
Pesticide Discharge Management Plan



**US Army Corps
of Engineers** ®

Portland District

April 2023

Pesticide Discharge Management Plan

for:

U.S. Army Corps of Engineers, Portland District

Bonneville Lock and Dam, The Dalles Lock and Dam, John Day-Willow Creek Project,
Willamette Valley Project and Rogue River Basin Project
USACE Portland District CENWP-ODT-N
333 SW 1st Ave
Portland, OR 97204-3440

Decision-maker:

U.S. Army Corps of Engineers, Portland District
Kymberly Anderson, Chief of Operations Division
USACE Portland District CENWP-OD
333 SW 1st Ave
Portland, OR 97204-3440

PDMP Contact:

U.S. Army Corps of Engineers, Portland District
Nicholas M. Racine, Natural Resource Specialist
USACE Portland District CENWP-ODT-N
333 SW 1st Ave
Portland, OR 97204-3440
503-808-4325

PDMP Preparation Date:

UPDATED: 04/18/2023

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SECTION 1: Operator Information

1. Pest Management Areas

Federal agencies must develop and maintain a Pesticide Discharge Management Plan (PDMP) for their pest management areas (PMA) that are within 3 feet of waters of the United States (WOTUS) in the state of Oregon, including wetlands, as required by the National Pollutant Discharge Elimination System (NPDES) general permit issued by the Oregon Department of Environmental Quality pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act (CWA), and at or below ordinary high water mark (OHWM) of WOTUS in the state of Washington, as required by Chapter 90.48 RCW, 173-201A WAC, and the NPDES Pesticide General Permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to Section 402 of the CWA.

The USACE Portland District has PMAs under its jurisdiction and management that need invasive weed control within the scope of NPDES requirements. Civil works projects at Bonneville, The Dalles, John Day-Willow Creek have PMAs located on or near the Columbia River. Additionally, this PDMP covers the East Sand Island located near the mouth of the Columbia River. Civil works projects at Detroit, Big Cliff, Foster, Green Peter, Fern Ridge, Blue River, Cougar, Fall Creek, Dexter, Lookout Point, Hills Creek, Cottage Grove, Dorena, Elk Creek, Lost Creek Lake, and Applegate have PMAs located on or near a variety of watersheds including Willamette, McKenzie, North and South Santiam rivers as well as the Rogue and Applegate rivers and Elk Creek.

NWP uses an Integrated Pest Management (IPM) approach to pest management, which involves regular survey for pest plants, the decision whether to treat, the choice of the most appropriate method for treatment from all possible options, monitoring of results, and, when appropriate, follow-up restoration to native vegetation. This plan lists both the general processes NWP uses to make pest management decisions, and specific sites where pest treatments are proposed. In many cases, PMAs are intentionally large, and vegetation will be treated when appropriate based on thresholds and IPM practices. This is an intentional decision to allow pest managers to treat new patches as they are discovered and to respond rapidly to priority species for which Early Detection and Rapid Response (EDRR) are critical.

This plan meets the requirements of the permits and is reviewed annually and updated as needed to remain current. This document is maintained in the Operations Division, Natural Resources Management Section of the Portland District office. This PDMP will be updated when new sites, species, or chemicals need to be included.

2. Identify the Pesticide Use Patterns for this Pest Management Area that trigger the requirement to develop a Pesticide Discharge Management Plan. (check all that apply).

a. ☐ Mosquitoes and Other Flying Insect Pests

b. ☒ Weeds and Algae

c. ☐ Animal Pests

d. ☐ Forest Canopy Pests

3. Operator Type (check one):

a. ☒ Federal Government

b. ☐ State Government

c. ☐ Local Government

d. ☐ Mosquito control district (or similar)

SECTION 2: PDMP Team

1. Decision-maker: *Any entity with control over the decision to perform pesticide applications including the ability to modify those decisions.*
Organization Name: U.S. Army Corps of Engineers, Portland District
Name: Kymberly Anderson
Address: 333 SW 1st Ave
City, State, Zip Code: Portland, OR 97204
Telephone Number: (503) 808-4300
Email address: Kymberly.C.Anderson@usace.army.mil
2. PDMP Contact: *Person who should be contacted regarding PDMP questions.*
Organization Name: U.S. Army Corps of Engineers, Portland District Office
Name: Nicholas Racine
Address: 333 SW 1st Ave
City, State, Zip Code: Portland, OR 97204
Telephone Number: 503-808-4325
Email address: Nicholas.M.Racine@usace.army.mil
3. This PDMP was Prepared by: *Person responsible for developing and revising the PDMP.*
Organization Name: USACE Portland District Office
Name: Nicholas Racine
Address: 333 SW 1st Ave
City, State, Zip Code: Portland, OR 97204
Telephone Number: 503-808-4325
Email address: Nicholas.M.Racine@usace.army.mil
4. Please include any additional team members and their responsibilities.

Team Member Name(s)	Individual Responsibilities
Nicholas Racine, Portland District	Natural Resource Manager
Melissa Rinehart, Portland District	NRM and EC Section Chief
Mason Scharfe, Bonneville Lock & Dam	Natural Resource Specialist
Claire Addis, The Dalles Lock & Dam	Natural Resource Specialist
Greg Volkman, John Day Lock and Dam	Natural Resource Specialist
Wes Messinger, Willamette Valley Projects	Botanist
Jesse Brownlee, Rogue River Basin Projects	Natural Resource Manager

SECTION 3: Problem Identification

3.1 Pest Problem Description

1. Provide a brief summary of the pest problem in the table.

Summary of Pest Problem

Target Pest(s) <i>Note: Use common name</i>	Source of the pest problem	Data Source	WA List	OR List
Bittersweet Nightshade	Eurasian vine that has naturalized throughout North America along waterways, lake shores and open areas	Field Observation	N/A	N/A
Blackberry (Himalayan/Armenian, Evergreen, European, Cut Leaf)	Bird and animal seed disbursement in improperly vegetated regions	Field Observation	C	B
Butterfly Bush	An escaped ornamental, native to northwestern China and Japan.	Field Observation	B	B
Cattails (Exotic)	Natural environmental and accidental human disbursement	Field Observation	C	N/A
Common Reed	Accidental human facilitated introduction through aquatic activities.	Field Observation	B	B
Curlyleaf Pondweed	Eurasian aquatic that was introduced in the Great Lakes region and is now considered invasive throughout much of North America.	Field Observation	C	N/A
English Hawthorne	European tree species, introduced as ornamental and occasionally for livestock hedges	Field Observation	C	B
Eurasian Watermilfoil	Natural environmental and accidental human disbursement	Field Observation	B	B
Everlasting Pea (Perennial Peavine)	European native sold in wildflower mixes and used for erosion control and restoration	Field Observation	N/A	B
False Indigo/ Indigobush	Human cultivation and natural seed disbursement	Field Observation	B	B
Flowering Rush (EDRR)	Ornamental cultivation spread through natural and human means	Field Observation	A	A/T
French Broom (EDRR in Washington)	Introduced as an ornamental, it is originally from Mediterranean Europe and northwest Africa.	Field Observation	A	B
Garlic Mustard (EDRR)	European native first planted in North America in 1800s, cultivated	No Reports	A	B/T

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	for food and medicine by pioneers who valued its garlic flavor.			
Geranium (Shiny and Herb Robert)	Originally from Eurasia, transported by human and environmental means	Field Observation	B	B
Giant Hogweed (EDRR)	Native to Asia, imported then escaped and naturalized in surrounding areas, especially riparian and urban sites.	No Reports	A	A/T
Gorse (EDRR in Oregon)	Native to Europe, it was introduced at Bandon, OR as an ornamental and living fence. Oregon has 55,000 acres with some level of infestation.	No Reports	B	B/T
Grasses [False-Brome (WA-A), Ravenna (OR-A/T), Harding, Loy Manna, Reed Canary, Johnsongrass (WA-A)]	Agricultural product cultivation spread through natural and human means	Field Observation	Varies A-List Noted	Varies A and T List Noted
Hoary Cress	Potentially introduces through contaminated alfalfa seeds spread via humans and environmental means	Field Observation	C	B
Ivies (English and Atlantic)	Introduced by European immigrants, then widely sold as ornamental plants for landscaping	Field Observation	C	B
Knotweed (Japanese, Giant, Himalayan)	Native to Eurasia, introduced as an ornamental and stream bank stabilization	Field Observation	B	B
Kudzu (EDRR)	Native to Japan, three sites are known in Oregon. Since 2000, all sites received intensive treatment, but unknown infestations may exist.	No Reports	A	A/T
Lesser Celandine	An escaped ornamental that has spread to the PNW including the Willamette Valley. Cultivars of lesser celandine continue to be sold through catalogs and nurseries nationwide.	Field Observation	B	B
Myrtle Spurge / Caper Spurge/ Leafy Spurge (EDRR in Oregon)	Ornamental cultivation spread through natural and human means.	Field Observation	B, N/A, B	B, N/A, B/T
Orange Hawkweed (EDRR in Oregon)	Native to Europe, it has spread throughout US. Plant enthusiasts have contributed to spread due to its showy, red-orange flowers. It continues to be sold in nurseries as an ornamental.	No Reports	B	A/T
Parrot Feather	Native of South America, introduced for use in aquariums and water gardens. First reported in PNW in	Field Observation	B	B

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	1940s, now found in slow moving water throughout Western Oregon.			
Paterson's Curse (EDRR in Oregon)	Native to southern Europe and Africa, believed to have come from wildflower seed mix. First detected in Linn County in 2003 and Douglas County in 2004. Both sites are under intensive treatment, but unknown infestations may exist.	No Reports	N/A	A/T
Perennial Pepperweed	Suspected to have originated in contaminated sugar beet seed	Field Observation	B	B/T
Poison Hemlock	Natural environmental and accidental human disbursement	Field Observation	B	B
Poison Oak	Native to WA and OR, but strategically managed for safety reasons	Field Observation	N/A	N/A
Policeman's Helmet	Native to India and western Himalaya, introduced as an ornamental to gardeners and now spreading through PNW.	No Reports	B	B
Portuguese Broom (EDRR)	Native to Portugal and Spain, introduced as an ornamental and for sand stabilization. Infestations are limited to Lane and Douglas counties, but unknown infestations may exist.	No Reports	N/A	B/T
Puncturevine	Suspected to have been a contaminant in wool from Europe	Field Observation	B	B
Purple Loosestrife	Natural environmental and accidental human disbursement	Field Observation	B	B
Roses (Exotic)	Natural environmental and accidental human disbursement	Field Observation	N/A	N/A
Rush Skeletonweed	Originally from Eurasia, transported by human and environmental means	Field Observation	B	B/T
Russian Thistle	Native to SE Russia and western Siberia, first introduced in 1873 then transported by human and environmental means	Field Observation	N/A	N/A
Saltcedar (EDRR in Oregon)	Native to the Middle East, it was introduced in the 1800's as an ornamental, for windbreaks and erosion control.	Field Observation	B	B/T
Scotch Broom	Ornamental cultivation spread through natural and human means	Field Observation	B	B
Spurge Laurel	Native to Europe, ornamental cultivation spread through natural and human means	Field Observation	B	B
St. Johnswort	A European native, this introduced species is now abundant in the PNW. It is still widely sold in herbal	Field Observation	C	B

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	medicine market due to purported medicinal qualities.			
Sulfur Cinquefoil	Transported from Europe and spread through natural and human means	Field Observation	B	B
Tansy Ragwort and Common Tansy	Native to Europe and Western Asia, transported by human and environmental means	Field Observation	B, B	B/T, N/A
Teasels (Common, Cutleaf)	Natural environmental and accidental human disbursement	Field Observation	C	B
Thistles / Knapweeds	Natural environmental and accidental human disbursement	Field Observation	Varies	Varies
Toadflax (Yellow and Dalmatian)	Introduced as ornamental, still occasionally found in wildflower seed mixes	Field Observation	C/B	B, B/T
Tree of Heaven / Russian Olive, other Woody Plants	Human cultivation and natural seed disbursement	Field Observation	C/C	B
Viper's Bugloss (Blueweed)	Native to Europe and Western and Central Asia, introduced and naturalized to North America. Cultivated and distributed in other parts of the U.S.	No Reports	B	N/A
Virginia Creeper	Ornamental cultivation spread through natural and human means	Field Observation	N/A	N/A
Water Primrose (EDRR in Oregon)	Accidental human facilitated introduction through aquatic activities.	Field Observation	B	B/T
Yellow Flag Iris	Seed transportation via humans and environmental means	Field Observation	C	B
Yellow Floating Heart (EDRR in Oregon)	Native to the Mediterranean region, this was introduced as an ornamental pond plant and escaped.	Field Observation	B	A/T

2. Provide a brief description of the pest problem.

Non-native species are ubiquitous throughout the Pacific Northwest. As people from around the world have traveled through North America, species from their countries of origin have been transplanted both accidentally and intentionally. Common vectors resulting in establishment of exotic species include escape from cultivation as agricultural products (exotic grasses) or ornamentals (tree of heaven, water primrose, flowering rush), intentional establishment (blackberries, feral apples), agricultural weeds accidentally introduced, or aquarium plants dumped by un-informed owners.

Once introduced, species may be spread through environmental or anthropogenic means resulting in new patches of pest plants on Corps lands on an ongoing basis. The primary contributing factor for invasive plant species is transplanted seeds and stem fragments carried by varying modes and deposited on Corps managed areas. Nearly all the management units

are adjacent to major watersheds or their first-order tributaries. The natural flow of rivers transport seeds long distances. Other environmental influences that aid the spread of invasives are various types of weather, animal disbursement and lack of adequate native riparian vegetation. Anthropogenic influences include vessel and vehicle traffic, recreational and construction activities, and alteration of the native landscape and associated vegetation. Many different types of activity from recreation to industry occur on USACE project and adjacent lands enhancing this distribution influence. These activities have the potential to spread seeds and reproductive parts from area to area. Another factor contributing to the problem can be a lack of established native vegetation in shoreline and riparian areas.

3.2 Action Threshold(s)

1. Provide a brief summary of the action threshold(s) in the table.

Summary of Action Threshold(s)

Target Pests	Action Thresholds
Bittersweet Nightshade	Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.
Blackberry (Himalayan/ Armenian, Evergreen, European, Cut Leaf)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to infrastructure, endemic vegetation and/or wildlife or endangered species.
Butterfly Bush	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Cattails (Exotic)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Common Reed	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Curlyleaf Pondweed	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
English Hawthorne	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Eurasian Watermilfoil	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Everlasting Pea (Perennial Peavine)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

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False Indigo / Indigobush	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Flowering Rush (A & A/T, EDRR)	Any presence detected in management areas.
French Broom (A, EDRR in Washington)	In WA: Any presence detected in management areas. In OR: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Garlic Mustard (A & B/T, EDRR)	Any presence detected in management areas.
Geranium (Shiny and Herb Robert)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Giant Hogweed (A & A/T, EDRR)	Any presence detected in management areas.
Gorse (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Grasses [False-Brome (WA-A, EDRR), Ravenna (OR-A/T, EDRR), Harding, Loy Manna, Reed Canary, Johnsongrass (WA-A, EDRR)]	Ravenna, False Brome in WA, Johnsongrass in WA: Any presence detected in management areas. All others: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Hoary Cress	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Ivies (English and Atlantic)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Knotweeds (Japanese, Giant, Himalayan)	Any presence detected in management areas.
Kudzu (A & A/T, EDRR)	Any presence detected in management areas.
Lesser Celandine	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

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Myrtle Spurge / Caper Spurge / Leafy Spurge (B/T, EDRR in Oregon)	Leafy Spurge in OR: Any presence detected in management areas. Myrtle Spurge or Caper Spurge in either state or Leafy Spurge in WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Orange Hawkweed (A/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Parrot Feather	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Paterson's Curse (A/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Perennial Pepperweed (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Poison Hemlock	Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.
Poison Oak	Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.
Policeman's Helmet	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Portuguese Broom (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Puncturevine	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new

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	growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Purple Loosestrife	Any presence detected in management areas where biocontrol beetles are not detected. If beetles are present, infestation will be monitored but not actively controlled.
Roses (Exotic)	Infestation that jeopardizes ecological restoration objectives, or pose a significant safety risk to the public, employees or infrastructure.
Rush Skeletonweed (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Russian Thistle	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Saltcedar (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Scotch Broom	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Spurge Laurel	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
St. Johnswort	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Sulfur Cinquefoil	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Tansy Ragwort (B/T in OR) and Common Tansy	Tansy Ragwort in OR: Any presence detected in management areas.

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	All others: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Teasels (Common, Cutleaf)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Thistles/Knapweeds	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Toadflax (Yellow and Dalmatian, B/T in OR)	Dalmatian Toadflax in OR: Any presence detected in management areas. Dalmatian Toadflax in WA and Yellow Toadflax: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Tree of Heaven / Russian Olive and other Woody Plants	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to infrastructure, endemic vegetation and/or wildlife or endangered species.
Viper's Bugloss (Blueweed)	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Virginia Creeper	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Water Primrose (B/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Yellow Flag Iris	Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Yellow Floating Heart (A/T, EDRR in Oregon)	In OR: Any presence detected in management areas. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
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2. Provide a brief description of the action threshold(s).

Action thresholds are factors taken into consideration to determine when action will be taken to start pest control. Species are placed into one of two categories based on the threat level to Corps managed natural capital. The first category are priority species that include rare species and species that may have not yet been detected on Corps lands, but would threaten ecosystem function, endemic species, and/or the human environment. These species will be targeted for eradication anywhere they are found on NWP lands. The second category is the as-needed category. These are species that are either lower threat or are so well established that there is no hope of eradication, but which threaten rare species, sites, or human safety. These will be targeted for treatment as needed to protect NWP resources.

Priority Species: Any Species on the Washington A list or Oregon A/T or B/T list, well as, Knotweeds, Purple Loosestrife, and Poison Hemlock as determined by Project managers.

As-Needed Species: All other species listed in this PDMP.

a. *Target Pest:* **Bittersweet Nightshade**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.

Basis for the action threshold: No legal status but is recognized it as an invasive and control and containment of existing populations is encouraged. Toxic to people, pets and livestock.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

b. *Target Pest:* **Blackberry** (Himalayan/Armenian, Evergreen, European, Cut Leaf)

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to infrastructure, endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: The species is very invasive, widespread and forms dense groupings/monocultures in riparian zones leading to habitat and biodiversity loss, native species displacement and the creation of impassable brambles.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- c. Target Pest: **Butterfly Bush**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Butterfly bush forms dense thickets, especially along riverbanks and gravel bars, which crowd out native plants and may alter soil nutrient concentrations. This shrub is difficult to control, can produce seeds during its first year and seeds are viable 3 to 5 years.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- d. Target Pest: **Cattails (Exotic)**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Non-native cattails can invade managed and recreation aquatic systems, forming dense monocultures, negatively impacting the ecosystems ecology and impairing the intended usage of affected regions.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- e. Target Pest: **Common Reed**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: The species proliferates rapidly and outcompetes native vegetation, forming very dense monocultures. It alters wetland hydrology, increases the potential for a fire and degrades the overall wetland wildlife habitat.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- f. Target Pest: **Curlyleaf Pondweed**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Curlyleaf pondweed forms dense surface mats that choke out native plants and affect recreational uses. It is a perennial aquatic that grows in early spring and then goes dormant in the summer, so early detection and swift action is key.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

g. Target Pest: **English Hawthorne**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Degrades wildlife habitat in oak woodlands, forming very dense stands that can alter the structure of forest understories and open grasslands.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff

h. Target Pest: **Eurasian Watermilfoil**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: This a pervasive species in the region that has a propensity to form dense mats of vegetation on the surface of the water that hinders with recreational activities, creates an ideal mosquito habitat, and out competes native species while shading others out.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

i. Target Pest: **Everlasting Pea (Perennial Peavine)**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Everlasting pea is increasingly a problem in Western Oregon on rights-of-way, forested regions, and natural areas. As infestations occur, large areas are smothered, and native plant cover are reduced.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

j. **Target Pest: False Indigo / Indigobush**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: The species root system acidifies the surrounding soils inhibiting the growth of endemic species and at maturity each individual is capable of producing and releasing approximately 6,000 seeds. Once established at high densities it becomes very difficult and expensive to control. If current populations are allowed to increase recreation, wildlife and native vegetation (specifically restored endemic wormwood) will be negatively impacted.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

k. **Target Pest: Flowering Rush (EDRR)**

Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.

Action Threshold: Any presence detected in any management area.

Basis for the action threshold: Flowering Rush is an Early Detection Rapid Response “A” list species. It is an aggressive colonizer, rapidly spreading and forming dense mats that force out native species, block water intakes, and filling regions inhibiting access and egress from boat ramps, launches, swimming areas and marinas.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

l. **Target Pest: French Broom (EDRR in Washington)**

Pest Management Objective: In WA: Prevent new establishments and treat all existing distributions within the management units. In OR: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: In WA, any presence detected in any management area.

In OR, infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: French Broom is an aggressive pioneer species, moving in and spreading quickly after disturbance. Once established its very difficult and expensive to remove.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- m. **Target Pest: Garlic Mustard (EDRR)**
Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.
Action Threshold: Any presence detected in any management area.
Basis for the action threshold: Garlic Mustard is an Early Detection Rapid Response “T” list species. Garlic mustard outcompetes native and beneficial species producing high quantities of seed from a single plant can make it difficult to eradicate once it is well-established.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- n. **Target Pest: Geranium (Shiny and Herb Robert)**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Shiny Geranium is difficult to control since the seeds can germinate when conditions are favorable in a variety of habitats. It is tolerant of shade and wet soils; it grows prolifically in oak and ash woodlands.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- o. **Target Pest: Giant Hogweed (EDRR)**
Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.
Action Threshold: Any presence detected in any management area.
Basis for the action threshold: Giant Hogweed is an Early Detection Rapid Response “A” list species. It forms dense canopies outcompeting native species and increasing soil erosion. It is also a public safety hazard as it exudes a clear watery sap which can result in severe burns.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- p. **Target Pest: Gorse (B/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR, any presence detected in any management area. In WA, infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Gorse is an Early Detection Rapid Response “T” list species. Few invasive exotic species persist like gorse, making it one of the most difficult to manage weeds in the world. Control costs are high, and reinfestation is a constant problem.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- q. *Target Pest:* **Grasses** [False-Brome (WA-A, EDRR), Ravenna (OR-A/T, EDRR), Harding, Loy Manna, Reed Canary, Johnsongrass (WA-A, EDRR)]
Pest Management Objective: A-listed species: Prevent new establishments and treat all existing distributions within the management units. All others: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: A-listed species: Any presence detected in any management area. All others: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Exotic grasses are very invasive, widespread and forms dense groupings/monocultures leading to habitat and biodiversity loss, native species displacement and changes in fire regime.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- r. *Target Pest:* **Hoary Cress**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Hoary Cress is a highly competitive plant and once established it rapidly displaces native vegetation, forming dense monocultures.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- s. *Target Pest:* **Ivies (English and Atlantic)**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Ivy can outcompete native plants, reducing animal foraging habitat. It inhibits regeneration of understory plants and kills understory and overstory trees by shading them out. Ivy may cause storm damage trees by the added weight in the canopy that also may act as a sail. The sap of the stems can cause skin

irritations and rashes to sensitive individuals. Consuming large amounts of leaves and fruits can be toxic to people and cattle.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

t. ***Target Pest:*** **Knotweeds- Japanese, Giant, Himalayan (Priority)**

Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.

Action Threshold: Any presence detected in management areas.

Basis for the action threshold: These are very aggressive escaped ornamentals that are capable of forming dense stands, crowding out all other vegetation and degrading wildlife habitat. It can also create a fire hazard in the dormant season. It is difficult to control once established. Due to the ecosystem devastation potential, the species will be treated as an Early Detection Rapid Response (Priority-EDRR) species.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

u. ***Target Pest:*** **Kudzu (EDRR)**

Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.

Action Threshold: Any presence detected in any management area.

Basis for the action threshold: Kudzu is an Early Detection Rapid Response “A” list species. It is a highly aggressive invasive plant which is extremely difficult to control once established. Kudzu is so aggressive it covers and smothers all other plants in its path, resulting in solid single species stands eliminating native species.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

v. ***Target Pest:*** **Lesser Celandine**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Lesser celandine outcompetes and excludes native plants. It emerges before most other spring ephemeral plants which can give it a competitive advantage over our native understory plant communities. It is invasive and difficult to control.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- w. **Target Pest: Myrtle Spurge / Caper Spurge / Leafy Spurge (B/T, EDRR in Oregon)**
Pest Management Objective: For Leafy Spurge in OR: Prevent new establishments and treat all existing distributions within the management units. Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: For Leafy Spurge in OR: Any presence detected in any management area. For all others: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Myrtle Spurge poses a danger to the public because of its caustic, latex sap, which causes nausea, vomiting and diarrhea when ingested. Skin contact with sap causes redness, swelling and blisters. Leafy Spurge is toxic to cattle, horses, and humans.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- x. **Target Pest: Orange Hawkweed (A/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR: Any presence detected in any management area. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Orange Hawkweed is an Early Detection Rapid Response "A" list species. It is an aggressive competitor of native plant species. It is a serious pest of lowland open-areas and mountain meadows.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- y. **Target Pest: Parrot Feather**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Parrot feather infestations can alter aquatic ecosystems. It forms dense mats that shade out other native aquatic plants as well as inhibit water flow and recreational activities.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- z. **Target Pest: Paterson's Curse (A/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR: Any presence detected in any management area.
In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Paterson's Curse is an Early Detection Rapid Response "A" list species. Paterson's curse has prolific seed production enabling rapid spread and can form solid stands and displace native and desirable plants.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- aa. **Target Pest: Perennial Pepperweed (B/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR: Any presence detected in any management area. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Perennial pepperweed establishes and colonizes rapidly, degrading wetlands, nesting habitat and outcompeting desirable grasses in natural areas. Plants are known to mine subsurface salts, depositing them on the soil surface through leaf drop.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- bb. **Target Pest: Poison Hemlock (Priority as determined by Projects managers)**
Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units or strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.
Basis for the action threshold: Poison hemlock can be deadly toxic to humans and animals. The entire plant contains toxic alkaloids but is primarily concentrated in the unripe seeds. It is an aggressive species that rapidly colonizes once established, especially in rich, moist soil. It outcompetes native vegetation and displaces desirable forage species. It can also damage recreational opportunities, clog waterways, and lower land values.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- cc. **Target Pest: Poison Oak**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives or pose a significant safety risk to the public or employees.
Basis for the action threshold: Poison Oak causes rash through contact and smoke inhalation.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- dd. **Target Pest: Policeman's Helmet**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Policeman's helmet forms dense stands in riparian areas and moist lowlands, excluding native forbs.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- ee. **Target Pest: Portuguese Broom (B/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR: Any presence detected in any management area.
In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Portuguese Broom is an Early Detection Rapid Response "T" list species. Portuguese broom is highly competitive to native shrubs and trees.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- ff. **Target Pest: Puncturevine**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Puncturevine is a toxic plant and a serious weed in open fields, meadows and roadsides. The spines of the fruit can cause damage to animals and people.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

gg. *Target Pest:* **Purple Loosestrife (Priority)**

Pest Management Objective: Prevent new establishments and treat all existing distributions within the management units.

Action Threshold: Any presence detected in management areas where biocontrol beetle is not detected. If beetle is present, infestation will be monitored but not actively controlled.

Basis for the action threshold: The species is a very invasive and prolific perennial plant that causes serious damage to wetland areas. It can grow 5ft tall in a year, produce thousands of seeds per plant and rapidly create large and extremely dense monocultures that displace native plants and prevent their growth/regrowth. Wetland monocultures severely reduce the biodiversity and resiliency of the ecosystem. Due to the ecosystem devastation potential, the species will be treated as an Early Detection Rapid Response (EDRR) species.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

hh. *Target Pest:* **Roses (Exotic)**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, or pose a significant safety risk to the public, employees or infrastructure.

Basis for the action threshold: The species is very invasive, widespread and forms dense groupings/monocultures leading to habitat and biodiversity loss, native species displacement and the creation of impassable brambles.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

ii. *Target Pest:* **Rush Skeletonweed (B/T, EDRR in Oregon)**

Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: In OR: Any presence detected in any management area. In WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Rush skeletonweed is an aggressive plant in both rangeland and cropland, particularly in lower elevation, light textured soils. Extensive

efforts have been implemented to eradicate or contain outbreaks, but new sites emerge each year.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

jj. **Target Pest: Russian Thistle**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: The species proliferates rapidly and outcompetes native vegetation as it produces thousands of seeds that are spread as mature plants break off at ground level and become tumbleweeds. It is well adapted to dry and disturbed sites.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

kk. **Target Pest: Saltcedar (B/T, EDRR in Oregon)**

Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: In OR, any presence detected in any management area.

