

# E.T.A.R.T.

Erosion Threat Assessment & Reduction Team

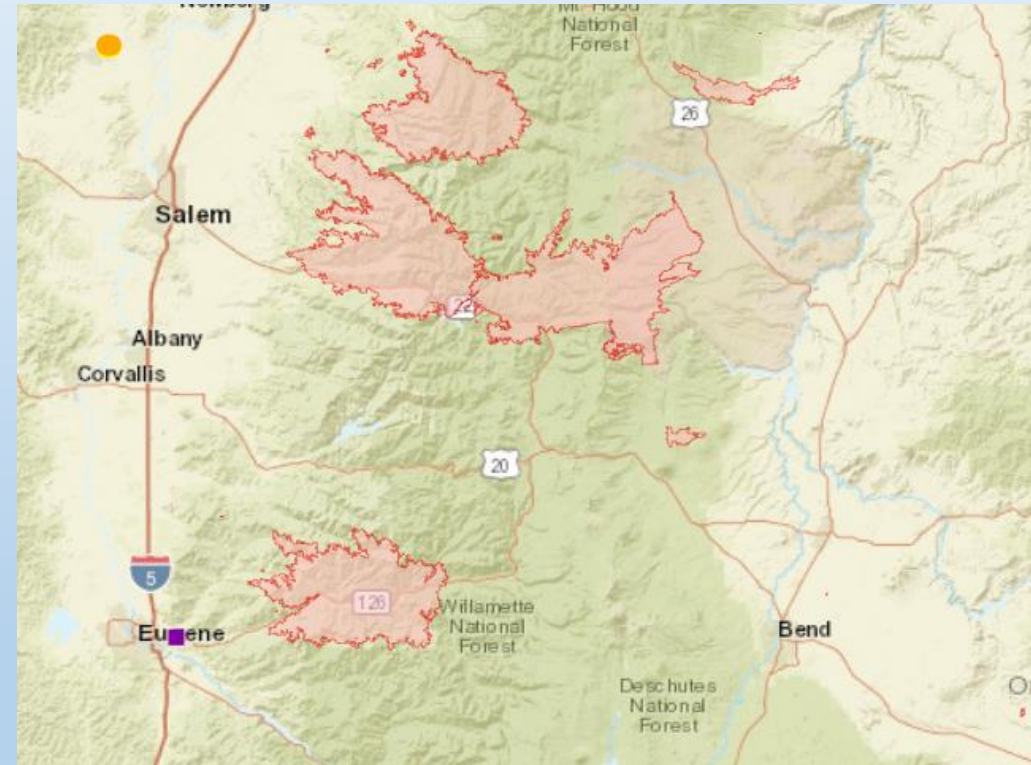


*An overview of a unique approach applied to an unprecedented fire event in Oregon in 2020.*

*Prepared for Oregon Invasive Species Council by Troy Abercrombie, Western Invasives Network*

# Fire Event Background

- Over 1.2M acres burned in 2020 season
- 21 fires over 1K acres, 18 of them started on 3 days
- Caused by lightning, damaged utilities/infrastructure
  - Fueled by massive, nearly statewide wind event
- Immense multi-jurisdictional scale requiring immense, simultaneous response efforts
- Numerous lives lost
- Over \$350M, just for suppression



# Catalyst for ETART

- *“Given the size and severity of the fires’ impacts to state, local and private lands throughout Oregon, the State of Oregon requested the Federal Emergency Management Agency (FEMA) form a multi-jurisdiction assessment team to assess the state, local and private lands of several fires. FEMA coordinated with Oregon Emergency Management (OEM) and Department of Forestry (ODF), National Weather Service (NWS), U.S. Army Corps of Engineers (USACE) and the USFS to staff the Erosion Threat Assessment and Reduction Team (ETART) to evaluate the fire-affected state and private lands.”*
- 14 fires, 1.1M acres initially flagged for ETART
- OWEB emergency response eligibility emphasized/required ETART
  - Future prioritization for open-solicitation

# The Teams

- Life & Safety
- Property
- Soil & Water
- Fish & Wildlife Habitat
- *Native Plant Communities*
- Cultural Resources

ETART Precedent: Carlton Fire, Washington



## Holiday Farm Fire

Erosion Threat Assessment/Reduction Team (ETART)  
Summary Report

December 2020



FEMA

# Native Plant Communities

- Botany & Invasive Species Teams
  - USFS staff, Sarah Callaghan, as liaison to staff teams
  - WIN assisted to identify potential regional/local partners
- 
- Report Leads:
    - Simon Apostol, Archie Creek
    - Michelle Delepine, Holiday Farm
    - Sam Leininger, Riverside
    - Jenny Meisel, Beachie Creek
    - Troy Abercrombie, South Obenchain



Introducing:

**Sarah Callaghan, US Forest Service**

Botany & Invasive Plant Coordinator, Columbia Gorge National Scenic Area

# Burned Area Emergency Response



## Value Identification Assessment Steps

Identify critical values to be considered during Burned-Area Emergency Response

### CRITICAL VALUES

#### HUMAN LIFE AND SAFETY

Human life and safety on NFS lands.

