Exhibit B

OZARK-ST. FRANCIS NATIONAL FORESTS
LAND AND RESOURCE MANAGEMENT PLAN

Amendment #4
February 1990

This amendment incorporates methods and tools available for use in the Final EIS on vegetation management in the Ozark/Ouachita Mountains. Biological methods and aerial application of herbicides are not applicable as they are not included in the selected alternative. All tools specified for prescribed fire, herbicides, manual and mechanical methods are available for use.

Chapter 4, Add:

Page #	Mitigation Measure(s)
4-4	24
4-6	12, 13, 15, 16, 19
4-7	17, 18, 19, 41, 42, 43
4-8	2
4-12	1, 6, 7, 8, 9, 10, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75-selective (only) herbicide treatments may be used closer than 60 feet provided a site-specific analysis (mitigation measure #1) shows that threatened, endangered, proposed and sensitive plants are adequately protected according to mitigation measure #2, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87
4-13	4, 22, 23, 46, 47, 48, 49, 50, 52, 52, 53
4-14	11, 39, 40
4-17	20
4-19	20, 21, 22, 23
4-20	3
4-21	14, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45

Chapter 5, Add:

Page #	Mitigation Measure(s)
5-12	26, 27

These management requirements are either additions or expand on those presently in the Forest Plan. General Management Requirement and Mitigation Measure (5) in the Vegetation Management EIS ROD is in the Forest Plan.

This amendment is not a significant change in the Ozark-St. Francis National Forests' Land and Resource Management Plan. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10(f) and

Forest Service Manual Chapter 1920 (53 Fed. Reg., 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of goods and services projected by the Land and Resource Management Plan.

The National Environmental Poicy Act analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Ozark/Ouachita Mountains. The EIS is available for review at the Forest Supervisor's Office.

MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

This exhibit describes management requirements and mitigation measures required by this Record of Decision. Management requirements set direction on how resources are managed (such as timber stocking standards). Mitigation measures are actions taken to lessen adverse impacts or enhance beneficial effects (such as streamside protection).

GENERAL MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

Site-Specific Analysis

(1) Projects must have site-specific analysis in compliance with the National Environmental Policy Act (NEPA). This environmental analysis considers site-specific techniques, intensity of application methods, and potential environmental effects of any method considered. A reasonable range of alternatives, including one which does not use herbicides and a "no action" alternative, is examined.

Potential direct, indirect, and cumulative effects are evaluated. Effects to be considered include long-term soil productivity, water quality, air quality, visual quality, vegetation diversity, wildlife, fish, cultural resources, civil rights (including those of minorities and women), and threatened, endangered, proposed, and sensitive species.

(2) A biological evaluation of how a project may affect any species Federally listed as threatened, endangered, or proposed, or identified by the Forest Service as sensitive, is done as part of the site-specific environmental analysis. This evaluation considers all available inventories of threatened, endangered, proposed, and sensitive species populations and their habitat for the proposed treatment area. When adequate population inventory information is unavailable, it must be collected when the site has high potential for occupancy by a threatened, endangered, proposed, or sensitive species. Appendix D (Final EIS) identifies potential adverse effects from vegetation management by species. When adverse effects are projected, mitigation measures specified in appendix D and chapter II of the Final EIS are used to prevent them.

Requirements and measures for actions affecting U. S. Fish and Wildlife Service threatened, endangered, or proposed species are detailed in species recovery plans and FSH 2609.23R. Recovery plans have been prepared for the red-cockaded woodpecker, southern bald eagle, northern bald eagle, gray bat, Indiana bat, eastern cougar, Florida panther, American peregrine falcon, American alligator, and the leopard darter. Chapters in FSH 2609.23R have been prepared for red-cockaded woodpecker, southern bald eagle, and American alligator. Requirements and measures for actions affecting sensitive species are detailed in Forest Land and Resource Management Plans.