In WA, infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Saltcedar is an aggressive invader of waterways in arid regions. It absorbs an enormous amount of water, and secretes salt, forming a crust that inhibits survival of other plants. It provides no food for wildlife and little cover for nesting.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

ll. **Target Pest: Scotch Broom**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Scotch broom displaces native and beneficial plants, causing a loss of grassland and open forest. It aggressively spreads to form monocultures, replacing desirable foraging grasses and young trees. Additionally, the seeds are toxic to animals. Each plant can produce thousands of seeds that remain viable for over 30 years, and up to an estimated 80 years.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

mm. *Target Pest:* **Spurge Laurel**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Escaped populations from ornamental plantings continue to expand into forested areas especially adjacent to urban areas. As birds further disperse seeds, more habitats will be invaded, and native plant communities altered. All parts of the plant are highly toxic.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

nn. *Target Pest:* **St. Johnwort**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: St. Johnswort spreads easily to disturbed and new sites. It is toxic to both animals and humans.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

oo. *Target Pest:* **Sulfur Cinquefoil**

Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.

Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: This invasive species is new to the region and failure to prevent establishment would allow the species to spread rapidly, forming monocultures over large regions. It is a strong competitor with native grasses and unpalatable to most wildlife.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- pp. **Target Pest: Tansy Ragwort (B/T, EDRR in Oregon) and Common Tansy**
Pest Management Objective: Tansy Ragwort in OR: Prevent new establishments and treat all existing distributions within the management units. Common Tansy and Tansy Ragwort in WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Tansy Ragwort in OR: Any presence detected in any management area. Common Tansy and Tansy Ragwort in WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Tansy ragwort is toxic and a threat to livestock and agriculture. All plant parts are toxic, with the highest number of alkaloids in flowers then leaves, roots and stems. Toxic properties are a possible threat to humans through food chain contaminants. Common Tansy displaces forage plants, reduces wildlife habitat and species diversity.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- qq. **Target Pest: Teasels (Common, Cutleaf)**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Teasel can form large stands that inhibit the growth of desirable native plants and forming monocultures. On average, a single flower head can yield around 850 seeds and plants typically produce 1-40 flower heads.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- rr. **Target Pest: Thistles / Knapweeds**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: The included species are aggressive colonizers that outcompete native forage and other plant species. Knapweed infestations degrade wildlife habitat, decrease species diversity, increase soil erosion rates, and pose wildfire hazards. Each plant can produce approximately 1000 seeds that can remain viable for up to eight years. Spotted knapweed is capable of exuding allelopathic compounds into the soil to restrict competition.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

- ss. **Target Pest: Toadflax (Yellow and Dalmatian B/T, EDRR in Oregon)**
Pest Management Objective: Dalmatian Toadflax in OR: Prevent new establishments and treat all existing distributions within the management units. Yellow Toadflax and Dalmatian Toadflax in WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Dalmatian Toadflax in OR: Any presence detected in any management area. Yellow Toadflax and Dalmatian Toadflax in WA: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Mature plants are strongly competitive, especially with shallow-rooted perennials and winter annuals. Toadflax causes negative impacts in natural areas, where it outcompetes natives or other desirable species.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- tt. **Target Pest: Tree of Heaven / Russian Olive / Woody Plants**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to infrastructure, endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Tree of Heaven is an aggressive, fast growing tree that quickly shades out and dominates other vegetation where rainfall or high-water tables provide them with sufficient soil moisture. Their leaf and stem tissues contain potent allelochemicals that prevent the germination of other species of seeds when released by fallen leaves into surrounding soils. These and other woody plants require special consideration due to the difficulties of controlling large, woody plants once they become established.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- uu. **Target Pest: Viper's Bugloss**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold:
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

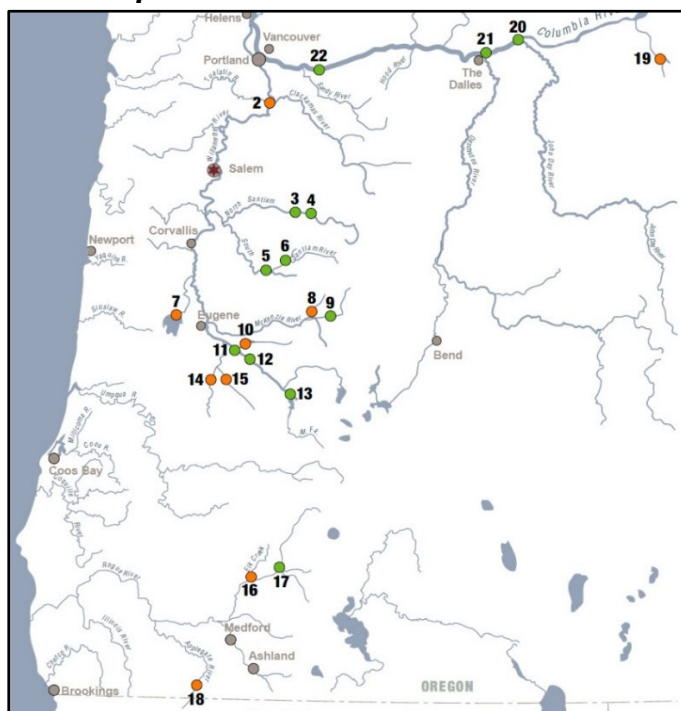
- vv. **Target Pest: Virginia Creeper**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: The species proliferates rapidly and outcompetes native vegetation, forming climbing mats of vines that can shade out native trees and undergrowth.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- ww. **Target Pest: Water Primrose (B/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR, any presence detected in any management area. In WA, infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: Water Primrose is an Early Detection Rapid Response “T” list species. Water primrose spreads easily by seeds and by plant fragments and can completely choke the surface of shallow wetlands.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- xx. **Target Pest: Yellow Flag Iris**
Pest Management Objective: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: Infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.
Basis for the action threshold: The species grows aggressively, is destructive to native aquaculture forming monocultures in wetlands, blocks water flow and is destructive to important fish habitat.
Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.
- yy. **Target Pest: Yellow Floating Heart (A/T, EDRR in Oregon)**
Pest Management Objective: In OR: Prevent new establishments and treat all existing distributions within the management units. In WA: Strategically manage the spread or establishment in management areas to prevent or treat significant impairment to the environment or utility of the waterway.
Action Threshold: In OR, any presence detected in any management area.

In WA, infestation that jeopardizes ecological restoration objectives, new or expanding colonization, any new growth that is determined to pose a significant risk to endemic vegetation and/or wildlife or endangered species.

Basis for the action threshold: Yellow Floating Heart is an Early Detection Rapid Response "A" list species. It grows in dense stands, excluding light for native species and creating stagnant areas unsuitable for other species. It negatively impacts fish and wildlife habitat, recreation activities and water quality.

Method to determine when the action threshold has been met: The action threshold will be met upon any confirmed detection identified by the Project specific Natural Resource Management Staff.

3.3 General Location Map



Number on Map	Pest Management Area	Primary Watershed
3	Big Cliff Project	North Santiam River
4	Detroit Project	North Santiam River
5	Foster Project	South Santiam River
6	Green Peter Project	Middle Santiam River
7	Fern Ridge Project	Multiple small creeks. Seasonal wetlands fed entirely by rainfall events.
8	Blue River Project	Blue River
9	Cougar Project	South Fork McKenzie River
10	Fall Creek Project	Fall Creek
11	Dexter Project	Middle Fork Willamette River
12	Lookout Point Project	Middle Fork Willamette River
13	Hills Creek Project	Middle Fork Willamette River
14	Cottage Grove Project	Coast Fork Willamette River
15	Dorena Project	Row River
16	Elk Creek Project	Elk Creek
17	Lost Creek Project	Rogue River
18	Applegate Project	Applegate River
19	Willow Creek Project	Willow Creek
20	John Day Lock and Dam	Columbia River
21	The Dalles Lock and Dam	Columbia River
22	Bonneville Lock and Dam	Columbia River
Not Numbered	East Sand Island	Columbia River

** See Attachment A for detailed maps of each Pest Management Area

3.4 *Water Quality Standards*

Nearly all NWP project lands contain management units adjacent to major watersheds and their first-order tributaries. No pesticide applications in the management areas are near waters defined by Oregon DEQ in its 303(d) list or the EPA as “impaired for the substance (pesticides) discharged”. There are no Tier 3 (Outstanding National Resource Waters) or any waters impaired by a specific substance or its degradates to which there may be discharge encompassed within these management regions.

SECTION 4: Pest Management Options Evaluation

1. Provide a brief description of the pest management options.

- Target Pest: **Bittersweet Nightshade**
- No Action: Can become the dominant weed along creeks causing channel disruption and crowding out native species.
- Prevention: Manually control new infestations as early as possible making sure to remove all roots. Cut and bag seed heads to prevent seed spread. Be sure to clean tools, boots and vehicles after work
- Mechanical/Physical Methods: Hand pull the stem closest to the ground and pull or dig up all the roots. Mowing is not usually practical, although brush cutting may facilitate access to roots if plants are growing in dense thickets.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Glyphosate is most effective August through October. Fall treatments should occur before first hard frost and when temperatures are above 50 degrees F. Glyphosate may also be effective in early summer after leaf-out but before flowering. Imazapyr or triclopyr are effective when plants are actively growing, early-mid summer, or in fall before first hard frost. Imazapyr and triclopyr are taken up by both roots and leaves, so avoid the drip zone around trees or other desirable plants. Both can be applied by spot spraying on the plant. When using imazapyr, use a surfactant appropriate for the site (aquatic or terrestrial.) Read and follow label directions whenever using any herbicide.

- Target Pest: **Blackberry (Himalayan/Armenian, Evergreen, European, Cut Leaf)**
- No Action: Impacted areas may continue to increase in size and density, increasing management costs.
- Prevention: Ensuring potentially impacted regions are properly vegetated and are left undisturbed.
- Mechanical/Physical Methods: The species has an extensive root system and will continue to grow when cut to the ground. Rhizomes must be dug out which may present an issue in the area of cultural resource protection. Mowing can help limit size, but constant application. Mechanical means are labor intensive, expensive, and present issues in other areas of consideration.
- Cultural Methods: Unknown
- Biological Control Agents: The use of goats to graze is one possibility but could impact water quality. There are many native and agriculturally important members of the blackberry genus *Rubus* in the Pacific Northwest that could be impacted by other biocontrol methods.
- Pesticides: Pesticides are the most cost-effective treatment method for large areas. From May through October, a foliar application of triclopyr may be effective. Though best practices combine use of mechanical control prior to chemical control. From April through

June, cut large canes and spot spray immediately with glyphosate or triclopyr. Read and follow label directions whenever using any herbicide.

- Target Pest: **Butterfly Bush**
- No Action: Butterfly bush is a pioneering species that can dominate open habitats. It poses an ecological threat to dry-land meadows, open slopes, reforested sites and right-of ways resulting in increased vegetation control costs.
- Prevention: Ensure that recently disturbed areas are properly vegetated with native plants.
- Mechanical/Physical Methods: Seedlings can be hand-picked, and adult plants can be dug up. However, butterfly bush thrives in recently disturbed areas, so be aware that these methods of removing plants may actually promote the growth of new seedlings. Deadhead flower spikes before they produce seed to prevent further spread.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agent is available.
- Pesticides: May-August- a foliar spray of triclopyr or imazapyr. Sept-Oct- basal or cut stump of triclopyr or glyphosate.

- Target Pest: **Cattails (Exotic)**
- No Action: Non-native cattail species currently have limited distribution in the Columbia River basin, but recorded occurrences are increasing. Failing to prevent the spread will cause displacement of native species, genetic alteration of native cattail stands, alteration of marsh habitat, and invasion of managed aquatic systems.
- Prevention: The most viable prevention method to prevent re-establishment in treated areas is to actively control growth and regrowth while ensuring riparian areas are properly vegetated with native species.
- Mechanical/Physical Methods: Mowing, burning, tilling, fire, and flooding have been demonstrated some effectiveness in controlling non-native cattails. Utilizing fire as a control method reduces above ground plant debris, but there is not enough debris to support annual burning. Fire as a standalone treatment is not effective in long-term control of the species. When used in conjunction with mowing and flooding a reduction in shoot density has been demonstrated, but such methods can subsequently reduce the species diversity.
- Cultural Methods: Manipulating water levels, if possible, and shading plant rhizomes with tarps can both be effective controls.
- Biological Control Agents: Deer may graze on seedlings and juvenile plants. Currently there are no approved biological controls for non-native cattail species or hybrids.
- Pesticides: Species control can be attained through a progressive treatment utilizing designated herbicides. The following have been demonstrated to be effective in the Pacific Northwest Region: Glyphosate for mature plants after formation of heads and prior to frost; Imazapyr after head appears in boot or after head emerges and before frost. Impact to water quality and non-target species depends on the time of year, type of pesticide applied, and rate of application. Read and follow label directions whenever using any herbicide.

- Target Pest: **Common Reed**
- No Action: No Action will result in increased population sizes and negatively impact non-target organisms in the riparian and wetland habitats throughout the associated management areas. Seeds from infestations will travel downstream and spread the infestations, increasing future management costs.
- Prevention: Prevention involves ensuring that riparian areas are properly vegetated or re-vegetated with native species. Also, minimizing disturbances by limiting access to these regions will help to prevent new establishments. Prevention may have limited success with this widespread species.
- Mechanical/Physical Methods: According to invasive profiles on the common reed; cutting, disking, plowing and dredging may help to slow the spread, but will not eradicate it. Methods with ground disturbance may not be feasible due to the potential of negative impacts to cultural resources and pulling the plant is nearly impossible. Fire or controlled burns help regenerate new growth and does not destroy the rhizome, are costly to manage, and may negatively impact non-target organisms.
- Cultural Methods: None relevant to this widespread species.
- Biological Control Agents: Unknown
- Pesticides: Pesticides are the most cost-effective way to eradicate target plants. Damage to non-target species is unlikely due to the target areas consisting nearly entirely of the target species. An aquatic-labeled glyphosate formulation will be used and applied according to the specifications on the label. Read and follow label directions whenever using any herbicide.

- Target Pest: **Curlyleaf Pondweed**
- No Action: Curlyleaf pondweed forms dense surface mats that choke out native plants and affect recreational uses, potentially restricting access to docks and fishing access.
- Prevention: As with all aquatic plants, it can be difficult to control. To prevent the spread, boats and equipment should be inspected before moving between water bodies.
- Mechanical/Physical Methods: Raking, cutting, and harvesting can be effective to clear plants out, but they will regrow. Care must be taken to prevent stem fragments from escaping during control since they can establish new plants in other locations.
- Cultural Methods: Unknown
- Biological Control Agents: Grass carp will feed on this plant but may not be present and introduction may not be permissible.
- Pesticides: Herbicides can be effective since the species grows early in the season before many native plants start growing. A diquat formulation (Reward) has shown to be effective, but control must be repeated over several growing seasons.

- Target Pest: **English Hawthorne**
- No Action: Left unchecked, will form thickets that will block animal movements and become increasingly difficult to remove. Sharp thorns will also present a safety hazard.

- Prevention: Make sure to monitor for seedlings as birds can disperse seeds far from plants; find and control plants when they are small. Avoid cutting the plants when they are full of ripe fruit as they will be dispersed when moving and disposing of plant material.
- Mechanical/Physical Methods: Manual removal of seedlings and small plants is possible and is easier to accomplish when the soil is moist. Seedlings can be hand-pulled, but small plants will need to be dug out including all the roots or at least the crown and upper portions of the roots to prevent resprouts. Plants can be cut back with the best time being in early summer as the plant is putting most of its energy into aboveground growth. Larger shrubs and trees can be cut to the base with chain saws or hand saws. Remove the cut material from site as English hawthorn can regenerate from cutting. Plants will resprout unless the roots are removed, or the cut surface is treated with herbicide. Burning the cut surface with a torch may also reduce sprouting.
- Cultural Methods: It is unknown how effective fire may be at controlling English hawthorn. Repeated burning over time may gradually reduce the density and slow the expansion of the invaders.
- Biological Control Agents: Unknown. Its spines typically deter grazing.
- Pesticides: A cut stump application of glyphosate on plants larger than 1" in diameter in mid-late summer may be effective. Resprouts can be treated with aminopyralid in August.
- Target Pest: **Eurasian Watermilfoil**
- No Action: If no action is taken the pervasiveness of the species will continue to increase, forming dense mats that inhibit recreational activities and outcompete native aquatic species negatively impact non-target organisms and increasing future management costs.
- Prevention: Inspection of vessels and washing stations at boat ramps help prevent transport and infestation spreading between lakes, but flowing water easily transports watermilfoil and these activities are less effective on the Columbia where the plant is already present.
- Mechanical/Physical Methods: Mechanical methods are not advised unless the region is entirely invaded. Otherwise, mechanical methods often facilitate the spread of the infestation. If hand-pulling is used, the entire plant must be removed to prevent regrowth. Tilling can also be utilized in non-flowing waters but is ineffectual long term and also facilitates the spread of the species. Anchored fabric barriers can be utilized to control infestations but require continual maintenance and bottom barriers would require permitting under the Clean Water Act; consultation on potential adverse effects to critical salmonid habitat, tribal concerns, and section 106 of the NHPA, increasing management costs.
- Cultural Methods: Unknown
- Biological Control Agents: Triploid grass carp will eat Eurasian watermilfoil but will often eat native vegetation first therefore they are not recommended for watermilfoil control. Other biological controls such as the watermilfoil weevil, *Euhrychiopsis lecontei* may be effective but are cost-prohibitive to purchase. These weevils are native to the US and natural dispersion is relied upon to aid control.
- Pesticides: Herbicides are an effective control method, especially in flowing systems where other control methods can be more detrimental, spreading the infestations and harming non-target species. Herbicides with the active ingredient Florpyrauxifen-benzyl

have shown to have less impact to salmonids and other organisms. However, any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

- Target Pest: **Everlasting Pea (Perennial Peavine)**
- No Action: As infestations occur, large areas are smothered, and native plant cover are reduced.
- Prevention: Dig or pull isolated or small populations before infestation spreads. Cut and bag seed heads to prevent seed spread. Be sure to clean tools, boots, and vehicles after work. Planting ground cover after removal may help prevent regrowth.
- Mechanical/Physical Methods: After infestation is large, pulling or digging will disturb ground and likely cause germination of seeds already in the ground. Cut to the ground then cover with heavy duty woven plastic fabric. Keep in place for 2 years, and do not use mulch or chips.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: From March through October, apply a spot spray of triclopyr during the growing season. Read and follow label directions whenever using any herbicide.

- Target Pest: **False Indigo/Indigobush**
- No Action: No action will allow increased establishments of false indigo in the management units. Due to the proliferation of false indigo no action is the course most often taken. Other actions have been used only in select instances (e.g. advancement into new regions and restoration projects) due to the high costs associated with treatment.
- Prevention: One of the most successful methods is to ensure that riparian and shoreline areas are properly vegetated with native species.
- Mechanical/Physical Methods: The species can be cut down and roots dug out. This is often a costly process but is necessary to remove the dead indigo to allow native species to recolonize.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Pesticides are a cost-effective treatment method. Impacts to other species are minimal due to the densely populated monoculture false indigo tends to form. An aquatic-labeled glyphosate formulation will be used at the label rate, prior to plants becoming dormant. Read and follow label directions whenever using any herbicide.

- Target Pest: **Flowering Rush (EDRR)**
- No Action: This plant has the potential to invade and disrupt native marshlands out-competing cattails and bullrushes. In the Northwest the species is capable of forming vast monocultures in littoral zones as well as marshlands.

- Prevention: Educate the public and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
 - Mechanical/Physical Methods: The species has an extensive root system and will continue to grow when cut to the ground. Rhizomes must be dug out which may present an issue in the area of cultural resource protection. Mechanical means are labor intensive and expensive but may be effective for isolated plants. Diver Assisted Suction Harvesting is a method currently being used as well.
 - Cultural Methods: Unknown
 - Biological Control Agents: Biological control agents are not used on EDRR weeds. When the weed is found in the state, it is targeted for eradication.
 - Pesticides: Pesticides can be an effective treatment method for large areas, but applications are only effective in slow moving water. An aquatic-labeled diquat has been effective with very low water exchange rates. An aquatic glyphosate formulation can be effective for emergents. An imazapyr formulation can be effective as a pre-emergent if water can be drawn down to bare soil/sediment. Read and follow label directions whenever using any herbicide.
-
- Target Pest: **French Broom (EDRR in WA)**
 - No Action: Infestations will outcompete native plants and aid the spread of wildfires into tree canopy layers. Established infestations are difficult to eradicate due to high seed production.
 - Prevention: Prevention may be the best way to minimize impacts. It is important to minimize soil disturbance, and monitor areas, pulling young plants before they produce seeds.
 - Mechanical/Physical Methods: Handpulling or weed wrenches can be effective on small plants.
 - Cultural Methods: French Broom is shade-intolerant so planting native species and creating canopy will limit growth and spread.
 - Biological Control Agents: In WA, biological control would not be used since eradication is required. In OR, using goats for grazing could be an option.
 - Pesticides: Foliar sprays, basal bark treatments and cut stump treatments can all be used. If near water, an aquatic-labeled glyphosate could be effective when plants are actively growing in spring, or an aquatic-labeled triclopyr amine could be effective any time the plant is actively growing. Read and follow label directions whenever using any herbicide.
-
- Target Pest: **Garlic Mustard (EDRR)**
 - No Action: Garlic mustard's vegetative growth starts early in the spring, outcompeting native and beneficial species that are still dormant. Its ability to reproduce high quantities of seed from a single plant can make it difficult to eradicate once it is well-established. Seeds can survive a number of years in the seedbank, prolonging its ability to dominate a site. Garlic mustard also changes the composition of a plant community by exuding chemicals that disrupt plant growth and certain plant-mycorrhizal fungi connections, which are important for tree seedling health.

- Prevention: Ensure that forest openings, forest edges, roadsides, streamside, and trails, are properly vegetated with native plants and are left undisturbed.
- Mechanical/Physical Methods: Hand pulling is an effective method and mature plants are easily pulled though care must be taken to remove all the roots and discard in trash. Pulling of rosettes only is not recommended.
- Cultural Methods: Prescribed burning is a control option for large invasions of garlic mustard when permissible. Burning is recommended for two consecutive years to achieve effective control. Fires must burn hot enough to completely kill plants. If fires are too cool, plants may regenerate from root crowns, producing flower stalks that have higher seed production and result in higher seedling survival.
- Biological Control Agents: Biological control agents are not used on EDRR weeds. When the weed is found in the state, it is targeted for eradication.
- Pesticides: April- June- A foliar spray of triclopyr or glyphosate while plants are actively growing but before bud stage is effective. Also, while at bud stage but before flowers open. Sept-November- a foliar spray of triclopyr or glyphosate to fall rosettes.

- Target Pest: **Geranium (Shiny and Herb Robert)**
- No Action: Shiny geranium in the Pacific Northwest effect native plant communities in oak woodlands, seasonally wet ash forests and conifer forest edges. Utilizing the abundance of early spring moisture, shiny geranium quickly establishes, dominating sites by smothering other early spring wildflowers and the seedlings of perennial plants. As soils dry, few other plants can establish through the receding weed canopy.
- Prevention: After control efforts, applying a heavy layer of mulch may help to prevent it from establishing.
- Mechanical/Physical Methods: Past attempts to control shiny geranium with hand pulling have not been successful.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: From February through October an application of glyphosate, triclopyr, diquat, (or metsulfuron or aminopyralid in terrestrial applications) on large patches of small seedlings is recommended. Applications in spring and fall are most effective. Read and follow label directions whenever using any herbicide.

- Target Pest: **Giant Hogweed (EDRR)**
- No Action: Giant Hogweed forms dense canopies outcompeting native species and increasing soil erosion. It is a public safety hazard as it exudes a clear watery sap which sensitizes the skin to ultraviolet radiation, resulting in severe burns to the affected area causing blistering and painful dermatitis. Scars can last for as long as 6 years and sensitivity to sunlight can continue beyond that.
- Prevention: Revegetating with native plants and educating gardeners of the impact of Hogweed are prevention methods. Also removing or treating the plant before it goes to seed will prevent new establishments.

- Mechanical/Physical Methods: Seedlings and young plants can be hand-pulled or dug up. This is best done in the spring while soil is moist. Remember it is very important to avoid getting any of the sap on your skin. The toxic sap that causes the burning is contained in all portions of the plant. Always wear protective clothing and gloves. Large plants can be cut back, using loppers to avoid contact, and then the remaining roots dug up. Make sure to remove the root crown and as much of the roots as possible to prevent re-sprouting. Be sure to bag the flowerheads and plant parts and put into the regular trash to prevent seed spread. Mowing plants serves only to stimulate budding on the main root stalk, but it might be successful if done consistently and persistently enough to starve the roots.
- Cultural Methods: Unknown
- Biological Control Agents: Biological control agents are not used on EDRR weeds. When the weed is found in the state, it is targeted for eradication.
- Pesticides: Foliar application of glyphosate or imazapyr in the spring during bolting stage is effective. Also, injection of 5 ml of 5% glyphosate concentrate into the leaf cane, 12 inches above root crown. Mark each plant to avoid re-treatment.

- Target Pest: **Gorse (EDRR in OR)**
- No Action: Gorse forms vigorous stands that grow outward and crowd out all other vegetation causing a considerable loss of grassland habitat. Because it forms a center of dry dead vegetation and has a high oil content, it is a serious fire hazard.
- Prevention: Establishing competitive grassland species or forest trees will help resist gorse invasions as well as other weeds.
- Mechanical/Physical Methods: Hand pulling or digging may be an option for small infestations, but the entire plant must be removed since gorse can re-sprout. Chopping, cutting, or mowing is an option for flat areas. Repeated mowing may be necessary to deplete root reserves.
- Cultural Methods: In OR, biological control would not be used since eradication is required. In WA, prescribed burning is a control option when permissible.
- Biological Control Agents: Biological control agents are not used on “T” listed weeds in Oregon. When the weed is found in the state, it is targeted for eradication.
- Pesticides: Apply a 1.5-2% solution of glyphosate to actively growing plants after bloom drop in spring. Foliage must be wet when using herbicides.

- Target Pest: **Grasses [False-Brome (EDRR in WA), Ravenna (EDRR in OR), Harding, Loy Manna, Reed Canary, Johnsongrass (EDRR in WA)]**
- No Action: Impacted areas may continue to increase in size and density. Reed canary grass in particular causes displacement of native species and alteration of habitat in sensitive wetlands, potentially impacting water quality and displacing non-target native species.
- Prevention: Ensuring potentially impacted regions are properly vegetated and are left undisturbed.
- Mechanical/Physical Methods: Ineffective; mowing is ineffective and pulling does not remove all root system fragments, which quickly resprout.

- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time. Grazing is not known to be effective for long term control.
- Pesticides: Pesticides are the most cost-effective treatment method for large areas. An aquatic-labeled 5% glyphosate formulation can be used at the label rate, and two herbicidal applications may be necessary to ensure complete coverage. Impact to water quality and non-target species depends on the time of year, type of pesticide applied, and rate of application. Read and follow label directions whenever using any herbicide

- Target Pest: **Hoary Cress**
- No Action: Hoary Cress is a highly adaptable species that can thrive under a wide range of conditions. Each plant can produce 1,200 – 4,800 seeds and buried seeds remain viable for up to 3 years. Left unmanaged the species will form dense colonies of monocultures, outcompeting native vegetation. It can impair the quality of wildlife habitat, increase soil erosion and decrease the quality of recreational lands.
- Prevention: Restoring disturbed sites with native vegetation will help reduce growth and decrease the vulnerability of the regions in question, as the species commonly takes root in disturbed areas.
- Mechanical/Physical Methods: Mechanical methods are strongly discouraged. From small, broken root fragments a new plant will germinate. Successful hand pulling or digging can be done on very small infestations but requires complete plant removal within 10 days of weed emergence throughout the growing season for 2 to 4 years. Seed production can be achieved through mowing but does not control underground root stocks.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Chorsulfuron or metsulfuron from pre-bloom to bloom stage and/or on fall rosettes may be effective. Read and follow label directions whenever using any herbicide.

- Target Pest: **Ivies (English and Atlantic)**
- No Action: With rapid and massive vegetative growth, vines reach the tops of trees and can also displace native vegetation on the forest floor. Ivies frequently become intertwined with forest shrubs creating difficulties for manual removal or herbicide use.
- Prevention: Where applicable, areas that have had ivy pulled can be sheet mulched with layers of wood chips to prevent respouts and seed germination.
- Mechanical/Physical Methods: Plants can successfully be pulled by hand or dug out and are easier to pull out of the ground when the soil is moist. Be careful when pulling ivy in the spring and summer to not damage native and other desirable plants in the area. In the case of plants climbing on trees, vines can be cut at around waist to chest height, pulling away the lower part of the stems away from the base of the tree, to kill the upper portions of the vine.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.

