Wildland Fire Urban Interface

Skagit County, 2022

Webinar

Webinar Agenda

1. Opening
2. National Weather Service
3. Skagit Conservation District
4. Dept of Natural Resources
5. NW Clean Air Agency
6. Skagit Planning Department
7. Skagit Public Health
8. Puget Sound Energy
9. Skagit Dept of Emergency Management
10. Closing

DEM

Fire Marshal

WELCOME

When assessing a community's assets at risk, we should include public buildings, multiple dwelling units like apartment buildings, and businesses and their owners and managers in the creation of the community's risk assessment and Community Wildfire Protection Plan.

This webinar is designed to continue the conversation on the impacts of wildland fire and its effect on Skagit County.

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National Weather Service Pre-Summer Briefing

Spring 2022

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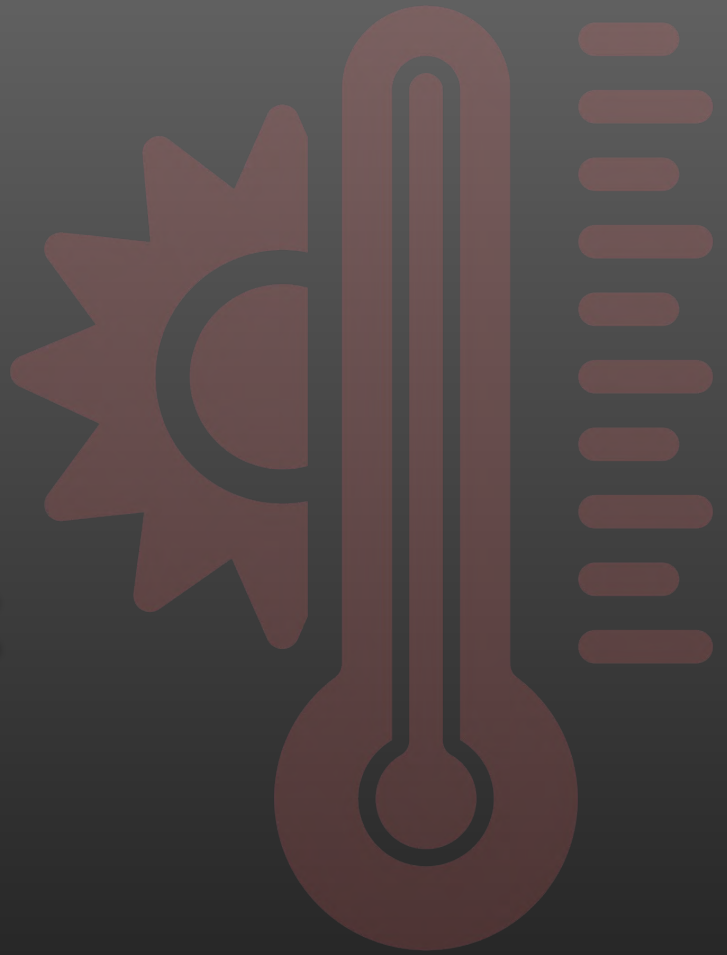
Extreme Heat



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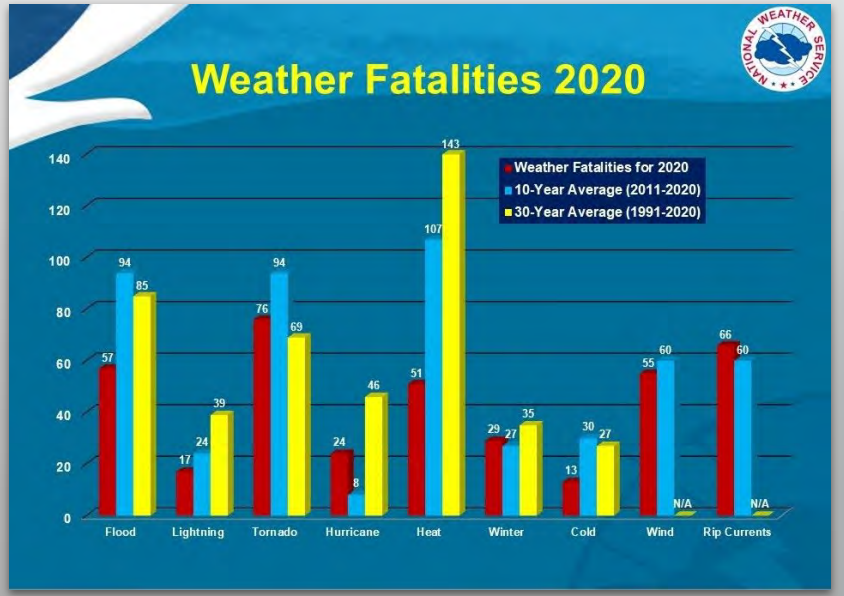
Hazard Description

EXTREME HEAT

Heat is the leading weather-related cause of fatalities in the United States.

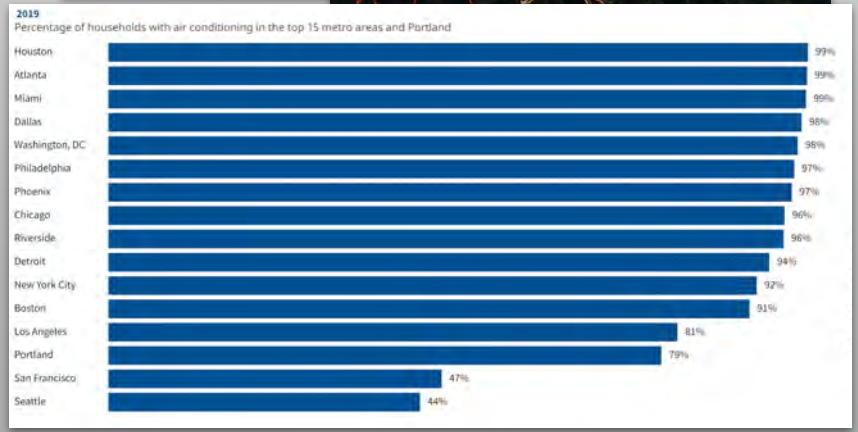
- This is especially true in the urban centers, where population density, the urban heat island, and building construction exacerbate the effects of excessive heat.
- Poor air quality can occur during periods of extreme heat (ozone and particulates). Poor AQ amplifies the health impacts during heat events
- Heat can lead to heat-related illness, including heat cramps, heat exhaustion, and heat stroke.
- Heat can also result in significant impacts to infrastructure, including roadways, railways, power/telecommunications lines, and cause increased strain on power systems.
- Heat can also increase the rate at which fire danger increases (through fuel drying)



Hazard Description

Indoor Temperatures & Low Temperatures

- PNW homes are designed to let in and retain heat (south facing windows, insulation, etc.)
- For locations without A/C (the majority of Western WA homes), indoor temperatures don't typically peak until the outdoor temperature is cooler than the indoor temperature
- **The hotter the event, the later this crossover occurs**
- June 2021 heat wave example: indoor temperatures didn't peak until between 10pm - 11pm
- Once windows are opened, the indoor temperature will only cool as fast as the outdoor temperature, and only as low as the morning low - making **overnight low temperatures critically important.**
- These factors should be taken into account when considering cooling center hours



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Climate Change - Washington State

[See NOAA NCEI State Climate Summary 2022 for more information]

1. Temperatures in Washington have **risen almost 2°F** since the beginning of the 20th century. Winter warming has been evident in the below average number of freezing days and very cold nights since 1990. Under a higher emissions pathway, historically **unprecedented warming is projected to continue** through this century.

2. Rising temperatures will lead to **earlier melting of the snowpack**, which plays a critical role in spring and summer water supplies. The combination of this earlier melting and more precipitation falling as rain instead of snow may lead to an increase in springtime flooding.

3. Wildfires during the dry summer months are a particular concern for Washington, and the **frequency and severity of wildfires are projected to increase**.

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NWS HeatRisk

Purpose

To put heat into an actionable, impacts-based context and to provide support in decision-making at a local level.

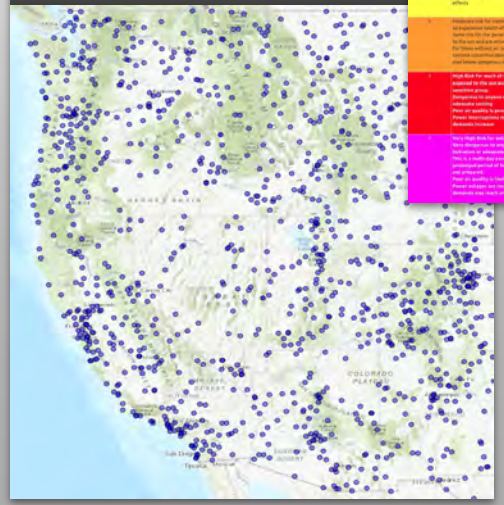
HeatRisk takes into account:

- **Local climatology** - including the time of year, and temperature climatology.
- **Forecast** - Including the daily max & min temperatures as well as the event duration.
- **Impacts** - including identifying groups potentially most at risk for the given level of heat. CDC heat health data is used in this calculation.
  Note: infrastructure impacts are not connected to HeatRisk

HeatRisk is used to influence the issuance of and add value to NWS watches, warnings, and advisories.

Category	Level	Meaning
Green	0	No Elevated Risk
Yellow	1	Low Risk for those extremely sensitive to heat, especially those without effective cooling and/or adequate hydration
Orange	2	Moderate Risk for those who are sensitive to heat, especially those without effective cooling and/or adequate hydration
Red	3	High Risk for much of the population, especially those who are heat sensitive and those without effective cooling and/or adequate hydration
Magenta	4	Very High Risk for entire population due to long duration heat, with little to no relief overnight

Stations used in local HeatRisk calculations



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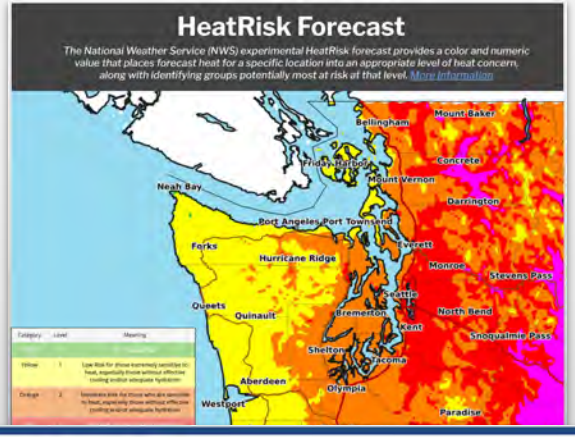
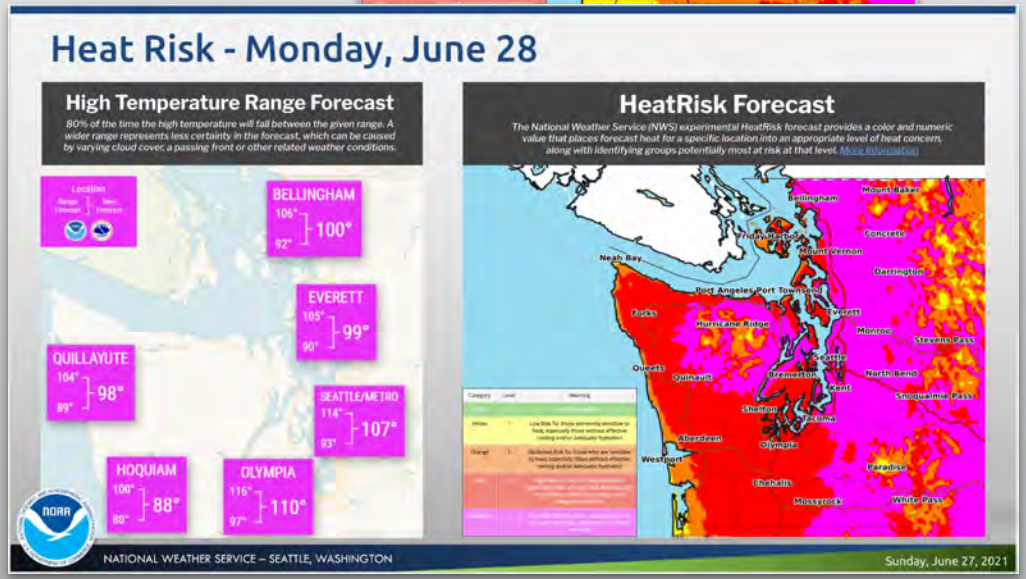
NWS HeatRisk

HeatRisk is used extensively in both public and partner messaging.

Often paired with high or low temperature forecast information.





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HeatRisk Updates

By Summer 2022 we expect HeatRisk version 2 to be implemented. Expected changes:

- CDC heat health thresholds are now more strongly weighted
- Updated thresholds with new 1991-2020 climate data
- Better logic for near-record and/or long-duration events

Overall effect is a lowering of the HeatRisk thresholds, especially early/late in the summer.

This will result in more conservative messaging.

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NWS HeatRisk Resources

- Current HeatRisk Forecasts
- Statewide HeatRisk Maps
- Historical HeatRisk Data
- About HeatRisk

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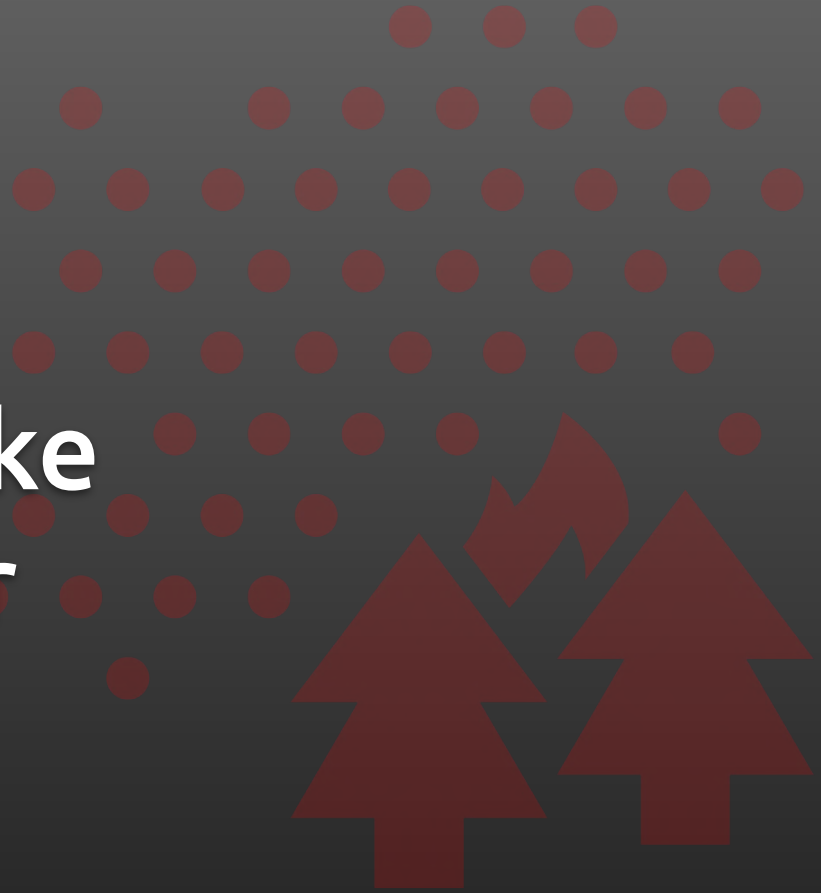
Wildfire Smoke & Summer Air Quality



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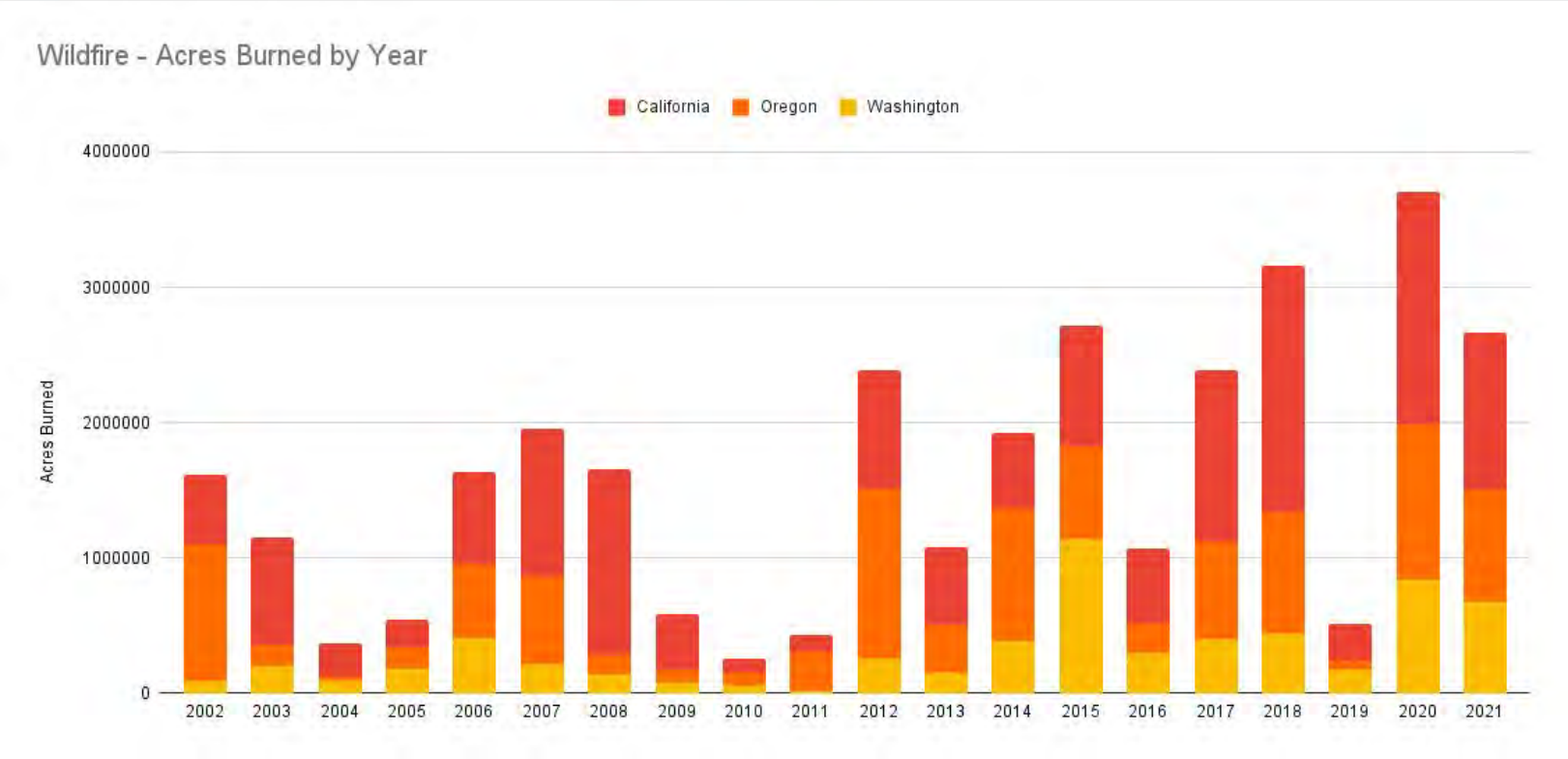
Wildfire Trends - West Coast



