Ozette Watershed

Connecting the Dots Between Noxious Weed Control and Wildlife Habitat

Big River and Umbrella Creek Riparian Restoration Project 2016-2018

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WASHINGTON STATE RECREATION AND CONSERVATION OFFICE
Salmon Recovery Funding Board

GREEN CROW

CampbellGlobal
FOREST & NATURAL RESOURCE INVESTMENTS

NORTH OLYMPIC Land Trust
Farms • Fish • Forests

MERRILL & RING

NATIONAL PARK SERVICE

Private Landowners

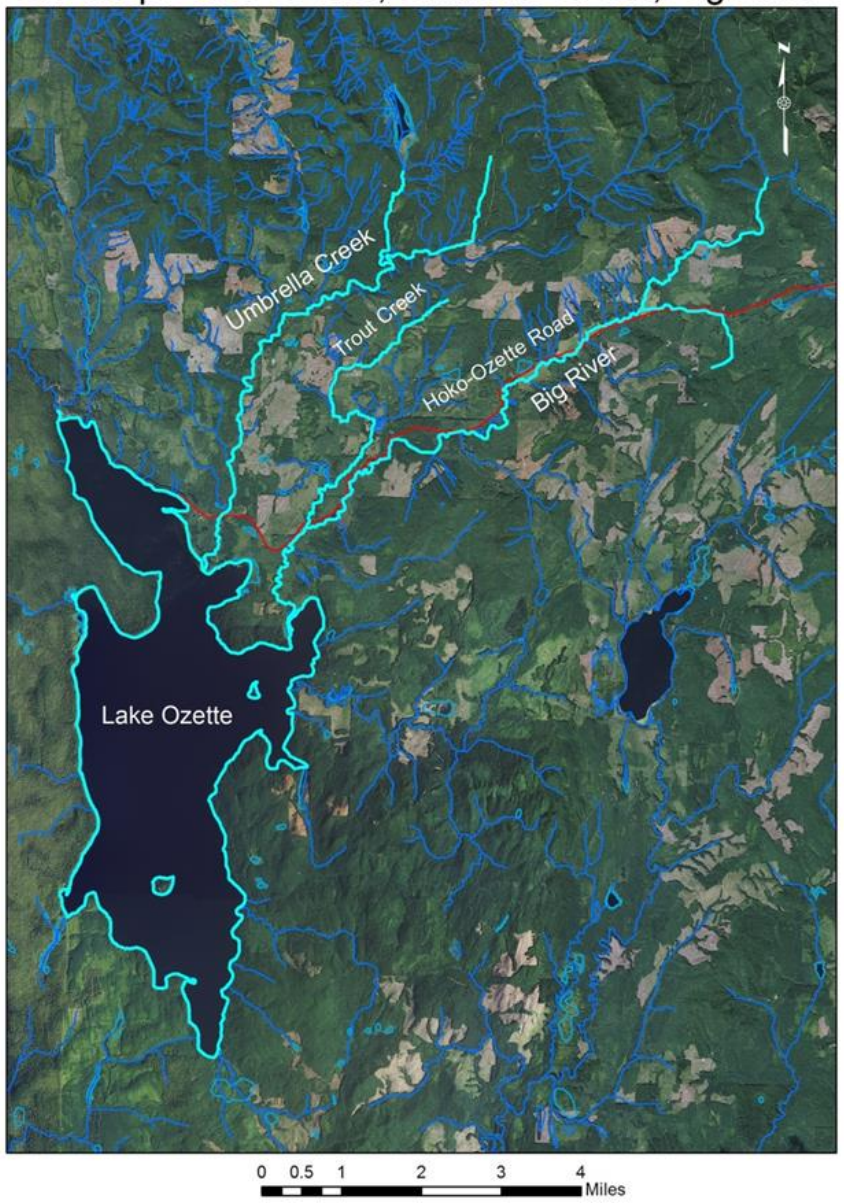
Background

- Ozette Watershed Tributaries
  - Degraded Conditions
  - <5% Old-Growth Riparian
  - Loss of Large Wood
    - Removal
    - Limited Recruitment
  - Extensive Medium-aged Alder Stands or Younger-aged Conifer
  - Disturbed Banks Infested with Noxious Weeds
- Big River Increased Susceptibility
  - Logging
  - Transportation
  - Agriculture
  - Various Private Residential Uses
- Umbrella Creek
  - Logging - High Road Density

Big River & Umbrella Creek

- Major Tributaries to Lake Ozette
- Support ESA Listed L.Ozette Sockeye Salmon
- Designated Critical Habitat
- Important for Multiple Species of Fish and Wildlife

