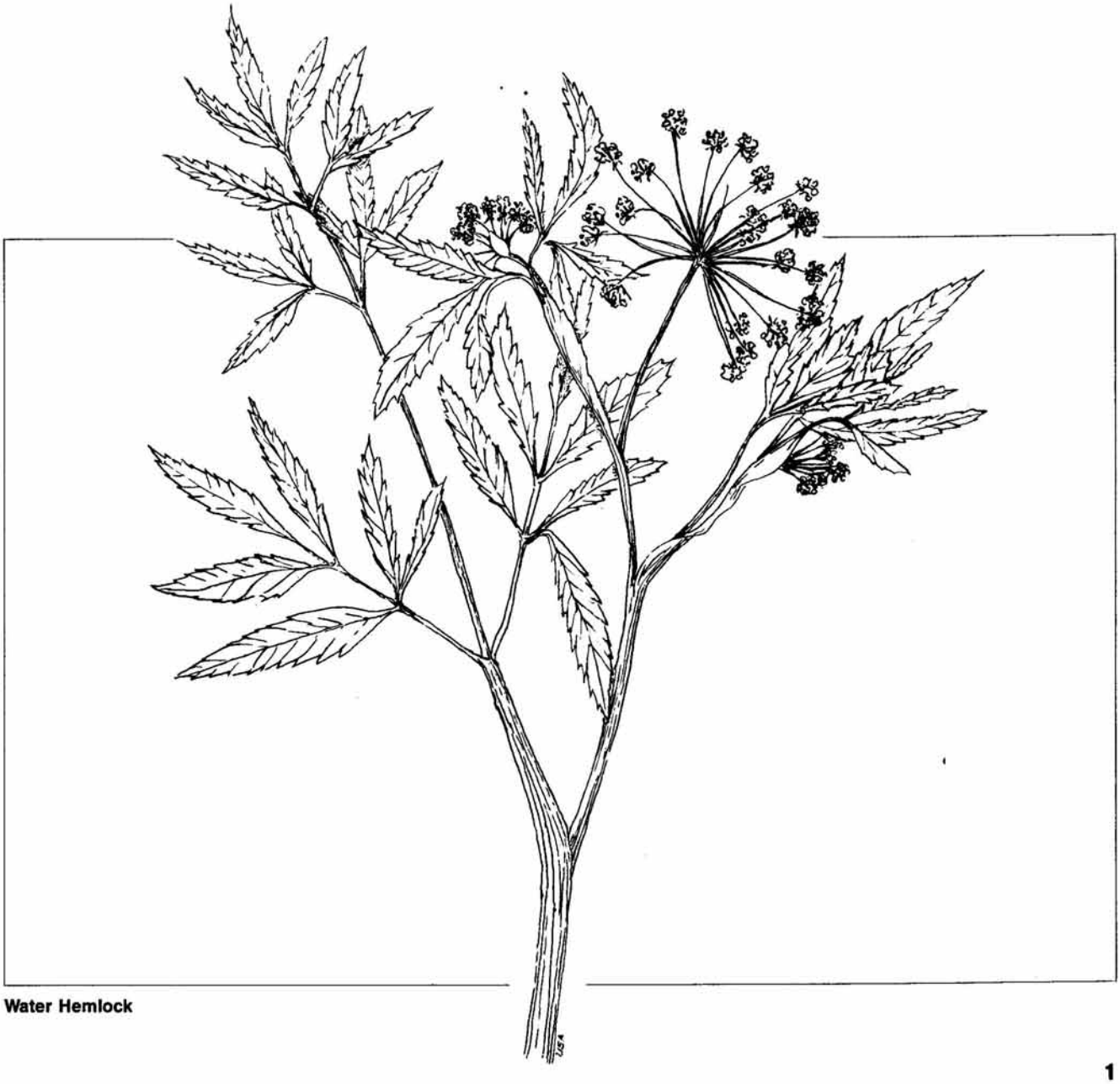
Chapter 1— Description of Alternatives Including the Proposed Action



Water Hemlock

Purpose of and Need for Action

The Bureau of Land Management (BLM) proposes to implement a program for controlling or eradicating noxious weeds on public land in the northwestern United states. The program would apply to BLM-administered public lands in Idaho, Montana, Oregon, Washington, and Wyoming. (See general location map on inside of front cover.)

BLM's main authority and direction for managing public lands derives from the Federal Land Policy and Management Act of 1976, 43 USC 1700 et seq.. (FLPMA). Under FLPMA, BLM must manage public lands according to the principles of multiple use and sustained yield. These principles are further qualified in FLPMA by the statutory duty that BLM prevent unnecessary degradation of the public lands. In addition to FLPMA, under the Public Rangelands Improvement Act of 1978, 43 USC 1901 et seq.., BLM must "manage, maintain and improve [public lands suitable for livestock grazing] so that they become as productive as feasible... ." In addition, two federal laws direct weed control on federal lands: the Carlson-Foley Act (PL 90-583) and the Federal Noxious Weed Act (PL 93-629). (See Appendix A.) State and county laws also place responsibility for noxious weed control on federal land with the federal government.

Because of the detrimental effects of some noxious weeds on animals and humans, no control in some instances encourages hazard and economic losses as is emphasized in the Federal Noxious Weed Act (PL 93-629), which states that distribution of noxious weeds "... allows the growth and spread of such weeds which cause disease or have other adverse effects on man or his environment, therefore, is detrimental to the agriculture and commerce of the United States and to the public health." According to the National Academy of Sciences (1968), an estimated 75,000 people suffer poisoning by plants annually.

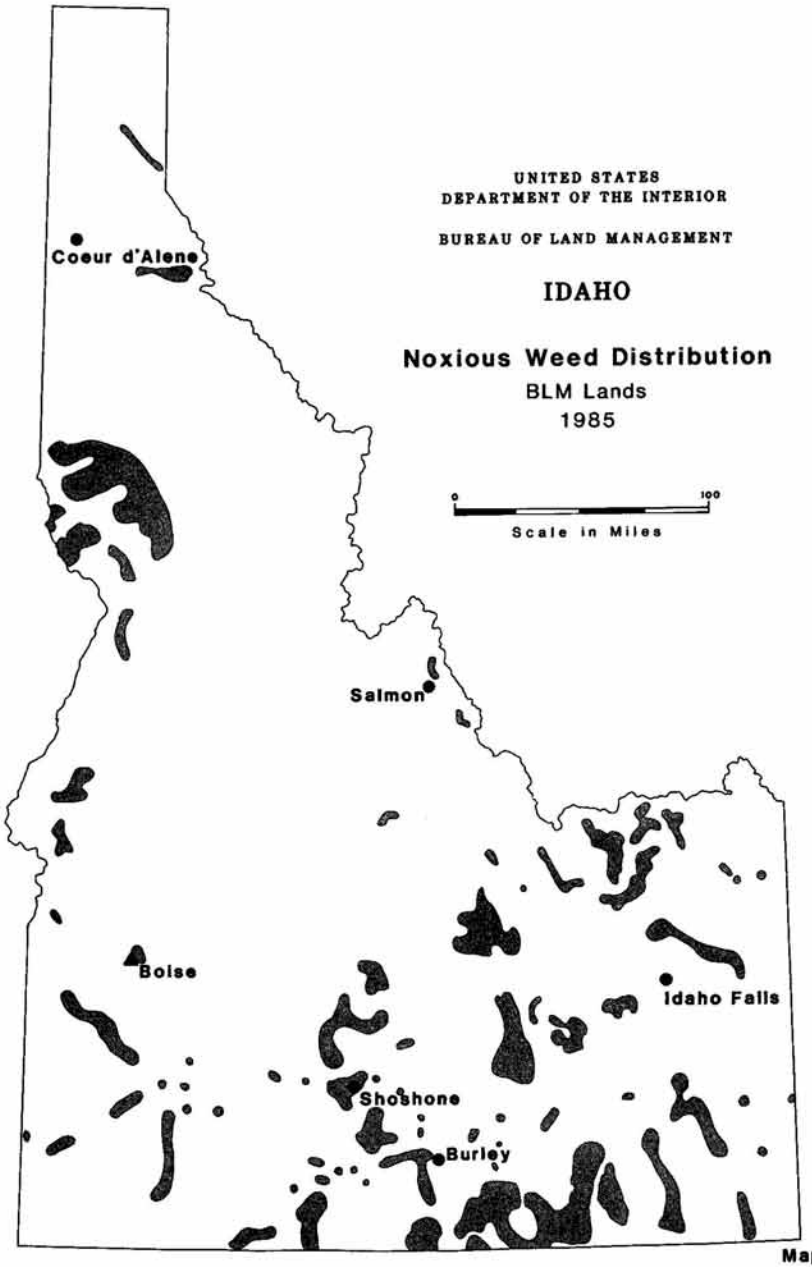
Noxious weeds have become established and are rapidly spreading on both public and private rangeland, woodlands and farm land (Forcella and Harvey, 1981; Messersmith and Lym, 1983; Bucher, 1984; French and Lacey, 1983). As a result, crop yields are being reduced, rangeland in good ecological condition is being invaded, and wildlife habitat is being reduced (Chase, 1985; Bucher, 1984; Kelsey, 1984; Morris and Bedunah, 1984; Penhallegon, 1983). Economic loss from noxious weeds is considerable and runs into the millions of dollars annually in each state in the EIS area, posing a serious menace to the public welfare and the state's economic stability (Kelsey, 1984; Jenson, 1984; Bucher, 1984; Chase, 1985; Lewiston Morning Tribune, 1980; Baker, 1983; Nielson, 1978). Noxious weeds cannot be adequately controlled unless federal, state, county and private interests work together in controlling weeds using effective and efficient means (Lacey and Fay, 1984; French, 1984; Hahnkamp and Pence, 1984; Ali, 1984).