Data Courtesy NIFC

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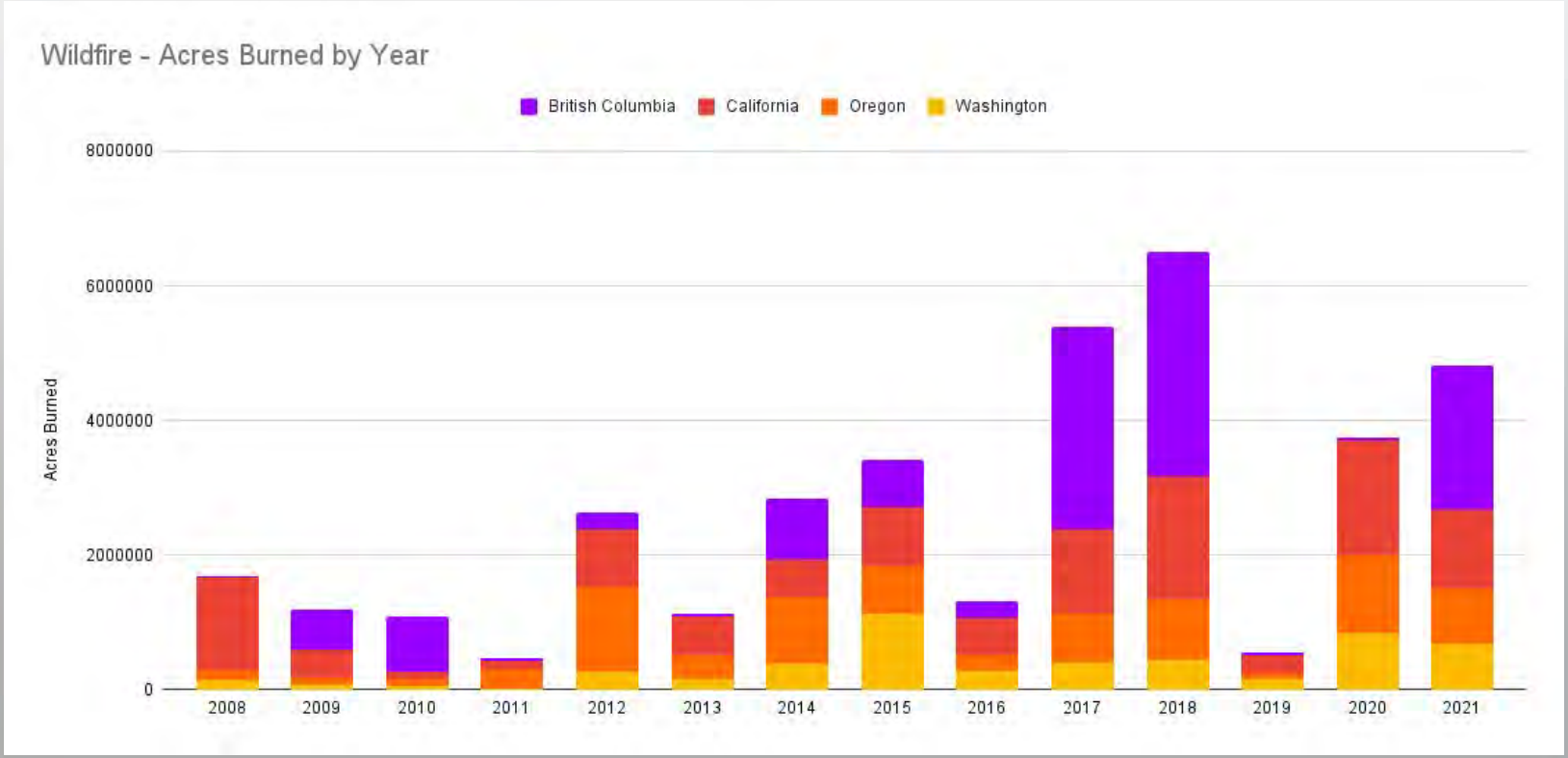
Wildfire Trends - West Coast & B.C.



Data Courtesy NIFC & Govt of British Columbia

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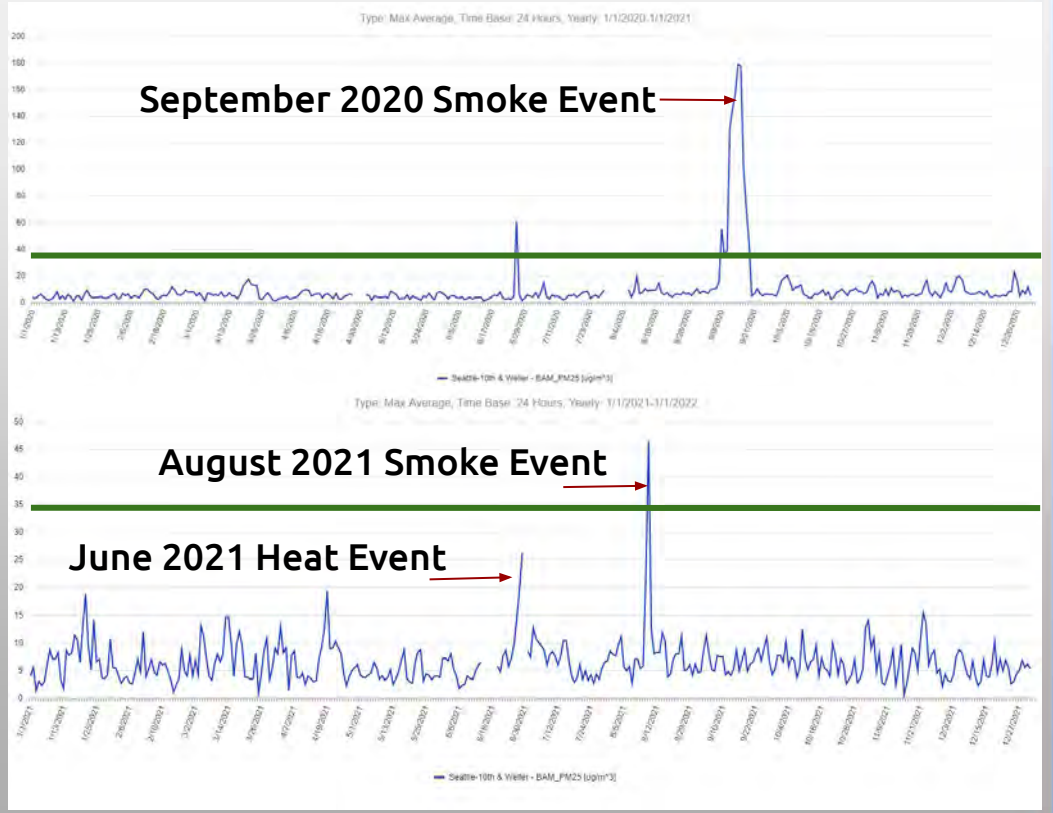
Yearly Particulate Matter Trends

- Wildfire smoke is the typical reason for poor AQ during the summer months in Western Washington.
- While AQ can decrease during extreme heat it is often more localized and is typically due to increased concentrations of both PM and ozone.



AQ Data Courtesy WA Ecology

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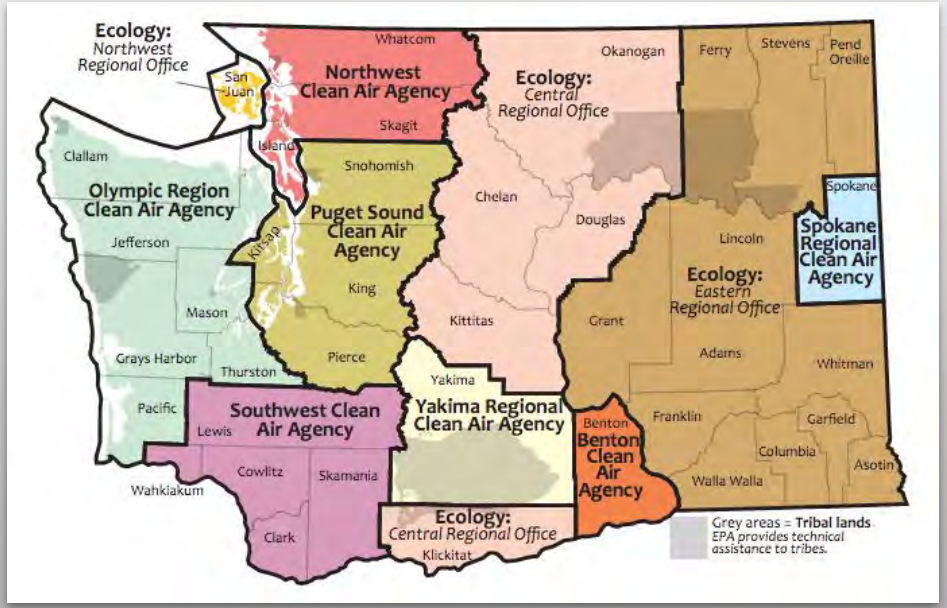
Smoke & Air Quality Responsibilities

Lead Agencies

- Local Clean Air Agencies
- WA State Department of Ecology
- Tribal Nations (EPA provides technical assistance)

NWS Responsibility

- NWS is NOT the lead agency for alerts/messaging for air quality or smoke events.
- Air Quality Alerts may be disseminated through NWS pathways in coordination with lead agencies.
- NWS provides wildfire smoke modeling and may send messaging regarding potential smoke events and amplify information from partner agencies.
- NWS can trigger collaboration calls with lead agencies.



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Fire Weather

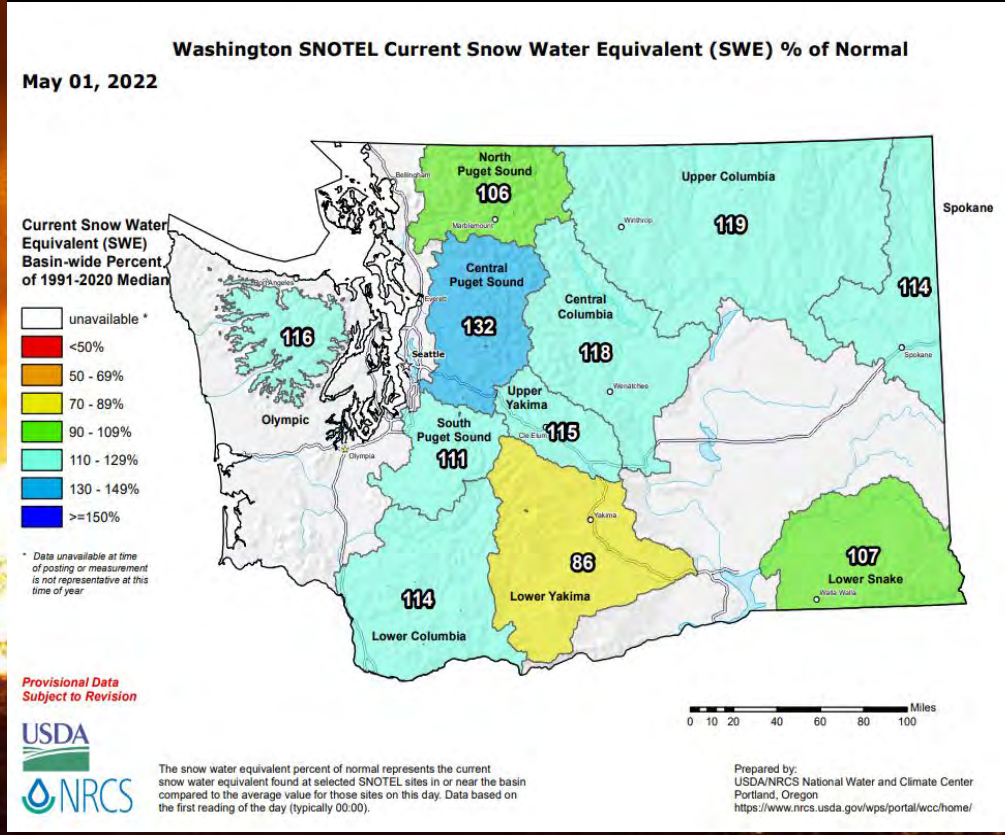
What do we look at?

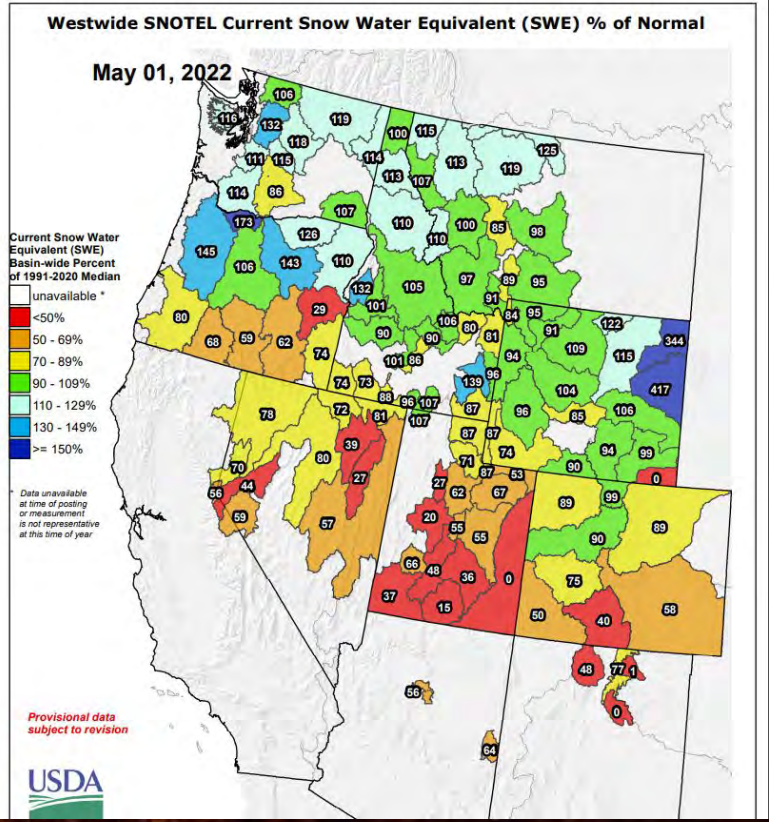
- **Pre-season**
  - Mountain snowpack (low correlation)
  - Long-term drought? (higher correlation)
- **June:** Important in gaging how soon fire season will begin
- **Most Important?** What happens *during* fire season (Jul-Sep)
  - Long-range Climate Outlooks

Winter 2021-2022 Review (Pacific Northwest)

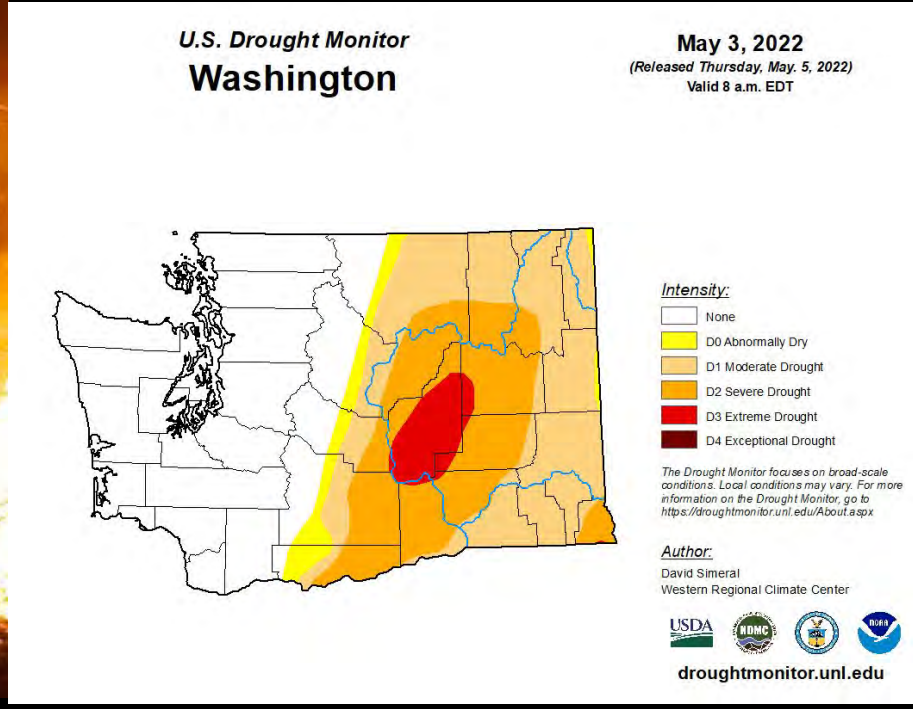
- Coming out of winter
  - Washington: Widespread heavy rains & mountain snow in the first half of winter gave way to generally dry conditions by the second half. While W WA has avoided drought so far thanks to a wet start to spring, E WA has not been so lucky.
  - Oregon: Persistent dry conditions have allowed for drought over much of the state, especially E OR. The far NW corner, however, is seeing conditions similar to W WA.