Site Map: Lake Ozette, Umbrella Creek, Big River



Noxious Weed Impacts to Riparian Forest Function

- Riparian Functions:
  - Maintain Water Quality
  - Sediment/Toxin Filters
  - Nutrient and Water Retention
  - Sequester Carbon and Nutrients
  - High Biodiversity
  - Migration, Dispersal AND Reproductive Processes of Fish
  - Important Habitat for Wildlife
- Threats:
  - Decreased Biodiversity
  - Disrupted Food Chain
  - Loss of Habitat
  - Flow Alteration
  - Reduced Nutrient Quality of Litter Input
  - Increased Water Temperature
  - Limited Resources

Knotweed

- Fast Growing
- Extensive Root System
- Spread Rapidly:
  - Seeds, Rhizomes, Stems
- Outcompetes Native Species
- ↓Species Diversity
- Altered Plant Community Structure
- Poor Erosion Control

Reed Canarygrass

- Extensive Rhizomes
- Create Thick Sod Layer
- Large Monoculture
- Chokes out Native Species
- Low Species Diversity
- High Potential to Invade Low-gradient Streams
- Low Forage Value
  - Young Plants Only in Spring

Other Species

Scotch broom

Tansy Ragwort

Herb Robert

Canada Thistle

Bull Thistle

Evergreen Blackberry

Himalayan Blackberry

Coastal Burnweed

Field Bindweed

Common Burdock

English Ivy

St. John's-wort

Common Bugle

English Holly

Yellow Archangel

Scarlet Pimpernel

English/Cherry Laurel

Big River History

- Initial Knotweed Inventory & Treatment
  - 2004-2007
  - 87% Reduction by 2009
- Annual Treatment
  - Big River-Hoko Road
- < 6 gal. since 2007 (vs 65 gal 2005)
  - Not All Parcels Treated
- Still Present
  - Less Dense
- Control & prevention now mandatory within 100 year flood zone

Needs & Objectives

Big River

- Updated Comprehensive Weed Survey
- Concern About Other Noxious Weeds Replacing Knotweed Treatment Areas
- Potential for Long-Term Goals
- Actions:
  - Develop Database/Map
  - Treatment
  - Assessment
  - Re-treat / Enhancement
  - Private Landowner Interests
  - Future Planning

Umbrella Creek

- Unknown:
  - Extent
  - Intensity
  - Species Present
- Actions:
  - Develop Database/Map
  - Treatment
  - Assessment
  - Re-treat / Enhancement
  - Future Restoration Activity Planning

Treatment & Enhancements

- Selected Sites Based on Severity (2+ acres)
- Treatment
  - Aquatic Approved Herbicides
  - Hand Pulling
- Following treatment
  - Trees and Shrubs – 1600
    - Mix of Conifer, spruce and cedar, (LT shading and future LW), Alder (N-fixing and rapid growth), red elderberry, and Indian Plum (early succession establishment)
  - Willow – 3000
    - Harvested Locally
    - Cut Live Stakes Feb-Mar
    - Cut/Plant Immediately
  - Grasses/Forbs
    - TBD