Fourteen noxious weeds have become thoroughly established and are spreading rapidly on public lands in Idaho, Montana, Oregon, Washington, and Wyoming. Table 1-1 shows the acreages affected by noxious weeds, and Maps 1-1a through 1-1e show noxious weed distribution by state. Figures D-1 through D-4 in Appendix D show the distribution and spread of selected noxious weeds. Accordingly, BLM proposes to implement a program for controlling or eradicating these weeds on BLM-administered lands in the northwest United States.

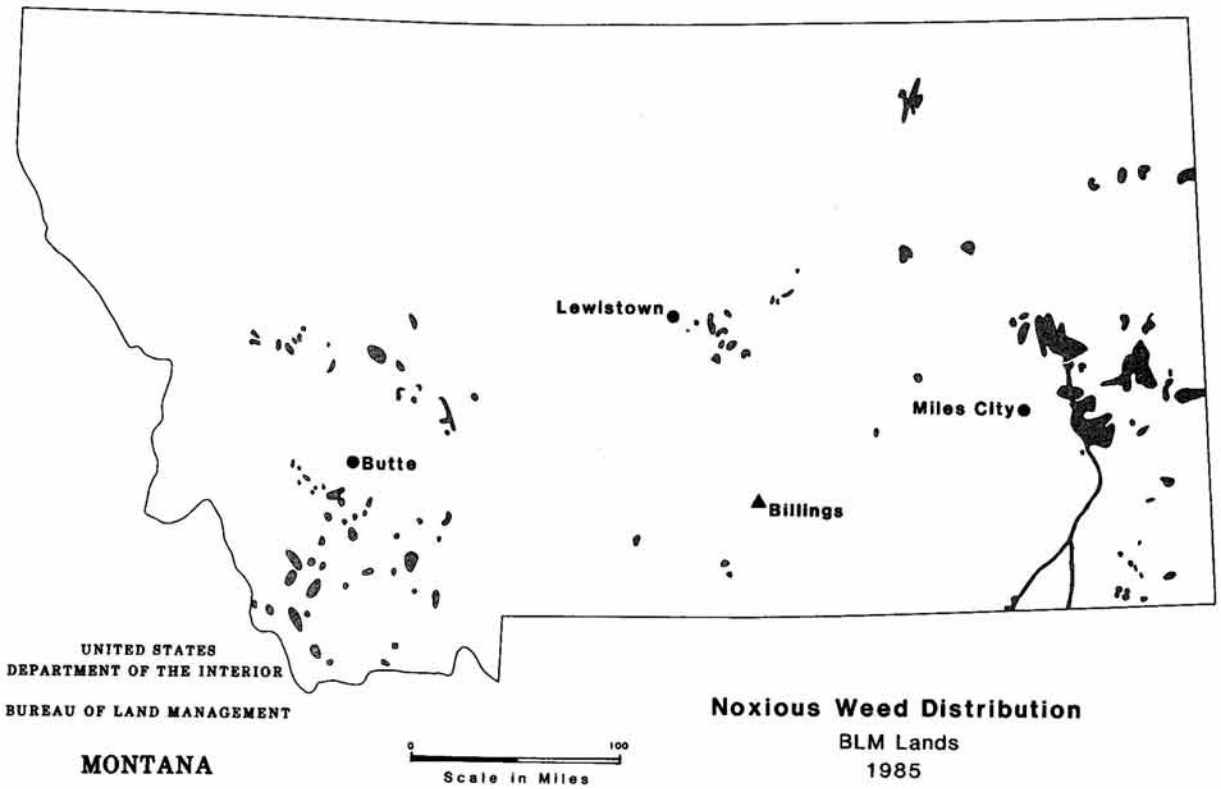
Table 1-1. Acres Affected by Noxious Weeds in EIS Area

	BLM-Administered Land		Other Land in State		Total Area of State	
	Nox. Weeds[1]	Total	Nox. Weeds[2]	Total	Nox. Weeds[2]	Total
Idaho	59,440	11,906,669	3,540,560	41,026,451	3,600,000	52,933,120
Montana	90,852	8,125,262	6,553,583	85,145,778	6,644,435	93,271,040
Oregon	2,255,923	13,572,655	6,985,477	48,026,065	9,241,400	61,598,720
Washington	25,000	310,675	4,438,361	42,383,085	4,463,361	42,693,760
Wyoming	14,133	17,600,000	241,942	44,743,040	256,075	62,343,040
EIS Area Total	2,445,348	51,515,261	21,759,923	261,324,419	24,205,271	312,839,680

[1]Includes all BLM acres.
[2]Include noxious weeds that threaten BLM lands.
Source: BLM Offices; Public Land Statistics - 1983; State Departments of Agriculture in Montana, Oregon, and Wyoning; and State Universities in Idaho and Washington.

