Noxious Weeds and Non-Native Species Control Plan

Tule Wind Project
San Diego County, California

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Prepared for

U.S. Bureau of Land Management
California Desert District Office
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ACRONYMS

BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
CDFA	California Department of Food and Agriculture
CDFAC	California Department of Food and Agricultural Code
FNWA	Federal Noxious Weed Act
GIS	Geographic information system
IRI	Iberdrola Renewables, Inc.
kV	Kilovolt
LLC	Limited Liability Corporation
MPH	Miles per hour
MSDS	Material Safety Data Sheets
NEPA	National Environmental Policy Act
O&M	Operations and Maintenance
OHV	Off-highway vehicle
PEIS	Programmatic Environmental Impact Statement
PPA	Plant Protection Act
PUP	Pesticide Use Permit
SODAR	Sonic Detection and Ranging
T-line	Transmission Line
U.S.C.	United States Code
USEPA	U.S Environmental Protection Agency

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1.0 INTRODUCTION

Tule Wind, LLC, a wholly-owned subsidiary of Iberdrola Renewables, Inc. (IRI), is proposing to construct and operate the Tule Wind Project (proposed project) located near Boulevard, California. The proposed wind energy project will consist of: (1) up to 134 wind turbines; (2) access roads between turbines, including improvements to existing roadways and new roadways; (3) a 138 kilovolt (kV) overhead transmission line (T-line); (4) a 34.5 kV overhead and underground electrical collector cable system; (5) a 5-acre collector substation site; (6) a 5-acre operation and maintenance site; (7) a temporary 5-acre cement batch plant site; (8) a temporary10-acre parking area; (9) 19 two-acre temporary laydown areas; (10) two permanent meteorological towers; and (11) a Sonic Detection and Ranging (SODAR) System unit.

IRI developed this Noxious Weed and Non-native Species Control Plan to control noxious weeds and non-native species that could occur as a result of new surface disturbance activities in the project area. The overall project area is approximately 15,390 acres, with the proposed project footprint (impact extent) occurring on approximately 773 acres (230 temporary and 543 permanent). Data collected during surveys conducted from 2005 to 2010 have been incorporated into the plan in order to develop methods for monitoring and educating personnel on weed identification, and methods for avoiding and treating infestations. The survey corridor included the proposed project footprint and alternatives footprint (potential impact extent) and the surrounding buffer area that was surveyed for biological resources. IRI will work with the Bureau of Land Management (BLM), the State of California, and the County of San Diego to obtain seeding specifications to be compliant with required standards.

In addition to the Noxious Weed and Non-Native Species Control Plan, a Conceptual Revegetation Plan will be developed to mitigate impacts on plants and wildlife in the proposed project footprint. Control of the exotics will help the revegetation efforts.

1.1 PLAN PURPOSE

IRI developed this Noxious Weed and Non-Native Species Control Plan to control noxious weeds and non-native plant species that could occur as a result of project-related activities. The plan will comply with all applicable laws, ordinances, regulations, and standards. Weed management objectives for the proposed project are discussed in Section 1.3 and include prevention, infestation containment and control, monitoring, and reporting within the proposed project footprint.

1.2 NOXIOUS WEED DEFINED AND NON-NATIVE SPECIES CATAGORIZED

Section 403 of the Plant Protection Act (PPA) (7 *United States Code* [U.S.C.] 7701 et seq.) defines noxious weeds as:

> "*any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment* (USDA 2010)."

Noxious weeds are generally defined as non-native plants that colonize and dominate an area. These plants are able to out-compete other native plants because they often lack natural predators or

diseases. These plants establish in areas where soil has been disturbed, such as freshly graded roads or construction sites. New disturbance allows noxious weeds an opportunity to gain a foothold on a previously native area. Once established, noxious weeds may exclude native plants and reduce native forage for wildlife. Invasive plants can also compromise crops, create fire hazards, and disrupt groundwater resources.

The California Invasive Plant Inventory provides a uniform methodology for categorizing non-native invasive plants that threaten wildlands. Each plant within the inventory receives a High, Moderate, or Limited category based on ecological impacts, invasive potential, and ecological disturbance (Cal-IPC 2010):

- **High:** These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- **Moderate:** These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbances. Ecological amplitude and distribution may range from limited to widespread.
- **Limited:** These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Known species of noxious weeds and non-native plant species will be identified within the proposed project footprint during pre-construction surveys and construction activities, and will be monitored after competition of the project. Based on weed management recommendations presented in this document, existing individual species will be managed in order to minimize the impact and spread of noxious weeds and non-native species. During surveys conducted from 2005 to 2010, no federally designated noxious weed species were identified within the survey corridor; however, several non-native species were observed. **Table 3-1** in the Existing Conditions section includes a complete list of non-native species observed within the survey corridor during surveys conducted from 2005 to 2010.

1.3 OBJECTIVES

The objective of this report is to outline methodology for preventing, identifying, monitoring, and dealing with noxious weeds and non-native species within the proposed project footprint. Included in this report is a list and assessment of non-native species identified on-site during surveys, a list of target weeds that will be controlled, survey methods for identifying noxious weeds during construction and operation, weed control methods and reporting requirements. Considerations may be made for species that are widespread and naturalized where control may be impractical. When evaluating noxious weeds within the proposed project footprint, the appropriate objectives will be defined as necessary.

Noxious weed management objectives for the proposed project footprint include the following:

- **Eradication:** Eliminate individuals of a particular species from a specified area. This method of control will be the goal for most noxious weed species within the project footprint.
- **Suppression:** Reduce current noxious weed densities but won't necessarily reduce the total area or boundary of noxious weed infestations. This control method applies to widely distributed, high-density species where eradication is not feasible.
- **Containment/Prevention:** Prevent noxious weed expansion and spread. This control method focuses on inhibiting the spread of noxious weeds until suppression or eradication can be implemented.

1.4 RESPONSIBLE PARTIES

Ultimately, IRI is responsible for compliance with BLM's environmental regulations. However, contractors and other responsible parties will be in charge of implementing and enforcing the plan outlined in this report. The Environmental Compliance Manager will be responsible for implementing and monitoring the Noxious Weed and Non-Native Species Control Plan. The Construction Manager will have the responsibility of overseeing and enforcing the plan. As land manager for the majority of the land within the project boundary, BLM will have the final say in approving the plan and the oversight of the implementation.

2.0 LAWS AND REGULATIONSFEDERAL LAWS AND REGULATIONS

Federal Noxious Weed Act of 1974

The Federal Noxious Weed Act (FNWA) (Public Law 93-629; 7 U.S.C. 2801 et seq.; 88 Stat 2148, as amended 1988 and 1994) was enacted January 3, 1975, and established a federal program to control the spread of noxious weeds. This law provides for the control and management of non-native weeds that harm, or have the potential to harm, the interests of agriculture and commerce, wildlife resources, or public health. The Secretary of Agriculture was given the authority to designate non-native plants as noxious weeds and the ability to regulate the transactions and movement of noxious weeds. Prohibited under this law is the movement of any noxious weed identified by the Secretary of Agriculture into or through the U.S. except for those that are in compliance and possess applicable permits. In addition, the law requires each federal agency to develop a management program to control noxious weeds on federal lands under the agency's jurisdiction.

Plant Protection Act of 2000

The Plant Protection Act (PPA), as amended (7 U.S.C. 7701-7786), prohibits unauthorized movement of plant pests. No person shall import, enter, export, or move in interstate commerce any plant pest unless movement actions have been authorized under general or specific permit and is accordance with such regulations. The PPA defines a noxious weed as any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health or the environment. In general, the Secretary of Agriculture may prohibit or restrict the movement of any plant, plant product, biological control organism, noxious

weed, article or means of conveyance, if the Secretary determines that the prohibition is necessary to prevent the introduction into the United States.

2.2 STATE AND LOCAL LAWS AND REGULATIONS

California Food and Agricultural Code

The California Food and Agricultural Code (CDFAC) Section 403 mandates that, "The Department of Food and Agriculture shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds." In accordance with Section 403, the California Commissioner of Agriculture has the authority to control noxious weeds, provide funding for research and assistance to weed management entities for the control and abatement of noxious weeds in accordance with an approved integrated weed management plan. Compliance with an integrated weed management plan will result in an ecosystem-based control strategy that focuses on long-term prevention of weeds through the combination of techniques, such as biological controls, use of herbicides, modified land management and cultural practices, and will minimize the risks to human health, non-targeted organisms, and the environment.

2.3 CONSERVATION AND MANAGEMNT PLANS

The Bureau of Land Management

The BLM administers vegetation on nearly 216 million acres in 17 western states (BLM 2007). Management and control of vegetation and habitat enhancement is accomplished through a variety of treatments including, but not limited to, herbicides, prescribed fire and wildland fire use, manual and mechanical methods, and biological controls (BLM 2007). In response to threats of invasive vegetation and noxious weeds and the increased use of herbicides, the BLM composed the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), released on June 29, 2007. The PEIS analyzes and identifies the impacts on natural and human environment associated with herbicide use on public lands. **Appendix A** includes the *Herbicide Treatment Standard Operating Procedures* which identifies standard operating procedures for management controls and performance standards required for vegetation management treatments on BLM lands. Procedures listed in **Appendix A** have been incorporated into this management plan.

3.0 EXISTING CONDITIONS

Plant communities and vegetation types within the vicinity of the proposed project range from semi-desert scrub to mixed chaparral to oak woodland, and include big sagebrush, grassland, and riparian communities. Chaparral and scrub communities are the predominant vegetation communities. Chaparral communities include semi-desert chaparral, northern mixed chaparral, scrub oak chaparral, upper Sonoran manzanita chaparral, chamise chaparral, red shank chaparral, and southern north slope chaparral. Scrub communities include upper Sonoran subshrub scrub, montane buckwheat scrub and big sagebrush scrub. Semi-desert chaparral is the dominant vegetation in McCain Valley and is the most abundant community in the survey corridor. Additional vegetation communities occurring in the survey corridor include open and dense coast live oak woodland, southern riparian woodland,

southern willow scrub, mule fat scrub, and non-native grassland. Other land cover includes non-vegetated channels, agriculture, developed, and disturbed habitat.

Overall the survey corridor supports 20 different types of vegetation communities. With the exception of grazing in the grasslands and lowlands, and rural development along corridors in the southern portions, native vegetation communities within the survey corridor experience minimal human disturbance and exhibit a limited presence of exotic species outside of disturbed areas. No federally listed noxious weed species have been observed in the proposed project footprint. However, several non-native species were observed. **Table 3-1** lists the non-native species observed within the survey corridor and includes a Federal noxious weed rating, California Invasive Plant Council (Cal-IPC) rating and a California Department of Food and Agriculture (CDFA) rating for each species.

4.0 WEED MANAGEMENT AREAS

Noxious weed and non-native species management will occur within the proposed project footprint; however, certain areas (e.g., temporary and permanent impact areas) will require specific management considerations depending on a range of factors described in this section.

4.1 TEMPORARY IMPACTS

A number of construction-associated activities may temporarily impact vegetation within the proposed project. Direct temporary impacts are anticipated with clearing and grading of access roads, transmission corridors, and work areas at turbines and support structures. Up to 230 acres of temporary impacts are anticipated to occur as a result of the project. Temporary impacts to a vegetation community are such that the community is expected to recover to the pre-impacted state (e.g., temporarily widened access roads and construction work areas). Temporary impacts will result primarily from temporary construction work areas cleared/grubbed for each wind turbine tower pad; construction of temporary widened (36-foot-wide) roads between turbines; and temporary disturbance of a 50-foot x 150-foot (15 meters x 46 meters) area associated with overhead power collection line poles. Additional temporary impacts could occur from a temporary concrete batch plant at the Operations and Maintenance (O&M) facility location, construction staging areas, and from temporary security fencing. However, these impacts might occur within the existing permanent construction footprint. Temporary impacts associated with site monitoring and testing activities prior to project implementation, and associated with the ultimate decommissioning of the proposed project, could also occur.

Temporary impacts will occur in areas where cleared vegetation will be revegetated when construction activities are complete. Temporary impact areas will be monitored and managed during construction and operation of the proposed project.