If it is determined that the project may positively or negatively affect threatened, endangered, or proposed species, consultation is initiated with the Fish and Wildlife Service. If, during informal consultation, it is determined that the project is not likely to adversely affect listed species and the Fish and Wildlife Service so concurs in writing, consultation is terminated. However, if it is determined that the project is likely to adversely affect listed species, formal consultation is initiated. Figure D-1 (Final EIS) outlines this process.

When the evaluation indicates that a project may have an adverse effect on a sensitive species or its habitat, appropriate State wildlife agencies, natural heritage commissions, and other cooperators or species authorities are contacted to identify coordination measures. These measures are directed towards ensuring species viability and preventing negative population trends that would result in Federal listing.

(3) Integrated Pest Management (IPM) principles are used during site-specific analysis. IPM is a decision-making and action process which includes biological, economic, and environmental evaluation of pest-host systems to manage pest populations.

IPM strategies involve a comprehensive systems approach to silvicultural, wildlife, fuel treatment, recreation and corridor management practices that emphasizes prevention of pest problems. These strategies consist of a range of practices that include prescribed fire, manual, mechanical, biological, and chemical tools that may be used alone or in combination. Risk rating systems and pest incidence surveys are used during site-specific analysis. Further IPM direction is provided in FSM 3400, FSH 3409.11, and Forest Land and Resource Management Plans.

(4) In each project, water quality is protected from nonpoint-source pollution through use of preventive "best management practices" (BMP's). BMP's are developed by States with EPA review to comply with the Clean Water Act and control monpoint-source pollution. Implementation of BMP's, monitoring and evaluation of their application and effectiveness, and adjustment of practices as needed are done to protect beneficial water uses.

BMP's are applied to all activities. Some BMP's required to protect water quality appear in this section as mitigation measures for soil and water. BMP's applied in projects may be more stringent and more effective in protecting water quality than those in this section, but not less. In each project, site-specific conditions must be assessed, and the BMP's needed to comply with State water quality management plans and pertinent Federal regulations must be employed.

Timber Stand Improvement (TSI)

(5) For evenage timber management, methods that maintain stocking levels (stems per acre) and improve growth rates are used (table II-1).

Table II-1.--*Southern Region restocking standards: number of desirable stems per acre.

Forest Type	Lower** Level	Target Level	Upper Level
Loblolly pine	150	500-700	900
Shortleaf pine	150	500-700	900
Mixed pine-hardwood	150	400-600	900
Hardwoods (all species)	150	250-350	500

* Stocking levels shown are guides, and must be used in conjunction with professional judgment to determine restocking levels for a specific site.

**Based on site index 50. See the Ozark-St. Francis and Ouachita Plans for Lower Level guides on sites where site index is greater than 50.

(6) Pine stands receive release and weeding necessary to meet growth rates and stocking levels established in Forest Land and Resource Management Plans. Stands are considered for release when the desired seedlings are not free to grow, when competing growth threatens to overtop and compete directly for sunlight, moisture, and nutrients, or when competition results in less-than-average growth for comparable sites.

(7) Precommercial thinning of pine (usually done before age 10 to 15 years) is considered when stem density exceeds the upper level of restocking standards.

(8) Hardwood stands are generally not released. Clumps of competing stems are removed, however, where they may interfere with desired trees.

(9) Hardwood stands, where codominant trees of seedling (not sprout) origin are 25 feet or taller, are considered for precommercial thinning.

(10) Where a mixed pine/hardwood type is the management objective, release or precommercial thinning is designed to favor best quality stems of desired species, which include both hardwood and pine. Best quality includes consideration of origin, form, etc. Desired species are those that best achieve the Forest Land and Resource Management Plan's management objectives.

Soil, Water, and Aquatic Life

(11) Channel stability of perennial and intermittent streams is protected by retaining all woody understory vegetation within at least 5 feet of the bank and by keeping slash accumulations out of the stream. This measure is in addition to filter strips required by items 36 and 53.

