Forest Health Assessment and Treatment Framework Legislative Report

RCW 76.06.200

Forest Health Assessment and Treatment Framework

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WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

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Forest Health is the condition of a forest ecosystem reflecting its ability to sustain characteristic structure, function, and processes; resilience to fire, insects, and other disturbance mechanisms; adaptability to changing climate and increased drought stress; and capacity to provide ecosystem services to meet landowner objectives and human needs.

Report Contents

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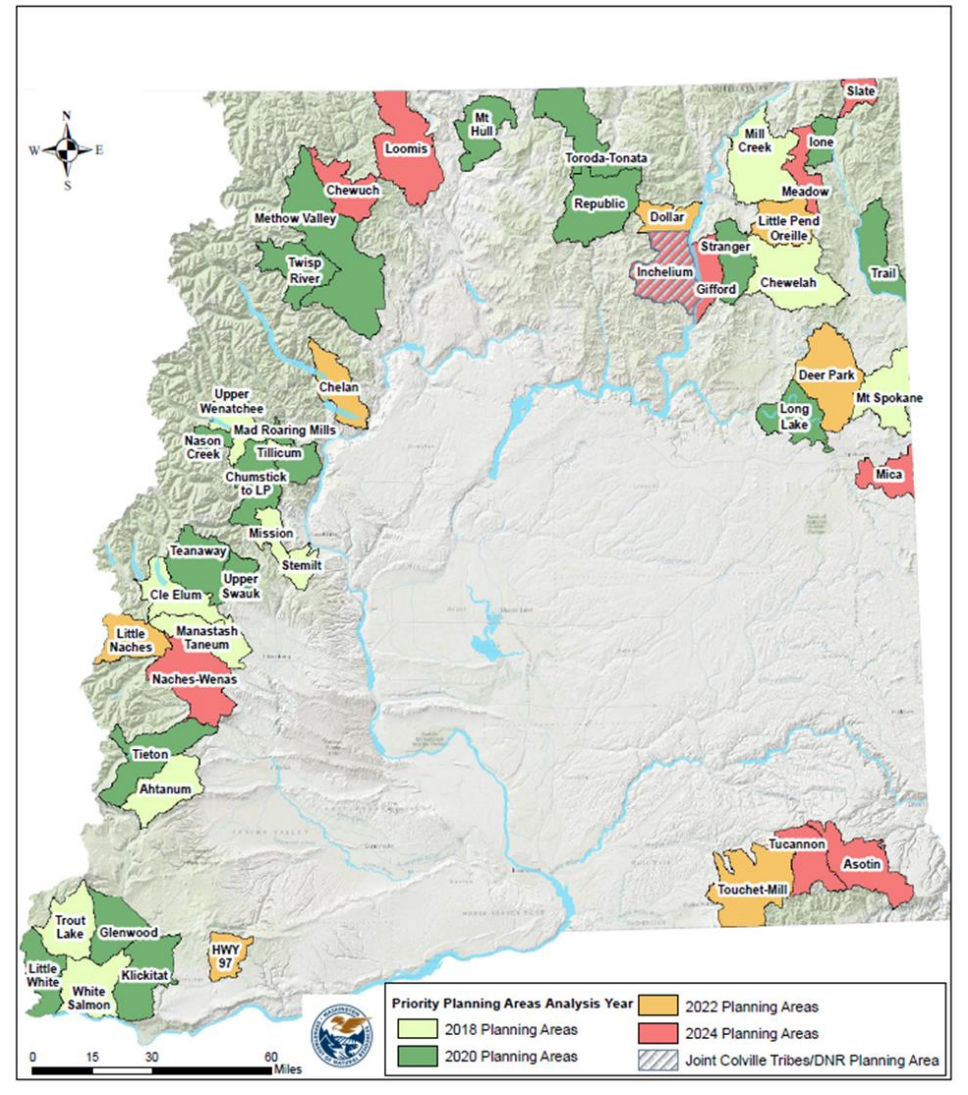
- 20-Year Forest Health Strategic Plan Priority Planning Areas
- Forest Health Assessment and Treatment Framework Methodology
- Forest Health Treatment Need Assessment Results
- Aquatic Restoration and Watershed Resilience
- Forest Health Partnerships
- Monitoring Framework
- 2023-25 Appropriations Request

Eastern Washington
Priority Planning Areas

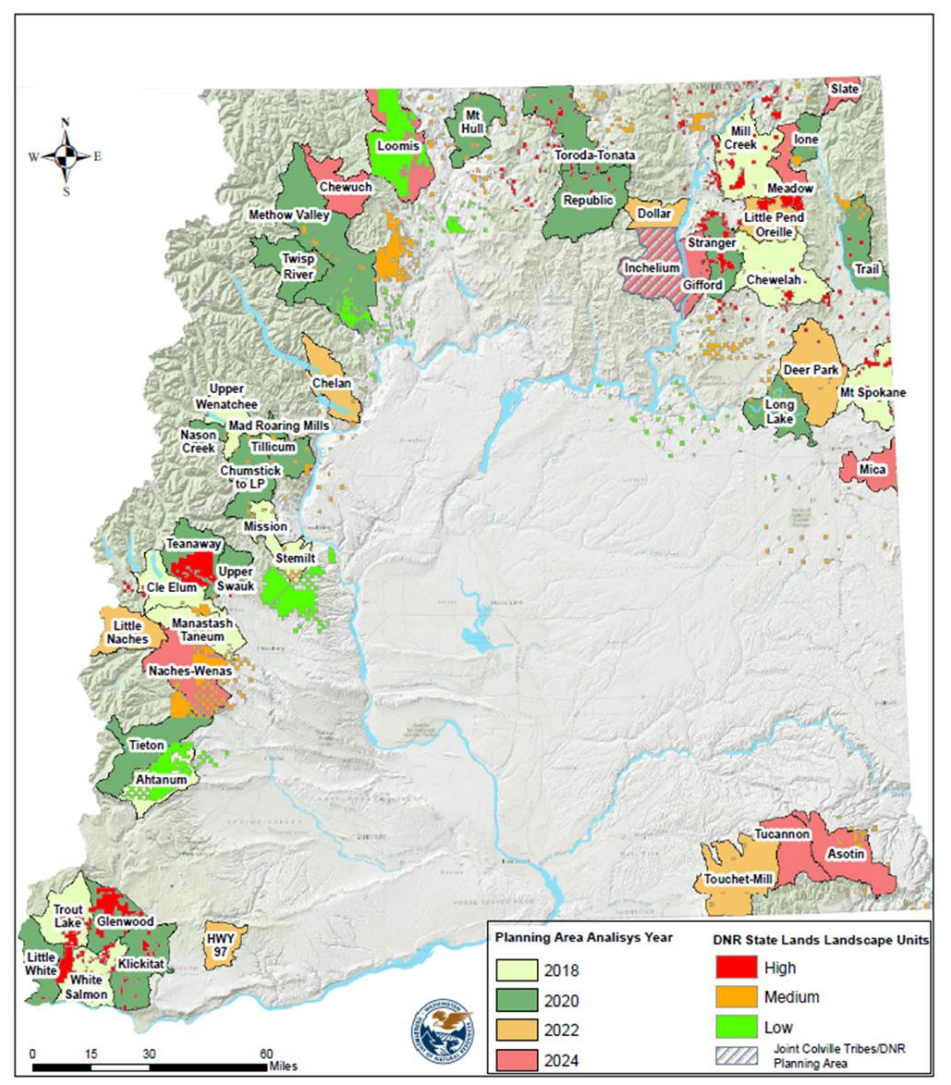


Assessment of 37 priority landscapes covering 4,165,780 acres in eastern Washington.

Analyze 10 more priority planning areas next biennium, representing an additional 1,108,883 acres.

47 total priority planning areas totaling more than 5.2 million acres.