#### PROPERTY

Buildings, water systems, utility systems, road and trail prisms, dams, wells or other significant investments on NFS lands.

#### NATURAL RESOURCES

Water used for municipal, domestic, hydropower, or agricultural supply or waters with special state or federal designations on NFS lands.

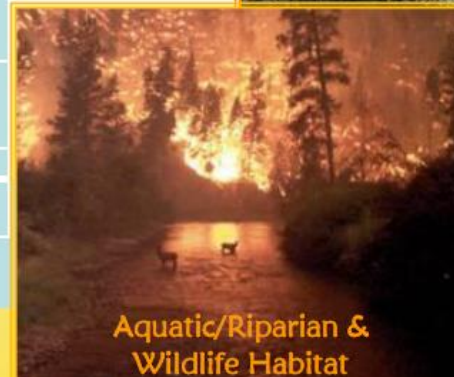
Soil productivity and hydrologic function on NFS lands.

Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal or plant species on NFS lands.

Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts.

#### CULTURAL AND HERITAGE RESOURCES

Cultural resources on lands which are listed on or potentially eligible for the National Register of Historic Places, Traditional Cultural Properties or Indian Sacred Sites on NFS lands.



# Invasive/TESP Treatment Prioritization EDRR

## Documentation

- ▶ Natural Veg Protection Areas
- ▶ Invasive Species
- ▶ Incident Disturbance Areas
- ▶ Vegetation Mortality (GEE)

- ▶ Visualize Options
- ▶ Adjust parameters
- ▶ Develop Treatment Recommendations

- MeadowsTouchFire
- BotanicalAreasTouchFire
- TESP Occurrence
- Invasive Plants
- Fire Point
- Camp
- Drop Point
- Helibase
- Helispot
- Safety Zone
- Fire Line

- RAVG\_RRSKlondikeTaylor
- ba\_class
- 0% BA mortality
- 1 - 10% BA mortality
- 11 - 25% BA mortality