- Pesticides: Glyphosate or a mix of glyphosate and triclopyr applied during a sunny period in winter when temps are above 50 degrees is effective. In early spring, apply glyphosate on young plants with 2-4 new leaves. An application of triclopyr can be effective right after cutting. It is generally preferable to wait until the period of maximum vegetative growth in order to achieve the most effective translocation of the herbicide to the roots. Read and follow label directions whenever using any herbicide.
- Target Pest: **Knotweeds - Japanese, Giant, Himalayan (Priority)**
- No Action: Knotweeds pose a significant threat in riparian areas, where it disperses during flood events rapidly colonizing scoured shorelines, islands, and adjacent forestland.
- Prevention: After cutting plants back to ground, plants can be covered with a thick landscape fabric for up to 5 years to attempt control. Provide some give in the fabric so new stem growth won't puncture through, monitor fabric, and flatten knotweed growth under it, keep fabric cleared of debris, and repair any holes.
- Mechanical/Physical Methods: Grubbing out small clumps when discovered can prevent new colonies from establishing but is time-consuming. Rhizomes and fragments left in the ground, or nearby, can regenerate and spread infestations. The entire root system must be removed since re-sprouting can occur from rhizomes. Frequent, repeated cutting of plants over many years can eventually kill the plant.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available currently. Grazing may provide some reduction in plants, but additional control methods are typically needed. Any grazing strategy should be carefully controlled to prevent damage in riparian areas.
- Pesticides: Foliar application is effective when plant is actively growing until the first hard frost. Glyphosate has been proven successful at 2%-5% solution. Imazapyr applied at 1% solution is slow acting but most effective. Imazapyr can be used alone or in combination with glyphosate. Large established patches will require foliar treatment over several years. Infestation will be greatly reduced in the first years, but maintenance of smaller plants that will likely appear will be necessary. Also, injection of 5 ml of glyphosate concentrate into the leaf cane, 12 inches above root crown, is effective. Mark each plant to avoid re-treatment. Be sure to search for shoots as far as 10 yards away from the central patch after herbicide treatment begins. Read and follow label directions whenever using any herbicide.
- Target Pest: **Kudzu (EDRR)**
- No Action: Kudzu kills or degrades native and desirable plants by smothering them under a solid blanket of leaves, and by the sheer force of its weight breaking branches or uprooting entire trees and shrubs. Trees covered by kudzu often become damaged during ice events or die from insufficient light. Once established kudzu grows at a rapid rate extending as much as 60 feet per season at a rate of about one foot per day. Control costs especially on powerline and road right-of-ways are very high.
- Prevention: Most reproduction is by vegetative reproduction of vines which root at every node, forming root crowns that then send out new growth and create extensive plant

coverage within one year. Reproduction by seed is believed to be minimal. Persistent treatment of patches is the only true control measure.

- Mechanical/Physical Methods: Mechanical control methods require enormous persistence since the goal is to deplete the rootstocks of stored food and prevent replenishment through the photosynthesis of above ground vegetation.
 - Cultural Methods: Unknown
 - Biological Control Agents: Biological control agents are not used on EDRR weeds. When the weed is found in the state, it is targeted for eradication.
 - Pesticides: Although PNW data are lacking, glyphosate, imazapyr, and triclopyr are used for control of kudzu in the Southeastern US.
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- Target Pest: **Lesser Celandine**
 - No Action: Lesser celandine forms dense patches leading to the exclusion of many low-growing forbs especially early blooming native wildflowers. Because of the bulbous nature of the root system, once established, control can be difficult.
 - Prevention: The best prevention method is not planting lesser celandine or its cultivars, opting for native plants instead. Also educate the public and adjacent landowners if feasible.
 - Mechanical/Physical Methods: Small infestations can be controlled by hand digging, making sure to remove all plant parts. Any remaining roots or bulbils can sprout into new plants. Bag and dispose of plant parts, do not put in home compost. Mowing is not recommended for control as it may spread bulbils and seeds.
 - Cultural Methods: Sheet mulching with wood chips can effectively smother the plants, but depth needs to be around six inches.
 - Biological Control Agents: No approved biological control agents are available at this time.
 - Pesticides: Glyphosate applied in late winter to early spring is recommended, before most native herbaceous plants have started to grow and before lesser celandine flowers. Timing is critical.
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- Target Pest: **Myrtle Spurge / Caper Spurge / Leafy Spurge (EDRR in OR)**
 - No Action: No action will allow for increased populations and enhance the likelihood of spreading infestations and increase the potential for poisoning/injury of visitors encountering the plant's toxic sap.
 - Prevention: Natural resource staff will take actions to prevent seeds from being transported on clothing, vehicles, and equipment.
 - Mechanical/Physical Methods: Small infestations can successfully be dug or pulled. In order to gain control over a population it must be pulled over multiple years. Pull plants early in the season to prior to seed formation. Use caution when pulling to not get any sap on your skin. If sap contacts skin make sure to wash that area.
 - Cultural Methods: Unknown

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- Biological Control Agents: Biological control agents are not used on EDRR weeds in Oregon. When the weed is found in the state, it is targeted for eradication. In WA, several biocontrols are known for Leafy Spurge including two root beetles and a stem-mining beetle. Consult with your local county weed board for more information. For heavy infestations, grazing sheep or goats can diminish growth but could impact water quality.
- Pesticides: From March through September, an application of glyphosate or triclopyr may be effective. Read and follow label directions whenever using any herbicide.

- Target Pest: **Orange Hawkweed (EDRR in OR)**
- No Action: Once established, hawkweed quickly develops into a monoculture that continues to expand until it covers the site. A dense mat of hawkweed plants has the potential to eliminate or restrict other vegetation, often invading meadows, and roadsides. It displaces native vegetation posing a serious threat to native plant communities.
- Prevention: The best prevention method is not planting Orange Hawkweed, opting for native plants instead. Educate the public and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
- Mechanical/Physical Methods: Small infestations may be dug out, being careful to remove all plant parts, including roots and runners.
- Cultural Methods: Improving soil nutrients by adding fertilizers in depleted soils can control hawkweeds in some areas, especially where hawkweed density is low, or the invasion is new.
- Biological Control Agents: Biological control agents are not used on EDRR weeds in Oregon. When the weed is found in the state, it is targeted for eradication.
- Pesticides: A foliar application of triclopyr, (or aminopyralid or clopyralid in terrestrial applications) between March and June before flowers open may be effective.

- Target Pest: **Parrot Feather**
- No Action: Negative impacts result from the dense mat formation blocking sunlight and oxygen exchange. Heavily infested waters face reductions in native plant diversity and community structure, recreational use, fish production and alterations of water chemistry. Mosquito populations are documented to increase significantly in infested waters.
- Prevention: Educate the public and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
- Mechanical/Physical Methods: Mechanical methods are not advised unless an area is entirely invaded by plants. Large infestations can be reduced mechanically, then sprayed with herbicides as it regrows otherwise, mechanical methods may increase infestation.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Herbicides can be an effective control method, especially in flowing systems where other control methods can be more detrimental, spreading the infestations and harming non-target species. Herbicides with the active ingredient Fluroxypyr have shown to have less impact to salmonids and other organisms. However, any

application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

- Target Pest: **Paterson's Curse (EDRR in OR)**
- No Action: Paterson's curse is a prolific seed producer enabling rapid spread and displacement of desirable plants. It is a threat to native habitat with the potential to invade oak woodland, native prairie, and dry upland slopes. Handling plants can cause mild to severe skin irritation and hay fever in some individuals. This weed contains pyrrolizidine alkaloids that cause chronic liver damage and death to susceptible animals.
- Prevention: The best prevention method is not planting Paterson's curse, avoiding wildflower mixes that contain it, and opting for native plants instead. Educate the public, unaware gardeners and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
- Mechanical/Physical Methods: Grub out, cut or pull all plants. If plants are flowering, collect and burn them to ensure that seeds do not continue to mature and add to the store in the soil.
- Cultural Methods: Unknown
- Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When the weed is found in the state, it is targeted for eradication.
- Pesticides: A foliar application of a selective broadleaf herbicide, like triclopyr, are most effective during the rosette stage, usually during autumn. Ensure there is competition from other plants that can replace the weed. Non-selective herbicides are not recommended because this invasive flourishes back with lack of competition.

- Target Pest: **Perennial Pepperweed (EDRR in OR)**
- No Action: It forms dense infestations that can turn into monocultures. Accumulations of its semi-woody stems degrade nesting habitat for wildlife. It can also displace more desirable species.
- Prevention: See Cultural Methods below.
- Mechanical/Physical Methods: Mechanical control of this plant is very difficult because very small sections of root contain buds that will sprout into new plants. Plant tops are easily killed, but root and crown buds can sprout and continue the infestation. Small infestations may be hand-pulled or dug, but as much of the root must be removed as possible.
- Cultural Methods: Planting competitive vegetation aids in controlling perennial pepperweed.
- Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When the weed is found in the state, it is targeted for eradication.
- Pesticides: A combination of mowing with a follow-up application of glyphosate from May through September is effective. In April up through bloom stage, and in September for a fall treatment, chlorsulfuron may be effective in terrestrial applications. Read and follow label directions whenever using any herbicide.

- Target Pest: **Poison Hemlock (Priority as determined by Projects managers)**
- No Action: Poison hemlock is a rapid colonizer of stream banks, vacant lots, roadsides, pastures, and meadows, especially when moist conditions are present. It outcompetes native plants and desirable forage species and already has attained wide distribution in the Pacific Northwest. Not managing existing establishments will allow the species further distribution and enhance the regional impacts and increase the risk of rashes, poisoning, or death to humans that contact or consume plant parts.
- Prevention: Avoid introducing soil or gravel from areas known to have poison hemlock. Remove young seedlings, they are easily pulled and have not had an opportunity to reproduce. Restore areas with native plant species to discourage infestation/reinfestation.
- Mechanical/Physical Methods: Small patches of poison hemlock can be carefully dug up, making sure to remove the taproot. Plants must be disposed of in garbage bags, as the toxins remain intact. Cutting and mowing are ineffective as the plants will resprout. Prior to handling ensure proper protective equipment is donned to prevent contact with the plant. While effective, these measures are only cost effective at small scales. The resulting soil disturbance often leads to recolonization by this or other invasive species. Cultural resource protection issues occur with ground disturbance, and erosion of disturbed sites may impact water quality.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: From March through June, apply triclopyr on rosettes or younger plants before flowering. Glyphosate on actively growing plants before bolt is also effective. When plants are in bloom, cut and dispose of flower heads in trash bags before herbicide application. Read and follow label directions whenever using any herbicide.

- Target Pest: **Poison Oak**
- No Action: The leaves and twigs have a surface oil, urushiol, which causes an allergic reaction in 4/5ths of humans.
- Prevention: Unknown
- Mechanical/Physical Methods: Can be pruned or pulled but caution needs to be exercised.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Glyphosate mixed at a 2% solution and applied 2 weeks before and 2 weeks after full bloom is effective. Triclopyr is effective after leaves fully expand in the spring and before leaf change color in fall. If there are nearby non-target species, cut the stem back to the root and apply only to the cut stem. Repeated applications may be necessary. Read and follow label directions whenever using any herbicide.

- Target Pest: **Policeman's Helmet**
- No Action: Policeman's helmet forms dense stands in riparian areas and moist lowlands, excluding native forbs. Each plant can produce up to 800 seeds. The seeds are ejected

over 20 feet from the capsule. Seeds can germinate underwater and can be viable for 18 months or more.

- Prevention: The best prevention method is not planting Policeman's Helmet, opting for native plants instead. Educate the public and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
- Mechanical/Physical Methods: An annual with a shallow root system, this plant pulls up easily. A seed bank is present with 2-year viability. Populations may be mowed but need to be monitored in case mowed plants resprout later in the season. Remove and carefully dispose of flower and seed heads prior to mowing.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Between May and June, a foliar application to young plants with glyphosate may be effective.

- Target Pest: **Portuguese Broom (EDRR in OR)**
- No Action: Portuguese broom is highly competitive to native shrubs and trees. It provides no food for wildlife and aids in wildfire ignition and spread. With little or no insect herbivory directed at it, Portuguese broom grows to remarkable size with the largest trunk diameter recorded at 14 inches in Douglas County.
- Prevention: Ensuring that forest openings, forest edges, roadsides, streamside, trails, are properly vegetated with native plants and are left undisturbed.
- Mechanical/Physical Methods: Hand pulling or mechanical grubbing is the best method to physically remove smaller infestations. Remove plants in early spring or late fall when the soil is moist, and it is easy to dislodge roots.
- Cultural Methods: Unknown
- Biological Control Agents: There are no biological control agents available for this plant.
- Pesticides: From April-July, a foliar application of glyphosate or triclopyr after leaves are fully developed and plant is actively growing may be effective.

- Target Pest: **Puncturevine**
- No Action: Puncturevine will infest the edges of fields, ditches, and roadsides where it forms dense mats. Animals, humans, and vehicles easily spread the heavily spined seeds. Puncturevine seeds are very painful to step on and easily puncture bicycle tires or light summer footwear. Even though it is not readily grazed, it is toxic to animals. Puncturevine is tolerant of drought conditions and survives well in sandy or gravelly soils.
- Prevention: Puncturevine spreads by seed so controlling plants prior to seed production will prevent further seed entering the seedbank. When working in puncturevine infestations, make sure to clean shoes, clothing, and tires to prevent spreading seeds to other areas. After puncturevine control, plant areas with site appropriate plants to provide competition and reduce further infestation.
- Mechanical/Physical Methods: Puncturevine can be hand-pulled or controlled by hoeing, ideally prior to seed formation in the spring. If plants have already produced seeds, make

sure to remove all possible spiny burrs from the ground. Make sure to wear gloves when removing puncturevine and be careful of the sharp spines. Mowing is ineffective due to the plant's low growth form.

- Cultural Methods: Unknown
- Biological Control Agents: Puncturevine Seed Weevil - larvae feed on developing seeds within spiny “goat-heads”. Adults cause minor pitting on stem undersides. Puncturevine Stem Weevil - larvae feed on pith in the stems. Adults cause minor pitting of stem undersides.
- Pesticides: From March through September, a treatment of glyphosate, diquat, may be effective. Read and follow label directions whenever using any herbicide.

- Target Pest: **Purple Loosestrife (Priority)**
- No Action: Impacted areas may continue to increase in size and density.
- Prevention: Ensuring potentially impacted regions are properly vegetated and are left undisturbed.
- Mechanical/Physical Methods: The species has an extensive root system and will continue to grow when cut to the ground. Rhizomes must be dug out which may present an issue in the area of cultural resource protection. Mowing can help limit size, but ineffective long term. Mechanical means are labor intensive, expensive, and present issues in other areas of consideration.
- Cultural Methods: Unknown.
- Biological Control Agents: A successful biocontrol program has reduced loosestrife populations nationwide. Loosestrife beetles, *Galerucella californiensis* and *Galerucella pusilla*, adults and larvae impact plant growth and reproduction by feeding heavily on the plant's leaves, stems and buds. The loosestrife root weevil, *Hylobius transversovittatus* adults feed on plant foliage and the larvae feed within the roots. The loosestrife seed weevil, *Nanophyes marmoratus*, adults and larvae impact the plants by feeding on unopened flower buds. The use of goats to graze is one possibility but could impact water quality.
- Pesticides: Pesticides are cost effective treatment method for large areas if biocontrol is not successful. An aquatic-labeled glyphosate formulation will be used at the label rate, in July or August. Read and follow label directions whenever using any herbicide.

- Target Pest: **Roses (Exotic)**
- No Action: Impacted areas may continue to increase in size and density.
- Prevention: Ensuring potentially impacted regions are properly vegetated and are left undisturbed.
- Mechanical/Physical Methods: The species has an extensive root system and will continue to grow when cut to the ground. Rhizomes must be dug out which may present an issue in the area of cultural resource protection. Mowing can help limit size, but ineffective long term. Mechanical means are labor intensive, expensive, and present issues in other areas of consideration.

- Cultural Methods: Unknown
- Biological Control Agents: The use of goats to graze is one possibility but could impact water quality.
- Pesticides: Pesticides are the most cost-effective treatment method. Stumps of large cut rose plants can be painted with 10- to 20% glyphosate. Foliar applications of triclopyr or glyphosate can treat large areas. Both kinds of treatments are most successful if applied during the growing season. Read and follow label directions whenever using any herbicide.

- Target Pest: **Rush Skeletonweed (EDRR in OR)**
- No Action: Rush skeletonweed is a threat to irrigated lands and rangelands. Rangeland infestations displace native and beneficial forage species grazed by wildlife.
- Prevention: Unknown
- Mechanical/Physical Methods: Hand-pulling can work for small infestations. Areas must be controlled 2 to 3 times per year for 6 to 10 years to remove seedlings and re-sprouting roots. Removal of deep tap roots is easiest when soils are damp. Mowing plants repeatedly may reduce plants' biomass and seed production but may not provide eradication.
- Cultural Methods: Using beneficial forage species for competition will not suppress the dominance of rush skeletonweed.
- Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When the weed is found in the state, it is targeted for eradication. However, four biocontrol agents are approved for release. Three of these, a gall midge, a gall mite and a rush fungus, have been established in Washington and Oregon, but have only been effective in reducing seed production. A root-mining moth is established but the long-term effects have not been fully determined.
- Pesticides: An application of glyphosate, (or aminopyralid in terrestrial applications) or is recommended in early spring before bolt and then again to rosettes in the fall. Early application with an aggressive reapplication program is key. Read and follow label directions whenever using any herbicide.

- Target Pest: **Russian Thistle**
- No Action: No action will allow for increased populations and colonization of new areas from tumbleweeds.
- Prevention: Minimize landscape disturbance as Russian thistle colonizes quickly. Early control can prevent the formation of seed-dispersing tumbleweeds.
- Mechanical/Physical Methods: Hand pulling is effective on small infestations, especially before flowering and seed set. Mowing is not very effective as it results in low growing plants that still produce seed. Tillage can be successful as seeds have little soil dormancy and generally do not germinate at depths greater than 3 in.
- Cultural Methods: Unknown
- Biological Control Agents: Grazing may be effective as the plant is considered fair forage.

- Pesticides: Preemergence herbicides are effective when applied in late winter to early spring. Systemic and broad-spectrum herbicides are also effective on young plants before flowering. Herbicide resistance is reported for this species; overuse of chemical control is discouraged, and mechanical methods may be preferred.
- Target Pest: **Saltcedar (EDRR in OR)**
- No Action: Saltcedar is an aggressive colonizer that forms monotypic stands and can dry up springs and small waterways putting stress on other desert plants.
- Prevention: Early detection and swift action on small plants can prevent establishment.
- Mechanical/Physical Methods: Mechanical methods may be difficult due to the plants ability to resprout from the roots. Very deep lowing of roots, 14-24 inches may get them all, but will be detrimental to other plants and the site.
- Cultural Methods: Unknown
- Biological Control Agents: Biological control agents are not used on EDRR weeds in Oregon. When the weed is found in the state, it is targeted for eradication. The saltcedar leaf beetle has been shown to be effective but it not available in WA at the time of last PDMP update. Check with your local county weed board for current availability.
- Pesticides: For smaller plants, less than 5 ft in height, a foliar spray of imazapyr in late summer to early fall may be effective. For larger plants and larger infestations, a cut stump application of imazapyr or triclopyr anytime of year has shown to be effective. Read and follow label directions whenever using any herbicide.
- Target Pest: **Scotch Broom**
- No Action: Left unmanaged, the species will continue to proliferate and form dense monocultures that displace native species while also negatively impacting the functional usage of the infiltrated regions.
- Prevention: Replant disturbed or recovering areas with native species and avoiding soil disturbances in unaffected areas where possible helps decrease the likelihood of an infestation.
- Mechanical/Physical Methods: Cutting large plants is very effective without herbicides in mid-July-September. Smaller plants can be pulled by hand or with a weed wrench. Mowing can be used to knock down large patches but should be avoided when the seed pods are ripe. Mowing also spreads an existing seed on the ground. Early season mowing results in dense, multi-stemmed regrowth and should be avoided.
- Cultural Methods: Unknown
- Biological Control Agents: The Scotch broom seed weevil larvae feed on seeds of Scotch broom in developing seed pods. The adults also feed on flowers and the tips of stems, though it does not yield significant damage to the plant. The Scotch broom bruchid larvae feed on developing seeds and impact the plant's reproduction. These biological control agents are seeing variable success where introduced.
- Pesticides: A foliar spray of triclopyr, glyphosate before seed pods appear is recommended. Read and follow label directions whenever using any herbicide.

- Target Pest: **Spurge Laurel**
- No Action: It will rapidly colonize areas forming monotypic stands and out compete with native plants.
- Prevention: Dig or pull isolated or small populations before infestation spreads. Cut and bag seed heads to prevent seed spread. Be sure to clean tools, boots and vehicles after work.
- Mechanical/Physical Methods: Hand pulling small infestations is effective. Larger shrubs that are too small to pull can be cut below soil line.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Applications of triclopyr or glyphosate to stump cuts have shown to be effective. Plants should be cut near the ground and treated as soon as possible following the cut. Also, a foliar application of triclopyr may be effective. Read and follow label directions whenever using any herbicide.

- Target Pest: **St. Johnswort**
- No Action: St. Johnswort spreads easily to new sites and exposure can lead to health problems including hypersensitivity to sunlight leading to skin lesions and necrosis.
- Prevention: Maintaining healthy native plants can prevent St Johnswort from becoming established.
- Mechanical/Physical Methods: Mechanical options are only viable with new, young populations. Care must be taken to remove and properly dispose of all vegetation. Repeated pulls will be necessary.
- Cultural Methods: Unknown
- Biological Control Agents: Two foliage-feeding beetles and one foliage-feeding moth are known to be effective, as well as one root-borer. Contact your local county weed board for more information.
- Pesticides: In terrestrial environments, a formulation of metsulfuron may be effective after weeds emerge. No aquatic-labeled products are known at this time, but consult with your local weed board for additional options.

- Target Pest: **Sulfur Cinquefoil**
- No Action: The species is highly adaptable to a wide range of environmental conditions and will continue to rapidly proliferate into new regions and is capable of forming dense monocultures where it is left unmanaged.
- Prevention: Replant disturbed or recovering areas with native annual species and avoiding soil disturbances in unaffected areas where possible helps decrease the likelihood of an infestation.
- Mechanical/Physical Methods: Mowing is not effective, and roots will send up new shoots. In productive areas, cultivation with annual crops will control the species. Hand pulling or chopping can also be effective, but the root crown must be removed.

- Cultural Methods: Unknown
- Biological Control Agents: Forty-seven species of insects are associated with sulfur cinquefoil in the northeastern United States, but because of the close genetic relationship between cinquefoils and strawberries there is concern with bioagents attacking non-targeted plants.
- Pesticides: Glyphosate can be applied to actively growing plants before flowering. Repeat applications may be necessary. Aminopyralid can be applied in the rosette to bud stage in terrestrial applications. Read and follow label directions whenever using any herbicide.
- Target Pest: **Tansy Ragwort (EDRR in OR) and Common Tansy**
- No Action: Both species are prolific in pastures, clear cuts, and disturbed roadside areas, and populations can become quite dense. Mowed or grazed plants will regenerate to become a short-lived perennial when moisture conditions are adequate. Tansy ragwort's seeds can lay dormant in the soil for 15 years.
- Prevention: After tansy control, plant areas with site appropriate plants to provide competition and reduce further invasion. Monitor areas for seedlings and resprouts.
- Mechanical/Physical Methods: Small infestations can be controlled manually by pulling up the entire plant, including its roots. Wear protective gloves when pulling and handling plants. If you pull flowering plants, seal them in a plastic bag and put them in the trash. Pull plants while the soil is still moist, roots will come out more easily. Roots left in the ground may resprout so remove as much as possible and continue to monitor the area. Plants are easier to find when they are beginning to form their flowering stems, but if you can pull the plants as rosettes, you will have less plant material to dispose of. Large infestations are better handled by a combination of manual and chemical controls. Mowing alone is not effective as tansy ragwort can re-sprout if entire plant is not removed, behaving as a perennial until the plant is removed. Mowing can be used as an interim measure to keep it from blooming and going to seed, but other control methods will be needed the same year before flowers form.
- Cultural Methods: Seed and/or plant areas with non-invasive plants to provide competition and suppress seed germination.
- Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When Tansy Ragwort is found in the state, it is targeted for eradication. However, the tansy ragwort flea beetle, *Longitarsus jacobaeae*, larvae and adults are destructive to tansy ragwort. Larvae feed on and within the roots and the adults feed on leaves. The ragwort seedhead fly, *Botanophila seneciella*, larvae feed within seedheads, often destroying all of the developing seeds.
- Pesticides: Spot treatment with glyphosate, triclopyr, (or dicamba or aminopyralid in terrestrial applications) from March through July is recommended. Also, from September through October, triclopyr with metsulfuron (terrestrial) can be applied to rosettes. Read and follow label directions whenever using any herbicide.
- Target Pest: **Teasels (Common, Cutleaf)**
- No Action: No action will result in increase in the density and distribution of the species, as seeds will continue to be disbursed throughout the Columbia River valley.

- Prevention: In agricultural settings and areas grazed by livestock, use of certified weed-free feed may help reduce introduction to pastures and rangelands.
 - Mechanical/Physical Methods: Mowing may delay flowering but will not kill teasel. Post flower seeds can be easily spread by mowing equipment. Mulching over small infestations with sheet plastic, cardboard, or wood chips left intact for several years can also be effective but is difficult to maintain. Rosettes can be dug up with care to remove as much of the root as possible to avoid re-sprouting. Flowering stalks can be cut from plants where flowering has begun and cut before the stems will re-sprout. Cut flower stalks should be removed from the area. All of these mechanical treatments are only cost effective at small scales.
 - Cultural Methods: Unknown
 - Biological Control Agents: No approved biological control agents are available at this time.
 - Pesticides: For large infestations herbicides are the best option to quickly gain control. Early spring, when few non-target plants have leafed out, is an ideal time to treat rosettes. A broadleaf, systemic herbicide is preferred since it will kill the roots and is less likely to affect grasses. Read and follow label directions whenever using any herbicide.
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- Target Pest: **Thistles / Knapweeds**
 - No Action: No action would allow for these aggressive invaders to rapidly colonize large areas, further perpetuating the associated negative impacts. In addition to already stated impacts, these infestations could pose a huge economic liability to the pest management areas.
 - Prevention: Continually repeating the selected control methods is one way to prevent reestablishment due to the length of time the seeds remain viable.
 - Mechanical/Physical Methods: Seasonal mowing and tillage can be an effective means of control.
 - Cultural Methods: In agricultural settings, frequent cultivation of areas should reduce and eliminate knapweed populations.
 - Biological Control Agents: Many biological control methods have been proven successful for the spotted knapweed: sulfur knapweed moth, knapweed peacock fly, green clearwing fly, knapweed root weevil, seedhead weevil, and others. Many of the agents listed feed on various parts of the plant during the larval stage.
 - Pesticides: In the month of April, triclopyr, (or clopyralid in terrestrial applications) can be applied to rosettes. May through July glyphosate, triclopyr, (clopyralid or aminopyralid in terrestrial applications) can be applied in flowering stage. From August through November, fall regrowth can be treated with triclopyr with clopyralid in terrestrial sites. Aminopyralid can be effective on dormant plants during fall in terrestrial applications. Read and follow label directions whenever using any herbicide.
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- Target Pest: **Toadflax (Yellow and Dalmatian – EDRR in Oregon)**
 - No Action: Yellow toadflax is a weed problem because of its prolific seed production and creeping rhizome. It is an aggressive weed where it quickly replaces grasses and herbs.
 - Prevention: Ensure disturbed areas are properly vegetated with native plants.

- Mechanical/Physical Methods: Hand-pulling and digging can be effective on small patches and can result in eradication if done consistently for 5-6 years
- Cultural Methods: Unknown
- Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When Dalmatian Toadflax is found in the state, it is targeted for eradication. However, seven biological control agents are approved for release in Oregon, with three of these have been successful: a flower-feeding beetle, a seed capsule weevil and a stem weevil. The stem-boring weevil *Mecinus janthiniformis* was introduced in 2001 and has since exhibited excellent control with reductions on Dalmatian toadflax.
- Pesticides: No aquatic labeled pesticides recommended. In terrestrial areas, chlorsulfuron applied from bud to bloom stage can be effective. Dicamba can be applied in early spring before bloom stage. Imazapic can be applied in fall, when top portion starts to die back, usually after a hard frost. A non-ionic surfactant used for both herbicides will aid the effectiveness. Read and follow label directions whenever using any herbicide.

- Target Pest: **Tree of Heaven / Russian Olive / Woody Plants**
- No Action: No action will result in increase in the density and distribution of these species, as seeds will continue to be disbursed throughout the Columbia River valley.
- Prevention: Education of the public about these species and discouraging their use as ornamental or windbreak trees.
- Mechanical/Physical Methods: Cutting down these and similar weed trees triggers vigorous resprouting. However, it is necessary and can be effective when coupled with herbicide application to the cuts or stumps.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: When leaves are fully expanded, a foliar application of glyphosate, triclopyr, or imazapyr can be effective. Also, a cut stump application of triclopyr from mid-June through mid-September is recommended. Read and follow label directions whenever using any herbicide.

- Target Pest: **Viper's Bugloss (Blueweed)**
- No Action: No action will result in increase in density and distribution of this species, as seeds will continue to be disbursed in sunny areas, meadows, poorly drained slopes, and roadsides.
- Prevention: Maintaining healthy native plants can prevent the species from becoming established.
- Mechanical/Physical Methods: Dig or pull plants prior to bloom and ensure that the entire root system is removed. Mowing is not effective and can stimulate growth.
- Cultural Methods: Seed and/or plant areas with non-invasive plants to provide competition and prevent establishment.
- Biological Control Agents: No approved biological control agents are available at this time.

