

Managing for Watershed Resilience

Examples of Shared Stewardship on the Okanogan Wenatchee NF



Molly Hanson
Watershed Program Manager

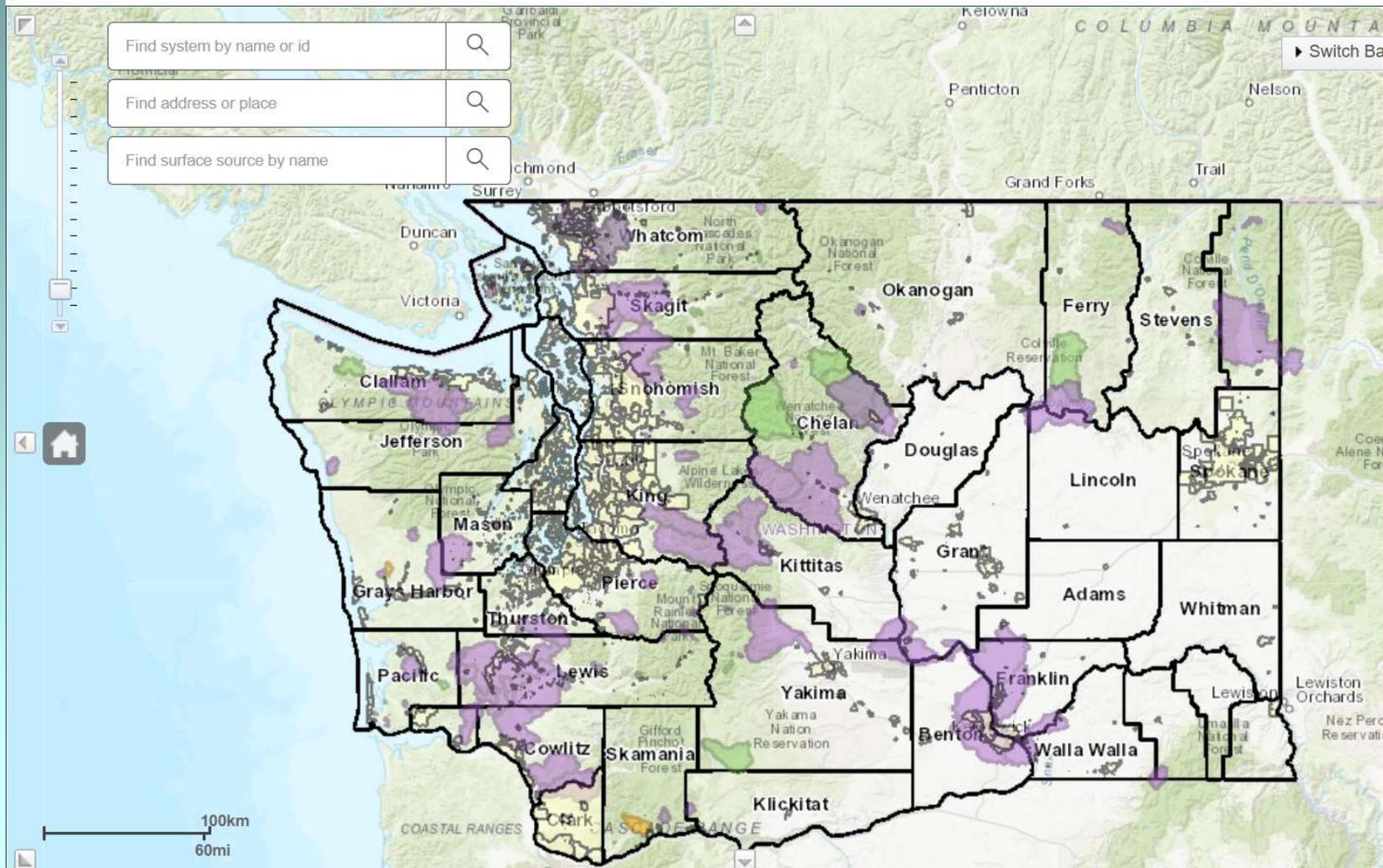
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Source Water Assessment Program (SWAP)
Mapping Application



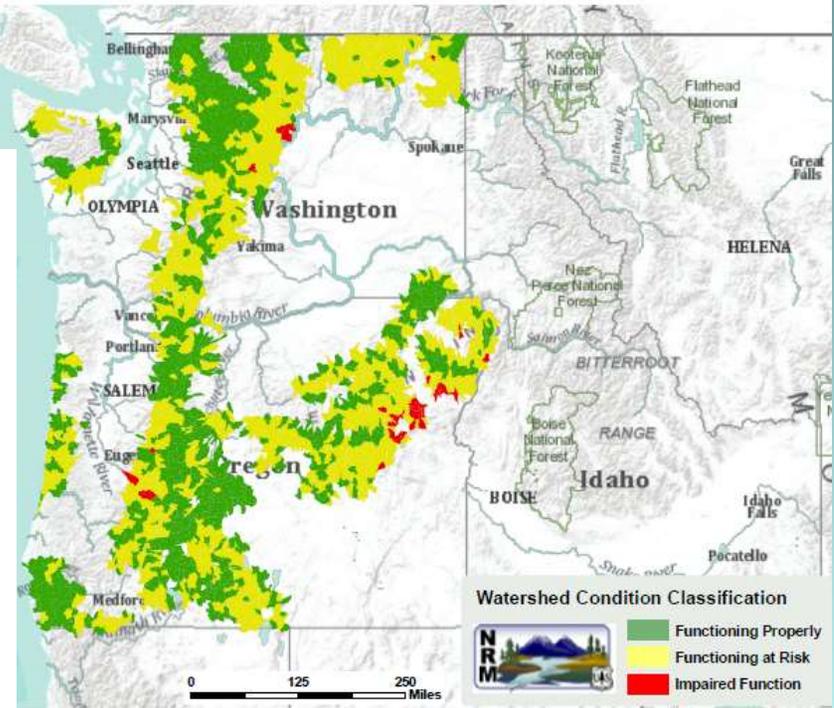
<https://fortress.wa.gov/doh/swap/index.html>