Table 3-1. List of Non-Native Species Observed On-Site

Scientific Name / Common Name	Ecological Types Invaded and Comments	Federal Noxious Weed Listing	CDFA Rank*	Cal-IPC Rating*	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
Avena barbata slender wild oat	Coastal scrub, grasslands, oak woodlands, forest. Very widespread, but impacts more sever in desert regions.	No	NR	Moderate	B	B	A
Avena fatua wild oat	Coastal scrub, chaparral, grasslands, woodland, forest. Very widespread, but impacts more sever in desert regions.	No	NR	Moderate	B	B	A
Bromus hordaceous soft brome	NE/NR	No	NR	NE/NR	NE/NR	NE/NR	NE/NR
Bromus madritensis ssp. *rubens* red brome	Scrub, grassland, desert washes, woodlands. Impacts most significant in desert areas.	No	NR	High	A	B	A
Bromus madritensis ssp. *madritensis* compact brome	NE/NR	No	NR	NE/NR	NE/NR	NE/NR	NE/NR
Bromus tectorum downy brome, cheatgrass	Interior scrub, woodlands, grasslands. Most widely distributed invasive plant in the U.S.	No	NR	High	A	B	A
Centaurea melitensis malta star-thistle, tocalote	Grasslands, oak woodlands. Impacts vary regionally.	No	C	Moderate	B	B	B
Cynodon dactylon Bermuda grass	Riparian scrub in southern CA. Common landscape weed, but can be very invasive in desert washes.	No	NR	Moderate	B	B	B
Erodium botrys long-beal filaree/ storksbill	Present in wildlands but known impacts are negligible. Often transient.	No	NR	Evaluated, not listed	D	C	A
Erodium cicutarium redstem filaree	Many habitats. Widespread. Impacts minor in wildlands. High density populations are transient.	No	NR	Limited	C	C	A
Erodium moschatum white-stem filaree/ storksbill	Primarily an agricultural weed, little impact in wildlands.	No	NR	Evaluated, not listed	D	C	A
Hirschfeldia incana shortpod mustard, summer mustard	Scrub, grassland, riparian areas. Impacts not well understood, but appear to be greater in Southern Calif.	No	NR	Moderate	B	B	A

Scientific Name / Common Name	Ecological Types Invaded and Comments	Federal Noxious Weed Listing	CDFA Rank*	Cal-IPC Rating*	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
Hordeum marinum Mediterranean barley, hare barley, wall barley	Grasslands, wetlands. Impacts can be more severe locally, especially in wetlands.	No	NR	Moderate	B	B	A
Hypochaeris glabra smooth cat's ear	Scrub and woodlands. Widespread. Impacts appear to be minor. Some local variability.	No	NR	Limited	C	B	B
Lepidium campestre cow cress	NE/NR	No	NR	NR	NR	NR	NR
Lepidium perfoliatum clasping pepperweed	NE/NR	No	NR	NE/NR	NE/NR	NE/NR	NE/NR
Marubium vulgare horehound	Grasslands, scrub, riparian areas. Widespread. Impacts unknown. Impacts relatively minor.	No	NR	Limited	C	C	B
Medicago polymorpha burclover	Grasslands. Widespread weed of agriculture and disturbed areas. Impacts in wildlands minor.	No	NR	Limited	C	C	A
Ole europeae olive	Rarely escapes in CA but is a concern due to possibility of spread from planted groves.	No	NR	Limited	C	B	B
Pinus sp. pine/pinyon	NA	NA	NA	NA	NA	NA	NA
Polypogon monspeliensis annual beard grass	Margins of ponds and streams, seasonally wet places, edge of coastal dunes. Widespread. Impacts appear to be minor.	No	NR	Limited	C	C	B
Salsola tragus Russian thistle	Desert dunes and scrub, alkali playa. Widespread. Impacts minor in wildlands.	No	C	Limited	C	B	B
Schismus barbatus Mediterranean schimus	Shrub, thorn woodland. Widespread in deserts. Impacts can be more important locally.	No	NR	Limited	B	C	A
Sherardia arvensis field madder	NE/NR	No	NR	NE/NR	NE/NR	NE/NR	NE/NR
Sismbrium altissimum tumble/Jim Hill mustard	NE/NR	No	NR	NE/NR	NE/NR	NE/NR	NE/NR

Scientific Name / Common Name	Ecological Types Invaded and Comments	Federal Noxious Weed Listing	CDFA Rank*	Cal-IPC Rating*	Cal-IPC Impacts Rating	Cal-IPC Invasive Rating	Cal-IPC Distribution Rating
Sisymbrium irio London rocket	Scrub, grasslands. Widespread. Primarily in disturbed sites. Impacts vary locally.	No	NR	Moderate	B	B	A
Tamarix ramosissima saltcedar, tamarisk	Desert washes, riparian areas, coastal scrub.	No	B	High	A	A	A
Trifolium sp. clover	NA	NA	NA	NA	NA	NA	NA
Vulpia myuros rattail fescue	Coastal sage scrub, chaparral. Widespread. Rarely forms monotypic stands, but locally problematic.	No	NR	Moderate	B	B	A

Notes:

CDFA Rating:

A = A rated pests are subject to state enforced action involving eradication, quarantine regulation, containment, rejection, or other holding action.

B = B rated pests are at the discretion of the county commissioner subject to eradication, containment, suppression, control, or other holding action.

C = C rated pests are subject to regulations designed retard spread or to suppress at the discretion of the county commissioner.

Q = Q rated pests status is uncertain because of incomplete identification or inadequate information.

D = D rated pests have an extremely low likelihood of weediness.

Cal-IPC Ratings:

A = Severe

B = Moderate

C = Limited

D = None

U = Unknown

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbances. Ecological amplitude and distribution may range from limited to widespread.

Limited These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

NA = Not Applicable

NR = Not Rated/Not Ranked

NE = Not Evaluated

4.2 PERMANENT IMPACTS

A number of construction activities may permanently impact vegetation within the proposed project. Direct permanent impacts are anticipated as a result of vegetation removal from grading and clearing at turbine locations, support structure locations, and brush management. Access road construction will be the primary source of direct permanent impacts to vegetation communities within the proposed project. In addition, permanent impacts may result from site monitoring, testing activities, and decommissioning. An estimated maximum of 543 acres of permanent impacts are anticipated to occur as a result of the project. Direct permanent impacts affect the vegetation community such that it is not expected to recover to the pre-impacted state (e.g., permanent development of a site through grading and construction of structures). Permanent impacts will result from construction of linear turbine strings with a disturbance radius of 200 feet for each turbine pad, up to a maximum of 134 turbines, a combined 5-acre project substation and O&M facility, a 10-acre parking area, and a 20-foot-wide corridor along permanent access roads, transmission lines (overhead), and collector lines.

Direct permanent impacts will not be revegetated when construction activities are complete. Permanent impact areas will be monitored and managed during construction and operation of the proposed project.

5.0 MONITORING AND SURVEY METHODS

5.1 WEED IDENTIFCATION

Monitoring and removal of non-native species requires training and/or in plant identification. Plant identification training and field manuals will be provided to field staff including biological monitors, weed abatement contractors, project operators and staff, and construction workers. Non-native plant species will be identified using *The Jepson Manual, Higher Plants of California*.

Plant identification training will include:

- An in-field presentation containing pictures and descriptions of the known non-native species found within the proposed project footprint;
- An overview of the field manual;
- Instructions on management strategies for noxious weeds and non-native species that are observed within the proposed project footprint.

5.2 SURVEY AND MONITORING

Surveys and monitoring will ensure timely detection and eradication of non-native plant species, which are essential to the long-term management of noxious weed management.

5.2.1 Monitoring Methods

Construction Areas

Biological monitors will be present during site clearing and construction activities. Construction crews will be responsible for inspecting construction areas, identifying the presence of noxious weeds, and inspecting equipment cleaning facilities for weed seed removal. In addition, the biological monitor will verify that weed management activities prescribed in the field are consistent with activities outlined in this plan. Monitoring construction areas for non-native species arrivals will be conducted on a regular basis, and will consist of surveying the construction areas and access routes and documenting the presence of non-native plant species.

Revegetation Areas

Temporarily disturbed areas will be revegetated and will require ongoing monitoring. Based on the Conceptual Revegetation Plan, monitoring will be conducted regularly for a total of 10 years. The monitoring schedule shall be sufficiently flexible in order to address variable prescription regimens that have been determined in the Conceptual Revegetation Plan and approved by the regulatory agency. In addition, surveys and monitoring visits will identify areas of significant non-native species establishment.

General Operations Monitoring

General site monitoring of the proposed project will be conducted by grounds personnel on an ongoing basis. Non-native species control will be conducted, as needed, by project personnel. Monitoring will be conducted at a minimum of every other week during the growing season (February to June). Project personnel will be trained in non-native plant identification and non-native plant removal strategies.

5.2.2 Database and Mapping

Locations of new noxious weeds and non-native plant species occurrences and species data (detection date, growth stage, infestation extent, treatments implemented, results of treatment, and current status) will be maintained during the construction and operation within the proposed project footprint. This will not be required of previously established non-native species. A geographic information system (GIS) will be used to map and store data.

6.0 NOXIOUS WEED AND NON-NATIVE PLANT SPECIES MANAGEMENT

6.1 SPECIES DESCRIPTION AND MANAGEMENT STRATEGY

Descriptions of non-native plant species observed on-site are provided in this section. All non-native annual, perennial, tree, and shrub species occurring within temporary impact/revegetation areas would be controlled using management strategies identified in this plan. Management strategies encompass not only eradication, but also identify the means of eradication (methods for eradication are described in Section 6.3.1).

Temporary impact/revegetation areas would be maintained to achieve less than 10 percent cover of annual non-native vegetation and prevent the introduction of new non-native species to the site. Non-native perennial and tree/shrub species would be eradicated from temporary impact/revegetation areas.

Slender wild oat (*Avena barbata***)**
Family: Poaceae
Cal-IPC Inventory Rating: Moderate

Slender wild oat a winter annual grass that is common in almost every grassland area in California (Cal-IPC 2010).This species does well in sandy/poor soils and is often found along roads (Cal-IPC 2010).

Wild oat (*Avena fatua*)
Family: Poaceae
Cal-IPC Inventory Rating: Moderate

Wild oat is a winter annual grass. This species is a common agricultural weed and grows in most grassland sites within the state, particularly in sandy/poor soils, and is often associated with road verges (Cal-IPC 2010).

Soft brome (*Bromus hordaceous*)
Family: Poaceae
Cal-IPC Inventory Rating: Limited

Soft brome is an annual grass that is common at low elevations and especially in disturbed and open areas (Cal-IPC 2010). This species can thrive in soils that have low fertility and are often occupied by rare or sensitive native plant species (Cal-IPC 2010).

Red brome (*Bromus madritensis* ssp. *rubens* (*=B. rubens*))
Family: Poaceae
Cal-IPC Inventory Rating: High

Red brome is a cool-season annual grass that is commonly found throughout California (Cal-IPC 2010). This species is often found in disturbed areas, roadsides, agricultural fields, rangelands, and native habitats (Cal-IPC 2010).

Compact brome (*Bromus madritensis* ssp. *madritensis*)
Family: Poaceae
Cal-IPC Inventory Rating: Not rated or evaluated

Compact brome is an annual grass that is common in disturbed areas throughout California (Calflora 2010).

Downy brome, cheatgrass (*Bromus tectorum*)
Family: Poaceae
Cal-IPC Inventory Rating: High

Downy brome is an annual grass that commonly overcrowds native grasslands and croplands (Cal-IPC 2010).

Tocalote (*Centaurea melitensis*)
Family: Asteraceae
Cal-IPC Inventory Rating: Moderate

Tocalote is an annual herb that is common in grasslands and oak woodlands throughout California. Dense stands can displace native plants and animals; this species may also increase erosion and reduce water percolation (Cal-IPC 2010).

Bermuda grass (*Cynodon dactylon*)
Family: Poaceae
Cal-IPC Inventory Rating: Moderate.

Bermuda grass is a perennial grass that can escape cultivation and out-compete native species (Cal-IPC 2010).

Long-beak filaree/storksbill (*Erodium botrys*)
Family: Geraniaceae
Cal-IPC Inventory Rating: Evaluated but not rated

Long-beak filaree is an annual herb that is present in wildlands but known impacts are negligible (Cal-IPC 2010).

Redstem filaree (*Erodium cicutarium*)
Family: Geraniaceae
Cal-IPC Inventory Rating: Limited

Redstem filaree is an annual/biannual herb that is common throughout California and often associated with roadsides, grasslands, fields and semi-desert areas (Cal-IPC 2010).

White-stem filaree/storksbill (*Erodium moschatum*)
Family: Geraniaceae
Cal-IPC Inventory Rating: Evaluated but not rated

White-stem filaree is an annual herb that is primarily an agricultural weed but known impacts are negligible.

Short pod mustard (*Hirschfeldia incana*)
Family: Brassicaeae
Cal-IPC Inventory Rating: Moderate

Short pod mustard is a perennial forb that is common in scrub, grasslands, and riparian areas (Cal-IPC 2010). This species can produce large amounts of biomass, and matures early in the phonologic year, possibly usurping soil water before other native annual plants reach peak development (Cal-IPC 2010).

Mouse barley (*Hordeum marinum*)
Family: Poaceae
Cal-IPC Inventory Rating: Moderate

Mouse barley is an annual grass. Impacts can be more severe locally, especially in wetlands (Cal-IPC 2010).

Smooth cat's ear (*Hypochaeris glabra*)
Family: Asteraceae
Cal-IPC Inventory Rating: Limited

Smooth cat's ear is an annual herb found throughout California, commonly in scrub and woodland habitats (Cal-IPC 2010).

Field pepperweed (*Lepidium camestre*)
Family: Brassicaeae
Cal-IPC Inventory Rating: Not rated or evaluated

Field pepperweed is an annual or perennial herb that is characteristic of disturbed areas (Calflora 2010).

Clasping pepperweed (*Lepidium perfoliatum*)
Family: Brassicaceae
Cal-IPC Inventory Rating: Not rated or evaluated

Clasping pepperweed is an annual herb is a common non-native species in California (Calflora 2010).

Horehound (*Marubium vulgare*)
Family: Lamiaceae
Cal-IPC Inventory Rating: Limited

Horehound is a perennial shrub/forb/herb and is common in grasslands, scrub, and riparian areas (Cal-IPC 2010). This species is only browsed by livestock when no other forage material is present; this gives it a competitive advantage over more desirable grazing species (Cal-IPC 2010).

Burclover (*Medicago polymorpha*)
Family: Fabaceae
Cal-IPC Inventory Rating: Limited

Burclover is a perennial/annual forb/herb that is widespread in agriculture and disturbed areas (Cal-IPC 2010). This species is considered good forage for livestock but can out-compete native species in wildlands (Cal-IPC 2010).