- Pesticides: Chlorsulfuron is effective in rosette, bolting and flower bud stages. Metsulfuron Methyl is effective in rosette to bolting stages. Glyphosate spot treatments in a 1-2% solution is effective before flowering.
- Target Pest: **Virginia Creeper**
- No Action: No action will allow for increased populations and enhance the likelihood of spreading infestations.
- Prevention: Early control of infestations can prevent the natural spreading of seeds by wildlife.
- Mechanical/Physical Methods: Young vines can be pulled by hand while larger vines require the use of a handsaw or other pruning tools. Caution must be used as the sap in the plant can cause irritation to the skin.
- Cultural Methods: Unknown
- Biological Control Agents: No approved biological control agents are available currently.
- Pesticides: A broadcast application of herbicide containing glyphosate or triclopyr as the active ingredient, of low concentration around 2%-3%, is cost effective for large infestations. Painting stumps of large cut vines with a similar herbicide solution is effective for spot treatments to ensure no non-target species are affected and to protect water quality. Read and follow label directions whenever using any herbicide.
- Target Pest: **Water Primrose (EDRR in OR)**
- No Action: Shallow wetlands with low or no surface flow are at risk from water primrose, which can cover their entire surface and completely alter the nutrient flow and habitat of the infested water body.
- Prevention: Weed wash stations for boats and public education are key to reducing anthropogenic spread.
- Mechanical/Physical Methods: Not effective, as any small fragment of stem or root can regrow. Large infestations can be reduced mechanically, then sprayed with herbicides as it regrows.
- Cultural Methods: If a water body can be drained, the plants can be killed by drought. However, this kind of action impacts all other water dependent organisms at the site.
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Herbicides can be an effective control method, especially in flowing systems where other control methods can be more detrimental, spreading the infestations and harming non-target species. Herbicides with the active ingredient Florpyrauxifen-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate and imazapyr are also effective. However, any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised. Read and follow label directions whenever using any herbicide.

- Target Pest: **Yellow Flag Iris**
- No Action: No action will allow for increased populations and enhance the likelihood of spreading infestations due to the coinciding increased disbursement of seeds.
- Prevention: Natural resource staff will take actions to prevent seeds from being transported on clothing, vehicles, and equipment.
- Mechanical/Physical Methods: The species can be cut down underwater to prevent new seeds from being produced and disbursed. Cutting will not destroy the plant, rhizomes and all fragments must be completely removed to prevent regrowth. Removal of rhizomes in management areas is problematic since they are primarily rock and uncondusive to digging. Seeds germinate and grow well after being burnt in late summer and existing plants can readily re-sprout from rhizomes after burning.
- Cultural Methods: Provide education to residents associated with planting native species in landscape settings.
- Biological Control Agents: No approved biological control agents are available at this time.
- Pesticides: Pesticides are the least labor intensive and most cost-effective means for controlling infestation. An aquatic-labeled glyphosate formulation will be used at the label rate, prior to plants seeding. The most effective pesticide control is to cut the stems off, dispose of them properly and then apply the correct herbicide to the stump. Read and follow label directions whenever using any herbicide.

- Target Pest: **Yellow Floating Heart (EDRR in OR)**
- No Action: Yellow floating heart forms dense patches that compete with native plants. Thick mats can cause stagnant areas in the water with little oxygen for fish or other aquatic life. Established infestations also interfere with recreational uses such as swimming, fishing, water-skiing, and boating.
- Prevention: Educate the public and adjacent landowners if feasible. Clean boots, pets and equipment of mud and debris that may carry seeds.
- Mechanical/Physical Methods: Mechanical methods are not advised unless an area is entirely invaded by plants. Large infestations can be reduced mechanically, then sprayed with herbicides as it regrows otherwise, mechanical methods may increase infestation.
- Cultural Methods: Unknown
- Biological Control Agents: Biological Control Agents: Biological control agents are not used on EDRR listed weeds in Oregon. When the weed is found in the state, it is targeted for eradication.
- Pesticides: Herbicides can be an effective control method, especially in flowing systems where other control methods can be more detrimental, spreading the infestations and harming non-target species. Herbicides with the active ingredient Florpyrauxifen-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate and imazapyr are also effective. However, any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

2. Provide a summary of Pest Management Measures that will be or are implemented to meet the technology-based effluent limitations.

Target Pest: Bittersweet Nightshade

Pest Management Measures: Mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Blackberry (Himalayan/Armenian, Evergreen, European, Cut Leaf)

Pest Management Measures: To successfully control the species a combination of mechanical, cultural and pesticide control methods will be implemented.

Target Pest: Butterfly Bush

Pest Management Measures: Mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Cattails (Exotic)

Pest Management Measures: Strategic control in areas where negative impacts to native ecosystem restoration efforts are most significant will be attained primarily through chemical treatment in combination with mechanical methods where economically feasible.

Target Pest: Common Reed

Pest Management Measures: Pesticides are currently the most effective means of eradicating the common reed and may be used in conjunction with mechanical methods, where possible, to increase effectiveness and reduce environmental impacts.

Target Pest: Curlyleaf Pondweed

Pest Management Measures: Mechanical methods will be used for new and small patches, with care taken to ensure all fragments are removed in the process. Herbicide may be used for large infestations, however any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

Target Pest: English Hawthorne

Pest Management Measures: Mechanical methods will be used when saplings are small and manageable. If large in diameter, mechanical cutting will be supplemented with herbicide application. This and other invasive tree species often resprout vigorously after cutting without additional herbicide treatment. Pesticides use will be limited when possible but used as needed in accordance with the product label and this PDMP.

Target Pest: Eurasian Watermilfoil

Pest Management Measures: Due to the difficulties associated with other control methods, especially mechanical in a flowing water system, herbicides will be the principal management approach. Products with the active ingredient Flupyraxifen-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate could be used in combination with mechanical methods to reduce spray quantities. However, any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

Target Pest: Everlasting Pea

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: False Indigo / Indigobush

Pest Management Measures: Considering effectiveness, cost and other relevant factors, a combination of mechanical and pesticide control methods will be utilized.

Target Pest: Flowering Rush (EDRR)

Pest Management Measures: A combination of mechanical, Diver Assisted Suction Harvesting and pesticides are the most effective means currently and will be employed to control the species in identified pest management areas within the approved limitation for critical habitat. Report sites to ODA.

Target Pest: French Broom (EDRR in WA)

Pest Management Measures: When the plant cannot be prevented from becoming established, mechanical methods will be used for small infestations and a combination of mechanical and herbicides will be used on larger infestations. Pesticides use will be limited when possible but used as needed in accordance with the product label and this PDMP

Target Pest: Garlic Mustard (EDRR)

Pest Management Measures: Mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Report suspect sites to ODA.

Target Pest: Geranium (Shiny and Herb Robert)

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Giant Hogweed (EDRR)

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Report sites to ODA.

Target Pest: Gorse (EDRR in OR)

Pest Management Measures: Gorse control should be done in two stages. The first stage is to get control of established plants. The second stage is to control new plants from the existing seed bank, which can lay dormant for up to 30 years. An effective control program will be a combination of mowing (where feasible), burning (where permissible) and herbicides. Report sites to ODA.

Target Pest: Grasses [False-Brome (EDRR in WA), Ravenna (EDRR in OR), Harding, Loy Manna, Reed Canary, Johnsongrass (EDRR in WA)]

Pest Management Measures: Treatment will vary depending on ecological setting, but some annual exotic grasses can be selectively treated with broadcast application of appropriate herbicides that favor native, perennial grasses and forbs in prairie and savanna settings. Mowing can also be effective, if performed after annual grasses have allocated most of their energy reserves into seed but before the seeds are viable.

Target Pest: Hoary Cress

Pest Management Measures: Restoration of native vegetation in management areas will be used in conjunction with cultural methods and pesticide application where determined to be necessary and beneficial.

Target Pest: Ivies (English and Atlantic)

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Knotweeds - Japanese, Giant, Himalayan (Priority)

Pest Management Measures: As a priority species and due to its ability to quickly reproduce and overcome riparian areas, knotweeds will be aggressively treated before infestations become a larger problem. Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Kudzu (EDRR)

Pest Management Measures: Control of well-established kudzu stands can take up to 10 years. Persistent treatment of patches is the only true control measure. Mechanical methods will be employed for any new establishment followed up by application of glyphosate, triclopyr, or imazapyr in accordance with the product label. Consult a SE project/ district for known effective rates. Report sites to ODA.

Target Pest: Lesser Celandine

Pest Management Measures: Multiple control methods will be utilized. Mechanical methods can be used for individuals and small patches with care being taken to remove all plant parts. Mulching can be followed up when applicable and feasible. Herbicides will be employed for large infestations since it kills the entire plants and minimizes soil disturbance. Persistent monitoring and follow-up work will be needed. Pesticides will be used in accordance with the product label.

Target Pest: Myrtle Spurge / Caper Spurge / Leafy Spurge (EDRR in OR)

Pest Management Measures: Small infestations will be dug or pulled over multiple years, using caution when pulling to not get any sap on worker's skin. For heavy infestations, herbicide application will occur with mowing or grazing with sheep, as practical per site condition. Report Leafy Spurge sites to ODA.

Target Pest: Orange Hawkweed (EDRR in OR)

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Report sites to ODA.

Target Pest: Parrot Feather

Pest Management Measures: Due to the difficulties associated with other control methods, especially mechanical in a flowing water system, herbicides will be the principal management approach. Products with the active ingredient Flupyraxifen-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate could be used in combination with mechanical methods to reduce spray quantities. However, any application in water needs to be

done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised.

Target Pest: Paterson's Curse (EDRR in OR)

Pest Management Measures: Mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Only selective herbicides will be employed. Because small numbers of seeds can remain viable in the soil for a long period, eradication will require repeated use of these techniques over several years. Report sites to ODA.

Target Pest: Perennial Pepperweed (EDRR in OR)

Pest Management Measures: Mechanical methods are difficult due to the plants ability to reproduce from small plant fragments. As a result, preventative, mechanical and cultural methods will be used for new and small patches before they become a larger problem. Pesticides use may be the most effective method to treat infestations large and small but will still be limited when possible and in accordance with the product label and this PDMP. Report sites to ODA.

Target Pest: Poison Hemlock (Priority as determined by Projects managers)

Pest Management Measures: Strategic control in areas where negative impacts to native ecosystem restoration efforts are most significant will be attained primarily through chemical treatment in combination with mechanical methods where economically feasible.

Target Pest: Poison Oak

Pest Management Measures: Mechanical methods will be used for new and small patches, with extreme caution and proper PPE being utilized. Pesticides use will be limited when possible but used when necessary and on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Policeman's Helmet

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Extreme care must be taken to not spread the seeds. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Portuguese Broom (EDRR in OR)

Pest Management Measures: Mechanical methods will be used for new and small patches. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Control efforts must be long-term and sustained. Report sites to ODA.

Target Pest: Puncturevine

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Biocontrol methods will be utilized when available and cost effective. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Purple Loosestrife (Priority)

Pest Management Measures: If biocontrol beetles are present, infestation will be monitored but not actively controlled. If biocontrol beetles are not detected, a combination of mechanical and

chemical actions will be employed to control the species, if any presence is detected, in identified pest management areas. However, pesticides use will be limited when possible but as needed in accordance with the product label and this PDMP.

Target Pest: Roses (Exotic)

Pest Management Measures: To successfully control exotic roses, particularly multiflora rose, a combination of mechanical, cultural and pesticide control methods will be implemented.

Target Pest: Rush Skeletonweed (EDRR in OR)

Pest Management Measures: Mechanical methods will be used for new and small patches. Biocontrol methods will be utilized when available and cost effective. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Report sites to ODA.

Target Pest: Russian Thistle

Pest Management Measures: Mechanical methods will be used for new and small patches and is probably the best method for preventing large infestations. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP.

Target Pest: Saltcedar (EDRR in OR)

Pest Management Measures: Due to the resprouting ability of this plant, mechanical methods alone are not particularly effective. A foliar herbicide application on small plants/infestations will be used. A combination of mechanical and pesticide control methods is the best practice for larger infestations as needed in accordance with the product label and this PDMP. Report sites to ODA.

Target Pest: Scotch Broom

Pest Management Measures: A combination of targeted herbicide application and mechanical methods will be employed to manage to control the species in identified pest management areas.

Target Pest: Spurge Laurel

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches and when feasible. Pesticides use will be limited when possible but used on large infestations as needed, after plants are cut to the ground, in accordance with the product label and this PDMP.

Target Pest: St. Johnswort

Pest Management Measures: Mechanical methods will be used for small plants and small infestations. Herbicide may be used in upland environments, away from water, in accordance with the product label and this PDMP.

Target Pest: Sulfur Cinquefoil

Pest Management Measures: A combination of chemical and prevention actions are the most effective means currently and will be employed to control the species in identified pest management areas.

Target Pest: Tansy Ragwort (EDRR in OR) and Common Tansy

Pest Management Measures: Preventative and mechanical methods will be used for new and small patches. Biocontrol methods will be utilized when available and cost effective. Pesticides use will be limited when possible but used on large infestations as needed in accordance with the product label and this PDMP. Report Tansy Ragwort sites to ODA.

Target Pest: Teasels (Common, Cutleaf)

Pest Management Measures: A combination of control methods will be employed and determined by specifics of the individual pest management areas, including severity and impact of the infestation, potential effects on non-target species, and economic feasibility.

Target Pest: Thistles / Knapweeds

Pest Management Measures: Control methods vary depending on the thistle or knapweed species, and proper identification is the first step towards stopping the spread of these noxious weeds. Broadcast herbicide application would be used in most cases with knapweeds and when dealing with dense infestations or monocultures of some thistles, such as *Cirsium arvense* (Canadian Thistle). Otherwise, herbicide spot treatment of individual exotic thistle plants would occur, with applicators trained in distinguishing between native and exotic species.

Target Pest: Toadflax [Yellow and Dalmatian (EDRR in OR)]

Pest Management Measures: Mechanical methods will be used for new and small patches and is probably the best method for preventing large infestations. Biocontrol methods will be utilized when available and cost effective. No aquatic labeled pesticides are recommended per PNW handbook. Pesticides use will be limited to terrestrial sites in accordance with the product label and this PDMP. Report Dalmatian Toadflax sites to ODA.

Target Pest: Tree of Heaven / Woody Plants

Pest Management Measures: Large woody plants such as Tree of Heaven trees would be frilled and painted with herbicide, cut and painted with herbicide, or injected with herbicide. This and other invasive tree species often resprout vigorously after cutting without additional herbicide treatment.

Target Pest: Viper's Bugloss (Blueweed)

Pest Management Measures: Early detection is key to prevent establishment. Small populations will be mechanically removed, and seed heads disposed of. Large infestations may require herbicide application, used as needed in accordance with the product label and this PDMP

Target Pest: Virginia Creeper

Pest Management Measures: Small infestations will be dug or pulled over multiple years, with herbicide painted onto larger cut vines for spot treatments where appropriate, using caution when pulling to not get any sap on worker's skin. For heavy infestations, broadcast herbicide application will occur when appropriate.

Target Pest: Water Primrose (EDRR in OR)

Pest Management Measures: Small patches can be pulled by hand and monitored for regrowth. However, due to the difficulties associated with other control methods, especially mechanical in a flowing water system, herbicides will be the principal management approach. Products with the active ingredient Florypyrauxifen-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate could be used in combination with mechanical methods to reduce spray quantities. However, any application in water needs to be done within the approved

temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised. Report sites to ODA.

Target Pest: Yellow Flag Iris

Pest Management Measures: A combination of mechanical and pesticide control methods is the best practice for infestations. However, solely mechanical methods can be effective for small areas.

Target Pest: Yellow Floating Heart (EDRR in OR)

Pest Management Measures: Small patches can be pulled by hand and monitored for regrowth. However, due to the difficulties associated with other control methods, especially mechanical in a flowing water system, herbicides will be the principal management approach. Products with the active ingredient Fluroxypyr-benzyl have shown to have less impact to salmonids and other organisms. Glyphosate could be used in combination with mechanical methods to reduce spray quantities. However, any application in water needs to be done within the approved temporal windows provided by the state. Consultation with the licensed applicator and/or the county noxious weed coordinator is advised. Report sites to ODA.

SECTION 5: Schedules and Procedures

- i. a. List of proposed pesticides to be applied and EPA registration number

APPROVED FOR AQUATIC USE

Brand Name	Active Ingredient	Restricted Use	Aquatic Use	EPA Registration Number
Aquaneat	Glyphosate 53.8%	No	Yes	228-365
Aqua Star	Glyphosate 53.8%	No	Yes	42750-59
Rodeo (Glypro)	Glyphosate 53.8%	No	Yes	62719-324
Roundup Custom	Glyphosate 53.8%	No	Yes	524-343
Alligare Glyphosate 5.4	Glyphosate 53.8%	No	Yes	81927-8
Drexel Imitator Aquatic	Glyphosate 53.8%	No	Yes	19713-623
Polaris	Imazapyr 27.7%	No	Yes	228-534
Habitat	Imazapyr 27.77%	No	Yes	241-426
Arsenal	Imazapyr, isopropylamine salt 53.1%	No	Yes	241-299
Vastlan	Triclopyr choline 54.72%	No	Yes	62719-687
Element 3A (Garlon 3A)	Triclopyr 44.4%	No	Yes	62719-37
ProcellaCOR SC	Florpyrauxifen-benzyl 26.5%	No	Yes	67690-79
ProcellaCOR EC	Florpyrauxifen-benzyl 2.7%	No	Yes	67690-80
Red Eagle Flumioxazin	Flumioxazin 51%	No	Yes	85678-35
Reward	Diquat dibromide 37.3%	No	Yes	100-1091
Alligare Diquat	Diquat dibromide 37.3%	No	Yes	81927-35

- i. b. Aquatic Pesticide Labels

Brand Name	Link to EPA website for full label history	Date of last label update
Aquaneat	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:37515,228-365	5/12/2015
Aqua Star	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:6538654394931::NO::P8_PUID,P8_RINUM:38446,42750-59	2/12/2016
Rodeo (Glypro)	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:37811,62719-324	11/27/2018
Roundup Custom	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:2765,524-343	10/18/2016
Alligare Glyphosate 5.4	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:484986,81927-8	11/26/2019
Drexel Imitator Aquatic	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:499179,19713-623	4/18/2013

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Polais	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:486916,228-534	10/9/2018
Habitat	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:464130,241-426	8/17/2011
Arsenal	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:937234788163::NO::P8_PUID,P8_RINUM:2869,241-299	9/7/2017
Vastlan	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:515509,62719-687	12/6/2017
Element 3A (Garlon 3A)	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:2695,62719-37	2/25/2016
ProcellaCOR SC	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:17139671236288::NO::P8_PUID,P8_RINUM:525450,67690-79	5/9/2022
ProcellaCOR EC	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:4849039838739::NO::P8_PUID,P8_RINUM:525451,67690-80	2/27/2018
Red Eagle Flumioxazin	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:5037450356548::NO::P8_PUID,P8_RINUM:518984,85678-35	10/22/2020
Reward	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:5037450356548::NO::P8_PUID,P8_RINUM:5389,100-1091	10/9/2009
Alligare Diquat	https://ordspub.epa.gov/ords/pesticides/f?p=PPLS:8:5037450356548::NO::P8_PUID,P8_RINUM:495903,81927-35	12/14/2016

- ii. Pesticides that are prohibited for use in aquatic environments and strongly discouraged in terrestrial environments in Portland District

2,4-D	Chlorpyrifos	Fenbutatin oxide	Oryzalin
Carbaryl	Diazinon	Malathion	Pendimethalin
Carbofuran	Diflubenzuron	Methomyl	Propargite
Chlorothalonil	Diuron	Naled	Trifluralin

- iii. Application Rate and Frequency Procedures

- Application rates and frequency vary by species to be treated, application method, desired concentration and total area being treated. Read the product label and adhere to all specifications, including mixing instructions and compatibility testing if combining pesticides. Follow product label guidance to minimize environmental exposure and off-target pesticide drift. Applicators shall not exceed the treatment threshold or the annual threshold for any product used.

iv. Spill Prevention - Procedures and schedule of maintenance activities for preventing spills and leaks of pesticides associated with the application of pesticides covered under this permit.

- The requirements listed above are addressed through implementation of our internal regulation ER 1130-2-540, Chapter 3 and Appendix F. This is available upon request and is publicly available through the USACE library.

v. Pesticide Application Equipment - Schedules and procedures for maintaining the pesticide application equipment in proper operating condition, including calibrating, cleaning, and repairing the equipment.

- Inspect all equipment annually and prior to any application. Replace worn-out, deteriorated, or broken parts.
- Clean all equipment based on specifications on the product label immediately after use or when changing chemicals.
- Calibrate equipment to the manufacturer's specifications.
- All repairs beyond the scope of the licensed applicators training will be completed by an authorized repair shop based on manufacturer's specifications.

vi. Pesticide Monitoring

1) The process for determining the location of any monitoring:

Project pesticide managers will perform a visual assessment during the application of pesticides after safety and feasibility have been considered.

2) A schedule for monitoring:

For the first 2 weeks following the treatment, the site will be monitored every 3 days to look for adverse effects.

3) The person (or position) responsible for conducting monitoring:

Each project has a defined Point of Contact for pesticide management and is listed in Section 2: PDMP Team. That POC, or their designee, is the person responsible for monitoring.

SECTION 6: Response Procedures

6.1 Spill Response Procedures

6.1.1 Spill Containment

Response procedures are as documented in the NPDES permit. Spill response equipment will be on site when pesticides are handled. Trained applicators with knowledge and training of spill response will be on site. Reportable quantities of pesticides will not be transported.

This section outlines procedures for the containment, cleanup, and decontamination of pesticide spills and the safety precautions associated with these operations.

- a. These procedures will only be implemented in the event of an emergency. The pest control contractor is responsible for maintaining a spill response capability during pesticide operations and will be held accountable for cleaning-up any spills.
- b. Extreme caution shall be exercised by contractors handling pesticides to prevent spillage during storage, transportation, mixing, and application.
- c. All pesticide spills shall be immediately reported to the project Environmental Compliance Coordinator (ECC).
- d. All pesticide spills shall be handled in accordance with ER 1130-2-540, this Section and the appropriate Project Spill Contingency Plan.

Reporting: A pesticide spill must be reported to the ECC and project Pest Management Point of Contact (PMPOC). Any need for first aid or fire equipment must be reported.

Identification. Identify the pesticide involved in the spill. Retain the container and label for the ECC and PMPOC.

a. Remove contaminated and/or injured contractor personnel from the spill site to a safe area upwind from the spill.

(1) If necessary, remove contaminated clothing from the victim and wash all contamination off the victim using soap and water.

(2) Administer first aid if needed. This may include flushing contaminated eyes with clean water for at least 15 minutes.

b. Site Security. Secure the spill site from entry by unauthorized personnel by roping off the area and posting warning signs.

c. Containment and Control.

(1) If the pesticide container is leaking, prevent further leakage by repositioning the pesticide container or packaging.

(2) Prevent the spill from spreading by trenching or encircling the area with a dike of sand, absorbent material, or as a last resort – soil or rags.

(3) Cover the spill. If the spill is liquid, use an absorbent material; if dry material, use a plastic tarpaulin and weigh the edges to secure. NOTE: Use absorbent materials sparingly as they must be disposed of as hazardous wastes.

d. Clean-up. Adequate clean-up of spilled pesticides is essential in order to remove any health or environmental hazards. When cleaning up pesticide spills, it is advisable not to work alone and to make sure the area is properly ventilated.

(1) Dry spills (dusts, wet table powders, granular formulations) should be picked up in the following manner:

(a) Roll up the tarpaulin covering the spill while simultaneously sweeping the spilled material using a lightly moistened broom, shovel, or dustpan. Do not allow the pesticide to become airborne while sweeping.

(b) Collect the pesticide and place it in heavy duty plastic bags. Properly secure and label the bags, identifying the pesticide. Set the bags aside for later disposal.

(2) Liquid spills should be cleaned up in the following manner:

(a) Work absorbent material into the liquid spill with a shovel to force the absorbent into close contact with the spilled pesticide.

(b) Collect all the spent absorbent material and place into properly labeled leak-proof container(s) (e.g., heavy-duty plastic bags, polyethylene drums, etc.). Set the container(s) aside for later disposal.

(c) Contaminated soil should be removed to a depth of at least three inches below the wet surface line and placed in properly labeled leak-proof drums for disposal.

e. Decontamination.

(1) Decontamination solutions can be used for decontaminating surfaces and materials where spills have occurred. The bulk of the spilled pesticide should be cleaned up or removed prior to applying any decontaminant.

(2) Several materials may be used to decontaminate pesticides. Due to the many different pesticides available and the necessity to use the correct decontamination material, all decontamination activities must be carried out only after appropriate decontamination methods have been determined by the Environmental Coordinator and/or Spill Response Team. Many pesticides, especially the organophosphates, decompose when treated with lye or lime. Fewer pesticides are decomposed by bleach. Other pesticides cannot be effectively decontaminated and should only be treated with detergent and water to assist in removal.

Pesticide Discharge Management Plan USACE - Portland District

The following table is a guide for decontaminating certain pesticides:

Use Lye or Lime for:	Use Chlorine Bleach for:	Do Not Use Any Decontamination Chemicals for these Pesticides:
acephate	calcium cyanide	alachlor
atrazine	chlorpyrifos*	chloramben
captan	fonophos	chlorinated hydrocarbons
carbaryl*		diuron*
dalapon		methoxychlor
diazinon*		pentachlorophenol
dichlorvos		picloram
dimethoate		2,4-D*
malathion*		bromacil
naled*		simazine
propoxur		

*NOTE: These chemicals noted are prohibited from use in aquatic environments and strongly discouraged in terrestrial environments.

WARNING: There is a slight potential for creating toxic by-products when using these procedures. In critical situations, samples of affected soil, sediment, water, etc. should be sent to a laboratory for analysis to determine if decontamination was successful.

- a. Pesticides amenable to treatment using lye or lime may be decontaminated when mixed with an excess quantity of either of these materials. Lye or lime can be used in either the dry form or as a 10% solution in water. CAUTION: Caustic soda (lye) can cause severe eye damage to personnel not properly protected. Protect against contact by wearing unventilated goggles, long-sleeved work clothes with coveralls, neoprene gloves and a chemical-resistant apron. An approved respirator should also be worn. Do not use lye on Aluminum surfaces.
- b. For pesticides that can be degraded by treatment with bleach, in general, use one gallon of household bleach (containing approximately 5% sodium hypochlorite) per pound or gallon of pesticide spilled. If bleaching powder is used, first mix it with water (one gallon of water per pound of bleach) and add a small amount of liquid detergent. For safety reasons, a preliminary test must be run using small amounts of liquid bleach and the spilled pesticide. The reaction resulting from this test must be observed to ensure the reaction is not too vigorous. Do not store in close proximity to or mix chlorine bleach with amine-containing pesticides. Mingling of these materials can cause a violent reaction resulting in fire. Calcium hypochlorite is not recommended as a decontaminating agent because of the fire hazard.
- c. Spilled granular/bait materials only need to be swept up. When there is doubt concerning which decontaminate is appropriate, only water and a detergent should be used to decontaminate surfaces contacted by the spill.
 1. Non-porous surfaces should be washed with detergent and water. The decontamination solution determined to be correct should be spread on the surface and worked into any crevices, corners, etc. The decontamination material should then be soaked up using absorbent material. The spent absorbent material should be placed into a labeled leak-proof container for disposal.

2. Porous materials such as wood may not be adequately decontaminated if contamination is from a highly toxic or penetrating concentrated pesticide. If contamination is great enough to warrant, these materials should be replaced.
 3. Tools, vehicles, equipment, and any contaminated metal or other Non-porous objects can be readily decontaminated using detergent and the appropriate decontamination solution.
- d. Disposal: Pesticide application contractors will be responsible for disposal of contaminated materials caused by its personnel. All contaminated materials that cannot be effectively decontaminated as described above must be placed in properly labeled, sealed, leak-proof containers. Disposal of these containers shall be in accordance with instructions determined by the ECC, the Spill Response Team, and the PMPOC.
1. Supervision. All containment and control, cleanup, decontamination, and disposal activities shall be carried out under the direct supervision of the ECC, Spill Response Team, and the PMPOC.
- e. The pesticide spill kit should contain the following items:
- absorbent material;
 - household bleach;
 - push broom;
 - square point “D” handle shovel;
 - shop brush (dustpan brush or “foxtail”);
 - dustpan;
 - polyethylene bags with ties.

Whenever any of the above items are used, they shall be cleaned and/or replaced. A similar, though smaller, kit shall be carried in each vehicle carrying or involved in applying pesticides, similar to this product: <https://www.newpig.com/pig-pesticide-spill-kit-in-bucket/p/KIT620>

6.1.2 Spill Notification

Appropriate facility personnel, emergency chemical responders, drinking water intake contacts, and Oregon and/or Washington Emergency Response Systems will be notified of spills and adverse incidents. Project staff will also reference their Project’s latest Spill Response Plan as part of their safety program and their designated Environmental Compliance Coordinator’s guidance. Refer to Attachment D.

In accordance with state laws and agency regulations, the National Response Center, appropriate state response system, identified local Project and District personnel will be notified immediately.

To the best of your ability, please be ready with the following information:

Where is the spill?

What spilled?

How much spilled?

How concentrated is the spilled material?

Who spilled the material?

