

# Cliff Knox Project

## Invasive Plants Report

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## Introduction

This report analyzes potential effects or impacts from the proposed actions and alternatives to invasive plants, defined as “non-native plants” whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112).

## Regulatory Framework

Executive Order 13112 directs federal agencies to identify actions that may affect the status of invasive species, to prevent the introduction of invasive species, and to not carry out actions that are likely to cause or promote the introduction or spread of invasive species unless all feasible and prudent measures to minimize risk of harm would be taken in conjunction with the actions (Executive Order 13112, Section 2 and 3).

Forest Service policy directs the agency to determine the risk of introducing, establishing, or spreading invasive plants associated with any proposed action. This serves as an integral component of project planning and analysis, and where necessary, provide alternatives or mitigation measures to reduce or eliminate that risk prior to project approval (Forest Service Manual 2900).

This document is consistent with the Malheur National Forest Land and Resource Management Plan (hereafter Malheur Forest Plan). It states that the “Prevention of invasive plant introduction, establishment, and spread would be addressed in watershed analysis, roads analysis, fire and fuels management plans, ... vegetation management plans, and other land management assessments,” as amended by Prevention Standard 1 of the Pacific Northwest Region 2005 Preventing and Managing Invasive Plants Record of Decision (hereafter R6 2005 ROD) and the Malheur 2015 Site-Specific Invasive Plants Treatment Project Record of Decision (hereafter 2015 Invasive ROD).

This report also fulfills, in part, requirements of the National Environmental Policy Act of 1969 which directs federal agencies to “Ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken” (40 CFR §1500.1(b)).

## Issues and Design Criteria

Issues (objectives) for the proposed projects in the planning area and the related design criteria can be found in the Cliff Knox Final Environmental Impact Statement, Appendix C – Project Design Criteria.

## Resource Indicators and Measures

Direct and indirect physical disturbance has the potential to create bare ground and subsequently increase vulnerability of invasive plant introduction and infestation. Presence of invasive plant vectors (e.g. vehicles, heavy equipment, roads, landings, burning, etc.) have the potential to introduce and spread invasive plants into disturbed areas.

**Table 1. Resource element, indicator, and measure for assessing effects to invasive plants**

Resource element	Resource indicator	Measure	Indicator source
Invasive plants	Potential for introduction and spread of invasive plants	Extent of ground disturbance and vector presence	Executive Order 13112; Forest Service Manual Chapter 2900; Malheur Forest Plan Forest-wide Standard 188, R6 2005 ROD, and 2015 Invasive ROD

## Invasive Plants

### Methodology

A pre-field review was conducted to determine where existing infestation sites were known to occur within the planning area. The findings were used to help target specific areas for more in-depth, on-the-ground surveys.

### Information Sources

The pre-field review includes the following list of sources:

- Oregon Weed Mapper
- National Resource Information System Forest Service database

After we completed the pre-field review, we conducted surveys for invasive plants throughout the planning area from 2014 through 2016. We continue to conduct spot checks and new targeted surveys annually in the planning area.

The following assumptions were used to guide the determination of environmental consequences (effects or impacts). The analysis would only consider plant species identified as “invasive” (as defined in Executive Order 13112) by (1) the scientific literature as related to the local ecosystems, (2) the 2015 Invasive ROD, (3) botanists, ecologists, or invasive plant specialists with local knowledge and experience, (4) the Oregon Department of Agriculture as presented in their state noxious weeds list, and (5) new species to the ecoregion that may have the potential to become invasive (early detection rapid, response scenario).

Proposed actions are considered to have a “Beneficial Effect” on invasive plant management if they would reduce the distribution and size of invasive plant infestations as a direct or indirect effect of the actions. A “No Effect” determination is given if there would be no net increase or decrease in the potential number and size of invasive plant infestations as a direct or indirect result of the action (or consequence of the decision, e.g. no action). A determination of “May Detrimentially Impact” is given for proposed actions that may increase the potential number and size of invasive plant infestations as a direct or indirect result of the action (40 CFR §1508.8).

For this analysis, all invasive plant species are considered to be the same in regard to effects determinations. While some species may respond more aggressively due to (1) the nature of the disturbances associated with the various proposed actions, and (2) the biological and ecological characteristics of the species, all of the documented invasive plants have the potential to increase in distribution and cover with an increase in ground disturbance and vector presence.