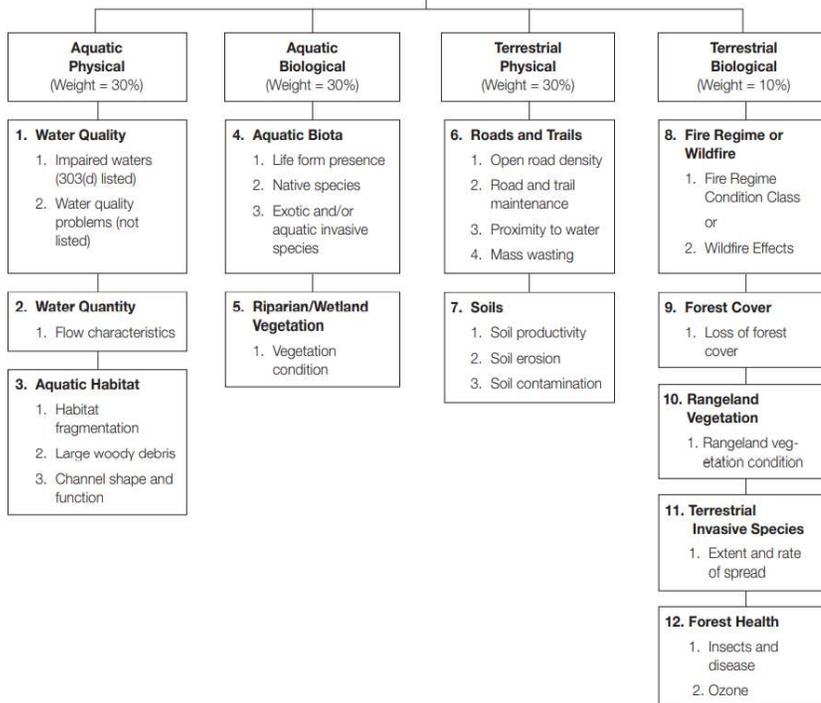
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USDA Forest Service Watershed Condition Classification - Region 6
 Ratings based on assessments of National Forest System land in sixth-level watersheds
 MAY 12, 2011

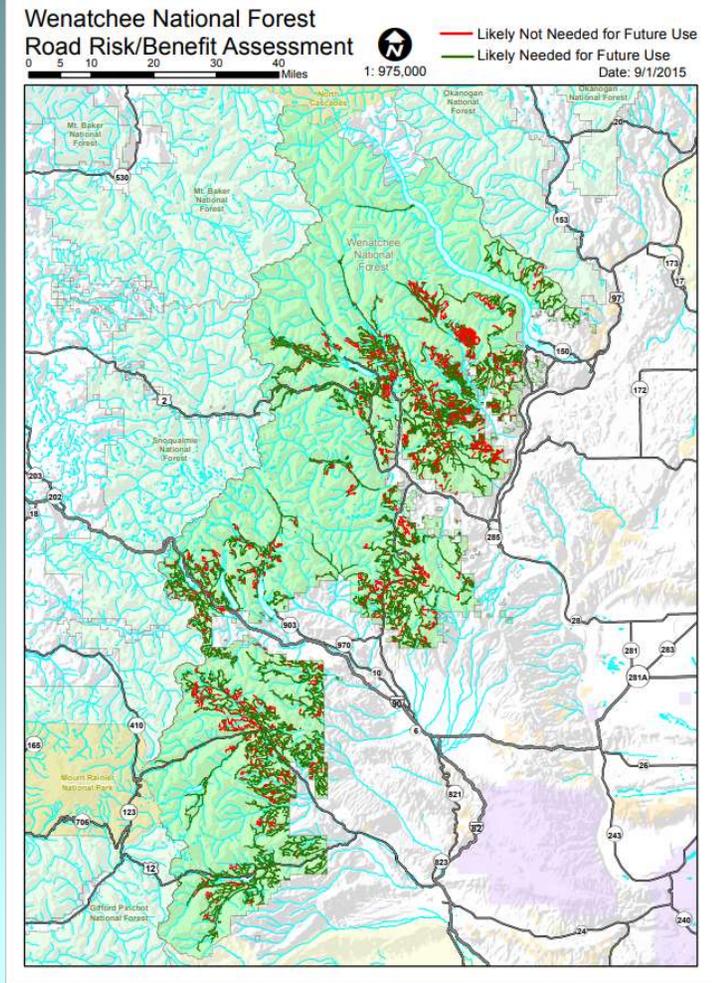


Watershed Condition Indicators (12-Indicator Model)

