Panther Fire Salvage and Reforestation Project
Noxious Weed Report

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Abstract

Regulatory Framework
Forest Service Manual 2080 and Forest Plan Standards and Guidelines require that all projects be evaluated for the risk of noxious weed introduction and spread as a result of project activities. In addition, projects must be designed to reduce the risk of weed introduction or spread.

Methodology for Analysis
The Klamath National Forest Noxious Weed list was developed from the California Department of Food and Agriculture, Siskiyou County Department of Agriculture and California Invasive Plant Inventory lists. Based on inventories and current understanding of species’ ranges, there are a total of twenty-six high priority weeds on the Klamath National Forest Noxious Weed List, and fifteen species of lesser concern (USDA 2009).

The Forest Noxious Weed Database was used for information on noxious weed sites that are currently mapped within or adjacent to the project area. Inventory in the project area was conducted from 2002 to 2009 by the Forest Noxious Weed program. Project specific weed surveys were conducted in September 2008 and June – August 2009 as part of the post-fire Burned Area Emergency Rehabilitation (BAER) surveys.

The effects analysis was conducted based on current distribution of weed species in habitats similar to those found in the proposed treatment areas and on the types of proposed project activities. The estimation of risk of weed spread and introduction of new weed invaders from the proposed activity is based on peer-reviewed literature, experience in the project area and on similar sites in the KNF, and professional judgment. This effects analysis is based on the Noxious Weed Risk Assessment conducted for the Panther Fire Salvage and Reforestation Project (USDA 2010). Effects of proposed actions on noxious weed spread are based on the amount of canopy removal, on the predicted amount of soil and/or understory vegetation disturbance, and on the predicted effectiveness of the mitigation measures in each alternative. Proposed actions with greater disturbance of existing vegetation and with greater soil disturbance will have a higher risk of weed spread.

Affected Environment
Within the Panther project area, there are currently two sites infested with two species of listed noxious weeds. Scotch broom (Cytisus scoparius) and dyer’s woad (Isatis tinctoria) are present in the meadow just below Norcross Campground, to the west of road 16N05. This site is not within an area proposed for project activities. Both species have been treated at this site since 2005, and no new plants have been seen in monitoring conducted in 2006-2009. One additional site is within the project area boundary, but is on private land and not in a project treatment unit. It is adjacent to a roadside hazard tree removal unit near Sulphur Springs. The next closest weed site is located 3 miles outside the project area boundary.

Scotch broom is an introduced woody shrub which spreads primarily by animal or vehicle transport of seed. Dyer’s woad is an annual or biennial which also has heavy seed which isn’t
spread by wind. Seeds are primarily transported by animals or in vehicle tire tread or by heavy equipment.

Environmental Consequences

Mitigation and Monitoring

Mitigation for weed species of concern has been incorporated into the proposed action. These measures are designed to reduce the risk of introduction of new weed species locations into the project area as a result of the project activities, and to reduce the risk of spread of existing weed sites present within the project area. These include:

- Equipment and vehicle exclusion from the known weed site within the project area to reduce the risk of seed spread from the known site.
- Washing heavy equipment prior to entry onto Forest Service lands to reduce the risk of introduction of new weed sites into the project area.
- Requiring the use of County certified weed free seed and straw, if used within the project area, to reduce the risk of introduction of new weed sites into the project area.
- Monitoring the project area for 3 years after implementation to quickly detect and treat potential new weed introductions.

For new weed invaders, the estimated effectiveness of the above measures is high; and the measures are expected to be very effective at preventing establishment of new invaders. The equipment exclusion measures are expected to be very effective at reducing the spread of these species in the project area by preventing the spread of seed on vehicle tires and in the tracks of heavy equipment.

Alternative 1 - No Action

Direct and Indirect Effects

Under this alternative, there would be no project related activities, and the potential for new weed introduction would remain unchanged. Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed. New weed sites may still be introduced through recreational vehicular use of the project area. As an indirect effect, vegetative recovery would proceed in the project area, and the increase in vegetative cover would reduce the potential for new weed sites to become established. The rate of spread of the existing weed sites would remain unchanged.

