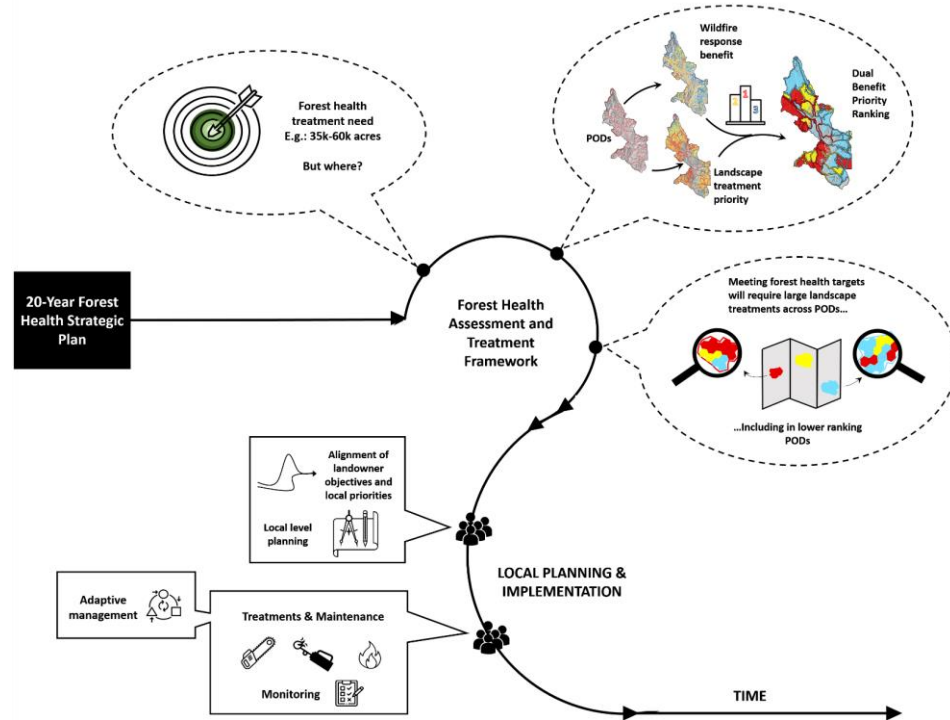


2020 Forest Health Assessment and Treatment Framework Report



Jennifer Watkins and Chuck Hersey
Washington State Dept. of Natural Resources

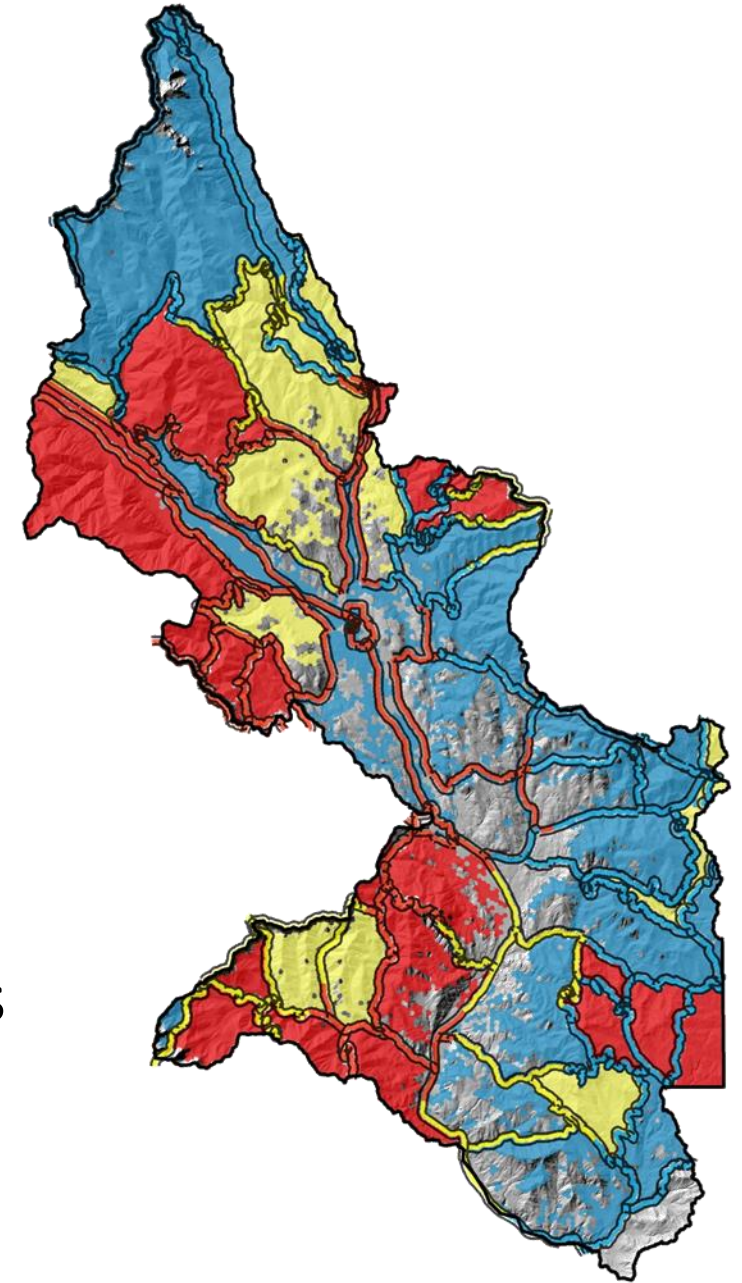
Forest Health Advisory Committee Meeting
December 11, 2020



WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

What is new for 2020?

- 18 planning areas assessed
 - 8 assessed for dual benefit under HB 1784 pilot project
- New landscape evaluation components
 - Large tree/dense forest sustainability
 - Landscape treatment priority
 - Wildfire response benefit priority
 - Dual benefit priority (forest health and wildfire response)
- Forest health treatment tracking and accomplishments