Cultural Resources

(12) When any soil disturbing activity is planned, an archaeologist performs a field survey to locate cultural resource sites and assess their significance and protection needs. Sites meeting criteria for significance are nominated to the National Register of Historic Places. All archaeological reports

(surveys, site evaluations, site nominations, site protection measures) are submitted to the State Historic Preservation Officer (and/or the Advisory Council on Historic Preservation) for review.

(13) If archaeological or historic resources are encountered during soil disturbing activities, work stops until an archaeologist evaluates the site's significance and the results and recommendations are reviewed by the State Historic Preservation Officer (and/or the Advisory Council on Historic Preservation).

Safety

(14) Safety equipment for Forest Service workers (such as hard hats, eye and ear protection, chaps, and fire retardant clothes) is worn as determined by a Job Hazard Analysis specified in the Health and Safety Code Handbook (FSH 6709.11). This analysis estimates risks to specific body parts and prescribes needed protection.

Visual Quality

(15) Visual Quality Objectives (VQO's) are met by corridor maintenance, site preparation, timber stand and wildlife habitat improvement, range forage, and fuels treatment projects. These VQO's are:

Preservation allows only for change not caused by humans. Generally, no treatments are permitted.

Retention ensures that human activities are not evident to the casual forest visitor. Concern for visual quality is primary. Visual impacts should be eliminated during or promptly after treatment. Many treatments are allowed, but piling, disking, and broadcast herbicide methods are usually not appropriate.

Partial Retention means that human activities may be evident but remain subordinate to the characteristic landscape. Concern for visual quality is high. Visual impacts should be eliminated at a minimum within the first year. Most treatments are allowed, but disking and broadcast herbicides are limited. In corridors, all methods and tools are available.

Modification indicates that human activity may dominate the characteristic landscape. Treatments should borrow established line, form, color, and texture so completely that visual characteristics are compatible with natural surroundings. All methods and tools are available for use.

Maximum Modification means that human activity may dominate the landscape, but should appear as a natural occurrence when viewed as background. All methods and tools are used, and at a greater intensity than in modification VQO.

(16) Treatments are scheduled as much as possible for the season that best meets VQO's. Rehabilitation and enhancement work may be needed to meet short-term VQO's. Visual diversity along active travelways (such as canopy layering, flowering trees) is protected from treatments where feasible and needed to meet VQO's. Tool selection and coordination requirements are determined by a site-specific project analysis.

Wildlife

(17) Wildlife stand improvement (WSI) seeks to improve vegetation species composition in stands and to develop wildlife habitat areas for game and nongame species. A variety of woody and herbaceous species suited to site conditions and burning regime are maintained to assure year-round quality habitat. Exceptions that may reduce plant species variety include treatments to improve habitat for species such as red-cockaded woodpeckers.

(18) For understory species WSI, proper management allows full sunlight on 30 percent of the forest floor. For hardwood overstory WSI, thinning encourages full crown development, vigorous growth, and soft or hard mast production. When thinning stands older than 30 years, stems are favored which show positive indication of bearing soft or hard mast.

(19) During TSI, WSI, and site preparation, selected groups of overstory and understory vegetation are protected and managed to assure a variety of softmast, hardmast, and cover species. During site preparation, active and potential den trees are retained in clumps (at least 1/2 acre per 20 acres) if they are not provided in adjacent stands not suitable for timber production, inclusions, or streamside management zones. During TSI and WSI, all recognized den trees are protected. In addition, during TSI, WSI, and site preparation, an average of at least 2 standing dead snags are retained per acre, in the form of large hardwood trees (greater than 12 inches) when possible. Appropriate treatments are used to create snags where natural snags are lacking.

Corridors

(20) Each forest works with utility special-use permittees to establish vegetation management objectives (such as wildlife, watershed, recreation, visual quality) for location of new utility lines and maintenance of existing ones. These objectives determine maintenance techniques and strategies.

(21) Where feasible, low-growing shrubs and grasses are established and maintained along utility lines where wildlife and aesthetic objectives are dominant.