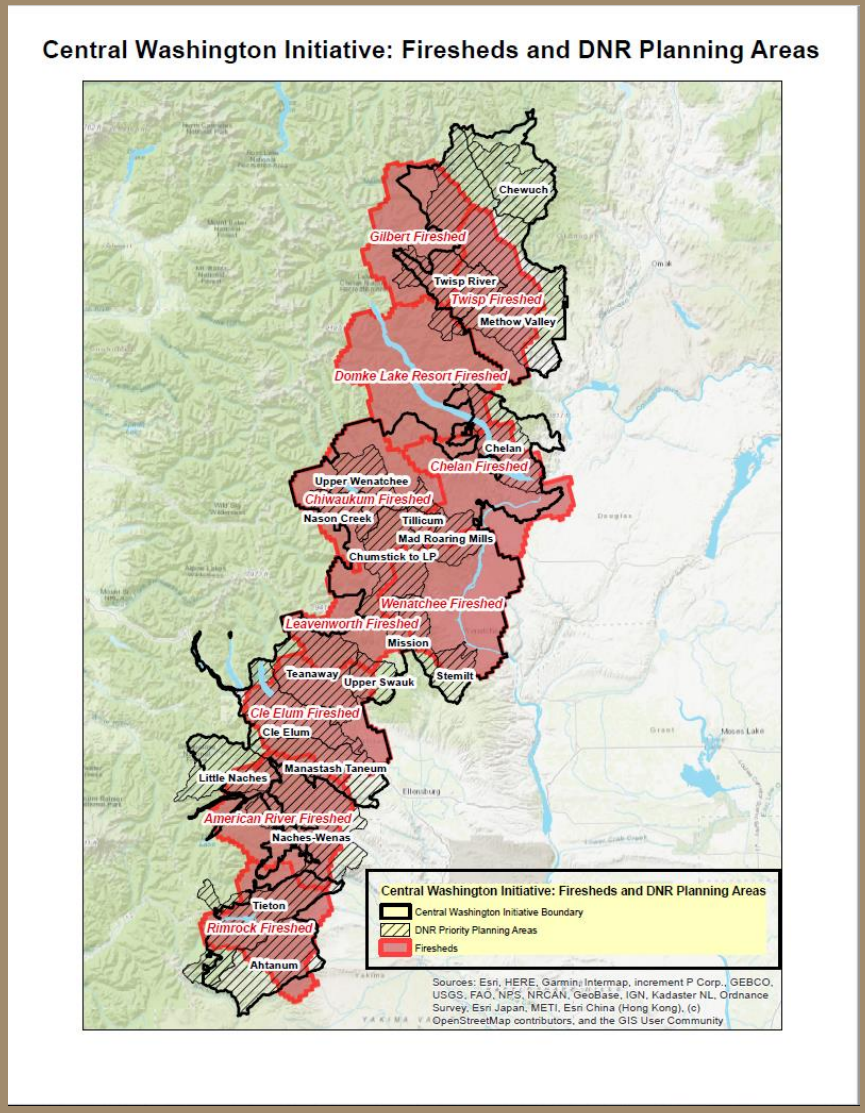
Eastern Washington
Priority Planning Areas



Overlap with DNR State Trust Lands Prioritization (E2SHB1711)

E2SHB 1711 prioritization identifies high, medium, and low priority landscapes for forest health treatment to inform treatment needs for the next two, six and 20 years.

Priority Planning Areas
Central Washington Initiative



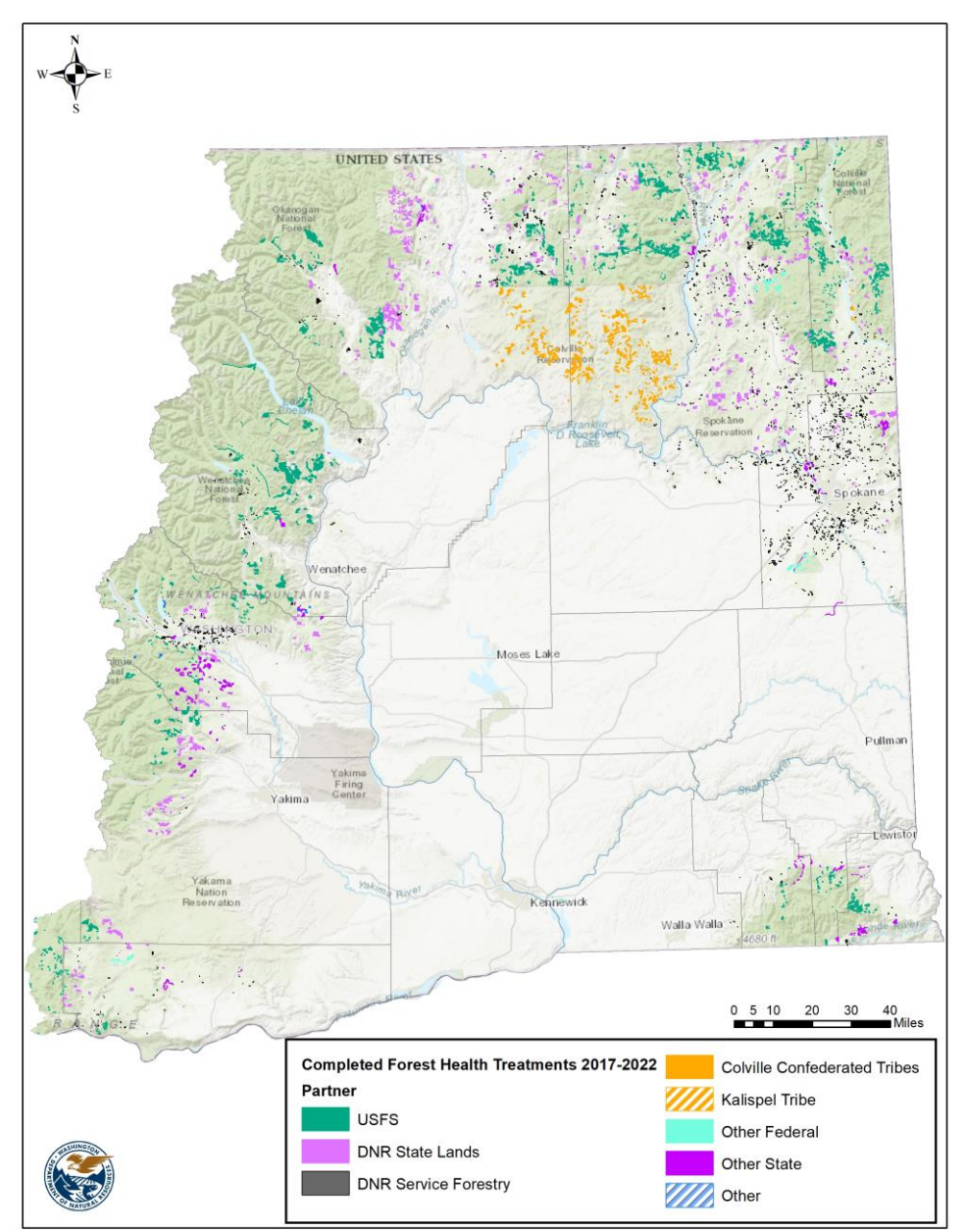
Alignment with USDA Forest Service 10-Year Wildfire Crisis Strategy and Central Washington Initiative.

DNR signed an MOU committing to leverage resources toward shared goals in the initiative landscape over the next 10 years

Forest Health Treatment Needs
2018-2022

Planning Area	Forest Structure Class (acres)			
	Small Dense[1]	Medium-Large Dense[2]	Medium-Large Open[3]	Total treatment need
2018 Structure Class Total	10,000 - 17,000	240,700 - 342,900	33,000 - 63,700	283,700 - 423,600
2020 Structure Class Total	17,750 - 30,900	378,500 - 516,100	113,250 - 177,500	509,500 - 724,500
2022 Structure Class Total	4,500 - 7,750	118,500 - 168,000	27,850 - 43,950	150,850 - 219,700
Structure Class Total	32,250 - 55,650	737,700 - 1,027,000	174,100 - 285,150	944,050 - 1,367,800
Grand Total (2018, 2020, and 2022 planning areas)	**962,070 - 1,385,820 acres**			
Anticipated Treatment Type	[1] Noncommercial thin plus fuels treatment. May be fire only (prescribed or managed wildfire).			
	[2] Commercial thin plus fuels treatment if access exists. May be noncommercial, fire only (prescribed or managed wildfire), or regeneration treatment.			
	[3] Maintenance treatment: prescribed fire, managed wildfire, or mechanical fuels treatment. Target range corresponds to 50-75% of dry open and 25-50% of moist open forests.			
Notes	Grand Total includes acres from planned US Forest Service treatments in the Tillicum and Mission Maintenance planning areas that are not in the Structure Class Total.			