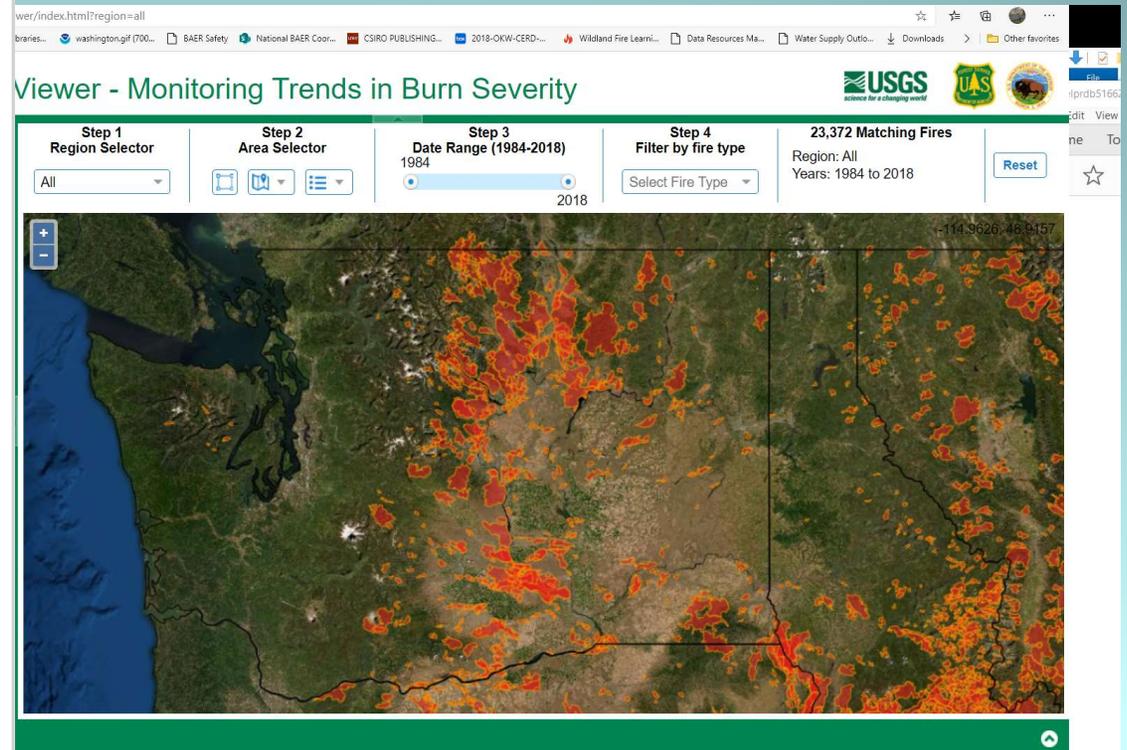


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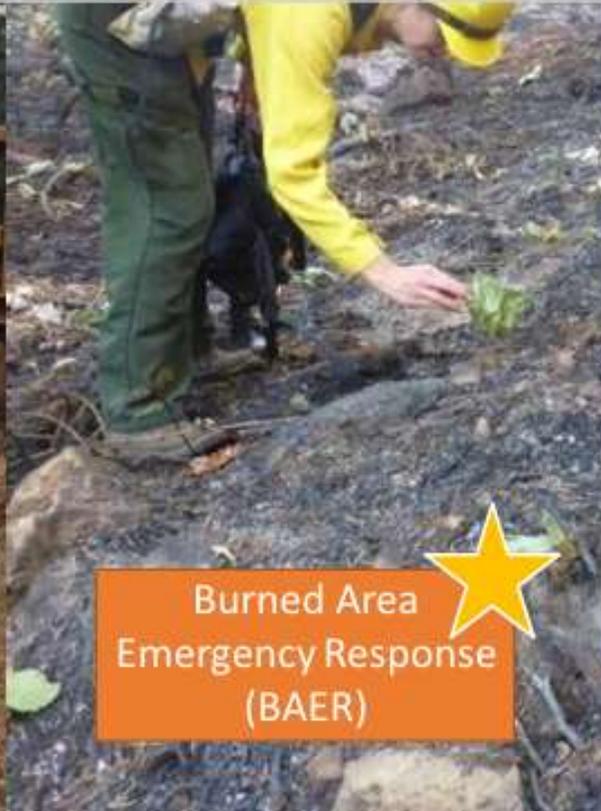
Biggest impacts to soil and water resources



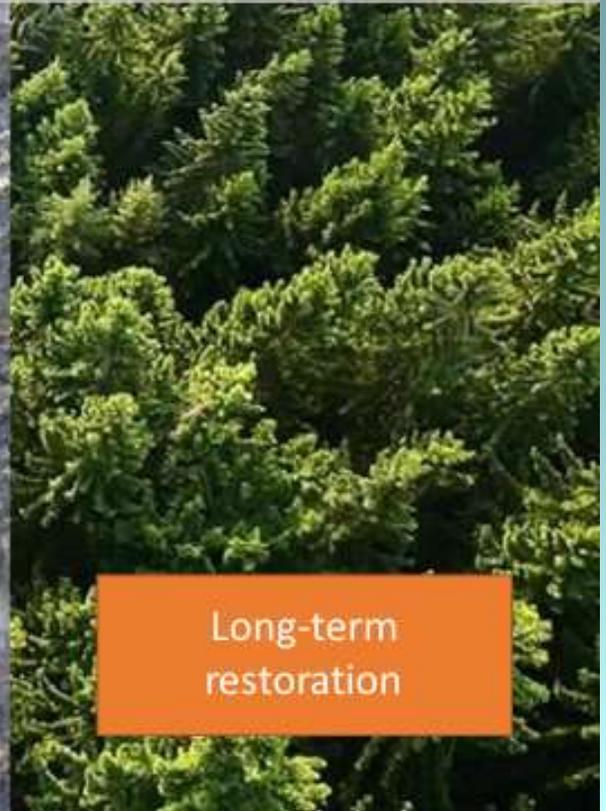
Three Phases of Post-Fire Actions



Suppression Repair



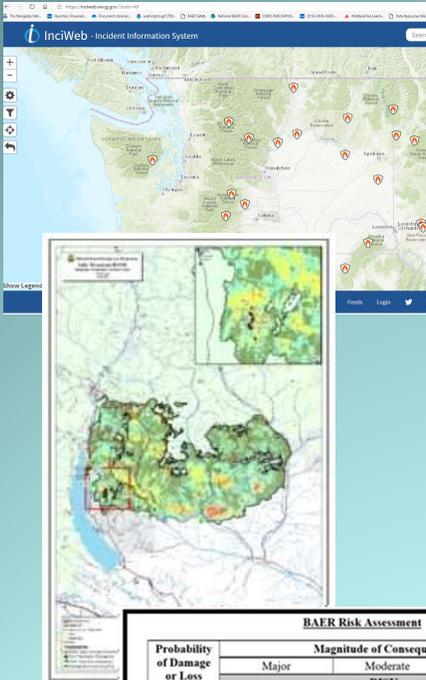
Burned Area
Emergency Response
(BAER)



Long-term
restoration

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BAER Risk Assessment

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
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: The following descriptions provide a framework to estimate the relative probability that damage or loss would occur within 1 to 3 years (depending on the resource):

- 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.

Post-Fire BAER Assessment Burned Area Emergency Response (BAER) Information Brief

Cougar Creek Fire 2500-8 Summary

September 25, 2018 Okanogan-Wenatchee National Forest FS-2500-8 BURNED AREA REPORT ANALYSIS

FIRE BACKGROUND
The Cougar Creek Fire began as a lightning strike on July 25, 2018. As of the date of this report the Cougar Creek Fire perimeter includes 41,107 acres. The fire spread through a combination of slow creeping and short runs, spotting, and burnout operations resulting in a mosaic of fire severity on USFS land — 882 acres of high, 13,010 acres of moderate, 11,340 acres of low, and 13,092 of unburned. Over 53 miles of dozer line were constructed, with 4.9 miles on private land.

Physical characteristics of the burned landscape

Geology: There are two major geologic types in the fire perimeter. The tonalitic plutons (T) consists mostly of tonalite, gneissic tonalite, and tonalite to granodioritic gneiss, with both hornblende and biotite. The Neoproterozoic Schist (Ks) is predominantly fine-grained hornblende mica schist, fine-grained hornblende-rich schist, and amphibolite and quartz-rich schist, as well as minor gneiss, marble, and ultramafic rock.