(22) Where feasible, permanent vegetation is established and maintained on the roadbed of intermittent service roads when they are closed, and on the cut and fill slopes of all roads.

(23) Where practical, native flowering species are established, maintained, and enhanced on intermittent service roads when they are closed and on cut and fill slopes of all roads.

(24) Vegetation along trails is treated to maintenance levels identified in the publication "Trails South." Priority is given to correcting unsafe conditions, preventing resource damage, and providing for intended recreation experience level.

Range Forage

(25) When managing for range forage sites, wildlife and livestock use should not exceed 50 percent of current annual growth of key grass species, 20 percent of total annual production of key forb species, and 20 percent of current annual growth of key shrub species.

Review and Reporting Requirements

(26) Each national forest must include vegetation management in its management review process. At a minimum, reviews must evaluate adequacy of vegetation management mitigations and monitoring.

(27) Using existing reporting systems, each national forest must report implementation of its vegetation management program annually. Every 3 to 5 years, Regional Office staff must assess these reports to be sure that the vegetation management program in the Ozark/Ouachita area approximates the acre distribution of methods and tools estimated for the selected alternative.

METHOD-SPECIFIC MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

These requirements and measures are in addition to general requirements and measures in the preceding section. Each forest may be more restrictive, but not less.

Prescribed Fire

Site-Specific Planning

(28) A written site-specific plan for all prescribed burns is prepared by trained resource specialists and approved by the appropriate Forest Service line officer prior to project implementation. This plan includes description of treatment area, burn objectives, weather factors and fuel moisture conditions, and resource coordination requirements. Coordination requirements include provisions for public and worker safety, burn day notification of appropriate agencies and persons, smoke management to comply with air quality regulations and protect visibility in smoke-sensitive areas, protection of sensitive features, as well as fireline placement, specific firing patterns, ignition methods, and mop-up and patrol procedures. A post-burn evaluation compares treatment results with plan objectives.

Vegetation Protection

(29) Underburns in loblolly and shortleaf pine stands are not done until pines are 10 to 15 feet tall or 3 to 4 inches in diameter at ground level.

(30) Underburns are not done in commercial pine-hardwood stands and inclusions until hardwood stems reach 5 to 6 inches in diameter at ground level. Only low intensity, dormant season fires with flame lengths of 2 feet or less are allowed.

(31) Underburns are not done in commercial hardwood-pine or hardwood stands and inclusions until hardwood stems reach 8 to 10 inches in diameter at ground level. Only low intensity, dormant season backing fires with flame lengths of 2 feet or less are allowed. Underburns to improve wildlife habitat occur only if habitat is limiting and threatens species viability.

Soil and Water Protection

(32) Slash burns are done so they do not consume all litter and duff and alter structure and color of mineral soil on more than 20 percent of the area. Steps taken to control soil heating include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately.

(33) On severely eroded forest soils, any area with an average litter-duff depth of less than 1/2 inch is not burned.

(34) Growing season underburns are not allowed on the same site more than twice in succession without an intervening dormant season burn.

(35) Where needed to prevent erosion, water diversions are installed on firelines during their construction, and the firelines are revegetated promptly after the burn.

(36) Firelines which expose mineral soil are not located in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps, unless tying into lakes, streams, or wetlands as firebreaks at designated points with minimal soil disturbance. Low-intensity fires with less than 2 foot flame lengths may be allowed to back into the strip along water bodies, as long as they do not kill trees and shrubs that shade the stream. The strip's width in feet is at least 30 plus 1.5 times the percent slope.

Wetland Protection

(37) When wetlands need to be protected from fire, firelines are used around them only when the water table is so low that the prescribed fire might otherwise damage wetland vegetation or organic matter. Where practical, previous firelines are reused, and firelines must cause minimal soil disturbance.

(38) If a fireline is required next to a wetland, it is not located in the transition zone between upland and wetland vegetation except to tie into a natural firebreak, and it must cause as little soil disturbance as practicable.

