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# **Record of Decision**

## **Noxious Weed Treatment Project Final Environmental Impact Statement**

### **Modoc National Forest**

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# **Record of Decision**

## **Noxious Weed Treatment Project**

### **Modoc National Forest**

Forest Service, United States Department of Agriculture  
Lassen, Modoc, and Siskiyou Counties, California

#### **The Decision and Rationale**

I have decided to implement Alternative 6 as described in the Modoc National Forest Noxious Weed Treatment Project Final Environmental Impact Statement (FEIS). I reached my decision after reviewing the FEIS, Forest Plan, and project record, and carefully considering public input, tribal consultation and communication with local, state, and other federal agencies. My decision is based on a review of the record, which shows a thorough consideration of relevant scientific information, responsible opposing views, and the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk. The introduction to Appendix F of the FEIS discusses the concept of uncertainty in risk assessments, as do the lead-in paragraphs in Appendix F, Section 5 (Risk Characterization).

Among the public, tribal, and governmental input to this project there was a general consensus that noxious weed expansion poses a threat to our environment. The primary concerns raised center around treatment methods, and particularly the use of herbicides.

Alternative 6 includes Physical+ methods of noxious weed treatment, which encompass hand-pulling, hoeing, the use of hand-held string trimmers and mulch or tarps, and grazing by goats. Alternative 6 also includes the use of a limited number of approved herbicides in carefully controlled, hand-application treatments. It is my decision in selecting Alternative 6 that this suite of treatment methods offers the best balance between the current and future environmental effects of noxious weed expansion, and the potential environmental and human health effects of the selected treatment methods. It is achievable within realistic budget and labor constraints.

Alternative 6 consists of the treatment parameters listed below, plus 35 of the 38 Design Standards listed in Table 1, Appendix A of this Record of Decision (ROD). Alternative 6 also includes site-specific treatment information found in Table 2-9 of the FEIS and Appendix B, Site-Specific Information and Treatment.

Alternative 6 will:

- Treat 541 sites on 541 acres (includes 200 acres treated through Early Detection-Rapid Response), for 14 currently identified species of noxious weeds.
- Treat 116 known sites (19 acres) using Physical + methods, to include physical and mechanical hand pulling, grubbing, hoeing, clipping, including string trimmers, and placing of mulches or tarps.
- Treat 371 known sites (116 acres) using Physical + methods (described above), herbicides, or both.
- Treat 46 known sites (65 acres) using herbicide methods.

- Treat 5 known sites (41 acres) using goat grazing or Physical + and/or herbicide methods.
- Treat 3 known sites (5,658 acre dyer's woad site, 159 acre common crupina site, and 850 acre Dalmatian toadflax site) using limited treatment methods along major travel ways to reduce potential for spread. These sites would be treated around the borders to contain the infestations. The estimated treatment area would be 100 acres along the borders. These treatment acres are estimated proportionally to the size of the current inventoried acres for these three sites.
- Treat the perimeter of the 5,658-acre site DH013ISTI of dyer's woad with either herbicide or Physical+ methods. During analysis of responses to the DEIS, the Agency determined that it was economically prohibitive to treat the entire infestation.
- Herbicides authorized for specific weeds and locations are chlorsulfuron, clopyralid, dicamba, glyphosate, triclopyr, 2-4-D, and two herbicide mixtures (mix 1: chlorsulfuron plus 2, 4-D, and mix 2: dicamba plus 2, 4-D).
- Herbicides would only be applied using hand-held spray equipment with directed spray and wicking treatments.
- Implement an Early Detection - Rapid Response Strategy. This strategy provides the opportunity to treat new sites of the 14 currently identified noxious weed species, new acres of weed expansion at existing sites, and occurrences of new noxious weed species—if they can be effectively treated using the methods and Design Standards authorized under Alternative 6, and the effects remain within the effects analyzed in the FEIS. Acres treated under Early Detection - Rapid Response would be capped at no more than 100 acres treated in any given year, and no more than 200 acres in total.

As stated above, there is a balancing of risk between treating with herbicides—and other methods—on one hand, and allowing noxious weeds to continue to spread on the other. Doing nothing to control noxious weeds poses more risk to the environment, wildlife, and humans than using a variety of techniques (including careful use of herbicides) to control and eradicate them. The negative effects of noxious-weed infestations are well documented in the FEIS and summarized in this document.

### *How Alternative 6 Meets the Purpose and Need*

The Purpose and Need for this project is to eliminate, control, and contain noxious weeds so as to minimize the loss of native plant communities. Alternative 6 best meets this goal, as it offers the broadest array of techniques—cultural, physical and mechanical, and herbicide:

1. It minimizes disturbance to the soil and native and desirable non-native plants, to maintain habitat and prevent erosion and damage to the soil profile. For example, using an aquatic formulation of glyphosate within riparian areas would control weeds along creeks, rivers, and lakes, while minimally impacting aquatic species (FEIS pp. 5-7).
2. It ensures that noxious weeds are treated with minimal risks to human health, native plant communities, and wildlife. It prescribes judicious use of herbicides, and only in accordance with label directions. It uses lower concentrations of herbicides than Alternative 2 or 4 (FEIS pp. 5-6, 61-62). The types of herbicides to be used, timing of application, and methods of application are designed to minimize risk. Thirty-five of the 38 Design Standards incorporate these restrictions (FEIS Table 2-4).
3. It reduces overall costs of control and eradication associated with large infestations, by preventing small weed infestations found throughout the forest from spreading. The Early

Detection – Rapid Response strategy allows for treating small infestations before they become large (FEIS pp. 5-7, 62).

4. It allows flexibility in treating existing noxious weed species and newly discovered infestations by allowing resource specialists to respond rapidly to new infestations, and apply the best treatment methods (FEIS pp. 5-7, 62). The Early Detection – Rapid Response strategy allows for the flexibility to respond quickly to new infestations of the 14 noxious weeds analyzed in the FEIS. The array of available physical and mechanical methods, plus herbicides, provides a complete toolbox to use.
5. It provides for the early treatment of new species of weeds currently not found on the Modoc National Forest, with expected savings in economic and environmental costs. The Early Detection – Rapid Response strategy provides for treatment of new noxious weeds, using the treatment methods specified for existing noxious weeds. Treatment would be capped at 200 acres over the life of the project, with 100 acres in a given year (FEIS pp. 5-7, 62).

### *How Alternative 6 Responds to the Significant Issues*

Alternative 6 also best responds to the Significant Issues, as explained below.

#### *Issue 1: Human health*

Some people have expressed concern regarding the use of herbicides in an integrated pest management program, even though available studies and evidence suggests minimal or no potential negative impacts on wildlife, the environment, or on humans. Alternative 6 uses less herbicides than Alternative 2 or 4 (the other two herbicide Alternatives). Analysis in the FEIS shows that when used according to label directions and following the Design Standards, herbicides pose a low risk to human health.

#### *Issue 2: Traditional and medicinal uses by Native Americans*

All Alternatives require notification of tribes prior to treatments. Design Standard DS-36 (found in Table 2-4 of the FEIS) requires posting of notices at access points to treatment areas, prior to treatment. Signs must list herbicides to be used, effective dates, and name and phone number of the Forest contact. This is to prevent inadvertent use of the treatment area by people collecting plant materials.

#### *Issue 3: Using an aggressive approach, including additional treatment methods and adaptive management, for treating more acres annually over a 10-year period*

Alternative 6 establishes a 10-year time frame for treatment. It contains more treatment methods (physical, cultural, and herbicide) than the other Alternatives. It also allows more flexibility than Alternatives 2 because it incorporates the Early Detection – Rapid Response strategy (FEIS pp. 61-2).