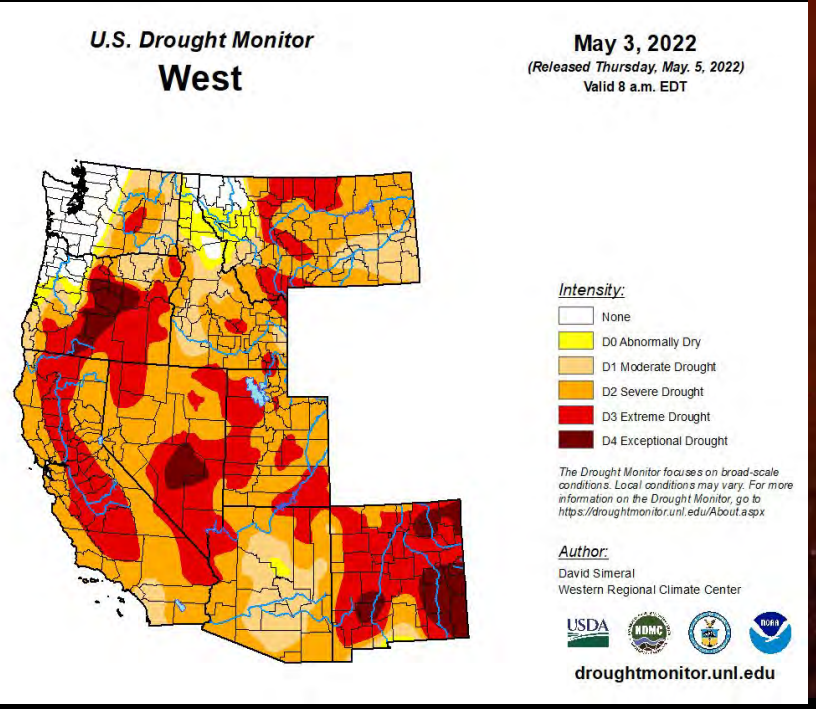
WA: Near normal. Rest of the west: Below normal



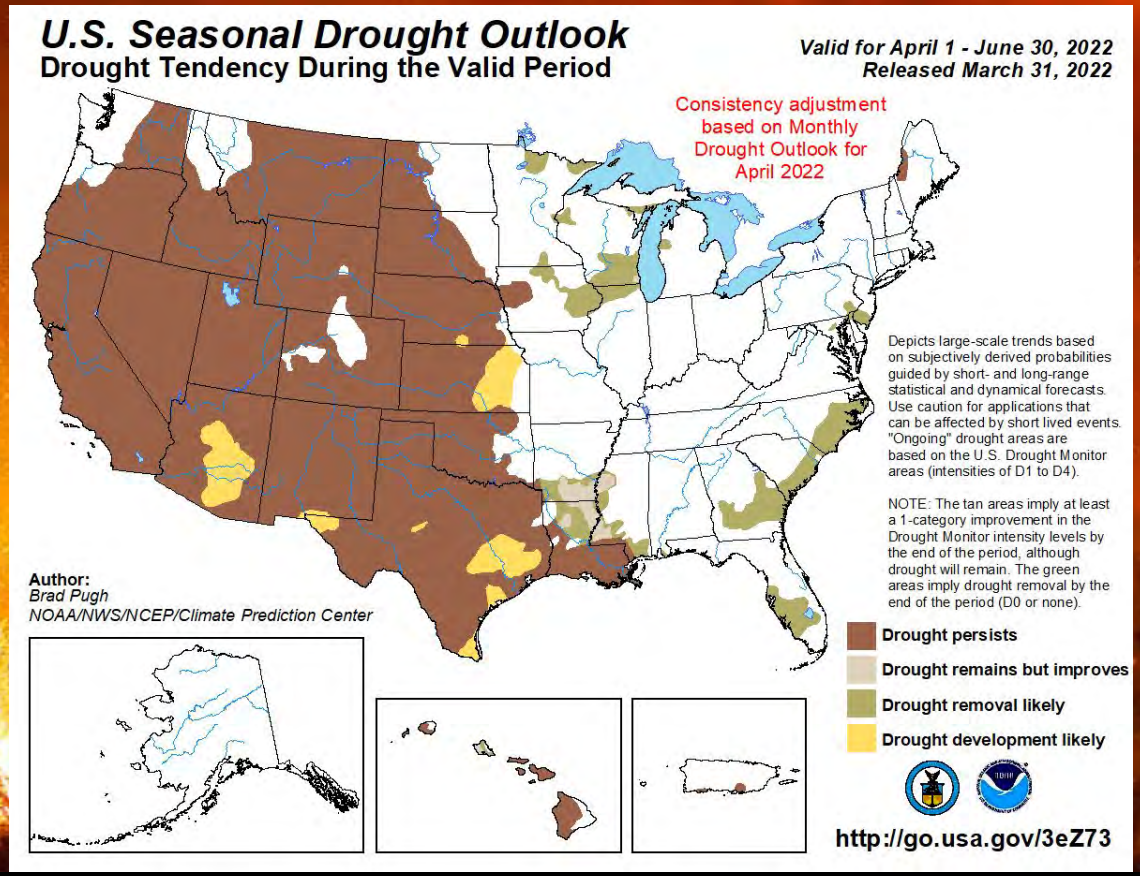


Drought Conditions





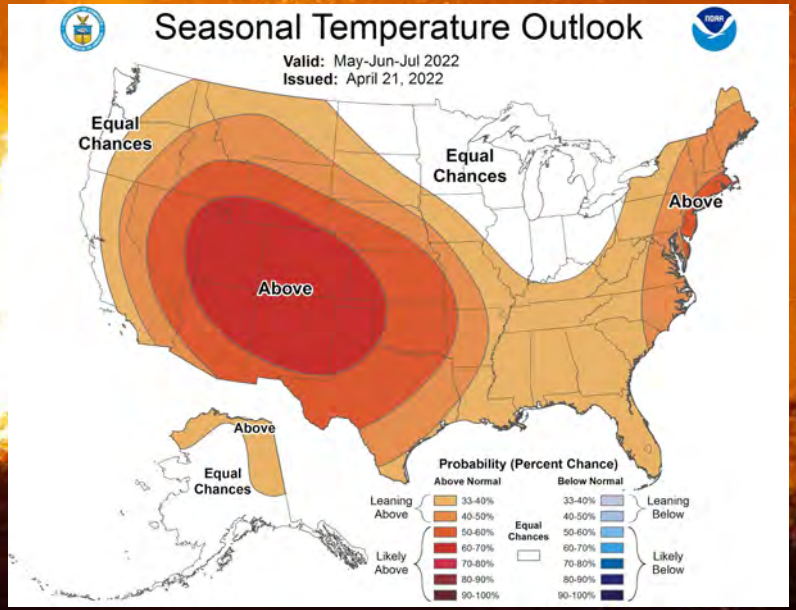
- Stark contrast between W WA & E WA.
- Rest of the west in Moderate to Exceptional Drought



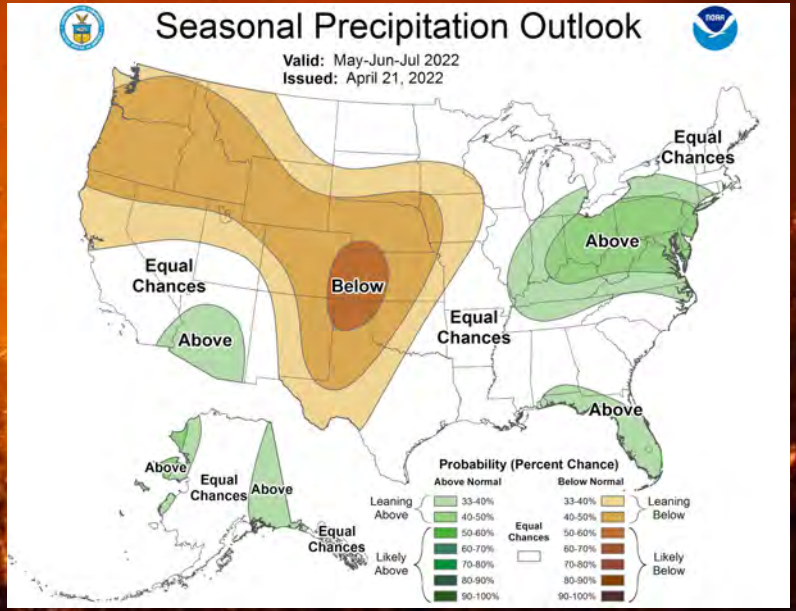
- Washington: East side persistence
- Rest of the West: Drought is likely to persist or develop

Temperature and Precipitation Outlook
May-June-July 2022

Temperature



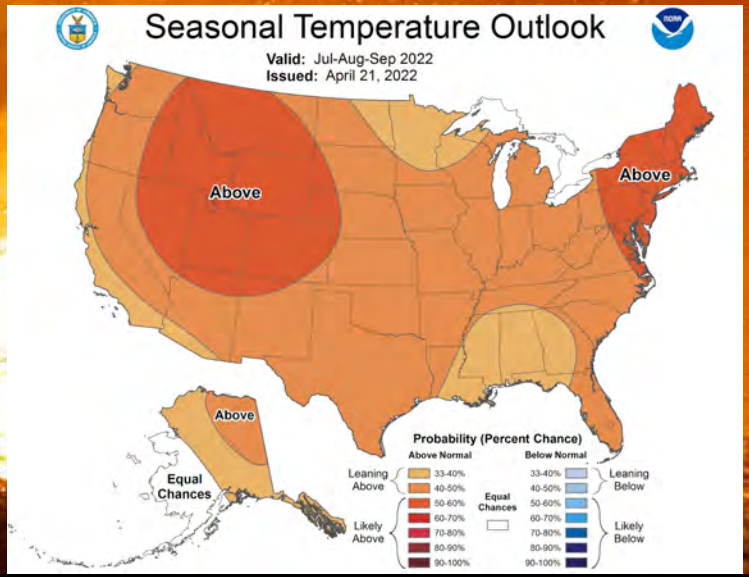
Precipitation



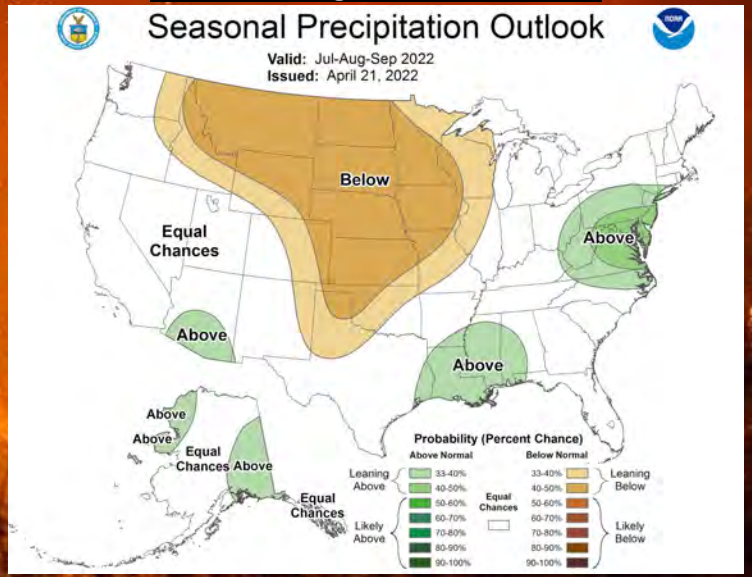
Normal but dry Spring. Some fuels may cure early. Slightly early or on-time start.

Temperature and Precipitation Outlook
July-Aug-Sep 2022

Temperature



Precipitation



For <u>Washington</u>, pattern suggests:

- ***Warm conditions with generally normal precip (which is low anyway)***
- ***Some potential for lightning given normal chances for precip***

Bottom Line for 2022 PNW Fire Season

- **Season Starting Time** –
  - Potential slightly early start (WA)/early start for OR
    - Slight indications of below normal precipitation for season run-up on the back of what was a dry 2nd half to the winter may allow for early drying of fuels, especially in E WA, where drought conditions persist.
- **Overall Fire Activity** –
  - Near normal to slightly above normal given that temperatures are expected to hew mostly around normal, but lacking moisture may cause fuels to potentially support above normal activity.
  - Near normal precipitation may allow for an increase in potential lightning strikes when compared to the past couple of years.
- **Season Ending Time** –
  - ENSO status and current Climate Outlooks suggest either a slightly early to on-time end to the season.

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Public Information Resources

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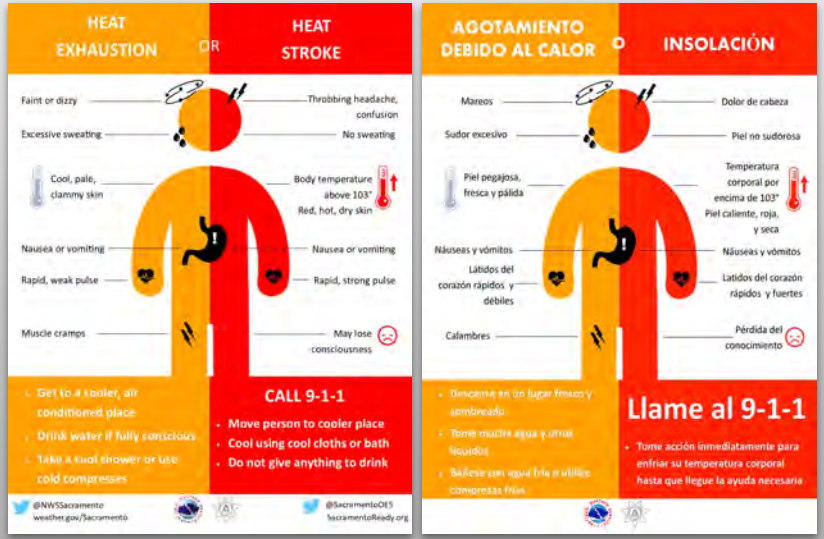
Safety & Calls to Action Resources

Summer Safety Resources

- Social Media Plans - **canned graphics as well as Twitter/Facebook captions**
- Infographics
- Videos
- Presentations
- Spanish Content
- Deaf & Hard of Hearing Content



weather.gov/safety

- Hazard-based safety resources

Washington 2-1-1

- NWS Seattle has developed an initiative to promote WA 2-1-1 in public products & services.
  "For sheltering information and other human services in your area, dial 2-1-1 during business hours or visit wa211.org anytime."

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Vulnerable Populations

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NWS Actions

1. Developing New & Enhanced Partnerships
2. Providing Targeted Messaging & Resources
3. Integrating Into Core Partner Planning & Response
4. Supporting Long-Term Climate Justice Efforts

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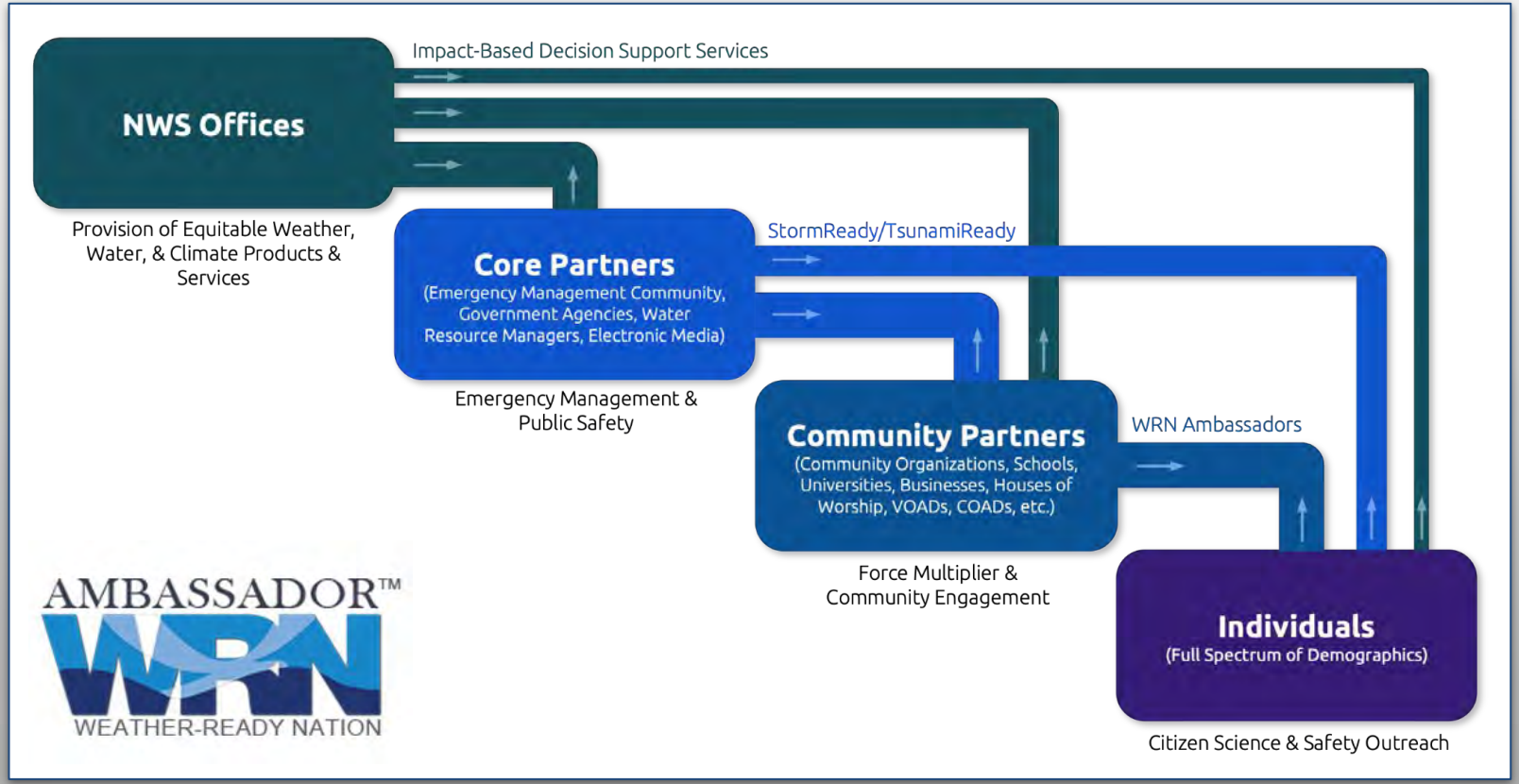
Whole Community Engagement Model



Thank You

Operational Support

- nws.seattle@noaa.gov

Non-Emergency Coordination

- Reid Wolcott
- 206-526-6095 x223
- reid.wolcott@noaa.gov

Wildfire Safety in the Wildland-Urban Interface

Skagit WUI Webinar
May 17, 2022

SKAGIT
CONSERVATION DISTRICT
SOIL • WATER • WOODLAND

Wildfire risk is INCREASING in Western Washington

CHANGING CONDITIONS

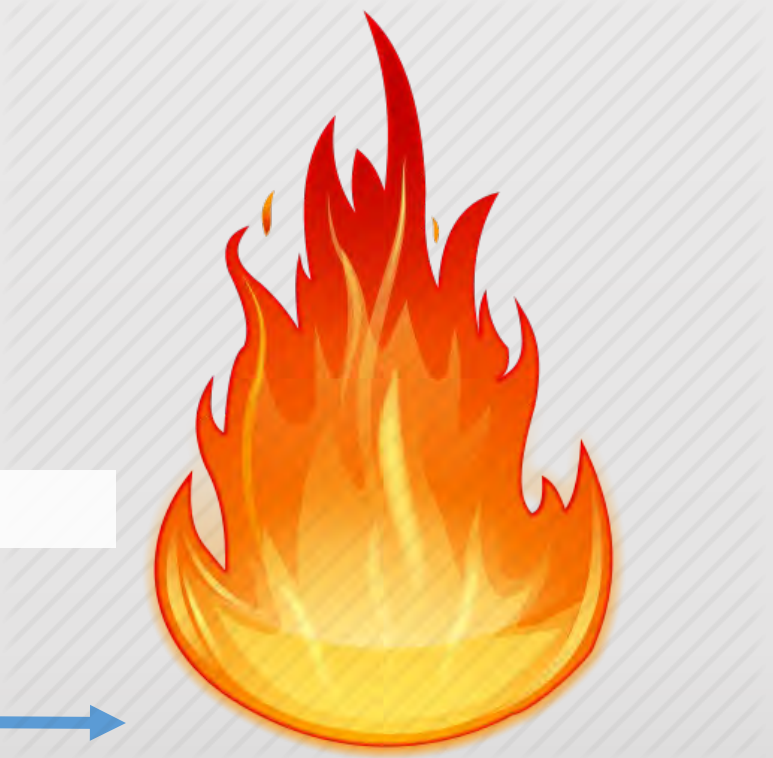
Recent increases in fuel aridity are related to multiple climate factors.

Adapted by Whatcom Conservation District from Westerling et.al. 2006

Potential Ignition Sources

Home Ignition Zone

100 Feet



RESEARCH SHOWS THAT HOMES IGNITE DUE TO THE CONDITION OF THE HOME AND EVERYTHING AROUND IT, UP TO 100’ FROM THE FOUNDATION. THIS IS CALLED THE HOME IGNITION ZONE

It's the little things…

Small modifications to construction & vegetation can make a big difference in whether your home survives a wildfire

THE ROOF

Class A fire-rated roofing materials provide best protection

Maintenance is key!

Clear flammable debris from roof & gutters

Untreated wood shake roofs are extremely flammable.