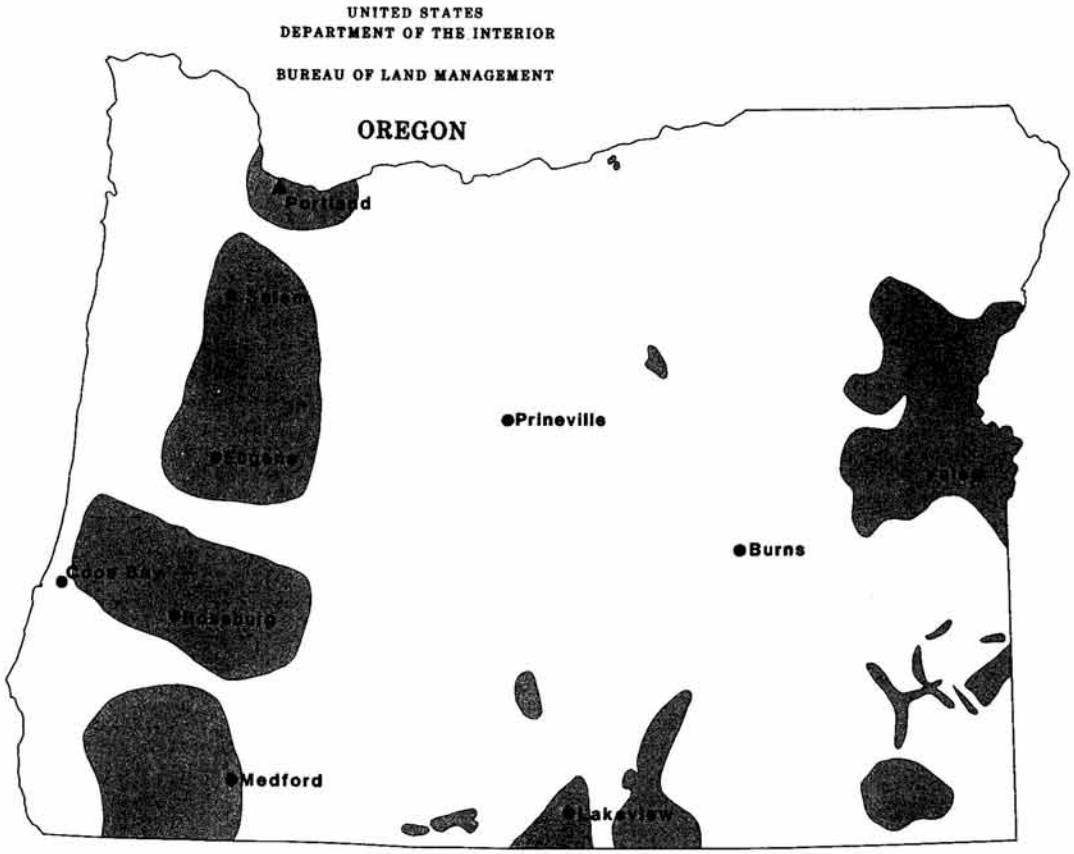

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
IDAHO
Noxious Weed Distribution
BLM Lands
1985
0
100
Scale in Miles
Coeur d'Alene
Salmon
Boise
Idaho Falls
Shoshone
Burley

Map 1-1a



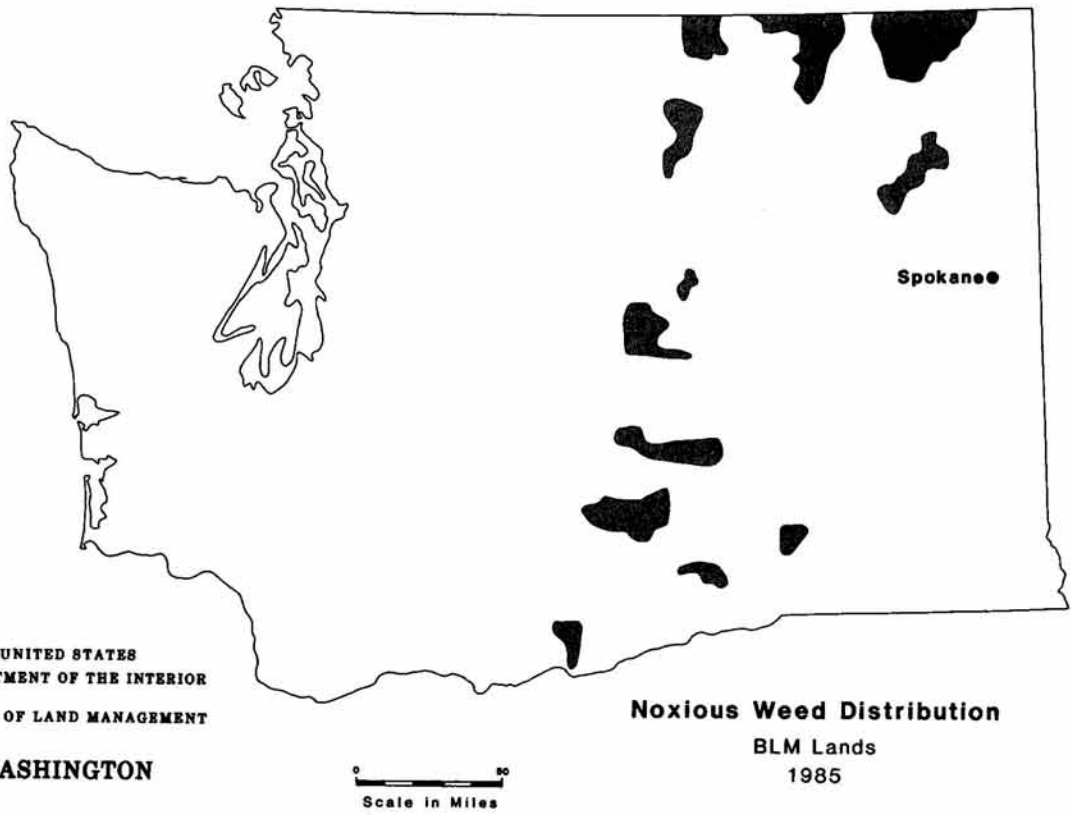
Noxious Weed Distribution
BLM Lands
1985

Map 1-1b

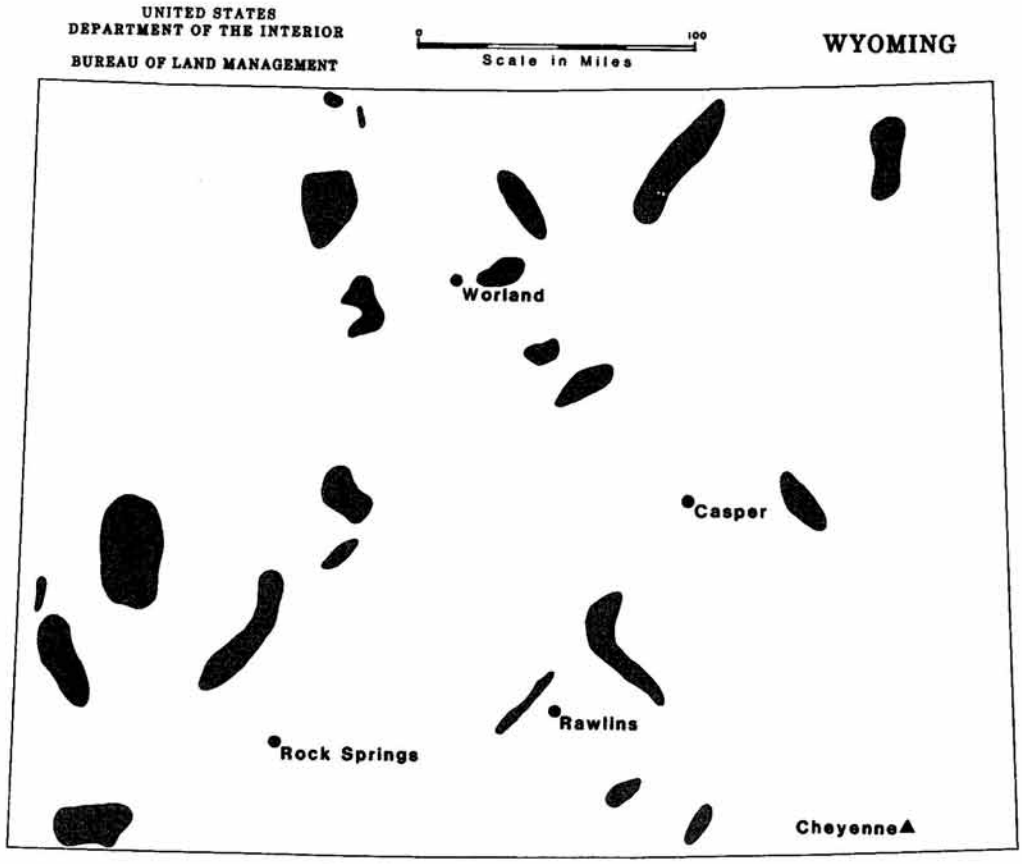


Noxious Weed Distribution
BLM Lands
1985

Map 1-1c



Map 1-1d



Noxious Weed Distribution
BLM Lands
1985

Map 1-1e

In accordance with the National Environmental Policy Act (NEPA) of 1969 (PL 91-190), this environmental impact statement (EIS) identifies impacts on the natural and human environment of the Proposed Action and other alternatives.