### Incomplete and Unavailable Information

While there is a high level of confidence that most invasive plant occurrences have been discovered, some areas (e.g. roads, campsites, livestock holding facilities) have perpetual disturbance and vector presence, and thus new invasive plant infestations can potentially arise on an annual basis. For this reason, these areas would continue to be surveyed and monitored indefinitely for invasive plants.

### Spatial and Temporal Context for Effects Analysis

#### *Direct and Indirect Effects Boundaries*

The spatial context for effects analysis includes all of the proposed units and haul routes of the action alternatives. The temporal context includes the timeframe when the proposed actions would occur, the

past few decades as related to invasive plant management, and the foreseeable future after the operations cease.

### ***Cumulative Effects Boundaries***

Cumulative effects boundaries, both spatial and temporal, are the same as for direct and indirect effects boundaries, above.

## **Affected Environment**

### **Existing Condition**

The planning area has been surveyed for plant species. This includes surveys for invasive plants and all other botanical species, collective work accomplished by Forest Service botanists and technicians (see the Botany Report for more information on rare plants and their habitats in the planning area).

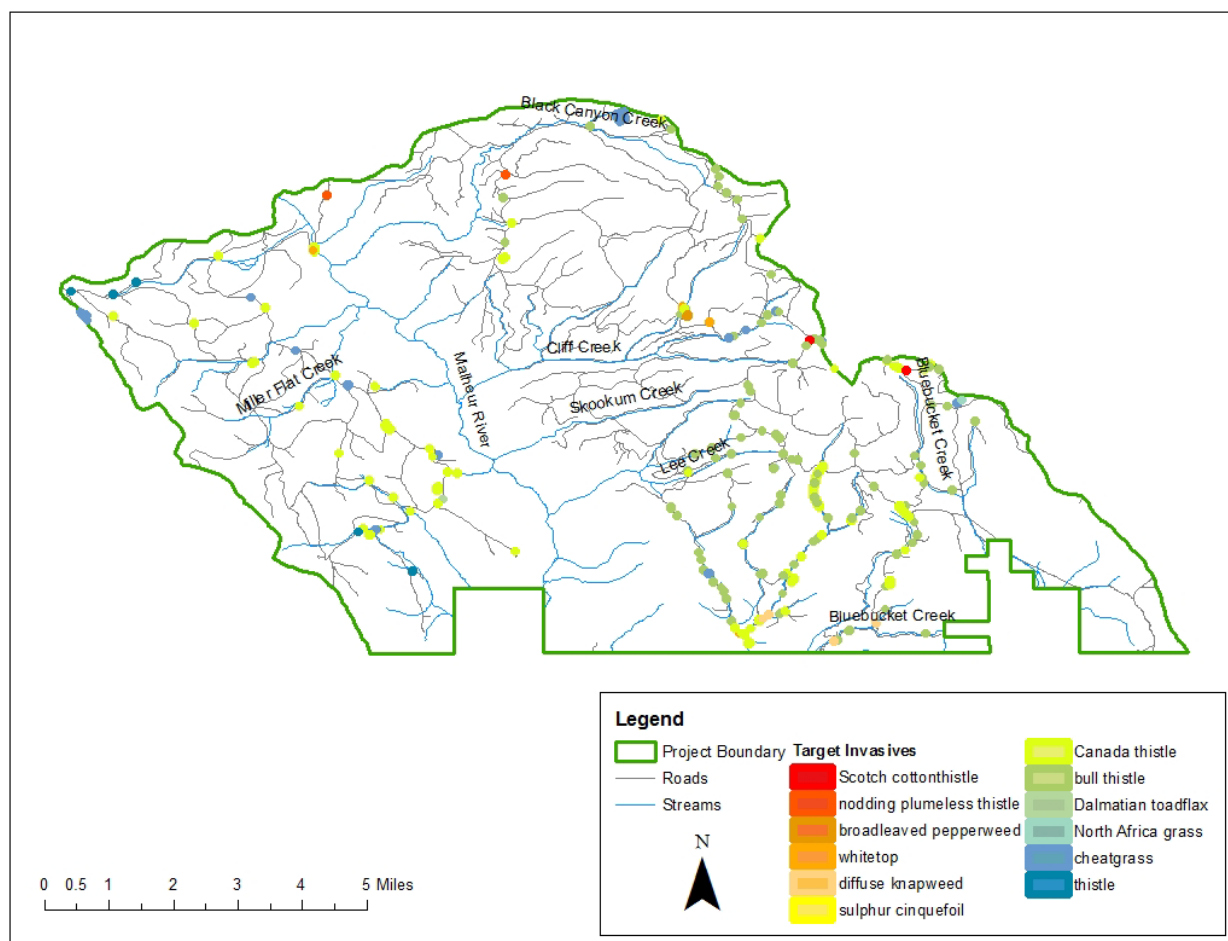
To date, there are 24 documented species of non-native plants that cover 168 acres of the planning area. Of those, 11 are identified as target invasive species for treatment under the 2015 Invasive ROD (Figure 1): whitetop (*Cardaria draba*), musk thistle (*Carduus nutans*), diffuse knapweed (*Centaurea diffusa*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), houndstongue (*Cynoglossum officinale*), broadleaved pepperweed (*Lepidium latifolium*), Dalmatian toadflax (*Linaria dalmatica*), Scotch cottonthistle (*Onopordum acanthium*), sulphur cinquefoil (*Potentilla recta*), and North Africa grass (*Ventenata dubia*).