SIDING & WINDOWS

Fiber-cement, brick, stucco siding are more ignition-resistant than wood or vinyl

Dual-pane, tempered glass windows withstand more heat and won't crack like single pane

VENTS

Install 1/8” metal screening on all vents and clear back flammable materials

DECKS/PORCHES

Never store flammable material underneath decks or porches

Debris accumulation where deck meets siding. Install metal flashing

Area below deck should be non-flammable zone

Adjacent to the Home

MULCH…

Great for so many things, but also combustible.

MULCH TIPS

- Use mulch outside of the 5-foot non-flammable zone
- Avoid shredded western red cedar
- Use rock mulch in the first 5 feet and organic mulch outside of that

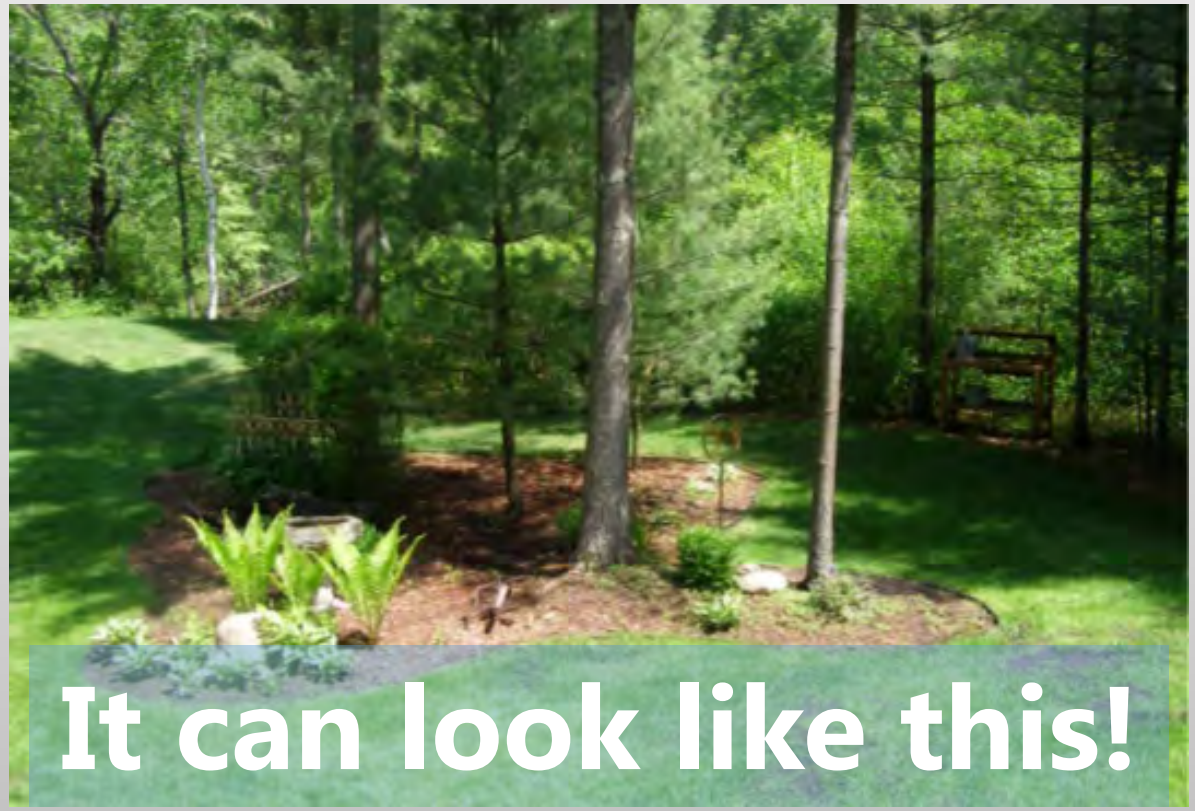
Propane Tanks

Remove vegetation from underneath and around propane tanks

Ensure that they are maintained properly so the venting feature works

Fire-Resistant Landscaping

VS



USE FUEL BREAKS IN YOUR LANDSCAPE

This helps keep surface fire from spreading to your structures through continuous paths of landscaping.

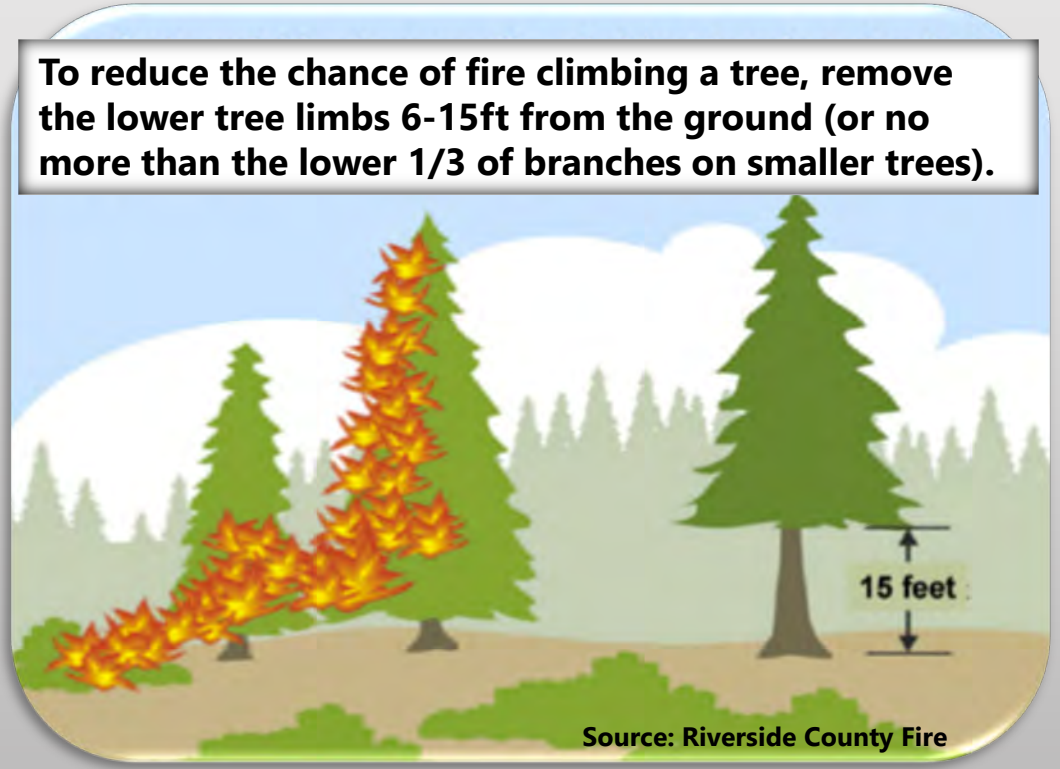
Plant in clusters

Incorporate rock features

Keep small patches of lawn to 4”

CREATE VERTICAL SPACE BETWEEN PLANTS (Remove “ladder fuels”)

Continuous vegetation from the ground up to large trees creates a path for fire to burn from the ground up into the tops of trees where it becomes much more dangerous and difficult to put out.

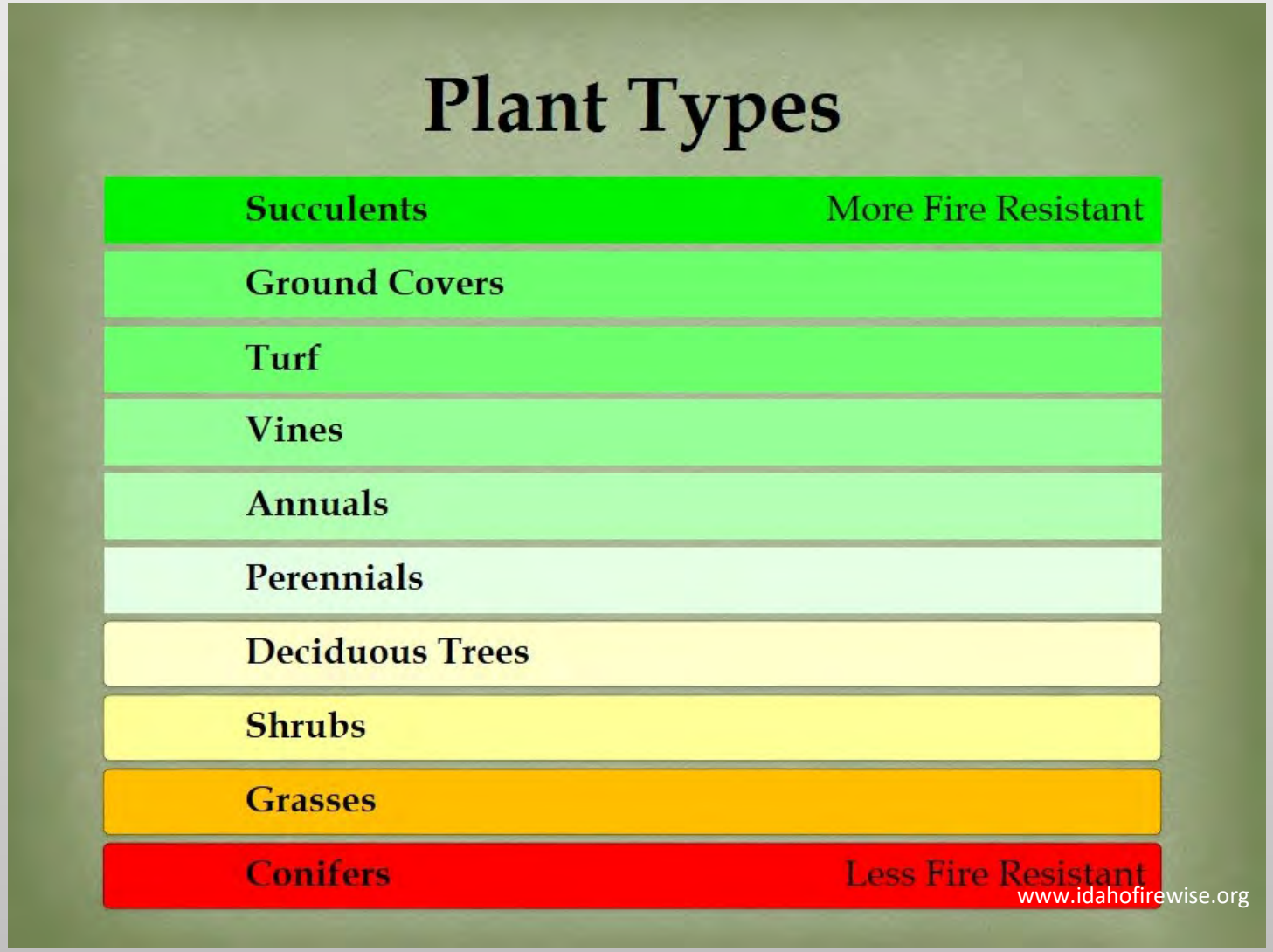


USE NATIVE FIRE-RESISTANT PLANTS IN YOUR LANDSCAPE

Native plants thrive in our conditions. A plant that is thriving also tends to be less flammable.

PLANTS: Fire –resistant and native

- have higher moisture content in their leaves
- have little build-up of dead vegetation
- are more resistant to drought
- low-compact growth form



Plants: Flammable plants

- are water-stressed
- accumulate dry, dead material
- high oil or resin content

Beyond the landscaped area

Dispose of heavy accumulation of dead plant material – slash or blowdown

Managing/reducing invasive species

Thinning unhealthy understory trees, removing dead trees if near homes, recreation areas, roads

Other Considerations

Keep canopy cover to provide shade, reduced soil temperatures and retain soil moisture

Incorporate paths that can be used by firefighters for access and to lay hose

FIREWISE USA®
RESIDENTS REDUCING WILDFIRE RISKS

A national recognition program for communities that provides a framework for residents to work together to reduce wildfire risks

- Chuckanut Ridge
- Shelter Bay
- Diobsud Creek Area
- Jenkins Lane
- Colony Mountain
- Coming soon… Holiday Hideaway-Guemes Island

Skagit Conservation District Wildfire Resources

- FREE wildfire risk assessments
- Firewise USA® guidance for communities
- Presentations & outreach events
- Forest health assessments

www.skagitcd.org/wild-fire

Thank you!

Jenny Coe
Community Wildfire Resilience Coordinator
Skagit & Whatcom Conservation Districts
jcoe@whatcomcd.org

www.skagitcd.org/wild-fire

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CONSERVATION DISTRICT
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DNR Wildfire in Northwest Region

Why the Department of Natural Resources (DNR)?

RCW 52.02.020 (1)

Fire protection districts for the provision of fire prevention services, fire suppression services, emergency medical services, and for the protection of life and property are authorized to be established as provided in this title.

RCW 76.04.015:Fire protection powers and duties of department (DNR)

(2) The department shall have direct charge of and supervision of all matters pertaining to the forest fire service of the state.

(3) The department shall:

(a) Enforce all laws within this chapter;

(b) Be empowered to take charge of and direct the work of suppressing forest fires;

Classifications

(5) **"Department protected lands"** means all lands subject to the forest protection assessment under RCW 76.04.610 or covered under contract or agreement pursuant to RCW 76.04.135 by the department.

(11) **"Forestland"** means any unimproved lands which have enough trees, standing or down, or flammable material, to constitute in the judgment of the department, a fire menace to life or property. Sagebrush and grass areas east of the summit of the Cascade mountains may be considered forestlands when such areas are adjacent to or intermingled with areas supporting tree growth. Forestland, for protection purposes, does not include structures.

(23) **"Unimproved lands"** means those lands that will support grass, brush and tree growth, or other flammable material when such lands are not cleared or cultivated and, in the opinion of the department, are a fire menace to life and property.

The WUI fires are usually Joint Jurisdiction between Fire Districts and DNR.

NW Region Fire Resources

- 2 Six Person Hand Crew Modules (New in 2022)
- 10 Four Person Engine Crews
- ~40 Permanent “Ready Reserve” Staff
- DNR Helicopter and other Aviation Assets Statewide
- Countless Forest Land Response Agreements with Partnering Fire Districts and other statewide support

Stationed in Big Lake

Typical West-Side Wildland Urban Interface Area

Typical West-Side Fire Behavior


URDOCK

House Bill 1168 Implementation

Wildfire Program:

- 2 Six Person Hand Crew Modules (2022)
- Excavator with Mastication Head (2023)
- Additional “Overhead” Supervising Seasonal Firefighters (2022)
- Fire Fiscal Analyst (2022)
- Fire District Assistance Coordinator (TBD)
- New Aviation Assets Statewide (TBD)

Forest Resiliency:

- Stewardship Forestry Help
- Land Owner Assistance Programming
- Prescribed Fire Program/Cross Boundary Restoration

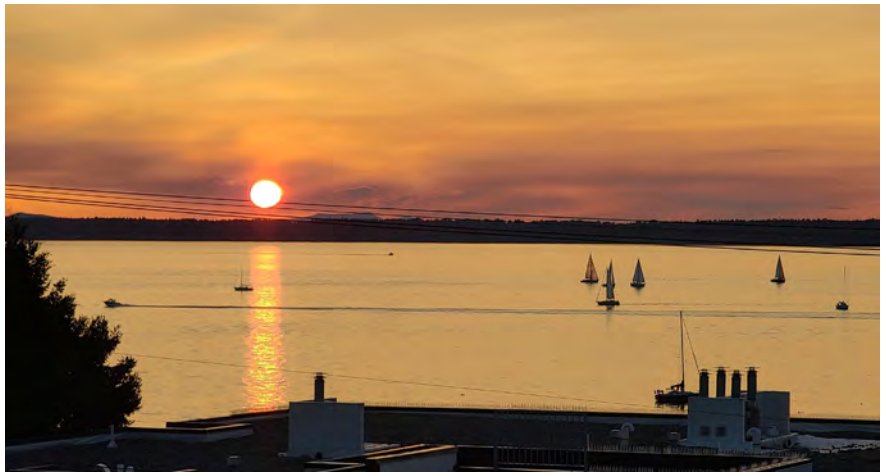
What can DNR help with?

Holiday Hideaway – Guemes Island

WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

dnr.wa.gov

Questions?



Northwest Clean Air Agency (NWCAA)

Agency Overview and Wildfire Smoke Monitoring Coordination

Evan Bing, Atmospheric Measurement Manager

Northwest Clean Air Agency (NWCAA)

- Regional air quality agency serving Skagit, Island & Whatcom counties
  - One of several local air quality agencies in WA
- Perform long-term air quality monitoring of several air pollutants at stations scattered throughout the three counties
- Synthesize current and forecasted meteorological and air quality data to provide actionable air quality information via social media, e.g., Twitter, Facebook
- Provide online air quality resources so public can understand their risk level, find clean air shelters, etc.