Forest Health Treatment Tracking



Between January 2017 and October 31, 2022, 493,460 acres of completed forest health treatments in eastern Washington

Treatments impacted 309,556 footprint acres.

Forest Health Treatment Tracking

EASTERN WASHINGTON TREATMENT ACRES							
	2017	2018	2019	2020	2021	2022	Total
Commercial Vegetation	16,694	14,857	16,124	17,599	13,812	9,526	**88,612**
Non-Commercial Vegetation	38,871	50,879	48,045	63,613	50,650	31,551	**283,609**
Prescribed Fire	21,122	36,635	27,383	12,958	20,927	2,214	**121,239**
Total	**76,687**	**102,371**	**91,552**	**94,170**	**85,389**	**43,291**	**493,460**

Between January 2017 and October 31, 2022, 493,460 acres of completed forest health treatments in eastern Washington

Treatments impacted 309,556 footprint acres.

Forest Health Treatment Tracking

Planned Treatments

- 820 Forest Stewardship Plans covering 126,066 acres on private lands.
- Since 2017, US Forest Service has finalized NEPA decisions that will result in 305,194 acres of treatments.
- In FY23-25 58,000 acres on DNR State Lands.

Monitoring

Appendix E: 20-Year Forest Health Strategic Plan Monitoring Framework

Monitoring forest conditions across eastern Washington: a multi-level and multi-party monitoring framework in support of the 20 Year Forest Health Strategic Plan

Washington State Department of Natural Resources, Forest Health and Resiliency Division[1]
November 2020

Core, high level questions:

1. **How are forest conditions and associated forest health indicators changing?**
2. **What are the outcomes of forest health treatments?**

Monitoring

2020 – 2022 Accomplishments

Regional and Planning Areas levels:

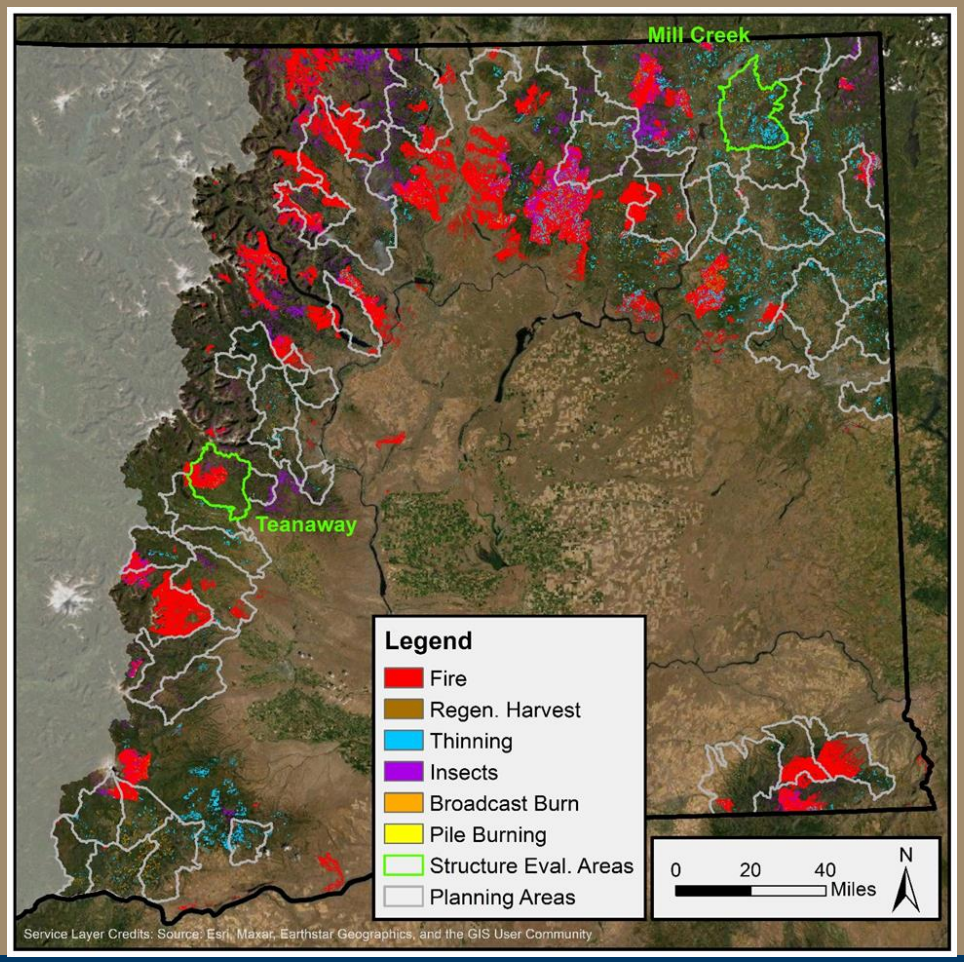
- Forest Health Treatment Tracking
- Change detection
- Evaluation of 2021 Work of Wildfires: Wildfires in NC WA StoryMap
- Wildfire Emissions
- Social Science Monitoring
- Economic Analysis of 20 Year Plan
- Treatment effects on Streamflow
- Upper Wenatchee Pilot: Monitoring Plan

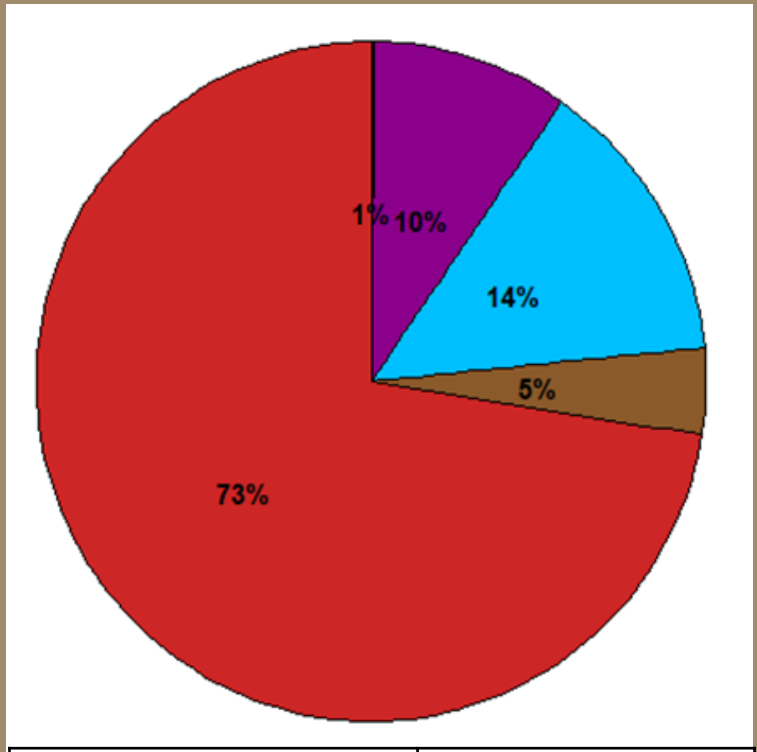
Treatment Unit – Stand level:

- Bullfrog & Virginia Ridge monitoring reports
- Cle Elum snowpack study
- Stemilt Rx Fire Monitoring
- Treatment longevity study