#### *Issue 4: Potential harm to soil and water, and therefore to humans, animals, and native plants*

Alternative 6 has a low potential risk to soil and water resources because all sites to be treated with herbicides are limited in size. Also because the types of herbicides to be used, timing of application, and methods of application are designed to minimize risk. These protections are incorporated in 35 of the 38 Design Standards.

See Appendix B, Site-Specific Information, for an explanation of how site-specific information was used in this analysis. It also shows how the Forest, in doing its annual work planning, will evaluate, verify, and modify treatments to insure that treatment effects remain within the parameters of the effects analysis in the FEIS.

All practicable means to avoid or minimize environmental harm from the Alternative selected have been adopted. The Design Standards in Table 1 of Appendix A of this document specify measures for all the Alternatives to avoid harm to humans, riparian features, soils, and aquatic and terrestrial wildlife from herbicide or physical and mechanical treatments. Thirty-five of the 38 Design Standards apply to Alternative 6. The Design Standards are used in place of mitigations because they avoid environmental harm in implementation of the project.

### *Staying Effective through Follow-up Monitoring*

The Forest will develop an annual weed-treatment work plan. It will identify the specific weed-treatment locations, treatment prescriptions, treatment and monitoring protocols, and treatment locations proposed for the coming year. The Forest will review the work plan with affected groups such as Native American tribes and grazing permittees, prior to its approval by the appropriate line officer. See Appendix H: Noxious Weed Treatment Monitoring, for more information.

By implementing Alternative 6 and the use of Early Detection – Rapid Response, the Forest will have a more comprehensive system for tracking our successes and identifying new problems. It will also help us find, map, and prioritize treatment of the species of concern. Monitoring is a key element of Early Detection – Rapid Response; it will provide long-term benefits both through responding to changes in conditions and by providing a record of conditions over time. GIS tracking of weed infestations allows for very site-specific follow-up monitoring of weed locations and effectiveness of specific treatment methods and control agents.

### *Size of the Alternative 6 Treatment Program*

A total of 541 acres are proposed for treatment over a 10-year period. This constitutes 0.03 percent of the Modoc National Forest landmass. Of this amount, a possible 522 acres could be treated with herbicides over a 10-year period. This is a miniscule amount of acres treated with approved herbicides, under controlled conditions.

## Purpose and Need

The Purpose and Need of the Noxious Weed Treatment Project is to implement the Forest Plan and meet key objectives of the Forest Weed Management Strategy.

Millions of acres of public lands in the West, including lands on the Modoc National Forest, are rapidly undergoing degradation due to the spread of invasive, non-native plants. Nationwide, the spread of non-native, invasive species into forests and rangelands threatens forest health by displacing native species. In 2003, Forest Service Chief Dale Bosworth identified four interrelated threats to our ability to protect and restore our forests to healthy condition: fuels and fires, loss of open space, unmanaged recreation, and invasive species. These four threats are further emphasized in the USDA Forest Service Strategic Plan FY 2007-2012 (Forest Service, USDA FS-880 July 2007).

The State of California identifies as noxious weeds those non-native invasive species that threaten our natural and human environment. These noxious weeds threaten public and private lands in numerous ways. The spread of noxious weeds reduces ecosystem diversity and health. A decline in ecosystem diversity, in turn, affects human uses such as agriculture, hunting, fishing, plant gathering, and recreation. The spread of noxious weeds increases the amount of bare soil, resulting in a decline in the watershed condition. It impacts threatened and endangered species by reducing the quality of their habitat, modifies vegetative structure and species composition, changes fire and nutrient cycles, and degrades soil structure.

Noxious weeds on National Forest lands can readily spread to surrounding private, state, county, other federal agency, and tribal lands. The Forest has received concerns from adjacent landowners, Native American tribes, and county officials concerning growing infestations on Modoc National Forest lands that could spread to surrounding ownerships (FEIS p. 5).

Action is needed because inventories on the National Forest show that noxious weed populations have expanded from a few, small infestations to over 6,000 acres (e.g., dyer's woad in the area of the Long Damon wildfire area). Studies completed in other parts of the country show that many invasive plants have the ability to replace all native plants within a given area. These species pose a serious threat to ecosystem diversity and have a high potential to harm native plants and wildlife, especially threatened, endangered, and sensitive species (FEIS p. 5).

The consequences of continuing to treat noxious weeds under current management on the Modoc National Forest (No-Action Alternative) would include the following:

- The Forest would continue treating 20 to 30 acres per year, using only physical methods such as hand pulling and hoeing, and no herbicides.
- Ecosystem diversity and health would decline.
- Noxious weeds would continue to regenerate and spread within the Forest. New noxious weeds would invade the Forest. As weeds increase, there would be a corresponding increase in weed propagules, such as seeds and rhizomes, which would continue to spread the infestations (FEIS p. 189).
- The spread of noxious weeds may lead to noxious weeds out-competing desirable native plant species, thus altering native plant communities (FEIS p. i) and impacting native wildlife populations.
- Noxious weed spread would impact the livestock industry by lowering yield and quality of forage (FEIS p. 194).
- As noxious weeds spread, the Forest would not meet the following Modoc National Forest Land and Resource Management Plan (Forest Plan) goals:
  - Maintaining lasting populations of all native and non-native desired vertebrate species (Forest Plan p. 4-1)
  - Higher populations of threatened and endangered species ...and early successional wildlife, and improved fisheries production (Forest Plan p. 4-1)
  - Improved water quality and riparian areas (Forest Plan p. 4-1)
  - Improved rangeland condition, with permitted grazing and forage capacity in balance (Forest Plan p. 4-1)
  - Riparian Areas: Manage lakes, perennial reservoirs, meadows, seeps, wetlands, springs, and Streamside Management Zones (including perennial and seasonally flowing) to maintain or improve riparian-dependent resources (Forest Plan p. 4-3)
  - Sensitive Plants: Protect habitat for sensitive species necessary for eventual de-listing. (Forest Plan p. 4-3)
  - Soil: Maintain natural nutrient balance to ensure long-term soil productivity. Restore areas of soil degradation. Enhance soil productivity on selected sites (Forest Plan p. 4-3)

In 2005, the Forest completed an Integrated Weed Management Strategy (Forest Service, USDA, Modoc National Forest September 2005), responding to one the four threats articulated by Forest Service Chief Bosworth. The Strategy includes an array of goals and objectives for noxious weed prevention and control. Among the key objectives of the Strategy are the following:

- Determine the distribution of noxious weed species on the Forest through systematic inventories.
- Re-inventory at set intervals to determine the rate of spread and detect new weed infestations.
- Complete Noxious Weed Treatment EIS to allow the treatment of existing noxious weed sites to control or eradicate noxious weeds.
- Conduct early treatment of new infestations.

The Purpose and Need of the Noxious Weed Treatment Project is to implement the Forest Plan and meet key objectives of the Forest Weed Management Strategy as follows:

- Implement an aggressive inventory and treatment program to reduce, control, or eliminate noxious weed infestations on the Modoc National Forest, including 14 currently identified weed species, on 541 known sites spread over 6,908 acres (FEIS pp. 5-7).
- Ensure that noxious weeds are treated with minimal risks to human health.
- Ensure that noxious weeds are treated with minimal disturbance to the soil, and native and desirable non-native plants and animals.
- Minimize overall costs of noxious weed control and eradication through careful selection of treatment methods.
- Minimize overall costs of noxious weed control and eradication by treating small weed infestations, enabling the Forest to avoid the high, sometimes prohibitive costs associated with control and eradication of large infestations.
- Provide for aggressive treatment of new infestations of the currently identified 14 noxious weed species, as well as treatment of newly detected species of noxious weeds, allowing for rapid treatment of small infestations.

## Public Involvement

Scoping of the initial Proposed Action for the Noxious Weed Treatment Project was conducted in April, 1998. The Forest mailed the Proposed Action to concerned citizens, federal and state agencies, Native American tribes, and environmental organizations. Based on public comments on the initial Proposed Action, the Forest released a new Proposed Action for scoping in 2001. The Forest also formally consulted federally recognized and unrecognized Indian tribes in March, 1998 and in 2001 (FEIS pp. 11-18).