Comments received in response to a February 20, 1985 Federal Register notice announcing the scoping period and local news releases in each of the five states were generally supportive of the need for a noxious weed control program. When the team assembled to conduct the analysis and prepare this EIS, an internal scoping session was held to identify the team's perceptions of issues and concerns. The results of this session incorporated concerns and issues raised in the letters received as a result of news releases. Concerns were associated with herbicide use, alternative treatment methods, no or insufficient control of noxious weeds, and potential effects on human health and the environment. (See Appendix B for results of scoping.)

Alternatives Including the Proposed Action

Four alternatives, including the Proposed Action (Alternative 1, the preferred alternative), have been identified for impact analysis in Chapter 3. Differences among alternatives include types of treatments, treatment levels, and constraints on noxious weed management to benefit other resources. These relationships are shown in Table 1-2. Descriptions of the alternatives and estimates of treatment acres were developed under the assumption that each alternative could be implemented. Treatments and standard mitigation that apply to each alternative are discussed in the Weed Management Treatments and Design Features section of Chapter 1.

Table 1-2. Estimated Annual Acreage of Weed Treatments by Alternative [1]

Treatment	Estimated Annual Acreage (P.A.) Alt. 1	(No Air) Alt. 2	(No Herb.) Alt. 3	(No. Act) Alt. 4
Chemical				
helicopter aerial	5,900	0	0	0
ground vehicular	13,665	15,000	0	0
ground backpack	1,678	2,953	0	0
Manual				
hand pulling	4	4	400	0
hand tools	272	277	3,680	0
Mechanical				
mowing	10	10	250	0
tilling	190	190	1,050	0
burning	600	700	910	0
Biological[2]				
grazing	100	200	300	0
insects	21,590	21,630	21,630	0
pathogens	5	10	20	0
Totals	44,014	40,974	28,240	0

[1]Individual state summaries are listed in Appendix H.
[2]Acres may increase as additional biological agents become available for release.

The state departments of agriculture in the EIS area have developed lists of designated noxious weed species (see Appendix C). The Federal Government also publishes a list of noxious weeds (7 CFR 360). These lists are periodically updated. The programs discussed in this EIS would apply to any weed on the federal or state lists. BLM is responsible for implementing a weed control program on the land it administers. Much of the noxious weed control on BLM land is actually conducted by state and county weed control authorities.

Alternative 1: The Proposed Action (PA)

Under this integrated approach, managers would use herbicide, manual, and biological methods to treat an estimated 44,014 acres of noxious weeds annually in the EIS area (Table 1-2).

An estimated 21,243 acres would be treated with herbicides using helicopter aerial, ground vehicle and backpack methods of application. Manual treatment would total approximately 276 acres; and include hand pulling and grubbing with hand tools. Approximately 800 acres would be treated mechanically, utilizing mowing, tilling and burning. Biological treatment would include grazing, insects and pathogens, and total about 21,695 acres.

Alternative 2: No Aerial Herbicide Application

This alternative would allow the same vegetation management techniques as would the Proposed Action except that herbicides would be applied only by ground application methods. Increased use of manual, mechanical, and biological treatments would be needed to meet treatment objectives. The average annual program would treat approximately 17,953 acres with vehicular and backpack applied herbicides, 281 acres manually, 900 acres mechanically, and 21,840 acres with biological control. The dollar level of investment needed to implement this alternative would be the same as for the Proposed Action.

Alternative 3: No Use of Herbicides

Under this alternative, herbicides would not be used under any circumstances, and the use of manual, mechanical, and biological measures would be increased in an attempt to meet weed control objectives. Approximately 4,080 acres would be treated manually, 2,210 acres mechanically, and 21,950 acres biologically. The analysis for this alternative assumes the following:

(1) BLM would contract out a greater number of manual and mechanical treatments which otherwise would have been treated by counties using herbicides.

(2) The dollar level of investment to implement this alternative would be the same as under the Proposed Action.

Alternative 4: No Action

Under No Action, noxious weeds on BLM-administered land would not be treated to stop growth and further spread, and the objectives of the Proposed Action and federal and state laws would not be met.

Weed Management Treatments And Design Features

The purpose of this section is to discuss preventive measures, treatment methods, and protective measures (design features) that would be used in a noxious weed management program. Table 1-2 shows the treatments that would be applied under each alternative. Maps 1-1a through 1-1e show noxious weed concentrations on BLM lands in the EIS area. Some acres may receive one or more treatments in combination, including such treatment combinations as herbicide application and burning, grazing and herbicide application, and grazing and use of insects or pathogens. Treatment would have to be repeated in most situations.

Pretreatment surveys would be conducted in accordance with BLM Manual 9222 before a decision is made to use herbicides on a specific tract. Such surveys would involve consideration of all feasible treatments, including potential impacts, effectiveness, and cost (see Appendix J). Information from such surveys would be used as a basis for prescribing noxious weed treatments.

Special provisions for treatments would be selected according to the scope of the action, accepted mitigation measures, and the physical characteristics of the specific site. BLM manuals, manual supplements, and field guides provide a variety of approved standard and special provisions. These provisions are updated periodically as pre- and post-treatment analysis finds a need for change.

Before any vegetation treatment or ground disturbance, BLM policy requires a survey of the project site for plants and animals listed or proposed for listing as threatened, endangered, and sensitive species (see Glossary). If a project might affect any listed or proposed federal threatened or endangered species or its critical habitat, BLM would make every effort to modify, relocate, or abandon the project to obtain a no effect determination. If BLM determines that a project cannot be altered or abandoned, it would initiate consultation with the U.S. Fish and Wildlife Service (50 CFR 402; Endangered Species Act of 1973, as amended).

When no effective alternatives to noxious weed control exist for wilderness study areas (WSAs), BLM's policy is to carry out a control program, but only in small areas. BLM is required to manage WSAs so as not to impair their suitability for preservation as wilderness. Therefore, some actions can occur in WSAs that would not be allowed in wilderness areas. These actions, however, could not impair wilderness values at the time the Secretary of the Interior submits his wilderness suitability recommendations to the President (BLM Interim Management Policy and Guidelines for Lands Under Wilderness Review, USDI, BLM 1979).

In wilderness areas, BLM's policy is to allow natural ecological processes to occur and to be interfered with only in rare circumstances. Noxious weeds would not ordinarily be controlled in wilderness areas unless these weeds threaten outside lands or are spreading within the wilderness. In those cases, noxious weeds may be grubbed or controlled with chemicals, provided the control can be effected without seriously impairing wilderness values (BLM Wilderness Management Policy--USDI, BLM 1981).

