within FMNF on SCDOT roads have been identified in Berkeley and Charleston County that require permanent smoke signs.
- b. During normal conditions, these permanent signs will be locked in a position that says "Drive Safely" or "Fasten Seatbelts".
- c. United States Forest Service personnel are authorized to unlock the folding signs when conditions warrant action for public safety. They will open and lock the signs into position saying "Smoke", and will activate an orange flashing light on the sign.
- d. Whenever the smoke signs are activated or deactivated by USFS personnel, they will immediately notify Berkeley or Charleston Maintenance as applicable. They will use the standard notification form attached to the agreement. This form will provide sign number, location, and date/time activated and deactivated.

- e. In the event a portable smoke sign is required at a location not covered by a permanent sign, USFS personnel will request that support from Berkeley or Charleston County maintenance as applicable.
- f. In the event a permanent smoke sign is stolen, damaged, or excessively worn, it will be the responsibility of Berkeley or Charleston Maintenance to repair or replace the sign.

3. THE SCDOT SHALL PROVIDE:

- a. Signs, to include posts.
- b. Locks for the signs.
- c. Maps that identify, by number and location, each permanent smoke sign within FMNF on state roads in Berkeley and Charleston County.

4. FOREST SERVICE SHALL PROVIDE 

- a. Orange flashing lights for the signs.
- b. Batteries for the flashing lights.

5. IT IS MUTUALLY AGREED AND UNDERSTOOD BY ALL PARTIES THAT:

- a. FREEDOM OF INFORMATION ACT (FOIA). Any information furnished to the Forest Service under this instrument is subject to the Freedom of Information Act (5 U.S.C. 552).
- b. MODIFICATION. Modifications within the scope of the instrument shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being performed.
- c. PARTICIPATION IN SIMILAR ACTIVITIES. This instrument in no way restricts the Forest Service or the Cooperator(s) from participating in similar activities with other public or private agencies, organizations, and individuals.
- d. COMMENCEMENT/EXPIRATION DATE. The instrument is executed as of the date of the last signature and is effective through **September 30, 2006** at which time it will expire unless extended.
- e. TERMINATION. Any of the parties, in writing, may terminate the instrument in whole, or in part, at any time before the date of expiration.
- f. PRINCIPAL CONTACT. The principal contacts for this instrument are:

Forest Service Project Contact
David H. Kuhn
US Forest Service
4931 Broad River Road
Columbia, SC 29212
Phone: (803) 561-4000
FAX: (803) 561-4085
E-Mail: Dkuhn@FS.FED.US

Cooperator Contact (Charleston)	Cooperator Contact (Berkeley)
Charles O. Skipper, RME	Cornelius J. Gathers
SCDOT, Charleston Maintenance	SCDOT, Berkeley Maintenance
2401 Maintenance Way	P. O. Box 698
North Charleston, SC 29406	Moncks Corner, SC 29461
Phone: (843) 740-1655 X 501	Phone: (843) 761-8481
FAX: (843) 740-1548	FAX: (843) 761-5100
E-Mail: SkipperCO@dot.state.sc.us	E-Mail: GathersCJ@dot.state.sc.us

- g. NON-FUND OBLIGATING DOCUMENT. This instrument is neither a fiscal nor a funds obligation document. Any endeavor or transfer of anything of value involving reimbursement or contribution of funds between the parties to this instrument will be handled in accordance with applicable laws, regulations, and procedures including those for Government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the parties and shall be independently authorized by appropriate statutory authority. This instrument does not provide such authority. Specifically, this instrument does not establish authority for noncompetitive award to the cooperator of any contract or other agreement. Any contract or agreement for training or other services must fully comply with all applicable requirements for competition.
- h. LIABILITY: The SCDOT authorizes the U.S. Forest Service to act on behalf of the SCDOT, to activate the permanent smoke signs when smoke conditions potentially could jeopardize public safety, or when an immanent threat to public safety exists. The SCDOT also authorizes the U.S. Forest Service to de-activate the smoke signs when Forest Service personnel determine a smoke on road threat to public safety no longer exists. The U. S. Forest Service shall not be liable to the depositor or landowner for any damage incident to the performance of this agreement.
- i. PERIODIC REVIEW: This agreement will be reviewed annually at a face-to-face meeting during the anniversary month of signature, and adjustments made as required. Either party can cancel this agreement provided a 30-day notice is given.

IN WITNESS WHEREOF, the Parties hereto have executed this agreement as of the last written date below.

Jerome Thomas
Name

Forest Supervisor, Francis Marion & Sumter NF
Title

/s/ Jerome Thomas
Signature

09/24/01
Date

As a representative of Charleston County Maintenance, South Carolina Department of Transportation with appropriate authority, I accept and agree with the conditions of this agreement.

Charles O. Skipper
Name

Resident Maintenance Engineer, Charleston County
Title

/s/ Charles O. Skipper
Signature

09/25/01
Date

As a representative of Berkeley County Maintenance, South Carolina Department of Transportation, with appropriate authority, I accept and agree with the conditions of this agreement.

Cornelius Gathers
Name

Resident Maintenance Engineer, Berkeley County
Title

/s/ Cornelius Gathers
Signature

09/25/01
Date

The authority and format of this instrument has been reviewed and approved for signature.

/s/ Vinda W. Anderson September 24, 2001

(Name) DATE
Agreements Coordinator

Appendix G

New Cost Containment Policy



United States
Department of
Agriculture

Forest
Service

Washington Office

14th & Independence SW
P.O. Box 96090
Washington, DC 20090-6090

File Code: 5130

Date: May 30, 2003

Route To:

Subject: 2003 Cost Containment Measures - Wildfire Suppression

To: Regional Foresters, Station Directors, Area Director, IITF Director, Job Corps,
and WO Staff

Based on the 2003 Fire and Aviation Operations Action Plan and the recommendations from the Troyer-Mann "Large Fire Cost Reduction Action Plan," there are specific cost containment actions that every Line Officer is expected to follow this fire season.

Over the next few weeks, directives will be issued outlining these cost containment actions. Until those are finalized, this letter will provide direction to implement our cost containment policies. The directives will cover the responsibility, training, and qualifications of line officers who prepare, approve and manage a Wildland Fire Situation Analysis (WFSA); the certification protocol for the WFSA; and the proper line officer authority for the Delegation of Authority to an Incident Management Team. The Directives will also cover the use of Regional and National Fire Cost Oversight Teams and the use of Incident Business Management Advisors on large fires. The content of the directives are illustrated in the enclosed charts.

We must continue to demonstrate our commitment to improve accountability for expenditure of all funds. The accountability and efficient expenditure of fire suppression funds is a significant part of that commitment.

Please contact me if you have questions or require further clarification.

/s/ Joel D. Holtrop
JOEL D. HOLTROP
Deputy Chief State and Private Forestry

Enclosure

cc: Buck Latapie, Tom Harbour, Billy Terry, Tim Hartzell, Larry Hamilton, Virginia Heerwagen



WFSA APPROVAL AUTHORITY

The WFSA is to be used as a decision making tool that supports the selected suppression alternative.

Levels of Approval and Line Officer Responsibility for WFSA Certification and Delegation of Authority.

Cost and Complexity Level	Responsibility	Actions
Up to \$2 MM or Type 2 Incident Team Activated	District Ranger	Develop and Certify WFSA: Issues Delegation of Authority
\$2MM and up to \$10 MM, or Type I Incident Team, or Area Command Activated	Forest Supervisor	Develop and Certify WFSA: Issues Delegation of Authority
\$10MM and up to \$50 MM, regardless of team assigned.	Regional Forester	Forest Supervisor to develop WFSA and Issue Delegation of Authority. Regional Forester to Certify WFSA within 12 hours
Over \$50 MM	Chief	Forest Supervisor to develop WFSA and Issue Delegation of Authority. Regional Forester to provide WFSA and consultation with Chief: Chief to Certify within 24 hours

Line Officer Qualifications to Certify a WFSA

1. Every Region should implement a mentoring and qualifications program to assure Line Officers are qualified to certify a WFSA.
2. All Regions will conduct at least 1 WFSA mentor/coach training class by June 30 to develop WFSA coaching expertise within the Region. Training participants will assist in WFSA development and training of line officers. The WO will cover the cost of contractors to conduct classes for WFSA experts only. Line Officer mentoring is to be conducted within the Region.

Qualifications for Line Officers Certifying WFSA and Issuing Delegations of Authority

Line Officer	Quals	Alternative until Quas obtained
District Ranger up to \$2 MM	Participated in at least 1 WFSA certification process, completed Local Fire Management Leadership training, OR, Qualified at the command and general staff position at the type 1 or type 2 level.	Attend a Regional Line Officer Seminar covering WFSA, DOA, etc. AND Assign a qualified line officer and WFSA specialist to mentor and advise the WFSA/DOA process.
Forest Supervisor up to \$10 MM	Participated in at least 1 WFSA certification process, completed National Fire Management Leadership training OR, Qualified at the command and general staff position at the type 1 or type 2 level.	Attend a Regional Line Officer Seminar covering WFSA, DOA, etc. AND Assign a qualified line officer and WFSA specialist to mentor and advise the WFSA/DOA process.
Regional Forester up to \$50 MM	Annual NLT Fire Preparedness Briefing OR, Qualified at the command and general staff position at the type 1 or type 2 level.	Regional Fire Director to assist and advise Regional Forester with the WFSA/DOA process.
Chief over \$50 MM	Annual NLT Fire Preparedness Briefing OR, Qualified at the command and general staff position at the type 1 or type 2 level.	National Fire Director to assist and advise Chief with the WFSA/DOA process.

Incident Management and Fire Cost Reviews

Fire Cost Reviews are to be conducted and review reports drafted while a fire is ongoing to assure the implementation of cost saving actions. National review protocols and templates are being developed and will be provided for the 2003 western fire season. Each region will initiate a regional fire cost review when any fire is expected to exceed \$5mm in suppression cost. Each region shall request a National Fire Cost Oversight Team when any one of the following trigger items occur:

1. An incident is projected to have a control date that is 21 days out
2. There is no cost-share agreement in place between agencies or there exists significant cost share issues.
3. An incident has complex multi-jurisdictional issues
4. An Area Command Team is activated
5. The projected suppression cost exceeds \$10mm

The following National Fire Cost Oversight Teams are established to perform Fire Cost Reviews as requested.