Is anyone cleaning up the spill?

Are there resource damages (e.g. dead fish or oiled birds)?

Who is reporting the spill?
How can we get back to you?

USACE – PORTLAND DISTRICT EMERGENCY TELEPHONE NUMBERS

Bonneville Project Personnel:

Control Room: 541-374-8338
Project Manager: Mike Adams 541-374-4550
Natural Resource Manager: Gregory Webb 541-374-7996
Project Environmental Compliance Coordinator: Alex Barajas 541-374-3850

The Dalles Project Personnel:

Control Room: 541-298-7505
Project Manager: Ron Twiner 541-298-7500
Natural Resource Manager: David Ladouceur 541-506-8470
Project Environmental Compliance Coordinator: Wylesha Wilcox 541-506-8302

Willamette Valley Project Personnel:

Detroit Dam Control Room: 503-897-2385 x4451
Foster Dam Control Room: 541-367-5124
Lookout Point Dam Control Room: 541-349-3072
Project Manager: Erik Petersen 541-684-4301
Natural Resource Manager: Wendy Jones 541-688-8147
Project Environmental Compliance Coordinator: Dave Crocker 541-684-4310

John Day / Willow Creek Project Personnel:

Control room: 541-298-9712
Project Manager: Patricia Miller 541-739-1010
Natural Resource Manager: Timothy Darland 541-739-1040
Project Environmental Compliance Coordinator: Joseph Petersen 541-739-1128

Rogue River Basin Project Personnel:

Lost Creek Lake Control Room: 541-878-1076
Project Manager: Erik Petersen 541-684-4301
Natural Resource Manager: Jesse Brownlee 541-878-1081
Project Environmental Compliance Coordinator: Dave Crocker 541-684-4310

Portland District Personnel:

District Natural Resource Manager: Nick Racine 503-808-4325
District Environmental Compliance Coordinator: Carson Freels 503-808-4323

Oregon Emergency Response System: 1-800-452-0311 or Salem Area 503-378-6377.

Washington Emergency Response System: 1-800-258-5990

Washington Emergency Response System: According to Washington state law, **all hazardous material and oil spills must be reported immediately by the spiller.** The sooner WA Dept of Ecology knows about an incident, the quicker they can act to try and reduce damages to the environment and protect sensitive natural resources.

You must call the **TWO (2)** following 24-hour numbers:

1) National Response Center: 1-800-424-8802 **AND**

2) Washington Emergency Management Division: 1-800-258-5990 -OR- 1-800-OILS-911 (including Emergency Release Notification)

Washington Dept. of Ecology regional office for the county where the spill is located:

Southwest Regional Office (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties)
300 Desmond Drive SE
Olympia, WA 98504
Phone: 360-407-6300

Central Regional Office (Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties)
1250 West Alder St
Union Gap, WA 98903-0009
Phone: 509-575-2490

Eastern Regional Office - (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties)
4601 N Monroe
Spokane, WA 99205-1295
Phone: (509) 329-3400

National Response Center: 1-800-424-8802

For assistance in the event of a pesticide spill, leak, or exposure using:

CHEMTREC: 1-800-424-9300.

Monsanto: Call collect anytime day or night: 314-694-4000

Syngenta: For 24 Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) call 1-800-888-8372

Dow AgroSciences: Emergency Phone Number: 800-992-5994

6.2 Adverse Incident Response Procedures

6.2.1 Responding to an Adverse Incident

- | |
|--|
| <p>— When responding to adverse incidents personnel casualties will first be stabilized and first responders notified. After which spill response procedures will be followed as required beginning with the notifications</p> |
|--|

6.2.2 Notification of an Adverse Incident

Appropriate facility personnel, emergency chemical responders, drinking water intake contacts, and Oregon and/or Washington Emergency Response Systems will be notified of spills and adverse incidents. Refer to Attachment D.

In accordance with state laws and agency regulations, the National Response Center, appropriate state response system, identified local Project and District personnel will be notified immediately.

See pages 61-62 for USACE Project emergency telephone numbers

National Response Center: 1-800-424-880

Washington Emergency Response System: 1-800-258-5990

Oregon Emergency Response System: An operator must contact the Oregon Emergency Response System (OERS), if the operator observes or is otherwise made aware of an adverse incident that may have resulted from a discharge from the pesticide application. The contact must occur no later than 24 hours after the operator becomes aware of the adverse incident. The Oregon Emergency Response System can be reached at 800-452-0311 or Salem Area 503-378-6377.

Adverse Incident Notification to the Oregon Emergency Response System (OERS) at 800-452-0311 or Salem Area 503-378-6377 must include the following information.

1. Name of the person providing the notification and telephone number;
2. Location address and description of the area including water bodies affected;
3. Operator name and mailing address if different from above;
4. The NPDES File Number, if known;
5. Name of a contact person if different from the person providing the notification;
6. Date, time, and the way that the adverse incident was discovered;
7. Description of the adverse incident including name of the affected species;
8. EPA registration number of each product applied in the area of the adverse incident;
9. Description of any steps taken or plan to take to correct, repair, clean up or mitigate the adverse effects;
10. Reason why notification was made later than 24 hours, if applicable.

The operator must provide a written report within thirty (30) days of a reportable **adverse incident** to the DEQ local regional field office at the address below. The report must include the following information:

1. Date, time and the information that was provided in the initial notification in Condition 4.a. above;
2. The DEQ or OERS employee who was contacted and any instructions received from that person;
3. The effect of the adverse incident on species involved, including the type of species (if known), estimate of the number dead, estimate of the number distressed, the size of the number of dead and the size of the number distressed;
4. The size of the area of water that was affected (square area or stream miles);
5. Pesticide application rate, where the pesticide was applied (water's edge, canopy, in water), method of application, name of the pesticide product, description of the pesticide active ingredient(s), and EPA registration number for the product ;
6. Description of the circumstances under which the adverse incident occurred;

7. If laboratory tests were performed, provide information on what tests were performed, when the tests were performed, who conducted the tests and a summary of the test results within 5 days after they become available.
8. If applicable, explain why you believe the adverse incident could not have been caused by exposure to the pesticide.
9. Actions to be taken to prevent the recurrence of the adverse incidents; and
10. A signature and date on report.

Oregon DEQ Regional Field Office Addresses

Portland Office:

700 NE Multnomah St., Portland, OR 97232

Phone: (503) 229-5263

The Dalles Office:

Columbia Gorge Community College

400 E Scenic Drive, Bldg. 2, The Dalles, OR 97058

Phone: (541) 298-7255

Pendleton Office: (Oregon only)

800 SE Emigrant, #330, Pendleton, OR 97801,

Phone: 541-276-4063

Salem Office:

4026 Fairview Industrial Dr., Salem, OR 97302

Phone: (503) 378-8240

Eugene Office:

165 East 7th Avenue, Suite 100 Eugene, OR 97401

Phone: (541) 686-7838

Medford Office:

221 Stewart Ave., Suite 201, Medford, OR 97501

Phone: (541) 776-6010

Nearest emergency medical facilities:

Klickitat Valley Hospital

310 S Roosevelt, Goldendale WA 98620

Phone: (509) 773-4022

Mid-Columbia Medical Center

1700 E 19th

The Dalles, OR 97058

Phone: (541) 296-1111

Good Shepherd Medical Center

610 Northwest 11th Street, Hermiston, OR 97838

Phone: (541) 667-3400

PeaceHealth Sacred Heart Medical Center
3333 River Bend Drive, Springfield, OR 97477
Phone: (541) 222-7300

Asante Rogue Regional Medical Center
2825 E. Barnett Rd., Medford, OR 97504
Phone: (541) 789-7000

The operator is not required to report an **adverse incident** in the following situations:

- i.* The operator is aware of facts that clearly establish that the adverse incident was not related to toxic effects or exposure from the pesticide application;
- ii.* The operator has received notification in writing that DEQ has waived the reporting requirements for this incident or category of incidents;
- iii.* The operator receives information about the adverse incident, but that information is clearly erroneous;
- iv.* An adverse incident occurs to pests that are similar in kind to pests identified on the FIFRA label.

SECTION 7: Documentation to Support Eligibility Considerations under Other Federal Laws

Instructions (See PGP Part 5.1.5):

- If applicable, Decision-makers must keep documentation supporting their determination with regard to Part 1.1.2.4 (Endangered and Threatened Species and Critical Habitat Protection).

See Attachment C.

SECTION 8: Signature Requirements

Instructions (see PGP Part 5.1.6):

- The following certification statement must be signed and dated to certify that the PDMP is in accordance with Appendix B, Subsection B.11 of the PGP.

Note: This certification must be re-signed whenever necessary to address any of the triggering conditions for corrective action in Part 6.1 or when a change in pest control activities significantly changes the type or quantity of pollutants discharged.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the application of pesticides, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

USACE Portland District:

Name: **Kymberly C. Anderson** Title: Chief, Operations Division

Signature: _____ Date: _____

SECTION 9: PDMP Plan Modifications

Instructions (see PGP Part 5.2):

- You must modify your PDMP whenever necessary to address any of the triggering conditions for corrective action in Part 6.1 or when a change in pest control activities significantly changes the type or quantity of pollutants discharged. Changes to your PDMP must be made before the next pesticide application that results in a discharge, if practicable, or if not, no later than 90 days after any change in pesticide application activities. The revised PDMP must be signed and dated in accordance with the PGP, Appendix B, Subsection B.11.
- You should include significant changes in the activities or their timing on the project, changes in personnel, updates to site maps, and so on.

REFERENCE ATTACHMENT F

SECTION 10: PDMP Availability

Instructions (see PGP Part 5.3):

- You must retain a copy of the current PDMP, along with all supporting maps and documents, at the address provided in Section III.3 of the NOI. The PDMP and all supporting documents must be readily available, upon request, and copies of any of these documents provided, upon request, to EPA; a State, Territorial, Tribal, or local agency governing discharges or pesticide applications within their respective jurisdictions; and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS). EPA may provide copies of your PDMP or other information related to this permit that is in its possession to members of the public.
- Any Confidential Business Information (CBI), as defined in 40 CFR Part 2, may be withheld from the public provided that a claim of confidentiality is properly asserted and documented in accordance with 40 CFR Part 2; however, CBI must be submitted to EPA, if requested, and may not be withheld from those staff within EPA, FWS, and NMFS cleared for CBI review.

This PDMP will be available to the public upon request to the Natural Resources Management staff of the Portland District, per contact information provided in SECTION 2.

ATTACHMENTS

Attach the following documentation to the PDMP:

Attachment A – General Location Map

Attachment B – Pesticide General Permit

Attachment C – 2011 Acknowledgement Letter from Oregon DEQ, 2020 updated 2300A Permit Application

Attachment D – Adverse Incident Report

Attachment E – Corrective Action Log

Attachment F – PDMP Amendment Log

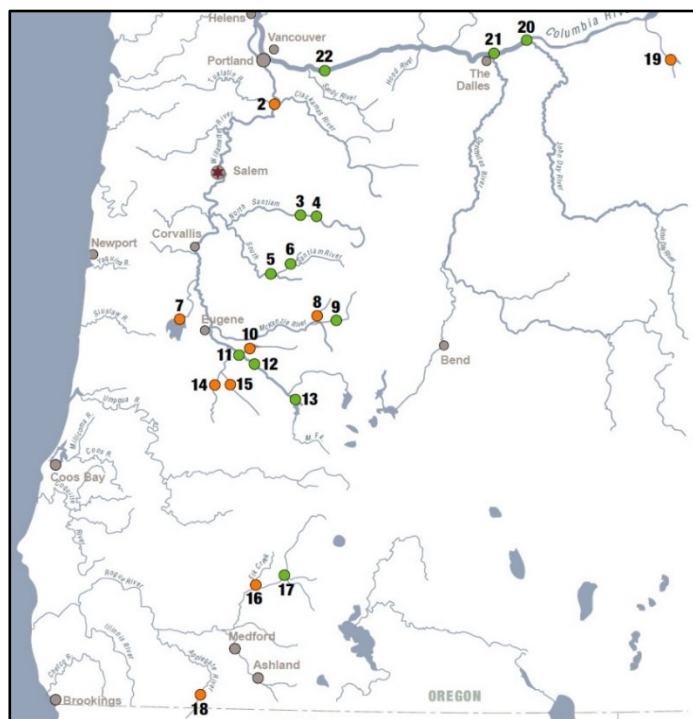
Attachment G – Subcontractor Certifications/Agreements

Attachment H – Delegation of Authority

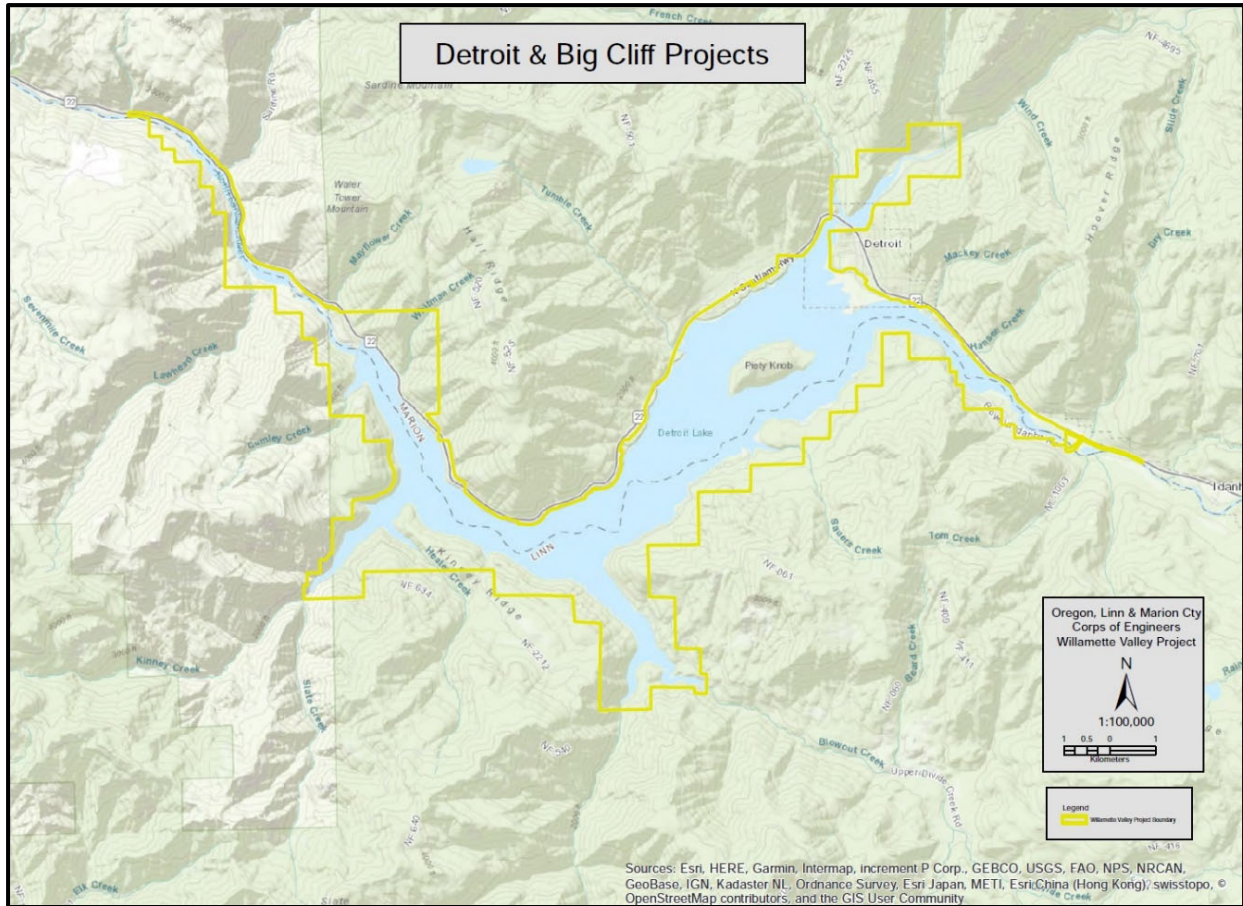
Attachment I – Annual Reports and Other Record Keeping

Attachment J - 2021 USACE-NWP Record of Environmental Consideration

Attachment A – General Location and PMA Maps



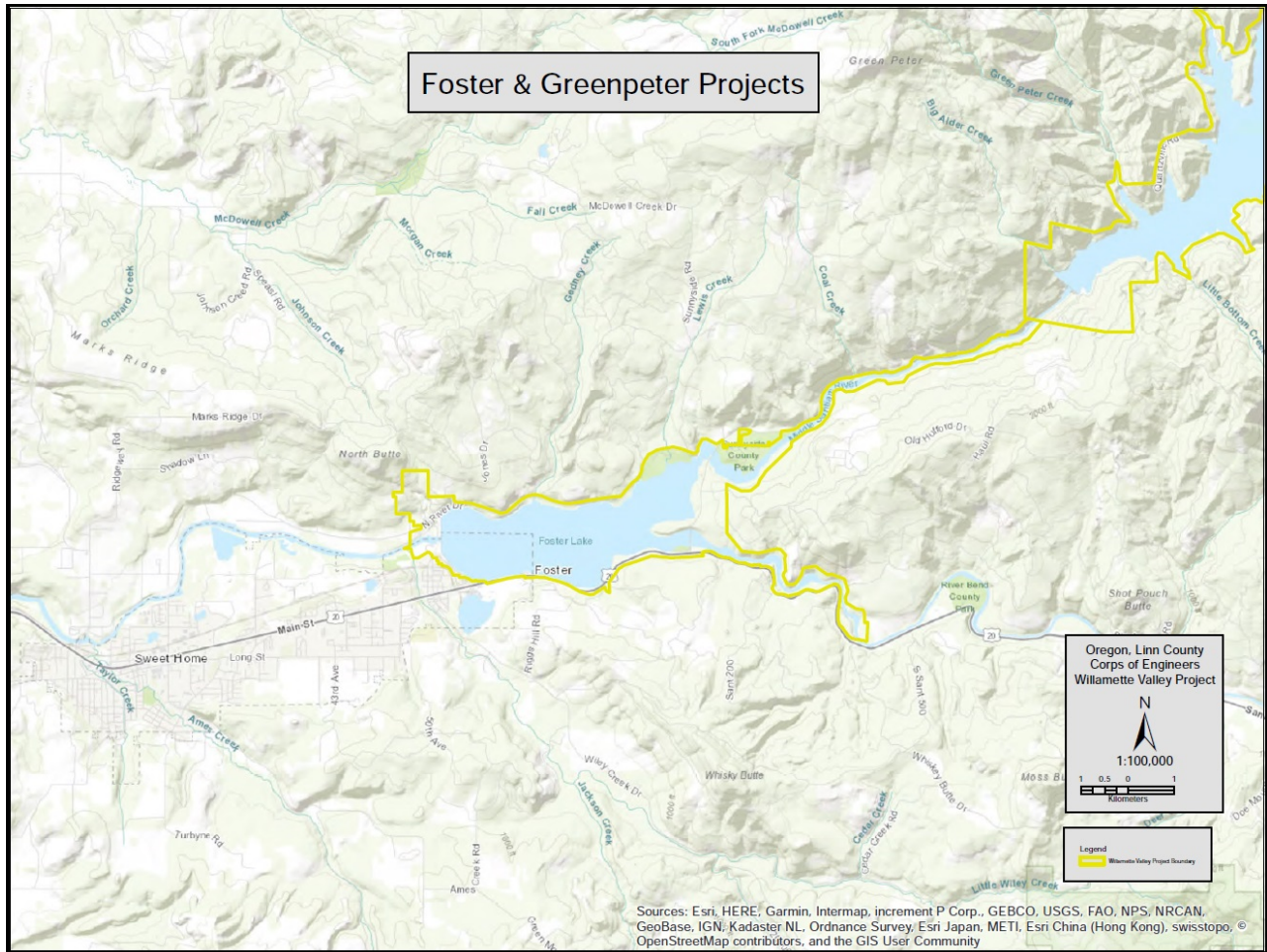
Number on Map	Pest Management Area	Primary Watershed
3	Big Cliff Project	North Santiam River
4	Detroit Project	North Santiam River
5	Foster Project	South Santiam River
6	Green Peter Project	Middle Santiam River
7	Fern Ridge Project	Multiple small creeks. Seasonal wetlands fed entirely by rainfall events.
8	Blue River Project	Blue River
9	Cougar Project	South Fork McKenzie River
10	Fall Creek Project	Fall Creek
11	Dexter Project	Middle Fork Willamette River
12	Lookout Point Project	Middle Fork Willamette River
13	Hills Creek Project	Middle Fork Willamette River
14	Cottage Grove Project	Coast Fork Willamette River
15	Dorena Project	Row River
16	Elk Creek Project	Elk Creek
17	Lost Creek Project	Rogue River
18	Applegate Project	Applegate River
19	Willow Creek Project	Willow Creek
20	John Day Lock and Dam	Columbia River
21	The Dalles Lock and Dam	Columbia River
22	Bonneville Lock and Dam	Columbia River
Not Numbered	East Sand Island	Columbia River



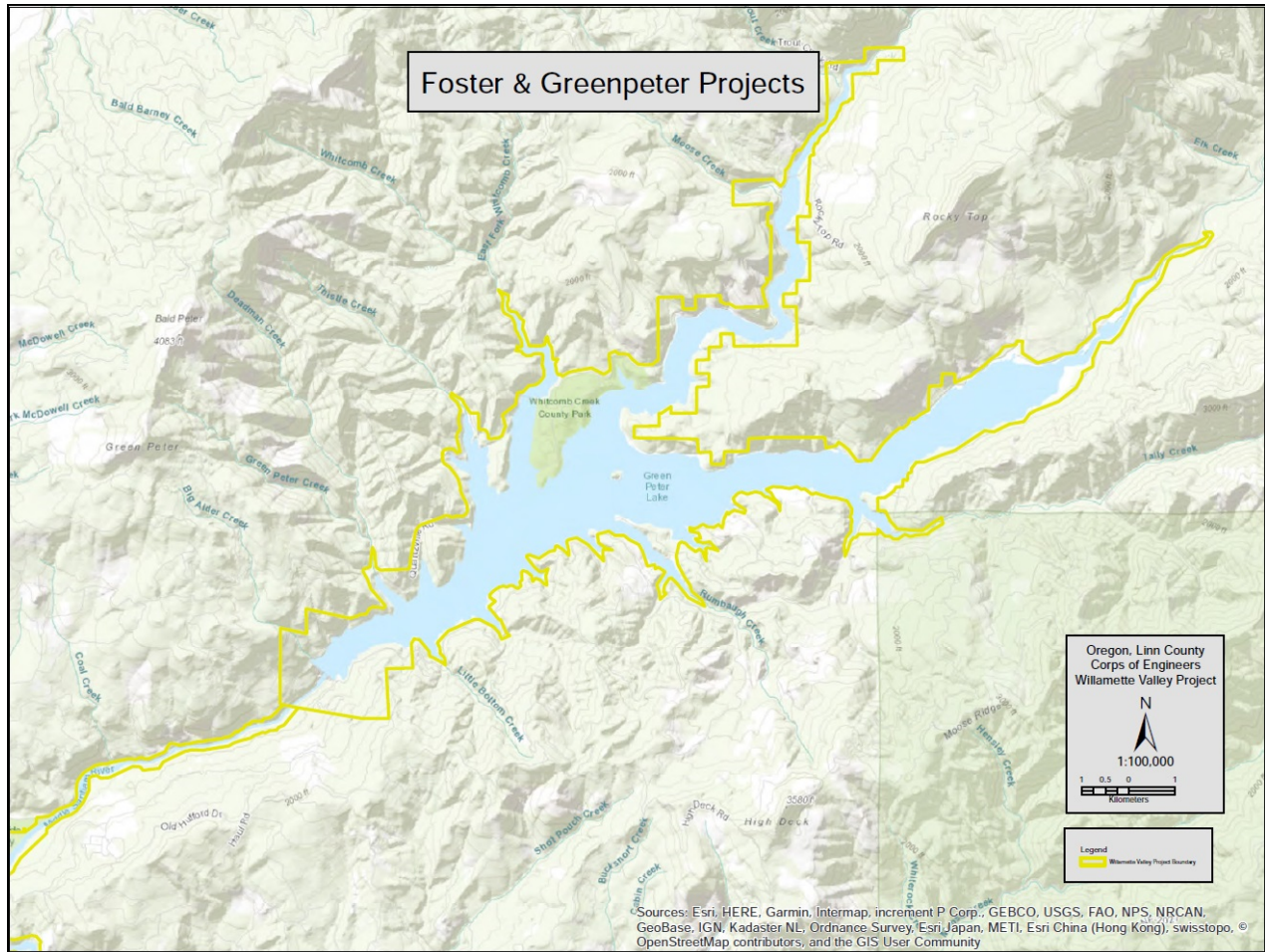
Big Cliff Reservoir PMA: Lands and water associated with Big Cliff Dam on the North Santiam River, about 38 road miles east of Salem Oregon, Linn and Marion Counties, Oregon.

Detroit Lake PMA: Lands and water associated with Detroit Dam on the North Santiam River, about 40 road miles east of Salem Oregon, Linn and Marion Counties, Oregon.

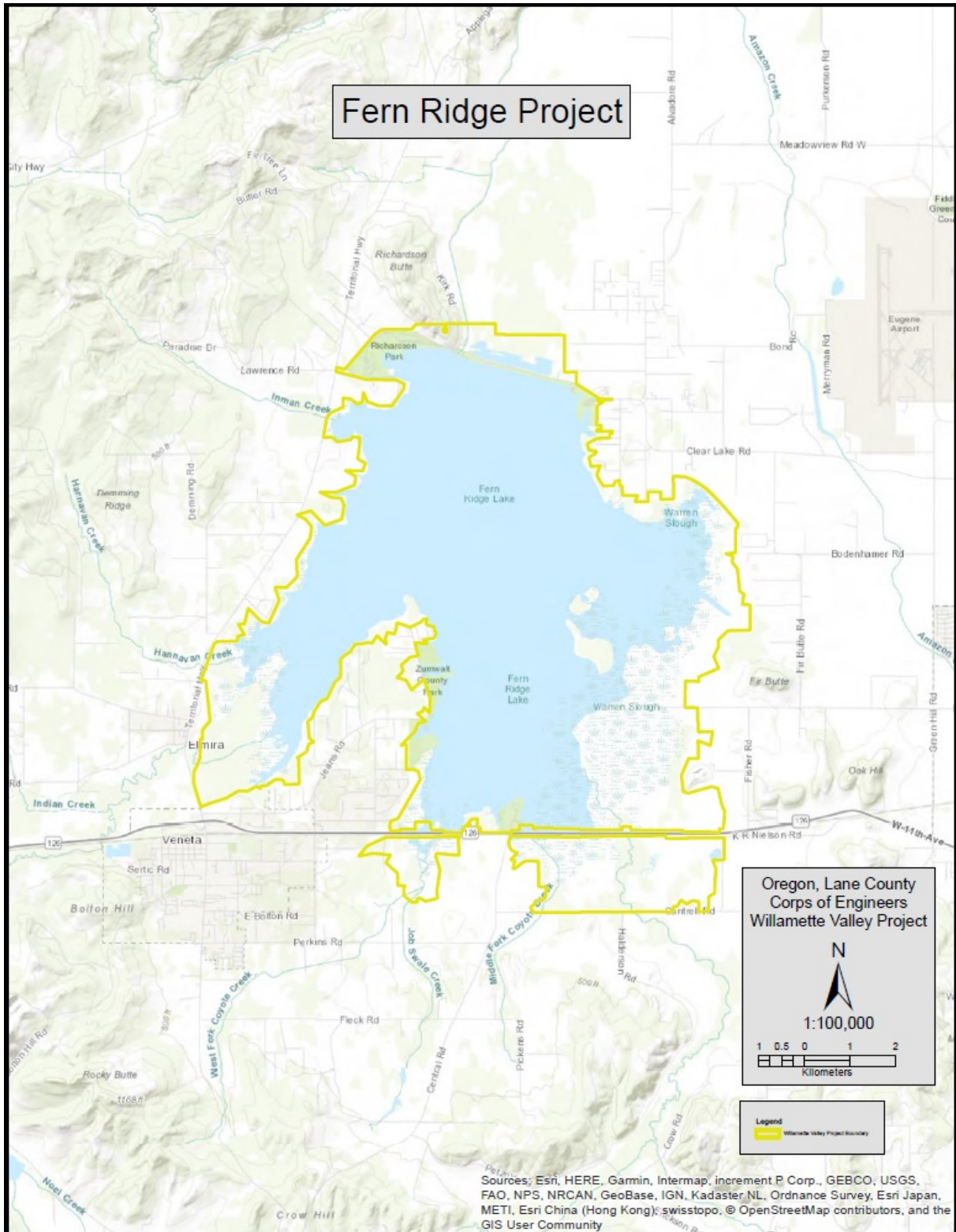
Pesticide Discharge Management Plan
USACE - Portland District



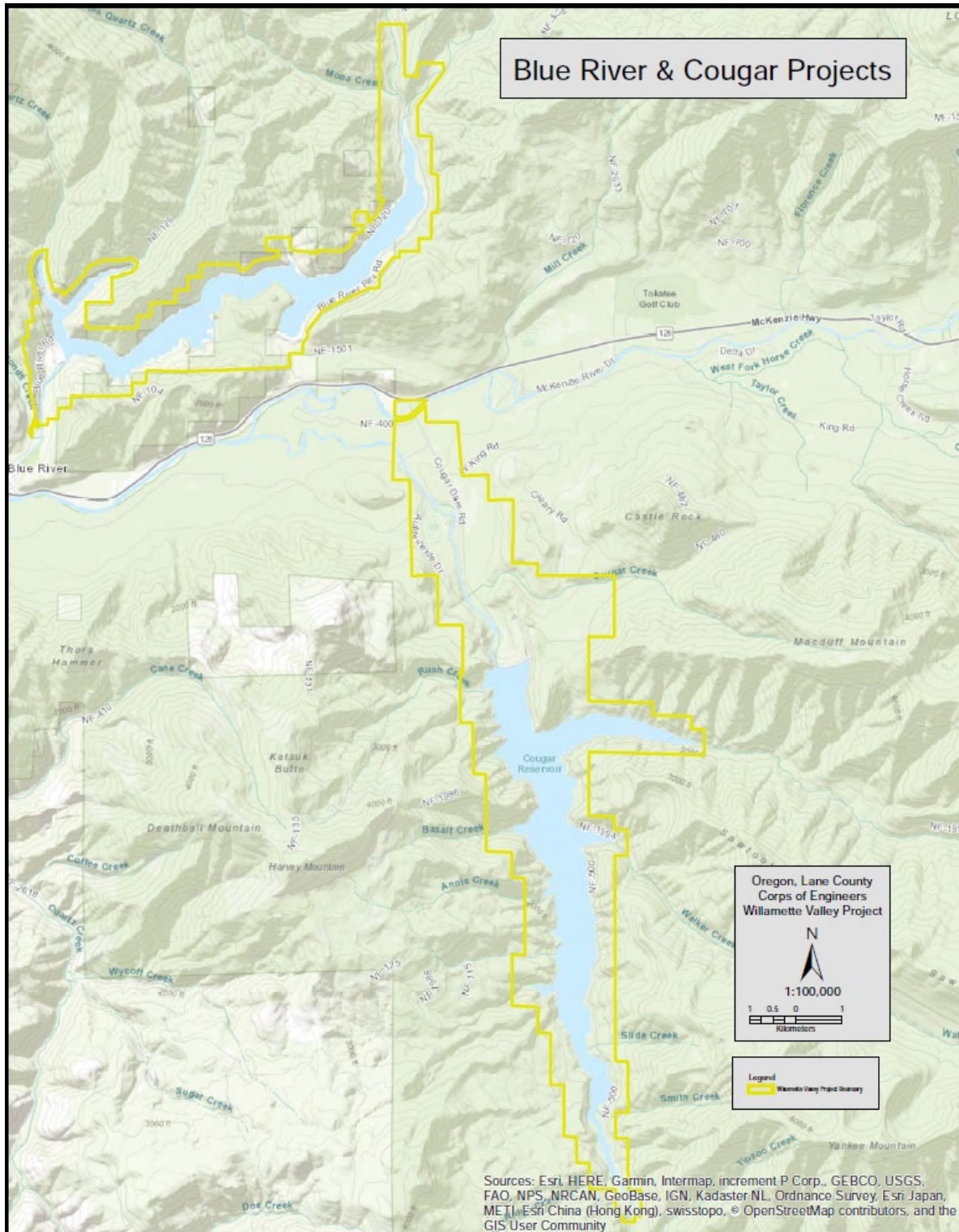
Foster Lake PMA: Foster Dam, just downstream of Green Peter Dam, is located on the South Santiam River at Sweet Home, Oregon, 38.5 miles above the confluence of the North and South Santiam Rivers and approximately 25 miles southeast of Albany, Oregon, in Linn County.