Olive (*Olea europeae*)
Family: Oleaceae
Cal-IPC Inventory Rating: Limited

Olive is a shrub or tree that is currently a rare escapee in California but is of concern due to the possibility of spread from planted groves (Cal-IPC 2010). In some areas this species will displace native species and reduce light availability but in California the impacts on native species composition has been minor (Cal-IPC 2010).

Annual beard grass (*Polypogon monspeliensis*)
Family: Poaceae
Cal-IPC Inventory Rating: Limited

Annual beard grass is a winter or summer annual grass that is common in moist or wet areas that will form dense stands in appropriate conditions (Cal-IPC 2010).

Prickly Russian thistle/tumbleweed (*Salsola tragus*)
Family: Chenopdiaceae
Cal-IPC Inventory Rating: Limited

Prickly Russian thistle is a summer annual that is common in California especially in agricultural areas, deserts, roadsides, and other disturbed areas (Cal-IPC 2010). This species is an alternate host for *Circulifer tenellus*, which can carry the virus causing curly-top of some native species (Cal-IPC 2010).

Mediterranean schismus (*Schismus barbatus*)
Family: Poaceae
Cal-IPC Inventory Rating: Limited

Mediterranean schismus is an annual grass that is common in disturbed areas and throughout deserts in southern California (Cal-IPC 2010).

Field madder (*Sherardia arvensis*)
Family: Rubiaceae
Cal-IPC Inventory Rating: Not rated or evaluated

Field madder is an annual herb that is becoming naturalized in California (Calflora 2010). This species has not been rated or evaluated by Cal-IPC.

Tumble/Jim Hill mustard (*Sisymbrium altissimum*)
Family: Brassicaceae
Cal-IPC Inventory Rating: Not rated or evaluated

Tumble mustard is an annual herb that is characteristic of disturbed areas. This species has not been rated or evaluated by Cal-IPC.

London rocket (*Sisymbrium irio*)
Family: Brassicaceae
Cal-IPC Inventory Rating: Moderate

London rocket is a winter annual forb/herb that is often found in fields, pastures, waste areas, roadsides, and orchards (Cal-IPC 2010). This species is able to out-compete native species by maturing early in the year (Cal-IPC 2010).

Tamarisk/salt cedar (*Tamarix ramosissima*)
Family: Tamaricaeae
Cal-IPC Inventory Rating: High

Tamarisk is a shrub or tree that is common along streams and lake shores throughout California (Cal-IPC 2010). In some areas this species makes up 70 to 80 percent of the vegetation cover, substantially displacing native vegetation and reducing the value of riparian communities (Cal-IPC 2010).

Fescue (*Vulpia Myuros*)
Family: Poaceae
Cal-IPC Inventory Rating: Moderate

Fescue is an annual grass common in coastal sage scrub and chaparral habitats (Cal-IPC 2010). This species is one of many that have replaced perennial grasses in California. The presence of this species has contributed to the increased fire frequency in Southern California (Cal-IPC 2010).

6.2 PREVENTATIVE MEASURES

General prevention measures that will be implemented prior to and during construction activities and will inhibit the spread of weeds and their germination include the following:

- Project-related disturbances to ecologically sensitive areas will be avoided or minimized when possible. Sensitive residual areas that are impacted will be mitigated as appropriate.
- IRI will minimize the clearing of existing trees and shrubs during site design and construction to the greatest practicable extent.
- Temporary impacts to vegetation communities will be mitigated through revegetation of impacted areas. Revegetation will involve recontouring the land, replacing collected topsoil, and planting seed and/or container stock. Based on monitoring of the restoration area, maintenance activities such as weeding, replacement planting and supplemental watering may be necessary to achieve restoration standards. Revegetated areas will include all areas

temporarily impacted by construction, such as wind turbine construction sites, laydown/staging areas, and temporary access roads. Reclamation activities will be undertaken as early as possible on disturbed areas. Additional reclamation measures will be developed to address site-specific conditions, as necessary.

- Topsoil from decommissioning activities will be salvaged and reapplied during final reclamation. Areas of disturbed soil will be reclaimed using weed-free native shrubs, grasses, and forbs.
- All project vehicle movement will be restricted to existing access roads and access roads constructed as a part of the project, unless determined infeasible due to physical or safety constraints. Approval from a biological monitor will be obtained prior to any travel off of existing access roads.
- Vehicle wash and inspection stations will be maintained throughout the project area. Recorded vehicle inspection logs will be kept for all vehicles brought on and off the project site.
- Materials brought on-site will be closely monitored to minimize the potential for weed introduction.

6.2.1 Construction

Personnel Environmental Training

Environmental training for contractors and related personnel entering the project site will be provided prior to and during construction activities. Mandatory training will be required for contractors, subcontractors, inspection personnel, construction managers, construction personnel, and individuals transiting vehicles and equipment into the project area. The training will include non-native species identification and non-native species management strategies for the prevention and spread of non-native species, as well as eradication and control methods of existing and introduced non-native species.

Equipment Cleaning

Equipment cleaning will be required to prevent the spread of weed species into new habitats. The construction contractor will insure that all construction equipment (any vehicle leaving Interstate 8 into the project area) will be cleaned by high pressure air or water spray in order to remove dirt and mud that may contain seeds, roots, or rhizomes. The tracks, tires, and undercarriage will be washed including, but not limited to, the axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumpers. Prior to entering the project area, equipment will be inspected to ensure they are free of any dirt or mud. During construction, all equipment will be cleaned after work in weed-contaminated soils. Cleaning stations will use either high pressure water or air to remove dirt and mud from equipment and will be located away from any sensitive biological resource. Sediment basins will be required if water is used for on-site equipment cleaning. Other construction-related vehicles (i.e., pick-up trucks) will be inspected and washed on an as-needed basis.

For equipment entering and leaving site, records and cleaning records will be kept stating the location, date and time, license plate/vehicle identification or serial number of equipment, and methods used. These records will be included in the monitoring reports.

Soil Management

Soil management will limit ground disturbances to the minimum feasible amount, and fugitive dust will be suppressed in order to minimize the spread of seeds. Soil management activities include revegetation of temporarily disturbed areas and the reclamation of topsoil. Revegetation will involve recontouring the land, replacing collected topsoil, and planting seed and/or container stock. Reclamation activities will be undertaken as early as possible on disturbed areas. Topsoil from excavations and construction activities will be segregated from sub-soil and reapplied to the surface of the ground during reclamation. During grading and construction activities, the contractor shall avoid transporting soil within proposed project footprint or outside of the proposed project footprint. Topsoil shall be stockpiled adjacent to the area from which they are removed to eliminate the transportation of soil-born non-native seeds, roots, and rhizomes. In addition, topsoil that is allowed to be stockpiled for the duration of a growing season (February to June) will be managed as described in this plan.

Weed-free Products

Weed-free products obtained from certified sources (i.e., free of primary noxious weeds) will be utilized. The contractor will ensure that straw or hay bales, gravel, mulch, and soil are free of weeds and, where feasible, mulch and soil will be generated or used from the proposed project footprint.

Site Reclamation

Reclamation would include revegetation of temporarily impacted vegetation communities and will be conducted in accordance with the Conceptual Revegetation Plan (**Appendix B**). Revegetation will involve recontouring the land, replacing collected topsoil, and planting seed and/or container stock. Reclamation activities will be undertaken as early as possible on disturbed areas.

6.2.2 Operation

Personnel Environmental Training

Environmental training for groundskeepers and maintenance personnel will be provided prior to and during operation activities. The training will include non-native species identification, management strategies for the prevention and spread of non-native species, as well as eradication and control methods of existing and introduced non-native species.

Infestation Containment and Control

Operation personnel will identify and flag areas which contain concentrations or new occurrences of non-native species. Access into these areas will be limited until non-native species management control measures can be implemented. Non-native species control measures will be implemented as described in Section 6.3.

6.3 ERADICATION AND CONTROL METHODS

6.3.1 Physical Weed Removal Methods

Physical control methods are applicable for removal of non-native species and can include hand pulling and mechanical clearing. Methods employed will depend on the species, size, and extent of the non-native species targeted and the root structure of each plant. Hand pulling is often most effective for localized non-native species control when the plant is large enough that it will not break and leave the root structures in place to resprout. This method is less effective in large areas or with species that spread through underground root systems.

6.3.2 Chemical Weed Removal Methods

Herbicide application is a widely employed, efficient, non-native species control method that is effective for large areas where hand pulling is not applicable. Herbicides will be employed in accordance with BLM requirements (BLM Handbook H-9011-1) and will use U.S. Environmental Protection Agency (USEPA)-registered herbicides that have been properly evaluated under the National Environmental Policy Act (NEPA). Pre- and post-emergent herbicides may be applied throughout the project. Pre-emergent herbicides are those that are integrated into the soil before the weed seed germinates and generally require irrigation or rainfall. Application of pre-emergent herbicides would occur in early fall prior to fall/early winter rain events. Post-emergent herbicides are applied directly to the weed while it is growing prior to seed set. Post-emergent treatment will occur between February and early April.

Any herbicides used as part of the weed control program will be mixed, handled, and applied in accordance with manufacturer's label instructions by a State-certified licensed contractor. No herbicide applications will be performed during unfavorable wind and weather conditions. Application of herbicides will not occur when either of the following conditions exist; wind speeds in excess of 6 miles per hour (mph) during liquid application or 15 mph during granular application, snow or ice are present, or the air temperature is above 90 degrees Fahrenheit. Herbicide containers will be returned to the contractor's facilities for disposal in accordance with applicable federal, state and local codes and regulations.

Permitting and Regulatory Requirements

Prior to application of any herbicide, contractors will obtain required permits from state and local authorities. In addition contractors will obtain a Pesticide Use Permit (PUP) from the BLM. Contractors applying herbicide measures must be a State-certified contractor and must be approved by the BLM. Only herbicides that are approved by the State of California and federal agency for use on BLM lands will be used within or adjacent to the project site. A list of approved herbicides is available in **Appendix C**.

Application and Handling

The following general precautions and procedures have been outlined in the BLM Handbook H-9011-11 (*Chemical Pest Control*); and Manuals 1112 (Safety), 9011 (Chemical Pest Control), 012 (Expenditure of Rangeland Insect Pest Control Funds), 9015 Integrated Weed Management), and

9220 (Integrated Pest Management), for use of herbicides on public lands (BLM 2007; the complete Herbicide Treatment Standard Operation Procedure can be found in **Appendix A**):

- Prepare operational and spill contingency plan in advance of treatment.
- Conduct pretreatment survey before applying herbicides.
- Select herbicide that is least damaging to the environment while providing the described results.
- Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures.
- Apply the least amount of herbicide needed to achieve the desired result.
- Follow herbicide applicators label for use and storage.
- Have licensed applicators apply herbicides.
- Use only USEPA-approved herbicides and follow product label directions and "advisory statements.
- Review, understand, and conform to the "Environmental Hazards" section on the herbicide product label. This section warms of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment.
- Minimize the size of application area, when feasible.
- Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners and native habitat.
- Post treated areas and specify reentry or rest times, if appropriate.
- Notify adjacent landowners prior to treatment.
- Keep a copy of Material Safety Data Sheets (MSDS) at work site. MSDSs are available for review at http://wwwcdms.net/.
- Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location.
- Avoid accidental direct spray and spill conditions to minimize risks to resources.
- Take precautions to minimize drift by not applying herbicides when winds exceed >10 miles per hour, or a serious rainfall event is imminent.
- Use drift control agents and low volatile formulations.
- Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas.
- Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation.
- Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species.

- Turn off applied treatment at the completion of spray runs and during turns to start another spray run.
- Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide.
- Clean off-highway vehicles (OHV) to remove seeds.

7.0 REPORTING REQUIREMENTS

7.1 REPORT CONTENT

Implementation of the noxious weed and non-native control plan will include the following data collection and reporting guidelines.

7.1.1 Construction Reports

Construction monitoring reports would be prepared throughout the duration of construction activities. Continuous reporting on the status of noxious weeds and non-native species within the proposed project footprint will be included in the construction monitoring reports. Noxious weed and non-native species reporting will include the following information:

- Location, type, extent, and density of noxious weed and non-native species. This will include mapping and photographs, as appropriate, as well as a description of conditions within the survey area.
- Management efforts, including date, location, type of treatment implemented, and results of treatment. Ongoing evaluation of treatment success will be included.
- Description on implementation and success of preventative measures, including status of equipment wash facilities and worker of environmental training program.
- Description of revegetation efforts undertaken, and their current status.

7.1.2 Long-term Monitoring Reports

Long-term monitoring will be required after construction and after implementation of site revegetation in the temporarily impacted areas. Noxious weed and non-native species management reports will be required as part of the ongoing site monitoring and will include the following information:

- Location, type, extent, and density of noxious weed and non-native species. This will include mapping and photographs, as appropriate, as well as a description of conditions within the survey area.
- Management efforts, including date, location, type of treatment implemented, and results of treatment. Ongoing evaluation of treatment success will be included.
- Description of revegetation efforts undertaken, and their current status.

7.2 REPORT PERIODS

7.2.1 Construction Reports

Biological monitors will keep daily records of construction activities during the proposed project. Included in these records will be the above-listed data (Sections 7.1.1 and 7.1.2). Daily records will be summarized in weekly reports. In addition, a single post-construction report will be produced summarizing the overall results of construction activities and will include data on noxious and non-native species management.