Air Quality Protection

(39) Smoke management guidelines based on requirements of the Clean Air Act and State Implementation Plans are used to reduce smoke emissions. When feasible, backing and flanking fires are used instead of heading fires, and burning is done when duff and large fuels are moist and small fuels are dry. Slash piles are not burned unless relatively free of soil. All burns are completed during the active burning period and mopped up as soon as practical after completion.

(40) Smoke management guidelines are also used to enhance smoke dispersion. Burning is done when the atmosphere is thermally neutral to slightly unstable, not during pollution alerts, stagnant or humid weather, or inversions. Burning is done only when:

-- air quality or visibility standards in smoke-sensitive areas (see "A Guide for Prescribed Fire in Southern Forests" (Wade and Lunsford 1989) pages 31-32) such as highways, airports, populated areas, and Class I areas will not be violated by smoke from the fire.

-- atmospheric mixing height is at least 1,650 feet, transport windspeed is at least 9 mph, and background visibility downwind is at least 5 miles.

Wildlife Protection

(41) Oak-hickory, oak-pine, and oak-gum-cypress inclusions are protected by excluding fire or by using low-intensity backing fires.

(42) Generally, underburns are not scheduled during the nesting season to avoid disrupting reproductive activities. Forest managers may, however, use burns to meet specific objectives, such as protecting threatened and endangered species (e.g., red-cockaded woodpecker), reestablishing natural ecosystems, and site preparation. Burns are planned and executed to avoid damage to habitat of any threatened, endangered, proposed, or sensitive species (such as caves used as maternity and hibernating sites by the gray bat and Indiana bat, nests of Bachman's sparrow, and essential habitat of the Caddo Mountain, Fourche Mountain, and Rich Mountain salamanders).

(43) Underburns are planned to achieve their most desirable distribution for plant and animal communities and to break up large, continuous fuel types. When consistent with burning objectives, such burns are done to create a mosaic pattern of fuel types that complements fuel treatment and wildlife objectives.

Safety

(44) Prescribed fires are conducted under the direct supervision of a burning boss with fire behavior expertise consistent with the project's complexity. All workers must meet health, age, physical and training requirements in FSM 5140, and use protective clothing and equipment.

General Resource Protection

(45) Critical values of the Keetch-Byram Drought Code (Cumulative Severity Index) are developed for all major vegetation-soil-landform types on which prescribed fires are conducted. Burning is allowed only on days when the Drought Code is less than this critical value.

Mechanical Method

Soil and Water Protection

(46) Prompt revegetation is done if treatments leave insufficient ground cover to control erosion by the end of the first growing season.

(47) Only mowing, chopping, shearing, ripping, and scarifying are used on sustained slopes over 15 percent. No mechanical equipment is used on sustained slopes over 35 percent.

(48) Mechanical site preparation is not done on sustained slopes over 20 percent with highly erodible or failure-prone soils.

(49) To limit soil compaction, no mechanical equipment is used on plastic soils when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size without breaking or crumbling.

(50) Mechanical equipment is operated so that furrows and soil indentations are aligned on the contour (with grades of furrows and indentations kept under 5 percent). Do not rip within 30 feet of designated ephemeral drains.

(51) Windrows and piles are spaced no more than 200 feet apart to limit soil exposure, soil compaction, and nutrient loss from piling and raking. Windrows are aligned on the contour.

(52) When piling, at least 80 percent of the area must retain some ground cover of litter and duff, and soil must not be displaced by piling rakes.

(53) Mechanical equipment is not allowed in any defined stream channel except to cross at designated points, and may not expose more than 10 percent mineral soil in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps. The strip's width in feet is at least 30 plus 1.5 times the percent slope. Soil and debris are not deposited in lakes, streams, wetlands, springs, or seeps.

Corridors

(54) All trails, roads, ditches, and other improvements in the project area are kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations is promptly repaired.

Safety

(55) Forest Service equipment operators must demonstrate proficiency with the equipment and be licensed to operate it. A helper must direct the operator where safety is compromised by terrain or limited sight distance.