Annual invasive grasses were documented on 22 acres and include cheatgrass (*Bromus tectorum*), bulbous bluegrass (*Poa bulbosa*) and North Africa grass. All of the other occurrences are non-native plants that do not clearly meet the federal definition of “invasive” (as defined in Executive Order 13112) in the local ecosystems, and include intermediate wheatgrass (*Thinopyrum intermedium*), dandelion (*Taraxacum officinale*) and mullein (*Verbascum thapsus*). The majority of non-native and invasive plants occur along roads, in rock pits, and at dispersed campsites. Approximately 18 acres throughout the planning area have already had invasive species treatments.

Invasive plants would not be considered special or unique resource values that require separate effects analysis within undeveloped lands. We have documented populations of invasive plants within undeveloped areas, but these infestations occur along or nearby existing roads, therefore management of these species would not impact undeveloped areas. Invasive plants identified within the project footprint are fully described in the invasive plants resource report in the project record. Effects to invasive plants from proposed project treatment activities would not differ based on the description of land (undeveloped). Management direction and project design criteria are required to ensure compliance and avoid adverse impacts and would be implemented during operations across all NFS lands. Therefore, the description of effects is not differentiated further in the analysis and include proposed vegetation activities and the associated connected actions to complete project activities. Activities proposed within undeveloped areas greater than 1,000 acres are described in the undeveloped areas section of the FEIS.

### **Desired Condition**

The R6 2005 ROD added the following desired future condition statement to the Malheur Forest Plan: “... healthy native plant communities remain diverse and resilient, and damaged ecosystems are being restored. High quality habitat is provided for native organisms throughout the Forest. Invasive plants do not jeopardize the ability of the Malheur National Forest to provide goods and services communities expect. The need for invasive plant treatment is reduced due to the effectiveness and habitual nature of preventative actions, and the success of restoration efforts.”



**Figure 1. Documented target invasive species in the planning area.**

## Environmental Consequences

### Direct and Indirect Effects

#### *Alternative 1 - No Action*

### Direct and Indirect Effects

Under the no action alternative there would be no ground disturbance and no increase in vectors as a result of the decision, and thus there would be no effect to the number and extent of invasive plant occurrences in the planning area. While some existing infestations would naturally increase in size, and new infestations would arise from ongoing vectors and actions (see Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis above), there would likely be a net decrease in invasive plants due to ongoing treatment as described and implemented under the 2015 Invasive ROD.

#### *Alternative 2 and Alternative 3*

Forest-wide invasive plant prevention standards and project design criteria (Final Environmental Impact Statement, Appendix C – Project Design Criteria)—such as cleaning of equipment, use of weed-free mulch, gravel, and pit material—would prevent any direct introduction of invasive plant materials or seeds as a result of the proposed actions. Therefore, there would be no direct impact to invasive plant populations; invasive plants would not be introduced or spread as a direct result of the project.