Dominant Soils: Soils within the burn perimeter are diverse, but nearly all soils within the burned area contain volcanic ash. The most common soil groups within the burn are Xeric Vitricrysollics comprising 46% of the burn area, and Andic Haplocreps which comprise 20%. Soils are primarily coarse and fine sandy loams.

Water-Repellent Soils (acres): Natural hydrophobicity present on approximately 60% of soils, or around 24,600 acres. Fire-induced or altered hydrophobicity occurred on approximately 18% of soils (100% of severely burned soil and 50% of moderately burned soil).

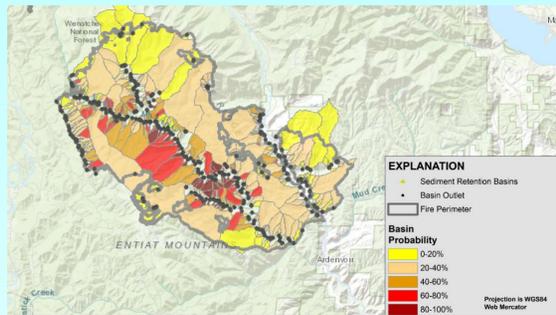
CENTRAL WASHINGTON FIRE RECO 2019

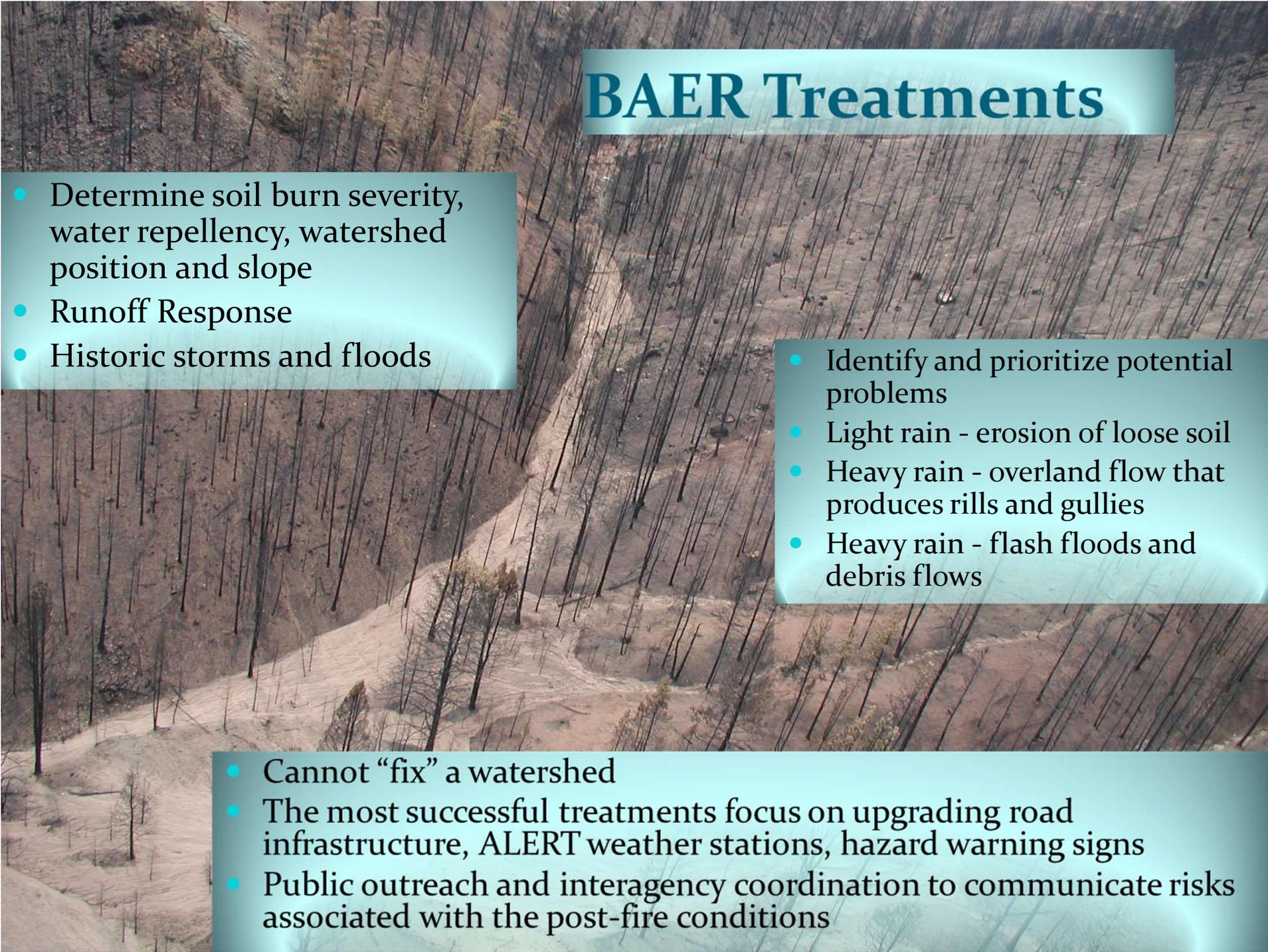
Home About Wildfire Reports News Floodwatch Photos Resources

HOME

September 2019 - The Okanogan-Wenatchee National Forest assembled a Burned Area Emergency Response team to analyze post-fire condition of burned watersheds and develop burn area assessments.