- Monitoring framework



Big thanks to the Forest Health Science and Planning Team!

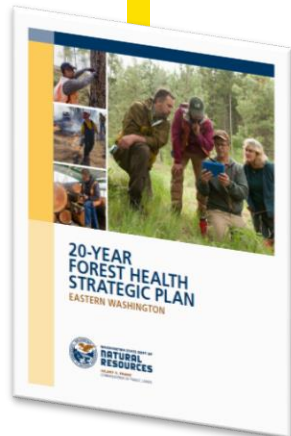
- Ana Barros, Fire Scientist
- Derek Churchill, Forest Health Scientist
- Aleksandar Dozic, GIS Analyst
- Stevie Mathieu, Communications Manager
- Garrett Meigs, Forest Health Scientist
- Amy Ramsey, Forest Health Planner
- Annie Smith, Forest Health Scientist
- Andrew Spaeth, Forest Health Planner

Legislative context

RCW 76.06

Main forest health law for the state of Washington

2017

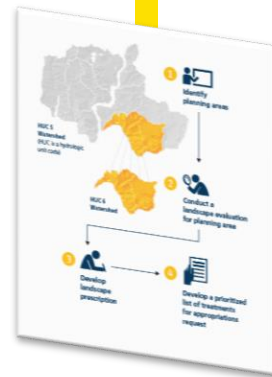


SB 5546

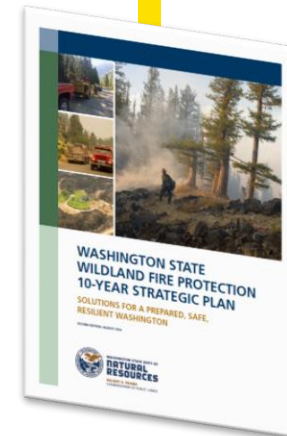
Forest health landscape evaluations across all lands for priority planning areas