From the scoping comments, the Forest identified four Significant Issues that were used to drive creation of Alternatives for analysis in the Draft Environmental Impact Statement (FEIS pp. 18-19). The DEIS was issued on December 30, 2004:

### *Issue 1*

The use of herbicides for invasive weed control may cause health problems for people who are exposed to the herbicides and/or treated areas. Although federal and state licensing and certification requirements for herbicide use build in strict safety features before use, some people

have reservations about the use of these products. While many believe limited use of herbicides does not pose a significant threat to human health, there are those who believe that, if an alternative is selected that authorizes the use of herbicides, there is a potential that health problems could surface.

### *Issue 2*

The proposed application of herbicides for weed control may affect the ability of Native Americans and others to collect plants for traditional uses or medicinal reasons in specific areas. As with issue 1 above, this concern relates to potential human health problems that may be caused with the application of herbicides. In addition, herbicides may kill specific plants that are collected in specific areas and used for medical or traditional purposes.

### *Issue 3*

An alternative is needed to respond to the need to evaluate an aggressive approach using additional treatment methods and adaptive management for treating more acres annually over a ten-year period to control and eradicate noxious weeds. The Proposed Action is seen as too limited and ineffective.

### *Issue 4*

The proposed application of herbicides for weed control has the potential to harm the physical and biological resources of the forest. The use of herbicides has the potential to adversely affect the soil and water resources and therefore may harm humans, animals, and native plants.

In addition to the issues above, the public brought forth the comments and concerns listed below:

#### *Tribal Concerns*

- Herbicides could contaminate drinking water.
- Use of herbicides could interfere with traditional plant gathering and basket weaving (e.g., some weavers use their teeth to process plant materials).
- Noxious weeds could spread to tribal lands (FEIS pp 15-18).

#### *State and County Governments, and Other Federal Agencies*

- Use chloresulfuron for more selectivity to target broadleaf plants, and to get better control of pepperweed (Response to Comments p. 79).
- Use a combination of herbicides for more effective treatment, and to reduce the amount of active ingredient used (Response to Comments p. 78).
- Use adaptive management (Early Detection – Rapid Response) to respond to new infestations as they are discovered (Response to Comments pp. 5-7).

#### *General*

- Use a more aggressive approach to control noxious weeds (Response to Comments pp. 5-7).
- Provide more non-herbicide treatment methods such as burning and mulching (Response to Comments pp. 80-83).
- Do not use hexazinone. It can be poisonous to birds, terrestrial wildlife, aquatic wildlife, and humans. It is highly persistent in soils, and can leach into the groundwater (Response to Comments pp. 10, 17).

- Do not use herbicides: (1) They may cause human health problems for people exposed to them or to the treated areas; (2) Their use may affect ability of Native Americans and others to collect plants for traditional uses; (3) They can pollute groundwater; (4) They can drift into streams and other bodies of water during application on plants; (5) They can negatively affect wildlife, soil, and water (Response to Comments pp. 80-83).
- Do not treat Klamathweed (St. Johnswort). It is used by some for medicinal purposes (Response to Comments pp. 82, 145).
- Establish distances from riparian features, within which no spraying of herbicides would occur (Response to Comments p. 31).

## Alternatives Considered

In response to comments on the DEIS and to better meet the Purpose and Need, the Forest modified Alternatives 2 through 4, added Alternatives 5 and 6, and added some clarifying tables in the FEIS. These changes are briefly summarized below (FEIS, pp. v-vi, 21-22):

- The Forest dropped hexazinone from Alternatives 2 and 4, as it is a pre-emergent herbicide and the FEIS calls for using only post-emergent, directed spray applications. (Hexazinone is not included in Alternative 6).
- The Forest dropped use of herbicides to treat noxious weed sites within designated Wilderness areas from Alternatives 2 and 4. Updated inventories show that there are no noxious weed sites in the South Warner Wilderness. If herbicides are considered for the South Warner Wilderness in the future, the Forest would complete a separate environmental review. This FEIS does analyze the effects of hand treatment of future noxious weed sites within the South Warner Wilderness in all action Alternatives (FEIS Chapter 3).
- Tables displaying noxious weeds in Modoc County and treatment method effectiveness have been included in Chapter 2 (FEIS Tables 2-1 and 2-3)
- An Early Detection - Rapid Response Strategy was developed during preparation of the FEIS. This strategy is included in Alternatives 5 and 6, and replaces the adaptive management included in the DEIS for Alternative 4.
- Alternative 5 was added to respond to comments on the DEIS to provide a non-herbicide alternative that contains additional non-herbicide treatment methods, and an Early Detection-Rapid Response Strategy. It includes Physical+ treatment methods not included in Alternative 3 (FEIS pp. 59-61).
- Alternative 6 was added to respond to comments on the DEIS and better meet the Purpose and Need. Public comments emphasized consideration of additional herbicides and herbicide combinations, and additional non-herbicide treatment methods. The need to better minimize overall costs of noxious weed control and eradication is also an important element of Alternative 6. This Alternative provides the opportunity to use chlorsulfuron and two herbicide tank mixes that were not included in Alternatives 2 and 4. This Alternative includes physical+ treatment methods not included in Alternatives 2, 3, and 4. It also includes the Early Detection – Rapid Response Strategy.

The comparison of Alternatives and weed treatments are displayed in Appendix A, and in tables 2-11 and 2-12 of the FEIS.

## *Alternatives Considered in Detail*

The FEIS analyzed six alternatives (Alternatives 1 through 6) in detail; they are summarized below. For a discussion of Alternative 6, see page 1 of this document.

### Alternative 1: No Action

This Alternative is required by law because it provides a baseline for understanding the effects of the action Alternatives.

Under Current Management the Forest is implementing direction in the Forest Land and Resource Management Plan, the Sierra Nevada Forest Plan Amendment, and the Modoc National Forest Integrated Weed Management Strategy (Sylva 2005). Under this direction, a Noxious Weed Risk Assessment is completed for all projects planned on the Forest. The risk assessment assigns an expected risk level to proposed activities and identifies inventory, monitoring, and Physical + weed-related actions to be included in project implementation. The use of herbicides has not been authorized for these weed related actions. On average, the Forest treats 20 to 30 acres per year with physical + methods covered under project environmental analysis. The Forest currently has no NEPA decision that encompasses the treatment and/or containment of all noxious weeds on the Forest. Under this Alternative, a Forest-wide noxious weed control program would not be implemented (FEIS pp. 43-44).

Since this Alternative would permit the continued spread of noxious weeds, I did not choose it.

### Alternative 2: The Proposed Action

This Proposed Action was created to respond to the Purpose and Need as described in Chapter 1. Under this Alternative, the Modoc National Forest proposes to treat noxious weeds on 536 existing sites comprising approximately 6,899 acres using herbicides and physical and mechanical methods over a five year time frame. Listed below are features of Alternative 2:

- Treating 300 to 1,500 acres annually for the next five years.
- A total of 536 known sites on 6,899 acres would be treated as shown in Table 2-5 of the FEIS.
- Physical and mechanical methods would be used at 161 sites (31 acres) that are less than 10 feet from any water source, to include hand pulling, digging, grubbing, and hoeing.
- Use of physical and mechanical and/or herbicide methods on 333 sites (5,961 acres) located greater than 10 feet from any water source targeting non rhizomatous noxious weed species.
- Twenty-six sites (2.4 acres) located greater than 10 feet from any water source and composed of rhizomatous species would be treated with herbicides.
- Sixteen sites of rhizomatous species that have some acreage within 10 feet of water would receive partial treatment. On these 16 sites, the acreage within 10 feet of water would not be treated, and the acreage that is further than 10 feet of water would be treated with aquatic Glyphosate (904.3 acres).
- No treatment would occur at 5 sites (9 acres). These sites are composed of rhizomatous species and are within 10 feet of water.
- Herbicides would be applied by directed spray and wicking treatments.
- Herbicides used would be clopyralid, dicamba, glyphosate, triclopyr, and 2, 4-D.