Whenever evidence of historic or prehistoric occupation is found during BLM activities, special surveys are undertaken to determine possible conflicts in management objectives. In addition, a Class III (complete) cultural resources inventory is required on all areas to be subjected to ground disturbance. This inventory is conducted in the preplanning stage of an action, and the results are

analyzed in an environmental analysis addressing the action (BLM Manual 8100, Cultural Resource Management). When a cultural resource that might be harmed is discovered during weed treatment, nearby operations are immediately suspended and may resume only upon receipt of written instructions from the BLM authorized officer. Procedures under 36 CFR 800 would be followed, including consultation with the State Historic Preservation Officer in determining eligibility for nomination to the National Register of Historic Places, effect, and adverse effects.

BLM will assure that noxious weed infestations are noted and considered during appraisals of any land proposed for exchange.

Preventive management is important in preventing or retarding the spread of noxious weeds. The method of spread of noxious weeds that has the greatest impact on all landowners is the continued spread by vehicles, machinery or cargo along highways, railroads and rights-of-ways. Noxious weeds also spread downstream from points of sources of infestation by seed deposit into the water. Where livestock are being moved from a weed-infested pasture to a weed-free pasture, they should be confined to a small area for several days to prevent weed introduction into the weed-free pasture. Weeds can also be introduced by hay and other foodstuffs. Label restrictions dealing with buffer zones, feeding areas and holding pastures will be observed.

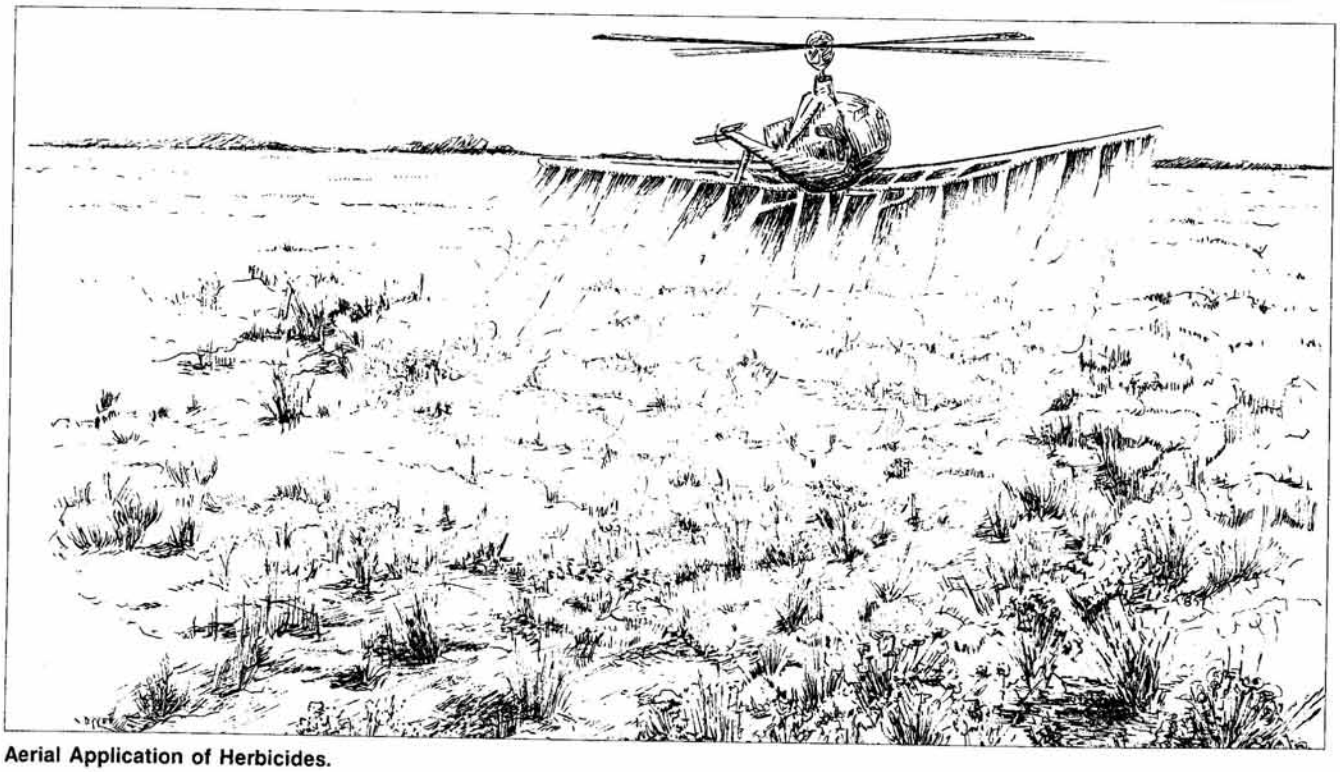
Chemical Methods

Stage of plant growth and season of application are especially important in prescribing chemical (herbicide) treatments as proposed by Alternatives 1 and 2. Plant susceptibility to herbicides varies seasonally and widely throughout the EIS area. Information on the most effective timing of applications appears in published research and on herbicide labels.

The herbicides 2,4-D, picloram, dicamba, and glyphosate are the only four proposed for use at this time. Other or new herbicides could be proposed for use in the future, but before their use, a hazard assessment similar to those in Appendix K will be conducted and appropriately documented.

Glyphosate is a nonselective herbicide that is not labeled for range use but is labeled for use along waterways and reservoirs and in recreation areas. Precautions would be taken to ensure that water will not be contaminated and that glyphossate would be used only for small infestations. Dicamba, 2,4-D, and picloram are selective herbicides that can injure or kill broadleaf herbaceous plants, depending upon the rate and method of application, without injuring grasses when label guidelines are adhered to.

Information on herbicides proposed for use is presented in Table 1-3. More detailed information



Aerial Application of Herbicides.

Table 1-3. Estimated Annual Acreage of Chemical Treatment by Method and Herbicide [1] [2]

Herbicide	Major Trade Name	Expected Maximum Rate of Application [3]	Estimated Annual Acreage (P.A.) Alt. 1	Estimated Annual Acreage (No Air) Alt. 2
Helicopter				
2,4-D amine salt or butyl ester		3 lbs. ai/acre	650	0
Picloram[5]	Tordon 22K (liquid)	1 lbs. ai/acre	930	0
Picloram	Tordon 2K (granular)	1 lbs. ai/acre	2,800	
2,4-D and Dicamba [4]	Tank mix	2 lb. ai/acre 2,4-D 1-1/2 lb. ai/acre Banvel	1,520	0
Ground Vehicle				
2,4-D amine salt or butyl ester		3 lbs. ai/acre	1,315	1,430
Dicamba	Banvel	6 lbs. ai/acre	250	200
Picloram	Tordon 22K (liquid)	1 lb. ai/acre	2,316	2,713
Picloram	Tordon 2K (granular)	1 lb. ai/acre	1,550	1,950
2,4-D and Dicamba	Tank mix	2 lb. ai/acre 2,4-D 1-1/2 lb. ai/acre Banvel	7,435	7,725
2,4-D and Picloram	Tank mix	1 lb. ai/acre 2,4-D 1/2 lb. ai/acre Tordon	694	844
Glyphosate	Roundup	3 lbs. ai/acre	105	120
Ground Hand				
2,4-D amine salt or butyl ester		3 lbs. ai/acre	197	145
Dicamba	Banvel	6 lbs. ai/acre	20	20
Picloram	Tordon 22K (liquid)	1 lb. ai/acre	342	435
Picloram	Tordon 2K (granular)	1 lb. ai/acre	315	455
2,4-D and Dicamba	Tank mix	2 lb. ai/acre 2,4-D 1-1/2 lb. ai/acre Banvel	682	1,731
2,4-D and Picloram	Tank mix	1 lb. ai/acre 2,4-D 1/2 lb. ai/acre Tordon	80	125
Glyphosate	Roundup	3 lbs. ai/acre	42	42