RCW 76.06.200

Forest Health Assessment and Treatment Framework



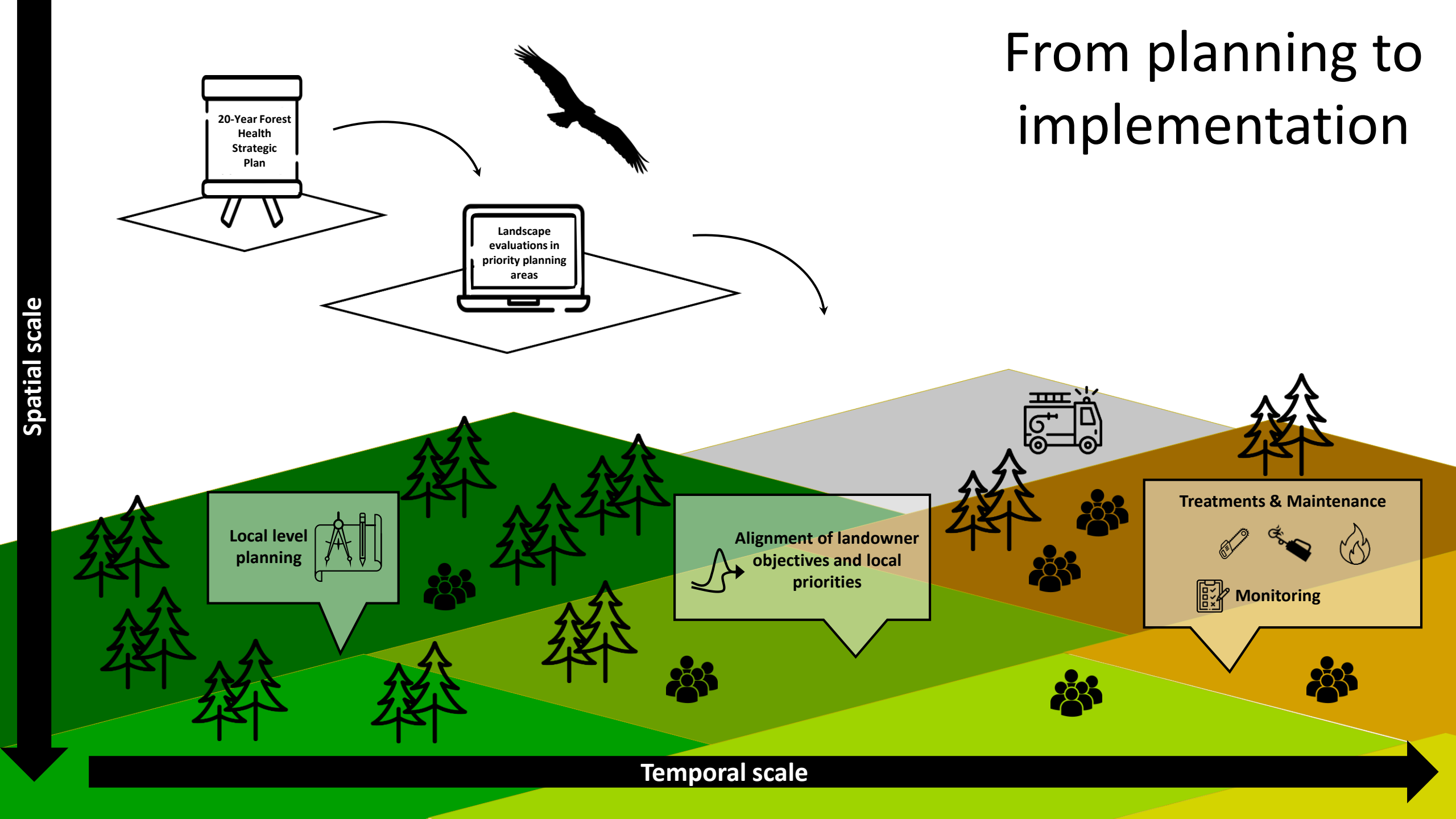