Green Peter Reservoir PMA: Green Peter Dam is located in the Willamette River drainage basin, on the Middle Santiam River, approximately 30 miles southeast of Albany (and 10 miles from Sweet Home, Oregon in Linn County).

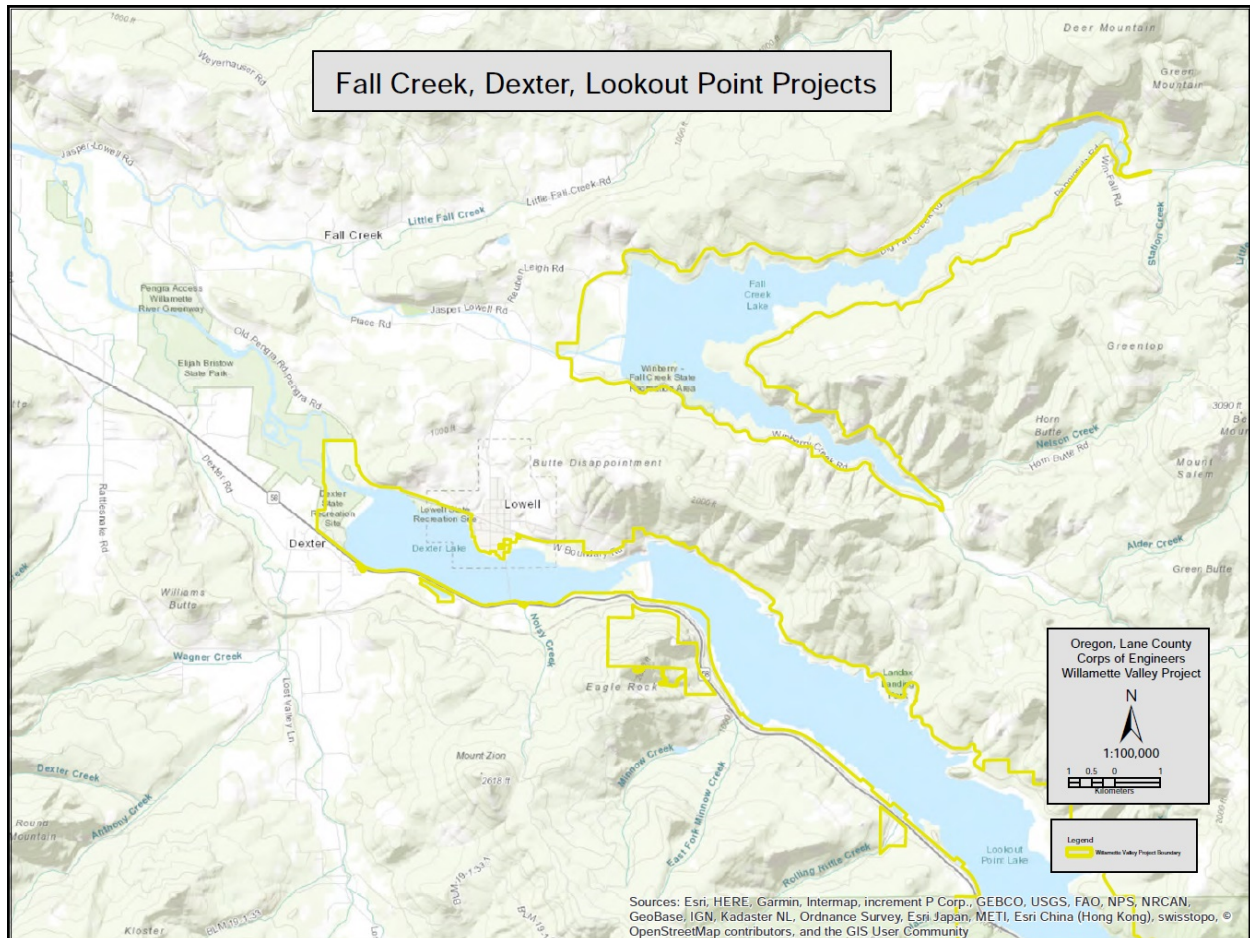


Fern Ridge Lake PMA: This area is located in Lane County around the margin of Fern Ridge Lake. They are in seasonal wetlands fed and drained by sheet flow over an impervious layer of clay derived from Mount Mazama ash and are entirely watered by rainfall events. Additional aquatic sites may include the reservoir area and tributaries.



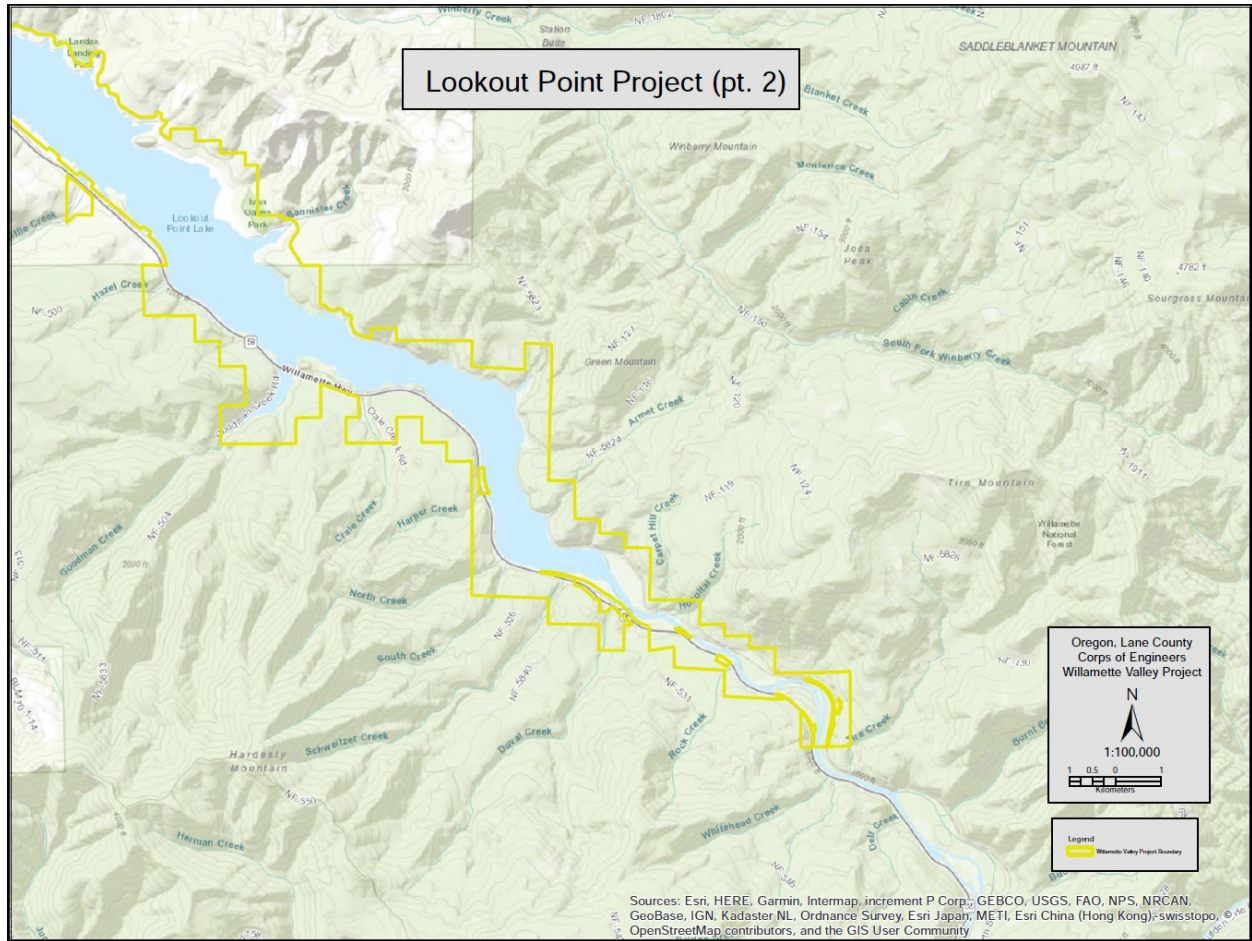
Blue River Lake PMA: Lands associated with Blue River Dam and reservoir, about 2 miles upstream of the town of Blue River at Highway 126, Lane County Oregon.

Cougar Reservoir PMA: Lands associated with Cougar Dam and reservoir, about 3 miles south of Highway 126 on the South Fork of the McKenzie River, Lane County Oregon.

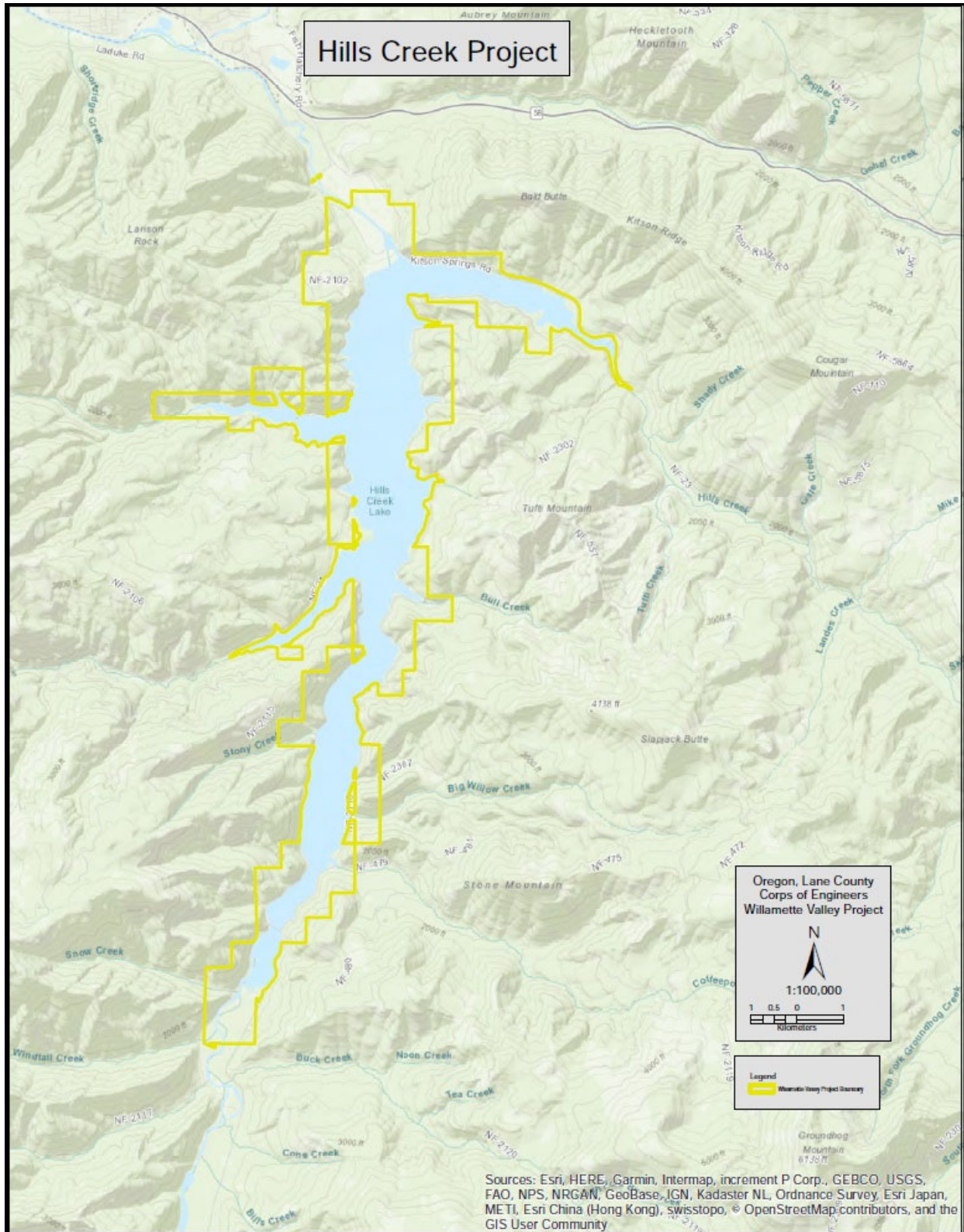


Fall Creek Reservoir PMA: Fall Creek Dam is located on Fall Creek, a tributary of the Middle Fork Willamette River, approximately 20 miles southeast of Eugene, Oregon in Lane County.

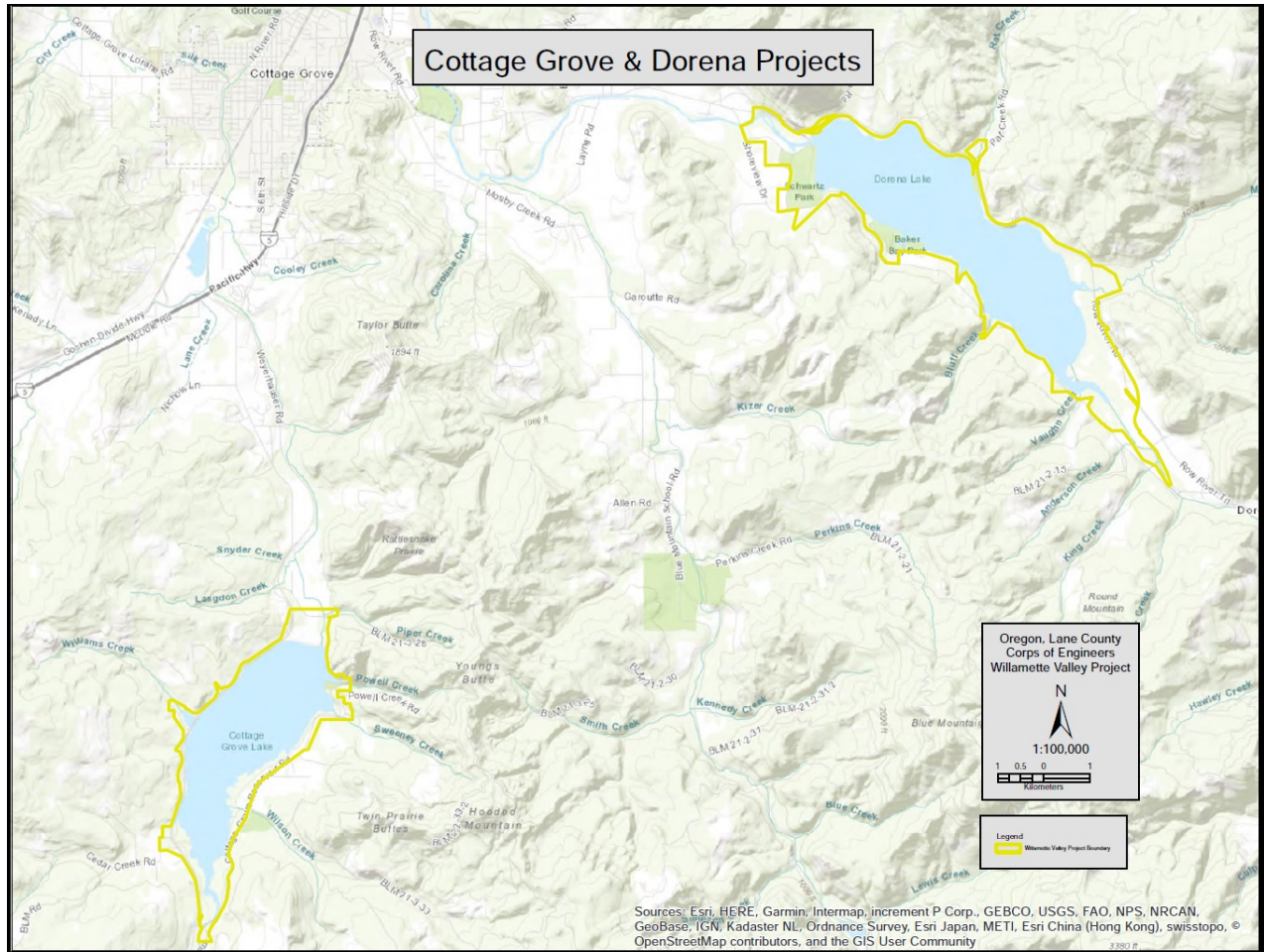
Dexter Lake PMA: Dexter is the re-regulating reservoir for Lookout Point Reservoir, located adjacent to Highway 58 at the town of Lowell, Lane County Oregon.



Lookout Point Reservoir PMA: Lookout Point Dam is located on the Middle Fork of the Willamette River, 20 miles upstream from the city of Eugene, Oregon, and adjacent to Highway 58 between Lowell and Westfir in Lane County.



Hills Creek Reservoir PMA: Hills Creek Dam is located in Lane County, on the South Fork of the Middle Fork of the Willamette River at River Mile 47.8 where Hills Creek joins the Willamette about 3 miles from the town of Oakridge, Oregon and 42 miles southeast of Eugene, Oregon.

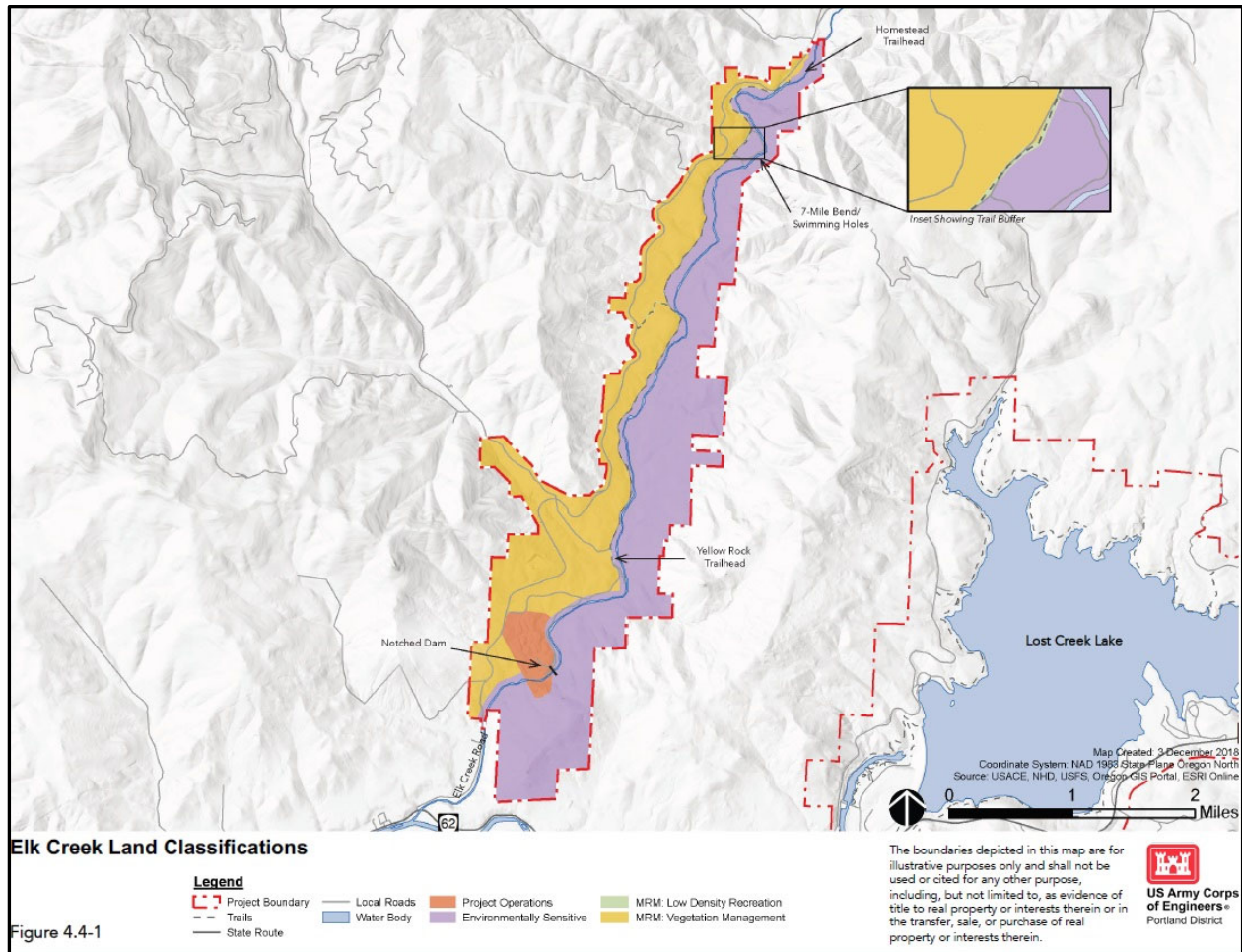


Cottage Grove Reservoir PMA: Cottage Grove Dam is located in the Willamette River drainage basin, on the Coast Fork Willamette River, 29 miles above the confluence with the Middle Fork Willamette River, and about 5 miles south of Cottage Grove in Lane County, Oregon.

Dorena Reservoir PMA: Dorena Dam is located in the Willamette River drainage basin, on the Row River, a tributary of the Coast Fork Willamette River, and is about 6 miles east of Cottage Grove in Lane County, Oregon.

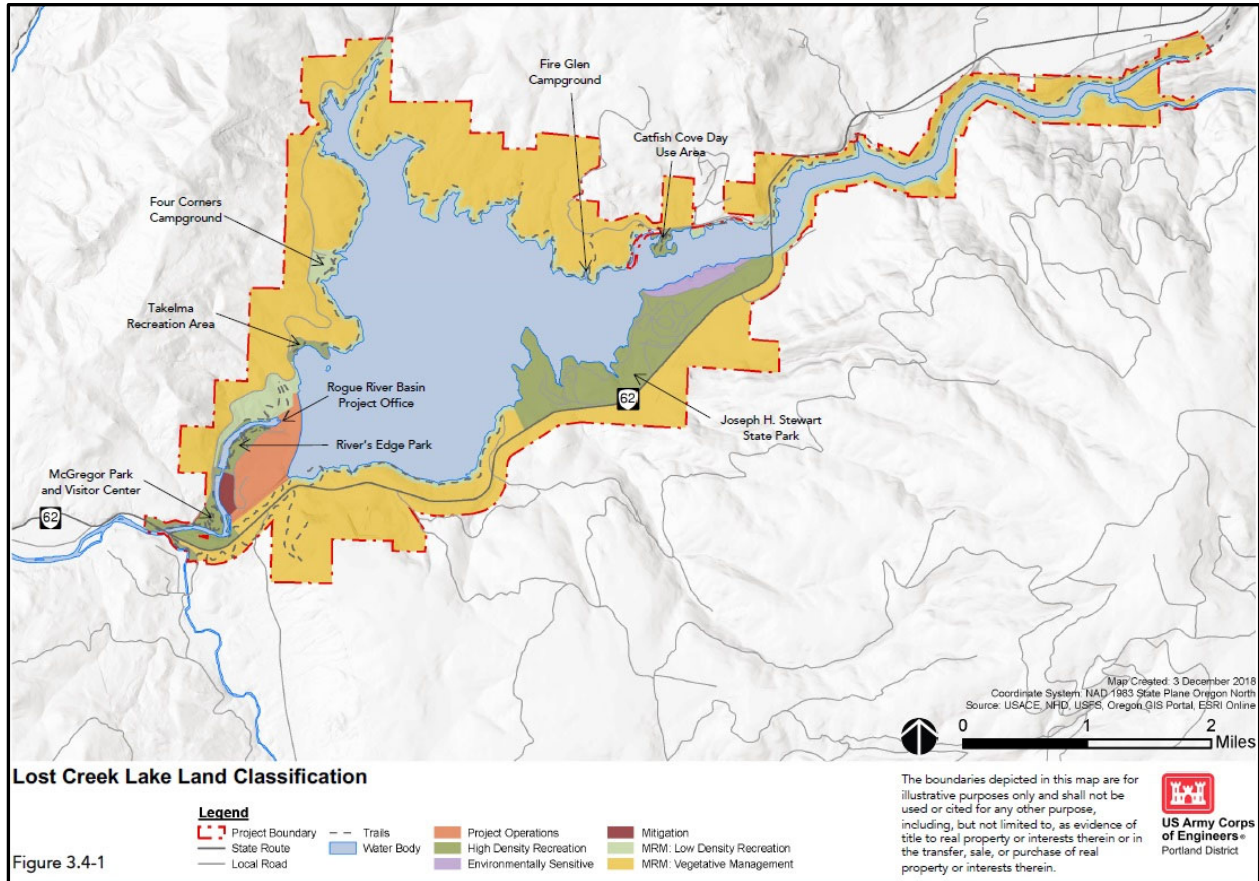
Rogue River Basin Pest Management Areas (PMA) - #16-18

Elk Creek PMA



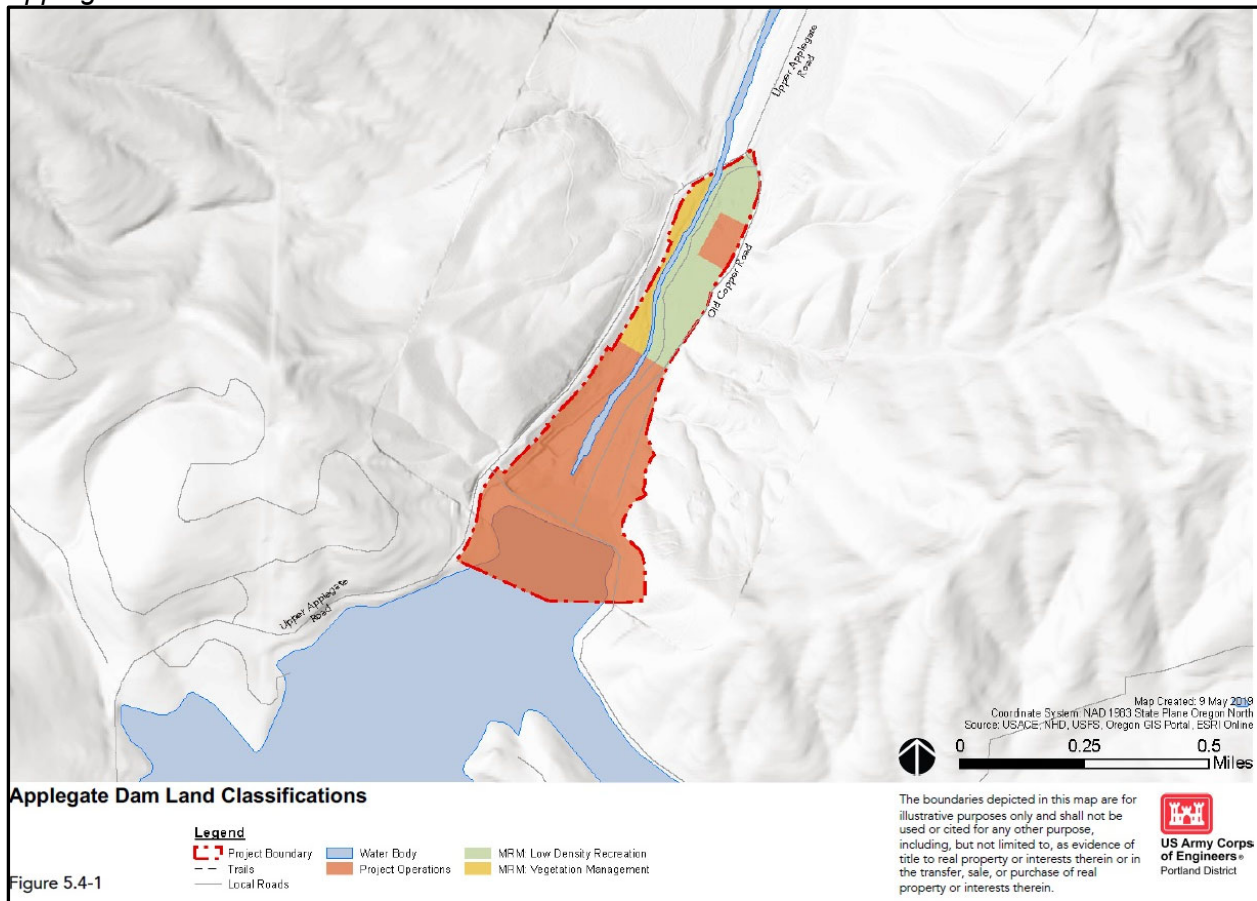
Elk Creek PMA: Elk Creek is a tributary of the Rogue River in Jackson County, OR. The notched dam site is located 5 miles northeast of Shady Cove, OR and 29 miles northeast of Medford, OR.