[1]Liquids would be applied using water as the carrier.
[2]Individual state summaries are listed in Appendix H.
[3]Expected maximum application rates that would be used, actual application rates may be less.
[4]Dicamba will not be applied aerially by itself, only as a mix with 2,4-D.
[5]No more than one application of picloram will be made on a given site in any given year to reduce the potential for picloram accumulation in the soil.
ai = active ingredient

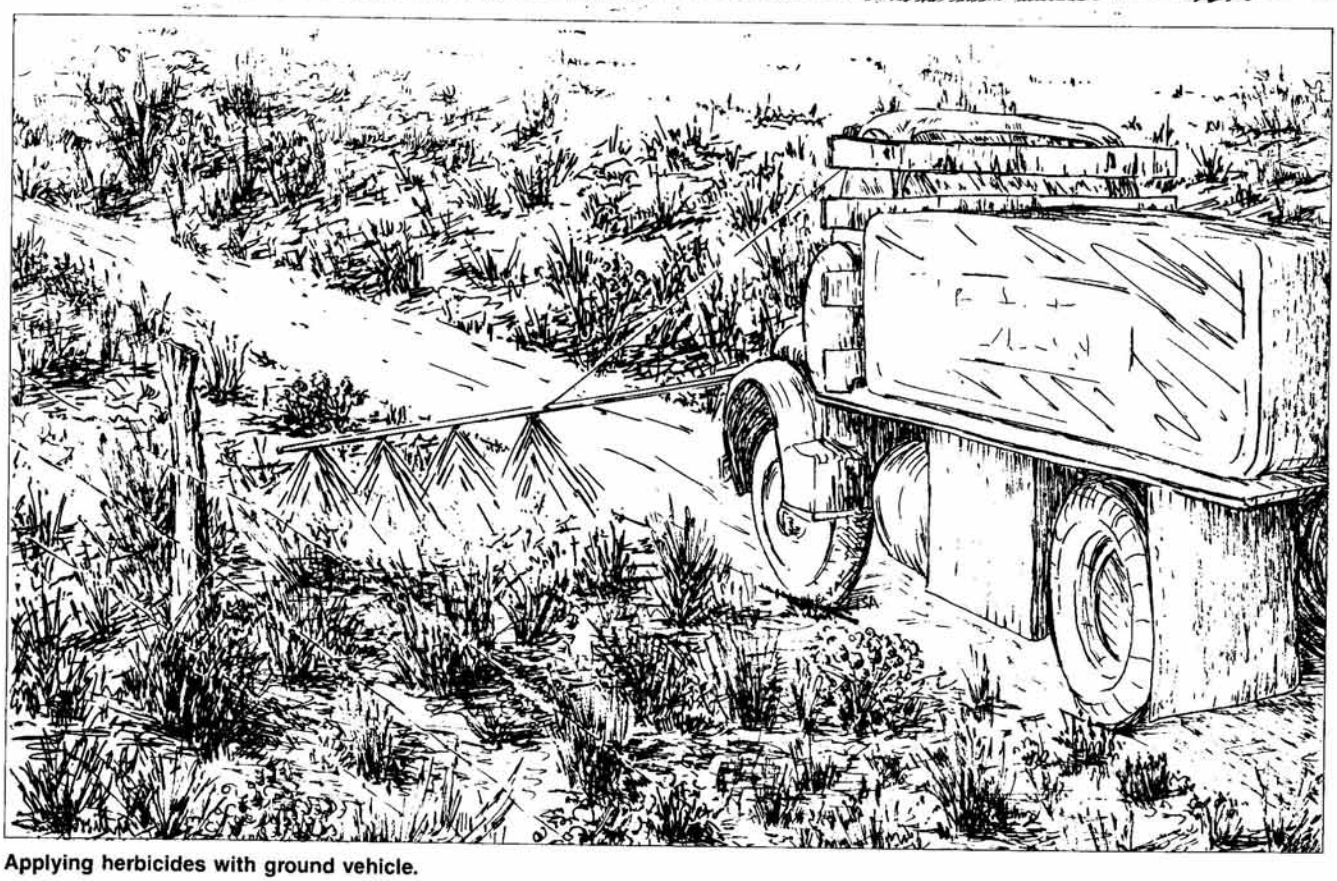
can be found in Appendix K, on herbicide labels, or in the following documents: Pesticides Background Statement (USDA, FS 1984), Environmental Fates and Impacts of Forest Use Pesticides (Ghassemi and others 1981), Transmission Facilities Vegetation Management Program Final EIS (DOE, BPA 1983), Environmental Effects of Vegetation Management Practices on DNR Lands (Newton and Dost 1981) and Biological and Physical Effects of Forest Vegetation Management (Newton and Dost 1984). Herbicides would be applied and monitored in accordance with BLM Manual 9222, Chemical Pest Control.

Herbicides are applied in several ways, depending upon the treatment objective, topography of the treatment area, target species, expected costs, equipment limitations, and potential environmental impacts.

Herbicide applications would be timed to have the least impact on nontarget plants and animals consistent with the objective of the noxious weed control program.

Rates of herbicide application would depend on the target species, other vegetation present, soil type, depth of the ground water table, and presence of other water sources. Where weeds have infested riparian areas and woody draws, the rate of application would be reduced to reduce injury to nontarget species.

The size of areas that would be treated would vary from 10 feet in diameter to 100 acres, but, most



Applying herbicides with ground vehicle.

Applying herbicides with backpack sprayer.

such areas would vary from 10 feet in diameter to less than 5 acres. The normal area of treatment by helicopter would be less than 100 acres.

Helicopters would be used for all aerial applications, and nozzles to reduce drift would be used for all liquid applications. Liquid herbicides would not be applied when wind speeds exceed 5 miles per hour (mph), and granular herbicides would not be applied when wind speeds exceed 10 mph. Herbicides would not be applied when conditions stated on the herbicide label cannot be met and when air turbulence significantly affects the desired spray pattern. Buffer zones (see Glossary) to protect water resources would be provided according to individual state regulations and guidelines and herbicide labels.

Vehicle-mounted sprayer (hand gun or boom) applications would be mainly used in open areas that are readily accessible by vehicle. The boom would be used only where feasible to treat concentrated weed infestations. The hand gun would be used for spot treatment of weeds and only up to the highwater line near water bodies. Neither hand guns nor booms would be used in riparian areas where weeds are closely intermingled with shrubs and trees. Under both hand gun and boom methods, sprays would be applied in a manner that

gives the best possible coverage with the least amount of drift, and only when wind velocity is below 8 mph, except in riparian areas where treatment would be applied only at wind velocities below 5 mph. Boom sprayers would not be used within 25 feet of water bodies.

Hand applications could involve backpack spraying, wiper application, and cyclone broadcast spreading (granular formulations). Backpack sprayers are operated at low pressure and low volume and release herbicide through a single nozzle held from 0.5 to 2.5 feet above the ground when wind velocities do not exceed 8 mph. (Near water, wind velocities cannot exceed 5 mph.) Contact systemic herbicides (see Glossary), such as glyphosate, wiped on individual plants, would be used up to the existing high water line. Granular formulations would be applied through broadcast spreaders at about 3.5 feet above the ground and no closer than 10 feet from the high water line of streams and other water bodies.

Manual Methods

Hand pulling and hand tools (shovel, hoe, pulaski,) would be employed under all alternatives (Table 1-2) except Alternative 4 (No Action). These methods are highly labor intensive, requiring periodic retreatment, ranging from every 3 weeks during the growing season to annually, depending on the target species. These methods have been successful in controlling annuals and biennials but are ineffective in controlling creeping perennials.

Mechanical Methods

Burning, mowing, and tilling would be used under all alternatives except Alternative 4. (Table 1-2).