Change Detection

- Disturbance Mapping & Attribution: 2015 -2021

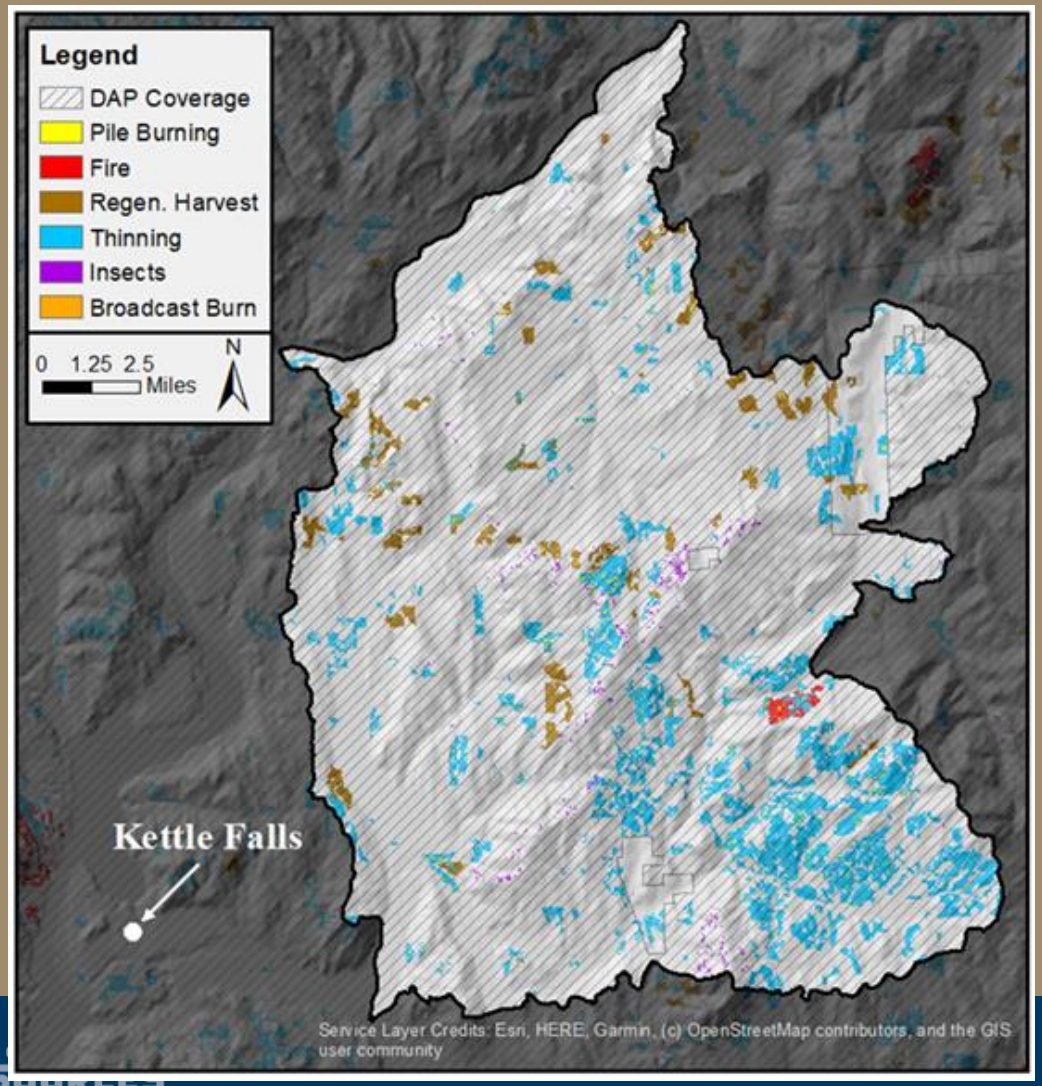




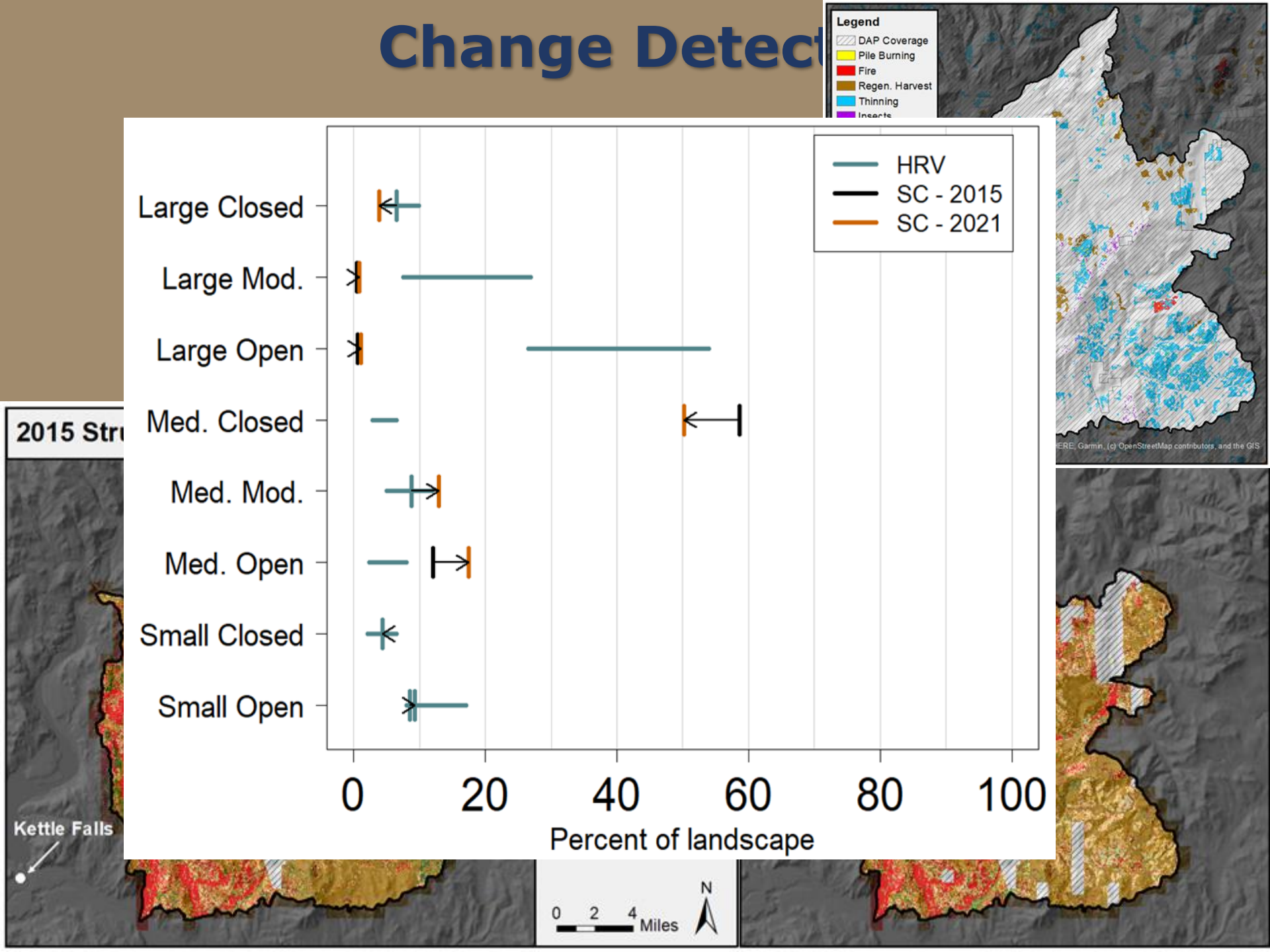
Disturbance Type	Acres
Fire	1,433,312
Thinning	272,710
Regen Harvest	80,936
Insect Activity	187,302
Broadcast Burn	3,066