2019



HB 1784

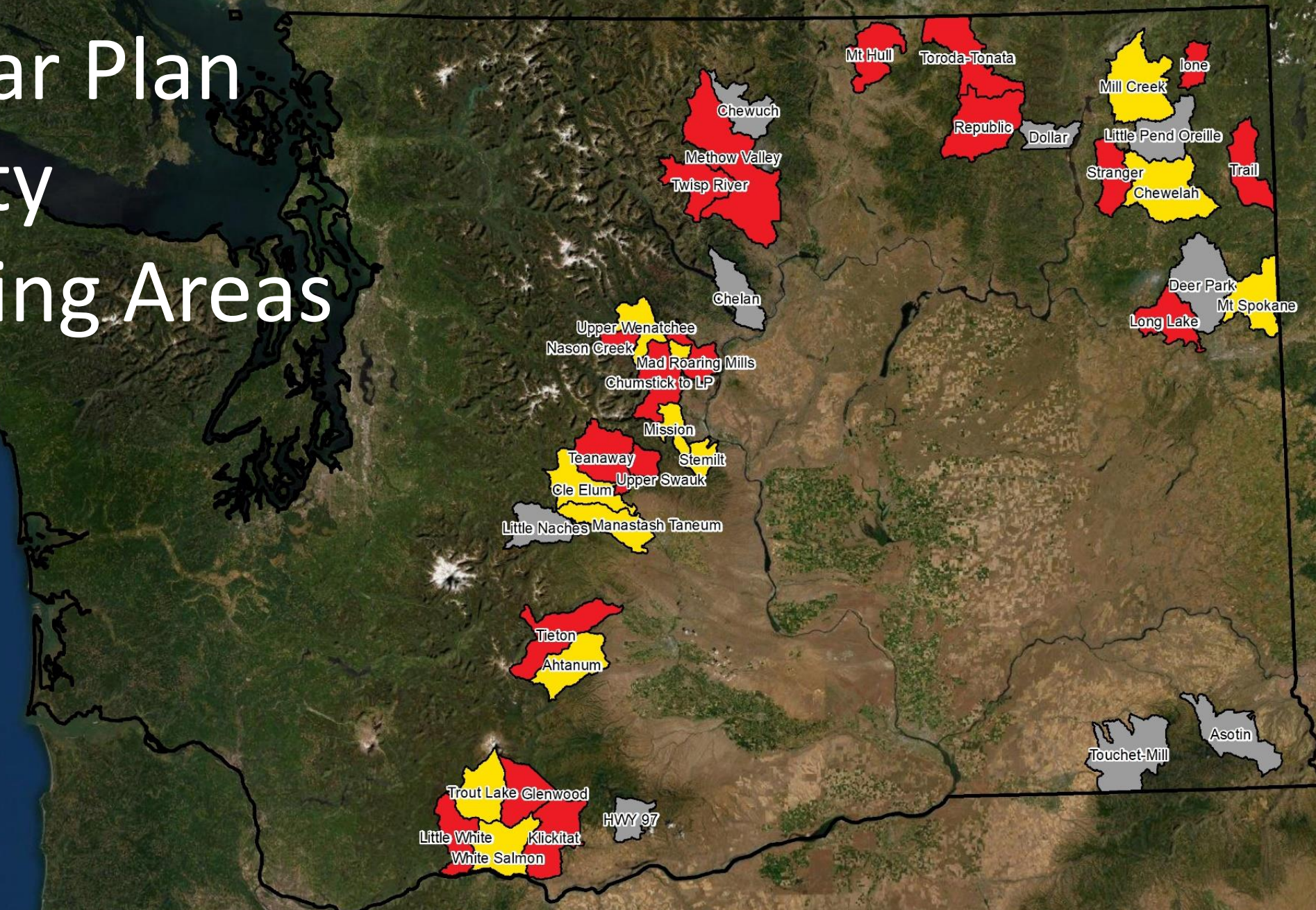
Dual benefit: forest health and fire response