	Line Officer (Team Leader)	Incident Business Specialist	Incident Management Team Specialist	Financial Specialist
Team 1	Steve Ellis (BLM)	Harry Croft	Rich Wands	John Maria or John De La Torre
Team 2	Mike King	Dede Domingos (BLM)	BLM to determine	Stewart Lundgren

(The Team Leader and the receiving Line Officer can agree to add team members as needed to address issues specific to the incident, i.e., aviation, personnel, contracting, etc.)

(Team requests will be coordinated through Fire and Aviation Management WO.)

Use of Incident Business Advisors on Fires over \$5 MM.

1. The accountable line officer will activate a Type 1 IBA on fires that exceed or are predicted to exceed \$ 5MM or require the activation of a Type 1 Team. For Incidents requiring a Type 2 Team activation, an Type 2 IBA will be assigned or an appropriate fiscal or administrative person from the regional staff or forest staff must be assigned those duties by the Line Officer. In all cases, the IBA will work directly for the Line Officer.

2. The IBA will:

- Provide ongoing advice to the Line Officer regarding incident business issues and cost-containment opportunities that can be immediately implemented to contain costs.
- Provide advice to the Line Officer on Incident Management Team Performance regarding fiscal issues and efficient use of cost containment actions.
- Provide a direct, concise report of all findings, especially ones that display Forest Service cost savings recommendations and resulting actions to the appropriate line officer within 5 days of containment of the fire.

WFSA

Wildland Fire Situation Analysis

middle

[WFSA](#)

USDA Forest Service

Fire and Aviation Management

Briefing Paper

Date 4/30/2003

Topic: 2003 Cost Containment Actions

Issue: Letters of direction and changes in policy are in process.

Background: The Chief is taking steps to reinforce the commitment to improve cost containment acti issuing two letters of direction and initiating to changes to FSM 5130 and FSM 5190. The Letters are the review process and should be issued within the next few weeks. Directive changes have been draft submitted to the Directives Staff.

Key Points:

- One letter to the field changes the direction concerning the use of the WFSA. the Chief's letter w direction through FY 03. Changes area:
 1. FSM 5130.41-sets qualifications for Line Officers to approve WFSA and Delegation of A
 2. FSM 5131.03-sets monetary limits on qualified Line Officers of \$2 MM for DFs, \$10 MM \$50 MM for RFs, and Chief over \$50 MM.
 3. FSM 5131.14-sets approval and notification process for WFSA and proper use of the least alternative.
 4. FSM 5194.15-sets limits of \$5 MM for Regional Reviews and triggers for National cost re
 5. FSM 5130 (to be determined)-requires the Line Officer to assign an IBA to any fire that e MM or has a Type I Team.
- A second letter requiring WFSA training in each Region is being initiated. Prospective trainees practitioners that will serve as mentors and coaches to unqualified Line Officers. One workshop will be paid for by the Washington Office.
- Directives are being changed to reflect the new requirements.

Recommendation:

Contact: Billy Terry, Branch Chief, Fire Training, 202-205-1488, bterry@fs.fed.us

WFSA APPROVAL AUTHORITY

The WFSA is to be used as a decision making tool that supports the selected suppression alternative.

Levels of Approval and Line Officer Responsibility for WFSA Certification and Delegation of Authority

Cost and Complexity Level	Responsibility	Actions
Up to \$2 MM or Type 2 Incident Team Activated	District Ranger	Develop and Certify WFS Delegation of Authority
\$2MM and up to \$10 MM, or Type I Incident Team, or Area Command Activated	Forest Supervisor	Develop and Certify WFS Delegation of Authority
\$10MM and up to \$50 MM, regardless of team assigned.	Regional Forester	Forest Supervisor to develop and Issue Delegation of Authority Regional Forester to Certify within 12 hours
Over \$50 MM	Chief	Forest Supervisor to develop and Issue Delegation of Authority Regional Forester to provide and consultation with Chief Certify within 24 hours

Line Officer Qualifications to Certify a WFSA

1. Every Region should implement a mentoring and qualifications program to assure Line Officers qualified to certify a WFSA.
2. All Regions will conduct at least 1 WFSA mentor/coach training class by June 30 to develop WI coaching expertise within the Region. Training participants will assist in WFSA development at of line officers. The WO will cover the cost of contractors to conduct classes for WFSA experts. Officer mentoring is to be conducted within the Region.

Qualifications for Line Officers Certifying WFSA and Issuing Delegations of Authority

Line Officer Quals Obtained	Quals	Alternative until
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Forest Supervisor up to \$10 MM	Participated in at least 1 WFSA certification process, completed National Fire Management Leadership training OR, Qualified at the command and general staff position at the type 1 or type 2 level.	Attend a Regional Line Officer covering WFSA, DOA, etc. AND Assign a qualified line officer & specialist to mentor and advise WFSA/DOA process.
Regional Forester up to \$50 MM	Annual NLT Fire Preparedness Briefing OR, Qualified at the command and general staff position at the type 1 or type 2 level.	Regional Fire Director to assist Regional Forester with the WF process.
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2. There is no cost-share agreement in place between agencies or there exists significant cost share
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The following National Fire Cost Oversight Teams are established to perform Fire Cost Reviews as required:

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1. The accountable line officer will activate a Type 1 IBA on fires that exceed or are predicted to exceed \$5MM or require the activation of a Type 1 Team. For Incidents requiring a Type 2 Team activation, a Type 2 IBA will be assigned or an appropriate fiscal or administrative person from the regional or district forest staff must be assigned those duties by the Line Officer. In all cases, the IBA will work directly with the Line Officer.
2. The IBA will:
 - Provide ongoing advice to the Line Officer regarding incident business issues and cost-containment opportunities that can be immediately implemented to contain costs.
 - Provide advice to the Line Officer on Incident Management Team Performance regarding fiscal and efficient use of cost containment actions.
 - Provide a direct, concise report of all findings, especially ones that display Forest Service cost savings recommendations and resulting actions to the appropriate line officer within 5 days of containment of the fire.

LARGE FIRE COST REDUCTION ACTION PLAN

MARCH • 2003

*USDA FOREST SERVICE -- USDI THE DEPARTMENT OF THE INTERIOR --
NATIONAL ASSOCIATION OF STATE FORESTERS*

“Only when every member of the nation’s wildland firefighting organization is held accountable for his or her role in containing costs, will a corporate resolve begin to coalesce and emerge. Meaningful accountability for cost containment must be instituted throughout all levels of the nation’s wildland fire suppression program.”

Cost Containment on Large Fires – Efficient Utilization of Wildland Fire Suppression Resources, July 2001
National Association of State Foresters
Fire Protection Committee

Why Should You Read This Report?

If you care about our country’s ability to successfully respond to the challenge of suppressing our rising trend of large wildland fires—this interagency-rooted Action Plan is for you.

Thousands of hours have already been invested on previous fire suppression cost reports and reviews. Unfortunately, it seems, far too often these important strategies have been quickly forgotten or overlooked. This Action Plan strives to be different.

These past efforts reflect consistent findings and recommendations—as far back as 1994—with little or no apparent implementation action. For the most part, a bias for action and a corporate will to change has been absent in these previous efforts.

This Action Plan attempts to rectify these shortcomings.

Requested by the Federal Fire and Aviation Leadership Council, this Action Plan supports the February 2003 *Chief’s Incident Accountability Report* and the July 2001 *Cost Containment of Large Fires – Efficient Utilization of Wildland Fire Suppression Resources* by the National Association of State Foresters.

Sponsoring agencies of this Action Plan include: the U.S. Department of Agriculture Forest Service; and the Department of the Interior – Bureau of Land Management, National Park Service, Bureau of Indian Affairs, and U.S. Fish and Wildlife Service; and the National Association of State Foresters.

The majority of the cost-containment strategies and approaches outlined in this report will be enacted this fire season. In crafting this strategy, the 2003 Large Fire Cost Reduction Team has tried to promote new business methods that will help us this year, and successfully move us into a more cost-beneficial future.

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“Drought, excessive fuel hazards, and human movement into the wildlands continue to threaten the nation’s communities and forests—driving costs even higher. The 2002 fire season is more than a wake-up call. It is a painful reminder of the magnitude of the problem and the dire need for action.”

Wildfire Suppression: Strategies for Containing Costs
A Report by a Panel of the National Academy of Public Administration
September 2002

INTRODUCTION

There is an urgent and immediate need to reduce the overwhelming cost of large fires.

A series of factors have combined to create an environment that fosters increases in the cost of suppressing large fires. During the 2002 fire season, four states set records for the largest fires in recent history. Twenty-one firefighters lost their lives. Two air tankers and eight helicopters crashed. Thousands of homeowners were evacuated. Hundreds of structures were destroyed. A total of 7.2 million acres burned.

Thus, this past fire season introduced extraordinary stress to agency leadership, agency line officers, fire staff, and Incident Management Teams.

This horrendous fire year saw the Forest Service, alone, funnel \$1.4 billion dollars into wildland fire suppression costs. Total Federal expenditures on wildland fire suppression approached \$2 billion dollars. Of these unprecedented amounts, more than \$500 million in Forest Service dollars funded suppression costs on just *four* large fires. (These monies could have financed the entire budgets of these affected national forests for more than five years.)

As evidenced by implementation of the *National Fire Plan*, and supported by the *President’s Healthy Forest Initiative*, it is clear that—in the long term—treating fuels and aggressive initial attack are essential for success in reducing large fire occurrence. By doing so, we will also reduce wildland fire costs. For, more than 80 percent of our wildland fire suppression costs are attributed to only 2 percent of our wildland fires.

Cost Containment Actions Due This Fire Season

To date, minimal progress has been made in addressing these escalating wildland fire suppression costs. This Action Plan strives to change that—starting this fire season. Through its various actions—outlined in detail in the following pages—this report provides effective, practical, common sense measures to help facilitate cost containment within our wildland fire suppression programs.

It is incumbent on those entities with responsibility for wildfire management to ensure that the highest level of management expertise is applied to every element and decision in the fire management equation—at every level of fire complexity.

This Action Plan is Founded on This Concept

As wildfires grow in number or size, the elements involved increase and the scope and effect (consequences) of the decisions based on those elements also increase.

It is therefore incumbent on those entities with responsibility for wildfire management to ensure that the highest level of management expertise is applied to every element and decision in the fire management equation—at every level of fire complexity.

Ensuring that this management expertise occurs is not simply a matter of deferring to the person—or people—with the most experience. It is a matter of assuring that the individuals responsible for making critical fire management decisions:

- Either *possess* the requisite level of expertise required for the level of decisions they are expected to make;
- Or are *advised* by individuals with that expertise.