7.2.2 Long-term Monitoring Reports

Annual monitoring reports will be produced for the duration of the monitoring period (approximately 10 years). Monitoring activities will include the following:

- Monthly surveys following the completion of revegetation will be conducted for the first two years. The data and results will be presented on an annual basis.
- Quarterly surveys will be conducted in years three and four. The data and results will be presented on an annual basis.
- Thereafter, semi-annual surveys will be conducted for a total of 10 years. The data and results will be presented on an annual basis.
- At the conclusion of monitoring activities, or if success criteria is met before that, a final monitoring report will be produced that describes the outcome of the proposed revegetation activities and noxious weed and non-native species management efforts.

8.0 REFERENCES

BLM 2010 — Bureau of Land Management (BLM). 2010. Updating List of Approved Herbicide Formulations and Adjuvants. April 2, 2010. Available online: <http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_information/2010/IB_2010-060.html>. Accessed October 14, 2010.

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APPENDIX A
Herbicide Treatment Standard Operating Procedures

APPENDIX A

Herbicide Treatment Standard Operating Procedures

To be prepared.

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APPENDIX B
Conceptual Revegetation Plan

APPENDIX B

HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

APPENDIX B

HERBICIDE TREATMENT STANDARD OPERATING PROCEDURES

This section identifies standard operating procedures (SOPs) that will be followed by the U.S. Department of the Interior Bureau of Land Management (USDI BLM) under all alternatives to ensure that risks to human health and the environment from herbicide treatment actions will be kept to a minimum. Standard operating procedures are the management controls and performance standards required for vegetation management treatments. These practices are intended to protect and enhance natural resources that could be affected by future vegetation treatments.

Prevention of Weeds and Early Detection and Rapid Response

Once weed populations become established, infestations can increase and expand in size. Weeds colonize highly disturbed ground and invade plant communities that have been degraded, but are also capable of invading intact communities. Therefore, prevention, early detection, and rapid response are the most cost-effective methods of weed control. Prevention, early detection, and rapid response strategies that reduce the need for vegetative treatments for noxious weeds should lead to a reduction in the number of acres treated using herbicides in the future by reducing or preventing weed establishment.

As stated in the BLM's *Partners Against Weeds: An Action Plan for the BLM*, prevention and public education are the highest priority weed management activities. Priorities are as follows:

- Priority 1: Take actions to prevent or minimize the need for vegetation control when and where feasible, considering the management objectives of the site.
- Priority 2: Use effective nonchemical methods of vegetation control when and where feasible.
- Priority 3: Use herbicides after considering the effectiveness of all potential methods or in combination with other methods or controls.

Prevention is best accomplished by ensuring the seeds and vegetatively reproductive plant parts of new weed species are not introduced into new areas.

The BLM is required to develop a noxious weed risk assessment when it is determined that an action may introduce or spread noxious weeds or when known habitat exists. If the risk is moderate or high, the BLM may modify the project to reduce the likelihood of weeds infesting the site, and to identify control measures to be implemented if weeds do infest the site.

To prevent the spread of weeds, the BLM takes actions to minimize the amount of existing non-target vegetation that is disturbed or destroyed during project or vegetation treatment actions (Table B-1). During project planning, the following steps are taken:

- Incorporate measures to prevent introduction or spread of weeds into project layout, design, alternative evaluation, and project decisions.
- During environmental analysis for projects and maintenance programs, assess weed risks, analyze potential treatment of high-risk sites for weed establishment and spread, and identify prevention practices.
- Determine prevention and maintenance needs, to include the use of herbicides if needed, at the onset of project planning.
- Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds.

During project development, weed infestations are prioritized for treatment in project operating areas and along access routes. Weeds present on or near the site are identified, a risk assessment is completed, and weeds are controlled as necessary. Project staging areas are weed free, and travel through weed infested areas is avoided or minimized. Examples of prevention actions to be followed during project activities include cleaning all equipment and clothing before entering the project site; avoiding soil disturbance and the creation of other

soil conditions that promote weed germination and establishment; and using weed-free seed, hay, mulch, gravel, soil, and mineral materials on public lands where there is a state or county program in place.

Conditions that enhance invasive species abundance should be addressed when developing mitigation and prevention plans for activities on public lands. These conditions include excessive disturbance associated with road maintenance, poor grazing management, and high levels of recreational use. If livestock grazing is managed to maintain the vigor of native perennial plants, particularly grasses, the chance of weeds invading rangeland is much less. By carefully managing recreational use and educating the public on the potential impacts of recreational activities on vegetation, the amount of damage to native vegetation and soil can be minimized at high use areas, such as campgrounds and off-highway vehicle (OHV) trails. Early detection in recreation areas is focused on roads and trails, where much of the weed spread occurs.

The BLM participates in the National Early Warning and Rapid Response System for Invasive Plants (Figure B-1). The goal of this System to minimize the establishment and spread of new invasive species through a coordinated framework of public and private processes by:

- Early detection and reporting of suspected new plant species to appropriate officials;
- Identification and vouchering of submitted specimens by designated specialists;
- Verification of suspected new state, regional, and national plant records;
- Archival of new records in designated regional and plant databases;
- Rapid assessment of confirmed new records; and
- Rapid response to verified new infestations that are determined to be invasive.

Herbicide Treatment Planning

BLM Manual 9011 (*Chemical Pest Control*) outlines the policies, and BLM Handbook H-9011-1 (*Chemical Pest Control*) outlines the procedures, for use of herbicides on public lands. As part of policy, the BLM is required to thoroughly evaluate the need for chemical treatments and their potential for impact on the environment. The BLM is required to use only U.S. Environmental Protection Agency (USEPA)-registered herbicides that have been properly evaluated under National Environmental Policy Act (NEPA), and to carefully follow label directions and additional BLM requirements.

An operational plan is developed and updated for each herbicide project. The plan includes information on project specifications, key personnel responsibilities, and communication, safety, spill response, and emergency procedures. For application of herbicides not approved for aquatic use, the plan should also specify minimum buffer widths between treatment areas and water bodies. Recommended widths are provided in BLM Handbook H-9011-1 (*Chemical Pest Control*), but actual buffers are site and herbicide active ingredient specific, and are determined based on a scientific analysis of environmental factors, such as climate, topography, vegetation, and weather; timing and method of application; and herbicide risks to humans and non-target species. Table B-2 summarizes important SOPs that should be used when applying herbicides to help protect resources of concern on public lands.

Revegetation

Disturbed areas may be reseeded or planted with desirable vegetation when the native plant community cannot recover and occupy the site sufficiently.

Determining the need for revegetation is an integral part of developing a vegetation treatment. The most important component of the process is determining whether active (seeding/planting) or passive (natural recovery) revegetation is appropriate.

U.S. Department of the Interior policy states, “Natural recovery by native plant species is preferable to planting or seeding, either of natives or non-natives. However, planting or seeding should be used only if necessary to prevent unacceptable erosion or resist competition from non-native invasive species” (620 Departmental Memorandum 3 2004). This policy is reiterated in the USDI *Burned Area Emergency Stabilization and Rehabilitation* Manual, the BLM *Burned Area Emergency Stabilization and Rehabilitation* Manual (BLM H-1742-1), and the *Interagency Burned Area Rehabilitation Guidebook.*

TABLE B-1
Prevention Measures

BLM Activity	Prevention Measure
Project Planning	• Incorporate prevention measures into project layout and design, alternative evaluation, and project decisions to prevent the introduction or spread of weeds. • Determine prevention and maintenance needs, including the use of herbicides, at the onset of project planning. • Before ground-disturbing activities begin, inventory weed infestations and prioritize areas for treatment in project operating areas and along access routes. • Remove sources of weed seed and propagules to prevent the spread of existing weeds and new weed infestations. • Pre-treat high-risk sites for weed establishment and spread before implementing projects. • Post weed awareness messages and prevention practices at strategic locations such as trailheads, roads, boat launches, and public land kiosks. • Coordinate project activities with nearby herbicide applications to maximize the cost-effectiveness of weed treatments.
Project Development	• Minimize soil disturbance to the extent practical, consistent with project objectives. • Avoid creating soil conditions that promote weed germination and establishment. • To prevent weed germination and establishment, retain native vegetation in and around project activity areas and keep soil disturbance to a minimum, consistent with project objectives. • Locate and use weed-free project staging areas. Avoid or minimize all types of travel through weed-infested areas, or restrict travel to periods when the spread of seeds or propagules is least likely. • Prevent the introduction and spread of weeds caused by moving weed-infested sand, gravel, borrow, and fill material. • Inspect material sources on site, and ensure that they are weed-free before use and transport. Treat weed-infested sources to eradicate weed seed and plant parts, and strip and stockpile contaminated material before any use of pit material. • Survey the area where material from treated weed-infested sources is used for at least 3 years after project completion to ensure that any weeds transported to the site are promptly detected and controlled. • Prevent weed establishment by not driving through weed-infested areas. • Inspect and document weed establishment at access roads, cleaning sites, and all disturbed areas; control infestations to prevent weed spread within the project area. • Avoid acquiring water for dust abatement where access to the water is through weed-infested sites. • Identify sites where equipment can be cleaned. Clean equipment before entering public lands. • Clean all equipment before leaving the project site if operating in areas infested with weeds. • Inspect and treat weeds that establish at equipment cleaning sites. • Ensure that rental equipment is free of weed seed. • Inspect, remove, and properly dispose of weed seed and plant parts found on workers' clothing and equipment. Proper disposal entails bagging the seeds and plant parts and incinerating them.
Revegetation	• Include weed prevention measures, including project inspection and documentation, in operation and reclamation plans. • Retain bonds until reclamation requirements, including weed treatments, are completed, based on inspection and documentation. • To prevent conditions favoring weed establishment, reestablish vegetation on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques. • Maintain stockpiled, uninfested material in a weed-free condition.

TABLE B-1 (Cont.)
Prevention Measures

BLM Activity	Prevention Measure
Revegetation (Cont.)	• Revegetate disturbed soil (except travel ways on surfaced projects) in a manner that optimizes plant establishment for each specific project site. For each project, define what constitutes disturbed soil and objectives for plant cover revegetation. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. • Where practical, stockpile weed-seed-free topsoil and replace it on disturbed areas (e.g., road embankments or landings). • Inspect seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) and certify that they are free of weed seed and propagules. • Inspect and document all limited term ground-disturbing operations in noxious weed infested areas for at least 3 growing seasons following completion of the project. • Use native material where appropriate and feasible. Use certified weed-free or weed-seed-free hay or straw where certified materials are required and/or are reasonably available. • Provide briefings that identify operational practices to reduce weed spread (for example, avoiding known weed infestation areas when locating fire lines). • Evaluate options, including closure, to regulate the flow of traffic on sites where desired vegetation needs to be established. Sites could include road and trail rights-of-way (ROW), and other areas of disturbed soils.

In addition to these handbooks and policy, use of native and non-native seed in revegetation and restoration is guided by BLM Manual 1745 (*Introduction, Transplant, Augmentation and Reestablishment of Fish, Wildlife and Plants)*. This manual states that native species shall be used, unless it is determined through the NEPA process that: 1) suitable native species are not available; 2) the natural biological diversity of the proposed management area will not be diminished; 3) exotic and naturalized species can be confined within the proposed management area; 4) analysis of ecological site inventory information indicates that a site will not support reestablishment of a species that historically was part of the natural environment; or 5) resource management objectives cannot be met with native species.

When natural recovery is not feasible, revegetation can be used to stabilize and restore vegetation on disturbed sites and to eliminate or reduce the conditions that favor invasive species. Reseeding or replanting may be required when there is insufficient vegetation or seed stores to naturally revegetate the site.

To ensure revegetation success, there must be adequate soil for root development and moisture storage, which provides moisture to support the new plants. Chances for revegetation success are improved by selecting seed with high purity and percentage germination; selecting native species or cultivars adapted to the area; planting at proper depth, seeding rate, and time of the year for the region; choosing the appropriate planting method; and, where feasible, removing competing vegetation. Planting mixtures are adapted for the treatment area and site uses. A combination of forbs, perennial grasses, and shrubs is typically used on rangeland sites, while shrubs and trees might be favored for riparian and forestland sites. A mixture of several native plant species and types or functional groups enhances the value of the site for fish and wildlife and improves the health and aesthetic character of the site. Mixtures can better take advantage of variable soil, terrain, and climatic conditions, and thus are more likely to withstand insect infestations and survive adverse climatic conditions.

The USDI BLM Native Seed program was developed in response to Congressional direction to supply native plant material for emergency stabilization and longer-term rehabilitation and restoration efforts. The focus of the program is to increase the number of native plant species for which seed is available and the total amount of native seed available for these efforts. To date, the program has focused on native plant material needs of emergency stabilization and burned area rehabilitation in the Great Basin, but is expanding to focus on areas such as western Oregon, the Colorado Plateau, and most recently the Mojave Desert. The Wildland Fire Management Program funds and manages the effort.