Change Detection

- Disturbance Mapping and Attribution
- Structure Class Transitions
- 2015-2021



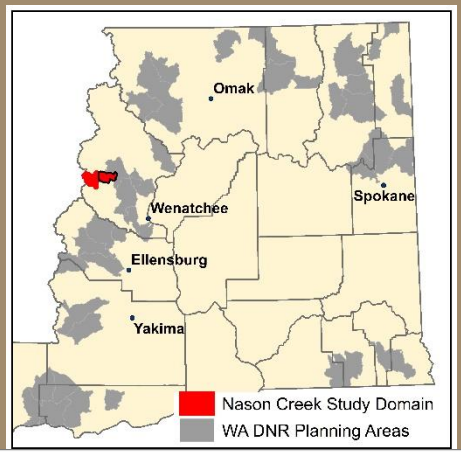
Change Detect

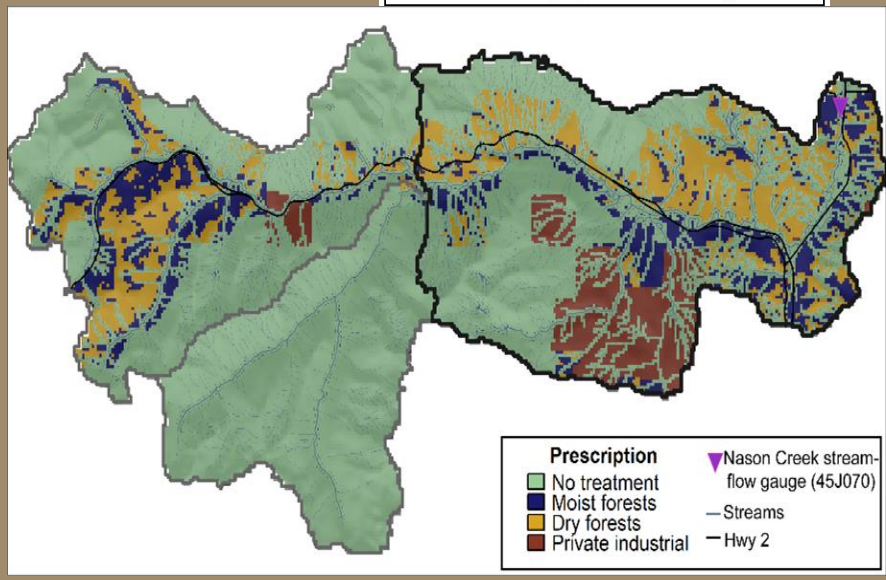


Treatments & Streamflow

Nason Creek Planning Area

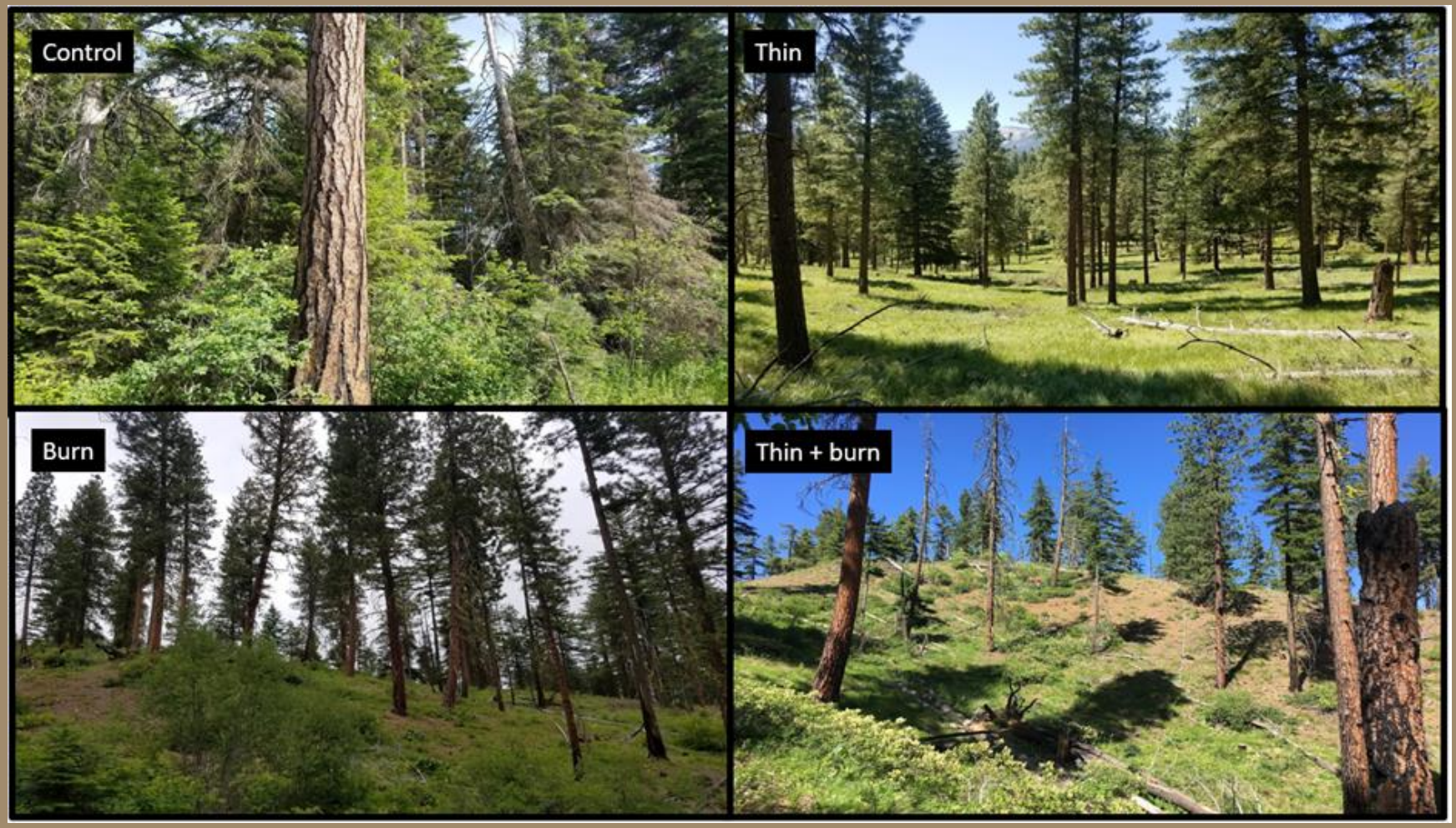
- Streamflows projected to decrease due to forest re-growth
- Mechanical thinning, Rx fire, and wildfire can offset declines and increase streamflows by ~5%
- Late season flows ➔ snowpack in upper elevations where wildfire is key strategy
- Expanding study to Wenatchee basin: ID areas that most influence streamflow & snowpack.





PNW Research Station: Tucker Furniss & Paul Hessburg
Pacific NW National Laboratory: Mark Wigmosta & Zhuoran Duan

Treatment Longevity



UW: Don Radcliffe, Brian Harvey, Jon Bakker.
Pacific NW National Laboratory: Mark Wigmosta & Zhuoran Duan

Treatment Longevity

Mission Creek Fire and Fire Surrogates Site:

- Treatment longevity varies based on metric:
  - Surface fuels <15 years
  - Canopy fuels >15 years)

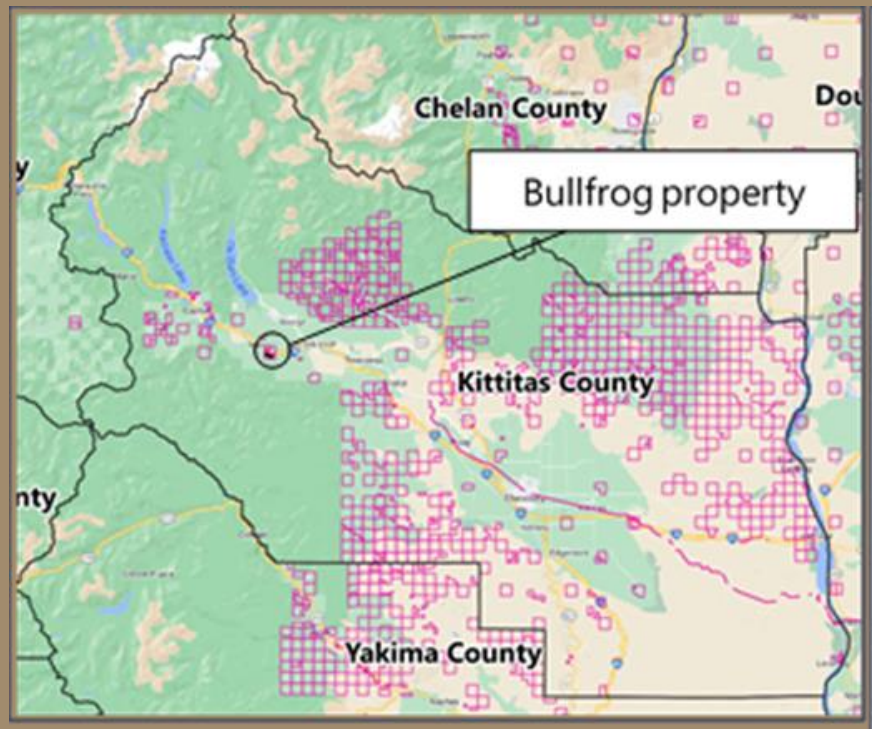
- Varies by treatment type
  - Thin & burn: ~ 20 years
  - Burn only 10-15 years