From planning to implementation



20-Year Plan Priority Planning Areas

Plan year
2018
2020
2022



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Landscape evaluations

12 planning areas Completed in **2018**

18 planning areas Completed in **2020**

(**8** with the full 14-step dual benefit process)

9 planning areas To be analyzed by December 2022

(**31** for dual benefit)

3.4 million acres assessed for forest health need and

1 million acres for dual benefit



*New landscape
evaluation
components*

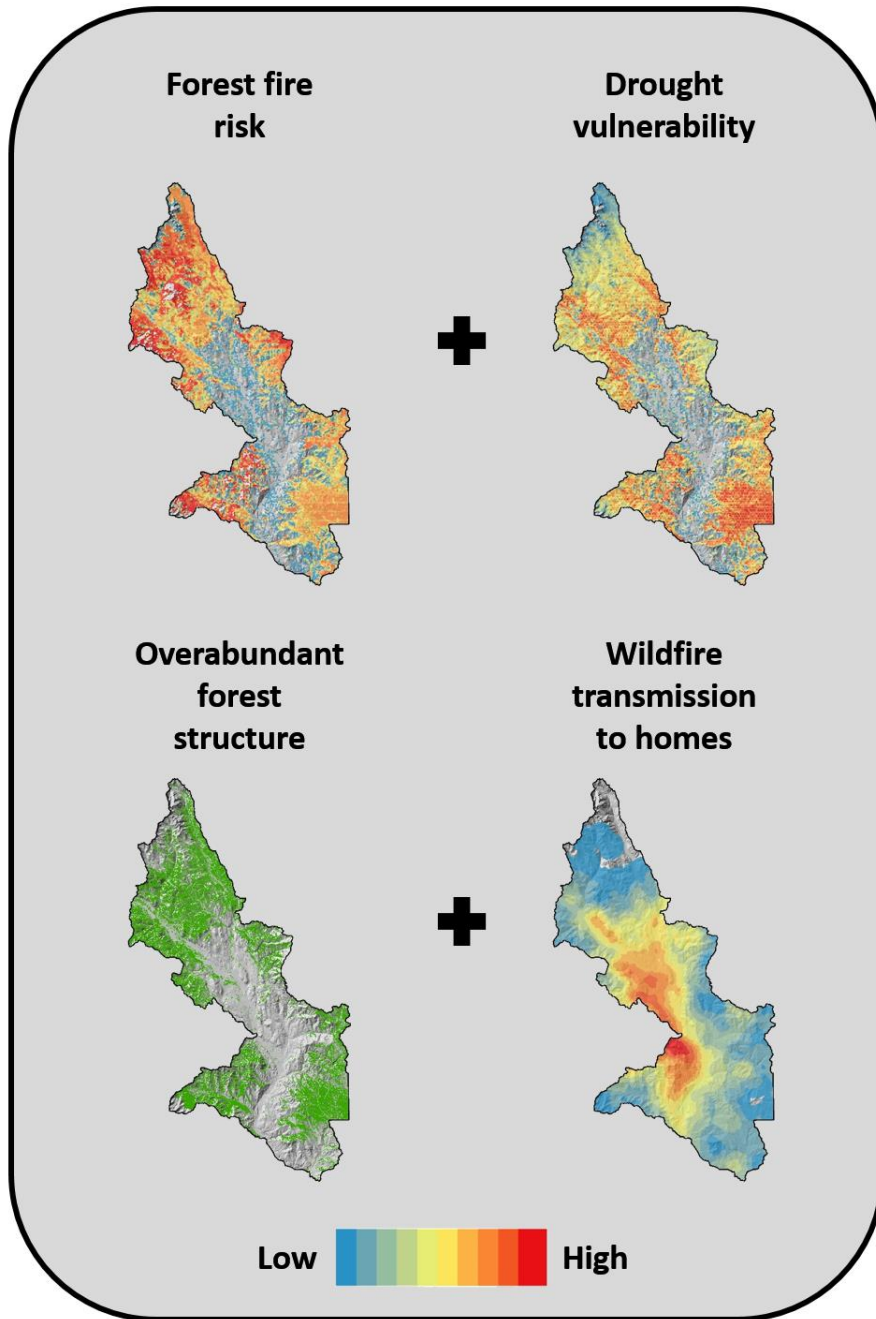
Landscape evaluations

1. Identify ownership types and management objectives
2. Map vegetation and forest types
3. Map current forest structure and species composition
4. Assess departure of forest structure
5. Assess wildfire risk