Cumulative Effects

When combined with the past, current, and reasonably foreseeable activities within the project area, there is an overall very low potential for noxious weed introduction and spread from this alternative. Some new sites may be introduced through natural processes or through the past Panther Fire suppression activities. These sites would be detected and treated through post-BEAR monitoring and treatment. Since the existing sites of noxious weeds of concern are currently being controlled with hand pulling methods, and would continue to be treated, the rate of spread is likely to be very low. There is a very low potential for cumulative effects from this alternative.
Alternative 2 - Proposed Action

Direct and Indirect Effects
In this alternative, there is a high potential for new weed introduction and existing weed spread within the project area. Weed sources are present within the project area and adjacent along access roads, and can be a source of new weed introductions. The high level of habitat alteration from the 2008 Panther Fire has made the area vulnerable to weed establishment. The additional ground disturbance from salvage harvest systems, fuel treatments, temporary access road and new landing construction, and use of existing landings would add a small amount of additional ground vulnerable to weed establishment. Reforestation within the harvest units would reduce the vulnerability of those areas to weed establishment.

Mitigation measures have been developed for this project that have an expected high level of effectiveness, and the overall potential for direct and indirect effects within the project area is low. The potential for new weed site introduction through project activities would be reduced through equipment washing measures and the use of weed free seed and straw. This is expected to greatly reduce the amount of weed seed introduction into the site. Heavy equipment would be excluded from the existing weed site within the project area, which would prevent the transfer of seed from these sites into others areas in the project by equipment. The post-project implementation weed monitoring and treatment would detect any new sites that may become established within the project area. Quickly treating these sites has a high probability of preventing new weed site establishment.

Cumulative Effects
In this alternative, mitigation measures are expected to have a high degree of effectiveness in reducing the risk of weed introduction or spread as a result of project implementation. Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed unchanged in this alternative. New weed sites may still be introduced through recreational vehicular use of the project area. These sites would be detected and treated through the post-fire BAER inventories and the Panther Fire Salvage and Reforestation related inventories and treatment. Overall, when project mitigation measures are applied, there would be a low potential for noxious weed introduction and spread from this alternative, and a low potential for cumulative effects.

Alternative 3 – Roadside Hazard Tree Removal and Fuels Treatment Only

Direct and Indirect Effects
The effects to the risk of noxious weed spread from this alternative would be less than the Proposed Action, but more than the No Action alternative. There would be no temporary road construction or timber salvage harvest related ground disturbance, which would reduce the risk of new weed invaders or spread of existing sites. Revegetation of the existing burned timber stands would likely proceed at a pace slower than the conifer regeneration proposed in Alternative 2. The mitigation measures proposed in this alternative would be the same as in Alternative 2.

Cumulative Effects
In this alternative, mitigation measures are expected to have a high degree of effectiveness in reducing the risk of weed introduction or spread as a result of project implementation.
Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed unchanged in this alternative. New weed sites may still be introduced through recreational vehicular use of the project area. These sites would be detected and treated through the post-fire BAER inventories and the Panther Fire Salvage and Reforestation Project related inventories and treatment. Overall, when project mitigation measures are applied, there would be a low potential for noxious weed introduction and spread from this alternative, and a low potential for cumulative effects.

**Compliance With the Forest Plan and Other Regulatory Direction**

Forest Service Manual 2080 and Forest Plan Standards and Guidelines require that all projects be evaluated for the risk of noxious weed introduction and spread as a result of project activities. In addition, projects must be designed to reduce the risk of weed introduction or spread. In both action alternatives, project design features have been incorporated that are expected to reduce the risk of weed introduction and spread. Forest Plan Standards and Guidelines and Manual direction would be met.
Introduction

The Klamath National Forest (KNF) has placed a high priority on management of noxious weeds, which includes reducing management related introduction and spread of noxious weeds on the Forest (USDA 2001). The purpose of this document is to evaluate the Panther Fire Salvage and Reforestation Project in sufficient detail to determine its effects on noxious weed species.

Regulatory Framework

Forest Service Manual (FSM) 2080 Noxious Weed Management (USDA 1995) includes a policy statement calling for a risk assessment for noxious weeds to be completed for every project. Specifically, the manual states:

2081.03 -Policy. When any ground disturbing action or activity is proposed, determine the risk of introducing or spreading noxious weeds associated with the proposed action.

1. For projects having moderate to high risk of introducing or spreading noxious weeds, the project decision document must identify noxious weed control measures that must be undertaken during project implementation.

2. Use contract and permit clauses to reduce the risk of the introduction or spread of noxious weeds by contractors and permittees. For example, where determined to be appropriate, use clauses requiring contractors or permittees to clean their equipment prior to entering National Forest System lands.

2081.2 -Prevention and Control Measures. Determine the factors that favour the establishment and spread of noxious weeds and design management practices or prescriptions to reduce the risk of infestation or spread of noxious weeds.