This basic concept applies to *every* element in the wildfire management equation at *every* level of wildfire management complexity. This Action Plan is founded on this concept.

SECTION ONE – IMMEDIATE 2003 ACTIONS

Our Culture

“A ‘corporate will’ to change appears to be lacking throughout the national organization. Strong national leadership in containing costs is essential and must be accompanied by the allocation of accountability for cost containment throughout the national organization.”

Cost Containment on Large Fires – Efficient Utilization of Wildland Fire Suppression Resources, July 2001 National Association of State Foresters Fire Protection Committee

Our culture and incentive system are not oriented toward reducing the costs of large fires. Currently, the local Agency Line Officer¹ and Incident Commander have three primary objectives: 1) Ensure firefighter and public safety; 2) Suppress the wildland fire; 3) Respond to community needs.

Unfortunately, any incentive to reduce costs is absent from these three central responsibilities. At this time, there is more incentive to reduce risk rather than reduce costs. We must change this. Beginning this fire season, we must elevate cost containment commensurate with other objectives.

To truly accomplish this, we must also be able to alleviate our managers’ concern regarding personal risk. Not risk in the personal liability sense, but more akin to a career altering/ending event. At the same time, we must also reward our managers who exhibit and make good progress in cost containment.

AGENCY ACTIONS

As the National Association of State Foresters recommend in their Cost Containment on Large Fires July, 2000 report:

- Each agency will formally establish wildland fire suppression cost control as a high priority. Begin this change at the very top of the organization.
- All levels of the organization will recognize and strive for leadership that is united and earnest about cost containment. **Both our Agency Line Officers and Incident Commanders are vital to this effort.**

¹ The “Agency Line Officer” is the official responsible for administering policy on an area of public land who has full authority for making decisions and providing direction to the incident organization. Also known as “Agency Administrator” and “Line Officer.”

“Although most managers recognize that they have the authority to select priorities and strategies that will reduce cost, few are willing to take the risk. Managers do a good job of allocating scarce resources to priority fires. As resources become more readily available and outside pressures increase, the care used in allocation of resources declines. The potential for litigation and claims, critical media coverage, and political pressure to suppress all fires are major disincentives to risk taking.”

***Fire Suppression Costs on Large Fires – A Review
of the 1994 Fire Season, USDA Forest Service***

The Agency Line Officer

Agency Line Officers are key to the efficient and effective management of large incidents. Yet, today, many are not effectively engaged in large incident management. Agency Line Officers significantly affect fires in two key ways:

Before the Fire – Agency Line Officers influence: planning (Land and Resource Management Plans, Fire Management Plans); prevention; implementation of National Fire Plan.

Once Fire Starts – the Agency Line Officer’s role becomes even more immediate and direct, with responsibility for: oversight of costs; complexity analysis of fires as they grow; The Wildland Fire Situation Analysis (WFSA); Delegation of Authority; monitoring of fire suppression efforts.

Fire complexity and the desire to minimize risk in fire operations leads to higher costs and greater safety issues.

Agency Line Officers must view and interpret risk management from a broad perspective, including: cost containment; safety issues/risk; alternative strategies and tactics that balance environmental impacts; and socio-economic concerns.

For Agency Line Officers to fully redeem their responsibilities, they must have:

- **Training** – Fire Management Leadership and WFSA Training;
- **Experience** – Successful participation as a shadow/trainee in at least one large Type I wildland fire incident;
- **Currency** – Completion of annual WFSA refresher; performing the duties of an Agency Line Officer on one Type I or Type II wildland fire incident within the last three years.

AGENCY LINE OFFICER ACTIONS

- Formalize the three Training, Experience, and Currency requirements (listed above).
- When an incident reaches a Level I complexity, the Regional or State administrator—in collaboration with the local Agency Line Officer—will assign an experienced person to assist the Agency Line Officer in performing his or her responsibilities. This individual does not have to be from the Agency Line Officer’s own agency. *(Coaching and mentoring is the key concept here. We need to help create a culture that encourages [rewards] managers rather than discourages [punishes] managers who ask for assistance.)*
- In addition to competencies normally associated with Agency Line Officer positions, evaluation criteria related to necessary fire management skills should be added to vacancy announcements. These skills should also be added to Agency Line Officer annual performance standards. This will lead to increased skills and decreased costs. *(Specifically for the Forest Service, these criteria and standards have been submitted to the Washington Office as an action item of the Thirtymile Fire Accident and Prevention Action Plan.)*

Incident Commander and Agency Line Officer

As soon as possible after the Incident Management Team arrives, the Agency Line Officer and the Incident Commander will jointly review the initial Wildland Fire Situation Analysis (WFSA).

At this time, the WFSA will be revised, as necessary, to produce attainable, reasonable, *doable* alternatives that reflect all of our objectives—including cost containment.

INCIDENT COMMANDER AND AGENCY LINE OFFICER ACTIONS

When Area Command is activated this 2003 fire season:

- A representative of the Area Command team will be involved in the Agency Line Officer/Incident Commander meeting.
- The Area Command Delegation of Authority will reflect the selected alternative with cost containment objectives, and will re-delegate to the Incident Commander(s).
- Both the Incident Management Team and the Area Command will be evaluated on how well they meet the objectives of the Delegation of Authority.

(After this fire season, better cost data for different fuel types and strategies etc. will be developed.)

The Wildland Fire Situation Analysis

The Wildland Fire Situation Analysis (WFSA) process for large fires is cumbersome. Its benefits are not well understood. It has commonly evolved beyond active thinking and analysis to simply a passive computer process-driven outcome.

The WFSA was never intended to be a superficial checklist. The National Wildfire Coordinating Group (NWCG) has recognized this important reality. Improvements to this valuable tool are currently underway. The Large Fire Cost Reduction Team endorses and encourages these efforts.

WILDLAND FIRE SITUATION ANALYSIS ACTIONS

The WFSA process must undergo change this year. All Agency Line Officers will:

- Develop the WFSA to address:
 - More substance and alternatives that reflect a thorough analysis of cost-vs.-risk with emphasis on cost containment.
 - A focus on thinking and analysis—rather than rote computer program interaction.
- Recognize that preparing a good WFSA requires specific skills.
- Seek or accept assistance from peers, superiors, or master performers in developing the WFSA.
- **Establish a cost threshold at which Region or State level approval of the WFSA and Delegation of Authority would be required. (For example, when projected or current costs exceed \$15 million.)**
- Collaborate and ensure in-depth discussion with the Incident Commander. This is crucial in developing a well-thought out WFSA. Equally important are similar discussions for ongoing review and updates using current and estimated costs.
- Issue Delegations of Authorities that reflect specific cost objectives and cost monitoring procedures.

WILDLAND FIRE SITUATION ANALYSIS ACTIONS

When preparing a WFSA for suppression action:

- Consider only tactics and strategies likely to be effective in that fire regime.
- Identify the least cost alternative.
- Provide justification when selecting an alternative other than the least cost alternative.
- Establish a cost threshold trigger that, when exceeded, requires a revision of the WFSA that includes review of additional alternatives.
- Establish performance standards for Area Command and Incident Management Teams to minimize suppression costs. Recognize the Area Command and Incident Management Team's performance in achieving cost containment.

Financial Management

Several immediate actions can be taken to improve fire business management practices, procurement, and reviews. These have been adequately discussed—and outlined with corresponding follow-up actions—by the *Chief's Incident Accountability Report* (in Final Draft, February, 2002).

The *Chief's Incident Accountability Report* addresses a number of prudent fire business management practices that call for action. Implementation of these actions is essential to reducing costs. (Decisions and costs associated with fire suppression tactics and the cost of incident operational decisions were not included in this report.) Chartered by the Chief of the Forest Service, this report's four key incident cost-control measures:

1. Enhance and Streamline Resource Acquisition Standards.
2. Refocus and Improve Large Fire Cost Reviews.
3. Conduct Post-Incident Activity Reviews.
4. Better Define and Improve Comptroller Roles and Training.

The Incident Business Advisor

The Incident Business Advisor position often becomes overrun in high cost incidents. Therefore, on large fires, a single Incident Business Advisor is insufficient. (To fill this need, in the short term, it may be necessary to rely on our retiree experience.)

FINANCIAL MANAGEMENT ACTIONS

- Endorse and incorporate the actions of the *Chief's Incident Accountability Report*.
- Reinforce the need for additional highly-skilled Incident Business Advisors.
- Reinforce the existing direction to ensure Incident Business Advisors are assigned to all Type I incidents. Consider assigning an Incident Business Advisor to Type II incidents with high-cost potential.
- Assign additional cost containment support positions (in addition to the Incident Business Advisor) when incidents exceed \$12-\$15 million.
- Collectively, these cost containment support positions must have the following financial skills: 1) Fire Business Management; 2) Contracting or Procurement; 3) Fire Operations.
- Invite senior-level agency, administration, and state policy staff to large fire incidents. (*Including these individuals will encourage an expanded view and learning opportunity of the myriad complexities that occur on large fire situations.*)

Operations – Large Aircraft, 14-Day Rotation, Tactical

Apply the least force necessary to achieve the desired outcome.

Large Aircraft

Today, large aircraft (air tankers and helicopters) are:

- The most visible symbol of our fire suppression efforts.
- The most expensive resource on large wildland fires.

On this country's large wildland fires in recent years, these large aircraft costs—alone—can account for more than one-third of total suppression costs. Therefore, to save money on our wildland fires, we must address the spending on large air tankers and large helicopters. Better managing of use, flight times and contract performance for these aircraft—both fixed and rotary wing—will provide more prudent suppression strategies and vital cost-saving opportunities.

LARGE AIRCRAFT ACTIONS

- Ensure that the primary role and purpose of air tankers and large helicopters is initial attack and the protection of human life.
- Increase the use of Single Engine Air Tankers (SEATS). They may constitute the minimum force necessary for suppression.
- Conduct an analysis to determine the appropriate number of Type I Helicopters and National Shared Resource Type II Helicopters to be used in the national fleet. (Resources contracted over a period of time are more cost efficient than paying call-when-needed rates during an emergency.)
- Agency leadership should support operational decisions NOT to use large aircraft on incidents.
- Establish positive management controls and oversight on aerial operations regarding the use of large helicopters.

All assignments are limited to 14 days, exclusive of travel, with possible extensions as identified in the 2003 updated language for the Interagency Incident Business Management Handbook.

14-Day Rotation for Incident Management Teams and Area Command

Transitions between Incident Management Teams are a critical wildland fire event.