Reports and maps of the burned area assessment





BAER Treatments

- Determine soil burn severity, water repellency, watershed position and slope
- Runoff Response
- Historic storms and floods

- Identify and prioritize potential problems
- Light rain - erosion of loose soil
- Heavy rain - overland flow that produces rills and gullies
- Heavy rain - flash floods and debris flows

- Cannot “fix” a watershed
- The most successful treatments focus on upgrading road infrastructure, ALERT weather stations, hazard warning signs
- Public outreach and interagency coordination to communicate risks associated with the post-fire conditions

- Storm Damage Risk Reduction
- Clean culvert inlets, establish sediment traps, rock outlets
- Ditch cleaning/reconstruction
- Rolling dips and water bars



Okanogan-Wenatche...  
 2018 Annual Report



Repair work on Forest Road 1000, Naches Ranger District



Forest by the numbers



Emergency Relief for
 Federally Owned
 Roads (ERFO)

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Examples of Shared Stewardship on the Okanogan Wenatchee NF

More than ½ Million Seedlings Replanted in Finley Canyon (Carlton Complex 2014)



2,658
ACRES OF SEEDLINGS
PLANTED TO REFOREST
BURNED AREAS

67,299
PLANTS PROPAGATED AND
90 POUNDS OF NATIVE
SEEDS COLLECTED

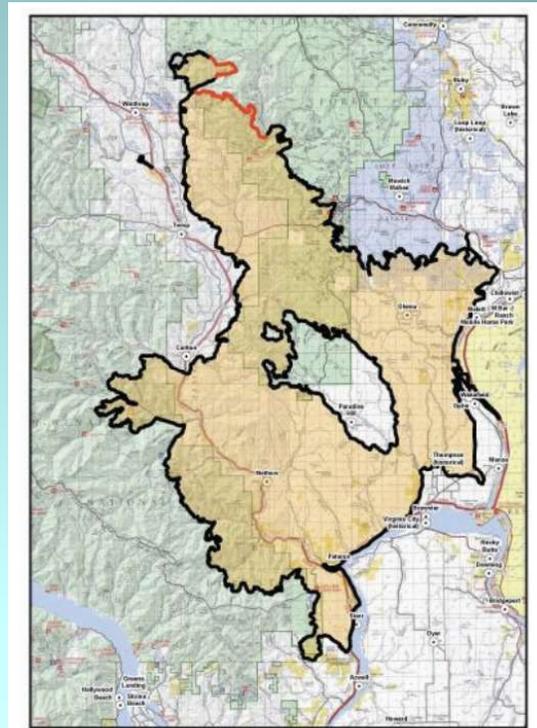
DEPARTMENT OF
ECOLOGY
State of Washington

Dam Safety Incident Report

Benson Creek Flood, August 2014
Okanogan County near Twisp, WA

DSO Files OK 48-0320, -0308, -0328

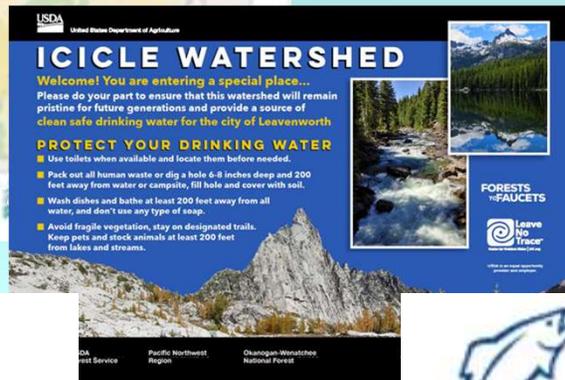
by
Marilyn Wilkerson, DSE



Carlton Complex perimeter 08/20/2014

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DWPP -- 12 projects 2017-2020

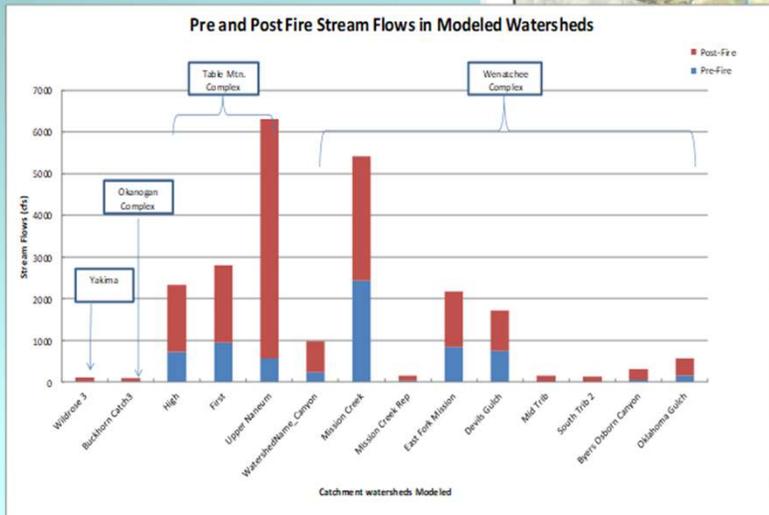
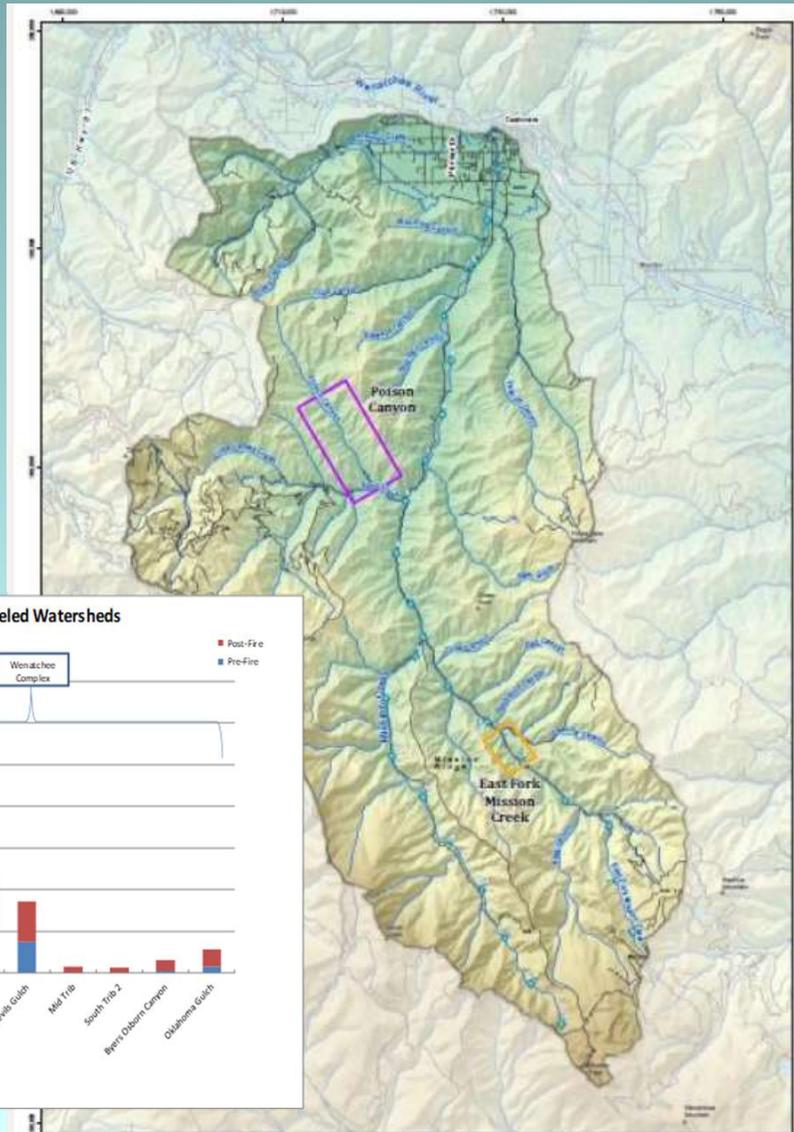
USFS, EPA, WA Dept. of Health