NWCAA and Wildfire Smoke

- Monitoring
  - Long-term stations with conventional, highly accurate monitors
  - Low-cost sensors (PurpleAir)
  - Mobile trailer
- Forecasting
  - Coordination with other local air agencies, Dept. of Ecology, DOH, National Weather Service
  - Issue media releases via social channels, e.g. Twitter, Facebook, Instagram
  - Typically provide near term forecasts in the range of the next 2-3 days

NWCAA and Wildfire Smoke

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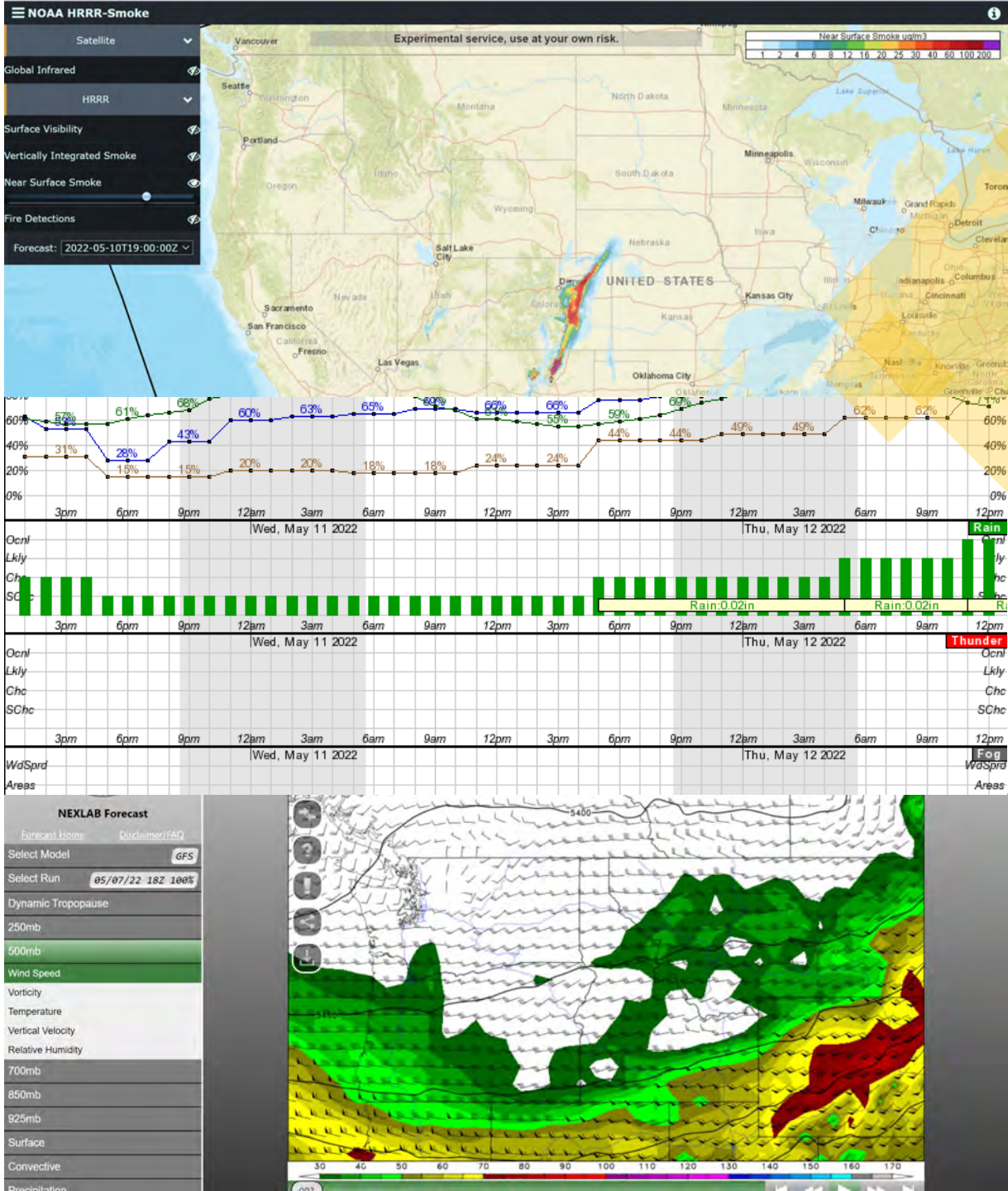
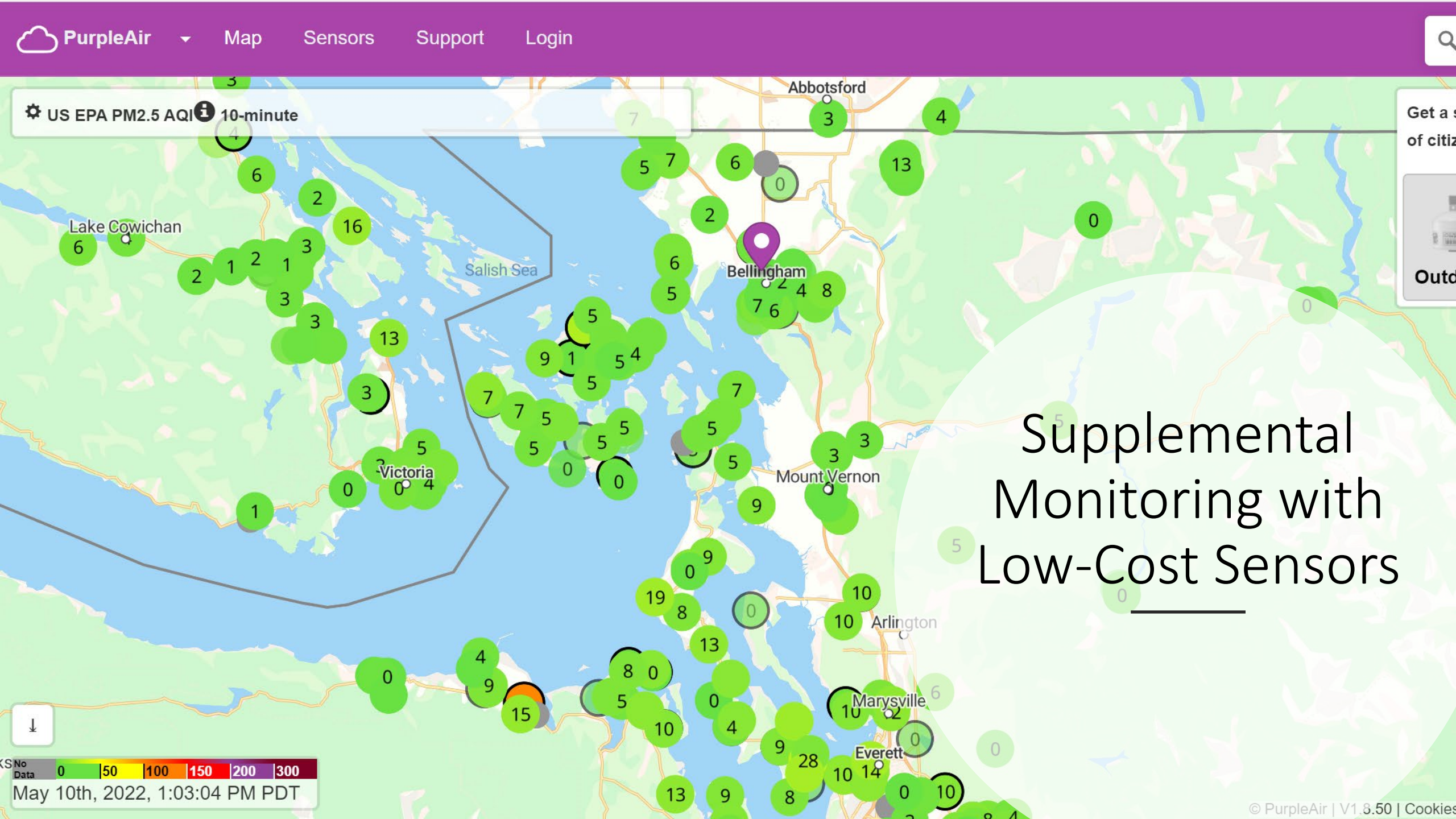
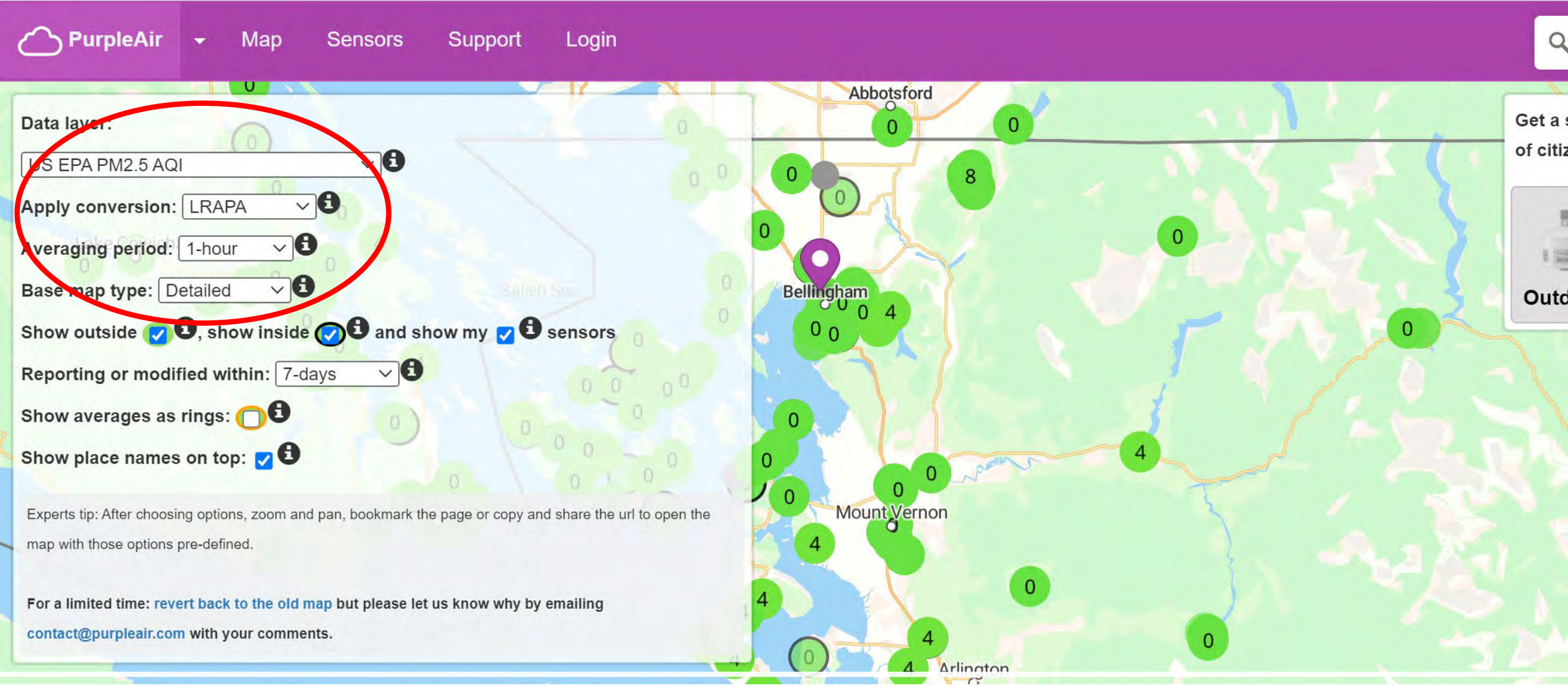


Supplemental Monitoring with Low-Cost Sensors

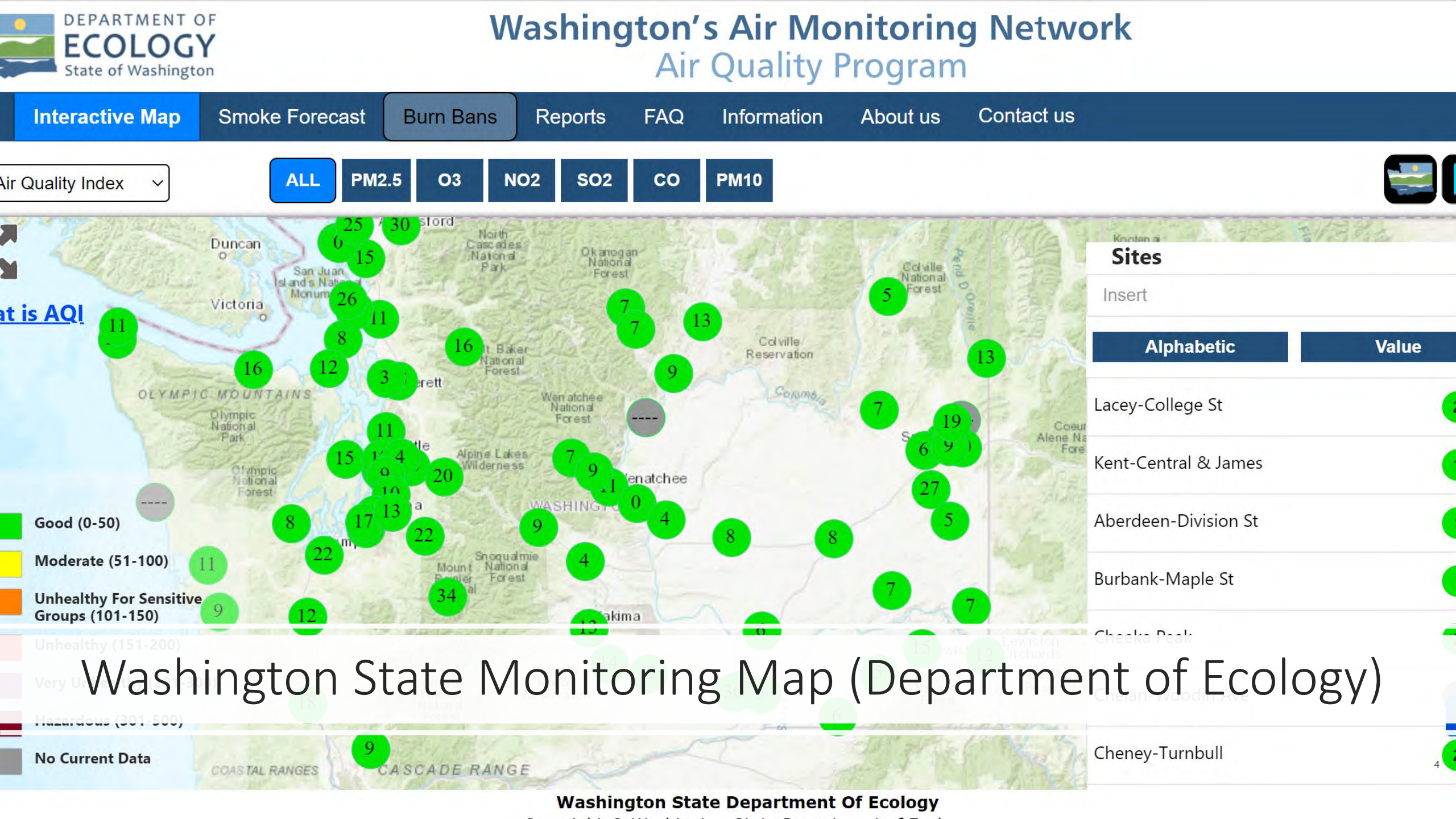
- Installed and maintain network of over 45 PurpleAir PA-II units throughout jurisdiction
- Help fill-in gaps in monitoring coverage due to cost, ease of installation, and low power consumption
- Provide “near-real-time” air quality data
  - Data update every few minutes compared to conventional monitors that update only once an hour
  - Data from low-cost sensors must be carefully interpreted due to a number of factors, e.g. siting, correction factors
- Continued expansion through coordination with local partners such as health departments, schools, private citizens



Supplemental Monitoring with Low-Cost Sensors



Supplemental Monitoring with Low-Cost Sensors



Washington State Monitoring Map (Department of Ecology)

The state of Washington collects data in Pacific Standard Time (PST) to comply with EPA requirements. During Pacific Daylight Time (also called Daylight Savings Time), this causes a 2-hour time difference in the data display. You can read more about the timing of our data here (question #6).

Mount Vernon

Updated: May 10, 2022 9:00 a.m.

O3

NWCAA Air Quality Center

SEE STATE MONITORING

The Air Quality Index (AQI)

- A simplified tool created by the EPA and implemented by monitoring networks
- Designed to easily communicate air quality data so that public can make informed decisions about their environmental risk
- The current implementation is an algorithm that incorporates the last 8 hours of data, but with extra weight given to the most recent three hours of data.
- Throughout much of the year, air quality in Skagit County is “Good” or “Moderate”. We typically experience the worst air quality (“Unhealthy”, “Very Unhealthy” and “Hazardous”) during wildfire smoke events.

The Air Quality Index (AQI)

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

Burn Bans

- NWCAA is tasked with issuing Air Quality Burn Bans, not Fire Safety Burn Bans. The difference is that fire safety burn bans do not extend to agricultural burning
  - Can be consequential and controversial due to organic potatoes often being harvested near the peak of wildfire season
  - When air quality has degraded or is expected to degrade, NWCAA will issue an air quality burn ban
- Fire Safety Burn Bans are issued by the fire marshall or, in some cases, the governor's office

Frequently Asked Questions During Wildfire Smoke Events

Frequently Asked Questions During Wildfire Smoke Events

- Q: The sky looks hazy. Is the air quality safe?
- A: Sometimes, the sky can look very hazy and give the impression that air quality is poor. While this is frequently true, there are other times when the upper atmosphere will look hazy (think dark pink/orange sunsets), but the air near the ground may be perfectly safe. This is due to the way winds can vary with speed and direction as you go further up into the atmosphere. Wildfire smoke from distant fires often makes it to our area high in the atmosphere first.
- Q: Why is the Oak Harbor monitor showing green or “good” air quality while all the other local air monitors are yellow or orange?
- A: Especially during wildfire smoke events where fires are more local, air quality can vary dramatically between stations. Additionally, proximity to the Puget Sound, mountains, and other topographical features can significantly affect concentrations.

Frequently Asked Questions During Wildfire Smoke Events

- Q: I see the air quality monitors are reading yellow/orange/red, etc. Is it safe to exercise, walk the dog, go for a hike?
  - A: We provide many resources to help citizens make informed decisions about how degraded air quality can impact one's health. However, it is up to the individual to decide whether they are at risk for a certain activity during wildfire smoke events.
- Q: The air quality is currently "Moderate" and NWCAA is forecasting that conditions may deteriorate to "Unhealthy for Sensitive Groups" or worse. Is the football game still on tonight?
  - A: NWCAA provides current air quality information and forecasts for the public and health officers, etc. but ultimately it is the health officer's decision to cancel sporting events, etc.

Frequently Asked Questions During Wildfire Smoke Events

- Q: There is a discrepancy between data from PurpleAir monitors and the official NWCAA monitors. Why is that?
  - A: There can be dramatic differences between low-cost air quality sensors like the PurpleAir and conventional monitors for a number for reasons. One of the most common issues is that a “correction factor” has not been applied to the low-cost sensor data. Another is that, by default, data from the PurpleAir monitors are updated on a more frequent basis (every few minutes), while the NWCAA and Dept. of Ecology monitors only update once per hour.