The National Seed Warehouse is a storage facility for the native seed supply. Through a Memorandum of

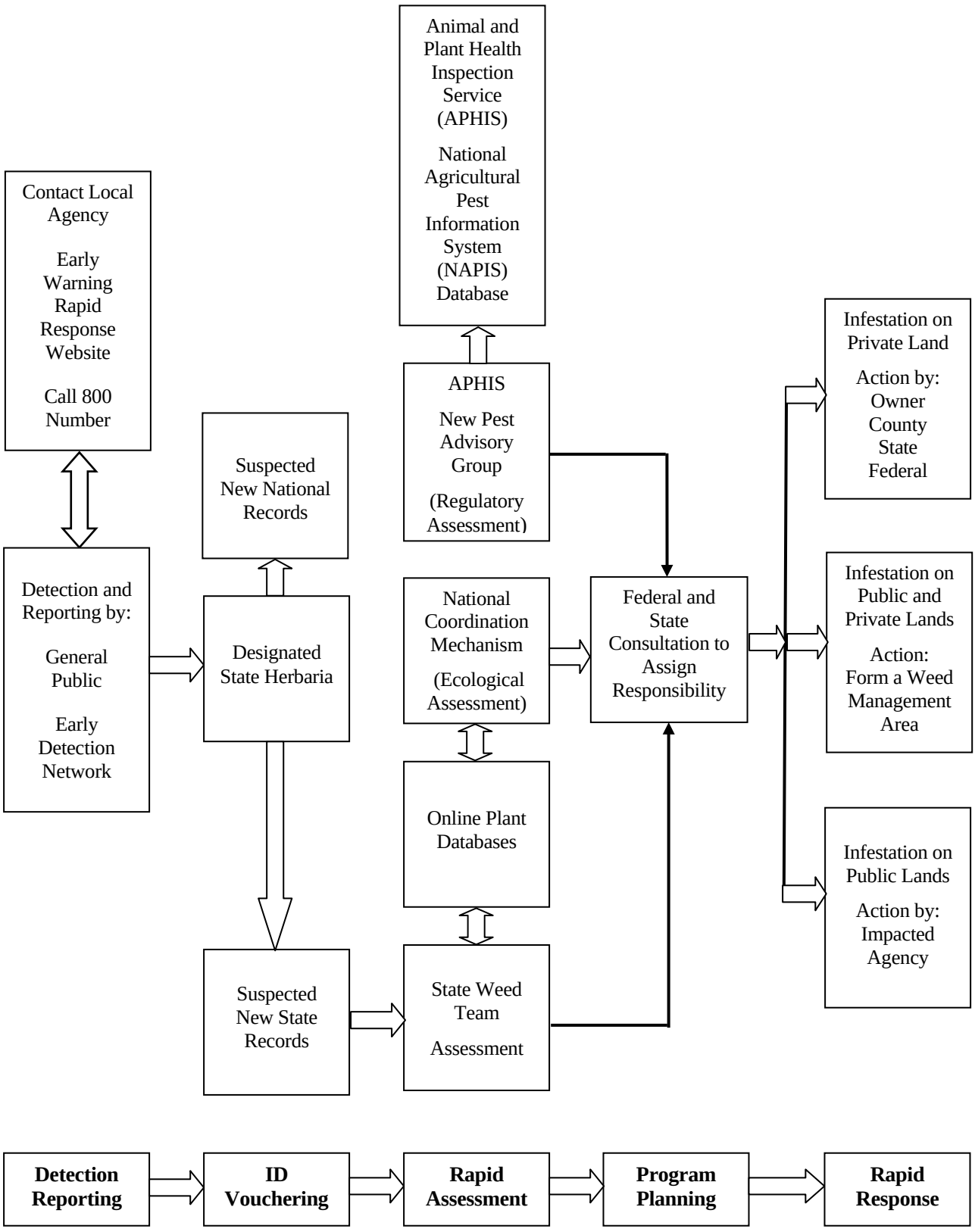

Figure B-1. National Early Warning and Rapid Response System for Invasive Plants.

Understanding with the BLM Idaho State Director, each state (Idaho, Oregon, Nevada, Utah and Colorado) can reserve an annual seed supply for purchase based on a reasonable projection of annual acreage to be stabilized or rehabilitated over a 5-year period.

The Great Basin Restoration Initiative (GBRI) grew out of concern for the health of the Great Basin after the wildfires of 1999. The goal of GBRI is to implement treatments and strategies to maintain functioning ecosystems and to proactively restore degraded ones at strategic locations. Native plants are emphasized in restoration projects where their use is practical and the potential for success is satisfactory. Monitoring is recommended to measure treatment success. To increase the availability of native plants, especially native forbs, the GBRI has established a collaborative native plant project, the Great Basin Native Plant Selection and Increase Project, to increase native plant availability and the technology to successfully establish these plants. This project is supported by funding from the BLM's Native Plant Initiative.

The BLM will follow the following SOPs when revegetating sites:

- Cultivate previously disturbed sites to reduce the amount of weed seeds in the soil seedbank.
- Revegetate sites once work is completed or soon after a disturbance.
- When available, use native seed of known origin as labeled by state seed certification programs.
- Use seed of non-native cultivars and species only when locally adapted native seed is not available or when it is unlikely to establish quickly enough to prevent soil erosion or weed establishment.
- Use seed that is free of noxious and invasive weeds, as determined and documented by a seed inspection test by a certified seed laboratory.
- Limit nitrogen fertilizer applications that favor annual grass growth over forb growth in newly seeded areas, especially where downy brome (cheatgrass) and other invasive annuals are establishing.
- Use clean equipment, free of plants and plant parts, on revegetation projects to prevent the inadvertent introduction of weeds into the site.
- Where important pollinator resources exist, include native nectar and pollen producing plants in the seed mixes used in restoration and reclamation projects. Include non-forage plant species in seed mixes for their pollinator/host relationships as foraging, nesting, or shelter species. Choose native plant species over manipulated cultivars, especially of forbs and shrubs, since natives tend to have more valuable pollen and nectar resources than cultivars. Ensure that bloom times for the flowers of the species chosen match the activity times for the pollinators. Maintain sufficient litter on the soil surfaces of native plant communities for ground-nesting bees.
- Where feasible, avoid grazing by domestic and wild animals on treatment sites until vegetation is well established. Where total rest from grazing is not feasible, efforts should be made to modify the amount and/or season of grazing to promote vegetation recovery within the treatment area. Reductions in grazing animal numbers, permanent or temporary fencing, changes in grazing rotation, and identification of alternative forage sources are examples of methods that could be used to remove, reduce or modify grazing impacts during vegetation recovery.

Special Precautions

Special Status Species

Federal policies and procedures for protecting federally-listed threatened and endangered plant and animal species, and species proposed for listing, were established by the Endangered Species Act of 1973 and regulations issued pursuant to the Act. The purposes of the Act are to provide mechanisms for the conservation of threatened and endangered species and their habitats. Under the Act, the Secretary of the Interior is required to determine which species are threatened or endangered and to issue recovery plans for those species.

Section 7 of the Act specifically requires all federal agencies to use their authorities in furtherance of the Act to carry out programs for the conservation of listed

species, and to ensure that no agency action is likely to jeopardize the continued existence of a listed species or adversely modify critical habitat. Policy and guidance (BLM Manual 6840; *Special Status Species*) also stipulates that species proposed for listing must be managed at the same level of protection as listed species.

The BLM state directors may designate special status in cooperation with their respective state. These special status species must receive, at a minimum, the same level of protection as federal candidate species. The BLM will also carry out management for the conservation of state-listed species, and state laws protecting these species will apply to all BLM programs and actions to the extent that they are consistent with Federal Land Policy and Management Act (FLPMA) and other federal laws.

The BLM consulted with the U.S. Fish and Wildlife Service (UFWS) and National Marine Fisheries Service (NMFS) during development of the *Final Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS) as required under Section 7 of the Endangered Species Act. As part of this process, the BLM prepared a formal consultation package that included a description of the program; species listed as threatened or endangered, species proposed for listing, and critical habitats that could be affected by the program; and a Biological Assessment (BA) that evaluated the likely impacts to listed species, species proposed for listing, and critical habitats from the proposed vegetation treatment program. Over 300 species were evaluated in the BA. The BA also provides broad guidance at a programmatic level for actions that will be taken by the BLM to avoid adversely impacting species or critical habitat.

Before any vegetation treatment or ground disturbance occurs, BLM policy requires a survey of the project site for species listed or proposed for listing, or special status species. This is done by a qualified biologist and/or botanist who consults the state and local databases and visits the site at the appropriate season. If a proposed project may affect a proposed or listed species or its critical habitat, the BLM consults with the USFWS and/or NMFS. A project with a "may affect, likely to adversely affect" determination requires formal consultation and receives a Biological Opinion from the USFWS and/or NMFS. A project with a "may affect, not likely to adversely affect" determination requires informal consultation and receives a concurrence letter from USFWS and/or NMFS, unless that action is implemented under the authorities of the alternative consultation agreement pursuant to counterpart regulations established for *National Fire Plan* projects.

Wilderness Areas

Wilderness areas, which are designated by Congress, are defined by the Wilderness Act of 1964 as places "where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." The BLM manages 175 Wilderness Areas encompassing over 7.2 million acres.

Activities allowed in wilderness areas are identified in wilderness management plans prepared by the BLM. The BLM does not ordinarily treat vegetation in wilderness areas, but will control invasive and noxious weeds when they threaten lands outside wilderness area or are spreading within the wilderness and can be controlled without serious adverse impacts to wilderness values.

Management of vegetation in a wilderness area is directed toward retaining the natural character of the environment. Tree and shrub removal is usually not allowed, except for fire, insect, or disease control. Reforestation is generally prohibited except to repair damage caused by humans in areas where natural reforestation is unlikely. Only native species and primitive methods, such as hand planting, are allowed for reforestation.

Tools and equipment may be used for vegetation management when they are the minimum amount necessary for the protection of the wilderness resource. Motorized tools may only be used in special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values.

Habitat manipulation using mechanical or chemical means may be allowed to protect threatened and endangered species and to correct unnatural conditions, such as weed infestations, resulting from human influence.

The BLM also manages a total of 610 Wilderness Study Areas (WSAs) encompassing nearly 14.3 million acres. These are areas that have been determined to have wilderness characteristics worthy of consideration for wilderness designation. The BLM's primary goals in WSAs are to manage them so as to not impair their wilderness values and to maintain their suitability for

preservation as wilderness until Congress makes a determination on their future.

In WSAs, the BLM must foster a natural distribution of native species of plants and animals by ensuring that ecosystems and processes continue to function naturally.

Cultural Resources

The effects of BLM actions on cultural resources are addressed through compliance with the National Historic Preservation Act, as implemented through a national Programmatic Agreement (*Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*) and state-specific protocol agreements with State Historic Preservation Officers (SHPOs). The BLM's responsibilities under these authorities are addressed as early in the vegetation management project planning process as possible.

The BLM meets its responsibilities for consultation and government-to-government relationships with Native American tribes by consulting with appropriate tribal representatives prior to taking actions that affect tribal interests. The BLM's tribal consultation policies are detailed in BLM Manual 8120 (*Tribal Consultation Under Cultural Resource Authorities)* and Handbook H-8120-1 (*Guidelines for Conducting Tribal Consultation).* The BLM consulted with Native American tribes and Alaska Native groups during development of the PEIS. Information gathered on important tribal resources and potential impacts to these resources from herbicide treatments is presented in the analysis of impacts.

When conducting vegetation treatments, field office personnel consult with relevant parties (including tribes, native groups, and SHPOs), assess the potential of the proposed treatment to affect cultural and subsistence resources, and devise inventory and protection strategies suitable to the types of resources present and the potential impacts to them.

Herbicide treatments, for example, are unlikely to affect buried cultural resources, but might have a negative effect on traditional cultural properties comprised of plant foods or materials significant to local tribes and native groups. These treatments require inventory and protection strategies that reflect the different potential of each treatment to affect various types of cultural resources.

Impacts to significant cultural resources are avoided through project redesign or are mitigated through data recovery, recordation, monitoring, or other appropriate measures. When cultural resources are discovered during vegetation treatment, appropriate actions are taken to protect these resources.