- Herbicide treatments would include use of surfactants and dyes. Surfactants increase the absorption of herbicide by the weeds, and dyes assist the applicator in efficiently treating target weeds.

The annual combination of methods used would vary depending on noxious weed species, distance from water or other sensitive areas, and the most economical and efficient treatment methods available. There would be no aerial spraying of herbicides and there would be no herbicide use within 10 feet of water.

I did not choose Alternative 2 because (1) it did not allow a mixture of herbicides, which provides for applying less herbicide in an area while treating multiple weed species of different characteristics; (2) it did not allow limited herbicide use within riparian areas to treat rhizomatous weeds—which in most cases cannot be eradicated by physical means; and (3) it did not provide an Early Detection – Rapid Response option for newly discovered weed infestations.

### Alternative 3

Alternative 3 responds to Significant Issues 1, 2, and 4, which concern anticipated negative effects of herbicide use. Alternative 3 does not include the use of herbicides. Under this Alternative, the Modoc National Forest proposes to treat noxious weeds on a total of 494 existing sites comprising approximately 5,993 acres through physical and mechanical methods over a five year time frame. Listed below are features of Alternative 3:

- Treating between 300 to 1,500 acres annually for the next 10 years
- Treating 494 sites (5,993 acres) using physical and mechanical methods, to include physical and mechanical hand pulling, digging, grubbing, and hoeing
- Not treating 47 sites (916 acres), as these sites are composed of rhizomatous species, and physical and mechanical methods are ineffective in treating rhizomatous species

I did not choose Alternative 3 because it does not authorize the use of herbicides. Herbicide use is essential to control larger infestations of rhizomatous weed species. I also did not choose this Alternative because it does not allow for an Early Detection – Rapid Response strategy. Effectiveness of treatment and meeting the purpose and need are expected to be less than Alternative 6, which provides for limited herbicide treatment.

### Alternative 4

Alternative 4 responds to Significant Issue 3, which focuses on providing flexibility in physical and mechanical and herbicide treatment methods for current occurrences, and expanding or new infestations of noxious weeds. Alternative 4 includes an Early Detection - Rapid Response Strategy not included in Alternatives 2 and 3. Under this Alternative, the Modoc National Forest proposes to treat noxious weeds on a total of 536 existing sites comprising approximately 6,899 acres through physical and mechanical, and herbicide methods over a ten-year time frame. Listed below are features of Alternative 4:

- Treating a total of 7,099 acres on 536 sites over the next 10 years (annual average 500-1,500). This includes 200 acres treated through Early Detection-Rapid Response.
- Physical treatment methods would be used at 161 sites (31 acres) that are less than 10 feet from any water source.
- Use of physical and/or herbicide methods on 333 sites (5,961 acres) located more than 10 feet from any water source and with non-rhizomatous noxious weed species.

- 26 sites (2.4 acres) located greater than 10 feet from any water source and composed of rhizomatous species, would be treated with herbicides.
- 16 sites of rhizomatous species that have some acreage within 10 feet of water would receive partial treatment. The acreage within 10 feet of water would not be treated and the acreage that is further than 10 feet of water would be treated with aquatic glyphosate (904.3 acres).
- No treatment would occur at 5 sites (9 acres). These sites are composed of rhizomatous species and are within 10 feet of water.
- Herbicides would be applied by directed spray and wicking treatments.
- Herbicide used would be clopyralid, dicamba, glyphosate, triclopyr, and 2-4-D.
- Herbicide treatments in Alternative 4 would include use of surfactants and dyes. Surfactants increase the absorption of herbicide by the target weeds, and dyes assist the applicator in efficiently treating target weeds.
- An Early Detection - Rapid Response Strategy would be implemented in this Alternative. This strategy provides the opportunity to treat new sites of the 14 identified species that have developed, existing sites that have expanded, and occurrences of new noxious weed species. It would use the same treatments as outlined for the 14 identified species, provided that environmental effects are within the parameters of the Design Standards and effects analyses in the FEIS.
- Proposed treatment under Early Detection – Rapid Response would be capped at 200 acres over the life of the Alternative, with no more than 100 acres being treated in any given year. The rationale for this cap is to provide limited flexibility to treat new and/or expanding weed sites while remaining within the range of effects as displayed in this analysis.

I did not select Alternative 4 because (1) it does not offer the mixing of herbicides that facilitates reducing the amount of herbicide used, and (2) it provides less flexibility in herbicide treatment—such as the use of tank mixes. Also, the budget does not support implementation of this Alternative.

## Alternative 5

Alternative 5 responds to comments on the DEIS to provide a non-herbicide Alternative that contained additional non-herbicide treatments and an Early Detection - Rapid Response Strategy. Alternative 5 responds to Significant Issues 1, 2, 3, and 4. Alternative 5 does not include the use of herbicides, but includes additional physical and mechanical treatment methods not in Alternatives 2 and 3. Alternative 5 includes an Early Detection - Rapid Response Strategy, which responds to new species and new sites using treatment methods analyzed in this FEIS.

During analysis of responses to the DEIS, the Agency determined that it was economically prohibitive to treat the entire 5,658 acre site number DH013ISTI of dyer's woad with either herbicide or physical and mechanical methods. Under Alternatives 5 and 6, only the perimeter of this site would be treated. Therefore, under Alternative 5, the Modoc National Forest proposes to treat noxious weeds on a total of 541 existing sites comprising approximately 280 known acres through physical and mechanical methods over a ten-year time frame. Listed below are features of Alternative 5:

- Use non-herbicide methods to eradicate, control, or contain approximately 480 acres at 541 sites of noxious weed species. This includes 200 acres treated under Early Detection-Rapid Response.
- 5 sites (41 acres) may potentially be treated using goat grazing. These sites may alternatively be treated using physical+ methods.
- 527 sites (139 acres) would be treated using physical + methods, to include physical and mechanical hand pulling, grubbing, hoeing, clipping (including use of hand-held string trimmers), and use of mulch and tarps.
- 9 sites (100 acres) would receive limited treatment to contain infestations. These sites include the large dyer's woad site (5,658 acres), one crupina site (159 acres) and 7 sites of rhizomatous noxious weeds (913 acres). The common crupina site is part of a larger site on adjacent private lands (an additional 586 acres). Limited treatment of these sites is expected to be 100 acres. Design Standards have been implemented in determining the treatment method that these acres would receive. These sites are composed of rhizomatous species and are greater than 0.10 acre. Physical and mechanical methods are not as effective in treating rhizomatous species as herbicides; thus, treatment goals would only include containment of the current infestation.
- An Early Detection - Rapid Response Strategy would be implemented in this Alternative. This strategy provides the opportunity to treat new sites of the 14 identified species that have developed, existing sites that have expanded, and occurrences of new noxious weed species. It would use the same treatments as outlined for the 14 identified species, provided that environmental effects are within the parameters of the Design Standards and effects analyses in the FEIS.
- Proposed treatment under Early Detection – Rapid Response would be capped at 200 acres over the life of the Alternative with no more than 100 acres being treated in any given year. The rationale for this cap is to provide limited flexibility to treat new and/or expanding weed sites, while remaining within the range of effects as displayed in this analysis.

I did not choose Alternative 5 because it does not authorize the use of herbicides. Herbicide use is essential to control larger infestations of rhizomatous weed species. Also, effectiveness of treatment and meeting the purpose and need are expected to be less than Alternative 6, which provides for limited herbicide treatment.