Lost Creek Lake PMA



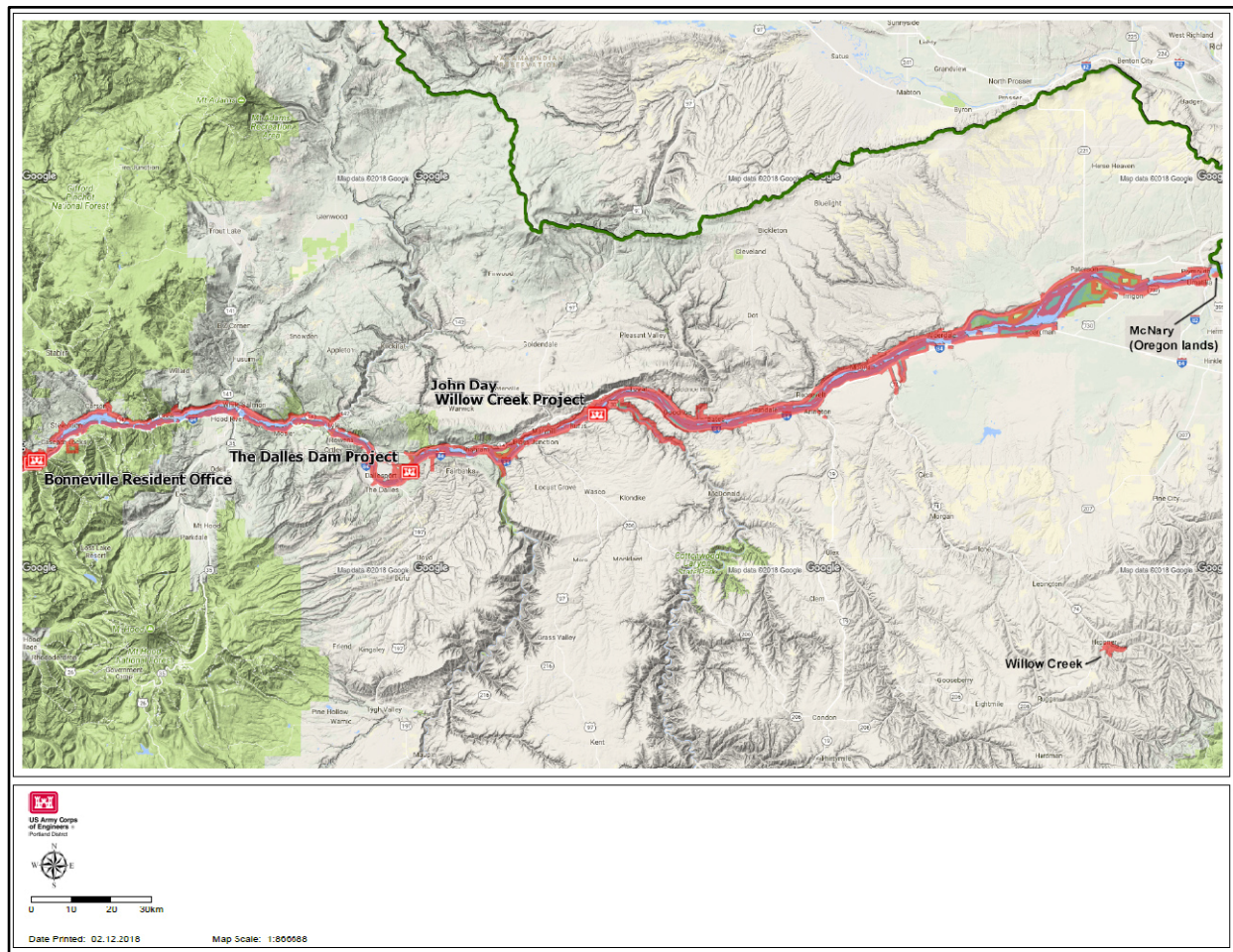
Lost Creek Lake PMA: Lost Creek Lake is a reservoir located on the Rogue River and impounded by the William L. Jess Dam. The lake is located 37 miles northeast of Medford, OR and located in Jackson County.

Applegate PMA



Applegate PMA: Applegate Lake is a reservoir located on the Applegate River in the Rogue River–Siskiyou National Forest and impounded by the Applegate Dam. The Applegate River is a tributary of the Rogue River. The lake is located 27 miles southwest of Medford, OR and 5 miles north of the California border in Jackson County, OR.

Lower Columbia River Pest Management Areas (PMA) - #19-22



Bonneville Lock & Dam Pest Management Areas

Bonneville Operations PMA – Oregon: This area is located on the Oregon side of the Columbia River at Bonneville Lock and Dam, about 45 miles east of Portland, in Multnomah County. This PMA begins at Tanner Creek to the west and covers all USACE land up to the east end of the Navigation Lock along the shore of the Columbia River. This area includes Robins Island, Tower Island, Powerhouse One and Bradford Island, up to the state boundary in the middle of the Spillway.

West Lake Bonneville PMA – Oregon: This area covers all USACE lands from the east end of the Bonneville Operations PMA – Oregon, spanning west along the Columbia River to the Hood River.

East Lake Bonneville PMA – Oregon: This area covers all USACE lands from the Hood River, spanning east to the west end of the The Dalles Operations PMA – Oregon.

Bonneville Operations PMA – Washington: The area is located on the Washington side of the Columbia River at Bonneville Lock and Dam, about 45 miles east of Vancouver, in Skamania County. This PMA begins at the tip of Hamilton Island to the west and covers all USACE land up

to the east end the Washington Shore Visitor Complex. This area also includes Ft. Cascades, Bass Lake, Cascades Island and up to the state boundary in the middle of the Spillway.

West Lake Bonneville PMA – Washington: This area covers all USACE lands from the east end of the Bonneville Operations PMA – Washington, spanning east to the White Salmon River.

East Lake Bonneville PMA – Washington: This area covers all USACE lands from the White Salmon River, spanning east to the west end of the The Dalles Operations PMA – Washington.

The Dalles Lock and Dam Pest Management Areas

The Dalles Operations PMA – Oregon: This PMA is located in Wasco County, and includes all USACE lands from US Route 197 to the west and spanning east to The Dalles Dam Road, including up to the state boundary in the middle of the Spillway.

West Lake Celilo PMA – Oregon: This area is located in Wasco County, extending from The Dalles Dam Road east to the western shore of the Deschutes River. The area is bounded by the Columbia River to the north and extends in parcels slightly south of I-84 and the Union Pacific Railroad right-of-way.

East Lake Celilo PMA – Oregon: This area is located in Sherman County, extending from the eastern shore of the Deschutes River to the western edge of John Day Operations PMA – Oregon. The area is bounded by Columbia River to the north and extends in parcels slightly south of I-84. Rufus Islands are included in this area.

The Dalles Operations PMA – Washington: This area is located in Klickitat County and includes all USACE lands from US Route 197 to the west and spanning to the east side of Spearfish Park, including the small sliver of land west of 197 within The Dalles Dam boundary and up to the state boundary in the middle of the Spillway.

West Lake Celilo PMA – Washington: This area is located in Klickitat County, extending from the east end of the The Dalles Operations PMA – Washington to the shoreline opposite the western end of Miller Island. The area is bounded by the Columbia River to the south and generally by the BNSF Railroad right-of-way to the north, with four parcels extending northward up to 0.6 miles. Brown's Island is included in this area.

East Lake Celilo PMA – Washington: This area is located in Klickitat County, extending from the shoreline opposite the western end of Miller Island eastward to the western edge of John Day Operations PMA – Washington. The area is bounded by the Columbia River to the south and the BNSF Railroad right-of-way to the north.

John Day - Willow Creek Project Pest Management Areas

John Day Operations PMA – Oregon: This area is located in Sherman County and includes all USACE lands from the eastern edge of East Lake Celilo PMA – Oregon, spanning east to the John Day Dam, including up to the state boundary in the middle of the Spillway. The area is bounded by the Columbia River to the north. To the south, this PMA is bordered by a 0.1-mile-wide parcel of BNSF Railroad land before reaching I-84.

West Lake Umatilla PMA – Oregon: This area extends from the east end of the John Day Operations PMA – Oregon, westward to the I-84 and Oregon State Highway 74 interchange.

The area is bounded to the north by the Columbia River. This PMA includes LePage Park and USACE lands extending approximately 10 miles southeast along the banks of the John Day River, a waterway that joins the Columbia River two miles upstream of the John Day Dam. Bigelow Canyon Recreation Area and Philippi Park along the John Day are also included in this PMA.

Willow Creek Dam and all USACE lands in Heppner, Oregon, are included in this area. Heppner is located approximately 45 miles southeast of the I-84 and Oregon State Highway 74 interchange, off of Oregon State Highway 74. Parcels in this PMA exist in Sherman, Gilliam and Morrow Counties.

East Lake Umatilla PMA – Oregon: This area extends from the I-84 and Oregon State Highway 74 interchange eastward to I-82, the Eastern edge of the John Day pool. This PMA includes Threemile Canyon Recreation Area, Irrigon day use area, parts of the Umatilla National Wildlife Refuge, and the Old Umatilla Town Site. Parcels in this PMA exist in Gilliam and Morrow Counties.

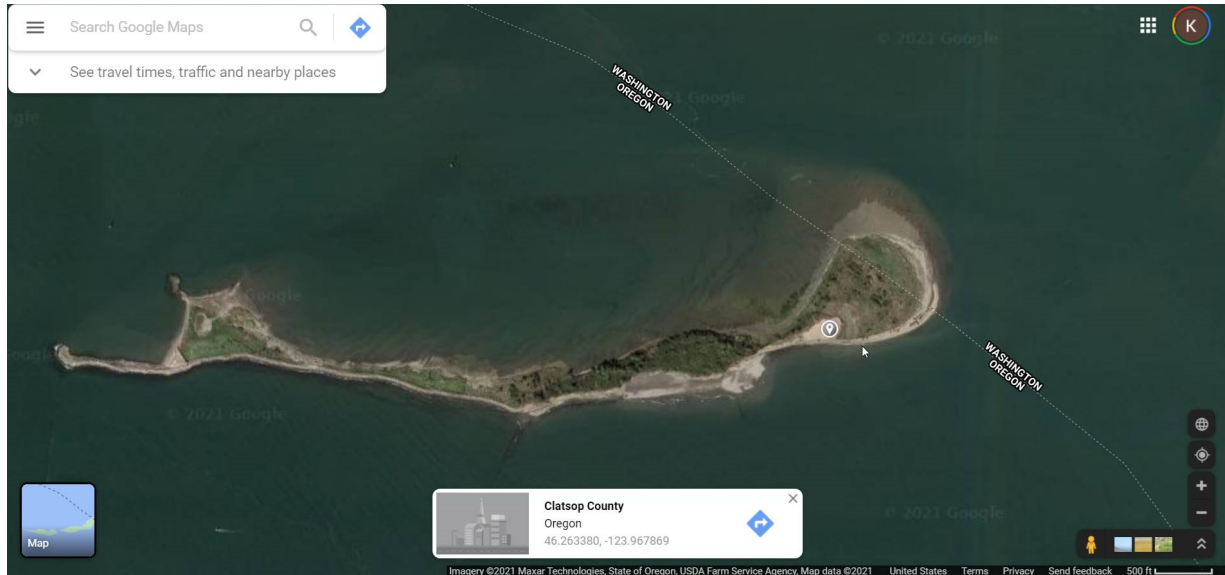
John Day Operations PMA – Washington: This area is located in Klickitat County and includes all USACE lands from the eastern edge of East Lake Celilo PMA – Washington spanning slightly east of the John Day Dam, including up to the state boundary in the middle of the Spillway. The Eastern boundary extends beyond the John Day Dam along the banks of the Columbia for approximately 1.5 miles, ending at River Mile 217. The area is bounded by the Columbia River to the south and generally by the BNSF Railroad right-of-way to the north. This area includes The Cliffs and Railroad Island recreation areas.

West Lake Umatilla PMA – Washington: This area is located in Klickitat County and starts at the eastern edge of John Day Operations PMA – Washington and spans westward to Alder Creek, a tributary of the Columbia River, approximately 42 miles from the John Day dam at river mile 258. The area is bound to the south by the Columbia, with most parcels existing on either side of Highway 14. This PMA includes Rock Creek Wildlife Management Area, Roosevelt Park and Sundale Recreation Area.

East Lake Umatilla PMA – Washington: This area starts at the eastern bank of Alder Creek and expands westward to I-82, the Eastern edge of the John Day pool. The area is bounded to the south by the Columbia River with few parcels existing to the north, and most to the south, of Highway 14. This PMA includes Crow Butte, USACE land on Whitcomb Island, part of the Umatilla National Wildlife Refuge, Paradise group camp site and Plymouth Park. Parcels in this PMA exist in Klickitat and Benton Counties

East Sand Island Pest Management Area

- Described area include all USACE lands on the island



East Sand Island PMA: This area is located on East Sand Island in Clatsop County, Oregon, about 3 miles west of Chinook, Washington, and about 15 nautical miles north east of Warrenton, Oregon in the Columbia River. The island is 1.5 miles long and 0.5 miles wide. The geometric center of the island is: 46° 16' 45" N & 123° 56' 38"W

Attachment B – Pesticide General Permit

Full permit language is below

Oregon Permit administered by ODEQ:

<https://www.oregon.gov/deq/FilterPermitsDocs/2300ApermitD.pdf>

Washington Permit administered by US EPA: <https://www.regulations.gov/document/EPA-HQ-OW-2020-0005-0079>

Attachment C – Permit Documentation

 Oregon Kate Brown, Governor	Department of Environmental Quality Northwest Region 700 NE Multnomah Street, Suite 600 Portland, OR 97232 (503) 229-5263 FAX (503) 229-6945 TTY 711
---	--

August 10, 2022

Melissa Rinehart
US Army Corps of Engineers, Portland District
P.O. Box 2946
Portland, OR 97208-2946

CERTIFIED MAIL # 7021 1970 0001 7506 2468
RETURN RECEIPT REQUESTED

RE: Registration to NPDES Pesticide General Permit 2300-A
Application No. 956714
File No. 122642
Common Name: John Day/The Dalles/Willamette Valley Projects
Location: MOBILE SOURCE - NWR

DEQ has received your application for registration to the National Pollutant Discharge Elimination System Pesticide General Permit 2300-A. DEQ's review of the application is complete and registration to the enclosed permit is effective. This registration is DEQ's final action on application no. 956714.

This permit covers pesticide applications in the pest management area described on the application for the following type(s) of pest control:

☐ ☒ ☐ ☐ ☐	Mosquito and Other Flying Insects Weed and Algae Nuisance Animal Control Forest Canopy Area-Wide Aerial Application
---	--

A copy of the [2300A pesticide general permit](https://www.oregon.gov/deq/FilterPermitsDocs/2300aPermit.pdf) is attached or, if needed, a copy of the permit can be found at <https://www.oregon.gov/deq/FilterPermitsDocs/2300aPermit.pdf>. Please read the permit carefully to become familiar with the new terms and conditions. Compliance with your permit is required at all times.

Please note the following:

- DEQ will invoice you for an annual fee as specified in OAR 340-045-0075, Permit Fee Schedule, Table 70G. Annual fee are subject to increase on a yearly basis. Please note, once registration to the permit is terminated, payment of new permit fees will be due for permit coverage in addition to other applicable fees in OAR 340-045-0075 Table 70G.
- You are required to submit an annual report to DEQ every February 15. Please send this report to the address on this letterhead. This annual report form is attached and available on DEQ's website [Pesticide Applications into Surface Water](https://www.oregon.gov/deq/wq/wqpermits/Pages/Pesticide.aspx) (<https://www.oregon.gov/deq/wq/wqpermits/Pages/Pesticide.aspx>).

For questions about your permit requirements, please contact Choose an item.

Sincerely,
Zachary J. Loboy
Digitally signed by Zachary J. Loboy
Date: 2022.08.10 10:56:21 -0700
Zach Loboy
Watersheds and Stormwater Manager

Pesticide Discharge Management Plan
USACE - Portland District



**GENERAL PERMIT
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
WASTE DISCHARGE PERMIT**

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Telephone: (503) 229-5696

Permit Number: 2300A
Expiration Date: May 31, 2027
Page 1 of 39

Issued pursuant to ORS 468B.050 and Section 402 of the Federal Clean Water Act

REGISTERED TO: US Army Corps of Engineers, Portland District
(John Day/The Dalles/Willamette Valley Projects)
WQ File No: 122642, Site Location: Mobile Source - NWR

Mailing Address:
P.O. Box 2946
Portland, OR 97208-2946
Registered date: August 16, 2022

This National Pollutant Discharge Elimination System general permit provides coverage for the following five pest control categories for point source discharges (discharges) to surface waters of the state from the application of biological pesticides or chemical pesticides that leave a residue (collectively called pesticides).

PESTICIDE APPLICATIONS THAT ARE COVERED UNDER THE PERMIT:

Mosquito and Other Flying Insect Pest Control for the protection of public health and prevention of nuisance. Coverage extends to mosquitoes, black flies and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water.

Weed and Algae Control for invasive or other nuisance weeds, algae and plant pathogens such as fungi and bacteria in water or at the water's edge. Water is defined as surface waters of the state.

Nuisance Animal Control for invasive or other nuisance animals and pathogens in water and at the water's edge. Coverage extends to but is not limited to, control of fish, mollusks, fungi and bacteria. Water is defined as surface waters of the state.

Forest Canopy Pest Control for the control of pest species, including but not limited to an insect or pathogen, by using aerial application of a pesticide over a forest environment or from the ground when, in order to target pests effectively, a portion of the pesticide unavoidably will be applied over and deposited in surface waters of the state.

Area-Wide Pest Control for the control of pest species by using aerial pesticide application to cover a large area to avoid substantial and widespread economic and social impact, when, in order to target pests effectively, a portion of the pesticide unavoidably will be applied over and deposited in surface waters of the state. This category does not include pest control included in the above categories.

Permit Number: 2300A
Page 2 of 39

Operators who register and operators who are not required to register but are required to conduct activities in compliance with the permit are authorized to conduct pesticide applications listed on page 1 that result in a discharge to surface waters of the state.

Jennifer Wigal
Jennifer Wigal (EPA 38, 3022 01 06 PDS)

Jennifer Wigal, Administrator
Water Quality Division

06/28/2022

Issuance Date

July 18, 2022

Effective Date

Pesticide Discharge Management Plan USACE - Portland District

[URL Verdict: Neutral][Non-DoD Source] EPA NeT PGP Coverage Status Change: Active; Weed and Algae Pest Control - NPDES ID: WAG8700AE

no-reply@epacdx.net
To: no-reply@epacdx.net

You forwarded this message on 4/25/2022 6:40 AM.

2022-04-24

Dear NeT User,

Coverage status has changed for a Pest Management Activity under the PGP.

NPDES ID	Form Type	Coverage Status	Operator Name (aka Decision-maker Name)	Pest Management Activity Name
WAG8700AE	New NOI	Active	U.S. Army Corps of Engineers - Portland District	Weed and Algae Pest Control

A copy of the submission can be found [here](#).

If you have questions about this email or about the NPDES Electronic Reporting Tool (NeT), please refer to the [Net Support](#) or e-mail NPDESereporting@epa.gov for assistance.

This is an automated notification; please do not reply to this email.

United States Environmental Protection Agency 2021 NPDES Pesticide General Permit

United States Environmental Protection Agency (EPA)
National Pollutant Discharge Elimination System (NPDES)

PESTICIDE GENERAL PERMIT (PGP) FOR DISCHARGES FROM THE APPLICATION OF PESTICIDES

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act (CWA), as amended (33 *United States Code* [U.S.C.] 1251 *et seq.*), any Operator of a point source discharge of pollutants (*i.e.*, discharge) resulting from the application of pesticides and eligible for permit coverage under Part 1.1 and located in an area identified in Appendix C where this permit is available is authorized to discharge to waters of the United States in accordance with the requirements of this permit. This permit is structured as follows:

- General permit conditions for all Operators are found in Parts 1 through 8;
- State- and tribal-specific permit conditions that apply to all Operators in those specific State or Indian Country are found in Part 9;
- Definitions of terms used in the permit and standard permit conditions that apply to all Operators are found in Appendices A and B, respectively; and
- Permit forms, worksheets, and templates are found in Appendices D through I.

This permit becomes effective on October 31, 2021. This permit and the authorization to discharge expire at midnight, October 31, 2026.

Signed and issued this 8th day of September 2021

DEBORAH SZARO
Digitally signed by DEBORAH SZARO
Date: 2021.09.08 10:36:59 -0400

Deborah A. Szaro,
Acting Regional Administrator, EPA Region 1.

Signed and issued this 8th day of September 2021

JAVIER LAUREANO
Digitally signed by JAVIER LAUREANO
Date: 2021.09.08 10:32:18 -0400

Javier Laureano,
Director, Water Division, EPA Region 2.

Signed and issued this 8th day of September 2021

CARMEN GUERRERO PEREZ
Digitally signed by CARMEN GUERRERO PEREZ
Date: 2021.09.08 11:13:43 -0400

Carmen R. Guerrero-Perez,
Director, Caribbean Environmental Protection Division, EPA Region 2
Caribbean Office.

Signed and issued this 8th day of September 2021

CATHERINE LIBERTZ
Digitally signed by CATHERINE LIBERTZ
Date: 2021.09.08 09:19:38 -0400

Catherine A. Libertz,
Director, Water Division, EPA Region 3.

Signed and issued this 8th day of September 2021

JEANEANNE GETTLE
Digitally signed by JEANEANNE GETTLE
Date: 2021.09.08 17:59:04 -0400

Jeaneanne M. Gettle,
Director, Water Division, EPA Region 4.

Signed and issued this 8th day of September 2021

Tera L. Fong
Digitally signed by Fong, Tera
Date: 2021.09.08 12:07:30 -0500

Tera L. Fong,
Director, Water Division, EPA Region 5.

Signed and issued this 8th day of September 2021

TROY HILL
Digitally signed by TROY HILL
Date: 2021.09.08 11:55:00 -0500

Troy Hill,
Deputy Director, Water Division, EPA Region 6.

Signed and issued this 8th day of September 2021

JEFFERY ROBICHAUD
Digitally signed by JEFFERY ROBICHAUD
Date: 2021.09.08 13:04:41 -0500

Jeffery Robichaud,
Director, Water Division, EPA Region 7.

Signed and issued this 8th day of September 2021

HUMBERTO GARCIA
Digitally signed by HUMBERTO GARCIA
Date: 2021.09.08 12:38:01 -0500

Humberto Garcia,
Acting Director, Water Division, EPA Region 8.

Signed and issued this 8th day of September 2021

TOMAS TORRES
Digitally signed by TOMAS TORRES
Date: 2021.09.08 11:57:08 -0700

Tomas Torres,
Director, Water Division, EPA Region 9.

Signed and issued this 8th day of September 2021

DANIEL OPALSKI
Digitally signed by DANIEL OPALSKI
Date: 2021.09.08 15:36:40 -0700

Daniel D. Opalski,
Director, Water Division, EPA Region 10.

Attachment D – Spill / Adverse Incident Report

Supplemental Information Provided by Operating Project

TIME	INITIAL	CONTACT	DUTY PHONE	HOME PHONE	CELL PHONE
		Control Room Operator			
CONTROL ROOM – CALLS:					
		Operations Project Manager			
		Project Environmental Compliance Coordinator			
OR					
		Alternate Incident Commander			
		Alternate Incident Commander			
PROJECT ECC/INCIDENT COMMANDER CALLS:					
Report #:					
		1. National Response Center (NRC)		1-800-424-8802	
		2. Oregon Emergency Response System (OERS)		1-800-452-0311	
		3. Washington Emergency Management Division		1-800-258-5990	
		4. Downstream notification (local 911 centers- they will contact downstream water users.)			
		5. Carson Freels, District ECC		503-808-4323	
		6. County Sheriff			
		7. Oregon State Police		503-731-3131	
		8. Washington State Police		360-696-6161	
		9. USACE- Portland – Emergency Spill Response Contractor (if needed)			
OPERATIONS PROJECT MANAGER or DESIGNEE WILL CONTACT:					
		1. Chief, Operations Division: Dwane Watsek Deputy Chief: Bern Klatte		503-808-4300 503-808-4320	
		2. Commander, Portland District: COL Michael Helton		503-808-4500	
DISTRICT ECC or DESIGNEE WILL CONTACT:					
		1. Public Affairs Office		503-808-4510	
		2. Readiness Branch		503-808-4402	
		3. CRITFC (for Columbia River Spills)		503-238-0667	
		4. Fisheries Field Unit			

INITIAL REPORT FORM

1. Reporting Name: _____ **Responsible Party:**

2. Location of Spill: (include County, Nearest Town, County, Township, Range, Rivermile)

3. Spill Description: (time & date spilled, material involved, quantity)

4. Environmental Impacts: (Air? Surface Water? Groundwater? Fish? Wildlife?)

5. Reporting Tracking No. Date/Time POC

National Response Center:

Oregon Emergency Response System:

Attachment E – Corrective Action Log Template

Project Name:

PDMP Contact:

Date	Description of Problem triggering the Corrective Action	Corrective Action Needed (including planned date/responsible person)	Date Action Taken/ Responsible person

Attachment F – PDMP Amendment Log Template

Project Name:
PDMP Contact:

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	Updated PDMP to merge OR and WA versions, and include East Sand Island	OCT 2021	Nicholas Racine, Natural Resource Specialist
2	Updated species state-listing/EDRR designations for Perennial Pepperweed, Rush Skeletonweed, and Dalmatian Toadflax, resulting in updated mgmt objectives and action thresholds, added Viper's Bugloss/Blueweed (<i>Echium vulgare</i>), added Aqua Star, Drexel Imitator, and Alligare Diquat to approved herbicide list, updated label links, and updated USACE Emergency POCs.	APR 2023	Nicholas Racine, Natural Resource Specialist

Attachment G – Subcontractor Certifications/Agreements Template

SUBCONTRACTOR CERTIFICATION PESTICIDE DISCHARGE MANAGEMENT PLAN

Project Number: _____

Project Name: _____

Decision-maker(s): _____

As a subcontractor, you are required to comply with the Pesticide Discharge Management Plan (PDMP) for any work that you perform for the above designated project. Any person or group who violates any condition of the PDMP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the PDMP. A copy of the PDMP is available for your review.