These disruptions in management continuity can have significant adverse impacts, including:

- Increased risks to firefighter safety.
- Reduced suppression effectiveness.

Furthermore, multiple transitions on long-duration fires can also be difficult for the land management unit and local cooperators. And, of course, team transitions also cost money.

14-DAY ROTATION ACTIONS

- Take maximum advantage of the flexibility within the recently revised 2003 NWCG guidelines (*Interagency Incident Business Management Handbook*) to minimize the number of Incident Management Team and Area Command transitions.

“Fight fire aggressively and provide for safety first.”

Standard Fire Order

“Confinement and containment strategies often involve maximizing the use of natural barriers and the commitment of fewer resources. Appropriate use of these strategies is estimated to save millions of dollars each year.”

Fire Suppression Costs on Large Fires – A Review of the 1994 Fire Season

Tactical

We need to reauthorize fire managers to maximize the opportunities provided by aggressive firefighting. While safety is our first priority, it isn't our only priority.

Aggressive initial attack is the best way to reduce costs and decrease long-term exposure to risk. In wildland fire management: we must always *“play to win rather than play not to lose.”*

Initial Attack

Key actions to minimize the cost of suppressing wildland fire: preventing the fire from occurring; immediate and aggressive initial attack to contain and control a new fire ignition while it is still small.

Suppression costs escalate significantly as fire size increases. Consequently, by eliminating greater exposure to large fire hazards, successful initial attack reduces suppression costs and also increases safety.

Forest Service figures show that only two percent of this agency's wildland fires—the large incidents—now usurp an enormous 85 percent of the agency's total suppression budget.

TACTICAL ACTIONS

- All Federal, State and Local agencies engaged in the suppression of wildland fire will formalize and embrace a policy of aggressive initial attack. This will be our wildland fire suppression program's top priority.
- Place a stronger consideration on the use of mechanized equipment. This can reduce: costs, risks to firefighters, and resource damage.

TACTICAL ACTIONS

- Revisit the advantages of night operations. Ensure a careful exposure to risk analysis is undertaken before we make decisions for no night operations.
- Rebuild a Type III Incident Management Team capability on local units.
- Apply the lowest standard of mop-up necessary to accomplish the incident objective. When applied to mop-up, less may be more.
- Demobilize resources—including portions of Incident Management Teams—as quickly and efficiently as possible when they are no longer needed to meet incident objectives.

SECTION TWO – 2003 AND BEYOND

We must ensure that we apply the highest skill level available at every phase and in every element of wildfire management.

Preparedness Levels IV and V

Clarified Roles and Responsibilities

Several times in the past decade our management model for Preparedness Levels IV and V has been stretched to the limit. To better contend with the increasing complexity of incidents and the decreasing availability of incident management expertise, we need a new model with clarified roles and responsibilities for Agency Line Officers, as well as for Local, Geographic, and National Multi-Agency Coordination Groups.

This concept helps buttress the underlying premise of this report: that we must ensure that we apply the highest skill level available at every phase and in every element of wildfire management.

PREPAREDNESS LEVEL IV & V ACTIONS

- At the highest preparedness levels, transition the National and Geographic Multi-Agency Coordination Groups to a management model of “command” rather than “coordination.” This will enable these important groups to make the difficult, strategic decisions necessary to ensure that critical resources are best positioned (nationally or geographically) to respond to the highest priority threats.

PREPAREDNESS LEVEL IV & V ACTIONS

- Implementing this change (first bulleted action on previous page) will require the following actions:
 - 1) National Multi-Agency Coordination (MAC) members must receive a written delegation of authority from their respective agencies that provides clear authority to allocate and reallocate nationally mobilized resources to the Geographic Areas having the most critical need.
 - 2) To quickly respond to emerging or rapidly changing situations, Geographic MAC members must receive a written delegation of authority from their agencies that provides clear authority to allocate and reallocate resources available to them within the Geographic Area.
 - 3) Agencies must ensure their National-MAC and Geographic-MAC members have the appropriate skills and experience to: a.) recognize emerging or changing situations; b.) make the timely, critical decisions necessary to ensure the available resources are best positioned to respond. This may require new training and support for MAC Groups to be developed that focuses on necessary decision-making skills required at the highest preparedness levels.
 - 4) To be effective, National and Geographic MAC Groups must have access to timely and accurate intelligence and predictive information.

Contracting

Needed: A New, Long-Term Approach to Fire Finance

As Michael Hupp, formerly of the Pacific Northwest Region's Umpqua National Forest, significantly pointed out in that Forest's 2002 Lessons Learned:

- Contracting now represents the major cost center in large fire suppression. In 2002, two-thirds of our suppression costs on large fires went through contracting.
- This scenario of very large, long-duration fires so heavily staffed by contractors is a relatively new phenomenon.
- Our business tools for fire finance were developed for smaller, shorter-duration fires staffed primarily by agency employees with occasional rented equipment. (This works just fine for a 300-person two-week fire.)

- The complexity of very large, long duration fires—staffed by thousands of contract employees—overwhelms our present finance model. We have suddenly become a very large contracting business.
- We, therefore, clearly need a new long-term approach to fire finance.

CONTRACTING ACTIONS

- | |
|---|
| <ul style="list-style-type: none"> • Establish an interagency team (including private sector experts) to establish a more efficient business model for contracting. This should include the development of new contracting management tools. |
| <ul style="list-style-type: none"> • Implement a new business model for contracting on large fires and develop the new skills and workforce to properly administer our contracts on the fireline. |
| <ul style="list-style-type: none"> • In lieu of contracting, increase the use of state and local resources. |

Wildland Urban Interface

During the past decade, frequent and prolonged wildland fire suppression operations in the Wildland Urban Interface (WUI) have become increasingly common. These operations have resulted in a dramatic increase in costs as Agency Line Officers and Incident Management Teams employ extraordinary efforts to protect: communities and associated infrastructure, homes, businesses, and other structures.

Uncertainty regarding the legal authorities, roles, and responsibilities of Federal, State, Tribal, and Local government entities with adjoining or over-lapping jurisdictions has led to confusion, and has occasionally resulted in uncoordinated, inefficient actions. Therefore, significant cost reductions in the Wildland Urban Interface will require a conscientious, well-coordinated effort by all entities with jurisdiction—long before a fire starts.

An interagency team, led by Jerry Williams (Forest Service) and Larry Hamilton (Bureau of Land Management), is currently working on this issue. One of their charges is to clarify the authorities, roles, and responsibilities of Federal, State, Tribal, and Local government in providing structure protection and structure suppression within the Wildland Urban Interface.

WILDLAND URBAN INTERFACE ACTIONS

In areas with communities-at-risk from wildland fire, all local fire protection organizations with jurisdiction should immediately beginning planning for the eventual wildland fire that threatens their communities or associated infrastructure. At a minimum, such planning should include the following:

- Jointly assess the defensibility of each community and its associated infrastructure and set priorities appropriately.
- Based on the (above) assessment, develop and implement pre-attack plans that identify which homes, businesses, and other improvements will be protected; how they will be protected; and by whom. In addition, identify those which are not safely defensible and which will only be evacuated.
- Jointly develop agreements that identify how structure protection costs will be shared among agencies should a fire threaten a community.
- Plan and train for the use of Unified Command among all organizations with jurisdiction.
- Jointly train with local government fire personnel to ensure that—in the event of fire—they can be immediately and effectively utilized in the suppression effort.
- Work with communities and home owners to implement “Firewise” actions to reduce their risk from wildfire.

LARGE FIRE COST REDUCTION TEAM MEMBERS

Jack Troyer, Team Co-Leader
Regional Forester, Intermountain Region.

Rex Mann, Team Co-Leader
National Area Commander.
Timber, Wildlife, Fire Staff Officer,
Daniel Boone National Forest.

Michael King
Forest Supervisor, Prescott National Forest.

John Berry
Forest Supervisor, Eldorado National Forest.

Neal Hitchcock
Manager, National Interagency Coordination Center.

Steve Frye
National Type I Incident Commander.
Chief Ranger, Glacier National Park.

Don Artley
National Fire Director, National Association of State Foresters.

Art DuFault
Fire, Fuels, Biomass Liaison, Bureau of Land Management
Washington D.C.

Paul Keller
Writer-Editor, USDA Forest Service.

Appendix H

Smoke Management Guidelines

5142.3 - Smoke Management. Smoke management will be an integral part of prescribed fire planning and execution. Prepare all burning plans and execute the burn as follows:

1. Locate all smoke sensitive targets on a master district administration map. Smoke sensitive targets are areas which smoke may cause an adverse effect. Examples are:

- Areas with air pollution or visibility problems.
- Airports where visibility impairment would be hazardous to aircraft.
- Communities or small towns, schools, or hospitals where smoke would violate state air quality standards.
- Any area where people gather and may suffer adversely from violation of state air quality standards.
- Highways with traffic flow that cannot function safely with visibility impairment.
- Class I Areas.
- Others, similar areas.

2. Notify State Forestry Commission or air quality control agency to obtain burning permit where required. Follow state or local smoke management requirements and guidelines in addition to Forest Service requirements.

3. Obtain a weather forecast that includes mixing height and transport wind speed in addition to other needed information on the day of the burn. Obtain a spot or zone weather forecast for all complex and intermediate level burns. Use a general forecast for basic level burns. Do Not Burn when State regulations or guidelines do not allow issuance of permits or when the combination of mixing height and transport windspeed are outside the values shown in 5142.3 Exhibit 06. In addition, for night time burning, follow State regulations and guidelines. Forest Supervisors may approve night burning based on risk assessment and smoke screening in States that have no night burning regulations or guidelines. Other wise, night burning will be permitted only when the nighttime relative humidity is predicted to be less than eighty percent (80%). Plans for these burns must address patrol and monitoring thoroughly in the burn plan (R8-FS-5100-6).

4. Notify people affected by the smoke downwind, as identified in section E.1, of the burn plan (R8-FS-5100-6). These people may be in addition to adjacent landowners. Identify who will perform specific tasks. Document contacts and how they were

made in the burn plan. Also notify Public Safety Agencies, such as State Patrol, "911" Dispatch Centers, Sheriff's Office and Newspapers.