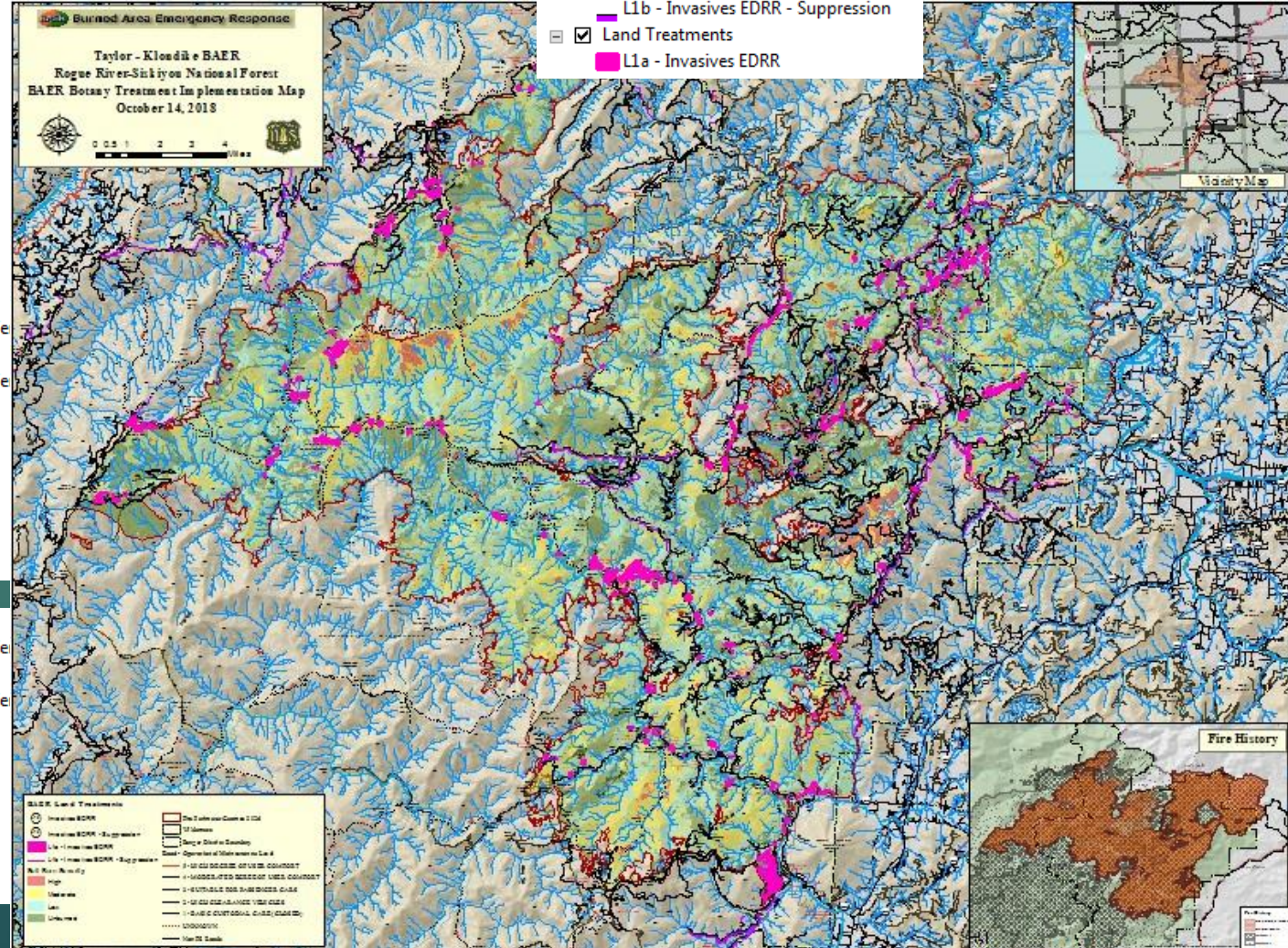
- Land Treatments
- Land Treatments
- L1b Invasives EDRR - Suppression
- Land Treatments
- L1b - Invasives EDRR - Suppression
- Land Treatments
- L1a - Invasives EDRR

Botany Analysis

- Natural Veg Protection Area Within Weeds Buffer
- Natural Veg Protection Area Within Weeds Buffer
- Protection Area Outside Weed Buffer
- Weed Buffer Outside Protection Area

Botany Analysis - 400ft Buffer

- Natural Veg Protection Area Within Weeds Buffer
- Natural Veg Protection Area Within Weeds Buffer
- Protection Area Outside Weed Buffer
- Weed Buffer Outside Protection Area





# Burned Area Emergency Response



## Assessment Steps Threats and Risks Evaluation

Identify potential threats to **critical values**, the probability of their occurrence and the cost of the potential damages. Risks are evaluated using the risk assessment matrix.

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	<b>RISK</b>		
Very Likely	Very High	Very High	Low
Likely	Very High	High	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

Probability of Damage or Loss: relative probability that damage or loss would occur within 1 to 3 years:

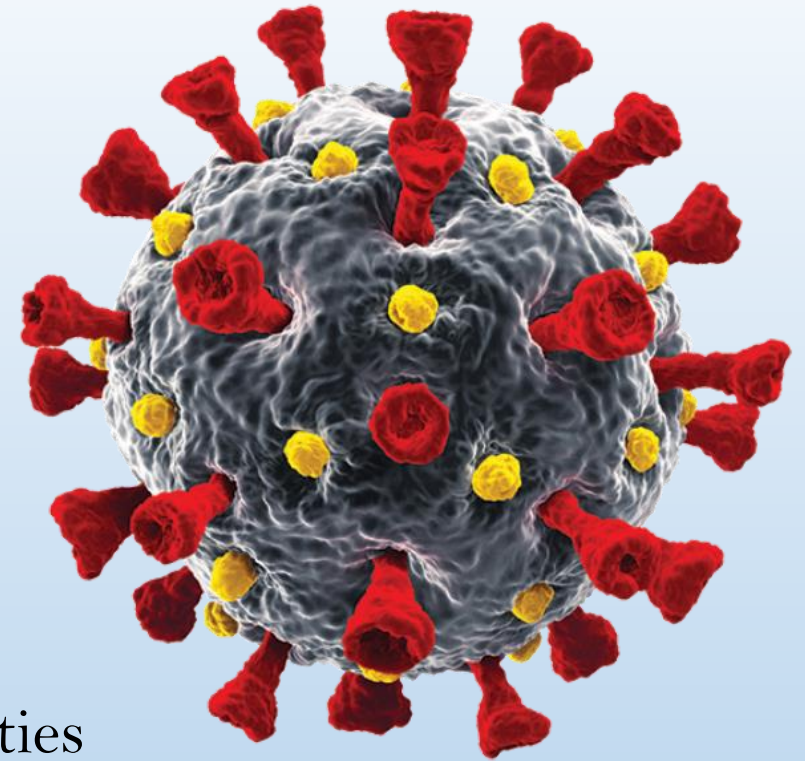
- Very likely. Nearly certain occurrence (90% - 100%)
- Likely. Likely occurrence (50% - 89%)
- Possible. Possible occurrence (10% - 49%)
- Unlikely. Unlikely occurrence (0% - 9%)