TABLE B-2
Standard Operating Procedures for Applying Herbicides

Resource Element	Standard Operating Procedure
Guidance Documents	BLM Handbook H-9011-1 (*Chemical Pest Control*); and manuals 1112 (*Safety*), 9011 (*Chemical Pest Control*), 9012 (*Expenditure of Rangeland Insect Pest Control Funds*), 9015 (*Integrated Weed Management)*, and 9220 (*Integrated Pest Management*).
General	• Prepare operational and spill contingency plan in advance of treatment. • Conduct a pretreatment survey before applying herbicides. • Select herbicide that is least damaging to the environment while providing the desired results. • Select herbicide products carefully to minimize additional impacts from degradates, adjuvants, inert ingredients, and tank mixtures. • Apply the least amount of herbicide needed to achieve the desired result. • Follow herbicide product label for use and storage. • Have licensed applicators apply herbicides. • Use only USEPA-approved herbicides and follow product label directions and "advisory" statements. • Review, understand, and conform to the "Environmental Hazards" section on the herbicide product label. This section warns of known pesticide risks to the environment and provides practical ways to avoid harm to organisms or to the environment. • Consider surrounding land use before assigning aerial spraying as a treatment method and avoid aerial spraying near agricultural or densely populated areas. • Minimize the size of application area, when feasible. • Comply with herbicide-free buffer zones to ensure that drift will not affect crops or nearby residents/landowners. • Post treated areas and specify reentry or rest times, if appropriate. • Notify adjacent landowners prior to treatment. • Keep a copy of Material Safety Data Sheets (MSDSs) at work sites. MSDSs are available for review at http://www.cdms.net/. • Keep records of each application, including the active ingredient, formulation, application rate, date, time, and location. • Avoid accidental direct spray and spill conditions to minimize risks to resources. • Consider surrounding land uses before aerial spraying. • Avoid aerial spraying during periods of adverse weather conditions (snow or rain imminent, fog, or air turbulence). • Make helicopter applications at a target airspeed of 40 to 50 miles per hour (mph), and at about 30 to 45 feet above ground. • Take precautions to minimize drift by not applying herbicides when winds exceed >10 mph (>6 mph for aerial applications), or a serious rainfall event is imminent. • Use drift control agents and low volatile formulations. • Conduct pre-treatment surveys for sensitive habitat and special status species within or adjacent to proposed treatment areas. • Consider site characteristics, environmental conditions, and application equipment in order to minimize damage to non-target vegetation. • Use drift reduction agents, as appropriate, to reduce the drift hazard to non-target species. • Turn off applied treatments at the completion of spray runs and during turns to start another spray run. • Refer to the herbicide product label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Clean OHVs to remove seeds.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Air Quality See Manual 7000 (*Soil, Water, and Air Management*)	• Consider the effects of wind, humidity, temperature inversions, and heavy rainfall on herbicide effectiveness and risks. • Apply herbicides in favorable weather conditions to minimize drift. For example, do not treat when winds exceed 10 mph (>6 mph for aerial applications) or rainfall is imminent. • Use drift reduction agents, as appropriate, to reduce the drift hazard. • Select proper application equipment (e.g., spray equipment that produces 200- to 800-micron diameter droplets [spray droplets of 100 microns and less are most prone to drift]). • Select proper application methods (e.g., set maximum spray heights, use appropriate buffer distances between spray sites and non-target resources).
Soil See Manual 7000 (*Soil, Water, and Air Management*)	• Minimize treatments in areas where herbicide runoff is likely, such as steep slopes when heavy rainfall is expected. • Minimize use of herbicides that have high soil mobility, particularly in areas where soil properties increase the potential for mobility. • Do not apply granular herbicides on slopes of more than 15% where there is the possibility of runoff carrying the granules into non-target areas.
Water Resources See Manual 7000 (*Soil, Water, and Air Management*)	• Consider climate, soil type, slope, and vegetation type when developing herbicide treatment programs. • Select herbicide products to minimize impacts to water. This is especially important for application scenarios that involve risk from active ingredients in a particular herbicide, as predicted by risk assessments. • Use local historical weather data to choose the month of treatment. Considering the phenology of the target species, schedule treatments based on the condition of the water body and existing water quality conditions. • Plan to treat between weather fronts (calms) and at appropriate time of day to avoid high winds that increase water movements, and to avoid potential stormwater runoff and water turbidity. • Review hydrogeologic maps of proposed treatment areas. Note depths to groundwater and areas of shallow groundwater and areas of surface water and groundwater interaction. Minimize treating areas with high risk for groundwater contamination. • Conduct mixing and loading operations in an area where an accidental spill would not contaminate an aquatic body. • Do not rinse spray tanks in or near water bodies. Do not broadcast pellets where there is danger of contaminating water supplies. • Maintain buffers between treatment areas and water bodies. Buffer widths should be developed based on herbicide- and site-specific criteria to minimize impacts to water bodies. • Minimize the potential effects to surface water quality and quantity by stabilizing terrestrial areas as quickly as possible following treatment.
Wetlands and Riparian Areas	• Use a selective herbicide and a wick or backpack sprayer. • Use appropriate herbicide-free buffer zones for herbicides not labeled for aquatic use based on risk assessment guidance, with minimum widths of 100 feet for aerial, 25 feet for vehicle, and 10 feet for hand spray applications.
Vegetation See Handbook H-4410-1 (*National Range Handbook*), and manuals 5000 (*Forest Management*) and 9015 (*Integrated Weed Management*)	• Refer to the herbicide label when planning revegetation to ensure that subsequent vegetation would not be injured following application of the herbicide. • Use native or sterile species for revegetation and restoration projects to compete with invasive species until desired vegetation establishes. • Use weed-free feed for horses and pack animals. Use weed-free straw and mulch for revegetation and other activities. • Identify and implement any temporary domestic livestock grazing and/or supplemental feeding restrictions needed to enhance desirable vegetation recovery following treatment. Consider adjustments in the existing grazing permit, to maintain desirable vegetation on the treatment site.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Pollinators	• Complete vegetation treatments seasonally before pollinator foraging plants bloom. • Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily. • Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment. • Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources. • Maintain herbicide free buffer zones around patches of important pollinator nectar and pollen sources. • Maintain herbicide free buffer zones around patches of important pollinator nesting habitat and hibernacula. • Make special note of pollinators that have single host plant species, and minimize herbicide spraying on those plants (if invasive species) and in their habitats.
Fish and Other Aquatic Organisms See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)	• Use appropriate buffer zones based on label and risk assessment guidance. • Minimize treatments near fish-bearing water bodies during periods when fish are in life stages most sensitive to the herbicide(s) used, and use spot rather than broadcast or aerial treatments. • Use appropriate application equipment/method near water bodies if the potential for off-site drift exists. • For treatment of aquatic vegetation, 1) treat only that portion of the aquatic system necessary to achieve acceptable vegetation management, 2) use the appropriate application method to minimize the potential for injury to desirable vegetation and aquatic organisms, and 3) follow water use restrictions presented on the herbicide label.
Wildlife See manuals 6500 (*Wildlife and Fisheries Management*) and 6780 (*Habitat Management Plans*)	• Use herbicides of low toxicity to wildlife, where feasible. • Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area. • Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife.
Threatened, Endangered, and Sensitive Species See Manual 6840 (*Special Status Species*)	• Survey for special status species before treating an area. Consider effects to special status species when designing herbicide treatment programs. • Use a selective herbicide and a wick or backpack sprayer to minimize risks to special status plants. • Avoid treating vegetation during time-sensitive periods (e.g., nesting and migration, sensitive life stages) for special status species in area to be treated.
Livestock See Handbook H-4120-1 (*Grazing Management*)	• Whenever possible and whenever needed, schedule treatments when livestock are not present in the treatment area. Design treatments to take advantage of normal livestock grazing rest periods, when possible. • As directed by the herbicide product label, remove livestock from treatment sites prior to herbicide application, where applicable. • Use herbicides of low toxicity to livestock, where feasible. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contamination of non-target food and water sources. • Avoid use of diquat in riparian pasture while pasture is being used by livestock. • Notify permittees of the herbicide treatment project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Notify permittees of livestock grazing, feeding, or slaughter restrictions, if necessary. • Provide alternative forage sites for livestock, if possible.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Wild Horses and Burros	• Minimize using herbicides in areas grazed by wild horses and burros. • Use herbicides of low toxicity to wild horses and burros, where feasible. • Remove wild horses and burros from identified treatment areas prior to herbicide application, in accordance with herbicide product label directions for livestock. • Take into account the different types of application equipment and methods, where possible, to reduce the probability of contaminating non-target food and water sources.
Cultural Resources and Paleontological Resources See handbooks H-8120-1 (*Guidelines for Conducting Tribal Consultation*) and H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*), and manuals 8100 (*The Foundations for Managing Cultural Resources*), 8120 (*Tribal Consultation Under Cultural Resource Authorities*), and 8270 (*Paleontological Resource Management*) See also: *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*	• Follow standard procedures for compliance with Section 106 of the National Historic Preservation Act as implemented through the *Programmatic Agreement among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act* and state protocols or 36 Code of Federal Regulations Part 800, including necessary consultations with State Historic Preservation Officers and interested tribes. • Follow BLM Handbook H-8270-1 (*General Procedural Guidance for Paleontological Resource Management*) to determine known Condition I and Condition 2 paleontological areas, or collect information through inventory to establish Condition 1 and Condition 2 areas, determine resource types at risk from the proposed treatment, and develop appropriate measures to minimize or mitigate adverse impacts. • Consult with tribes to locate any areas of vegetation that are of significance to the tribe and that might be affected by herbicide treatments. • Work with tribes to minimize impacts to these resources. • Follow guidance under Human Health and Safety in the PEIS in areas that may be visited by Native peoples after treatments.
Visual Resources See handbooks H-8410-1 (*Visual Resource Inventory*) and H-8431-1 (*Visual Resource Contrast Rating*), and manual 8400 (*Visual Resource Management*)	• Minimize the use of broadcast foliar applications in sensitive watersheds to avoid creating large areas of browned vegetation. • Consider the surrounding land use before assigning aerial spraying as an application method. • Minimize off-site drift and mobility of herbicides (e.g., do not treat when winds exceed 10 mph; minimize treatment in areas where herbicide runoff is likely; establish appropriate buffer widths between treatment areas and residences) to contain visual changes to the intended treatment area. • If the area is a Class I or II visual resource, ensure that the change to the characteristic landscape is low and does not attract attention (Class I), or if seen, does not attract the attention of the casual viewer (Class II). • Lessen visual impacts by: 1) designing projects to blend in with topographic forms; 2) leaving some low-growing trees or planting some low-growing tree seedlings adjacent to the treatment area to screen short-term effects; and 3) revegetating the site following treatment. • When restoring treated areas, design activities to repeat the form, line, color, and texture of the natural landscape character conditions to meet established Visual Resource Management (VRM) objectives.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Wilderness and Other Special Areas See handbooks H-8550-1 (*Management of Wilderness Study Areas (WSAs)*), and H-8560-1 (*Management of Designated Wilderness Study Areas*), and Manual 8351 (*Wild and Scenic Rivers*)	• Encourage backcountry pack and saddle stock users to feed their livestock only weed-free feed for several days before entering a wilderness area. • Encourage stock users to tie and/or hold stock in such a way as to minimize soil disturbance and loss of native vegetation. • Revegetate disturbed sites with native species if there is no reasonable expectation of natural regeneration. • Provide educational materials at trailheads and other wilderness entry points to educate the public on the need to prevent the spread of weeds. • Use the "minimum tool" to treat noxious and invasive vegetation, relying primarily on the use of ground-based tools, including backpack pumps, hand sprayers, and pumps mounted on pack and saddle stock. • Use chemicals only when they are the minimum method necessary to control weeds that are spreading within the wilderness or threaten lands outside the wilderness. • Give preference to herbicides that have the least impact on non-target species and the wilderness environment. • Implement herbicide treatments during periods of low human use, where feasible. • Address wilderness and special areas in management plans. • Maintain adequate buffers for Wild and Scenic Rivers (¼ mile on either side of river, ½ mile in Alaska).
Recreation See Handbook H-1601-1 (*Land Use Planning Handbook, Appendix C*)	• Schedule treatments to avoid peak recreational use times, while taking into account the optimum management period for the targeted species. • Notify the public of treatment methods, hazards, times, and nearby alternative recreation areas. • Adhere to entry restrictions identified on the herbicide product label for public and worker access. • Post signs noting exclusion areas and the duration of exclusion, if necessary. • Use herbicides during periods of low human use, where feasible.
Social and Economic Values	• Consider surrounding land use before selecting aerial spraying as a method, and avoid aerial spraying near agricultural or densely-populated areas. • Post treated areas and specify reentry or rest times, if appropriate. • Notify grazing permittees of livestock feeding restrictions in treated areas, if necessary, as per herbicide product label instructions. • Notify the public of the project to improve coordination and avoid potential conflicts and safety concerns during implementation of the treatment. • Control public access until potential treatment hazards no longer exist, per herbicide product label instructions. • Observe restricted entry intervals specified by the herbicide product label. • Notify local emergency personnel of proposed treatments. • Use spot applications or low-boom broadcast applications where possible to limit the probability of contaminating non-target food and water sources, especially vegetation over areas larger than the treatment area. • Consult with Native American tribes and Alaska Native groups to locate any areas of vegetation that are of significance to the tribes and Native groups and that might be affected by herbicide treatments. • To the degree possible within the law, hire local contractors and workers to assist with herbicide application projects and purchase materials and supplies, including chemicals, for herbicide treatment projects through local suppliers. • To minimize fears based on lack of information, provide public educational information on the need for vegetation treatments and the use of herbicides in an integrated pest management program for projects proposing local use of herbicides.

TABLE B-2 (Cont.)
Standard Operating Procedures for Applying Pesticides

Resource Element	Standard Operating Procedure
Rights-of-way	• Coordinate vegetation management activities where joint or multiple use of a ROW exists. • Notify other public land users within or adjacent to the ROW proposed for treatment. • Use only herbicides that are approved for use in ROW areas.
Human Health and Safety	• Establish a buffer between treatment areas and human residences based on guidance given in the HHRA, with a minimum buffer of ¼ mile for aerial applications and 100 feet for ground applications, unless a written waiver is granted. • Use protective equipment as directed by the herbicide product label. • Post treated areas with appropriate signs at common public access areas. • Observe restricted entry intervals specified by the herbicide product label. • Provide public notification in newspapers or other media where the potential exists for public exposure. • Have a copy of MSDSs at work site. • Notify local emergency personnel of proposed treatments. • Contain and clean up spills and request help as needed. • Secure containers during transport. • Follow label directions for use and storage. • Dispose of unwanted herbicides promptly and correctly.