5. Use test fire on intermediate and complex level burns to confirm smoke dispersion and record observation in burn plan on day of burn.
6. Determine and follow air quality regulations applicable to burn area. Do not violate National Ambient Air Quality Standards. Coordinate with Forest Air Resource Management Specialist.
7. Burn prior to peak burning period when possible. When active burning will not be completed by sunset, smoke management standards for night burning must be planned and predicted prior to ignition.
8. Do not ignite organic soils where avoidable.
9. Burn at night only when nighttime burning standards are met.
10. Mop up smoldering fires when necessary to comply with air quality and smoke management standards.
11. Develop a contingency plan if needed for smoke management and attach to smoke screening map. Identify who will perform specific tasks.
12. Post smoke warning signs on all roads where smoke may be hazardous to driving. All warning signs used will meet standards as described in FSH 7109.11 Sign Handbook. Patrol potential affected areas especially at night to ensure smoke is not causing problems.
13. Obtain assistance of local Sheriff or State Police when traffic control is necessary to reduce risk of accident from smoke on highways. When traffic control is identified in the burn plan (R8-FS-5100-6) and no cooperative agreement exist or the Sheriff, State Police or local authority cannot provide assistance, the burn must be postponed until appropriate assistance is available.
14. Mitigating Measures. When the risk created by smoke can be mitigated, burning may be conducted provided the risk is reduced to an acceptable level. Document in the burn plan mitigating measures to be taken at each target and also record what measures were taken on the burn day. Be specific.

Examples are:

- Closure of roads to traffic.
- Providing traffic control by State Police or local authorities.
- Relocating affected people as necessary.

- Reduction of particulates.
- Aerial Ignition.

Mitigating measures must have a very high assurance of success as determined by the risk assessment. When risk cannot be mitigated, do not burn. Forest Service employees must obtain authority to control traffic on State or County roads and highways from local law enforcement agencies. Execute a cooperative agreement where needed.

15. Screening System.

- a. Attach an administrative map to the prescription which shows the probable smoke impact area of the projected smoke plume and probable down drainage impact area. Indicate smoke sensitive targets in the impact area.
- b. Determine the probable downwind impact area as follows:
 - (1) Locate the burn area on an administrative map.
 - (2) Draw a line representing the centerline of the projected smoke plume the distance corresponding to the fuels types and loading as shown below:

- (a) When loading is less than 10 tons per acre.
- Grass fuels and leaf/needle litter - 5 miles.
 - Palmetto, galberry, yaupon, and other fuels.
 - * Backing fire or spot fire - 10 miles.
 - * Strip head - 20 miles.
 - Logging debris - 30 miles.
- (b) When loading is greater than 10 tons per acre, double above distances.
- c. Draw two other lines from the fire at an angle of 30° from the centerline. If fire is less than 50 acres, draw from center of fire (Figure A, 5142.3 - Exhibit 07). If larger than 50 acres, draw from fire edge (Figure B, 5142.3 - Exhibit 07).

**5140.3 - EXHIBIT 07
IS A SEPARATE ISSUANCE
SEE PAPER COPY IN 5140 - EXHIBITS IN MASTER SET**

This is the probable daytime smoke plume impact area.

- d. For nighttime smoke impact area, go down-drainage one half of the distances of daytime impact area. Cover only valley bottoms for smoke impact area.
- e. Locate all smoke sensitive targets within impact areas.
- f. If no smoke sensitive targets are identified, burn as planned.
- g. If a target with visibility or air pollution problems already present is identified, do not burn.
- h. Daytime burning. If smoke sensitive targets are located in impact areas within one half mile for underburns or one mile for scattered logging debris, do not burn unless impact can be mitigated.

Targets located a greater distance than these distances require mitigation only if visible inspection indicates actual impact. Residual smoke, if present, will drift down drainage after dark. Mitigation measures must be taken if needed.

i. Nighttime burning. If smoke sensitive targets are located within impact area, do not burn.

j. If the fuel type is windrowed logging debris for which there is currently no fuel model and smoke sensitive targets have been located, do not burn.

k. Refer to Technical Publication R8-TP11 "A Guide for Prescribed Fire in Southern Forests" and "Southern Forestry Smoke Management Guidebook" for additional information for smoke management.

Smoke Management Guidelines for South Carolina

General Burning Limitations

[Category 1](#) / [Category 2](#) / [Category 3](#) / [Category 4](#) / [Category 5](#)

Category 1:

No burning allowed, except for [crop stubble and grass fields](#).

[Burning Limitations](#)

Category 2:

Daytime burning only, between 9:00 a.m. and 4:00 p.m. EST, (10:00 a.m. and 5:00 p.m. DST). The fire should be appreciably burned out by the end of this time frame, with smoke production substantially ended.

Distance to closest downwind smoke sensitive area	Maximum tons of fuel that may be burned per day per 16,000 acres (25 sq. miles)
0 - less than 1000 feet	0
1000 feet - less than 5 miles	360
5 miles - less than 10 miles	720
10 miles or more	1440

CAUTION: In addition to downwind smoke sensitive areas, always consider down-drainage smoke drift. Residual smoke flows to and settles in low areas during the night and early morning, creating hazardous conditions on roads, especially when combined with fog.

[Burning Limitations](#)

Category 3:

If forecasted nighttime dispersion is poor or very poor, only daytime burning will be permitted between 9:00 a.m. and 5:00 p.m., (10:00 a.m. and 6:00 p.m. DST). The fire should be appreciably burned out by the end of this time frame, with smoke production substantially ended. If forecasted nighttime dispersion is fair to excellent, then daytime burning (all hours) and nighttime burning are permissible. If nighttime burning is allowed, ignition prior to receiving the new category day the following morning will be allowed based on the current category day. All burns (including those ignited earlier that morning) must comply with the new category day when issued.

Distance to closest downwind smoke sensitive area	Maximum tons of fuel that may be burned per day per 16,000 acres (25 sq. miles)
0 - less than 1000 feet	0
1000 feet - less than 5 miles	1800
5 miles - less than 10 miles	3600
10 miles or more	no limit

CAUTION: In addition to downwind smoke sensitive areas, always consider down-drainage smoke drift. Residual smoke flows to and settles in low areas during the night and early morning, creating hazardous conditions on roads, especially when combined with fog.

[Burning Limitations](#)

Category 4:

Daytime burning (all hours). Nighttime burning permissible with forecasted fair to excellent nighttime dispersion. When nighttime burning is permissible, ignition prior to receiving the new category day the following morning will be based on the current category day. All burns (including those ignited earlier that morning) must comply with the new category day when issued.

When forecasted dispersion is poor or very poor, the fire should be appreciably burned out by sunset, with smoke production substantially ended by the time of the forecasted inversion.

Distance to closest downwind smoke sensitive area	Maximum tons of fuel that may be burned per day per 16,000 acres (25 sq. miles)
0 - less than 1000 feet	0
1000 feet - less than 5 miles	2880
5 miles - less than 10 miles	5760
10 miles or more	no limit

CAUTION: In addition to downwind smoke sensitive areas, always consider down-drainage smoke drift. Residual smoke flows to and settles in low areas during the night and early morning, creating hazardous conditions on roads, especially when combined with fog.

[Burning Limitations](#)

Category 5:

Daytime burning (all hours). Nighttime burning permissible with forecasted fair to

excellent nighttime dispersion. When nighttime burning is permissible, ignition prior to receiving the new category day the following morning will be based on the current category day. All burns (including those ignited earlier that morning) must comply with the new category day when issued.

When forecasted dispersion is poor or very poor, the fire should be appreciably burned out by sunset, with smoke production substantially ended by the time of the forecasted inversion.

Distance to closest downwind smoke sensitive area	Maximum tons of fuel that may be burned per day per 16,000 acres (25 sq. miles)
0 - less than 1000 feet	0
1000 feet - less than 5 miles	3600
5 miles - less than 10 miles	7200
10 miles or more	no limit

CAUTION: In addition to downwind smoke sensitive areas, always consider down-drainage smoke drift. Residual smoke flows to and settles in low areas during the night and early morning, creating hazardous conditions on roads, especially when combined with fog.

[Burning Limitations](#)

[Contents](#)

[SCFC Home Page](#) / [Reference Resources](#) / [Burning Information](#) / [Piled Debris](#)

From the South Carolina Forestry Commissions Webpage:
<http://www.state.sc.us/forest/smglimit.htm>

South Carolina Smoke Management Guidelines

For specifics see: <http://www.state.sc.us/forest/fire.htm>

VENTILITATION RATE and CATEGORY DAY
(Based on Transport Wind/MPH)

Afternoon Ventilation Rate	Smoke Management Category Day
0 – 17,249	1
17,250 – 34,499	2
34,500 – 51,749	3
51,750 – 68,999	4
69,000 +	5

Appendix I

Burned Area Rehab Plan

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- 1. Funding request for estimated WFSU-SULT funds
- 2. Accomplishment Report
- 3. No Treatment Recommendation

B. Type of Action

- 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)
- 2. Interim Report
 - Updating the initial funding request based on more accurate site data or design analysis
 - Status of accomplishments to date
- 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name:___
- B. Fire Number:___
- C. State:___
- D. County:___
- E. Region:___
- F. Forest:___
- G. District:___
- H. Date Fire Started:___
- I. Date Fire Contained:___
- J. Suppression Cost:___
- K. Fire Suppression Damages Repaired with Suppression Funds
 - 1. Fireline waterbarred (miles):___
 - 2. Fireline seeded (miles):___
 - 3. Other (identify):___
- L. Watershed Number:___
- M. Total Acres Burned:___
 NFS Acres() Other Federal () State () Private ()
- N. Vegetation Types:___
- O. Dominant Soils:___
- P. Geologic Types:___

Q. Miles of Stream Channels by Order or Class:

R. Transportation System

Trails: miles Roads: miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): (low) (moderate) (high)

B. Water-Repellent Soil (acres):

C. Soil Erosion Hazard Rating (acres):
 (low) (moderate) (high)

D. Erosion Potential: tons/acre

E. Sediment Potential: cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):

B. Design Chance of Success, (percent):

C. Equivalent Design Recurrence Interval, (years):

D. Design Storm Duration, (hours):

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile):

G. Estimated Reduction in Infiltration, (percent):

H. Adjusted Design Flow, (cfs per square mile):

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

B. Emergency Treatment Objectives:

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land ___ % Channel ___ % Roads ___ % Other ___ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads			
Other			