New for 2022: WAQA to AQI

- Prior to April 30th, 2022, the State of Washington used an index similar to the AQI: the Washington Air Quality Advisory (WAQA)
- The move to AQI brings WA into alignment with the nationally used AQI
  - Previously, the different scales caused great confusion due to different air quality levels and corresponding colors being displayed by different sources.
  - WAQA was based on research over 10 years old

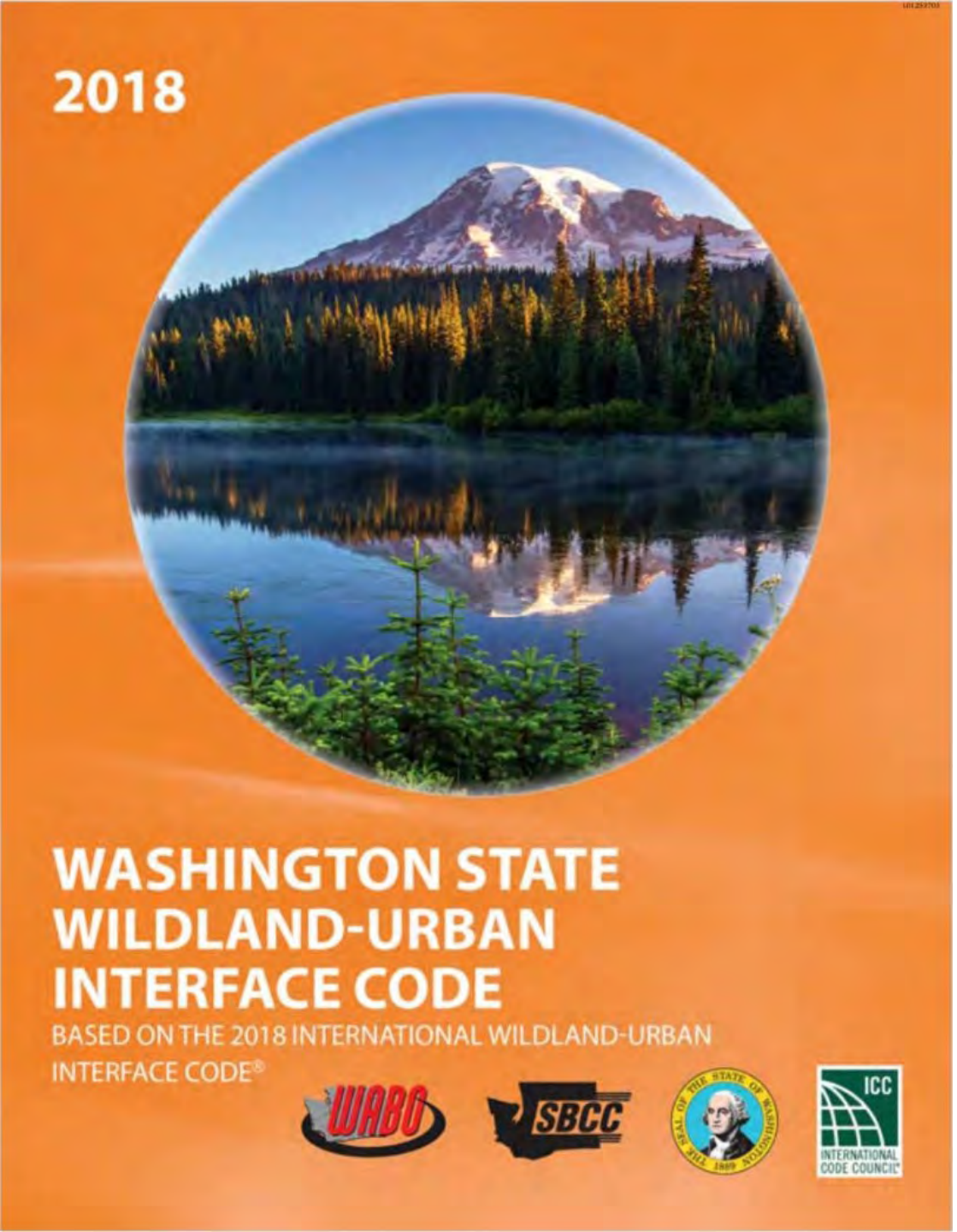
Thank you

Contact Information

Evan Bing, Atmospheric Measurement Manager

evanb@nwcleanairwa.gov

(360) 941-7103



WASHINGTON STATE WILDLAND–URBAN INTERFACE CODE

Goal of Wildland-Urban Interface Code

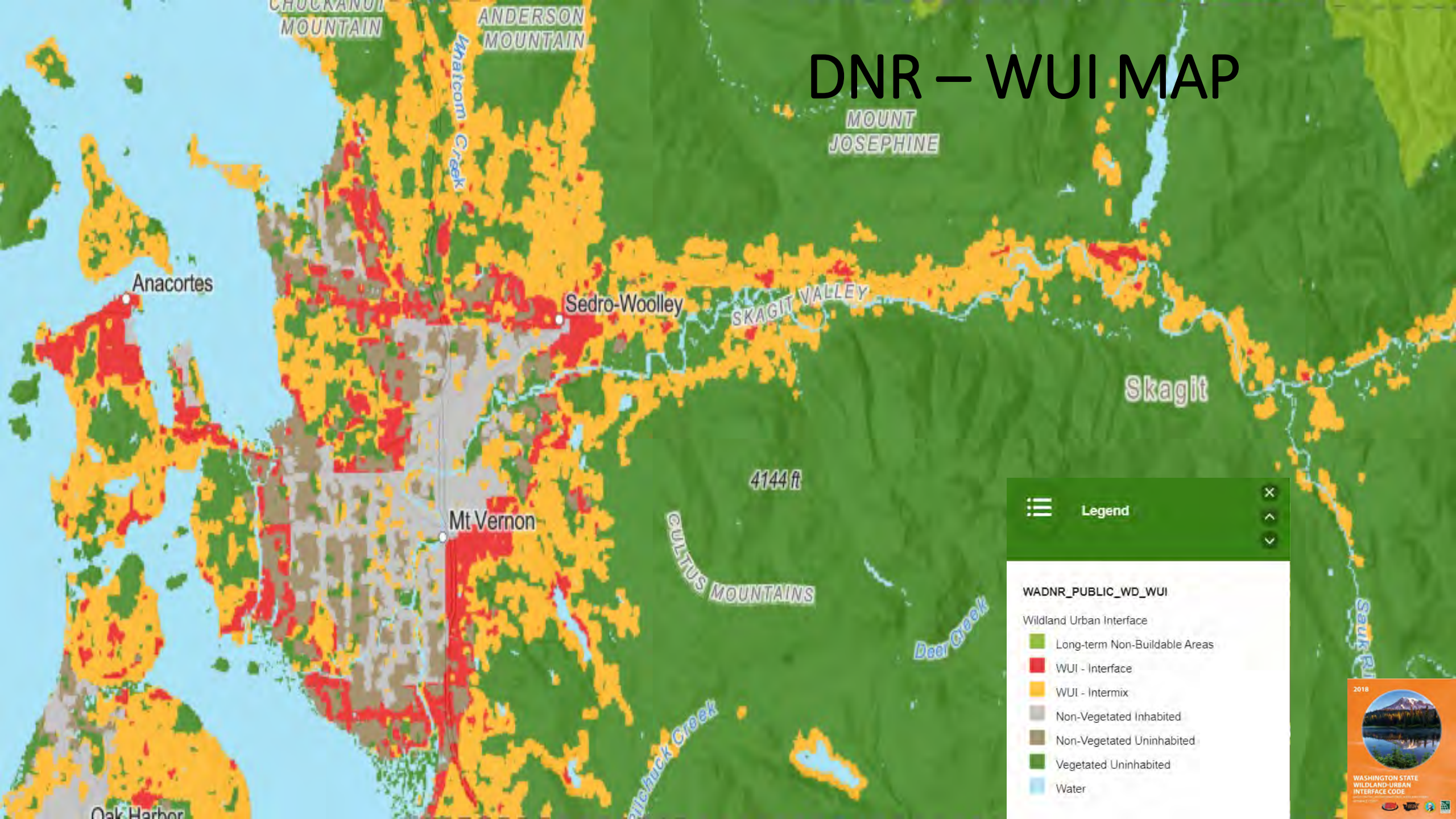
Mitigate fire hazards through provisions that will adequately protect public health, safety, and welfare along with associated structures.

Questions

- How does the Wildland-Urban Interface code affect me?
    1. New construction
    2. How following the Wildland-Urban Interface Code requirements can benefit a current homeowner

- What is required?
    1. Three steps to determine requirements for new construction
    2. Requirements for additions and repairs

DNR – WUI MAP


CHUCKANUT MOUNTAIN
ANDERSON MOUNTAIN
Whatcom Creek
MOUNT JOSEPHINE
Anacortes
Sedro-Woolley
SKAGIT VALLEY
Skagit
4144 ft
Mt Vernon
CULTUS MOUNTAINS
Deer Creek
Oak Harbor
Legend
WADNR_PUBLIC_WD_WUI
Wildland Urban Interface
Long-term Non-Buildable Areas
WUI - Interface
WUI - Intermix
Non-Vegetated Inhabited
Non-Vegetated Uninhabited
Vegetated Uninhabited
Water
2018
WASHINGTON STATE WILDLAND-URBAN INTERFACE CODE

iMap

Additional Maps

Currently Viewing:
Property Map

Common Maps

- Comprehensive Plan/Zoning
- Crime Related Incidents
- Property Map
- Aerial Images

Map Categories

- Districts
- Elections
- Lost Communities
- Planning and Development
- Property Assessment and Sales
- Public Health
- Public Safety
- Public Works
- Utilities

Build-A-Map

- Topographic Basemap

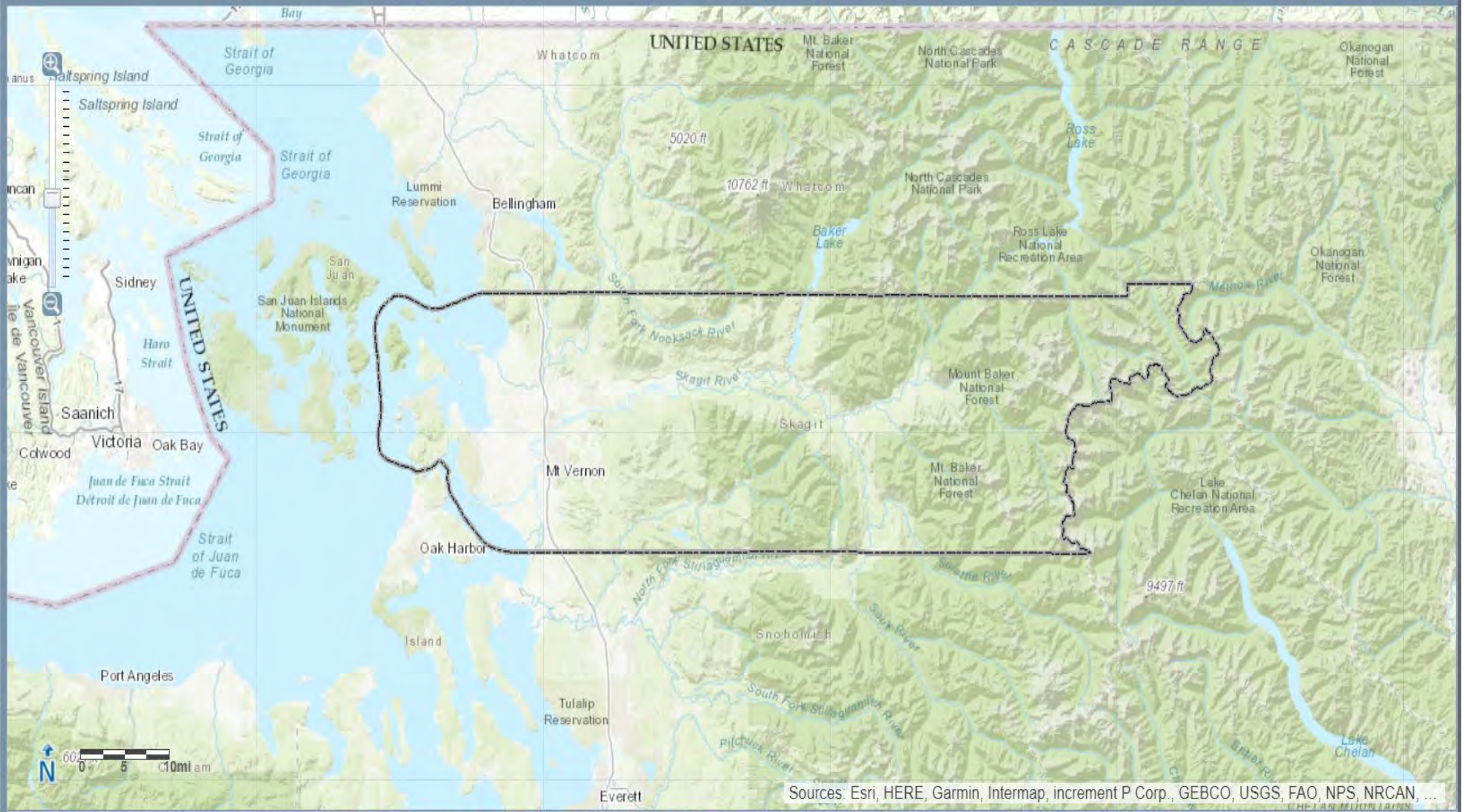
Legend

Layer List

Search

Map Description

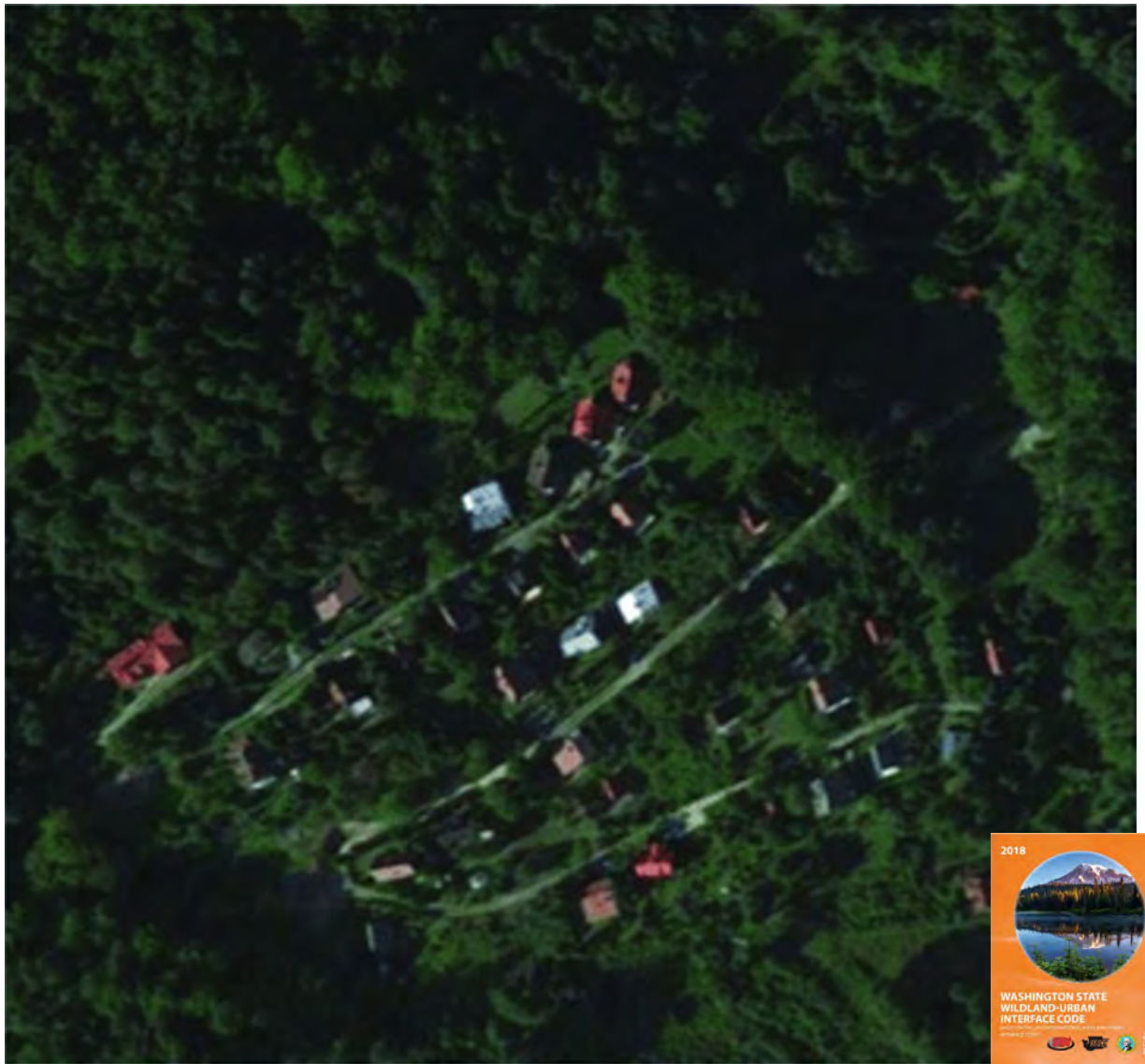
Property Map



What is INTERFACE and INTERMIX?

INTERFACE

INTERMIX



Wildland Urban Interface

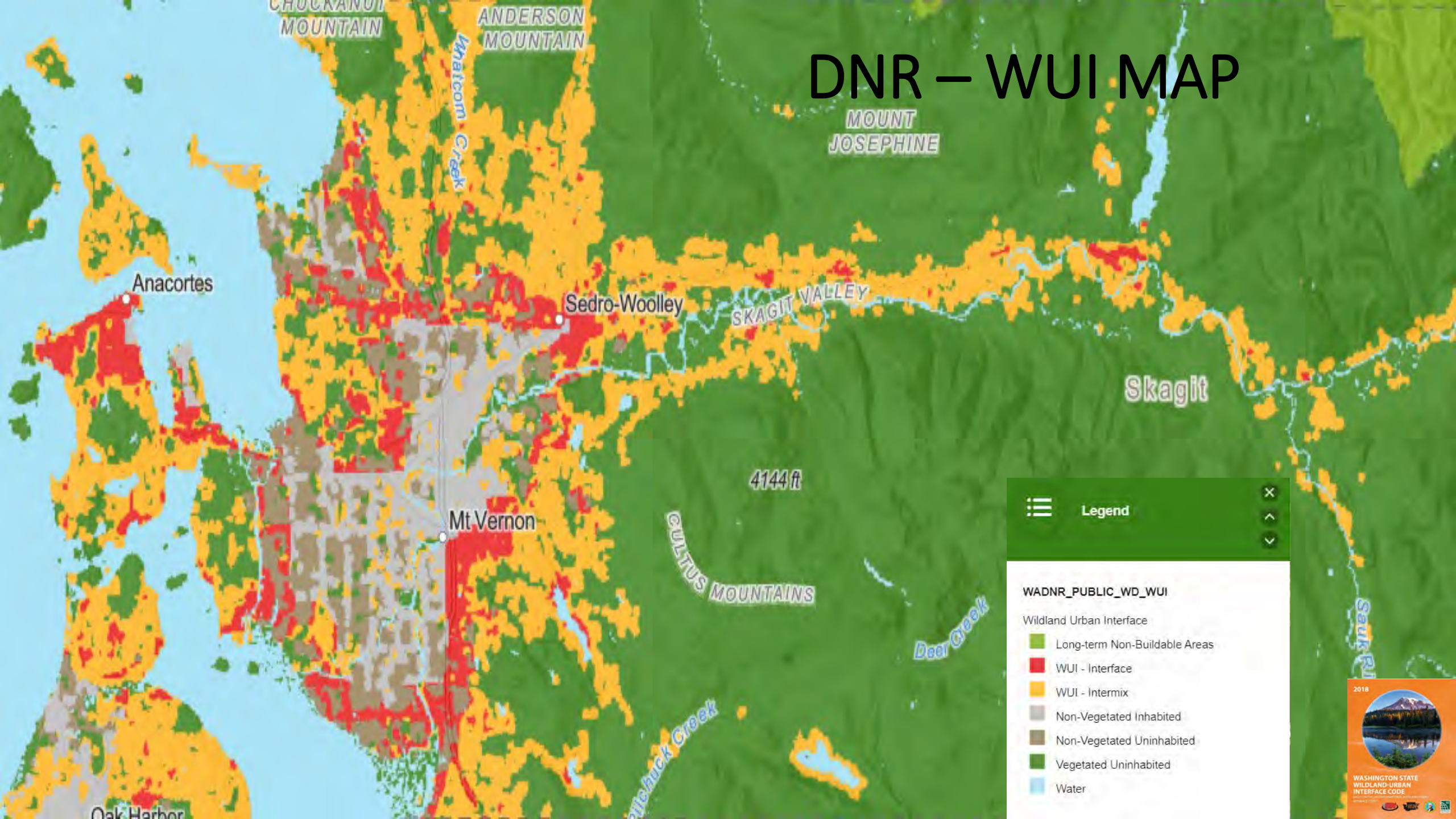
INTERFACE is where wildlands border a development or structures on at least one side.

Wildland Urban Intermix

INTERMIX is single home construction found within the wildlands.