Enhancements

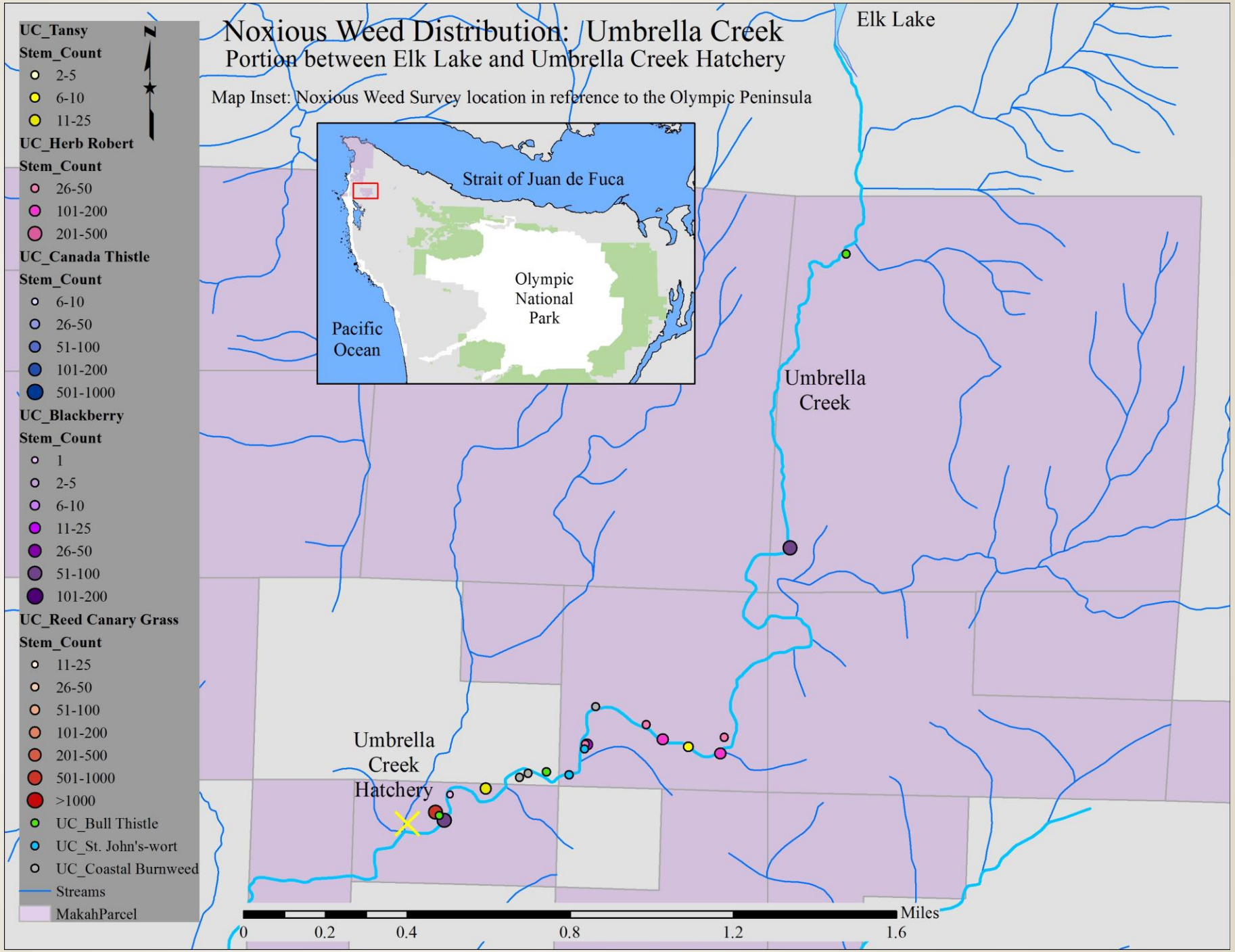
- Adaptive Strategy:
  - Effectiveness of Enhancement Post-treatment
  - Effectiveness of Species Selection
    - Tree Plantings
    - Willow Stakes
    - Native Grasses
  - Need for Follow-up Treatment
- Future Planning:
  - Extent and Severity of Infestations