Proposed actions including silvicultural treatments (forest and unique habitat restoration), fuels treatments (including strategic roads treatments), prescribed fire, and road building (reconstruction and new construction) would potentially create ground disturbance and bare ground areas that are susceptible to invasive plant establishment. There would also be an increase in vector presence from temporary road construction, heavy equipment impacts to soil, creation of landings and staging areas, increase in light availability due to thinning, and other similar activities. In some cases, like slash burn pile scars, the proposed actions would create small discrete areas of bare ground where the soil has been completely sterilized. Slash pile burn scars almost always have invasive plant infestations within a year after being created. In some cases, over 95 percent of the burn scars become infested with invasive plants (usually Canada and bull thistles). While the total area of burn scars is negligible compared to the total planning area (less than 0.1 percent of total area), the infestations can be a new source (vector) for invasive plant introductions. Therefore, the project may create potential deleterious indirect effects from ground disturbance.

### Cumulative Effects

Past and ongoing projects and activities within the planning area may cumulatively affect the number and distribution of invasive plant infestations. These actions have the potential to increase or decrease invasive plants on the landscape and most notably include timber harvest, fire suppression efforts, recreational activities, road maintenance, firewood cutting, aquatic restoration activities, livestock grazing, and ongoing invasive plant treatments.

The activities described above may increase the introduction and spread of invasive plants by increasing the vectors in the area and creating soil disturbances that are susceptible to invasive plant introduction. However, existing and future infestations would be treated before, during, and after the project is implemented. This, along with the project design criteria, would eliminate or substantially reduce the potential inadvertent spread of existing invasive plants before operations commence, and would eradicate any new infestations during and after implementation. Thus, overall beneficial cumulative effects would occur due to ongoing implementation of the treatments under the 2015 Invasive ROD. See the R6 2005 ROD for details on the planning, environmental effects, and implementation strategy for invasive plant treatments.

Because there are no direct or indirect effects from alternative 1, the no action alternative, no cumulative effects would occur.

Ground disturbance and increased vector presence from alternatives 2 and 3 would contribute incrementally to the potential for invasive plant spread across the forest. Following project design criteria will minimize these effects, and ongoing invasive plant treatment should minimize these cumulative effects.



## Summary of Environmental Effects

**Table 2. Summary of resource indicators and measures by alternative**

Resource element and resource indicator	Measure	Alternative 1 (no action)	Alternatives 2 and 3
Invasive Plants – Potential for introduction and spread of invasive plants	Extent of ground disturbance and vector presence	No effect: ground disturbance would not occur as a result of management activities, and new vectors would not be introduced as a direct result of the decision.	No direct effects due to project design criteria: invasive plants would not be directly introduced or spread as a result of the actions. Detrimental indirect effects occur by creating bare ground susceptible to invasive plant establishment from ground disturbing activities. Detrimental indirect and cumulative effects may occur from increased vector presence. Some detrimental cumulative effects would be lessened by invasive plant treatments that would occur before, during, and after the proposed actions. Overall beneficial cumulative effects would occur due to ongoing implementation of the treatments under the 2015 Invasive ROD.

## Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

This project complies with Executive Order 13112 which directs federal agencies to identify actions that may affect the status of invasive species, prevent their introduction, and minimize the risk of the actions. It is also consistent with Forest Service Policy (Forest Service Manual 2900) and the Malheur Forest Plan to determine the risk of introducing, establishing, or spreading invasive plants associated with any proposed action, and to reduce or eliminate that risk prior to project approval.

It also fulfills, in part, requirements of the National Environmental Policy Act of 1969 which directs federal agencies to “Ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken.”

## Other Relevant Mandatory Disclosures

There are no other relevant mandatory disclosures related to invasive plant species for this project.

## Monitoring

Invasive plant occurrences, treatments, and the areas that would be potentially disturbed as a result of the proposed actions would be monitored before, during, and after the implementation of the project. Monitoring protocols would follow the Forest Service’s national invasive plant monitoring requirements and protocols, and the Malheur National Forest Site-Specific Invasive Plants Treatment Project.

## References

- Executive Order 13112 of February 3, 1999. Invasive Species. Code of Federal Regulations 64:25:  
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