Step 1 – Identify Your Site on the Wildland Urban Interface Map

DNR – WUI MAP


CHUCKANUT MOUNTAIN
ANDERSON MOUNTAIN
Whatcom Creek
MOUNT JOSEPHINE
Anacortes
Sedro-Woolley
SKAGIT VALLEY
Skagit
4144 ft
Mt Vernon
CULTUS MOUNTAINS
Deer Creek
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Legend
WADNR_PUBLIC_WD_WUI
Wildland Urban Interface
Long-term Non-Buildable Areas
WUI - Interface
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Non-Vegetated Inhabited
Non-Vegetated Uninhabited
Vegetated Uninhabited
Water
2018
WASHINGTON STATE WILDLAND-URBAN INTERFACE CODE

Subdivision or Individual Structure

- Subdivision
    1. Access for Fire Apparatus
    2. Water Supply – (Fire Flow)

- Individual Structure
    1. Access for Fire Apparatus
    2. If no water (Fire Flow) use Table 503.1 for class of ignition-resistant construction

Step 2 – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

Step 2a – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

Critical Fire Weather – A set of weather conditions (usually a combination of low relative humidity and wind) whose effects on fire behavior make control difficult and threaten fire fighters' safety

Step 2a – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

NWCG – (National Wildfire Coordination Group) Determine frequency length – Skagit County 2 to 7 days

NOAA – (National Oceanic and Atmospheric Administration)

Step 2b – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

Critical Fire Weather Frequency – 2 to 7 days

Determine Slope of Property – 40% or less slope

Step 2c – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

Fuel Model – Under definitions in WUI it defines (Light/Medium/Heavy)

Skagit County will do a site visit to confirm Fuel Model

Step 2c – Fuel Model KEY

Light Fuel – C

1. Perennial grass and flowering plants are the predominant ground fuels
2. An overstory of conifers no more than 1/3 of the site

Medium Fuel – Q, H

1. Medium coverage of conifer trees with sparse undergrowth
2. Lichens, mosses and low shrubs dominate as understory fuels
3. Needles depth less than 2”

Heavy – G, I,J,K

1. Dense coverage of conifer trees, heavy accumulation of litter, down wood, or diseased trees
2. Clear cut slash

Step 2c – Determine Fire Hazard Severity

TABLE 502.1
FIRE HAZARD SEVERITY

FUEL MODEL[b]	CRITICAL FIRE WEATHER FREQUENCY								
	≤ 1 Day[a]			2 to 7 days[a]			≥ 8 days[a]		
	Slope (%)			Slope (%)			Slope (%)		
	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61	≤ 40	41-60	≥ 61
Light fuel	M	M	M	M	M	M	M	M	H
Medium fuel	M	M	H	H	H	H	E	E	E
Heavy fuel	H	H	H	H	E	E	E	E	E

E = Extreme hazard;
H = High hazard;
M = Moderate hazard.
a. Days per annum.
b. Where required by the code official, fuel classification shall be based on the historical fuel type for the area.

Critical Fire Weather Frequency – 2 to 7 days

Determine Slope of Property – 40% or less slope

Fuel Model - Medium

APPENDIX C – FIRE HAZARD SERVERITY FORM

Skagit County Building Official

Has Allowed use for Appendix C

A. Subdivision Design Points

1. Ingress/Egress

Two or more primary roads	1___
One road	3___
One-way road in, one-way road out	5___

2. Width of Primary Road

20 feet (6096 mm) or more	1___
Less than 20 feet (6096 mm)	3___

3. Accessibility

Road grade 5% or less	1___
Road grade more than 5%	3___

4. Secondary Road Terminus

Loop roads, cul-de-sacs with an outside turning radius of 45 feet (13 716 mm) or greater	1___
Cul-de-sac turnaround	2___
Dead-end roads 200 feet (60 960 mm) or less in length	3___
Dead-end roads greater than 200 feet (60 960 mm) in length	5___

5. Street Signs

Present	1___
Not present	3___

B. Vegetation (IWUIC Definitions)

1. Fuel Types

Light	1___
Medium	5___
Heavy	10___

2. Defensible Space

70% or more of site	1___
30% or more, but less than 70% of site	10___
Less than 30% of site	20___

C. Topography

8% or less	1___
More than 8%, but less than 20%	4___
20% or more, but less than 30%	7___
30% or more	10___

D. Roofing Material

Class A Fire Rated	1___
Class B Fire Rated	5___
Class C Fire Rated	10___
Nonrated	20___

E. Fire Protection—Water Source

500 GPM (1892.5 L/min) hydrant within 1,000 feet (304.8 m)	1___
Hydrant farther than 1,000 feet (304.8 m) or draft site	2___
Water source 20 min. or less, round trip	5___
Water source farther than 20 min., and 45 min. or less, round trip	7___
Water source farther than 45 min., round trip	10___

F. Existing Building Construction Materials

Noncombustible siding/deck	1___
Noncombustible siding/combustible deck	5___
Combustible siding and deck	10___

G. Utilities (gas and/or electric)

All underground utilities	1___
One underground, one above ground	3___
All above ground	5___

Total for Subdivision

Moderate Hazard	40–59
High Hazard	60–74
Extreme Hazard	75+

Step 3 – Determine Ignition Resistant Construction

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION[a]

	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply[b]		Water Supply[b]		Water Supply[b]	
DEFENSIBLE SPACE[c]	Conforming	Nonconforming	Conforming	Nonconforming	Conforming	Nonconforming
Nonconforming	IR 2	IR 1	IR 1	IR 1 N.C.	IR 1 N.C.	Not Permitted
Conforming	IR 3	IR 2	IR 2	IR 1	IR 1	IR 1 N.C.
1.5 × Conforming	Not Required	IR 3	IR 3	IR 2	IR 2	IR 1

a. Access shall be in accordance with Section 403.

b. Subdivisions shall have a conforming water supply in accordance with Section 402.1.
IR 1 = Ignition-resistant construction in accordance with Section 504.
IR 2 = Ignition-resistant construction in accordance with Section 505.
IR 3 = Ignition-resistant construction in accordance with Section 506.
N.C. = Exterior walls shall have a fire-resistance rating of not less than 1 hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.

c. Conformance based on Section 603.

Step 3a – Determine Ignition Resistant Construction

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION[a]

	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply[b]		Water Supply[b]		Water Supply[b]	
DEFENSIBLE SPACE[c]	Conforming	Nonconforming	Conforming	Nonconforming	Conforming	Nonconforming
Nonconforming	IR 2	IR 1	IR 1	IR 1 N.C.	IR 1 N.C.	Not Permitted
Conforming	IR 3	IR 2	IR 2	IR 1	IR 1	IR 1 N.C.
1.5 × Conforming	Not Required	IR 3	IR 3	IR 2	IR 2	IR 1

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IR 3 = Ignition-resistant construction in accordance with Section 506.
N.C. = Exterior walls shall have a fire-resistance rating of not less than 1 hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.
c. Conformance based on Section 603.

Conforming – Hydrant within 600', fire flow based of building S.F. or alternate means

Nonconforming – No hydrant or alternate means

Step 3a – Determine Ignition Resistant Construction

Conforming

Fire flow based of building size and use

Hydrant within 600’ or alternate water supply (tank)

Nonconforming

No hydrant or alternate water supply (tank)

Step 3b – Determine Ignition Resistant Construction

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION[a]

	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply[b]		Water Supply[b]		Water Supply[b]	
DEFENSIBLE SPACE[c]	Conforming	Nonconforming	Conforming	Nonconforming	Conforming	Nonconforming
Nonconforming	IR 2	IR 1	IR 1	IR 1 N.C.	IR 1 N.C.	Not Permitted
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IR 3 = Ignition-resistant construction in accordance with Section 506.
N.C. = Exterior walls shall have a fire-resistance rating of not less than 1 hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.

c. Conformance based on Section 603.

Step 3b – Defensible Space

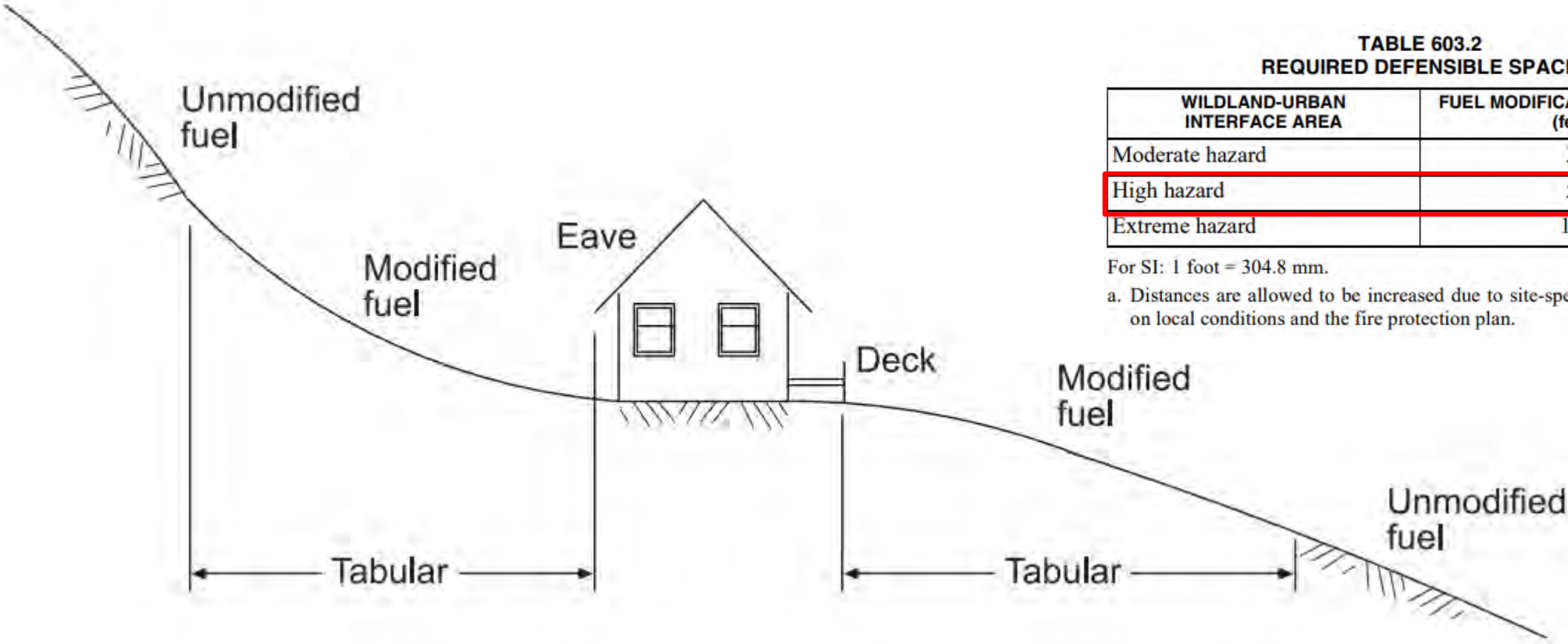

TABLE 603.2
REQUIRED DEFENSIBLE SPACE

WILDLAND-URBAN INTERFACE AREA	FUEL MODIFICATION DISTANCE (feet)[a]
Moderate hazard	30
High hazard	50
Extreme hazard	100

For SI: 1 foot = 304.8 mm.

a. Distances are allowed to be increased due to site-specific analysis based on local conditions and the fire protection plan.

An area either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur

Step 3b – Defensible Space

TREES CAN BE IN DEFENISBLE SPACE

10’ spacing between trees measuring from the crown

Limb trees 6’ up

Step 3b – Determine Ignition Resistant Construction

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION[a]

	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply[b]		Water Supply[b]		Water Supply[b]	
DEFENSIBLE SPACE[c]	Conforming	Nonconforming	Conforming	Nonconforming	Conforming	Nonconforming
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N.C. = Exterior walls shall have a fire-resistance rating of not less than 1 hour and the exterior surfaces of such walls shall be noncombustible. Usage of log wall construction is allowed.

c. Conformance based on Section 603.

Step 3b – Determine Ignition Resistant Construction

TABLE 503.1
IGNITION-RESISTANT CONSTRUCTION[a]

	FIRE HAZARD SEVERITY					
	Moderate Hazard		High Hazard		Extreme Hazard	
	Water Supply[b]		Water Supply[b]		Water Supply[b]	
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c. Conformance based on Section 603.

An area either natural or manmade, where material capable of allowing a fire to spread unchecked has been treated, cleared or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur

Ignition Resistant Construction

IR1 – Class 1 Section 504

Roof – Class A Gutters – Noncombustible with cover to prevent debris buildup
Exterior wall and Soffit – 1 Hour Fire Resistant Material
Exterior Door and Glazing – 20 Min Rating
Appendages or Projections – Fire Resistant Materials (Enclose within 6” to ground)

IR2 – Class 2 Section 505

Roof – Class B Gutters – Noncombustible with cover to prevent debris buildup
Exterior wall – 1 Hour Fire Resistant Material
Exterior Door and Glazing – 20 Min Rating
Appendages or Projections – Fire Resistant Materials (Slope greater than 10%, enclose within 6” to ground)

IR3 – Class 3 Section 506

Roof – Class C Gutters – Noncombustible with cover to prevent debris buildup

Existing Buildings in an INTERFACE or INTERMIX Area

Repairs or replacing a roof system

Use ignition-resistant materials as required by the hazard classification

Options

Credit for creating a defensible space

Recognition and Thanks

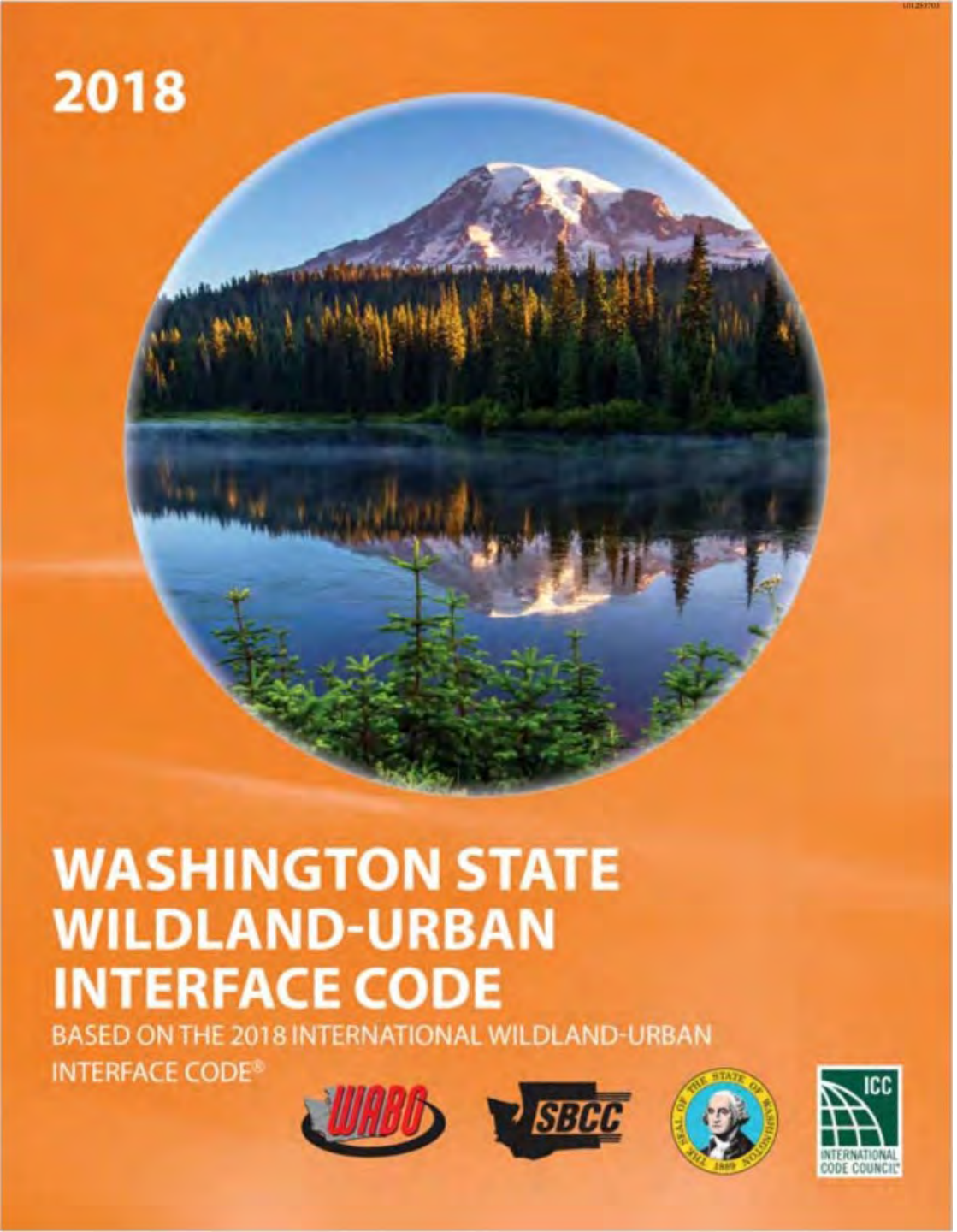
We are thankful for the following support

DNR –Wildland-Urban Interface Mapping and Fuel Model Identification
https://wadnr.maps.arcgis.com/apps/View/index.html?appid=21683af70ece4bd495c319915f7a9232

National Wildfire Coordinating Group – Identifying Critical Fire Weather Frequency
https://www.nwcg.gov/publications/pms437/weather/critical-fire-weather

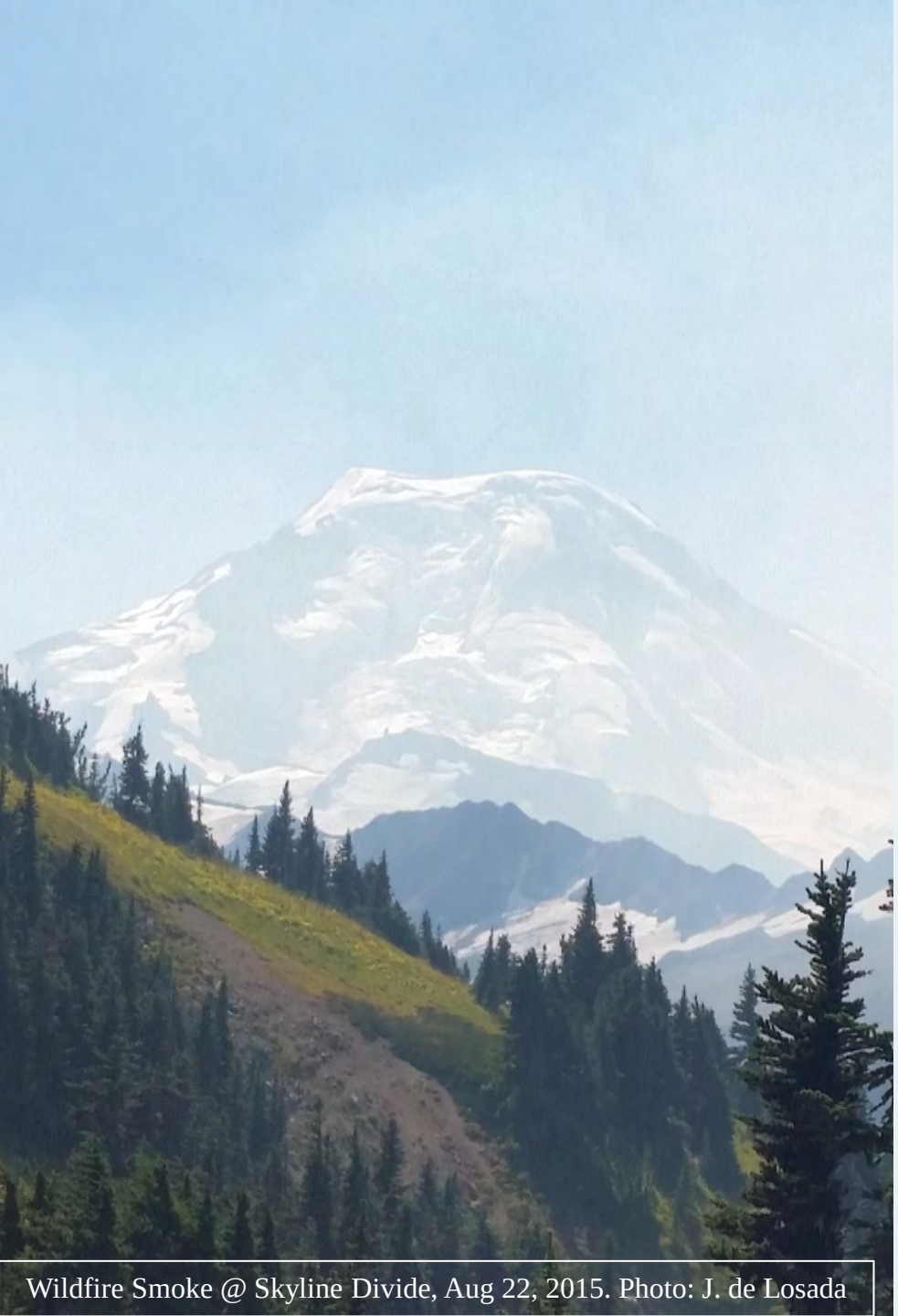
Whatcom & Skagit Conservation Districts
www.whatcomcd.org/wildfire
www.skagitcd.org/wild-fire