  - Feasibility Assessment
  - Potential Alternative Methodologies
  - Long-Term Management
  - Landowner interest & Incentives
  - Other Tributaries and Activities

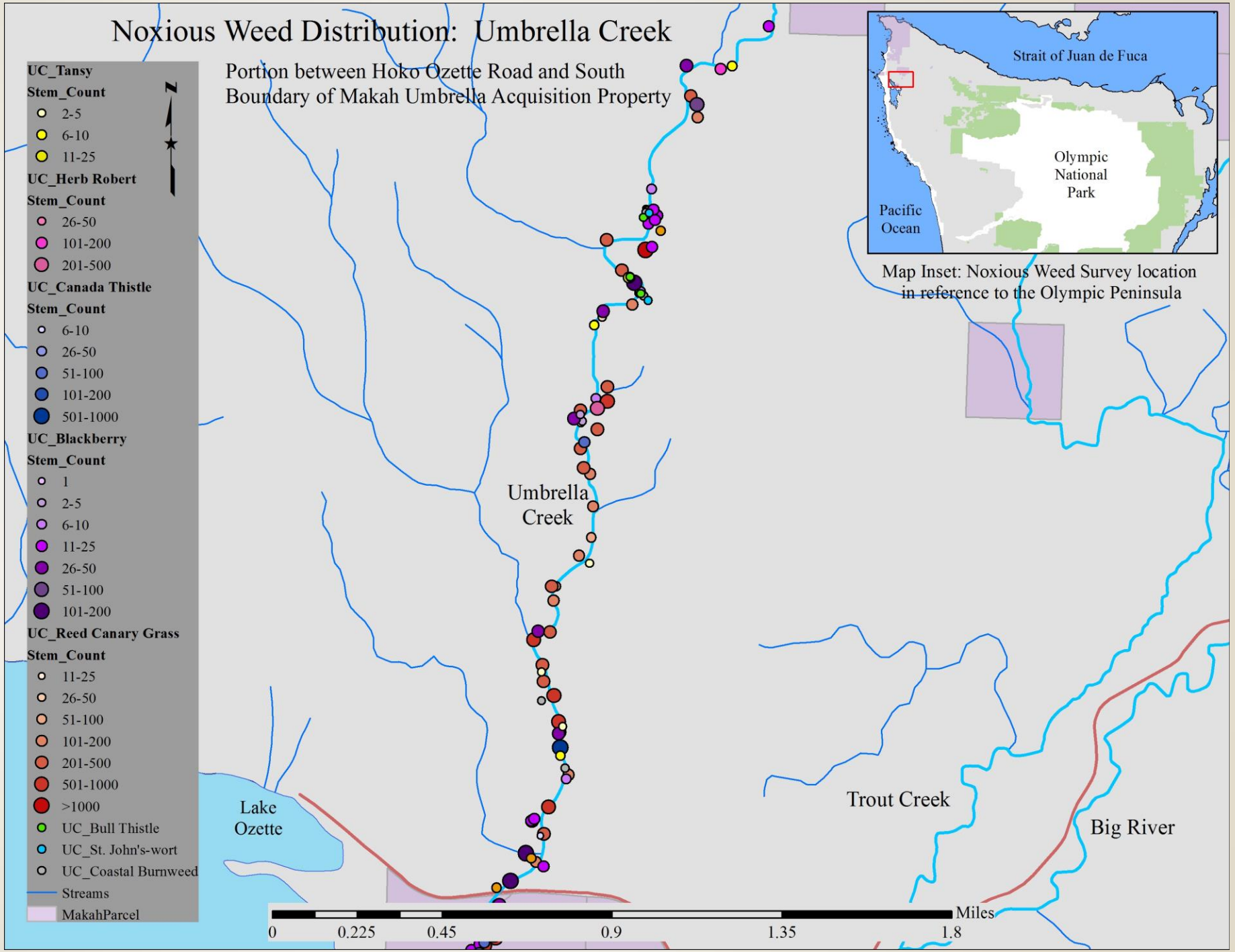
Photo Credit: Pacific Coast Fish, Wildlife and Wetlands Restoration Association