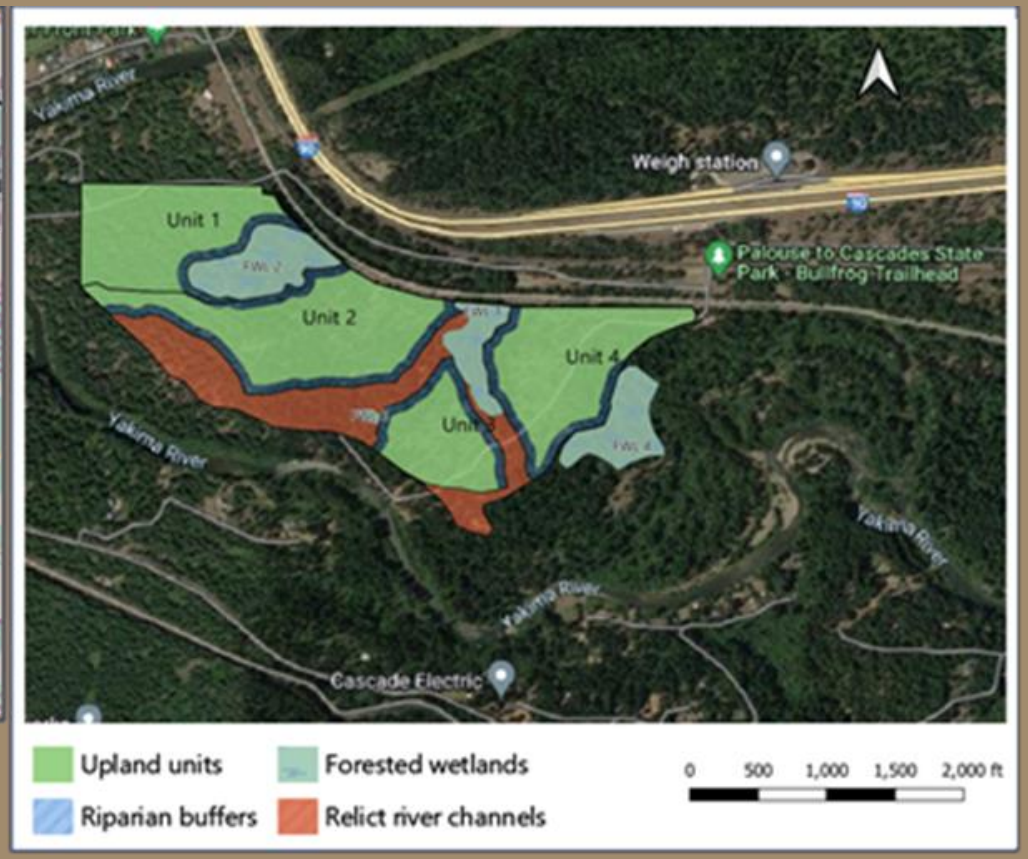
- Varies by pre-treatment conditions, treatment intensity, forest/vegetation type, etc.

- Limited data: ongoing research: JFSP for Colville NF and NPs.

UW: Don Radcliffe, Brian Harvey, Jon Bakker.
Pacific NW National Laboratory: Mark Wigmosta & Zhuoran Duan

Bullfrog Forest Health Treatment
Monitoring Report





Palouse to Cascades State Park

- WA State Parks: David Cass, Zach St. Amand
- Resilient Forestry: Russel Kramer
- DNR Staff

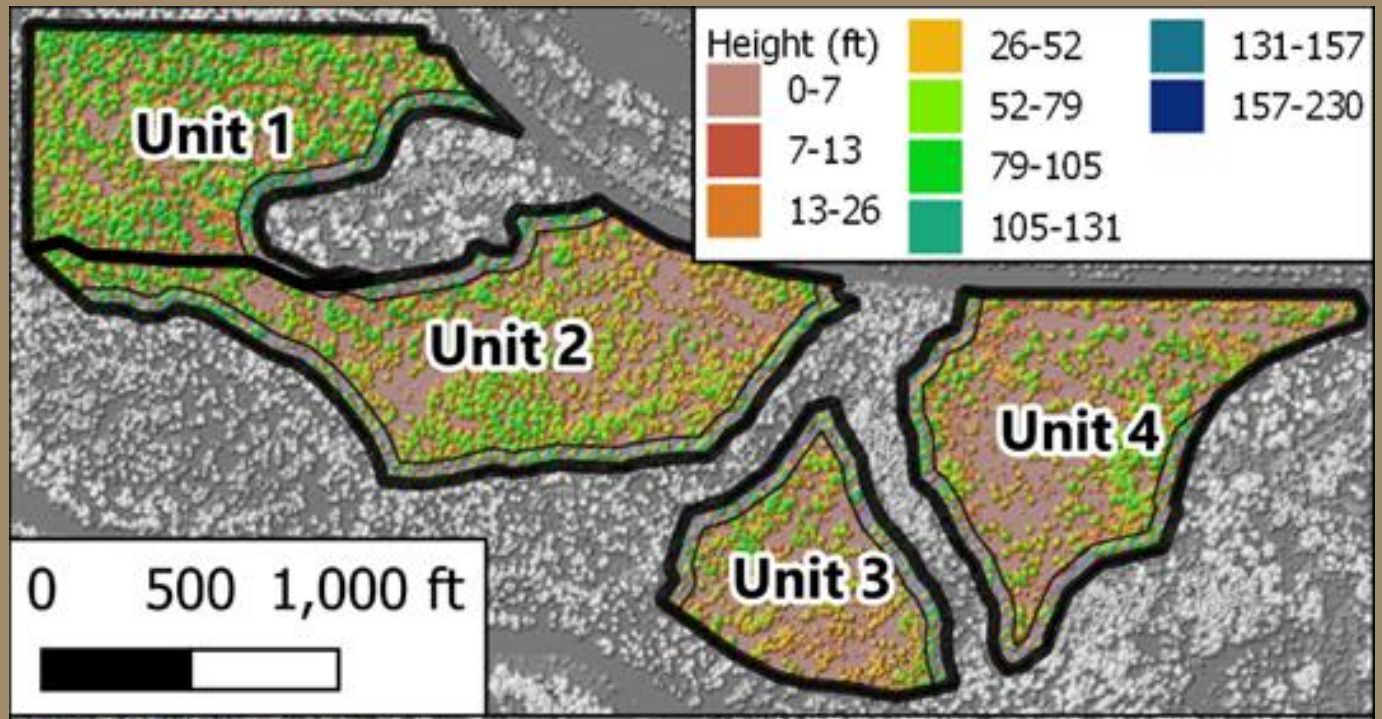
Monitoring questions:

- Density: Trees per Acres (TPA), Basal Area
- Species composition
- Large tree retention
- Spatial Variability: habitat diversity
- Small trees, regeneration
- Snags and downed logs