APPENDIX C
Herbicides Approved for Use on BLM Lands

Listing of Herbicides Approved for Use on BLM Lands*

				Update November 13, 2009	
	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	**EIS/ROD & COURT**			**EPA REG.**	**CA**
INGREDIENT	**INJUNCTIONS**	**TRADE NAME**	**MANUFACTURER**	**NUMBER**	**REG. ****
Bromacil	AK, AZ, CA, CO, ID, MT, ND,	Bromacil 80DF	Alligare, LLC	81927-4	Y
	NE, NM, NV, OK, SD, TX, UT,	Hyvar X	DuPont	352-287	Y
	WA, WY	Hyvar XL	DuPont	352-346	Y
Bromacil +	AK, AZ, CA, CO, ID, MT, ND,	Bromacil/Diuron 40/40	Alligare, LLC	81927-3	Y
Diuron	NE, NM, NV, OK, SD, TX, UT,	Krovar I DF	DuPont	352-505	Y
	WA, WY	Weed Blast Res. Weed Cont.	Loveland Products Inc.	34704-576	N
		DiBro 2+2	Nufarm Americas Inc.	228-227	Y
		DiBro 4+4	Nufarm Americas Inc.	228-235	N
		DiBro 4+2	Nufarm Americas Inc.	228-386	N
		Weed Blast 4G	SSI Maxim	34913-19	N
Chlorsulfuron	AK, AZ, CA, CO, ID, MT, ND,	Telar DF	DuPont	352-522	Y
	NE, NM, NV, OK, SD, TX, UT,	Telar XP	DuPont	352-654	Y
	WA, WY	NuFarm Chlorsulf Pro 75 WDG Herbicide	Nufarm Americas Inc.	228-672	N
		Chlorsulfuron E-Pro 75 WDG	Nufarm Americas Inc.	79676-72	N
Clopyralid	AK, AZ, CA, CO, ID, MT, ND,	Spur	Albaugh, Inc.	42750-89	N
	NE, NM, NV, OK, SD, TX, UT,	Pyramid R&P	Albaugh, Inc.	42750-94	N
	WA, WY	Clopyralid 3	Alligare, LLC	42750-94-81927	Y
		Cody Herbicide	Alligare, LLC	81927-28	Y
		Reclaim	Dow AgroSciences	62719-83	N
		Stinger	Dow AgroSciences	62719-73	Y
		Transline	Dow AgroSciences	62719-259	Y
		CleanSlate	Nufarm Americas Inc.	228-491	Y
Clopyralid +	AK, AZ, CA, CO, ID, MT, ND,	Commando	Albaugh, Inc.	42750-92	N
2,4-D	NE, NM, NV, OK, SD, TX, UT,	Curtail	Dow AgroSciences	62719-48	N
	WA, WY	Cutback	Nufarm Americas Inc.	71368-72	N

Listing of Herbicides Approved for Use on BLM Lands*

	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Agrisolution 2,4-D LV6	Agriliance, L.L.C.	1381-101	N
	NE, NM, NV, OK, OR, SD, TX,	Agrisolution 2,4-D Amine 4	Agriliance, L.L.C.	1381-103	N
	UT, WA, WY	Agrisolution 2,4-D LV4	Agriliance, L.L.C.	1381-102	N
		2,4-D Amine 4	Albaugh, Inc./Agri Star	42750-19	Y
		2,4-D LV 4	Albaugh, Inc./Agri Star	42750-15	Y
		Solve 2,4-D	Albaugh, Inc./Agri Star	42750-22	Y
		2,4-D LV 6	Albaugh, Inc./Agri Star	42750-20	N
		Five Star	Albaugh, Inc./Agri Star	42750-49	N
		D-638	Albaugh, Inc./Agri Star	42750-36	N
		2,4-D LV6	Helena Chem. Co.	4275-20-5905	N
		2,4-D Amine	Helena Chem. Co.	5905-72	N
		Opti-Amine	Helena Chem. Co.	5905-501	N
		Barrage HF	Helena	5905-529	N
		HardBall	Helena	5905-549	N
		Unison	Helena	5905-542	N
		Amine 4CA 2,4-D Weed Killer	Loveland Products Inc.	34704-5	Y
		Clean Amine	Loveland Products Inc.	34704-120	N
		Low Vol 4 Ester Weed Killer	Loveland Products Inc.	34704-124	N
		Low Vol 6 Ester Weed Killer	Loveland Products Inc.	34704-125	N
		LV-6 Ester Weed Killer	Loveland Products Inc.	34704-6	Y
		Saber	Loveland Products Inc.	34704-803	N
		Saber CA	Loveland Products Inc.	34704-803	Y
		Salvo	Loveland Products Inc.	34704-609	N
		Savage DF	Loveland Products Inc.	34704-606	Y
		Aqua-Kleen	Nufarm Americas Inc.	71368-4	N
		Aqua-Kleen	Nufarm Americas Inc.	228-378	N
		Esteron 99C	Nufarm Americas Inc.	62719-9-71368	N
		Weedar 64	Nufarm Americas Inc.	71368-1	Y
		Weedone LV-4	Nufarm Americas Inc.	228-139-71368	Y
		Weedone LV-4 Solventless	Nufarm Americas Inc.	71368-14	Y
		Weedone LV-6	Nufarm Americas Inc.	71368-11	Y
		Formula 40	Nufarm Americas Inc.	228-357	Y
		2,4-D LV 6 Ester	Nufarm Americas Inc.	228-95	Y

Listing of Herbicides Approved for Use on BLM Lands*

	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
2,4-D - cont.	AK, AZ, CA, CO, ID, MT, ND,	Platoon	Nufarm Americas Inc.	228-145	N
	NE, NM, NV, OK, OR, SD, TX,	WEEDstroy AM-40	Nufarm Americas Inc.	228-145	Y
	UT, WA, WY	Hi-Dep	PBI Gordon Corp.	2217-703	N
		2,4-D Amine	Setre (Helena)	5905-72	N
		Barrage LV Ester	Setre (Helena)	5905-504	N
		2,4-D LV4	Setre (Helena)	5905-90	N
		2,4-D LV6	Setre (Helena)	5905-93	N
		Clean Crop Amine 4	UAP-Platte Chem. Co.	34704-5 CA	Y
		Clean Crop Low Vol 6 Ester	UAP-Platte Chem. Co.	34704-125	N
		Salvo LV Ester	UAP-Platte Chem. Co.	34704-609	N
		2,4-D 4# Amine Weed Killer	UAP-Platte Chem. Co.	34704-120	N
		Clean Crop LV-4 ES	UAP-Platte Chem. Co.	34704-124	N
		Savage DF	UAP-Platte Chem. Co.	34704-606	Y
		Cornbelt 4 lb. Amine	Van Diest Supply Co.	11773-2	N
		Cornbelt 4# LoVol Ester	Van Diest Supply Co.	11773-3	N
		Cornbelt 6# LoVol Ester	Van Diest Supply Co.	11773-4	N
		Amine 4	Wilbur-Ellis Co.	2935-512	N
		Lo Vol-4	Wilbur-Ellis Co.	228-139-2935	N
		Lo Vol-6 Ester	Wilbur-Ellis Co.	228-95-2935	N
		Agrisolution 2,4-D LV6	Winflied Solutions, LLC	1381-101	N
		Agrisolution 2,4-D Amine 4	Winfield Solutions, LLC	1381-103	N
		Agrisolution 2,4-D LV4	Winfield Solutions, LLC	1381-102	N
Dicamba	AK, AZ, CA, CO, ID, MT, ND,	Dicamba DMA	Albaugh, Inc./Agri Star	42750-40	N
	NE, NM, NV, OK, OR, SD, TX,	Vision	Albaugh, Inc.	42750-98	N
	UT, WA, WY	Cruise Control	Alligare, LLC	42750-40-81927	N
		Banvel	Arysta LifeScience N.A. Corp.	66330-276	Y
		Clarity	BASF Ag. Products	7969-137	Y
		Rifle	Loveland Products Inc.	34704-861	Y
		Banvel	Micro Flo Company	51036-289	Y
		Diablo	Nufarm Americas Inc.	228-379	Y
		Vanquish Herbicide	Nufarm Americas Inc.	228-397	Y
		Vanquish	Syngenta	100-884	N
		Sterling Blue	Winfield Solutions, LLC	7969-137-1381	Y

Listing of Herbicides Approved for Use on BLM Lands*

	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Range Star	Albaugh, Inc./Agri Star	42750-55	N
	UT, WA, WY	Weedmaster	BASF Ag. Products	7969-133	Y
		Rifle-D	Loveland Products Inc.	34704-869	N
		KambaMaster	Nufarm Americas Inc.	71368-34	N
		Veteran 720	Nufarm Americas Inc.	228-295	Y
		Brash	Winfield Solutions, LLC	1381-202	N
Dicamba +	AZ, CO, ID, MT, ND, NE, NM,	Distinct	BASF Ag. Products	7969-150	N
Diflufenzopyr	NV, OK, SD, TX, UT, WA, WY	Overdrive	BASF Ag. Products	7969-150	N
Diquat	AK, AZ, CA, CO, ID, MT, ND, NE,	Reward	Syngenta Crop Prot., Inc.	100-1091	Y
	NM, NV, OK, SD, TX, UT, WA, WY	NuFarm Diquat Pro 2L Herbicide	Nufarm Americas Inc.	228-675	N
		Nufarm Diquat 2L Herbicide	Nufarm Americas Inc.	228-675	N
		Diquat E-Pro 2L	Nufarm Americas Inc.	79676-75	Y
Diuron	AK, AZ, CA, CO, ID, MT, ND,	Diuron 80DF	Agriliance, L.L.C.	9779-318	N
	NE, NM, NV, OK, SD, TX, UT,	Diuron 80DF	Alligare, LLC	81927-12	Y
	WA, WY	Karmex DF	DuPont	352-692	Y
		Karmex XP	DuPont	352-692	Y
		Karmex IWC	DuPont	352-692	Y
		Direx 4L	DuPont	352-678	Y
		Direx 80DF	Griffin Company	1812-362	Y
		Direx 4L	Griffin Company	1812-257	Y
		Diuron 4L	Loveland Products Inc.	34704-854	Y
		Diuron 80 WDG	Loveland Products Inc.	34704-648	N
		Diuron 80WDG	UAP-Platte Chem. Co.	34704-648	N
		Vegetation Man. Diuron 80 DF	Vegetation Man., LLC	66222-51-74477	N
		Diuron-DF	Wilbur-Ellis	00352-00-508-02935	N
		Diuron 80DF	Winfield Solutions, LLC	9779-318	N

Listing of Herbicides Approved for Use on BLM Lands*

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ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Fluridone	AK, AZ, CA, CO, ID, MT, ND,	Avast!	SePRO	67690-30	Y
	NE, NM, NV, OK, SD, TX, UT,	Sonar AS	SePRO	67690-4	Y
	WA, WY	Sonar Precision Release	SePRO	67690-12	Y
		Sonar Q	SePRO	67690-3	Y
		Sonar SRP	SePRO	67690-3	Y
Glyphosate	AK, AZ, CA, CO, ID, MT, ND,	Aqua Star	Albaugh, Inc./Agri Star	42750-59	Y
	NE, NM, NV, OK, OR, SD, TX,	Forest Star	Albaugh, Inc./Agri Star	42570-61	Y
	UT, WA, WY	Gly Star Original	Albaugh, Inc./Agri Star	42750-60	Y
		Gly Star Plus	Albaugh, Inc./Agri Star	42750-61	Y
		Gly Star Pro	Albaugh, Inc./Agri Star	42750-61	Y
		Glyphosate 4 PLUS	Alligare, LLC	81927-9	Y
		Glyphosate 5.4	Alligare, LLC	81927-8	Y
		Glyfos	Cheminova	4787-31	Y
		Glyfos PRO	Cheminova	67760-57	Y
		Glyfos Aquatic	Cheminova	4787-34	Y
		ClearOut 41	Chem. Prod. Tech., LLC	70829-2	N
		ClearOut 41 Plus	Chem. Prod. Tech., LLC	70829-3	N
		Accord Concentrate	Dow AgroSciences	62719-324	Y
		Accord SP	Dow AgroSciences	62719-322	Y
		Accord XRT	Dow AgroSciences	62719-517	Y
		Accord XRT II	Dow AgroSciences	62719-556	Y
		Glypro	Dow AgroSciences	62719-324	Y
		Glypro Plus	Dow AgroSciences	62719-322	Y
		Rodeo	Dow AgroSciences	62719-324	Y
		Mirage	Loveland Products Inc.	34704-889	Y
		Mirage Plus	Loveland Products Inc.	34704-890	Y
		Aquamaster	Monsanto	524-343	Y
		Roundup Original	Monsanto	524-445	Y
		Roundup Original II	Monsanto	524-454	Y
		Roundup Original II CA	Monsanto	524-475	Y
		Honcho	Monsanto	524-445	Y
		Honcho Plus	Monsanto	524-454	Y