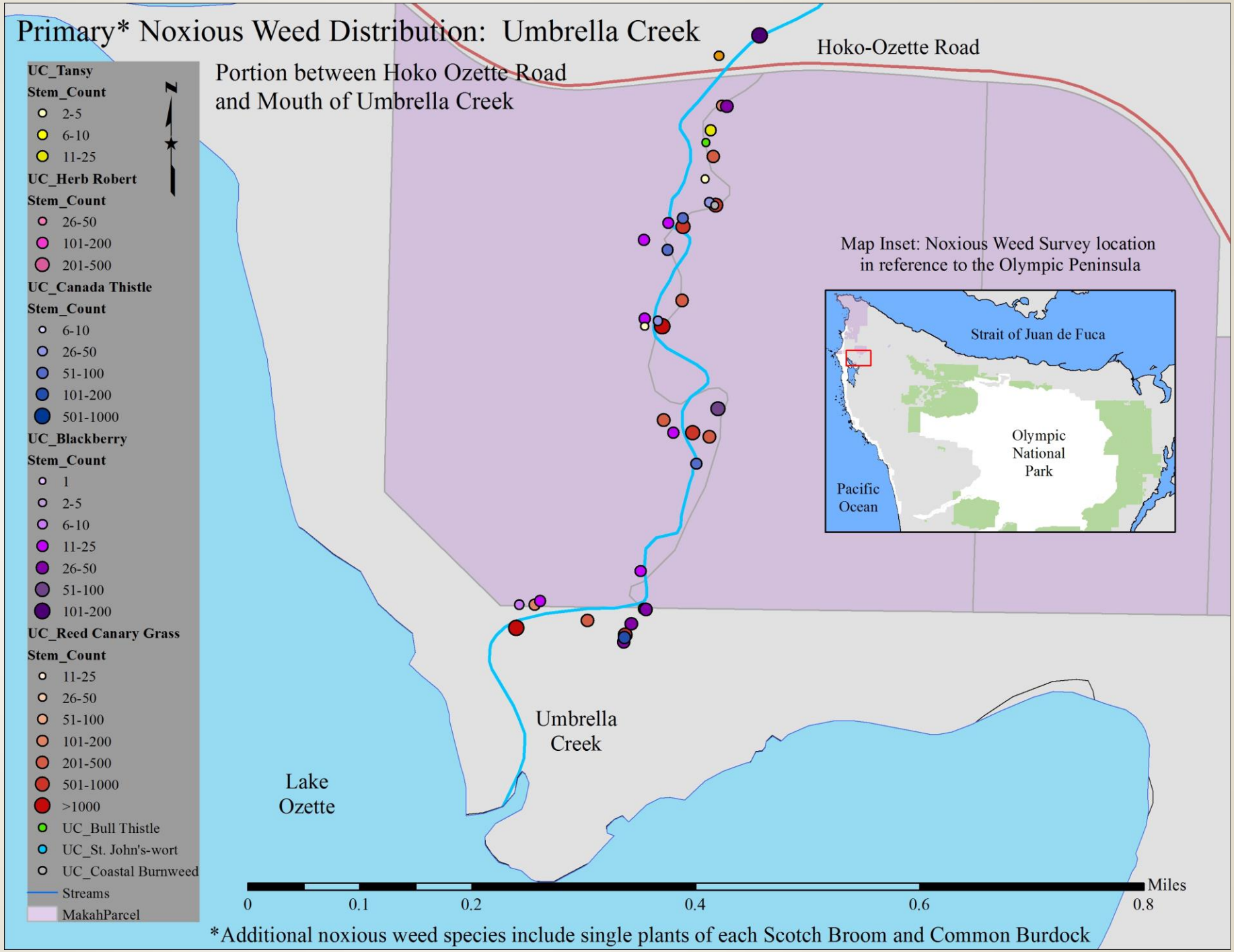
2016 Field season

Noxious Weed Surveys/Inventory

- Umbrella creek surveys June - July 2016
  - 154 Sites
  - Blackberry, Thistle, Herb Robert, Canary Grass, Scotch Broom, Tansy, Coastal Burnweed, Burdock, Ivy, St. John's-Wort
- Big River Surveys (partial) August - September 2016
  - 268 Sites
  - Blackberry, thistle, Herb Robert, Canary Grass, Scotch Broom, Tansy, coastal Burnweed, Field Bindweed, Knotweed, Scarlet Pimpernel, Common Bugle, Yellow Archangel, English (Laurel) Cherry, English Holly


Noxious Weed Distribution: Umbrella Creek
Portion between Elk Lake and Umbrella Creek Hatchery
Map Inset: Noxious Weed Survey location in reference to the Olympic Peninsula
Elk Lake
Strait of Juan de Fuca
Olympic National Park
Pacific Ocean
Umbrella Creek
Umbrella Creek Hatchery
UC_Tansy Stem_Count
2-5
6-10
11-25
UC_Herb Robert Stem_Count
26-50
101-200
201-500
UC_Canada Thistle Stem_Count
6-10
26-50
51-100
101-200
501-1000
UC_Blackberry Stem_Count
1
2-5
6-10
11-25
26-50
51-100
101-200
UC_Reed Canary Grass Stem_Count
11-25
26-50
51-100
101-200
201-500
501-1000
>1000
UC_Bull Thistle
UC_St. John's-wort
UC_Coastal Burnweed
Streams
MakahParcel
0
0.2
0.4
0.8
1.2
1.6
Miles


Noxious Weed Distribution: Umbrella Creek
Portion between Hoko Ozette Road and South Boundary of Makah Umbrella Acquisition Property
UC_Tansy Stem_Count
2-5
6-10
11-25
UC_Herb Robert Stem_Count
26-50
101-200
201-500
UC_Canada Thistle Stem_Count
6-10
26-50
51-100
101-200
501-1000
UC_Blackberry Stem_Count
1
2-5
6-10
11-25
26-50
51-100
101-200
UC_Reed Canary Grass Stem_Count
11-25
26-50
51-100
101-200
201-500
501-1000
>1000
UC_Bull Thistle
UC_St. John's-wort
UC_Coastal Burnweed
Streams
MakahParcel
N
Strait of Juan de Fuca
Olympic National Park
Pacific Ocean
Map Inset: Noxious Weed Survey location in reference to the Olympic Peninsula
Umbrella Creek
Lake Ozette
Trout Creek
Big River
0
0.225
0.45
0.9
1.35
1.8
Miles