Where funds and other resources do not permit undertaking all desired measures, address and schedule noxious weed prevention and control in the following order:

1. First Priority: Prevent the introduction of new invaders,
2. Second Priority: Conduct early treatment of new infestations, and
3. Third Priority: Contain and control established infestations.

The Klamath National Forest (KNF) has placed a high priority on management of noxious weeds. Management includes reducing management related introduction and spread of noxious weeds on the Forest (USDA 2001). The KNF Land and Resource Management Plan includes Forest-wide Standards and Guidelines for vegetative management that call for all silvicultural practices to consider how to best prevent introducing noxious or alien weeds (USDA 1994, p.4-59).

Additional direction is found in Executive Order #13112 (1999).

- Identify actions that may affect the status of invasive species.
- Use relevant programs and authorities to: (a) prevent the introduction of invasive species; (b) detect and respond rapidly to and control populations in a cost-effective and environmentally
sound manner; (c) monitor; (d) restore; (e) research; and (f) promote public education on invasive species.

- Not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species.
- Coordinate these duties with the National Invasive Species Council that coordinates Federal strategies to address the problem of noxious weeds.

Methodology for Analysis

Noxious Weed List
The California Department of Food and Agriculture (CDFA 2005), and the Siskiyou County Department of Agriculture manage weeds by use of the same list and risk rating criteria. There are approximately 30 species of State and County listed noxious and invasive weeds known within the Klamath National Forest. The State and County listing process was developed primarily to address agricultural concerns. The California Invasive Plant Council (Cal-IPC) identifies species that may threaten forest and rangeland ecosystems in their California Invasive Plant Inventory (Cal-IPC 2006).

The Klamath National Forest Noxious Weed List includes high priority plants (H) from the State and County lists that are known or expected to occur on the Klamath National Forest. There are fifteen species of lesser concern that may be addressed in projects if those species are a problem locally. Based on inventories and current understanding of species’ ranges, a total of twenty-six high priority weeds are on the Klamath National Forest Noxious Weed List (USDA 2009). This list is used for resource management and decision-making, and is subject to change to reflect new information.

Inventory and Mapping
The International Data Standards for Invasive Plant Inventory, Monitoring, and Mapping Protocol is being implemented on the Klamath National Forest. The National Resource Information System (NRIS) is the database of record for noxious weed populations. This database and the Forest Noxious Weed Database was used for information on noxious weed sites that are currently mapped within or adjacent to the project area. Inventory in the project area was conducted from 2002 to 2009 by the Forest Noxious Weed program. Project specific weed surveys were conducted in September 2008 and June-August 2009 as part of the post-fire Burned Area Emergency Rehabilitation (BAER) surveys. Surveyors were trained in the identification of the target species. Surveys were timed to correspond with the season in which the species could be most readily identified.

In addition, BAER funds have been programmed and weed crews hired to conduct inventories and weed treatment within the Panther fire area. Monitoring of all areas impacted by fire suppression activities would be conducted, and new introductions of noxious weed sites would be treated by hand-pulling as soon as they are discovered.
Effects Analysis

Analysis was conducted based on current distribution of weed species in habitats similar to those found in the proposed treatment areas and on the types of proposed project activities. The estimation of risk of weed spread and introduction of new weed invaders from the proposed activity is based on peer-reviewed literature, experience in the project area and on similar sites in the KNF, and professional judgment. This effects analysis is based on the Noxious Weed Risk Assessment conducted for the Panther Fire Salvage and Reforestation Project (USDA 2010).

Effects of proposed actions on noxious weed spread are based on the amount of canopy removal, on the predicted amount of soil and/or understory vegetation disturbance, and on the predicted effectiveness of the mitigation measures in each alternative. Proposed actions with greater disturbance of existing vegetation and with greater soil disturbance will have a higher risk of weed spread.

The cumulative effects analysis area describes the area beyond which effects of the proposed project cannot be detected. Determination of the cumulative effects area for weeds considered the extent of currently documented weed infestations and likely seed dispersal distances. Transport of weed seeds into or out of the project area is possible, with occasional transport over long distances (such as on vehicles). However, it would be difficult to predict the extent of such long-distance dispersal. It is likely that most seeds of noxious weeds would fall close to the parent plant. In addition, road systems and lands adjacent to the project area have noxious weed infestations similar in composition and distribution to those in the project area, so transport of weed seeds to these lands from the project area would have little additional impact. For these reasons, the cumulative effects analysis area for noxious weeds is the project area.