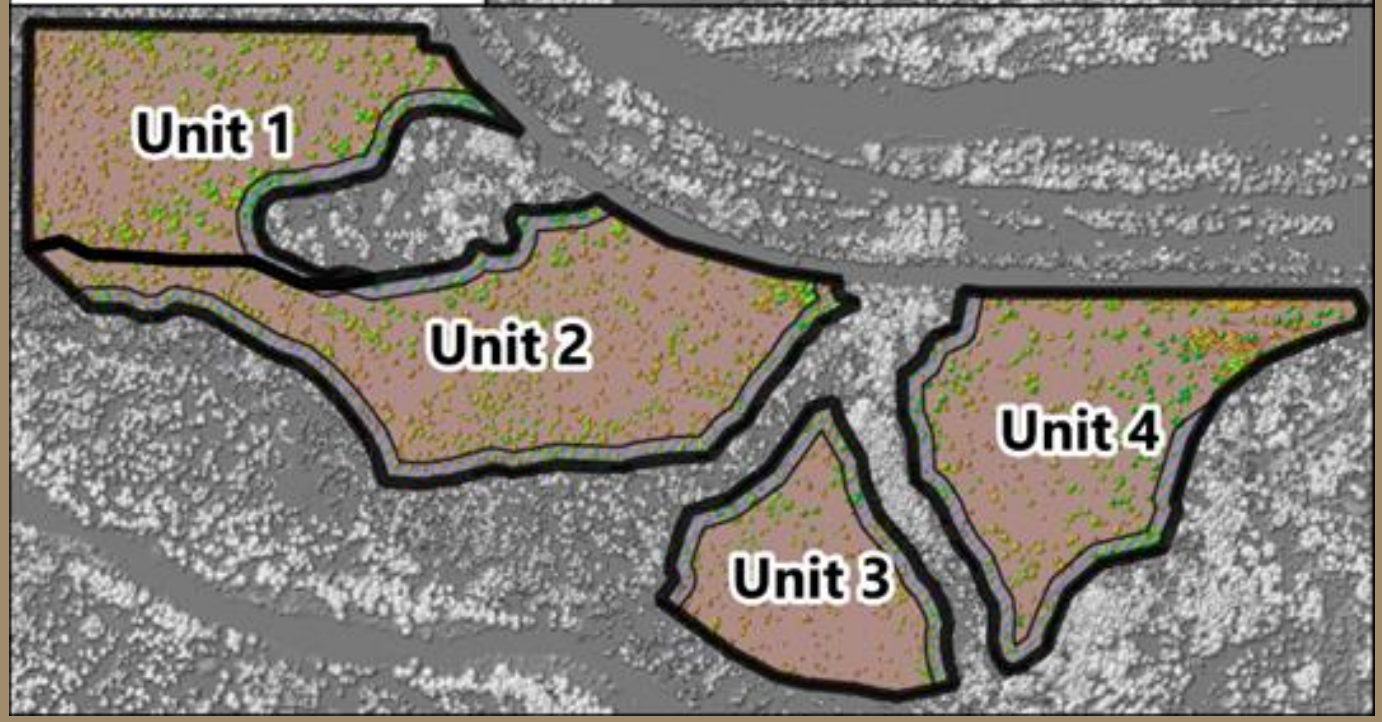
➔ Plots, Drone + LiDAR Tree Canopy Mapping

Implementation Monitoring: Density targets (esp RMZs), spatial variability

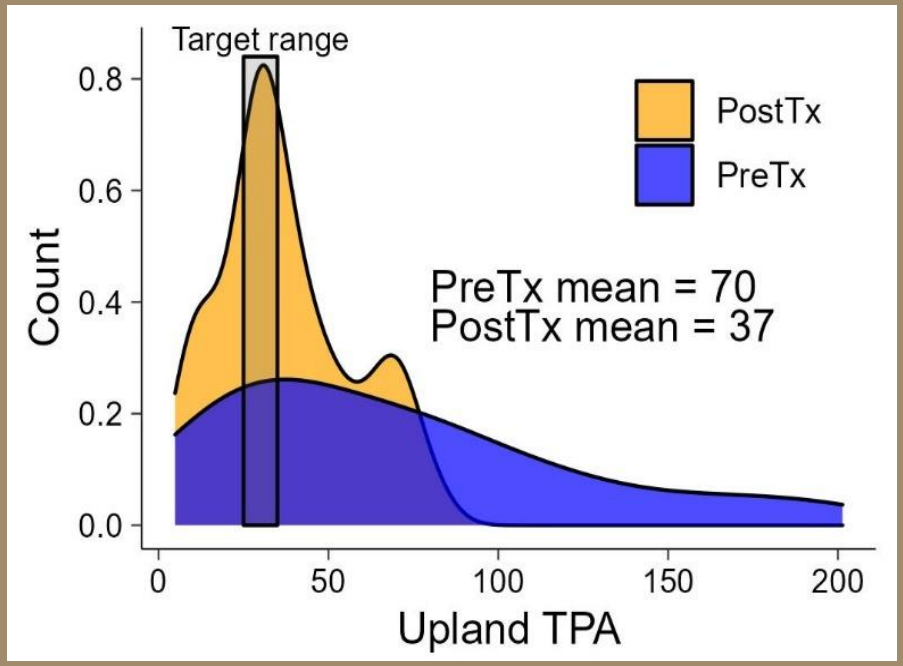
Effectiveness Monitoring: fire risk, riparian function, habitat