Skagit County Department of Emergency Management
dem@co.skagit.wa.us



WASHINGTON STATE WILDLAND–URBAN INTERFACE CODE

Presenter
Randy Johnson – Plans Examiner
Randyj@co.skagit.wa.us



Wildfire Smoke @ Skyline Divide, Aug 22, 2015. Photo: J. de Losada

WILDFIRE PREPARDENSS & RESPONSE

Public Health & Medical Reserve Corps

SKAGIT COUNTY PUBLIC HEALTH WASHINGTON

medical reserve corps Skagit County

Wildfires | Local Public Health's Role

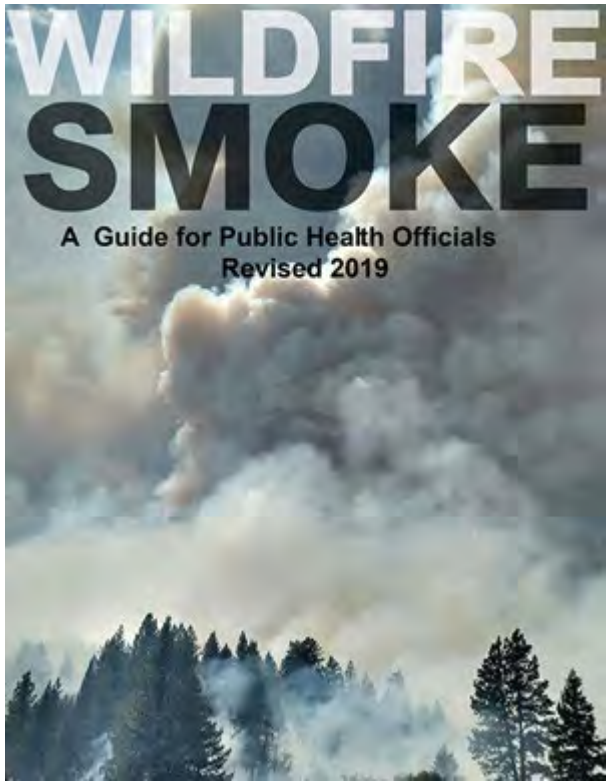
Prevent or mitigate health risks to the community, especially for vulnerable or high-risk populations.

- MONITOR
- ADVISE
- EDUCATE
- *RESPOND
  - Medical Reserve Corps
  - Skagit Public Health

Public Health Response

Response Team

- Environmental Health Manager / Team
- Health Officer
- Public Information Officer
- English /Spanish /Mixteco Community Health Outreach
- Public Health Emergency Preparedness and Response Manager
- MRC Coordinator



SKAGIT COUNTY PUBLIC HEALTH WASHINGTON

medical reserve corps Skagit County

What is the Medical Reserve Corps (MRC)?

The Medical Reserve Corps (MRC) is a national network of more than 200,000 volunteers, organized locally to improve the health and safety of their communities.

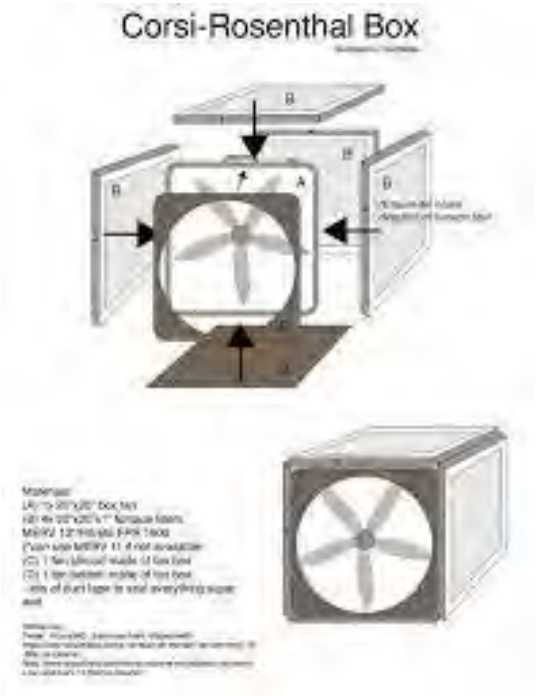
- Practicing, retired, or otherwise employed medical professionals, such as doctors, nurses, emergency medical technicians, pharmacists, nurses' assistants, and others
- Public health professionals
- Community members without medical training can assist with administrative and other essential support functions

Skagit County

Skagit MRC Missions

Mission Options

- Homebound Check & Connect
  - Medical Assessment
  - Emotional Wellbeing
  - HEPA
  - A/C
- DIY Air Cleaning
- Cooling/Clean Air Centers
  - Staffing
  - Emotional Wellbeing Checks
- Distributing Masks
- Sharing Social Media Posts from Trusted Sources



Skagit County Public Health Washington

medical reserve corps Skagit County

Questions?

Julie de Losada, Senior Analyst
Skagit County Public Health
Emergency Preparedness and Response Division
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360-416-1538

2022 Wildfire Season Preparedness

Presented By:

Michelle Boll
Wildfire Mitigation Program Manager

PSE PUGET SOUND ENERGY

Topics Covered

- Wildfire Mitigation Plan
- Review of 2021 fire season
- Wildfire Dashboard
- 2022 wildfire season preparations
- Public Safety Power Shutoff (PSPS)
- Future projects and improvements

PUGET SOUND ENERGY

Responding to Evolving Wildfire Risks

- Situational Awareness
- Fault Reduction
- Fault Protection
- Communication and Outreach
- Operational Procedures & Emergency Response

PUGET SOUND ENERGY

2021 Wildfire Season Review

Wildfires in PSE territory and impacts on infrastructure

Year	Number of wildfires within or near PSE's territory	Number of wildfires that affected PSE infrastructure
2017	3	0
2018	5	0
2019	0	0
2020	3	2
2021	5	0

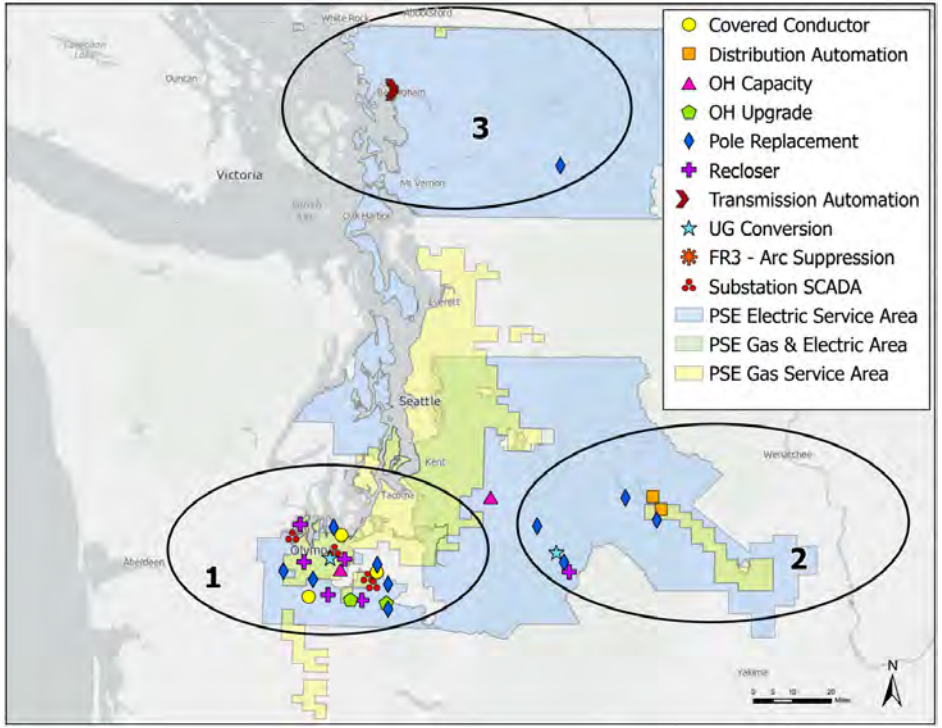
* Sourced from NICC Annual Fire Reports

A total of 10 red flag warnings issued in PSE service area

PUGET SOUND ENERGY

2021 Pre-Wildfire Season Review

2020-2021 Fault Reduction and Protection Projects

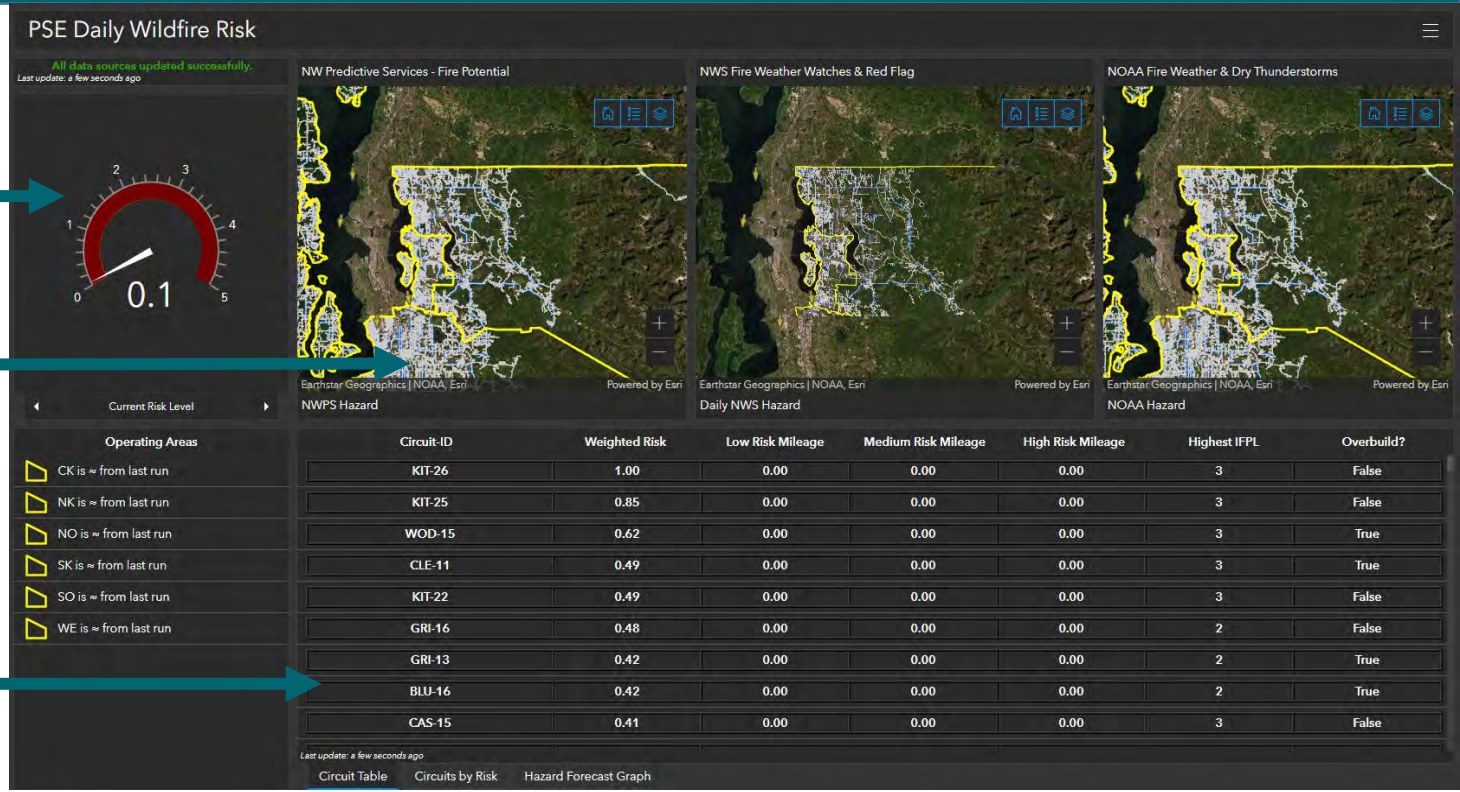


A total 46 projects were completed with an investment of $23.7 million dollars

PUGET SOUND ENERGY

Incorporated 2022 risk modeling into Dashboard and Operational Procedures

- Current overall system wildfire threat level
- Current active fires and red flag warnings
- Current operating area risk ranking
- Current circuit level risk ranking



Circuit-ID	Weighted Risk	Low Risk Mileage	Medium Risk Mileage	High Risk Mileage	Highest IFPL	Overbuild?
KIT-26	1.00	0.00	0.00	0.00	3	False
KIT-25	0.85	0.00	0.00	0.00	3	False
WOD-15	0.62	0.00	0.00	0.00	3	True
CLE-11	0.49	0.00	0.00	0.00	3	True
KIT-22	0.49	0.00	0.00	0.00	3	False
GRI-16	0.48	0.00	0.00	0.00	2	False
GRI-13	0.42	0.00	0.00	0.00	2	True
BLU-16	0.42	0.00	0.00	0.00	2	True
CAS-15	0.41	0.00	0.00	0.00	3	False

2022 Pre-Wildfire Season Actions

- Conducting pre-season inspections and remediation for vegetation
- System hardening projects completed that reduce wildfire risks and improve reliability
- Participating in hazards workshops hosted by county emergency management departments
- Hosting community meetings higher wildfire risk areas in our service territory
- Formalizing and improving daily ignition/fire event logging practices

PUGET SOUND ENERGY

Public Safety Power Shutoffs (PSPS)

- PSPS is a precautionary safety measure where utilities proactively turn off power lines to help prevent wildfires
- Striking the balance of “doing the greatest good for the greatest number”
- Roadmap in developing our PSPS plan will include:
  - ✓ Risk modeling, identify high risk areas
  - ✓ Needs assessment of high risk communities
  - ✓ Continuing to understand best practices associated with PSPS’s

PUGET SOUND ENERGY

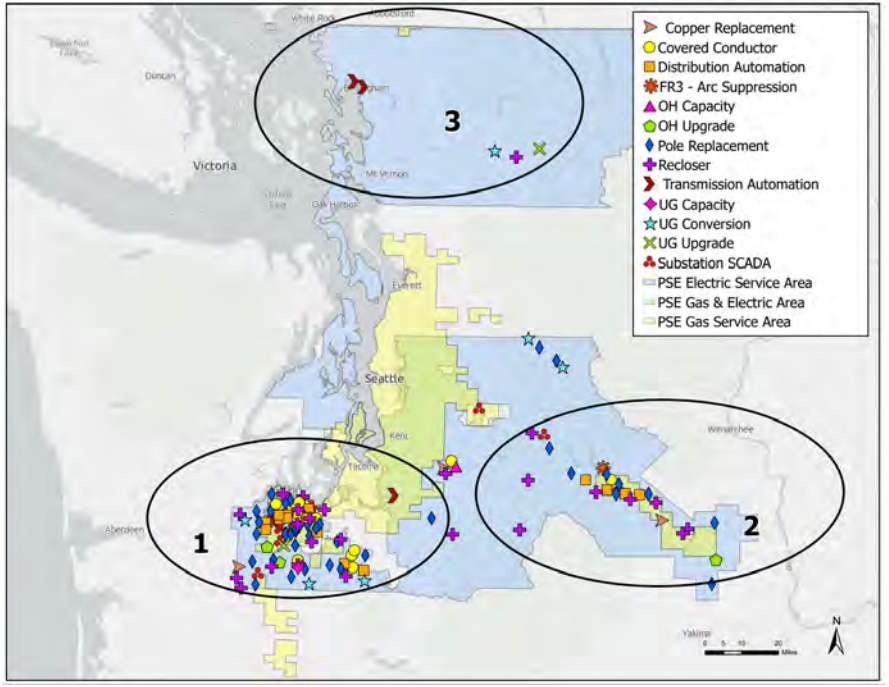
Continuous Improvement

- Advance grid modernization investments for a resilient electric system
- Enhance decision criteria that prioritizes investments and actions that reduce wildfire risk
- Deploy situational awareness technologies
- Refresh operational procedures and performance metrics
- Engage and collaborate with communities, customers, and partner agencies to inform our tools, actions, and plans

PUGET SOUND ENERGY

2022-2025 System Hardening Projects

2022-2025 Fault Reduction and Protection Projects



A total 176 projects are estimate to be completed with an investment of $110.6 million dollars

* Sourced from NICC Annual Fire Reports

PUGET SOUND ENERGY

PUGET SOUND ENERGY

Department of Emergency Management

Prepare for Wildfires

Recognize Warnings and Alerts

Have several ways to receive alerts. Receive real-time alerts from the National Weather Service.

Sign up for community alerts in your area. Skagit uses CodeRED. Be aware of the Emergency Alert System (EAS) and Wireless Emergency Alert (WEA), which require no-sign up.

Pay attention to air quality alerts.

Ready

https://www.ready.gov/wildfires

Prepare for Wildfires

Make an Emergency Plan

Make sure everyone in your household knows and understands what to do if you need to quickly evacuate.

Don’t forget a plan for the office, kids’ daycare, and anywhere you frequent.

Build a “Grab and GO” bag and a plan

Include family communication and returning home plan

Ready

https://www.ready.gov/wildfires

Prepare for Wildfires

Review Important Documents

Make sure your insurance policies and personal documents, like ID, are up to date.

Make copies and keep them in a secure password-protected digital space.

Ready

https://www.ready.gov/wildfires

Prepare for Wildfires

Strengthen your Home

Use fire-resistant materials to build, renovate or make repairs.

Create a fire-resistant zone that is free of leaves, debris or flammable materials for at least 30 feet from your home.

Designate a room that can be closed off from outside air. Close all doors and windows. Set up a portable air cleaner to keep indoor pollution levels low when smoky conditions exist.

Ready

https://www.ready.gov/wildfires

Prepare for Wildfires

Know your Evacuation Zone

You may have to evacuate quickly due to a wildfire. Learn your evacuation routes, practice with your household, and pets, and identify where you will go.

Follow the instructions from local authorities. They will provide the latest recommendations based on the threat to your community and appropriate safety measures.

Ready

https://www.ready.gov/wildfires

Prepare for Wildfires

Share and Review and Practice

Thank You

DEM@co.skagit.wa.us