E. Cost of No-Action (Including Loss):_

F. Cost of Selected Alternative (Including Loss):_

G. Skills Represented on Burned-Area Survey Team:

- | | | | | |
|--------------------------------------|-----------------------------------|---|--------------------------------------|--------------------------|
| <input type="checkbox"/> Hydrology | <input type="checkbox"/> Soils | <input type="checkbox"/> Geology | <input type="checkbox"/> Range | <input type="checkbox"/> |
| <input type="checkbox"/> Forestry | <input type="checkbox"/> Wildlife | <input type="checkbox"/> Fire Mgmt. | <input type="checkbox"/> Engineering | <input type="checkbox"/> |
| <input type="checkbox"/> Contracting | <input type="checkbox"/> Ecology | <input type="checkbox"/> Botany | <input type="checkbox"/> Archaeology | <input type="checkbox"/> |
| <input type="checkbox"/> Fisheries | <input type="checkbox"/> Research | <input type="checkbox"/> Landscape Arch | <input type="checkbox"/> GIS | |

Team Leader:___

Email:___

Phone:___

FAX:___

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

Channel Treatments:

Roads and Trail Treatments:

Structures:

I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

Line Items	Units	Unit Cost	NFS LANDS			OTHER LANDS				TOTAL
			# of Units	WFSU SULT \$	Other \$	# of Units	Fed \$	# of Units	Non-Fed \$	ALL \$
A. Land Treatments										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal Land Treatments</i>				0	0		0		0	0
B. Channel Treatments										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal Channel Treatments</i>				0	0		0		0	0
C. Roads and Trails										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal Roads and Trails</i>				0	0		0		0	0
D. Structures										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal Structures</i>				0	0		0		0	0
E. BAER Evaluation										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal BAER Evaluation</i>				0	0		0		0	0
F. Monitoring										
				\$0.0			\$0.0		\$0.0	0
				\$0.0			\$0.0		\$0.0	0
<i>Subtotal Monitoring</i>				0	0		0		0	0
G. TOTALS				0			0		0	0

PART VII - APPROVALS

1. _____ Date
Forest Supervisor (signature)

2. _____ Date
Regional Forester (signature)

Appendix J

NFMAS and BUDGET

- Full-time Fire Organization
- Documentation on Current Year Budget

FRANCIS MARION NEW NFMAS ORGANIZATION

Line Item			P10	MEL	M10	M20	M30	M40
<i>Producers</i>								
Engine T6			5	4	3	1	0	0
1	GS 5	211 days						
2	GS 4	211 days						
Engine T7			4	3	2	1	0	0
1	GS 5	211 days						
1	GS 4	211 days						
Helicopter T3			1	1	1	1	1	0
1	GS 9	211 days						
2	GS 5	211 days						
Tractor Plow T2			2	2	2	2	2	1
1	WG 8	211 days						
1	GS 5	211 days						
Helicopter T2			1	1	1	1	0	0
1	GS 8	14 days						
3	GS 5	14 days						
<i>Non Producers</i>								
Fire Program Mgr.			1	1	1	1	1	1
1	GS 11	181 days						
FMO			1	1	1	1	1	1
1	GS 9	211 days						
AFMO			1	1	1	1	1	1
2	GS 7	181 days						
Prevention Tech			1	1	1	1	1	1
1	GS 5	181 days						

SUMTER LEVEL 1 “MEL” NFMAS ORGANIZATION

(Level 1 organization)

Line Item			AP	EN	LC
<i>Producers</i>					
Engine T6			1	2	2
1	GS 7	211 days			
1	GS 5	211 days			
Dozer/Tractor Plow			1 D2	1 T3	1 T3
1	WG 8	211 days			
<i>Non Producers</i>					
Fire Program Mgr.			1	1	1
1	GS 11	30 days			
FMO			1	1	1
1	GS 9	211 days			
Prevention Tech			1	1	1
1	GS 5	181 days			

SUPERVISOR'S OFFICE NFMAS ORGANIZATION

<i>Non Producers</i>			
Fire Staff			
1	GS 13	211 days	
FMO			
1	GS 12	177+42	
Fire Planner			
1	GS 9	211 days	
Center Coordinator			
1	GS 11	All year	
Dispatch			
1	GS 8	All year	
1	GS 5	All year	
Prevention Tech			
1	GS 8	14 days	
1	GS 11	7 days	

**FRANCIS MARION AND SUMTER NFS
FY2004 FINAL ALLOCATION
DISTRIBUTION BY SUBUNIT**

AS OF March 17, 2004

FY2004		FY 2004	ADD'L FUNDS	CARRY	LESS	LESS						PLAN	TIMBER	FIRE			
EBLI	DESCRIPTION	FINAL	F/T ADJUST	OVER/	COST	POOLS 6-7	AVAIL		ANDREW	LONG	FRANCIS	REC	S/W/A	LANDS	ADMIN	LAW	AVAIL
		ALLOC	& 6500-10s	FIRE RTN	POOLS 1-5	OWCP/UCI	BAL	ENOREE	PICKENS	CANE	MARION	ENG	F,W,T&E	MINERALS	PAO	ENFORE	BALANCE
					\$4,173,533		11,457,322										11,457,322
	CWFS/SCSEP/EAZ OFFSETS				(\$73,041)	11,688	\$73,041										73,041
		15,755,481			\$3,976,931		11,530,363										11,530,363
CMFC	FACILITIES CAP. IMPROV. & MTNCE.	1,424,000	20,000	306,070	168,146		1,581,924										1,581,924
CMII	BACKLOG MTNCE. (TITLE VIII)	49,134		66,106	10,134		105,106										105,106
CMRD	ROADS CAP. IMPROV. & MTNCE.	1,442,000	20,000	159,647	197,622		1,424,025										1,424,025
CMTL	TRAILS CAP. IMPROV. & MTNCE.	299,000		44,712	62,411	1,665	279,636										279,636
CWFS	COOP. WORK OTHER																0
	Wildlife - Reg/Special	315,166					315,166										315,166
	Coop. Coll. - All other	130,000					130,000										130,000
CWKV	COOP. WORK KV	575,648			61,651		513,997										513,997
	Reforestation						0										0
	Soil & Water Improvements						0										0
	Wildlife						0										0
	Recreation						0										0
FDCL	FEE DEMO COLL SUPPORT	100,000					100,000										100,000
FDDS	FEE DEMO SITE SPECIFIC	260,000					260,000										260,000
GBGB	GIFTS AND BEQUESTS						0										0
HTAE	FOREST HIGHWAYS						0										0
LALW	LAND ACQUISITION L&WCF	231,000	25,000	8,057	47,294		216,763										216,763
MVIS	MAPS	3,000					3,000										3,000
NFIM	INVENTORY & MONITORING	865,000		22,860	246,603	40,662	600,595										600,595
NFLE	LAW ENFORCEMENT				177,356		0										0
NFLM	LANDOWNERSHIP MANAGEMENT	335,000		20,419	106,412		249,007										249,007
NFMG	MINERALS MGMT.	178,600		19,711	43,916		154,395										154,395
NFN3	FIRE REHAB AND RESTORATION						0										0
NFPN	LAND MANAGEMENT PLANNING	185,000		116,166	101,345		199,821										199,821
NFRW	RECREATION/HERITAGE/WILDERNESS	925,000		25,844	293,899	1,266	655,679										655,679
NFTM	TIMBER SALE MGMT.	2,327,000	65,500	95,610	764,308	3,414	1,720,388										1,720,388
NFVW	VEGETATION AND WATERSHED MGMT	915,000	73,500	50,923	279,541	25,852	734,030										734,030
NFWF	WILDLIFE MANAGEMENT	1,150,000	9,000	52,774	363,153	2,502	846,119										846,119
QMQM	QUARTERS MAINT.	14,250					14,250										14,250
PEPE	PURCHASER ELECTION		62,000				62,000										62,000
RIRI	RESTORATION OF IMPROVE.	2,000					2,000										2,000
RTRT	REFORESTATION TRUST FUND			-854			-854										-854
SPEA	ECONOMIC ACTION PROG.	9,000					9,000										9,000
SPFH	FOREST HEALTH	400,000			33,782		366,218										366,218
SPST	FOREST STEWARDSHIP						0										0
SPS4	FOREST HEALTH (TITLE IV)	25,000					25,000										25,000
SSSS	TIMBER SALVAGE SALES	329,000			152,017	1,868	175,115										175,115
TPCD	TIMBER PIPELINE REC BACKLOG			39,656			39,656										39,656
TRTR	ROADS & TRAILS FOR STATES			7,277	66,718		0										0
WCFE	WORKING CAPITAL FUND						0										0
WFHF	HAZARDOUS FUEL REDUCTION	1,360,000	650,000		271,096	-4,291	1,743,195	291,250	54,110	125,000	965,040			307,795			0
WFPR	FOREST FIRE MGMT.	2,180,000			529,527	37,813	1,612,660	112,000	105,000	108,000	710,000			577,660			0
WFEX	EXT. REIMBURSABLES - FIRE						0										0
WSEW	EMERGENCY WATERSHED						0										0
NFSD	S.C.S.E.P.	438,180				13,875	424,305										424,305
NFEX	EXTERNAL REIMBURSABLES	560,603					560,603										560,603
TOTAL		17,027,581	925,000	1,034,977	\$3,976,931	\$124,626	15,122,799	403,250	159,110	233,000	1,675,040	0	0	885,455	0	0	\$11,766,944
	All additional funds recv'd to date, except for LALW & PEPE, are for Trainees.																