Pre-Treatment
Lidar



Post-Treatment
Drone



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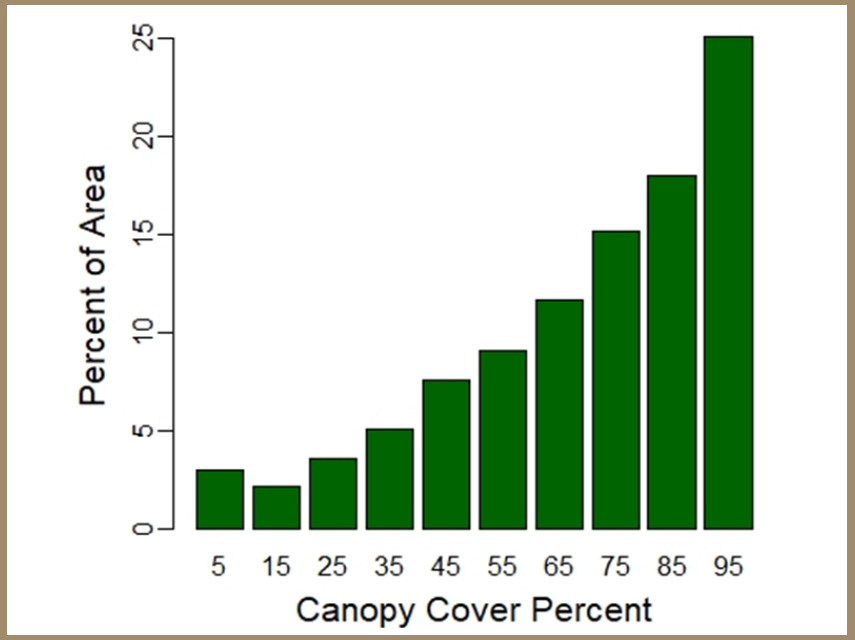
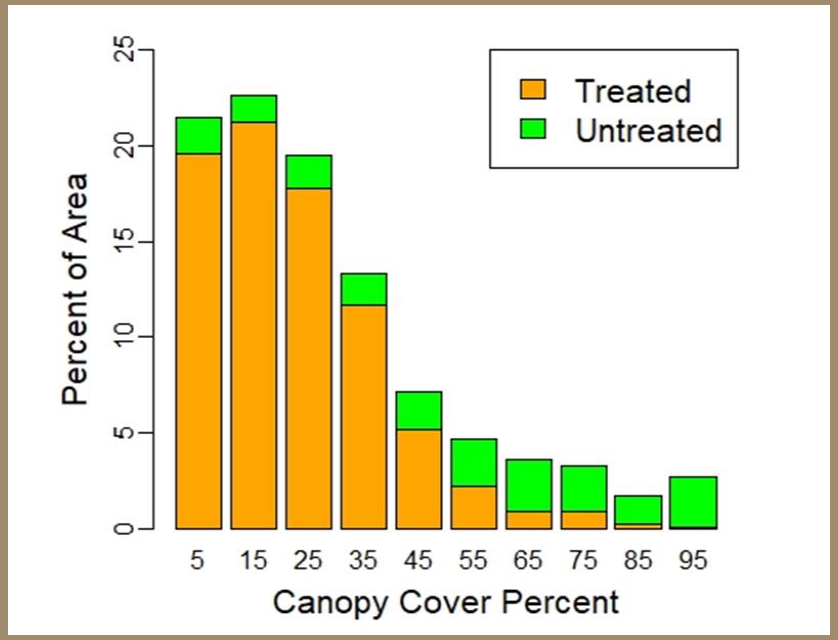
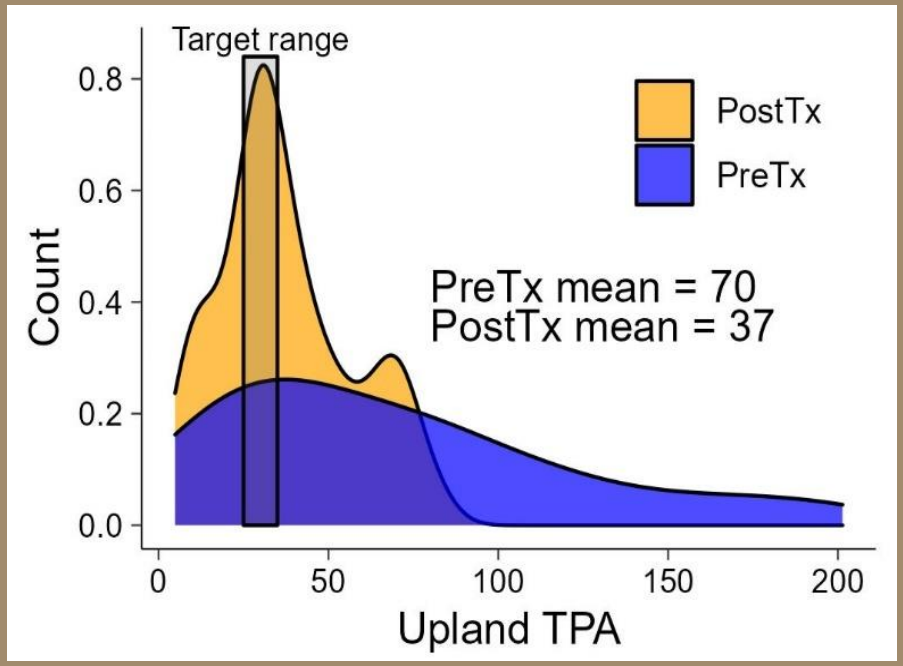


Post-Treatment





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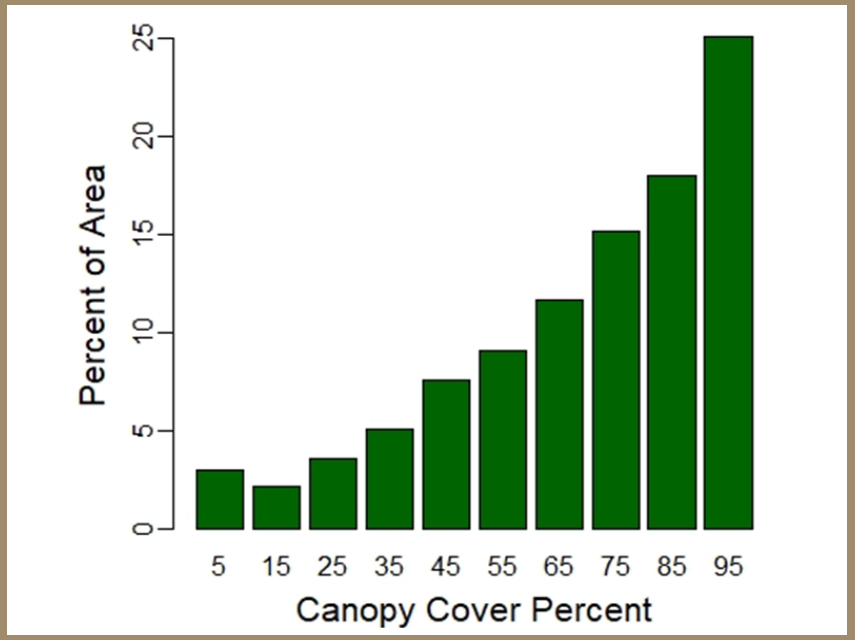

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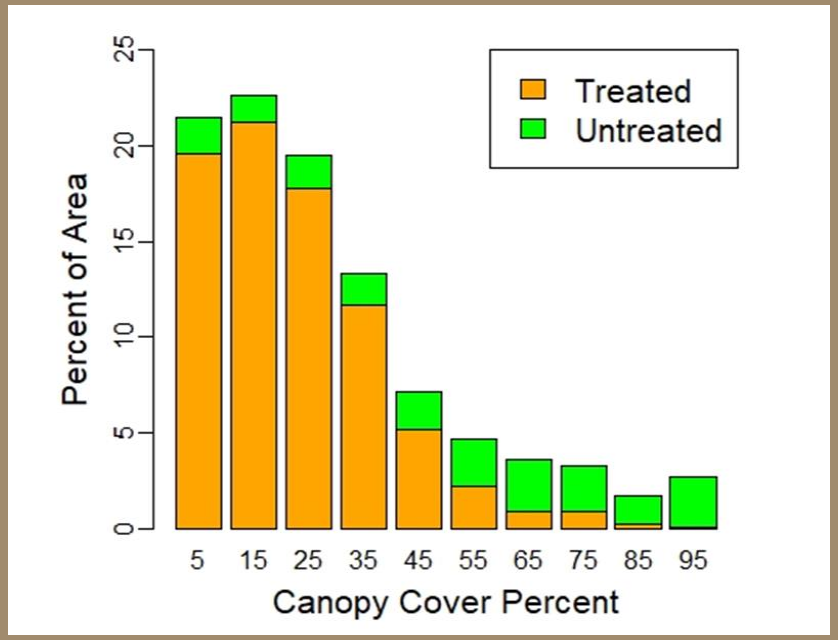

Monitoring

Forest Health Assessment and Treatment Framework

RCW 76.06.200

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20-Year Forest Health Strategic Plan Monitoring Framework

One of the five overarching goals of the 20-Year Plan is to "develop and implement a forest health resilience monitoring program that establishes criteria, tools, and processes to monitor forest and watershed conditions, assess progress, and reassess strategies over time".

During the 2018-2020 biennium, DNR science staff worked with a wide range of partners to develop a monitoring framework based on this goal. The monitoring framework, which was included in the 2020 legislative report, defines a set of specific questions to guide monitoring, describes methods and datasets, and defines roles of DNR staff and partners to accomplish the work at three different levels: eastern Washington region, planning areas, and treatment units. The framework is centered on two overarching questions:

State Appropriations Request

1. Maintenance-Level Request: $94.8 million, which includes just over $34 million specific to implementation of forest health assessments, treatments (including technical assistance to small forest landowners), and progress tracking.

State Appropriations Request

2. State Agency Requests: direct allocations to those state agencies producing core deliverables consistent with the 20-Year FHSP and Forest Action Plan.

- **Washington State Conservation Commission (SCC) for $5 million**
- **Washington Department of Fish and Wildlife (DFW) request for approximately $6M from the dedicated capital-funded Forest Resiliency Account – Hazardous Fuels Reduction and Forest Health (25F)**
- **Washington State Parks (Parks) request of approximately $1M in capital funding, and $500K as a component of the General Fund operating budget.**

State Appropriations Request

3. Policy Level Pass-Through Request: To ensure funding is provided in a transparent, consistent, and accessible manner to non-state entities, DNR requests the remaining $25.2 million in available funds from the Account be provided to the agency for direct disbursement through DNR's existing programs that provide ability to pass-through funding to implementation partners.

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