6. Analyze drought vulnerability
7. Map habitat for focal species
8. Evaluate aquatic functions
9. Estimate treatment targets
- 10. Evaluate operational feasibility and economics**
- 11. Map dense forest, large tree sustainability**
- 12. Prioritize landscape treatments**
- 13. Prioritize wildfire response benefit**
- 14. Prioritize for dual benefit using Potential wildland fire Operational Delineations**

**2018
Version 1.0**

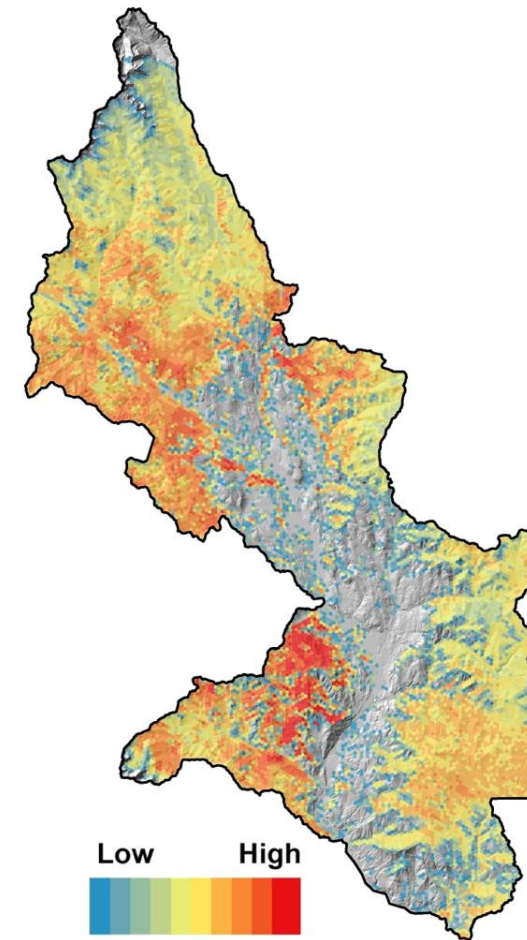
**2020
Version 2.0**

HB1784



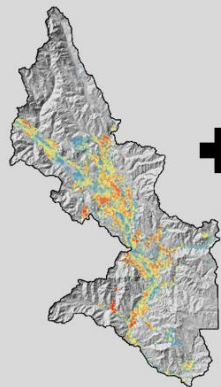
Landscape Treatment Priority

=



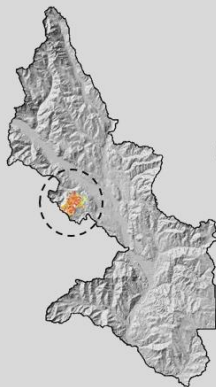
Wildfire risk

Homes and infrastructures



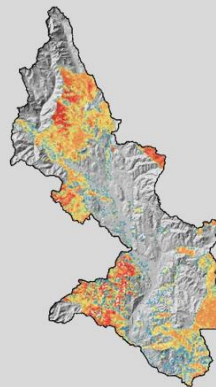
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Drinking water