Cumulative effects with regard to noxious weeds from proposed activities are generally described as very low, low, moderate or high, with the following definitions:

- very low = no measurable effect on existing weed infestations or susceptible habitat
- low = existing weed infestations and/or susceptible habitat not likely affected
- moderate = existing weed infestations or susceptible habitat affected, with the potential for expansion into uninfested areas and/or establishment of new invaders
- high = weed infestations and/or susceptible habitat affected, with a high likelihood of expansion into uninfested areas and/or establishment of new invaders

Affected Environment

Existing Condition

Within the Panther Fire Salvage and Reforestation project area, there are currently two sites infested with two species of listed noxious weeds (Table 1).
Table 1. High Priority Weeds and Species of Local Concern

<table>
<thead>
<tr>
<th>Population</th>
<th>Location</th>
<th>Proposed Treatment Unit</th>
<th>Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scotch broom population# CYSC4-21</td>
<td>In meadow to west of road 16N05, just below Norcross Campground.</td>
<td>None</td>
<td>No project related equipment and vehicles allowed to operate or park within weed site.</td>
</tr>
<tr>
<td>Isatis tinctoria (ISTI) dyer’s woad population# ISTI-33</td>
<td>In meadow to west of road 16N05, just below Norcross Campground.</td>
<td>None</td>
<td>No project related equipment and vehicles allowed to operate or park within weed site.</td>
</tr>
<tr>
<td>Isatis tinctoria (ISTI) dyer’s woad population# ISTI-53</td>
<td>In meadow to west of road 16N05, near Sulphur Springs, on private land.</td>
<td>None – on private land.</td>
<td>None – this is outside project treatment units on private land.</td>
</tr>
</tbody>
</table>

Scotch broom – *Cytisus scoparius* – CYSC4

This species, introduced from Europe and North Africa, is an aggressive, woody shrub in the pea family. Seedlings become reproductive after 2-3 years. The pods produce smooth seeds that are forcibly ejected when the pods dry. It spreads by prodigious seed production. One medium-sized shrub can produce over 12,000 seeds a year. After ballistic dispersal, seeds are further dispersed by ants, animals, or in mud clinging to road grading or maintenance machinery. Because the seeds are smooth, they are not dispersed in animals’ fur. Scotch broom is also readily dispersed by rain wash on slopes (Bossard 1991). Plants can resprout from the root crown after cutting or freezing and sometimes after fire (Bossard and Rejmanek 1994). Since Scotch broom can grow more rapidly than most trees used in forestry, it shades out tree seedlings in areas that are revegetated after tree harvest. Scotch broom burns readily and carries fire to the tree canopy, increasing both the frequency and intensity of fires (Parsons 1992). This species is difficult to control because of its substantial and long-lived seedbank.

Known Sites

Scotch broom is present in the meadow just below Norcross Campground, to the west of road 16N05. This site (CYSC4-21) was treated by hand-pulling in 2005, and no new plants have been seen in monitoring conducted in 2006-2009. No vehicles or equipment have been allowed to park or operate on this site since 2005. Seeds from this population may still be present in the soil at the population site.

Dyer’s woad – *Isatis tinctoria* – ISTI

Dyer’s woad is a winter annual, biennial or short-lived perennial (Whitson 2000). Seeds germinate in the fall, rosettes appear in early spring, and the plants overwinter. The following spring the rosette bolts, and the stems branch out to produce many flowering stalks. Dyer’s woad flowers from April to June, and until August in higher elevations (NWCB 2009). Flower production is related to temperature, and plants growing at higher elevations produce later flowers. The plant dies after seed production. Resprouting will occur from the taproot near the crown of the plant for several years if it is mechanically injured (NWCB 2009). Seeds are
dispersed by vehicles along roadways, along waterways and by animals through ingestion. Seeds are spread as a contaminant in feed, crop seed and bedding. Because the seeds are smooth, they are not dispersed in animals’ fur. The seeds fall usually within 22” of the parent plant, but wind can disperse seeds up to 8 feet, before snowfall (NWCB 2009).

**Known Sites**

Dyer’s woad is present in the meadow just below Norcross Campground, to the west of road 16N05. This site (ISTI-33) has been treated by hand-pulling from 2005-2009. No vehicles or equipment have been allowed to park or operate on this site since 2005. It is likely that seeds from this population are still present in the soil at the population site. One additional site is not in a project treatment unit (ISTI-53), but is on private land adjacent to a roadside hazard tree removal unit. This is in an area that will not have any project related impacts on site because it is on private land.