Primary* Noxious Weed Distribution: Umbrella Creek
Portion between Hoko Ozette Road
and Mouth of Umbrella Creek
Hoko-Ozette Road
UC_Tansy
Stem_Count
2-5
6-10
11-25
UC_Herb Robert
Stem_Count
26-50
101-200
201-500
UC_Canada Thistle
Stem_Count
6-10
26-50
51-100
101-200
501-1000
UC_Blackberry
Stem_Count
1
2-5
6-10
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26-50
51-100
101-200
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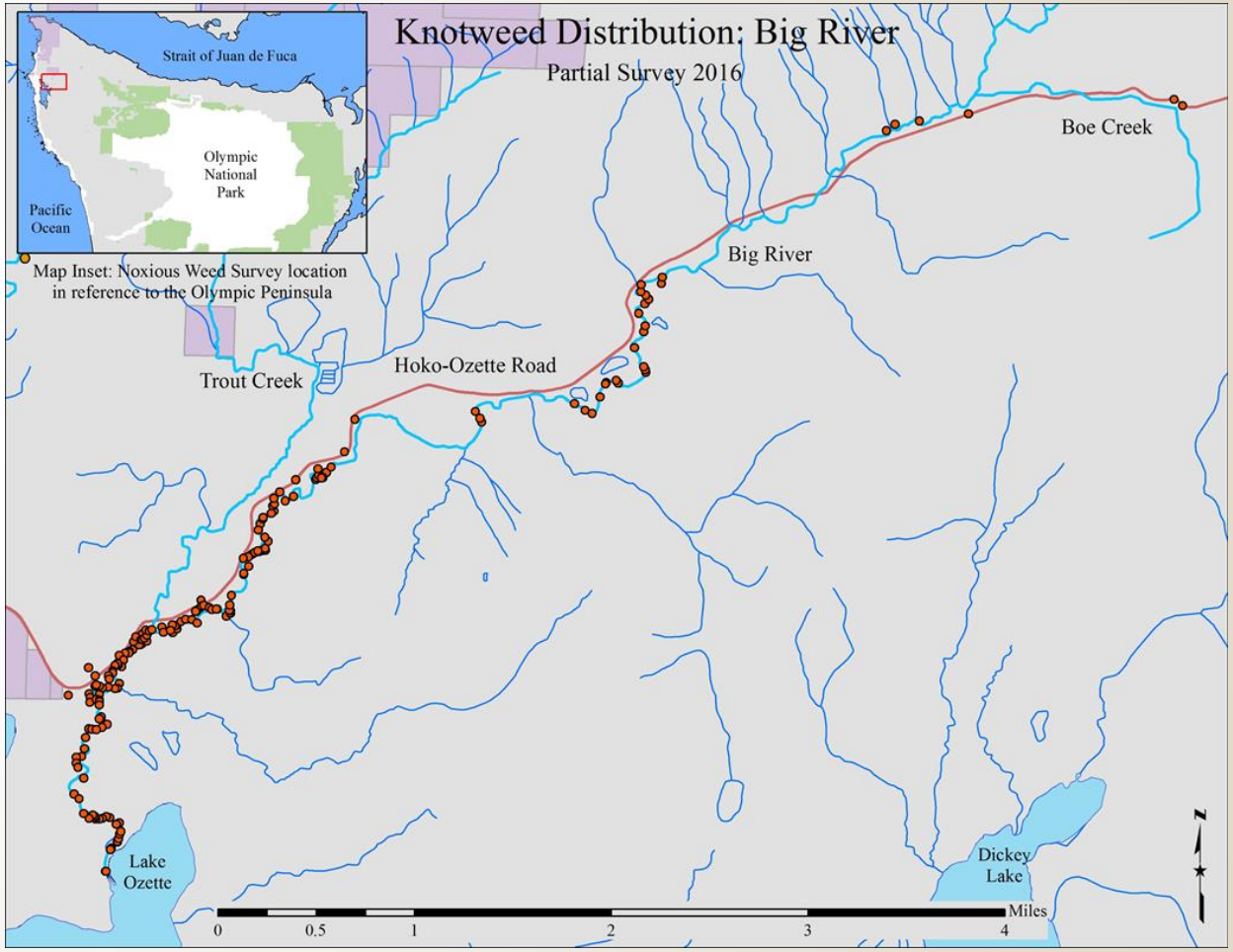
Streams
MakahParcel
Map Inset: Noxious Weed Survey location
in reference to the Olympic Peninsula
Strait of Juan de Fuca
Olympic
National
Park
Pacific
Ocean
Umbrella
Creek
Lake
Ozette
0
0.1
0.2
0.4
0.6
0.8
Miles
*Additional noxious weed species include single plants of each Scotch Broom and Common Burdock

2016 Big River Knotweed Inventory and Treatment

- Mouth at Lake Ozette to Confluence of Boe Creek and Hoko-Ozette Road from HWY 112 to ONP boundary
- 189 Sites
- 67.44 acres
- 1.77 Gal AquaNeat (Glyphosate)
- 0.28 Gal Polaris (Imazapyr)