## Alternative 6

(previously described)

### *Alternatives Considered, but Eliminated from Detailed Study*

The following Alternatives were considered in the FEIS (Table 2-10) but eliminated from detailed study. Reasons for elimination are given in the FEIS, Chapter 2.

- Mowing
- Tilling
- Intense grazing
- Fertilization of desired species
- Parasites, predators, and pathogens

- Ground application of herbicides with booms, or broadcast applications of granules
- Aerial application of herbicides
- Prescribed fire
- Burning with torches
- Burning by Native Americans
- Burning with lasers
- Burning with steam

## Environmentally Preferred Alternative

The environmentally preferred Alternative is Alternative 6, as it provides a multi-method approach to reduce or eliminate most noxious weed sites, while preventing spread of the three largest sites (FEIS pp. 63-72). Alternatives 2 and 4, by contrast, would treat large-acreage sites with herbicides, and would result in the application of a greater amount of herbicides in the environment than Alternative 6 (FEIS tables 2-14 and 2-15). Alternatives 3 and 5 (non-herbicide Alternatives) would not provide effective treatment for rhizomatous species, thus allowing for expansion of those noxious weed sites (FEIS pp. 51-52, 59-61).

## Findings Required by Other Laws

Numerous laws, regulations, and agency directives require that my decision be consistent with their provisions. To the best of my knowledge in reviewing and evaluating all the evidence presented to me, my decision is consistent with all laws, regulations, and agency policy relevant to this project. The following discussion is not an all-inclusive listing, but is intended to provide information on the areas raised as issues or comments by the public or other agencies.

### *Endangered Species Act (ESA)*

The Modoc NF wildlife biologists and fisheries biologist have evaluated Alternative 6 with regard to threatened and endangered species. Findings are summarized in Chapter 3 of the FEIS and in the Biological Assessments and Biological Evaluations—available in the project record. As concluded in the above documentation, the determination is that this action is not likely to adversely affect any threatened or endangered species on the Forest.

### *National Forest Management Act (NFMA)*

The NFMA and accompanying regulations require that several other specific findings be documented. They are listed below—forest plan consistency; riparian areas, soil, and water; diversity; and sensitive species.

#### Forest Plan Consistency

Management activities are consistent with the Modoc Forest Plan as amended, as discussed in Chapter 3 of the FEIS. Consistency discussions are addressed in the FEIS on pages 10 to 11.

#### Riparian Areas, Soil, and Water

Riparian areas' soil and water will be protected through use of Design Standards listed in Appendix A, Table 1 of this document.

## Diversity

The purpose of this project is to preserve and enhance the diversity of plant and animal communities by reducing and limiting the spread of noxious weeds (FEIS pp. 5-7 and NFMA, section 6g, paragraph 3 (B)).

## Sensitive Species

There are a number of plants and animals on the Forest for which population viability is a concern. They are listed as documented or potentially present on the Modoc NF. I have reviewed the FEIS information in Chapter 3—Affected Environment and Environmental Consequences, and the specialist reports. From this, I have concluded that there may be some short-term impacts, but will be no adverse long-term impacts on these sensitive species due to implementation of Alternative 6.

## *Clean Air Act*

The basic framework for controlling air pollutants in the United States is the 1970 Clean Air Act, as amended (42 USC 7401 et seq.). The primary concern with this project in regard to air-quality impacts is with the ground-based application of herbicides. Since impacts will be distributed across the Forest and over time, concentrations of air contaminants will not accumulate to the point of violating air-quality standards.

## *Migratory Bird Treaty Act*

I believe the techniques and protective measures embodied in the Design Standards provide adequate conservation measures for migratory birds. Overall impacts on land birds and waterfowl are expected to be minimal, as summarized in the FEIS, pp. 291-2.

## *National Historic Preservation Act (NHPA)*

Design Standard DS-09 (see Appendix A, Table 1 in this document) contains measures to protect identified cultural resources: “Weed treatments will be coordinated with the Forest heritage resource specialist and Forest tribal relations manager to protect heritage resources such as traditional plant gathering areas, rock art, and historic structures.”

## *Federal Noxious Weed Act (sec. 9) as amended (7 USC 2801 et seq.)*

Alternative 6 complies with this authorization for the Secretary of Agriculture to cooperate with other federal and state agencies or political subdivisions thereof, and individuals, in carrying out measures to eradicate, suppress, control, or prevent the spread of noxious weeds (FEIS p. 195).

## *Environmental Justice*

Executive Order 12898, issued in 1994, ordered federal agencies to identify and address any adverse human-health and environmental effects of agency programs that disproportionately impact minority and low-income populations. This project does not disproportionately impact any human populations.

## *Invasive Species*

Executive Order 13112, signed on February 3, 1999, directs federal agencies whose actions may affect the status of invasive species to (1) prevent the introduction of invasive species, and (2) detect and respond rapidly to, and control, populations of such species in a cost-effective and environmentally sound manner, as appropriations allow. My decision to implement Alternative 6 complies with this order.

### *Noxious Weed Management Policy (FSM 2080 and 2259.03)*

Alternative 6 is consistent with the National Forest Noxious Weed Management Policy (FSM 2080). It requires resource managers to prevent the introduction and establishment of noxious weeds, provide for the containment and suppression of noxious weeds, and to cooperate with state agencies.

### *Administrative Procedure Act*

The federal Administrative Procedure Act (APA) of 1946 governs the way in which administrative agencies of the federal government may propose and establish regulations. The APA also sets up a process for federal courts to directly review agency decisions. APA requires that in order to set aside agency action, the court must conclude that the regulation is "arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with the law." *Arbitrary and capricious* has been defined by the courts as an "absence of a rational connection between the facts found and the choice made." *Natural Resources v. U.S.*, 966 F.2d 1292, 97, (9th Cir. '92).

My decision rationale is disclosed in this Record of Decision. It complies with the relevant laws, regulations, and policies. My decision considered the risks and benefits associated with all alternatives analyzed in the FEIS, including the risks and benefits of taking no action. It is therefore not arbitrary and capricious, as mentioned in the Administrative Procedure Act and defined by the courts.

## Corrections and Clarifications

I reserve the right to correct errors or provide additional clarification if needed.

## New Treatment Opportunities

The Forest Service is actively working with partners to detect new invasive species infestations and support the infrastructure necessary to rapidly contain or eradicate these infestations. When new invasive species infestations are detected, a prompt and coordinated containment and eradication response can reduce environmental and economic impacts. This action results in lower cost and less resource damage than implementing a long-term control program after the species is established. This program is known as Early Detection – Rapid Response, and is a key feature of the selected Alternative, Alternative 6.

Herbicides other than those analyzed in the FEIS may be used, provided the effects are within the parameters of the effects analyses in the FEIS.

## Appeal Opportunities

Copies of the Modoc National Forest Noxious Weed Treatment Project FEIS and ROD are available for review at libraries, the Modoc NF Supervisor's Office, and the Warner Mountain/Devil's Garden and Big Valley/Doublehead Ranger Districts. It is also available on the Internet on the Modoc NF Web site: <http://www.fs.fed.us/r5/modoc/>.

Additional electronic (compact disc) copies of the FEIS and ROD are available upon request. The supporting project record is available for review at the Modoc NF Supervisor's Office at 800 W 12<sup>th</sup> Street, Alturas, CA 96101.

This decision is subject to appeal pursuant to 36 CFR 215.11. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the *Modoc Record*, Alturas, CA. It is the responsibility of the appellant to ensure his/her appeal is received

in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the *exclusive* means for calculating the time to file an appeal. Appellants should not rely on date or time-frame information provided by any other source.

Paper appeals must be submitted to the following address:

Attn. Appeal Deciding Officer  
USDA Forest Service, Southwest Region  
1323 Club Drive  
Vallejo, CA 94592

Electronic appeals must be submitted to the following e-mail address: [appeals-pacificsouthwest-regional-office@fs.fed.us](mailto:appeals-pacificsouthwest-regional-office@fs.fed.us).