- Restore and protect the health of watersheds which communities depend upon for drinking water while also benefiting aquatic and riparian ecosystems, including the native fish that inhabit them.

- Support local partnerships between drinking water providers, landowners, and restoration practitioners.

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Examples of Shared Stewardship on the Okanogan Wenatchee NF



Map 1. Overview of watershed and study reach locations: Mission Creek, Chelan County, Washington

Date: Sources: USGS 10-m Digital Elevation Model, stream network and fish reach boundaries from National Hydrography Dataset, watershed boundaries from National Hydrography Dataset, watershed boundaries from National Hydrography Dataset, State Plane Coordinate System

Scale: 0 1 2 3 Miles
 Mountain Summit
 Road
 Stream
 Silver Mile Marker
 Poison Canyon Study Reach
 EF Mission Creek Study Reach

Restoration in Mission Creek, trib. to Wenatchee River abv Cashmere, WA

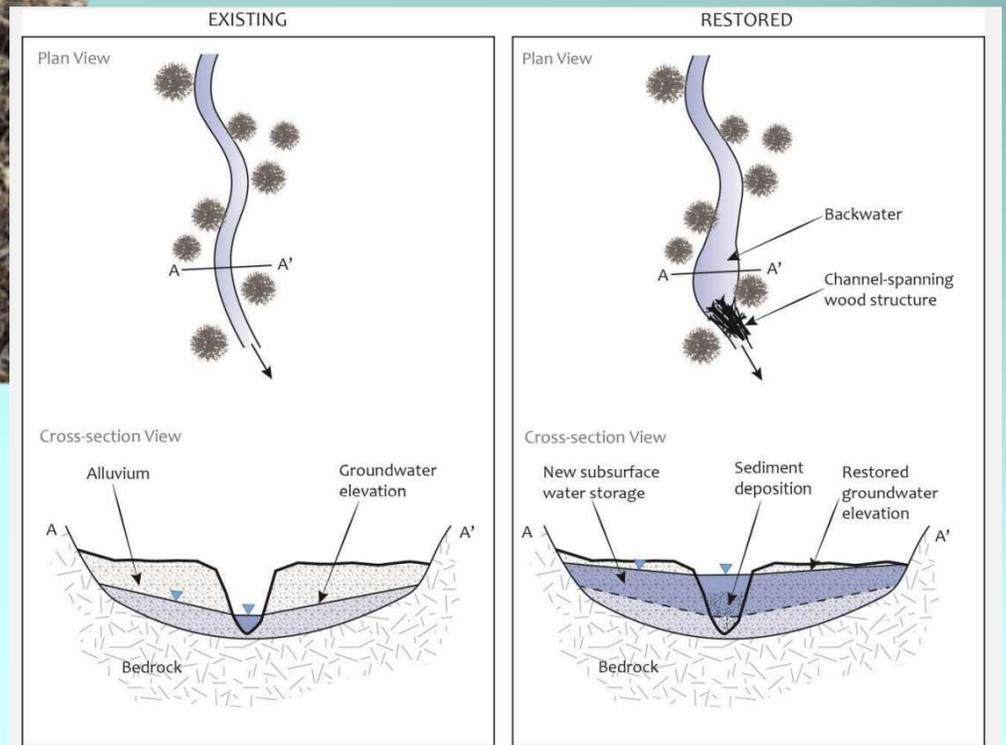
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Floodplain reconnection