FRANCIS MARION AND SUMTER
FY 2004 MID-YEAR
TARGET ACCOMPLISHMENT

FY 2004 REPORTING and ACCOUNTABLE ITEMS: Commitments and Forecasts																12-Month Projected Total	+/- 5% Variance	Justification: If % variance <95% or >105% enter brief bullet, i.e. (1) Fire (2) Weather (3) Funding Shortage/Increase (4) Contract Cost Increase/Decrease (5) NEPA/Consultation (6) Litigation, etc.
Annual Performance Report Activity	CODE	DESCRIPTION	Unit of Measure	Accountable Item, Critical (a)	Chief's Top 20 Performance Items (b)	Items we can request adjustment at mid-year	PBA Target Final	Forest Assigned Targets	EN	AP	LC	FM	SO	Total				
Environmental Compliance																		
NFMG-MO	MG-OP-ADM-FN	Operations Administered to Standard	Operations	NO			4				4			4		0%		
NFMG-GS	MG-GEO-PER-FN	Geologic Permits and Reports Completed	Reports	NO			3						3	3	3	100%		
Land Ownership Management																		
NFLM-LT	LM-LND-CLASS-FN	Cases resolved through litigation or processed through administrative procedure	Cases	NO			4		1	1	1	1		4		0%		
NFLM-LA	LM-SUP-STD-FN	Authorizations Administered to Standard	Permits	YES			47		9	10	10	18		47		0%		
NFLM-UP	LM-SUP-APPL-FN	Land use proposals and applications processed	Permits	NO			78		23	16	12	27		78		0%		
NFLM-BL	LM-BL-TOTAL-FN	Boundary Line Marked/Maintained	Miles	Yes			53		12	12	12	12	5	53		0%		
	LM-ROW-ACQ-FN	Rights-of-way acquired	Number	YES	YES		6						6	6		0%		
LALW-LP	LA-LND-PURCH-FN	Acres Acquired	Acres	NO			8000						8000	8000		0%		
Seniors, Youth and Volunteer Programs																		
	SYVP-SCSEP-FN	(Reference: Final Program Direction)	Participants	YES			17		3	3	7	5	2	20		0%		
	SYVP-SCSEP-PART-FN	(Reference: Final Program Direction)	Participants	YES			94		11	10	25	15	6	67		0%		
	SYVP-YCC-PART-FN	(Reference: Final Program Direction)	Dollars	YES			33600		2800		22400	8400		33600		0%		
State and Private Forestry and Fire																		
WFHF-FW	FP-FUELS-WUI-FN	Wildland/urban interface (WUI) high-priority hazardous fuels mitigated	Acres	YES	Yes		38610		4500	800	4500	26930		36730	36736	95%	Shift in planned areas due to weather conditions.	
WFHF-FN	FP-FUELS-NONWUI-FN	Non-wildland/urban interface (non-WUI) high-priority hazardous fuels mitigated	Acres	YES	Yes		10414		7150	0	500	4644		12294	12434	119%	Shift in planned areas due to weather conditions.	

Note:
(a) Accountable Item, Critical for agency accomplishment, targets assigned that the Units are expected to deliver.
(b) Chief's Top 20 Performance Items which will be used to evaluate the performance of the Unit.

Appendix K

R8 Southern Region, Prescribed Fire Monitoring Plan

R8 SUPPLEMENT 5140.42_exh02
EFFECTIVE XX/XX/XX

5140
Page 1 of 6

PRESCRIBED FIRE EFFECTS MONITORING

Background

At 2003's Regional, FMO meeting a team was established to develop and recommend a program of monitoring to be implemented within the Southern Region for prescribed fire effects. Specific objectives are to develop "minimum monitoring standards" for Forests across the Region to facilitate a uniform standard of data collection associated with prescribed fire. Those standards included methods to evaluate hazard fuel reduction and vegetative effects from prescribed fire projects. The following discussion is an explanation and recommendation of that proposed process.

All other Federal land management agencies are utilizing Brown's 1974 transect and plot monitoring methodology for prescribed fire effects monitoring. The process is detailed and follows a regimented structure and process for data collection. The process allows for monitoring any particular fuel or vegetation variable necessary on a Forest and the process uses scientifically tested and accepted methods for statistically valid data collection.

The recommendation allows flexibility within Forests and geographic areas to determine the amount and extent of monitoring needed to meet local issues of concern, while still maintaining a minimum standard program across the rest of the Region. The process will allow for the processing and analysis of a basic set of uniform data across the Region for comparative analysis purposes and program level validation.

Basic Program

The recommended, basic protocols are explained below. However, this document is not intended to provide managers with all the information necessary to establish a monitoring program. Details and specific operational protocols and direction can be found in the documents listed at the end of this paper.

The program centers around the installation of permanent monitoring plots within the burned areas. We are recommending a minimum of three plots, annually, on each district, each year, that operates a prescribed fire program. Districts have the option of putting in the plots in one burn or individual plots on different burns to meet local needs. Results may be better supported if plots are on a single burn. Districts have the option of putting in more plots to meet specific needs.

These plots will be put in each year until a rotation is reached and the plots are being burned again. At that point, further plots are unnecessary and data can be taken from the existing plots each year as they are burned.

An example would be for a district on a three year burning cycle. Each year three plots will be established for three consecutive years for a total of nine plots. The fourth year, the plots which were installed the first year would be burned again, and no further plots would be needed. At that point, information and data would be collected each year from the plots being burned on a repetitive cycle.

The minimum program consists of monitoring two basic areas; hazard fuel reduction and basic vegetation effects. The minimum hazard fuel program consists of monitoring litter/duff, 1-10-100 and 1000 hr fuels on the area. The data collected will be used to determine fuel loadings both pre and post burn. The minimum vegetative program consists of monitoring over story, mid story and understory fire effects. Forests have the option of expanding on this portion of the process based on their specific needs and conditions.

Plot Location

Locations may be chosen randomly or along transects. You may also decide to divide the burn unit into three areas and install one plot in each area. A second option is to install plots along transects. Random plots should not be located near roads, edges, or other influences which would have an effect on “normal” fire behavior, and consequently results.

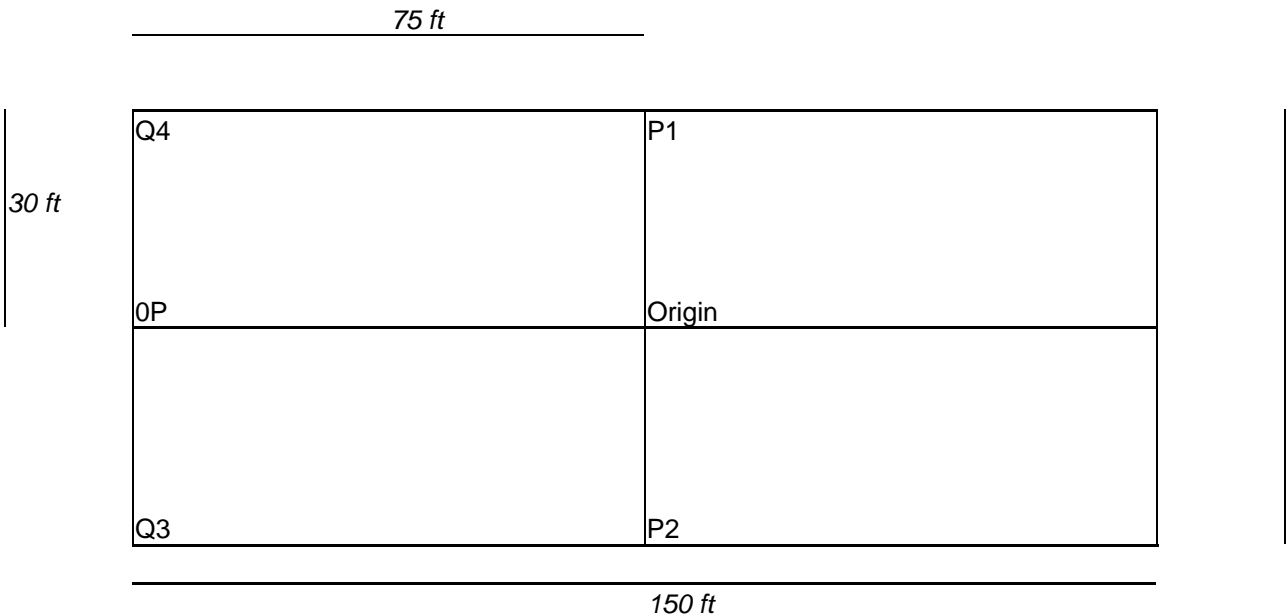
A minimum of three plots should be installed. Two or more monitoring types can be monitored, although, as explained above, monitor only those communities or fuel types that are most important for your objectives. For example, you may choose to monitor the dominant pine vegetation and fuel loadings, and also the hardwood stringers along drainages. These are two different monitoring types and will be analyzed separately. You may want to install three plots in each area.

Once you have found the location, select a plot location point (PLP). To do this, select a random compass direction and a random distance (0 to 60 ft). Locate the true plot origin by moving the indicated direction and distance. This is another way to ensure that the plot is not located with bias: it’s very tempting to put the plot in a nice, open area, rather than a spot thick with mountain laurel and greenbrier.

If the plot origin or the area roughly 150 ft in radius is unacceptable (i.e. lands in a stream), you can return to the PLP, orient 180 degrees away from the previously randomly selected azimuth and move 150 ft away to a new point.

Plot Installation

The default size for plots is 60 ft X 150 ft.



The plot is oriented one of two ways. If the terrain is flat, the top long line of the plot will run east/west (from plot origin to P1 is due north). If the terrain is not flat, the plot should be oriented along the contour or it should follow the ridge top, depending on its location. Record whether true north or magnetic north is used.

Monitoring personnel should get in the habit of setting up the tapes the same way every time they visit a plot. The long lines should run from Q4-Q1 and Q3-Q2 (left to right) and the short lines should run from Q4-Q3 and Q1-Q2 (top to bottom). The quarters are divided using points OP and 150P along the long center line and P1 and P2 along the short center line. That way, when trees are mapped the tapes will match the pre-drawn map and will make data collection much easier and accurate.

Define the plot and quarters with rebar stakes (rebar is recommended but other materials may be used). Install the stakes deep enough to provide adequate basal stability relative to the height necessary to bring the stake into view. Tagging the rebar is recommended for two reasons: first, monitors can orient themselves and locate the entire plot quickly, second, other forest employees can track the plot back to who installed it. Alternately, heat-resistant paints can be used to color-code stakes.

These plots are permanent and must be treated as such. Plot locations should be well marked on a map and GPS'd for future relocation. Written directions to each plot should be well written (described).

Dead Woody Fuels, Duff and Litter

Three-50 foot long fuel transects are set at predetermined points (30, 60 & 90ft) along the 0P-150P line. Litter and duff are measured at 1 ft, 5 ft, 10 ft and so on to 45 ft for a total of 10 points per transect and 30 points per plot. Along the same lines, measure dead and down woody fuels in the 1-10-100-1000hr categories as specified in the protocol. 1&10 hour woody fuels are measured along the first 6ft of each line. 100 hour fuels are measured for the first 12 feet of each line. The 1000-hrs are measured along the entire 50 ft length. Care should be taken when setting up the tapes not to disturb the ground along the transects.

These fuel transect lines are permanent within the plot area, are established using random compass bearings, and must be marked at beginning and ending points for future reference. All future fuels, duff/litter data will be collected from these specific lines.

Photos

Plot photos are a permanent part of the plot record and represent visual changes over time.

Four photos should be taken from the plot center looking toward P1, 50P, P2 and 0P (cardinal directions if plot is on flat ground). A range pole or density board should be located 30 ft from the center (at P1 and P2 and along the 0P-50P line).