In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, WordPerfect, or rich text format (rtf).

It is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why my decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing (paper or electronic format). At a minimum, the appeal must meet the content requirements of 36 DCR 215.14, and include the following information:

- The appellant's name and address, with a telephone number, if available
- A signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal)
- When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant, upon request
- The name of the project or activity for which the decision was made, the name and title of the responsible official, and the date of the decision
- The regulation under which the appeal is being filed, when there is an option to appeal under 36 CFR 215 or 36 CFR 251, sub-part C
- Any specific change(s) in the decision that the appellant seeks. and rationale for those changes
- Any portion of the decision with which the appellant disagrees, and explanation for the disagreement
- Why the appellant believes the responsible official's decision failed to consider the substantive comments
- How the appellant believes the decision specifically violates law, regulation, or policy

If an appeal is received on the project, there may be informal resolution meetings and/or conference calls between the responsible official and the appellant. These discussions would take place within 15 days after the closing date for filing an appeal. All such meetings are open to the public. If you are interested in attending any informal resolution discussions, please contact the responsible official.

**Contact Person**

For further information on this project and implementation, contact Robert Haggard, Public Services Staff Officer, at 530-233-8840. Or write the Modoc National Forest, 800 W 12<sup>th</sup> Street, Alturas, CA 96101.

**Signature**

*Stanley G. Sylva*

Stanley G. Sylva

Forest Supervisor

Modoc National Forest

*August 12, 2008*

Date

## Appendix A: Design Standards and Tables

**Table 1. Design Standards**

Code	Design Standard	2	3	4	5	6
DS-01	Planning: The Forest will develop an annual work plan for treating noxious weeds, specifying locations and treatments. The annual work plan will be provided to the US Fish and Wildlife Service, California Department of Fish and Game and the appropriate Regional Water Quality Control Boards, well in advance of treatment initiation for their review and comment. Consultation on the annual work plan will be conducted with all affected tribes.	X	X	X	X	X
DS-02	Planning: Treatment priorities for sites and methods are listed in Table 2-13, Comparison of Treatment Priorities	X	X	X	X	X
DS-03	Planning - Time Period: Time Frame for Implementation is 5 years.	X	X			
DS-04	Planning - Time Period: Time Frame for Implementation is 10 years or longer (FSH 1909.15 section 18.03). Review the environmental documentation of actions awaiting implementation and those of ongoing programs or projects at least every 5 years to determine if the environmental analysis and documentation is still current. If the responsible official determines that it is current and a correction, supplement, or revision is not necessary, implementation would continue. The results of the review will be documented in the project file.			X	X	X
DS-05a	Physical treatment will be used when occurrences are small consisting of having fewer than 100 weed plants or are a tenth (0.10) of an acre or less. Sites of 0.10 acre or less with over 100 plants may be treated with herbicides until the population is reduced to less than 100 plants.	X		X		
DS-05b	Physical+ treatment will be used when occurrences are small consisting of having fewer than 25 weed plants or are a tenth (0.10) of an acre or less. Sites of 0.10 acre or less with over 25 plants may be treated with herbicides until the population is reduced to less than 25 plants.					X
DS-06	Physical+ treatment of rhizomatous species would not be used.	X	X	X		
DS-07	Physical+ treatments may be used on rhizomatous species weed sites smaller than 1/10 of an acre in size, and that have young, small plants that can be totally removed, including the rhizomatous roots.				X	X
DS-08	Physical treatment: To reduce seed spread, disposal of noxious weeds that are grubbed or manually removed will be as follows: If no flowers or seeds are present, pull the weed and place it on the ground to dry out if species is not rhizomatous or there is a potential for re-sprouting. If flowers or seeds are present, pull the weed carefully to prevent seeds from falling, and place in an appropriate container for disposal.	X	X	X	X	X
DS-09	Heritage Resources: Weed treatments will be coordinated with the Forest heritage resource specialist and Forest tribal relations manager to protect heritage resources such as traditional plant gathering areas, rock art, and historic structures. Soil disturbance will be limited to cubic meter per acre, without prior authorization from the heritage resources specialist. (R5 Programmatic Agreement for minimum disturbance activities with State Historic Preservation Officer)	X	X	X	X	X
DS-10	Wildlife and Fish - Terrestrial: Limited Operating Periods for TE&S and MIS species, as called for in the Forest Plan and the Sierra Nevada Framework, will be implemented if weed infestations occur within the specified protection areas. An additional LOP for sandhill crane will be implemented from 1 April to 30 August for all active crane nests.	X	X	X	X	X
DS-11	Wildlife and Fish – Aquatic TES: Herbicides will not be applied within 100 feet of habitats of TES aquatic species, with the exception of aquatic formulations of Glyphosate which may be used within this zone.					X

Code	Design Standard	2	3	4	5	6
DS-12a	Wildlife and Fish – No Dicamba or 2, 4-D (either alone or in tank mix) will be used within occupied sage grouse habitat. The range for this species is very restricted on this forest.	X		X		X
DS-12b	Wildlife and Fish – No 2, 4-D on weed occurrences greater than 2 acres in size.					X
DS-13	Wildlife and Fish – No 2, 4-D (either alone or in tank mix) will be used within 25 feet of the water's edge in occupied bald eagle habitat.	X		X		X
DS-14	Water: Annually the amount of physical disturbance and/or herbicide application would be limited to no more than 15% of each 6th Field Sub-watershed.	X	X	X	X	X
DS-15	The specified distances for perennial streams, lakes and special aquatic features are 300 feet and 150 feet for seasonally flowing streams, both of which are consistent with Riparian Conservation Areas as defined the Sierra Nevada Framework (SNF) ROD, 2001. For the Noxious Weed FEIS, the designated zone for all Streamside Management Zones is the Riparian Conservation Areas (RCAs) on the Modoc National Forest. See the definition for <i>Riparian Conservation Area</i> in the glossary. Therefore, for the Noxious Weeds FEIS, the terms SMZ and RCA are interchangeable. For the purpose of noxious weed treatments, SNF RCA standards will apply Forest wide. Within these prescribed RCAs, limited hand treatments may occur for a distance of 10 feet outward from the edge of the High Water Mark.	X	X	X	X	X
DS-16	The RCAs will be maintained with 50% of the acreage of the RCA as undisturbed; disturbance will be limited to no more than 25% of the acreage of the inner half of the RCA.	X	X	X	X	X
DS- 17	Water - RCA Treatments: Herbicide treatment within the Riparian Conservation Areas (RCAs) will be as follows: -From the High Water Mark outward to 10 feet, no herbicide use (only Physical Methods). -From a distance of 10 feet to the outer edge of RCAs for Seasonally Flowing or Perennial Streams, only Aquatic Glyphosate may be applied by wicking it onto the plant. -From the outer edge of RCAs for Seasonally Flowing or Perennial Streams, Glyphosate, Clopyralid, Dicamba, and Triclopyr may be applied. -2, 4-D will not be applied within 1,000 feet of the High Water Mark of Seasonally Flowing or Perennial Streams.	X		X		
DS-18a	Water - RCA Treatments: Within the Riparian Conservation Areas (RCAs) outside of the Lahontan Regional Water Board area of jurisdiction, herbicide treatments will be as follows: -From the High Water Mark outward, aquatic formulations of Glyphosate may be used in RCAs for Seasonally Flowing or Perennial Streams (as well as Physical (+) Methods). -From a distance of 10 feet from the High Water Mark outward to the outer edge of RCAs for Seasonally Flowing or Perennial Streams, Glyphosate and Amine forms of 2, 4-D may be used. -From 25 feet from the High Water Mark outward to the outer edge of RCAs for Seasonally Flowing or Perennial Streams, Chlorsulfuron, Dicamba, Clopyralid, Triclopyr; and Tank Mixes 1 and 2 with only amine forms of 2, 4-D. -From 100 feet from the High Water Mark outward to the outer edge of RCAs for Seasonally Flowing or Perennial Streams, Chlorsulfuron, Dicamba, Clopyralid, Triclopyr; and Tank Mixes 1 and 2 with either ester or amine forms of 2, 4-D.					X
DS-18b	No more than 10 percent of the acreage with RCAs for the Frog Waterhole (6 <sup>th</sup> Field HUC 180200021103) and RCAs for lakes found within Clarks Valley (6 <sup>th</sup> Field HUC 18020030106) would be treated with herbicide each year, from the edge of the High Water Mark for a distance of 100 feet. When applied from the High Water Mark to a distance of 25 feet from water, herbicides would be applied by wicking them directly on the plant.					X