Herbicide Method

Labeling

(56) Herbicides are applied according to labeling information and the site-specific analysis done for projects. This labeling and analysis are used to choose the herbicide, rate, and application method for the site conditions and species to be controlled. They are also used to select measures to protect human and wildlife health, non-target vegetation, water, soil, and threatened, endangered, proposed, and sensitive species. Site conditions may require stricter constraints than those on the label, but labeling standards are never relaxed.

Choice of Herbicide

(57) Only herbicide formulations (active and inert ingredients) and additives registered by EPA and approved by the Forest Service for use on national forests are applied.

(58) Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. Non soil-active herbicides will be used in preference to soil-active ones when objectives can be met. Whenever possible and effective, class 4 or 5 mildly hydrotreated mineral oil is used in place of diesel oil in mixtures for application.

Application Rate

(59) Herbicides are applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human (NRC 1983) and wildlife health (EPA 1986a). Application rate and work time must not exceed typical levels (appendix A, tables 4-4 to 4-6) unless a supplementary risk assessment shows that proposed rates do not increase risk to human or wildlife health or the environment beyond standards discussed in Chapter IV of the Final EIS. Typical application rates (lb/ac) of active ingredient are:

	FOSAM	GLYPH	HEXAZ	IMAZA	FUEL OIL	LIMON	PICLO	SULFO	TRICLOPYR Amine	TRICLOPYR Ester
ML	7.8	1.5	1.7	0.75	2.0	0.9	0.7	0.17	4.0	4.0
MG			1.7							
HG			1.7							
HF		1.0	0.5	0.75	1.5	0.9	0.4	0.06	1.4	1.0
HB					1.0	0.9				1.9
HS			1.7							
HC		1.3		0.75			0.3		1.0	

KEY:
ML = mechanical liquid treatment
MG = mechanical granular treatment
HG = manual (hand) granular treatment
HF = manual foliar broadcast treatment
HB = manual basal stem treatment
HS = manual soil-spot treatment
HC = manual cut-surface treatment

GLYPHOS = glyphosate
HEXAZ = hexazinone
PICLO = picloram
SULFOMET = sulfometuron methyl
TEBUT = tebuthiuron
/a = amine formulation
/e = ester formulation

Application Method

(60) Public safety during such uses as viewing, hiking, berry picking, and fuelwood gathering is a priority concern. Method and timing of application are chosen to achieve project objectives while minimizing effects on non-target vegetation and other environmental elements. Fuelwood sales will not be made in areas where trees have been injected. Selective treatment is preferred over broadcast treatment. Application methods from most to least selective are:

1) Cut surface treatments
2) Basal stem treatments
3) Directed foliar treatments
4) Soil spot (spot around) treatments
5) Soil spot (spot grid) treatments
6) Manual granular treatments
7) Manual/mechanical broadcast treatments

Prescribed Burning of Treated Areas

(61) Areas are not prescribed burned for at least 30 days after herbicide treatment. Firewood sales are not allowed in areas where trees have been injected.

Drift Control

(62) Weather is monitored and the project is suspended if temperature, humidity, or wind become unfavorable as follows:

	Temperatures Higher Than	Humidity Less Than	Wind (at Target) Greater Than
Ground:			
Hand (cut surface)	N.A.	N.A.	N.A.
Hand (other)	98F	20%	15 mph
Mechanical (liquid)	95F	30%	10 mph
Mechanical (granular)	N.A.	N.A.	10 mph

(63) Nozzles that produce large droplets or streams of herbicide are used. Nozzles that produce fine droplets are used only for hand treatment where distance from nozzle to target does not exceed 8 feet.

Supervision and Training

(64) A certified pesticide applicator supervises each Forest Service application crew and trains crew members in personal safety, proper handling and application of herbicides, and proper disposal of empty containers.

(65) Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects, is a certified pesticide applicator. Contract inspectors are trained in herbicide use, handling, and application.