**Desired Condition**

In the foreseeable future, the Panther Fire Salvage and Reforestation Project area would continue to have a low risk for noxious weed introduction or spread. Forest Service Manual and Forest-wide Standards and Guidelines would be met by treating and controlling existing weed sites and by reducing the risk of management related weed introduction or spread.

**Environmental Consequences**

**Mitigation and Monitoring**

Mitigation for weed species of concern has been incorporated into the proposed action. These measures are designed to reduce the risk of introduction of new weed species locations into the project area as a result of the project activities, and to reduce the risk of spread of existing weed sites present within the project area.

**Noxious Weeds – Prevention Measures**

1) All vehicles and heavy equipment would be prevented from operating or parking in the meadow immediately below the Norcross Campground (known sites ISTI-33 and CYSC4-21).

2) B6.35 – Equipment Cleaning. (6/2006) This clause would be included in the contract whenever heavy equipment is used to treat fuels, and in the timber sale contract.

3) C6.349 – Use Of State Of California Certified Weed Free Hay, Straw, And Mulch Used In This Contract. (8/2006) Wherever seed and/or straw is used to restore areas of ground disturbance, certified weed free seed and straw would be specified in the contract.

4) Monitoring – The project area would be monitored for 3 years after project implementation is completed. Any new locations of noxious weeds discovered would be immediately controlled by hand-pulling methods.

**Estimated Effectiveness**

These mitigation measures are accepted weed prevention practices developed by public land management agencies and university cooperative extension offices and promoted by weed

For new weed invaders, the estimated effectiveness of the above measures is high; and the measures are expected to be very effective at preventing establishment of new invaders. According to current research (Hobbs and Humphries 1995), early detection and treatment of infestations before explosive spread occurs can significantly reduce the social cost of weed invasions.

For existing infestations that occur within the project area, estimated effectiveness is high. The equipment exclusion measures are expected to be very effective at reducing the spread of these species in the project area by preventing the spread of seed on vehicle tires and in the tracks of heavy equipment.

Existing weeds and new invaders are also spread by wildlife, winds, water and recreational use. The mitigation measures would have no effect on these sources of weed spread.

**Alternative 1 - No Action**

In this alternative, current management plans would continue to guide management of the project area. No timber salvage, fuels reduction activities, conifer reforestation, manual release, roadside hazard tree removal or roadwork would be implemented to accomplish project objectives. Stand development and fuel dynamics currently occurring in the project area would continue. The effects to noxious weed spread from this alternative are related to the increased rate of revegetation that would result from the No Action alternative. This analysis is based on the Panther Salvage Project Noxious Weed Risk Assessment. (USDA 2009). That information will only be summarized here.

**Direct and Indirect Effects**

Under this alternative, there would be no project related activities, and the potential for new weed introduction would remain unchanged. Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed. New weed sites may still be introduced through recreational vehicular use of the project area. As an indirect effect, vegetative recovery would proceed in the project area, and the increase in vegetative cover would reduce the potential for new weed sites to become established. The rate of spread of the existing weed sites would remain unchanged.

**Cumulative Effects**

For the cumulative effects analysis, past, current, and foreseeable actions include the activities listed in Table 1-1, Past, Current and Reasonably Foreseeable Activities, Panther Fire Salvage and Reforestation E.A. This analysis also considers routine road maintenance activities which would occur independent of the currently proposed actions, current and ongoing recreational use of the project area, the current and ongoing weed treatment of the existing sites, and the post-BAER inventories and treatment.

When combined with the past, current, and reasonably foreseeable activities within the project area, there is an overall very low potential for noxious weed introduction and spread from this alternative. Some new sites may be introduced through natural processes or through the past
Panther Fire salvage and reforestation project. These sites would be detected and treated through post-BEAR monitoring and treatment. Since the existing sites of noxious weeds of concern are currently being controlled with hand pulling methods, and would continue to be treated, the rate of spread is likely to be very low. There is a very low potential for cumulative effects from this alternative.

**Alternative 2 - Proposed Action**

In this alternative, timber salvage, fuels reduction activities, conifer reforestation, and temporary road construction would be implemented to accomplish project objectives. The effects to noxious weeds in this alternative are related to the increased amount of timber harvest, road construction and new landing related disturbance, and use of existing landings that would occur, relative to the No Action alternative.