Listing of Herbicides Approved for Use on BLM Lands*

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ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Glyphosate - cont.	AK, AZ, CA, CO, ID, MT, ND,	Roundup PRO	Monsanto	524-475	Y
	NE, NM, NV, OK, OR, SD, TX,	Roundup PRO Concentrate	Monsanto	524-529	Y
	UT, WA, WY	Roundup PRO Dry	Monsanto	524-505	Y
		Roundup PROMAX	Monsanto	524-579	Y
		Aqua Neat	Nufarm Americas Inc.	228-365	Y
		Credit Xtreme	Nufarm Americas Inc.	71368-81	Y
		Foresters	Nufarm Americas Inc.	228-381	Y
		Razor	Nufarm Americas Inc.	228-366	Y
		Razor Pro	Nufarm Americas Inc.	228-366	Y
		GlyphoMate 41	PBI Gordon Corp.	2217-847	Y
		AquaPro Aquatic Herbicide	SePRO Corporation	62719-324-67690	Y
		Rattler	Setre (Helena)	524-445-5905	Y
		Buccaneer	Tenkoz	55467-10	Y
		Buccaneer Plus	Tenkoz	55467-9	Y
		Mirage Herbicide	UAP-Platte Chem. Co.	524-445-34704	Y
		Mirage Plus Herbicide	UAP-Platte Chem. Co.	524-454-34704	Y
		Glyphosate 4	Vegetation Man., LLC	73220-6-74477	Y
		Cornerstone	Winfield Solutions, LLC	1381-191	Y
		Cornerstone Plus	Winfield Solutions, LLC	1381-192	Y
		Rascal	Winfield Solutions, LLC	1381-191	N
		Rascal Plus	Winfield Solutions, LLC	1381-192	N
Glyphosate +	AK, AZ, CA, CO, ID, MT, ND,	Landmaster BW	Albaugh, Inc./Agri Star	42570-62	N
2,4-D	NE, NM, NV, OK, OR, SD, TX,	Campaign	Monsanto	524-351	N
	UT, WA, WY	Landmaster BW	Monsanto	524-351	N
Glyphosate +	AK, AZ, CA, CO, ID, MT, ND,	Fallowmaster	Monsanto	524-507	N
Dicamba	NE, NM, NV, OK, OR, SD, TX,	GlyKamba	Nufarm Americas Inc.	71368-30	N
	UT, WA, WY				

Listing of Herbicides Approved for Use on BLM Lands*

	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Hexazinone	AK, AZ, CA, CO, ID, MT, ND,	Velpar ULW	DuPont	352-450	N
	NE, NM, NV, OK, SD, TX, UT,	Velpar L	DuPont	352-392	Y
	WA, WY	Velpar DF	DuPont	352-581	Y
		Pronone MG	Pro-Serve	33560-21	N
		Pronone 10G	Pro-Serve	33560-21	Y
		Pronone 25G	Pro-Serve	33560-45	N
Hexazinone +	AK, AZ, CO, ID, MT, ND, NE,	Westar	DuPont Crop Protection	352-626	Y
Sulfometuron methyl	NM, NV, OK, SD, TX, UT, WA, WY	Oustar	DuPont Crop Protection	352-603	Y
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.					
Imazapic	AZ, CO, ID, MT,ND, NE, NM,	Panoramic 2SL	Alligare, LLC	66222-141-81927	N
	NV, OK, SD, TX, UT, WA, WY	Plateau	BASF	241-365	N
		Imazapic E 2 SL	Etigra, LLC	79676-65	N
Imazapic +	AZ, CO, ID, MT,ND, NE, NM,	Journey	BASF	241-417	N
Glyphosate	NV, OK, SD, TX, UT, WA, WY				
Imazapyr	AK, AZ, CA, CO, ID, MT, ND,	Imazapyr 2SL	Alligare, LLC	81927-23	N
	NE, NM, NV, OK, SD, TX, UT,	Imazapyr 4SL	Alligare, LLC	81927-24	N
	WA, WY	Ecomazapyr 2SL	Alligare, LLC	81927-22	N
		Arsenal Railroad Herbicide	BASF	241-273	N
		Chopper	BASF	241-296	Y
		Arsenal Applicators Conc.	BASF	241-299	N
		Arsenal	BASF	241-346	N
		Arsenal PowerLine	BASF	241-431	N
		Stalker	BASF	241-398	N

Listing of Herbicides Approved for Use on BLM Lands*

	STATES WITH APPROVAL				
	BASED UPON CURRENT				
ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Imazapyr - cont.	AK, AZ, CA, CO, ID, MT, ND,	Habitat	BASF	241-426	Y
	NE, NM, NV, OK, SD, TX, UT,	Imazapyr E-Pro 2 - VM &	Etigra, LLC	81959-8	Y
	WA, WY	Aquatic Herbicide			
		Imazapyr E-Pro 4 - Forestry	Etigra, LLC	81959-9	N
		Imazapyr E-Pro 2E - Site Prep & Basal	Etigra, LLC	81959-7	N
		Polaris	Nufarm Americas Inc.	228-534	Y
		Polaris AC	Nufarm Americas Inc.	241-299-228	Y
		Polaris AC	Nufarm Americas Inc.	228-480	Y
		Polaris AQ	Nufarm Americas Inc.	241-426-228	Y
		Polaris RR	Nufarm Americas Inc.	241-273-228	N
		Polaris SP	Nufarm Americas Inc.	228-534	Y
		Polaris SP	Nufarm Americas Inc.	241-296-228	Y
		Polaris Herbicide	Nufarm Americas Inc.	241-346-228	N
		SSI Maxim Arsenal 0.5G	SSI Maxim Co., Inc.	34913-23	N
		Ecomazapyr 2 SL	Vegetation Man., LLC	74477-6	N
		Imazapyr 2 SL	Vegetation Man., LLC	74477-4	N
		Imazapyr 4 SL	Vegetation Man., LLC	74477-5	N
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND, NE,	Mojave 70 EG	Alligare, LLC	74477-9-81927	N
Diuron	NM, NV, OK, SD, TX, UT, WA, WY	Sahara DG	BASF	241-372	N
		Imazuron E-Pro	Etigra, LLC	79676-54	N
		SSI Maxim Topsite 2.5G	SSI Maxim Co., Inc.	34913-22	N
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage Clearstand	DuPont	352-766	N
Metsulfuron methyl	NE, NM, NV, OK, SD, TX, UT,				
	WA, WY				

Listing of Herbicides Approved for Use on BLM Lands*

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Imazapyr +	AK, AZ, CA, CO, ID, MT, ND,	Lineage HWC	DuPont	352-765	N
Sulfometuron methyl +	NE, NM, NV, OK, SD, TX, UT,	Lineage Prep	DuPont	352-767	N
Metsulfuron methyl	WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.					
Metsulfuron methyl	AK, AZ, CO, ID, MT, ND, NE,	MSM 60	Alligare, LLC	81927-7	N
	NM, NV, OK, SD, TX, UT, WA,	Escort DF	DuPont	352-439	N
	WY	Escort XP	DuPont	352-439	N
		MSM E-AG 60 EG Herbicide	Etigra, LLC	81959-14	N
		MSM E-Pro 60 EG Herbicide	Etigra, LLC	81959-14	N
		Patriot	Nufarm Americas Inc.	228-391	N
		PureStand	Nufarm Americas Inc.	71368-38	N
		Metsulfuron Methyl DF	Vegetation Man., L.L.C.	74477-2	N
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND, NE,	Cimarron Extra	DuPont	352-669	N
Chlorsulfuron	NM, NV, OK, SD, TX, UT, WA,	Cimarron Plus	DuPont	352-670	N
	WY				
Metsulfuron methyl +	AK, AZ, CO, ID, MT, ND, NE, NM	Cimarron MAX	DuPont	352-615	N
Dicamba + 2,4-D	NV, OK, SD, TX, UT, WA, WY				
Picloram	AZ, CO, ID, MT, ND, NE, NM,	Triumph K	Albaugh, Inc.	42750-81	N
	NV, OK, OR, SD, TX, UT, WA,	Triumph 22K	Albaugh, Inc.	42750-79	N
	WY	Picloram K	Alligare, LLC	42750-81-81927	N
		Picloram K	Alligare, LLC	81927-17	N
		Picloram 22K	Alligare, LLC	42750-79-81927	N
		Picloram 22K	Alligare, LLC	81927-18	N
		Grazon PC	Dow AgroSciences	62719-181	N
		OutPost 22K	Dow AgroSciences	62719-6	N
		Tordon K	Dow AgroSciences	62719-17	N
		Tordon 22K	Dow AgroSciences	62719-6	N
		Trooper 22K	Nufarm Americas Inc.	228-535	N

Listing of Herbicides Approved for Use on BLM Lands*

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ACTIVE	EIS/ROD & COURT			EPA REG.	CA
INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Picloram +	AZ, CO, ID, MT, ND, NE, NM,	GunSlinger	Albaugh, Inc.	42750-80	N
2,4-D	NV, OK, OR, SD, TX, UT, WA,	Picloram + D	Alligare, LLC	42750-80-81927	N
	WY	Picloram + D	Alligare, LLC	81927-16	N
		Tordon 101M	Dow AgroSciences	62719-5	N
		Tordon 101 R Forestry	Dow AgroSciences	62719-31	N
		Tordon RTU	Dow AgroSciences	62719-31	N
		Grazon P+D	Dow AgroSciences	62719-182	N
		HiredHand P+D	Dow AgroSciences	62719-182	N
		Pathway	Dow AgroSciences	62719-31	N
		Trooper 101	Nufarm Americas Inc.	228-561	N
		Trooper P + D	Nufarm Americas Inc.	228-530	N
Picloram +	AZ, CO, ID, MT, ND, NE, NM,	Trooper Extra	Nufarm Americas Inc.	228-586	N
2,4-D +	NV, OK, OR, SD, TX, UT, WA,				
Dicamba	WY				
Sulfometuron methyl	AK, AZ, CA, CO, ID, MT, ND,	SFM 75	Alligare, LLC	81927-26	Y
	NE, NM, NV, OK, SD, TX, UT	Oust DF	DuPont	352-401	N
	WA, WY	Oust XP	DuPont	352-601	Y
		SFM E-Pro 75EG	Etigra, LLC	79676-16	Y
		Spyder	Nufarm Americas Inc.	228-408	Y
		SFM 75	Vegetation Man., L.L.C.	72167-11-74477	Y
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.					
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Landmark XP	DuPont	352-645	Y
Chlorsulfuron	NE, NM, NV, OK, SD, TX, UT				
	WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.					

Listing of Herbicides Approved for Use on BLM Lands*

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INGREDIENT	INJUNCTIONS	TRADE NAME	MANUFACTURER	NUMBER	REG. **
Sulfometuron methyl +	AK, AZ, CA, CO, ID, MT, ND,	Oust Extra	DuPont	352-622	N
Metsulfuron methyl	NE, NM, NV, OK, SD, TX, UT				
	WA, WY				
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.					
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NE,	Spike 20P	Dow AgroSciences	62719-121	Y
	NM, NV, OK, SD, TX, UT, WA,	Spike 80DF	Dow AgroSciences	62719-107	Y
	WY	SpraKil S-5 Granules	SSI Maxim Co., Inc.	34913-10	Y
Tebuthiuron +	AZ, CA, CO, ID, MT, ND, NE,	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	Y
Diuron	NM, NV, OK, SD, TX, UT, WA,	SpraKil SK-26 Granular	SSI Maxim Co., Inc.	34913-16	Y
	WY				
Triclopyr	AK, AZ, CA, CO, ID, MT, ND,	Triclopyr 4EC	Alligare, LLC	72167-53-74477	Y
	NE, NM, NV, OK, SD, TX, UT	Triclopyr 3	Alligare, LLC	81927-13	Y
	WA, WY	Triclopry 4	Alligare, LLC	81927-11	Y
		Element 3A	Dow AgroSciences	62719-37	Y
		Element 4	Dow AgroSciences	62719-40	Y
		Forestry Garlon XRT	Dow AgroSciences	62719-553	Y
		Garlon 3A	Dow AgroSciences	62719-37	Y
		Garlon 4	Dow AgroSciences	62719-40	Y
		Garlon 4 Ultra	Dow AgroSciences	62719-527	Y
		Remedy	Dow AgroSciences	62719-70	Y
		Remedy Ultra	Dow AgroSciences	62719-552	Y
		Pathfinder II	Dow AgroSciences	62719-176	Y
		Relegate	Nufarm Americas Inc.	228-521	Y
		Tahoe 3A	Nufarm Americas Inc.	228-384	Y
		Tahoe 3A	Nufarm Americas Inc.	228-518	Y
		Tahoe 3A	Nufarm Americas Inc.	228-520	Y
		Tahoe 4E	Nufarm Americas Inc.	228-385	Y
		Tahoe 4E Herbicide	Nufarm Americas Inc.	228-517	Y
		Renovate 3	SePRO Corporation	62719-37-67690	Y

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Triclopyr (cont.)	AK, AZ, CA, CO, ID, MT, ND,	Renovate OTF	SePRO Corporation	67690-42	Y
	NE, NM, NV, OK, SD, TX, UT	Ecotriclopyr 3 SL	Vegetation Man., LLC	72167-49-74477	N
	WA, WY	Triclopyr 3 SL	Vegetation Man., LLC	72167-53-74477	N
Triclopyr +	AK, AZ, CA, CO, ID, MT, ND,	Everett	Alligare, LLC	81927-29	Y
2,4-D	NE, NM, NV, OK, SD, TX, UT,	Crossbow	Dow AgroSciences	62719-260	Y
	WA, WY	Candor	Nufarm Americas Inc.	228-565	Y
Triclopyr +	AK, AZ, CA, CO, ID, MT, ND,	Prescott Herbicide	Alligare, LLC	81927-30	Y
Clopyralid	NE, NM, NV, OK, SD, TX, UT,	Redeem R&P	Dow AgroSciences	62719-337	Y
	WA, WY	Brazen	Nufarm Americas Inc.	228-564	Y

*** Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as, creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, county restrictions, etc.**

**** Just because a herbicide has a Federal registration, and is approved under the current EIS, it may or may not be registered for use in California. This column identifies those formulations for which there is a California registration.**