An identifier card should be included in every photo so that it can be identified later. Suggested information includes Monitoring Type, Plot ID, Photo Direction (for example, P1), Date and Monitoring Status (e.g., Pre-Burn, Yr 1, etc.).

Photos should be taken about 5 ft from the ground and angled so that the view plane is also about 5 ft from the ground. Pre burn and post burn photos will be taken to document the area. Future photos should be taken the same way, to ensure that the view in the picture is consistent.

Overstory

Overstory trees in these protocols are defined as trees in the dominant or co-dominant canopy position. Within the 60 ft x 150 ft area, estimate the number or BA of overstory trees and list the species. Note damage and snags.

Some Forest may determine specific data is necessary on overstory vegetation. Forests have the option of identifying by species, tagging and mapping each

individual overstory tree within the plot for long term evaluation. Otherwise, an estimate of BA is acceptable.

Midstory

The midstory is comprised of all trees (not necessarily shrubs) ≥ 2 inches at DBH, and not in the dominant or co-dominant position. If the individual is not tall enough to measure DBH, it automatically falls into the understory.

Pre-burn protocols call for counting the number of live individuals in Q1. An individual, for these protocols, is a single stem emerging at ground level. If a shrub or tree branches above ground, record it as one individual and use the largest trunk or stem to determine DBH if necessary. It may help to picture the 30 ft X 75 ft area as several smaller areas and estimate each separately, then add the subgroups together. Post burn, record the approximate percent damaged by fire. Some species sprout from the base or the bole as a result of fire, even though the bole itself does not appear affected. Some Forest may want to identify species within the mid story. This is optional by Forest.

Understory

The understory consists of all plants < 2 inches at DBH, and all plants that are not as tall as breast height. They can be woody or herbaceous. This is undoubtedly the most difficult and time-consuming of all of the protocols. Minimum direction is to count the individuals at each sample point. Forest may choose to list by species.

Understory measurements are taken at 30 foot intervals along the long axis lines of the plot. Which gives five samples per line (1, 30, 60, 90 and 120 ft). Measure the density of this layer by placing a frame along the predetermined points on Q4-Q1 and Q3-Q2. Record the number of woody and herbaceous plants found within each frame.

The protocol frame size is 3 ft X 3 ft. However, this may prove too time-consuming and/or too frustrating, particularly for burn units with dense understory. Pilot sampling is highly recommended for this protocol because there may be little or no benefit to recording many quadrats. To ensure that pilot sampling can be done, divide up the data sheet so that 1 ft X 3 ft and 2 ft X 3 ft sections of each quadrat are recorded separately. The data can be added together afterward, but they can't be separated later. Keep in mind that some extra time and effort in the beginning helps to minimize time and effort later.

Forests have the option of species identification. A biologist or botanist should be encouraged to give input before these protocols are implemented: he or she may want to choose how the unknown plants are recorded (e.g., "Unknown # 1" or "Forb/Annual" or lump all of the grasses, forbs, tree seedlings and shrubs) and might even help with this collection. Plants should not be collected from within the

plot but good digital photos, drawings, descriptions and collections from the vicinity will prove helpful later—provided that (1) accurate information on where and when the plant was discovered is recorded and (2) someone actually does identify them at a point in the near future.

Live Fuels and Fuel Moisture

Some fuel models have live fuels as part of their composition. Examples are fuel models 2, 4, and 7. Field units may want to monitor live fuel moisture within the species involved in these models as a indication of fire behavior and consequent effects on associated vegetation. Live fuels moisture may be considered a trend indicator rather than a specific monitoring requirement. There are no protocol requirements for live fuel moisture measurements. Units monitoring this item should use normal clip, cook and weight sampling techniques.

Severity

Severity is measured as soon as possible after the prescribed burn. It is determined from a pre-set criteria format and is a visual assessment.

At the same points as litter/duff measurements, record the conditions using the severity scale of 0-5. Look at an area about 1 ft by 1 ft at each position. Second, record the remaining litter and duff depth. Ignore any leaf or needle fall that is a result of the burn. Record the average char height on over story and mid story layers.

Some Forest may want to look at consumption across a burn unit, independent of the plots. To accomplish this a transect can be set up across a burn unit. If litter and duff are to be measured pre-burn and just one time post-burn, drive large nails into the ground, until the head of the nail just touches the top of the litter layer. After the burn, measure the distance between the top of the nail and the new substrate height to document the loss in organic material. The additional transects are optional.

Timing of Data Collection

Formal, pre burn plot location, setup, and data collection should be done in the growing season prior to the burn. This insures data is collected timely and photos taken represent active vegetative conditions. Immediate post burn evaluations will consist of the normal burn plan, post burn evaluation, the Severity assessment part of the protocol and formal post burn fuels data collection for hazard fuel reduction analysis.

Formal post burn vegetative monitoring data collection on the plot should be done in the early growing season immediately following the burn. This process will include collecting the vegetative data and taking post burn photographs. Forests with short fire rotations (3-5 years) may take data only once within a burn cycle.

Others with longer rotations may want to take data at yearly intervals to evaluate long term effects between burns.

Other Data Collection

The protocols listed above are minimums recommended. Forests are encouraged to monitor effects of fire on vegetation or other resources to a greater extent. Several extensive sets of protocols exist (e.g. NPS Fire Monitoring Handbook, USFWS Protocols, Joint Fire Science Program's FireMon (Draft)). The committee strongly recommends that forests do not spend time "reinventing the wheel" and creating their own protocols. The existing handbooks represent a great effort by government and university scientists and researchers over more than a decade. We believe that adopting accepted protocols will benefit Region 8 in several ways:

- (1) Most of the "kinks" have been worked out of the existing protocols and they can be referred to when monitors come across a new situation in the field.
- (2) Employees who have designed their own protocols tend to store some of the details in their heads. When they leave, that information leaves with them. Using established protocols helps keep that information in the forest.
- (3) Field employees who switch forests can easily pick up the protocols in their new positions. They don't need to learn everything all over again
- (4) Using established protocols lends credence to this agency. If critics take issue with the data collection methods, they are criticizing all of the forests as well as other federal agencies in the region and across the country.

Forest: _____ Ranger District: _____ Burn Name: _____

Monitoring Element: WEATHER

Monitoring Variables	Frequency	Timing	Tools Utilized	Observation	Observation	Observation	Observation
Temperature	A	A					
Relative Humidity	A	A					
20 ft wind speed/direction	A	B					
Midflame wind speed/direction	A	A					
Sky condition	A	A					
Days since rain/amount	D	B					
Stability	A	B					
Mixing height	A	B					
Transport wind speed/direction	A	B					
Dispersion index, category day, ventilation rate	A	B					
Fronts expected? When?	A	A					
General forecast accurate?	A	B					
Spot wx forecast accurate?	A	B					

Feedback given to NWS or forecaster?	E	D					
Rx exceedances?	A	As occur					
Types, contacts, consequences	As occur	As occur					

Monitoring Element: FUELS

FBPS models used	A	B					
Kudzu fuels present?	A	B					
% of area by fuel model group	A	B					
Available fuel loadings	A	B					
1 hr fuel %	A	A					
10 hr fuel %	A	A					
100 hr fuel %	A	B					
Live FM % (herb)	A	B					
Live FM % (woody)	A	B					
Duff depth	A	B					
Duff % moisture	B	B					
% of area burned	A	D					
Consumption by size classes	E	D					
Special fuel conditions (blowdown, snow-ice)	A	As occurs					

damage, SPB, moth kill)							
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Monitoring Element: FIRE BEHAVIOR

Intensity (smolder, creep, run, flank, torch, spot, crown)	A	A					
ROS	A	A					
H/A	A	A					
FLI	A	A					
Flame length	A	A					
Flame height	A	A					
Direction of fire spread	A	A					
Spotting?	A	B					
Burning Index	A	B					
Prob of Ignition	A	B					
Erratic fire behavior?	A	C					
Escapes?	A	C					

Monitoring Element: SMOKE

Visibility impaired? SSA affected?	A	A					
Mix ht, dispersion, stability as forecasted?	A	A					
Smoke mix & move in direction forecasted?	A	A					
Smoke exposure,	A	A					

crew member welfare issues?							
Road closures or traffic reroutes required?	A	A					
Public traffic disrupted?	A	A					
Nighttime or early a.m. hours impacted?	A	C					
NAAQS or monitor exceedances?	D	D					
Emissions calculated or estimated?	C	D					
# of px calls received as concerned or complaints	E	D					
Smoke contingency implemented?	A	B					

Monitoring Element: 1st & 2nd ORDER FIRE EFFECTS

% of area by crown scorch (<1/3, 1/3-2/3, 2/3>)	E	D					
Avg scorch height (feet)	C	D					
Avg bark char height (feet)	B	D					
Seedling, sapling	D	D					

damages? Note on map							
% understory topkill, avg height (feet) & diameter (inches)	C	D					
Reserve tree damage? Describe and note on map	A	D					
% mineral soil exposure	D	D					
Adverse effects?	A	D					
Restoration needs?(waterbars, turnouts, seeding, remarking, etc)	A	D					
Other (describe)	As needed	As needed					

Objectives met? Briefly describe:

Remarks:

Recommendations for future evaluation:

Evaluated by: _____, _____, _____

Date: _____

Frequency legend (A-every burn, B-on 5-10% of burns, C-on 10-25% of burns, D-on 25-50% of burns, E-on 50-75% of burns)

Timing legend (A-every 2 hours during life of burn, B-once during life of burn, C-immediately after burn, D-sometime after the burn (specified on specific burns as days, weeks, months, or year(s))

Tools utilized legend:

- A- Rain gauge
- B- Camera (slides, prints, digital (JPEG), camcorder)
- C- Forecast (general or spot wx)
- D- Sling psychrometer
- E- Wind meter
- F- Photo series guide
- G- Heat/paint tiles, buried thermometers
- H- Transects, plots
- I- Nails
- J- 10 hr fuel sticks
- K- Tables, charts, guides
- L- Clip/dry
- M- Range pole
- N- NFDRS pocket cards
- O- BEHAVE or RXWINDOW runs
- P- Compass, clinometer
- Q- Timer
- R- Helicopter assets
- S- Fixed wing assets
- T- Smoke monitors (portable or fixed, on-site or down wind)
- U- VSMOKE model run
- V- PB PIEDMONT model run
- W- Phone log of complaints, concerns
- X- Personal visits
- Y- Smoke patrols
- Z- Photo points
- AA-Consumption guides for duff-litter
- BB-Pocket knife cuts to cambium
- CC-Other (specify)