Magnitude of Consequences:

- **Major.** Loss of life or injury to humans; **substantial** property damage; **irreversible** damage to critical natural or cultural resources.
- **Moderate.** Injury or illness to humans; **moderate** property damage; **damage** to critical natural or cultural resources resulting in **considerable or long term effects**.
- **Minor.** Property damage is **limited** in economic value and/or to few investments; **damage** to critical natural or cultural resources resulting in **minimal, recoverable or localized effects**.

# Pre-existing Complications

- Covid-19
  - Skews entire process
- Many professionals affected personally
  - Evacuations, assisting affected family, friends & communities
- Already engaged in response efforts



# Implementation Challenges

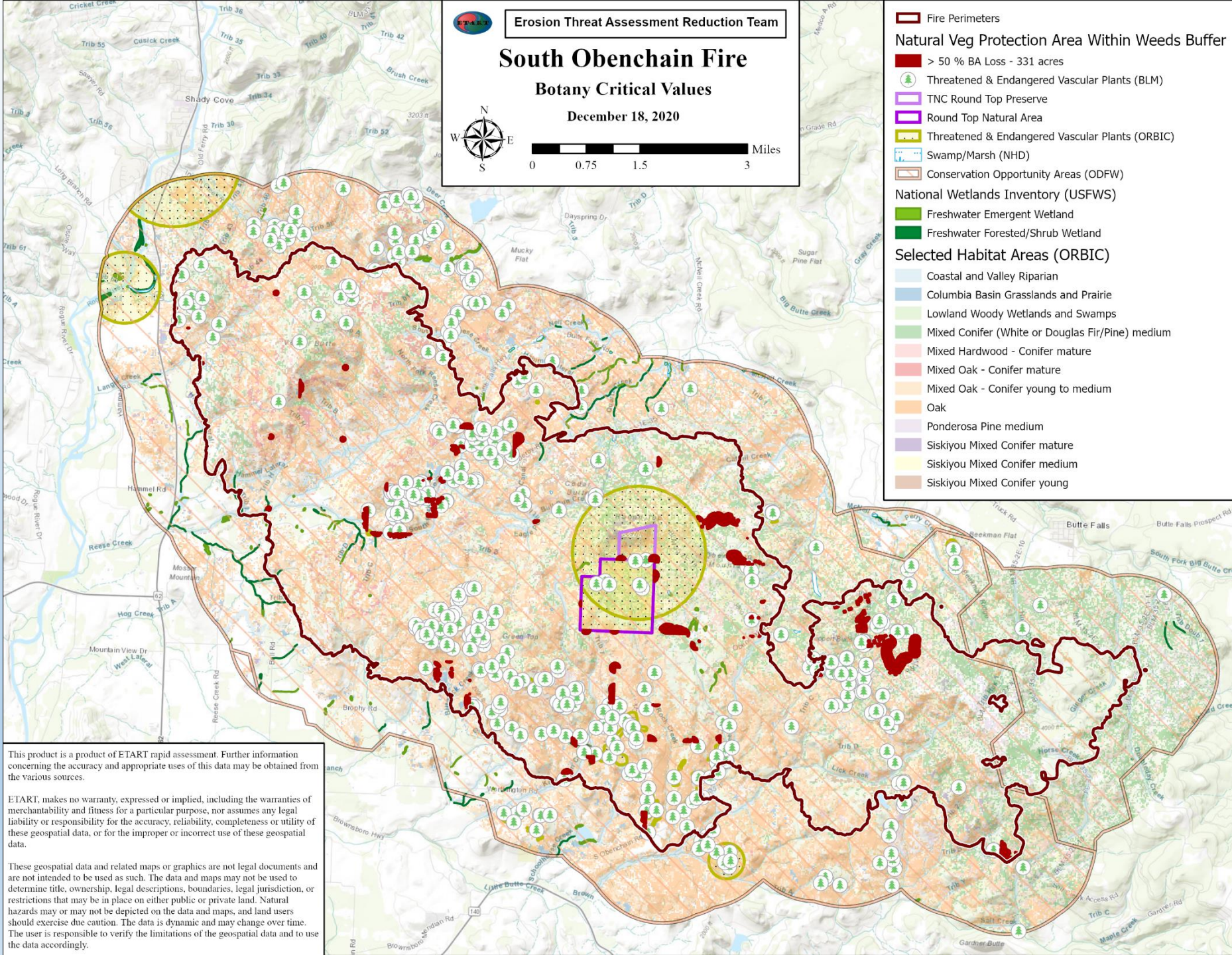
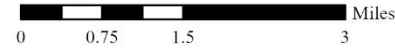
- **Entry barriers**
  - Prioritization/funding
- **Lack of experience with BAER process & outputs**
  - ETART was attempt to leverage BAER resource mobilization
- **Fragmented information & communication channels**
  - Who asked for this?
  - Reliance on federal/state tools by non-fed/state personnel
- **Finite availability of federal/state support**
- **Data gaps**