Code	Design Standard	2	3	4	5	6
DS-19a	In the areas under the Lahontan Water Quality Control Board jurisdiction (see Figure 3-2), with Alternative 6 no herbicide treatment will occur from the High Water Mark for a distance of 10 feet. From a distance of 10 to 100 feet from the High Water Mark, only aquatic Glyphosate will be used. At a distance greater than 100 feet from the High Water Mark, the other herbicides shown in the Alternative may be applied.					X
DS-19b	Do not use herbicides to treat noxious weeds in the Area of Concern that supplies the Ft. Bidwell Reservation with drinking water (see map in Appendix N). If weeds become established in the future, consult with the Ft. Bidwell Tribe to determine suitable treatment methods under Early Detection – Rapid Response.	X		X		X
DS-20	Soils: Areas with bare soil resulting from noxious weed treatments that are greater than ¼ acre in size will be assessed for need for rehabilitation.	X	X	X		
DS-21	Soils: Areas with bare soil created by the treatment of noxious weed, the site would be evaluated for rehabilitation.				X	X
DS-22	Annually the Forest Hydrologist, Watershed Specialist or Soil Scientist determines the location of the noxious weed occurrence to be treated to determine if the site to be treated is located on sensitive or shallow soils. If it is determined that the site to be treated contains sensitive or shallow soils then either DS 23 or 24 would be applied, depending on Alternative selected.	X		X		X
DS-23	Soils: On noxious weed sites identified as having sensitive soils and or shallow soils, do not use herbicides with high leaching potential to treat noxious weeds.	X		X		
DS-24a	Soils: Treatment of noxious weeds on sensitive and/or shallow soils utilizing herbicides other than Glyphosate will not exceed 1 acre per 6th field sub-watershed on an annual basis.					X
DS-24b	Soils: Limit annual herbicide treatments in 6th field sub-watersheds to no more than 10% of the acreage of the 6th field sub-watershed.					X
DS-25	Soils: On those sites with soils identified as having a high or very high erosion potential or a rapid or very rapid risk to runoff do not use Physical and Physical+ methods to treat noxious weeds when the fire weather forecast for the next 24 hours states there is a likely chance of thunderstorms (generally 60-70% or greater as defined by the National Weather Service).	X	X	X	X	X
DS-26	Herbicides: No mixing of herbicides will take place.	X		X		
DS-27	Herbicides: Two herbicide mixtures are available for application. Mixture 1 (Chlorsulfuron + 2, 4-D) and mixture 2 (Dicamba + 2, 4-D).					X
DS-28	Herbicides: Herbicide treatments will include use of surfactants and dyes. Surfactants increase the absorption of herbicide by the target weeds, and dyes assist the applicator in efficiently treating target weeds.	X		X		X
DS-29	Herbicides: When applying herbicides within RCAs, from the High Water Mark outward to a distance of 25 feet, all directed spray must be done in a downward direction. In addition, when the height of a weed is greater than 36 inches, the weed will be laid on the ground and sprayed in a downward direction. This will minimize herbicide drift and confine the herbicide to the drop zone of the individual weed plant being treated. Beyond 25 feet within RCAs and outside of RCAs, herbicides will be applied by on-the-ground applicators directly spraying or wicking the target noxious weed. Spraying will be done in a downward direction to the extent possible.	X		X		X
DS-30	Herbicides: All herbicide spray tanks will be equipped with a pressure gauge to ensure that low pressure application of herbicides is achieved.					X
DS-31	TES Plants: Vehicle-based herbicide application will not take place within 50 feet of any TES plant location. Hand spraying or non-herbicide treatment may be conducted.	X		X		
DS-32	Sensitive Plants: No spraying of herbicides within 50 feet of sensitive plant species. Wicking and Physical+ treatments may take place within 50 feet of sensitive plants.					X

<b>Code</b>	<b>Design Standard</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
DS-33	Threatened and Endangered Plants: Herbicide treatments will not take place within 100 feet of Threatened or Endangered plant locations, however, non-herbicide treatments may be conducted.					X
DS-34	Control of Drift or Herbicide Migration: All herbicide application will follow EPA approved label directions in regards to control of drift of herbicides during spraying. These directions have specific wind speeds and air temperatures for application of each herbicide. In addition, applicators will utilize droplet size and spray pressure to insure droplets do not travel outside of the drip line target plant.	X		X		X
DS-35	Safety and Health: All Personal Protective Equipment, required by state and federal regulations, for the specific type of treatment being implemented, will be used during field operations.	X	X	X	X	X
DS-36	Safety and Health: Signs regarding herbicide use will be placed at access points to treatment areas prior to initiating treatment. Signs will list herbicides to be used, effective dates, and name and phone number of Forest contact.	X		X		X
DS-37	Safety and Health: Herbicides will only be applied by trained and/or certified applicators in accordance with label instructions and applicable federal and state pesticide laws.	X		X		X
DS-38	Safety and Health: Klamathweed (St. Johnswort) will not be treated with herbicides due to its use as a medicine by some.	X		X		X

Note: This table can be found in the FEIS as Table 2-4.

**Table 2. Comparison of Cost (in 2006 dollars)**

	Alternative 1 (No Action)	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Estimated 5-year Discounted Cost	\$135,670	\$1,393,760	\$2,225,190	\$1,383,010	\$533,420	\$455,200
Estimated 10-year Discounted Cost	\$247,920	N/A	N/A	\$1,987,840	\$900,230	\$734,630
Estimated Cost per Effectively Treated Acre	\$1,183	\$243	\$418	\$241	\$1,159	\$660

Note: This table can be found in the FEIS as Table 2-17.

**Table 3. Comparison of Environmental Impacts and Significant Issues**

Issues	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Issue 1 - The use of herbicides for noxious weed control may cause health problems for people who are exposed to the herbicides and/or treated areas. Although federal and state licensing and certification requirements for herbicide use builds in strict safety features before use (such as a minimum and maximum amount that can be applied), some people have reservations about the use of these products. If an Alternative is selected which authorizes the use of herbicides, there is a potential that health problems could surface.	Herbicides will not affect people; however the potential for increased exposure of people to the adverse effects of noxious weeds will increase.	There is a little possibility of a small number of individuals to be affected by the use of herbicides.	Herbicides will not affect people; however the potential for increased exposure of people to the adverse effects of noxious weeds will increase.	There is a little possibility of a small number of individuals to be affected by the use of herbicides.	Herbicides will not affect people; however the potential for increased exposure of people to the adverse effects of noxious weeds will increase.	There is a very little possibility of a small number of individuals to be affected by the use of herbicides.