Alluvial Water Storage structures in Mission Creek



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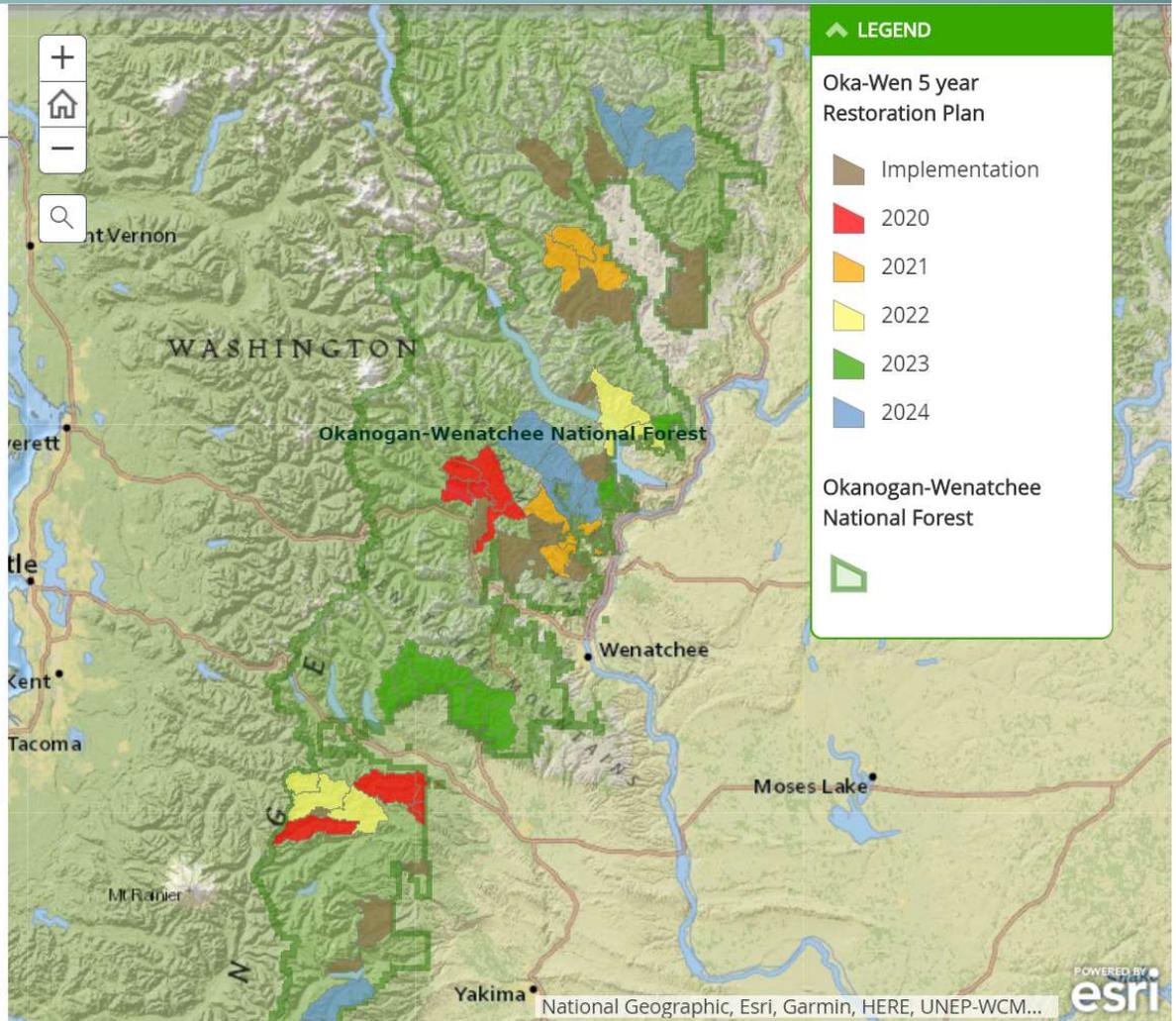
Okanogan-Wenatchee National For... [↗](#)



5-Year Restoration Plan

Our 5-Year Plan

The Forest's 2012 Restoration Strategy (Strategy) provides the base for our approach to landscape-scale restoration and is intended to drive project design with defined ecological outcomes. The overarching goals of the Strategy are to make these watersheds resilient to disturbances (like fire), adaptive to climate change and to collaborate with a variety of partners as we work to adapt our strategy to new information and changing conditions.



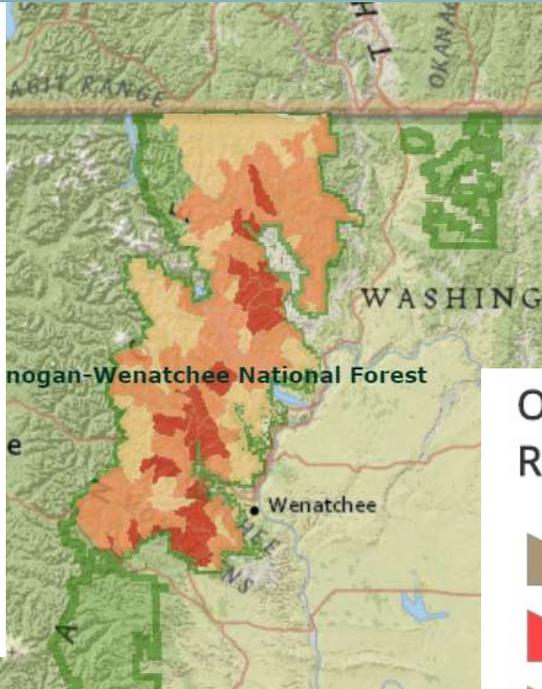
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WA DNR 20yr
Priority Watersheds
in NCW

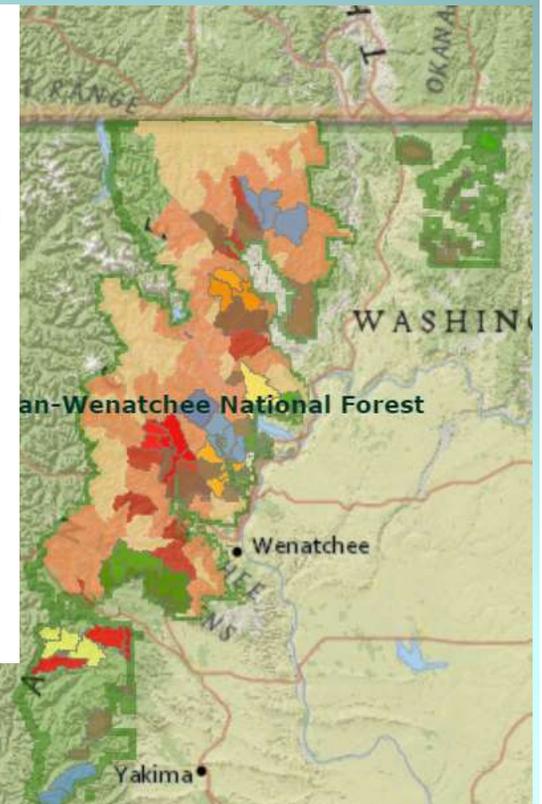
Priority Rating (0 - 1.8)

- High (1.25 - 1.8)
- Moderate (0.88 - 1.25)
- Low (0.35 - 0.88)
- Very Low (unforested, Wilderness: 0 - 0.35)



Oka-Wen 5 year Restoration Plan

- Implementation
- 2020
- 2021
- 2022
- 2023
- 2024



"Shared Stewardship is about working together in an integrated way to make decisions and take actions on the land."