Noxious weeds would be burned when weather or fuel conditions are favorable, usually between March and November and only at times approved by state organizations responsible for smoke management. Burning permits will be obtained where required.

All burning would be conducted in accordance with BLM's Fire Management Policy (BLM Manual 9210), which requires the preparation of a prescribed burning plan before every burn. The prescribed burning plan addresses the following: physical characteristics of the burn area, objectives of the burn, fuels on site (loading and characteristics), weather conditions under which the plan will be carried out, expected fire behavior, air and water quality restrictions, ignition pattern and sequence, emergency fire control force requirements, public contacts, and safety.

Three methods are normally used in igniting prescribed burns. One method is the use of truck-mounted propane flamethrowers. Drip torches are used to apply a burning mixture of diesel fuel and gasoline by hand. Hand-held fusees are similar to flares and are touched directly to the vegetation to ignite it. When using either hand-carried drip torches or fusees, individuals cross the burn area in a specified pattern described in the prescribed burning plan. Tailoring traverse patterns to each burn area can maintain effectiveness, maximum safety, and control.

Mowing and tilling (discing) prevent plants from producing seeds when treated in the bud stage or earlier. Efforts repeated every 21 days during the growing season can deplete the underground food supply of some perennials. This method would be required for at least a 3-year period to attain satisfactory control and would be considered only in areas where slope is less than 10 percent and a small percentage of the vegetation consists of shrubs. This method would also weaken nontarget species in treated areas.

Biological Methods

Insects, pathogens, and grazing by sheep or goats would be used as biological weed control methods under all alternatives except Alternative 4, although these methods can control few weed species. Biological control using sheep or goats would be applied to small areas for short periods. Areas where insects and pathogens naturally occur or are introduced should be protected from other control methods to maintain the density of host plants upon which the relationship between host plant and the controlling organism depends.

Extremely small supplies of biological agents exist for release on noxious weeds with the EIS area, and these insects and pathogens might not be able to survive in all parts of the EIS area because of severe climates. The following numbers of insects species are being tested in the EIS area: six species for leafy spurge, three for spotted and diffuse knapweed, three for musk thistle, three for tansy ragwort, two for Canada thistle, two for St. John's wort, and one for dalmation toadflax. Many of the insects have not been established, and no pathogens are available for biological control in the EIS area.

In most circumstances the biological control agents used may be putting stresses on noxious weeds, but are generally not performing control.

Comparison of Impacts

Table 1-4 compares the impacts of of all four alternatives. Although the impacts are described in detail in Chapter 3, Table 1-4 is presented to assist decisionmakers and reviewers by concisely summarizing and comparing the major impacts by alternative.

Table 1-4. Summary of Impacts By Alternative

	Existing Situation	Alternative 1 (Proposed Action)	Alternative 2 (No Aerial Herbicide Application)
Air Quality	Smoke intrusions from wood stoves sometimes results in particulate levels exceeding EPA standards in urban areas during periods of atmospheric stability.	Moderate, short-term increases in intrusions expected, but EPA standards would not be exceeded.	About the same impacts as under Alternative 1.
Soils	There is a great variation in soils across the EIS area due to differences in climate, parent material, and topography.	Short-term increases in erosion, long-term stabilization. Herbicides more persistant in arid area soils.	About the same impacts as under Alternative 1.
Water Quality	No detectable levels of herbicides on west coast but some detectable in Wyoming. Water quality good in west coast streams. Varying water quality on streams in rest of EIS area.	Some detectable levels of herbicides will enter streams from drift; short-term impact may result from spraying in ephemeral stream channels.	Less spray drift.
Vegetation	Noxious weeds are spreading on BLM lands within EIS area. Reduced productivity of desirable range vegetation due to competition from noxious weeds. Weeds invading adjacent private land.	Production of grass species would increase. Some injury or loss of nontarget vegetation may occur from using herbicides. Non-target species will become reestablished after treatment.	Production of grass species would increase. Some injury or loss of nontarget vegetation may occur from the use of herbicides. Degree of effects would be less than under the Proposed Action (fewer acres treated with herbicides). Non-target species will become reestablished after treatment.
Animals **Livestock** **Wild Horses** **Wildlife**	Livestock grazing is one of the primary uses of BLM lands in the EIS area. Wildlife diversity abundance and habitat values are high.	Adverse impacts would be temporary and localized. However, over the short and long term, animal habitat would improve benefiting all species populations.	About the same impacts as under Alternative 1.
Fish	Most habitat is in fair to good condition.	Habitat conditions and population levels would remain unchanged.	About the same impacts as under Alternative 1.
Cultural Resources		Low probability of site damage.	Low probability of site damage.
Visual Resources and Recreation	Outdoor recreation occurs throughout EIS area. Camping and picnicking occur in designated recreation sites that have noxious weeds.	Low probability of scenic degradation. Recreation areas infested with noxious weeds would benefit by decreased visitor exposure to adverse affects from weeds. Visitor use would increase.	About the same impacts as under Alternative 1.
Wilderness and Special Areas	The EIS area contains five designated wilderness areas and 224 wilderness study areas.	Noxious weeds in wilderness areas and WSAs may be controlled. Suppression of noxious weeds would allow native plants in the natural ecosystem to better compete.	About the same impacts as Alternative 1.
Economic Conditions	Little economic production on weed-infested land. Ingestion of poisonous plants by livestock cause deaths and production decreases. Weeds spreading from BLM land are contributing to economic losses on adjacent nonpublic land.	Beneficial economic impacts to the region: increased livestock production, fewer livestock deaths, and potential decrease in economic losses. Local expenditures on equipment and materials for weed control would benefit local economy.	Beneficial economic impacts to the region: increase in livestock production and fewer livestock deaths. Some weeds would spread to noninfested land, causing economic losses. Local expenditures on equipment and materials for weed control would benefit the economy.
Social Environment		Likely to generate more constructive social responses and concerns.	Likely to generate polarized reactions.
Human Health		No adverse impacts expected from use of herbicides. Human health would benefit from control of those noxious weeds that adversely affect humans.	Herbicide related impacts similar to those under Alternative 1. More workers would be exposed to herbicides. Hazards of manual control methods would increase.

Alternative 3 (No Herbicide Use)	Alternative 4 (No Action)
Slightly higher impacts than Alt. 1. EPA standards not exceeded.	No smoke intrusions would occur.
Short-term increases in erosion where burning and tilling take place. Long-term stabilization.	No change from existing environment.
Slightly increased suspended sediments and dissolved solids from mechanical and grazing controls.	No change from existing environment.
Some degree of weed control would be achieved, but noxious weeds would spread due to ineffective weed control efforts. Desirable vegetation would decline.	Spread of noxious weeds, thus reduction in desirable vegetation.
Where nonchemical measures fail to control weeds, weeds would continue to crowd out and reduce desirable forage and habitat for animals reducing wildlife diversity and leading to livestock herd reductions. Toxic plants would harm animals where not controlled with nonmechanical methods.	Noxious weeds would spread unchecked and reduce desirable forage and habitat for animals and would reduce wildlife diversity. Toxic weeds would harm animals leading to livestock herd reductions.
About the same impacts as under Alternative 1.	About the same impacts as under Alternative 1.
Low probability of site damage	No probability of site damage.
Spread of noxious weeds would increase exposure of recreationalists to detrimental effects when nonchemical measures fail to control these weeds. Visitor use reduced in such areas.	Increased exposure of recreationalists to detrimental effects of noxious weeds. Visitor use would be reduced.
Impacts would be the same as under Alternative 1 only when nonchemical measures sufficiently control noxious weeds. Otherwise, impacts would be the same as under Alternative 4.	Noxious weeds, including exotics, in wilderness and WSAs would spread unchecked and compete with native plants, decreasing naturalness.
Beneficial and adverse impacts to the local economy. Slight increase in livestock production where weeds are controlled, but potential further economic losses, livestock deaths,and lower livestock production over time where weeds are not controlled. Weeds spreading to noninfested land would cause additional economic losses.	Economic losses, livestock deaths, and lower livestock production would continue over time. Weeds would spread to nonpublic land contributing to a decline in productivity and economic loss.
Likely to generate a polarized reaction	About the same impacts as under Alternative 3.
More adverse impacts from more manual control methods and less control of weeds hazardous to human health.	Greatest adverse effects from a lack of control of weeds hazardous to human health. This can be caused by allergies, poisoning or physical harm depending upon the individual weed species.