Issues	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3	Alternative 4	Alternative 5	Alternative 6
<p>Issue 2 - The proposed application of herbicides for weed control may affect the ability of Native Americans and others to collect plants for traditional uses or medicinal reasons in specific areas. Also herbicides may kill specific plants that are collected and used for medical or traditional purposes in specific areas.</p>	<p>May Not Affect. However, noxious weed infestations have the potential to displace culturally important plants and continue to encroach on trust lands.</p>	<p>May Affect Specific Sites for short period of time but will not eliminate any species over a large area.</p>	<p>May Not Affect</p>	<p>May Affect Specific Sites for short period of time but will not eliminate any species over a large area.</p>	<p>May Not Affect</p>	<p>May Affect Specific Sites for short period of time but will not eliminate any species over a large area. Potential is substantially less than Alt's 2&amp;4.</p>
<p>Issue 3 - An Alternative is needed to respond to the need to evaluate an aggressive approach using additional treatment methods and adaptive management for treating more acres annually over a ten-year period to control and eradicate noxious weeds. The Proposed Action is seen as too limited and ineffective.</p>	<p>0</p>	<p>5 years of Treatments</p>	<p>5 years of Treatments</p>	<p>10 years of Treatments Early Detection – Rapid Response applied</p>	<p>10 years of Treatments Early Detection – Rapid Response applied</p>	<p>10 years of Treatments Early Detection – Rapid Response applied</p>
<p>Issue 4 - The proposed application of herbicides for weed control has the potential to harm the mechanical and physical and biological resources of the Forest. The use of herbicides has the potential to adversely affect on the soil and water resources and harms the native plants and animals</p>	<p>Herbicides will not affect the environment; however the potential for increased adverse effects of noxious weeds will increase.</p>	<p>There is a very little possibility of the use of herbicides to adversely affect the environment.</p>	<p>Herbicides will not affect the environment; however the potential for increased adverse effects of noxious weeds will increase.</p>	<p>There is a very little possibility of the use of herbicides to adversely affect the environment.</p>	<p>Herbicides will not affect the environment; however the potential for increased adverse effects of noxious weeds will increase.</p>	<p>There is a very little possibility of the use of herbicides to adversely affect the environment.</p>
<p>Impact to T&amp;E Wildlife</p>	<p>Bald Eagle -May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No Effect.</p>	<p>Bald Eagle - May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No</p>	<p>Bald Eagle -May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No Effect.</p>	<p>Bald Eagle -May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No Effect.</p>	<p>Bald Eagle -May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No Effect.</p>	<p>Bald Eagle -May Affect, Not Likely to Adversely Affect. Northern Spotted Owl – No Effect. Shasta Crayfish – No Effect.</p>

Issues	Alternative 1 No Action	Alternative 2 Proposed Action	Alternative 3	Alternative 4	Alternative 5	Alternative 6
		Effect.				
Impact to T&E Aquatic Species	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect	Lost River Sucker, Short Nose Sucker, Modoc Sucker, Warner Sucker - Not Likely to Adversely Affect
Impact to T&E Plants	No Effect					
Impact to cultural plants	May Affect, Not Likely to Adversely Affect					

Note: This table can be found in the FEIS as Table 2-18.

**Table 4. Comparison of Treatment Methods by Number of Sites and Acres**

Treatment Time Frame	Alternative 1 (No Action)		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
	Ongoing		5 years		10 years		10 years		10 years		10 years	
	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres
Physical– hand pulling, hoeing, grubbing	0	0	161	31	494	5993	161	31	0	0	0	0
Physical+ --clipping seed head or plant, using hand-held string trimmer, placing mulch or tarp		20-30/yr	0	0	0	0	0	0	527	139	116	19
Herbicide and/or Physical + Treatments	0	0	333	5961	0	0	333	5961	0	0	371	116
Herbicide	0	0	42	907	0	0	42	907	0	0	46	65
Limited Treatment <sup>1</sup>	0	0	0	0	0	0	0	0	9	100	3	100
Goat Grazing (potential) (physical + /herbicide)	0	0	0	0	0	0	0	0	5	41	5	41
Total Sites and Acres Potentially Treated with Herbicides (includes ED-RR acres)	0	0	355	6868 <sup>2</sup>	0		355	7068 <sup>3</sup>	0	0	425	522 <sup>4</sup>
Total Inventoried Acres Treated	0	0	536	6899	494	5993	536	6899	532	280	541	341

<sup>1</sup> Includes treating along borders of infestations to prevent spread, using the methods specific to each Alternative. Treatment is estimated at 100 acres, to be proportionally distributed based on the size of the individual infestations. These acres are included in the Inventoried Noxious Weeds Treated acreage.

<sup>2</sup> This includes acres under the physical and/or herbicide method, plus the herbicide-treated acres.

<sup>3</sup> This includes acres under the physical and/or herbicide method, the herbicide-treated acres, and the potentially treated areas under Early Detection – Rapid Response (200 acres).

<sup>4</sup> This acreage includes the Physical+ and/or herbicide acres, the herbicide acres, the acres under goat grazing, the acres under the limited-treatment category, and the 200 acres potentially treated under Early Decion – Rapid Response.

Total Inventoried Weeds (2004): 541 sites covering 6908 acres.

Note: This table can be found in the FEIS as Table 2-11.

**Table 5. Comparison of Extent of Weed Treatments (Full, Partial, Limited, No Treatment)**

Treatment Time Frame	Alternative 1 (No Action)		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6	
	Ongoing		5 years		10 years		10 years		10 years		10 years	
	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres	Sites	Acres
Inventoried Weeds Full Treatment		20-30/yr <sup>1</sup>	520	5995	494	5993	520	5995	520	180	538	241
Inventoried Weeds Partial Treatment	0	0	16 <sup>2</sup>	904 <sup>3</sup>	0	0	16 <sup>2</sup>	904 <sup>5</sup>	0	0	0	0
Inventoried Weeds Limited Treatment	0	0	0	0	0	0	0	0	9	100	3	100 <sup>6</sup>
Not Inventoried - Treated Through Early Detection – Rapid Response (100 acres max/yr) <sup>8</sup>	0	0	0	0	0	0		200		200		200
Total Acres of Weeds Treated		20-30/yr		6899		5993		7099		480		541
Total Acres of Inventoried Weeds Treated		20-30/yr		6899		5993		6899		280		341
% of Total Inventoried Weeds Treated		.3 - .4%		87%		87%		99%		4%		5%
Inventoried Weeds with No Treatment		6878	5 <sup>2</sup>	9	47 <sup>4</sup>	916	5 <sup>2</sup>	9	5 <sup>2</sup>	5515		6567 <sup>7</sup>
Total Inventoried Weeds (2004)			541	6908	541	6908	541	6908	541	6908	541	6908

<sup>1</sup> Under current management, approximately 20 to 30 acres of noxious weeds are treated each year through other site-specific NEPA decisions, as part of other projects, in accordance with the Modoc NF Integrated Weed Management Strategy (2005).

<sup>2</sup> Excluded 5 sites of rhizomatous species that are within 10' of live water, and partial acreage of 16 sites of rhizomatous species that are within 10' of live water. Rhizomatous species will not be treated by physical means.

<sup>3</sup> These sites have rhizomatous species that occur within 10' of water. Acreage within that zone would not be treated. Acreage outside the zone would receive partial treatment with herbicides.

<sup>4</sup> Excluded 47 sites of rhizomatous species composed of 916 acres.

<sup>5</sup> These sites have rhizomatous species that occur within 10' of water. Acreage within that zone would not be treated. Acreage outside that zone would receive partial treatment and be treated with herbicides.

<sup>6</sup> These sites will receive limited treatment around the perimeter, estimated at 100 acres proportionally distributed based on the size of these sites.

<sup>7</sup> Excluded 5,658 acres of dyer's woad, 850 acres of Dalmatian toadflax, and 159 acres of crupina.

<sup>8</sup> Acres treated with Early Detection – Rapid Response may use any of the methods approved for use in this decision.

Re-treatment of the Same Acres in all Alternatives is not considered new acres treated.

Note: This table can be found in the FEIS as Table 2-12.