- USDA Forest Service Chief Vicki Christiansen

Managing for Watershed Resilience

Examples of Shared Stewardship on the Okanogan Wenatchee NF

News & Events

Contact Information

Okanogan-Wenatchee National Forest Headquarters
215 Melody Lane
Wenatchee, WA 98801
(509) 664-9200

Chelan Ranger District
428 W. Woodin Avenue
Chelan, WA 98816
(509) 682-4900

Cle Elum Ranger District
803 W. 2nd Street
Cle Elum, WA 98922
(509) 852-1100

Entiat Ranger District
2108 Entiat Way
Entiat, WA 98822
(509) 784-4700

Methow Valley Ranger District
24 West Chewuch Road
Winthrop, WA 98862
(509) 996-4000

Naches Ranger District
10237 Highway 12
Naches, WA 98937
(509) 653-1401

Tonasket Ranger District
1 West Winesap
Tonasket, WA 98855
(509) 486-2186

The Tonasket Ranger District is now being administered by the Colville National Forest.
Information about recreation sites -- campgrounds, trails, etc -- is being copied over

Forest Projects

If list of projects does not display below, go to: **Current and Recent Projects**

Okanogan-Wenatchee National Forest Project Spotlights

Twisp Restoration

Landscape-scale aquatic and terrestrial restoration project including the Twisp River, Alder Creek, Rader Creek, and Wolf Creek drainages, excluding the Lake Chelan-Sawtooth Wilderness.

Swauk Mining Plans of Operation Analysis

This project will analyze ten mining Plans of Operations submitted to the Cle Elum Ranger District of the OWNF to fulfill responsibilities established by the 1872 Mining Law as amended and the Forest Land Policy and Management Act of 1976.

All Current and Recent Projects

Subscribe to this feed

Sort By: Na

Under Analysis

Administrative a

Removal of hazard
Wenatchee Nationa
day use areas, gua

Box Canyon Trail

Construct approx
Canyon on the sou

Chelan County D

Replacement of 4

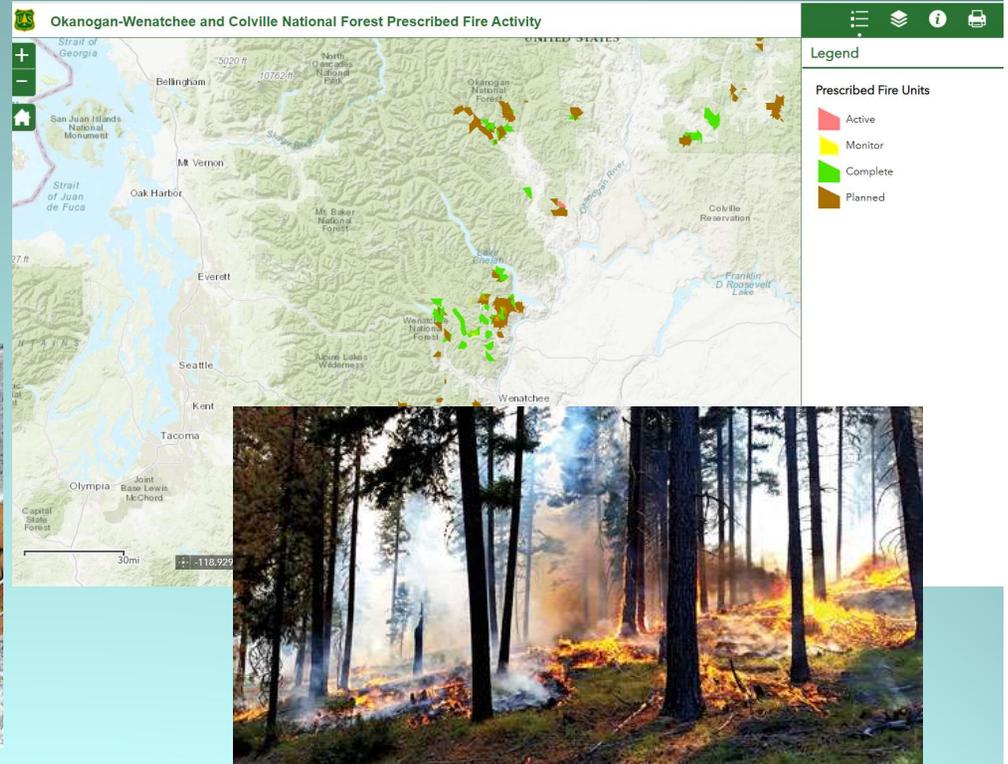
Chelan County Pt

Renew special use
including power po
facilities located on

Club Site Permit



- Holden Mine Site Cleanup
- Road Analysis Reports
- Dry Forest II Workshop Presentations



Current Projects –Contact local District Offices
<https://www.fs.usda.gov/projects/okawen/landmanagement/projects>

Prescribed Fire <https://www.fs.usda.gov/main/okawen/fire>

Okanogan-Wenatchee National Forest

Headquarters

215 Melody Lane

Wenatchee, WA 98801

(509) 664-9200

<https://www.fs.usda.gov/main/okawen/home>



Methow Valley Ranger District

Chris Furr, District Ranger
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Chelan Ranger District

Kari Grover-Wier, District Ranger
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Chelan, WA 98816-9724
(509) 682-4900

Entiat Ranger District

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Entiat, WA 98822
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Cle Elum Ranger District

Michelle Capp, District Ranger
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Cle Elum, WA 98922
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Naches Ranger District

Aaron Stockton, District Ranger
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Naches, WA 98937
(509) 653-1401

Wenatchee River Ranger District

Jeff Rivera, District Ranger
600 Sherbourne
Leavenworth, WA 98826
(509) 548-2550 or 548-2551

Molly Hanson, Watershed Program Manager
Okanogan-Wenatchee National Forest
215 Melody Lane
Wenatchee, WA 98801
(509) 664-9330
molly.hanson@usda.gov



USFS Watershed Management
Best Management Practices

<https://www.fs.fed.us/naturalresources/watershed/bmp.shtml>

Watershed Condition
Framework (web map)

<https://usfs.maps.arcgis.com/apps/MapSeries/index.html?appid=f4332e5b80c44874952b57e1dbob4407>

BAER

<https://www.fs.fed.us/naturalresources/watershed/burnedareas.shtml>,
<https://forest.moscowfsl.wsu.edu/BAERTOOLS/>

Inciweb

<https://inciweb.nwcg.gov/incident/7222/>

Central Washington Fire
Recovery

<http://www.centralwashingtonfirerecovery.info/>

After the Fire WA

<https://afterthefirewa.org/>

DWPP

<https://www.workingwatersgeos.org/drinking-water-providers-partnership>

Okanogan Wenatchee Project
planning

<https://www.fs.usda.gov/projects/okawen/landmanagement/projects>

Forest Restoration Strategy

<https://www.fs.usda.gov/detail/okawen/landmanagement/planning/?cid=stelprd>