Protection of Workers

(66) Forest Service workers who handle herbicides must wear a long-sleeved shirt and long pants made of tightly woven cloth that must be cleaned daily. They must wear a hard hat with plastic liner, waterproofed boots and gloves, and other safety clothing and equipment required by labeling. They must bring a change of clothes to the field in case their clothes become contaminated.

(67) Each Forest Service crew must take soap, wash water separate from drinking water, eyewash bottles, and first aid equipment to the field.

(68) Contractors ensure that their workers use proper protective clothing and safety equipment required by labeling for the herbicide and application method. When non-English-speaking crews are used, approximate translation of use and handling of herbicides will be required.

(69) Workers must not walk through areas treated by broadcast foliar methods on the day of application. No foliar application by hand-held tools will be made on vegetation above 6 feet in height.

(70) Supervisors must ensure that monitoring is adequate to prevent adverse health effects. Workers displaying unusual sensitivity to the herbicide in use are medically evaluated and, if tested as sensitive to the herbicide in use, are reassigned to other activities.

Protection of the General Public and Private Land

(71) Notice signs (FSH 7109.11) are clearly posted, with special care taken in areas of anticipated visitor use.

(72) No herbicide is broadcast within 100 feet of private land or 300 feet of a private residence, unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Non-Target Vegetation

(73) No soil-active herbicide is applied within 30 feet of the drip line of non-target vegetation (e.g., den trees, hardwood inclusions, adjacent stands) within or next to the treated area. Side pruning is allowed, but movement of herbicide to the root systems of non-target plants must be avoided. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Threatened, Endangered, Proposed, and Sensitive Species

(74) Triclopyr is not applied within 60 feet of known occupied gray or Indiana bat habitat. The same buffers are used with any formulation containing kerosene or diesel oil around habitat of any threatened, endangered, proposed, or sensitive bird during its nesting season. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

(75) No herbicide is ground broadcast within 60 feet of any known threatened, endangered, proposed, or sensitive plant. Selective applications may only be done closer than 60 feet when supported by a site-specific analysis. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Water and Soil

(76) Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers.

(77) Aquifers and public water sources are identified and protected by consulting with States to ensure compliance with their ground water protection strategies.

(78) No herbicide is applied on rock outcrops or sinkholes in karst areas. No herbicide with a half-life longer than 3 months is applied on slopes over 45 percent, highly erodible soils, or aquifer recharge zones. Such areas are clearly marked before treatment so applicators can easily see and avoid them.

(79) No herbicide is applied within 30 horizontal feet of sinkholes, lakes, wetlands, or perennial or intermittent springs and streams. No herbicide is applied within 100 horizontal feet of any public or domestic water source. Selective treatments (which require added site-specific analysis and use of aquatic-labeled herbicides) may occur within these buffers only to prevent significant environmental damage such as noxious weed infestations. Buffers are clearly marked before treatment so applicators can easily see and avoid them. Picloram may be used only to control kudzu and not in karst topography.

Control of Spills

(80) During transport, herbicides, additives, and application equipment are secured to prevent tipping or excess jarring and are carried in a part of the vehicle totally isolated from people, food, clothing, and livestock feed.

(81) Only the amount of herbicide needed for the day's use is brought to the site. At day's end, all leftover herbicide is returned to storage.

(82) Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas.

(83) During use, equipment to store, transport, mix, or apply herbicides is inspected daily for leaks.

(84) Containers are reused only for their designated purpose. Empty herbicide containers are disposed of according to 40 CFR 165.9 Group I & II Containers.

(85) Accident preplanning is done in each site-specific analysis. Emergency spill plans (FSM 2109.12, chapter 30) are prepared. In the unlikely event of a spill, the spill is quickly contained and cleaned up, and appropriate agencies and persons are promptly notified.

Manual Method

Safety

(86) Forest Service chain saw operators must be periodically certified and demonstrate proficiency with chain saws.

(87) Forest Service workers must comply with dress and safety standards specified in the Health and Safety Code Handbook (FSH 6709.11).