Each subcontractor engaged in pesticide activities in the pest management area that could impact Waters of the United States must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the PDMP for the above designated project.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of pesticide application service to be provided: _____

Signature: _____

Title: _____

Date: _____

Attachment H – Delegation of Authority



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, PORTLAND DISTRICT
PO BOX 2946
PORTLAND OR 97208-2946

0 8 APR 2016

CENWP-OD

MEMORANDUM FOR Chief, Operations Division (CENWP-OD/Dwane Watsek)

SUBJECT: Appointment Letter for National Pollutant Discharge Elimination System
Signature Authority

1. References:

a. Clean Water Act (CWA), Section 402 (33 U.S.C. § 1342), National Pollutant Discharge Elimination System (NPDES)

b. NPDES Signatories, 40 C.F.R. § 122.22

c. Applicability to State Programs, 40 C.F.R. § 123.25

2. The District Commander is authorized under 40 § C.F.R. § 122.22(a) to be the signatory for NPDES permit applications. Per 40 C.F.R. § 122.22(b), all reports required by the NPDES permits or other information requested by EPA or DEQ must be signed by the District Commander or by a Duly Authorized Representative of the District Commander. I hereby appoint the following positions to act as Duly Authorized Representative in accordance with 40 C.F.R. § 122.22(b) for signatures on reports required by NPDES permits and other information requested by EPA or DEQ. This position is responsible for the overall operation of the regulated activity as required by 40 C.F.R. § 122.22(b).

- a. Chief, Operations Division
- b. Operations Project Manager, John Day and Willow Creek Projects
- c. Operations Project Manager, The Dalles Project
- d. Operations Project Manager, Bonneville Project
- e. Operations Project Manager, Channels and Harbors Project
- f. Operations Project Manager, Willamette Valley Projects
- g. Operations Project Manager, Rogue River Basin Projects

3. Any person signing documents as a Duly Authorized Representative must include/sign the following certification statement per 40 C.F.R. § 122.22(d). "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge

CENWP-OD
SUBJECT Appointment Letter for National Pollutant Discharge Elimination System
(NPDES) Signature Authority

and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

4. The point of contact for this action is Kenneth D. Duncan, District Environmental Compliance Coordinator, at 503-808-4323, or kenneth.d.duncan@usace.army.mil.



JOSE L. AGUILAR
COL, EN
Commanding

Attachment I – Annual Reports and Other Record Keeping

The following is a list of records you should keep at your site and available for inspectors to review:

—Copies of Annual Reports

—Records as required in Schedule B, Section 9 of the Oregon PGP including:

Information on each treatment area to which pesticides are discharged as follows:

- i.* Surveillance methods used, dates of surveillance activities, and findings of surveillance;
- ii.* Target pest(s) and explanation of the need for pest control;
- iii.* Pest or site-specific action threshold prior to pesticide application;
- iv.* Description of pest management measures(s) implemented prior to the first pesticide application;
- v.* Company name and contact information for pesticide applicator;
- vi.* Pesticide application dates and time of day of the application;
- vii.* Description of treatment area, including location and size (acres or linear feet) of treatment area and identification of any surface waters of the state, either by name or by location, to which any pesticides were discharged;
- viii.* Name of each pesticide product used including the EPA registration number;
- ix.* Quantity of pesticide applied (application rate, diluents, dilution);
- x.* Concentration (%) of active ingredient in formulation;
- xi.* For pesticide applications directly to surface waters of the state, the effective concentration of active ingredient required for control;
- xii.* Any unusual or unexpected effects identified to non-target organisms;
- xiii.* Whether or not a visual assessment was conducted. If a visual assessment was conducted was it during the pesticide application or post pesticide application, and if no visual assessment was conducted, explain why it was not conducted;
- xiv.* Assessment of environmental conditions relating to proper pesticide use.

CENWP-PME

STATEMENT OF FINDINGS

SUBJECT: Record of Environmental Consideration: Determination of Applicability for General Permit for Pesticide Discharge multiple project locations, Oregon and Washington

Date Prepared: 24 September 2021

1 Description of the Proposed Action

Action type: Operations

This National Environmental Policy Act (NEPA) analysis represents the US Army Corps of Engineers, Portland District (USACE) “determination” that the USACE pesticide program for USACE federal facilities located in the State of Washington and Oregon operated on or adjacent to the Columbia River, Willamette River and the Rogue River, meets the US Environmental Protection Agency (EPA) as well as the Department of Environmental Quality (DEQ) requirements for issuing a Pesticide General Permit (PGP) under the National Pollutant Discharge Elimination System (NPDES) Clean Water Act (CWA) Section 402 Point Source Discharge Program. This record also documents that the USACE application to the EPA for approval of the five year programmatic NPDES PGP for pesticide applications (herbicide use) in Washington (2021-2026) complies with the approved Endangered Species Act (ESA) consultation between the EPA and the National Marine Fisheries Service (NMFS). This record also documents that the USACE application to the DEQ, approved and effective 6 SEPT 2012, for the programmatic NPDES 2300-A PGP for pesticide applications (herbicide use) in Oregon, complies with the approved ESA consultation between the EPA and the NMFS. (File# 122642). The DEQ PGP remains in effect and Portland District has an administratively extended permit on file per OAR-045-0040(2).

Pesticide applications on Corps lands are small scale, routine maintenance tasks to prevent the establishment of new invasive species, to manage/control existing populations and to enhance habitat for native species. Pesticide application requires no ground disturbance. Pesticides are applied in spot treatments and impacts to vegetation are localized and visual monitoring occurs before and after application to observe any adverse effects. The Oregon and Washington NPDES permit(s) provide coverage for both in-water and water's edge applications, and there are no in-water applications planned. Primary applications are upland away from water, with near water applications occurring 1-2 times per year. Only approved aquatic-labeled pesticides, as prescribed

by the label, will be used for any near-water applications as defined in the Pesticide Discharge Management Plan (PDMP).

Portland District acknowledges the restrictions that NMFS has placed on certain chemicals known to have adverse effects on ESA-listed species and has implemented a district-wide restriction on the use of the following pesticides for any near-water applications:

2,4-D	Chlorpyrifos	Fenbutatin oxide	Oryzalin
Carbaryl	Diazinon	Malathion	Pendimethalin
Carbofuran	Diflubenzuron	Methomyl	Propargite
Chlorothalonil	Diuron	Naled	Trifluralin

Additionally, Portland District recognizes and agrees to adhere to all Reasonable and Prudent Measures set forth by the Biological Opinion issued by NMFS dated 08 SEPT 2021.

This determination will remain valid as long as the PGP's remain valid in both states. If at any time PGP coverage lapses, further evaluation will be required.

1.1 Location of the Proposed Action

The proposed action will occur at multiple civil works projects within Portland District including at Bonneville, The Dalles, John Day / Willow Creek Projects as well as East Sand Island located near the mouth of the Columbia River. Additionally, the proposed action will occur on the East Sand Island located near the mouth of the Columbia River and at civil works projects at Detroit, Big Cliff, Foster, Green Peter, Fern Ridge, Blue River, Cougar, Fall Creek, Dexter, Lookout Point, Hills Creek, Cottage Grove, Dorena, Elk Creek, Lost Creek Lake, and Applegate located on or near a variety of watersheds including Willamette, McKenzie, North and South Santiam rivers as well as the Rogue and Applegate rivers and Elk Creek.

Project	Waterbody
Bonneville Lock and Dam	Columbia River
The Dalles	Columbia River
John Day	Columbia River
East Sand Island	Columbia River
Detroit	Santiam River
Big Cliff	Santiam River
Foster	South Santiam River
Green Peter	South Santiam River

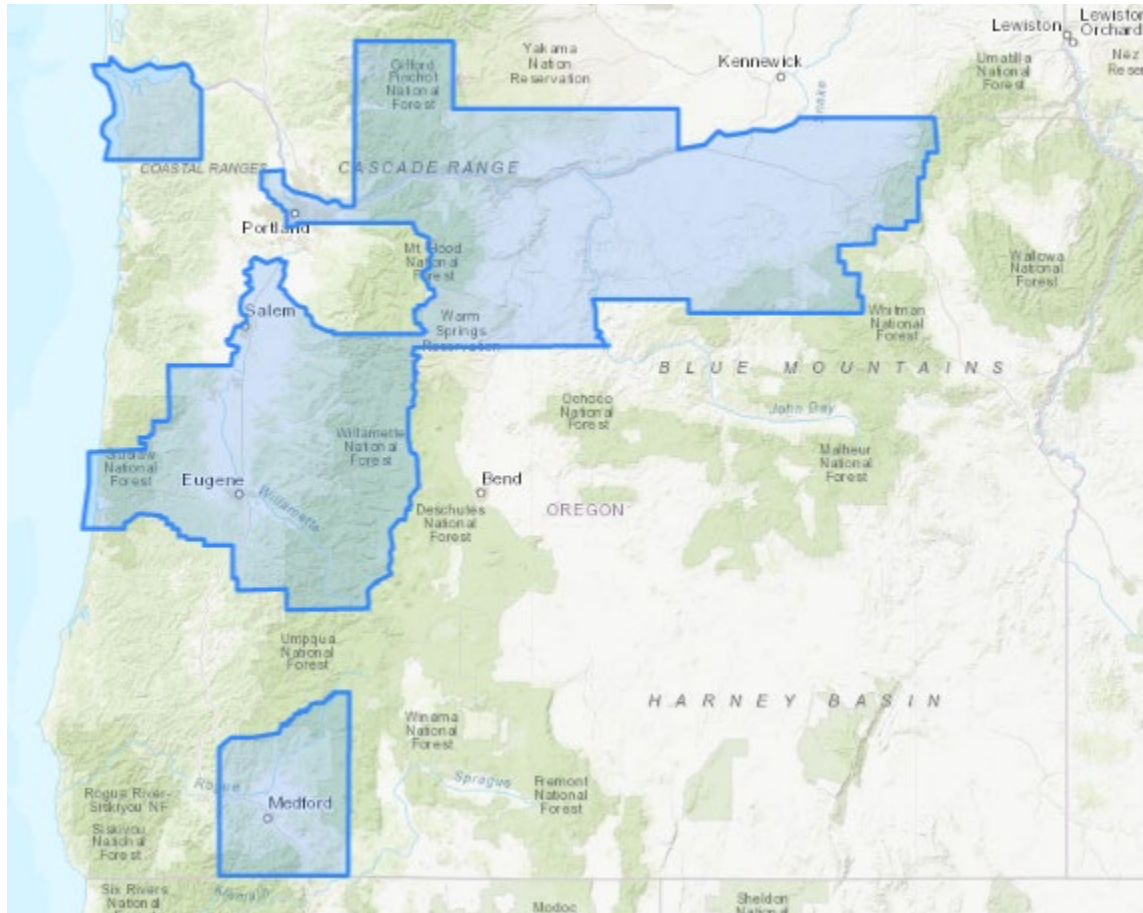
Fern Ridge	Long Tom River
Blue River	Blue River
Cougar	Blue River
Fall Creek	Fall Creek
Dexter	Middle Fork
Lookout Point	Middle Fork
Hills Creek	Middle Fork
Cottage Grove	Coast Fork
Dorena	Row River
Elk Creek	Elk Creek
Lost Creek Lake	Rogue River
Applegate	Rogue River

The proposed project area encompasses all USACE federally operated facilities on or adjacent to the Columbia River in Washington and Oregon, the Willamette River Basin, Oregon and the Rogue River Basin, Oregon where there is potential for approved NPDES pesticide discharges to waters of the U.S.

The proposed action is located in Multnomah, Hood River, Wasco, Sherman, Gilliam, Morrow, Linn, Marion, Lane, Jackson, Clatsop and Umatilla Counties, Oregon and Skamania, Klickitat, and Benton counties of Washington.

Proposed Action Maps & Drawings

Figure 1-1 Vicinity Map



2 Categorical Exclusion Evaluation

2.1 National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321 et seq.

Finding: The proposed action qualifies for a categorical exclusion as described by the Corps' regulations for implementing NEPA, 33 CFR §230.9, (b) Activities at completed Corps projects which carry out the authorized project purposes. This determination is based upon the fact that the Pesticide Discharge Management Plan is required to continue operations at projects.

Examples include routine operations and maintenance actions, general administration, equipment purchases, custodial actions, erosion control, painting, repair, rehabilitation, replacement of existing structures and facilities such as buildings, roads, levees, groins and utilities, and installation of new buildings utilities, or roadways in developed areas. The proposed action is in accordance with the categorical exclusion 33 CFR §230.9(b) because it is necessary to carry out the authorized project purposes as a routine operation and/or maintenance activity.

Furthermore, the proposed action is not an action that would be require an environmental assessment as required in 33 CFR §230.7 Actions normally requiring an Environmental Assessment (EA) but not necessarily an EIS. The proposed action involves Constuction and Operations and Maintenance, but would not result in Changes in environmental impacts which were not considered in the project EIS or EA. Examples are changes in pool level operations, use of new disposal areas, location of bank protection works, etc.

2.2 Extraordinary circumstances evaluation

In accordance with 33 CFR §230.9 and 40 CFR §§1501.3-1501.4, the proposed action would have no extraordinary circumstances from:

- a. Short- and long-term effects
- b. Beneficial and adverse effects
- c. Effects on public health and safety
- d. Effects that would violate Federal, State, Tribal, or local law protecting the environment.

Preparation of an EA or an EIS due to extraordinary circumstances is not required.

3 Compliance with Other Environmental and Cultural Resources Laws, Executive Orders

The following sections demonstrate compliance with all relevant environmental and cultural laws for the proposed action outside of the NEPA compliance.

3.1 Compliance with Environmental & Cultural Resource Laws

3.1.1 Archaeological Resources Protection Act of 1979, 16 U.S.C. §§470aa-470mm

Finding: The proposed action does not require a permit for the removal or excavation of a known archaeological site. Therefore, this Act is *not applicable* to this action.

3.1.2 Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. §668 et seq.

Finding: U.S. Fish and Wildlife Service, National Bald Eagle Management Guidelines (May 2007) and the U.S. Army Corps of Engineers eGIS Information Portal were aids in evaluating project impacts to bald eagles and known nest locations. The proposed action would have no impact to preferred nesting, rearing, or foraging habitat, and no 'take' of bald or golden eagles because potential impacts to bald and golden eagles will be managed through facility pesticide management planning and facility resource management planning. Therefore, the proposed action is *in compliance* with the Act.

3.1.3 Clean Air Act (CAA) of 1970, 42 U.S.C. §7401 et seq.

Finding: The proposed action would not create or result in any exceedances of State and Federal emission standards. Therefore, the proposed action is *in compliance* with this Act.

3.1.4 Clean Water Act (CWA) of 1972, 33 U.S.C. §1251 et seq.

The following sections of the CWA apply to the action: Sections 401 and 402

Finding: *Section 401* – Section 401(a)(1) requires certification from the State in which a discharge would occur to waters of the United States and is applicable to construction and operation of facilities. The State must certify that the discharge would not violate the states' water quality standards. EPA retains jurisdiction in limited cases.

A Pesticide General Permit (PGP) for discharges from the application of pesticides permit was issued by the United States Environmental Protection

Record of Environmental Consideration: Pesticide Discharge Management

Agency in compliance with the provision of the Clean Water Act (CWA), as amended (33 United States Code [U.S.C. 1251 et seq.], and Operator of a point source discharge of pollutants (i.e., discharge resulting from the application of pesticides and eligible for permit coverage under Part 1.1 and location in an area identified in where this permit is available is authorized to discharge to water of the United States in accordance with the requirements of this permit.

The Oregon Department of Environmental Quality (DEQ) administers NPDES permits and confirmed approval of the renewal of the Corps current NPDES permit 122642 on 17 September 2020. The PGP for USACE facilities in Washington, administered by EPA, will expire on 31 OCT 2021 and a draft Notice of Intent for the 2021-2026 PGP is being prepared at the time of this document being signed.

A CWA Section 402 permit is only required when there is probability that a point source discharge will enter waters of the U.S., all other upland discharges such as terrestrial applications for controlling pests on agricultural crops, forest floors, or range lands do not require a Section 402 NPDES PGP permit. Also, agricultural runoff and irrigation return flows are exempt from permitting under the CWA.

3.1.5 Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. §1451 et seq.

Finding: The proposed action is not located within the coastal zone for the state of Oregon or Washington, nor will it result in effects to coastal resources under the scope of the CZMA. Therefore, this Act is *not applicable* to the proposed action.

3.1.6 Columbia River Gorge National Scenic Area Act of 1986, 16 U.S.C. §§ 544–544p

Finding: A portion of the proposed action would occur in the Columbia River Gorge National Scenic Area but would not alter the natural landscape and would not result in a new land use. Therefore, the proposed action is in compliance with the Act.

3.1.7 Comprehensive Environmental Response, Compensation and Liability Act – Superfund (CERCLA) of 1980, 42 U.S.C. §9601 et seq.

Finding: The proposed action is not located within the boundaries of a designated Superfund site as identified by the EPA, the State of Oregon or the State of Washington, and is not part of the National Priority List. Therefore, the Act is *not applicable* to the proposed action.

3.1.8 Endangered Species Act (ESA) of 1973, 16 U.S.C. §1531 et seq.

The current ESA USFWS Species List and NMFS Species List were reviewed for PMA's in Oregon and Washington.

Mammal	Columbian White-tailed Deer <i>Odocoileus virginianus leucurus</i>	Threatened
Mammal	Pacific Marten, Coastal Distinct Population Segment, <i>Martes caurina</i>	Threatened
Bird	Marbled Murrelet <i>Brachyramphus marmoratus</i>	Threatened
Bird	Northern Spotted Owl <i>Strix occidentalis caurina</i>	Threatened
Bird	Short-tailed Albatross <i>Phoebastria (=Diomedea) albatrus</i>	Endangered
Bird	Streaked Horned Lark <i>Eremophila alpestris strigata</i>	Threatened
Bird	Western Snowy Plover <i>Charadrius nivosus nivosus</i>	Threatened
Bird	Yellow-billed Cuckoo <i>Coccyzus americanus</i>	Threatened
Amphibians	Oregon Spotted Frog <i>Rana pretiosa</i>	Threatened
Fishes	Bull Trout <i>Salvelinus confluentus</i>	Threatened
Fishes	Lost River Sucker <i>Deltistes luxatus</i>	Endangered

Fishes	Shortnose Sucker <i>Chasmistes brevirostris</i>	Endangered
Insects	Fender's Blue Butterfly <i>Icaricia icarioides fenderi</i>	Endangered
Insects	Oregon Silverspot Butterfly <i>Speyeria zerene hippolyta</i>	Threatened
Crustaceans	Conservancy Fairy Shrimp <i>Branchinecta conservatio</i>	Endangered
Crustaceans	Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i>	Threatened
Crustaceans	Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i>	Endangered
Flowering Plants	Cook's Lomatium <i>Lomatium cookii</i>	Endangered
Flowering Plants	Gentner's Fritillary <i>Fritillaria gentneri</i>	Endangered
Flowering Plants	Golden Paintbrush <i>Castilleja levisecta</i>	Threatened
Flowering Plants	Kincaid's Lupine <i>Lupinus sulphureus ssp. kincaidii</i>	Threatened
Flowering Plants	Large-flowered Woolly Meadowfoam <i>Limnanthes pumila ssp. grandiflora</i>	Endangered
Flowering Plants	Nelson's Checker-mallow <i>Sidalcea nelsoniana</i>	Threatened
Flowering Plants	Willamette Daisy <i>Erigeron decumbens</i>	Endangered

Conifers	Whitebark Pine <i>Pinus albicaulis</i>	Proposed Threatened
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Finding: The EPA initiated formal consultation with NMFS and USFWS pursuant to Section 7 of the ESA for the nation-wide program with the submittal of a five-year programmatic Biological Evaluation (BE) in July 2021 (EPA 2021). The Reissuance of the Pesticide General Permit for Discharge of Pesticide Pollutants into Waters of the United States biological opinion (BO) was issued July 29th 2021 (NMFS 2021) by the Endangered Species Act Interagency Cooperation Division, Office of Protected Resources, NMFS for both Services. Within the concluding document the Services determined that the action would result in jeopardy for specific species and adversely affect specific critical habitat for the nation-wide programmatic action. A Reasonable and Prudent Alternative (RPA) was provided to by NMFS to the EPA which included mandatory RPA requirements, conservation measures and an Incidental Take Statement (ITS). EPA was required to include all components listed above in the individual PGPs issued to specific applicant federal agencies. Each of the EPA Regions also included additional region-wide conservation requirements specific to species and habitat. The Corps has reviewed the action and determined that it fits within the 2021 Biological Opinion issued by NMFS. The Corps completed informal consultation for Franklin's Bumble Bee with USFW on September 24th and received concurrence that the proposed would be not likely to adversely affect Franklin's Bumble Bee.

3.1.9 Farmland Protection Policy Act (FPPA) of 1994, 7 U.S.C. §4201 et seq.

Finding: The proposed action does not involve farmland. Therefore, this Act is *not applicable* to the proposed action.

3.1.10 Fish and Wildlife Coordination Act (FWCA) of 1958, 16 U.S.C. §661 et seq.

Finding: The proposed action is not a water-resource development project, nor would it impound, divert, deepen, control, or modify a body of water. Therefore, this Act is *not applicable* to the proposed action.

3.1.11 Magnuson-Stevens Fishery Conservation and Management Act (MSA) of 1976, 16 U.S.C. §1801 et seq.

Finding: The RPA (NMFS 2021) commitments and EPA PGP program (EPA 2021) ensure that there is a *no adverse effect* determination for Essential Fish Habitat. Therefore, the proposed action is *in compliance* with this Act.

3.1.12 Marine Mammal Protection Act (MMPA) of 1972, 16 U.S.C. §1361 et seq.

Finding: Some Corps lands and facilities may occur in an area where marine mammals may be located. However, activities associated with the proposed action are unlikely to occur in-water. NMFS consultation with the EPA placed no specific requirements relating to marine mammals. Therefore, the proposed action is *in compliance* with this Act.

3.1.13 Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, 16 U.S.C. §1431 et seq.

Finding: The proposed action does not involve in-water disposal of materials into the ocean. Therefore, this Act is *not applicable* to the proposed action.

3.1.14 Migratory Bird Treaty Act (MBTA) of 1918, 16 U.S.C. §703 et seq.

Finding: The proposed action will not result in the taking of any migratory birds as areas would be surveyed prior to application to determine nesting presence. Therefore, this Act is *not applicable* to the proposed action.

3.1.15 National Historic Preservation Act (NHPA) of 1966, 54 U.S.C. § 300101 et seq.

Finding: Pursuant to its responsibilities under Section 106 of the NHPA, 36 CFR §800.3 (c) and 36 CFR §800.3(f)(2), the Corps has reviewed the undertaking for purposes of Section 106 of the NHPA and has determined that the nature of the undertaking is such that it does not have the potential to cause effects on historic properties pursuant to 36 CFR §800.3(a)(1). Pesticide applications on Corps lands are small scale, routine maintenance tasks to prevent the establishment of new invasive species, to manage/control existing populations and to enhance habitat for native species. Pesticide application requires no ground disturbance. Pesticides are applied in spot treatments and impacts to vegetation are localized. The Corps has no further obligations under Section 106.

3.1.16 Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, 25 U.S.C. §3001 et seq.

Finding: The proposed action is *in compliance* with this Act because it does not involve Native American human remains or objects of cultural patrimony. In the event that any potential human remains are encountered as a result of this action, the Corps will follow the process for inadvertent discoveries found in the NAGPRA regulations 43 CFR §10.4.

3.1.17 Resource Conservation and Recovery Act (RCRA of 1976, 42 U.S.C. §6912 et seq.

Finding: Some pesticides are considered hazardous waste. If an applicable pesticide need disposal, the Corps will follow all Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and EM 385-1-1 standards, as well as 29 CFR §1926.62, all state, and local ordinances pertaining to the proper removal, handling, and disposal of hazardous waste. Therefore, with the implementation of these requirements, the proposed action is *in compliance* with this Act.

3.1.18 Rivers and Harbors Appropriation Act (RHA) of 1899, 33 U.S.C. §401-418

The following sections of the RHA apply to the action: Not Applicable

Finding: Though some Corps lands and facilities are adjacent to navigable waters under the authority of the RHA, the proposed action has no potential to impact the navigability of these waters. Therefore, this Act is *not applicable* to the proposed action.

3.1.19 Safe Drinking Water Act of 1996 (SDWA), 42 U.S.C. §300(f) et seq.

Finding: The proposed action will not endanger underground aquifers and will not result in any effects on the public drinking water supply. Therefore the proposed action is *in compliance* with this Act.

3.1.20 Wild and Scenic Rivers Act (WSRA) of 1968, 16 U.S.C. §§1271-1287

Finding: Though some Corps lands and facilities are adjacent to designated Wild and Scenic Rivers, the proposed action has no potential to impact a designated Wild and Scenic River because it will not result in effects to the outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values. Therefore, the proposed action is *in compliance* with this Act.

3.2 Compliance with Environmental and Cultural Resource Executive Orders

3.2.1 Executive Order 11593, Protection and Enhancement of the Cultural Environment, 13 May 1971

Finding: The project would not demolish, significantly alter, or sell/transfer properties included in, or eligible for inclusion in, the National Register of Historic Places. Therefore, this Executive Order is *not applicable* to the proposed action.

3.2.2 Executive Order 11988, Floodplain Management, 24 May 1977

Finding: The proposed action would not result in a modification to the current floodplain conditions, nor would it encourage further development of the floodplain. Therefore, the proposed action is *in compliance* with the Order.

3.2.3 Executive Order 11990, Protection of Wetlands, 24 May 1977

Finding: The proposed action impacts to wetlands will be managed through the BMP's of the Pesticide Discharge Management Plan and in accordance with the requirements of the Section 402 permit. Therefore, the proposed action is *in compliance* with this Order.

3.2.4 Executive Order 12114, Environmental effects abroad of major Federal actions, 04 January 1979

Finding: Refer to 4.2 Foreign Nations below for finding.

3.2.5 Executive Order 12898, Environmental Justice, 11 February 1994

Finding: The proposed action would not affect subsistence, low-income or minority communities. There would be no changes in population, economics, or other indicators of social well-being within the short- or long-term future due to the proposed action. Therefore, the proposed action is *in compliance with* the Order.

3.2.6 Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, 6 November 2000

Finding: Refer to 4.1 Tribal Trust and Treaty Responsibilities below for finding.

3.2.7 Executive Order 13186, Migratory Birds, 10 January 2001

Finding: The proposed action does not involve activities where there would be take of migratory birds or disturbance of their habitat. Therefore, the Order is *not applicable* to the proposed action.

3.2.8 Executive Order 13287, Preserve America, 3 March 2003

Finding: The proposed action will have *no impact* on this Order. The current undertaking does not propose any changes to eligible or potentially eligible historic structures within the area of potential effect.

3.2.9 Executive Order 13751, Safeguarding the Nation From the Impacts of Invasive Species, 5 December 2016

Finding: The proposed action would have no potential to introduce, establish, or spread invasive species because associated activities are targeted at the management of invasive species within the PMA's. Therefore, the proposed action would be *in compliance* with the Order.

4 Treaty Responsibilities

4.1 Tribal Trust and Treaty Responsibilities

Government-to-government consultation was not conducted with Federally recognized Tribes.

Finding: Executive Order 13175 defines the criteria in which the Agency must consult with Tribal Governments. The executive order defines such policies as, “regulations, legislative comments or proposed legislation, and other policy statement or actions that have substantial direct effects on one or more Indian tribes, or on the distribution of power responsibilities between the Federal Government and Indian tribes.” This action does not meet the criteria identified in EO 13175 that requires Agency consultation with Tribal Governments.

4.2 Foreign Nations

Finding: Executive Order 12114 Environmental Effects Abroad of Major Federal Actions, 4 January 1979, and 33 CFR §230.25 Environmental review and consultation requirements, requires procedures in the event that a Major Federal Action may impact a foreign nation, and for which environmental studies may be necessary to determine the extent and significance of the impact. The proposed action would not impact foreign nations because the project is wholly within the United States of America with no impacts that would affect a foreign nation or require further environmental study.

5 Special conditions

Describe any special conditions required to ensure compliance of the Federal action with any of the laws above or explain why no special conditions are required.

5.1 Special condition No. 1

Special condition: The Corps will re-evaluate the REC as it pertains to the recently listed Franklin's Bee once critical habitat and management plans have been released (tentative date from FWS November 2021).

Rationale: To ensure there are no effects to ESA-listed species.

6 Compliance Determination

The proposed action is categorically excluded from NEPA per 33 CFR §230,(b) Activities at completed Corps projects which carry out the authorized project purposes. Based upon the review of the action, the action complies with all applicable Federal cultural and environmental laws, regulations and executive orders, provided the permittee complies with the special conditions identified above. No extraordinary circumstances have been identified and no further NEPA analysis is required.

Prepared by:



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JONES.JESSICA.THERESE.1453914352
Date: 2021.10.08 09:29:59 -07'00'

Jess Jones
Environmental Resource Specialist

Prepared by:

GAUTHIER.TARA.RE
NEE.1503756788

Digitally signed by GAUTHIER.TARA.RENEE.1503756788
Date: 2021.10.08 10:10:02 -07'00'

Kristin Scheidt
District Archaeologist

Authorized By:

PAGE.CHRISTOPHER.MICHA
EL.1290831497

Digitally signed by

Christopher Page
Environmental Resources Branch Chief