Implementation

Final Decisions

At least 30-days after EPA publishes the notice of availability of this final EIS, BLM decisionmakers will evaluate public comment on the draft and final EISs and prepare a record of decision. The decision may be to select one of the alternatives intact or to combine features from several alternatives that fall within the range of actions analyzed in this EIS. The Record of Decision will address significant impacts, alternatives, environmental preferences, and relevant economic and technical considerations.

Monitoring and Studies

Currently, most vegetation management treatments are monitored through administration of contracts under which the practices are authorized. Continuous administration of active slash burning and herbicide spraying contracts is required. Prescribed burns are monitored in progress, and the effectiveness of burns is assessed in postburn evaluation reports. Weed management at most recreation sites and along roads and hiking trails is routine maintenance work conducted and monitored by Bureau employees.

Impacts that weed management treatments have on other resources would also be monitored. Currently, each State Department of Environmental Quality monitors air quality by measuring particulate levels in the atmosphere. Water quality monitoring would be carried out in accordance with Executive Orders 11514 (partially amended by 11991) and 12088, Sections 208 and 313 of the Clean Water Act, BLM Manual 7240. Additional monitoring systems for other resources (watershed, wildlife, etc.) as identified and outlined in the final decision will be developed and implemented. Effectiveness of mitigating measures identified in project-specific environmental documents will be monitored through periodic inspections of selected projects.

Requirements for Further Environmental Analysis

This EIS is a regional programmatic statement for controlling noxious weeds on BLM-administered lands in Idaho, Montana, Oregon, Washington, and Wyoming and is intended to guide this program for the next 10-15 years. Site-specific environmental analysis and documentation (including application of categorical exclusions where appropriate) will be accomplished at the state or district level on proposed weed control plans. During site-specific analysis and documentation, public involvement will occur in accordance with the CEQ Regulations for implementing NEPA. Interdisciplinary impact analyses will be based upon this and other EISs, such as resource management plan, timber management plan, and grazing management plan EISs.

If analysis finds potential for significant impacts not already described in an existing EIS, another EIS or a supplement to an existing EIS may be required.

Interrelationships

The scattered nature of BLM-administered land in the EIS area makes it essential for BLM to coordinate its weed management activities with adjacent landowners and managers. BLM also works closely with other government agencies responsible for special resource management programs. This section briefly describes major interrelationships involved in the weed control program.

Federal Government

BLM shares common boundaries with several national forests and routinely coordinates with Forest Service supervisors and staffs. Specific project and program coordination takes place as needed between all management levels of each agency.

The U.S. Environmental Protection Agency (EPA) has responsibility for herbicide registration (40 CFR 162), including determining that a herbicide will not generally cause unreasonable adverse effects on the environment. EPA's determinations are based upon research data supplied by the applicant for registration.

The U.S. Fish and Wildlife Services administers the Endangered Species Act of 1973 (PL 93-205), as mended. Accordingly, BLM consults with that agency when it is determined that a federally listed or proposed threatened or endangered species or its critical habitat may be affected. The purpose of consultation is to avoid adverse impacts to the species in question. Such consultation may result in modification or abandonment of an action.

The National Park Service (NPS) administers the Nationwide Rivers Inventory, as provided under the National Wild and Scenic Rivers Act of 1968 (PL 90-542). Present efforts are directed toward inventory and evaluation to determine which freeflowing rivers and river segments are suitable for possible designation as components of the National Wild and Scenic Rivers System. BLM consultation with NPS is required if proposed management actions could alter a river's ability to meet established Wild and Scenic Rivers Act eligibility, classification criteria, or both.

Tribal governments will be consulted when noxious weeds are controlled along the common boundaries between BLM and Indian trust lands.

State and Local Governments

Section 202(c)(9) of the Federal Land Policy and Management Act requires BLM to develop resource management programs consistent with those of state and local governments to the extent that such BLM programs are also consistent with federal law and regulations. BLM coordination efforts involve a number of state and local agencies as described below. Table 1-5 shows the relationship between the alternatives presented in this EIS and generalized goals and concerns of the states in the EIS area.

Section 202(c)(8) of the Federal Land Policy and Management Act requires BLM to provide for compliance with applicable pollution control laws, including State and Federal air and water pollution standards or implementation plans.

Table 1-5. Relationship of Alternatives to State Resource Protection Goals and Concerns

Protection Goals and Concerns	Discussions
Forest land for forest use	Under the No Herbicide and No Action alternatives (Alternatives 3 and 4), weed infestation would continue to increase in some suitable forest lands. Under the Proposed Action and No Aerial Application alternatives (Alternatives 1 and 2), herbicides could injure forest trees on some forest lands.
Cropland, range, and pasture	Under Alternatives 3 and 4, weed infestation would continue to increase in some areas of cropland, range, and pasture.
Fish and wildlife areas and habitats	Over the short and long-term, wildlife habitat would improve under Alternatives 1 and 2, benefiting all species populations. The reduction of desirable forage and habitat would reduce wildlife diversity under Alternative 4, and to a lesser extent, under Alternative 3.
Outstanding scenic views and sites	Some localized, degradation of scenic quality for short periods, but overall impacts would be insignificant.
Water areas, wetlands, watersheds, and ground water resources	Water quantity would not be significantly affected by any alternative. Under Alternative 4, weed seed would be spread by water. Also see water quality (below).
Wilderness areas	Noxious weeds will be controlled in wilderness and wilderness study areas.
Historic areas, sites, structures, and objects	Historic sites would either be protected or salvaged, if appropriate, under all alternatives.
Archeological sites	Known archeological sites would either be protected or salvaged, if appropriate, under all alternatives.
Potential and approved recreation trails	Trails serve as avenues of spread. Heavy stands of thistle discourage use. Some weed control practices could be visible from approved trails.
Potential and approved federal wild and scenic waterways and state scenic waterways	Approved waterways would not be directly affected by any alternative. Some weed control practices could be visible from approved waterways.
To maintain and improve the quality of the air, water, and land resources	
Air quality	The major pollutants and contaminants affecting air quality would be smoke from prescribed burns of weed-infested areas. Burning of designated areas would not exceed state or federal standards under any alternative. Burning would be conducted in accordance with state smoke management plans.
Water quality	Sediments and herbicide drift could affect water quality but are not expected to violate state or federal water quality standards.
Land (soils)	Short-term increases in erosion but long-term stabilization under Alternative 1, 2, and 3. Also, herbicides more persistant in arid area soils.
To protect life and property from natural disasters and hazards	Design features under all alternatives would protect life and property from hazards. Alternatives 3 and 4 have limitations that would further protect against hazards.
To satisfy the recreation needs of state residents and visitors	Except under Alternative 4, developed recreation sites would be protected. Decreased visitor exposure to adverse effects of noxious weeds under Alternatives 1 and 2. Alternative 4 would increase exposure of recreationalist to detrimental effects of weeds.
To diversify and improve the economy of the state	Alternatives 1 and 2 would slightly benefit the local economy; Alternative 3 would have minimal impacts on the local economy; and economic losses would continue or increase under Alternative 4.