2016 Big River Knotweed Treatment

2016 Big River Noxious Weed Infestations

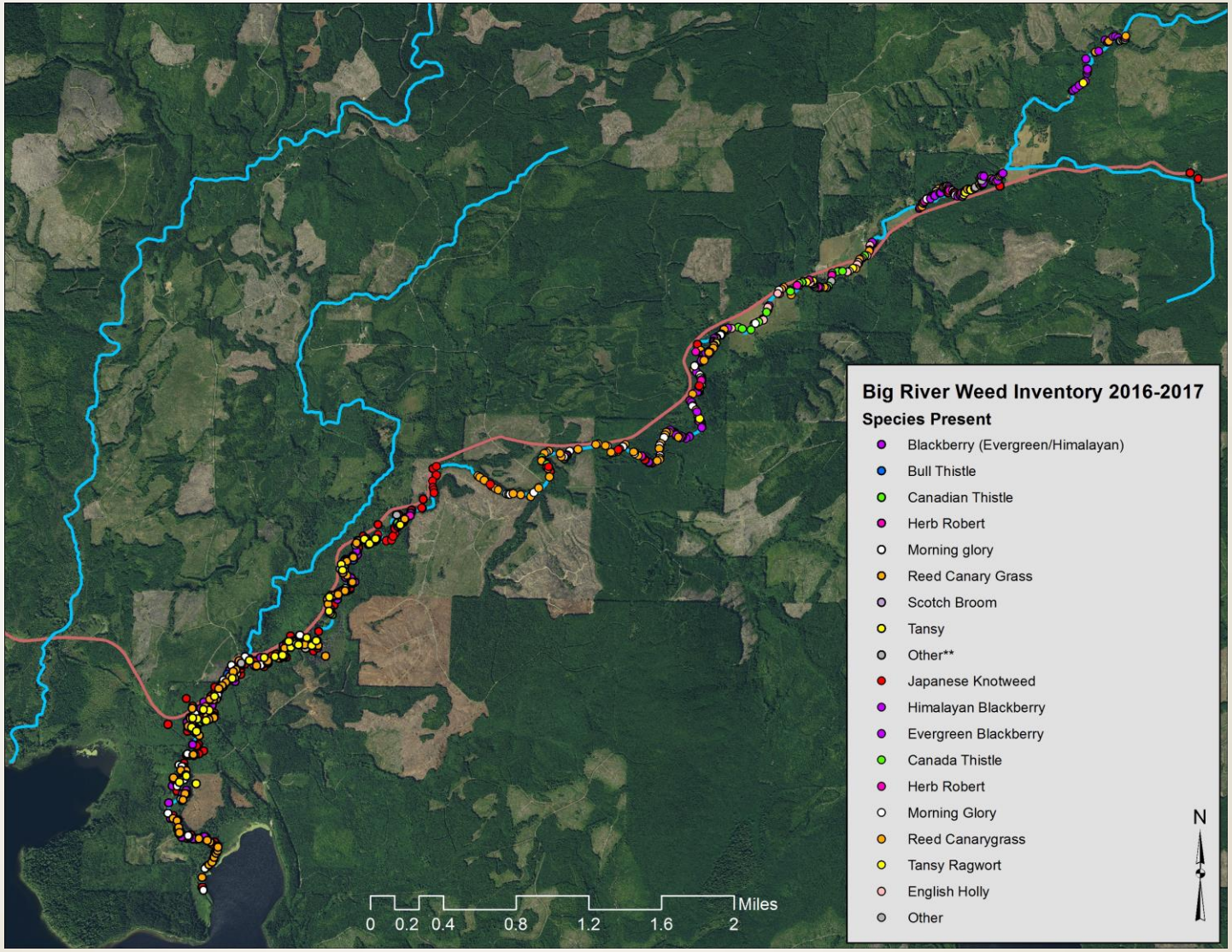
2017 Project Updates and Accomplishments

- UMBRELLA CREEK
  - Treated~5 miles between National Park boundary at mouth to ~1 mile east of hatchery
  - Total 9.36 acres treated
  - Logging roads adjacent to Umbrella Creek from Hoko-Ozette Road to Elk Lake
  - Ivy Infestation along Hoko-Ozette Road at Umbrella Creek Bridge (hand pulled)
- BIG RIVER
  - Inventory for all noxious weeds complete except ~4 miles of upper reach
  - Knotweed treatment in 2017
    - 19.5 acres
  - Tansy ragwort pulled, bagged, and removed from 42 acres private Property
  - 12.9 acres treated for other noxious weeds along Big River on private Property – significant H. blackberry
  - Several parcels selected for treatment of reed canary grass and follow-up tree planting (3.5 acres)
    - Property at approximate MM 13.75
    - Property at approximate MM 16.5
    - Trout Creek Confluence