Erosion Threat Assessment Reduction Team

# South Obenchain Fire Botany Critical Values

December 18, 2020



Fire Perimeters

Natural Veg Protection Area Within Weeds Buffer

> 50 % BA Loss - 331 acres

Threatened & Endangered Vascular Plants (BLM)

TNC Round Top Preserve

Round Top Natural Area

Threatened & Endangered Vascular Plants (ORBIC)

Swamp/Marsh (NHD)

Conservation Opportunity Areas (ODFW)

National Wetlands Inventory (USFWS)

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Selected Habitat Areas (ORBIC)

Coastal and Valley Riparian

Columbia Basin Grasslands and Prairie

Lowland Woody Wetlands and Swamps

Mixed Conifer (White or Douglas Fir/Pine) medium

Mixed Hardwood - Conifer mature

Mixed Oak - Conifer mature

Mixed Oak - Conifer young to medium

Oak

Ponderosa Pine medium

Siskiyou Mixed Conifer mature

Siskiyou Mixed Conifer medium

Siskiyou Mixed Conifer young

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# Outcomes & Recommendations

- Over 2,500 acres of primary EDRR treatments/activities including:
  - Survey
  - Manual/chemical controls
  - Biocontrol (re)establishment
  - Seeding
  - Education & Outreach
- Hundreds of miles of roads, suppression lines
- Over 10,000 acres of secondary priority EDRR surveys, monitoring
- **\$1.13M+ estimated EDRR response costs on just 5 fires**

# Future Needs

- Designated “Hub Agency” to coordinate botany/invasive ETART
  - Funded team leads and supporting staff
- Improved inter/inner-agency communication
  - Including interagency training programs/simulations
- Better aggregation and buildout of spatial data
  - With easy/wide accessibility
  - Improving existing datasets
- Landowner/manager empowerment
  - Education & training on response
  - Materials exist, need synthesized

# Future Needs (cont'd)

- Emergency funding pool
  - Front-end assistance
  - Assessments, surveys and high-priority treatments
    - Post-fire surveys coincide with fall treatment windows
- Securing annual stock-piles
  - Straw, seed and forage
- Improved, advanced modeling
- Separation of botany/invasive portions from rest of process
- Enhanced, extended support from federal/state partners
- Clear mechanisms & pathways to leverage assessments

# Silver Linings

- We can do hard things, even when times are hard
- Demonstrated importance of state programs
- Highlighted critical importance of strong county/local programs



# Where can OISC help?

- Missed opportunities to mobilize Emergency Fund
  - \$2K-3K per fire for ETART leads
- Collect, synthesize, produce & distribute landowner guidance
- Engage academia, agencies to improve modeling & data
- Explore interstate & interagency agreements for support
  - Straw, seed & forage stockpiles and/or commitments to assist
  - Cross-agency trainings
- Exploring ways to help partners leverage the assessments

# Questions & Discussion

*Extra special thanks to all of the dedicated folks who helped with fire response, ETART or otherwise, and to those who took the time to share their experiences and perspectives with me as I built this presentation.*