**Direct and Indirect Effects**

Interactions between the project activities and the potential for new weed introduction or spread of existing weeds are discussed in detail in the Panther Salvage Project Weed Risk Assessment (USDA 2009), and summarized here. In this alternative, the five risk factors combined have a high potential for new weed introduction and existing weed spread within the project area. Weed sources are present within the project area and adjacent along access roads, and can be a source of new weed introductions. The high level of habitat alteration from the 2008 fire has made the area vulnerable to weed establishment. The additional ground disturbance from salvage harvest systems, fuel treatments, temporary access road and new landing construction, and use of existing landings would add a small amount of additional ground vulnerable to weed establishment. Manual release and roadside hazard tree removal is expected to have only minimal effects on the rate of weed spread due to the low amount of soil disturbance from these activities. Reforestation within the harvest units would reduce the vulnerability of those areas to weed establishment.

Mitigation measures have been developed for this project that have an expected high level of effectiveness, and the overall potential for direct and indirect effects within the project area is low. The potential for new weed site introduction through project activities would be reduced through equipment washing measures and the use of weed free seed and straw. This is expected to greatly reduce the amount of weed seed introduction into the site. Heavy equipment would be excluded from the existing weed site within the project area, which would prevent the transfer of seed from these sites into others areas in the project by equipment. The post-project implementation weed monitoring and treatment would detect any new sites that may become established within the project area. Quickly treating these sites has a high probability of preventing new weed site establishment.

**Cumulative Effects**

For the cumulative effects analysis, past, current, and foreseeable actions include the activities listed in Table 1-1, Past, Current and Reasonably Foreseeable Activities, Panther Fire Salvage and Reforestation E.A. This analysis also considers the proposed actions in the Panther Fire Salvage and Reforestation project, routine road maintenance activities which would occur independent of the currently proposed actions, current and ongoing recreational use of the project area, the current and ongoing weed treatment of the existing sites, the post-BAER inventories and treatment, and the mitigation measures that would be incorporated into the Proposed Action.

Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed unchanged in this alternative. New weed sites may still be introduced through
recreational vehicular use of the project area. These sites would be detected and treated through the post-fire BAER inventories and the Panther Fire Salvage and Reforestation related inventories and treatment. Overall, when project mitigation measures are applied, there would be a low potential for noxious weed introduction and spread from this alternative, and a low potential for cumulative effects.

**Alternative 3 – Roadside Hazard Tree Removal and Fuels Treatment Only**

**Direct and Indirect Effects**

In this alternative, only roadside hazard trees would be removed, and the only fuels treatment would be within the roadside hazard tree removal units in a 200 ft. strip on both sides of the roads. The effects to the risk of noxious weed spread from this alternative would be less than the Proposed Action, but more than the No Action alternative. There would be no temporary road construction or timber salvage harvest related ground disturbance, which would reduce the risk of new weed invaders or spread of existing sites. Revegetation of the existing burned timber stands would likely proceed at a pace slower than the conifer regeneration proposed in Alternative 2. The mitigation measures proposed in this alternative would be the same as in Alternative 2.

**Cumulative Effects**

For the cumulative effects analysis, past, current, and foreseeable actions include the activities listed in Table 1-1, Past, current and reasonably foreseeable activities, Panther Fire Salvage and Reforestation Project E.A. (USDA 2010). This analysis also considers the proposed roadside hazard tree removal and fuel treatment activities in the Alternative 3, routine road maintenance activities which would occur independent of the currently proposed actions, current and ongoing recreational use of the project area, the current and ongoing weed treatment of the existing sites, the post-BAER inventories and treatment, and the mitigation measures that would be incorporated into Alternative 3.

Introduction of new weeds through natural processes such as wind, water, and wildlife would proceed unchanged in this alternative. New weed sites may still be introduced through recreational vehicular use of the project area. These sites would be detected and treated through the post-fire BAER inventories and the Panther Fire Salvage and Reforestation Project related inventories and treatment. Overall, when project mitigation measures are applied, there would be a low potential for noxious weed introduction and spread from this alternative, and a low potential for cumulative effects.

**Compliance With the Forest Plan and Other Regulatory Direction**

Forest Service Manual 2080 and Forest Plan Standards and Guidelines require that all projects be evaluated for the risk of noxious weed introduction and spread as a result of project activities. In addition, projects must be designed to reduce the risk of weed introduction or spread. In all alternatives, Project Design Standards have been incorporated into the Proposed Action which are expected to reduce the risk of weed introduction and spread. Forest Plan Standards and Guidelines and Manual direction will be met.
References