Umbrella Creek Treatment

Pulling Tansy - 2017

Big River Noxious Weed Inventory and Knotweed Distribution

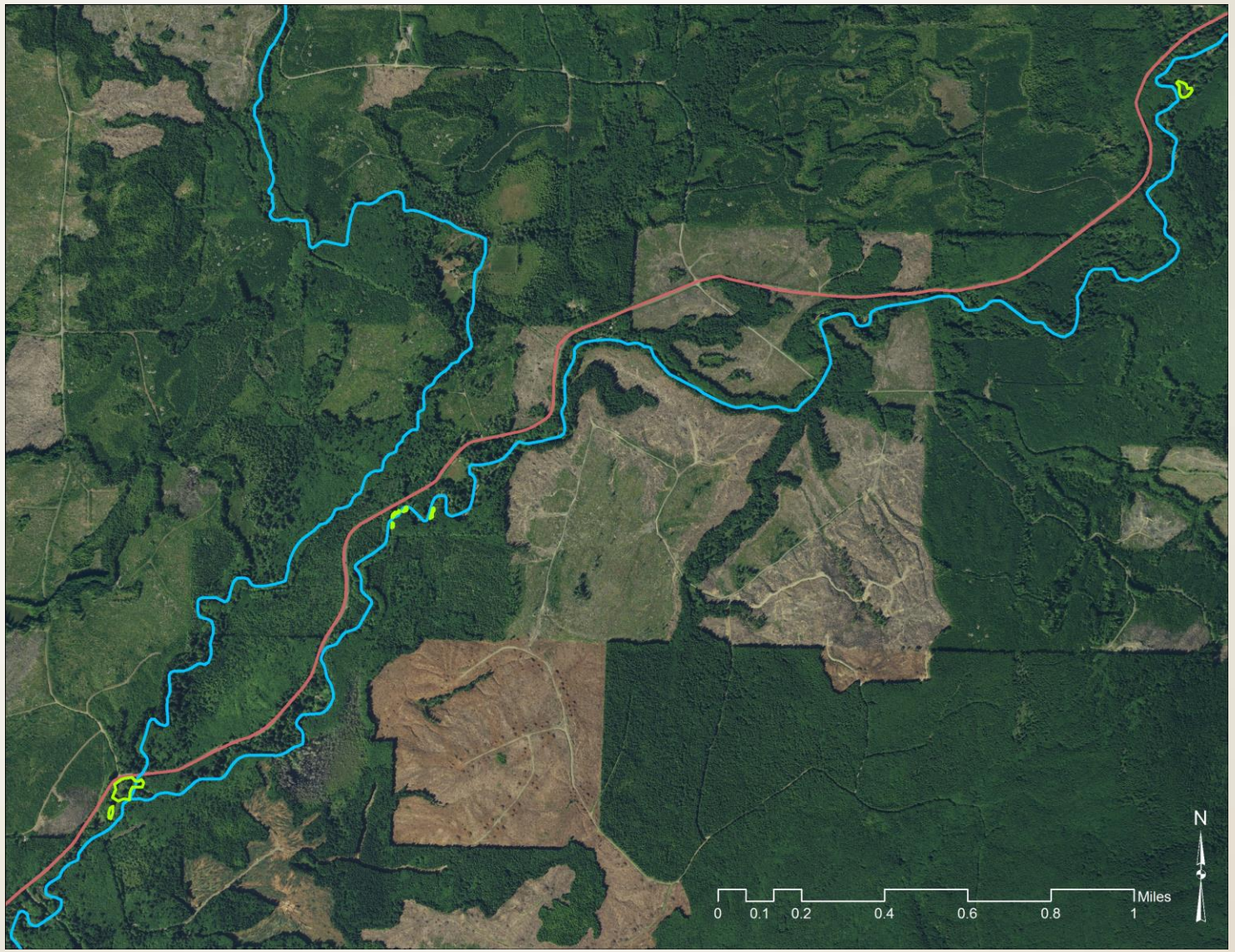


2017 Big River Knotweed

Sites in 2017 – treated in summer 2016

New sites in 2017 – not treated in 2016

Selected Sites for Treatment and Replanting



Trout Creek – Big River Confluence Treatment 2017

May (before treatment)

June – July (~2 weeks after treatment)

August

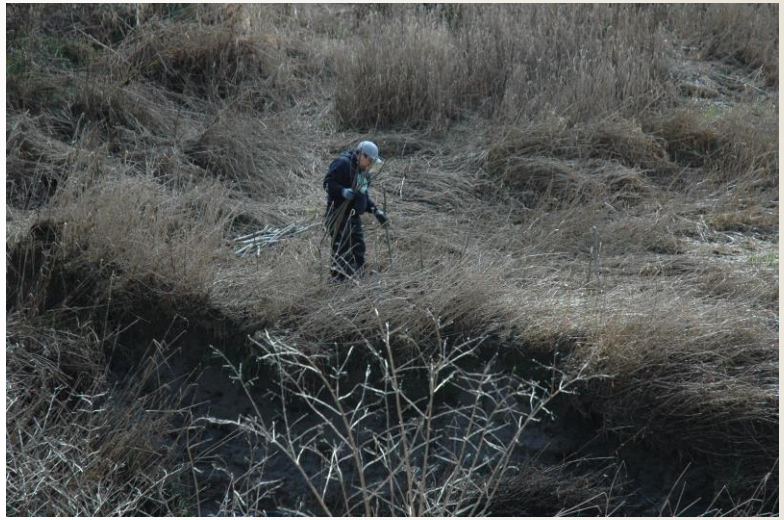
September

2018 Project Accomplishments, Goals, and Activities

- Big River Restoration Sites
  - ✓ Willows Cut and Planted March 2018
  - ✓ Trees and Shrubs Planted March 2018
  - ✓ First Round Maintenance Re-treatment May 2018
  - Grass Seeding – Fall 2018 or Spring 2019?
- Finish Big River Inventory – Summer 2018
- Knotweed treatment on Big River – September 2018
- Develop Long-term plan for restoration and maintenance – December 2018

Big River-Trout Creek Confluence

Tree Planting March 2018



MM 13.75 Restoration Site

MM 16.5 Restoration Site

The river moves from land to water to land, in and out of organisms, reminding us …you cannot separate the land from the water, or the people from the land. - Lynn Noel

There is no rushing a river. When you go there, you go at the pace of the water and that pace ties you into a flow that is older than life on this planet. Acceptance of that pace, even for a day, changes us, reminds us of other rhythms beyond the sound of our own heartbeats. - Jeff Rennicke

Questions?