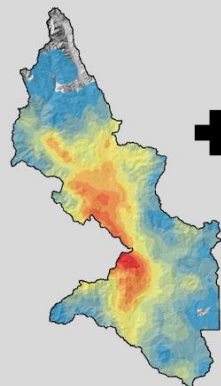


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Commercially-managed lands

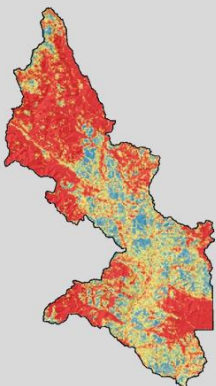


Wildfire transmission to homes



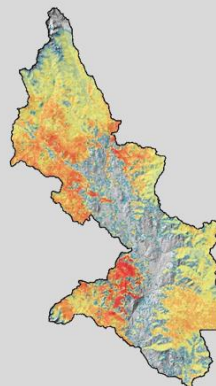
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Crown fire potential



+

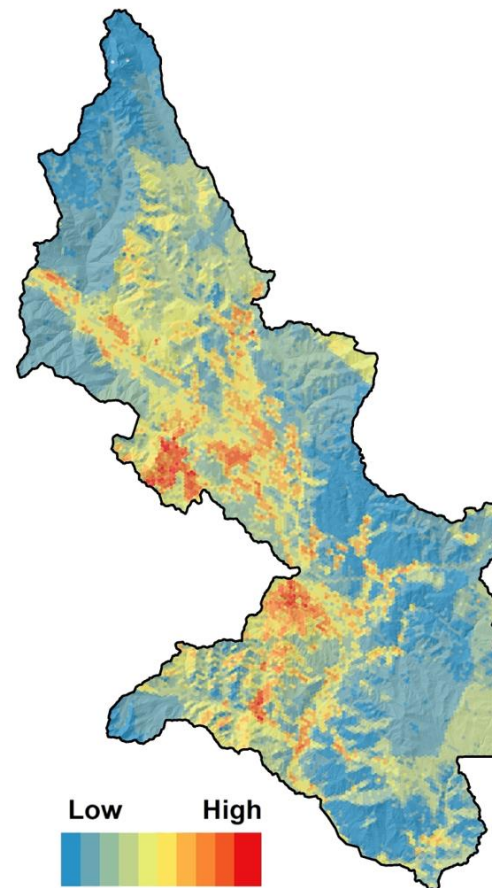
Landscape Treatment Priority



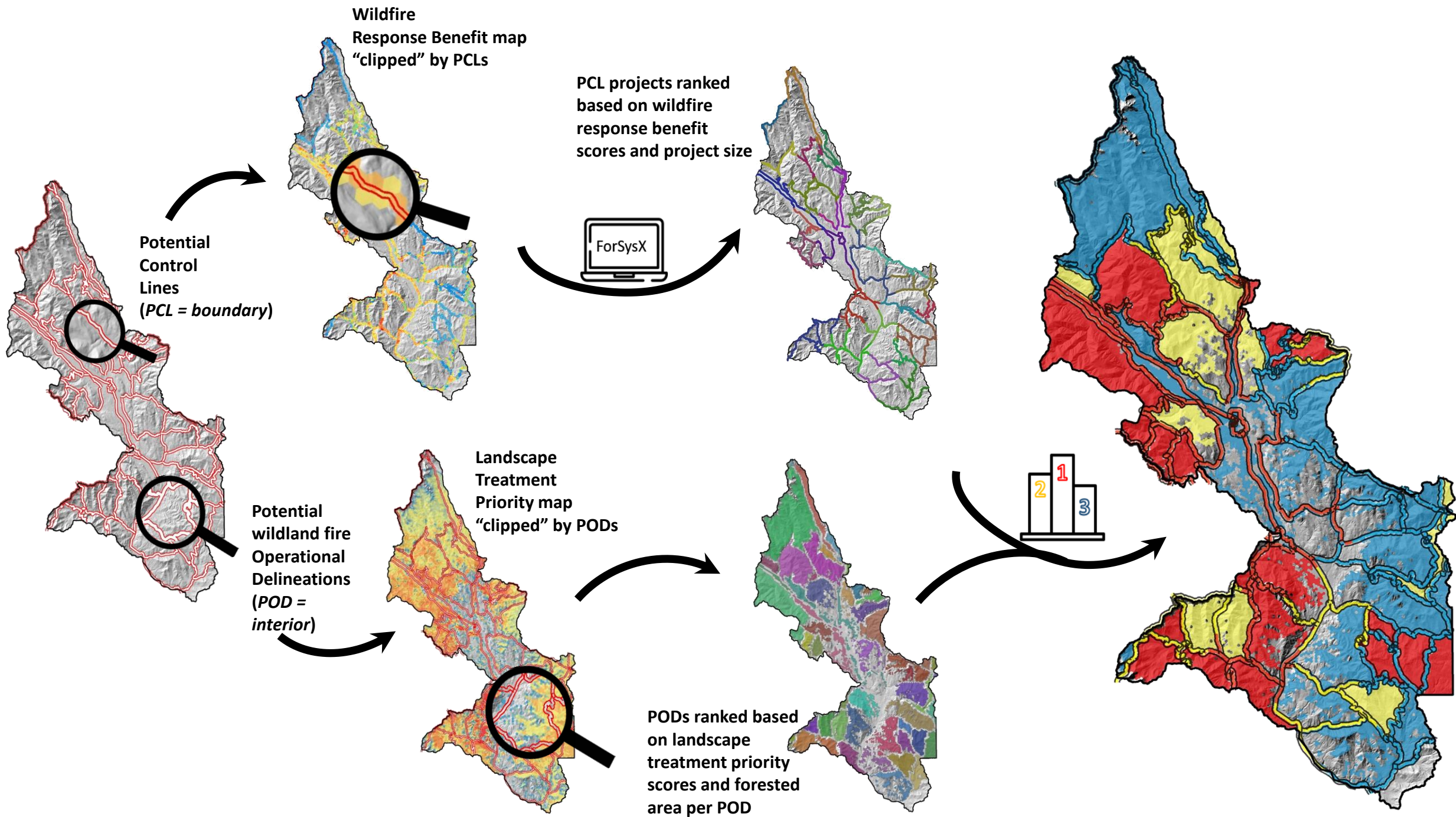
Low  High

Wildfire Response Benefit Priority

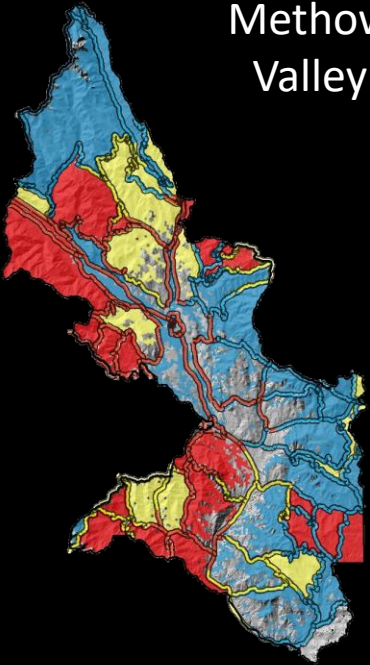
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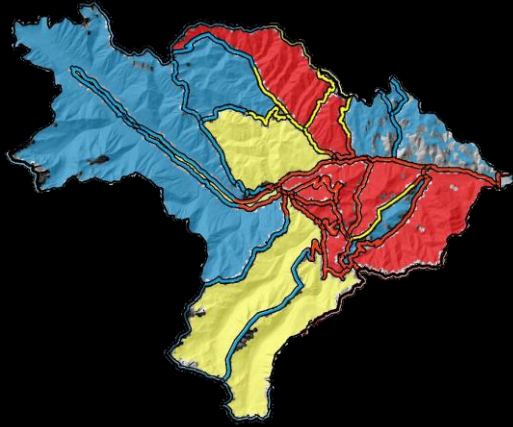
Low  High



Methow Valley



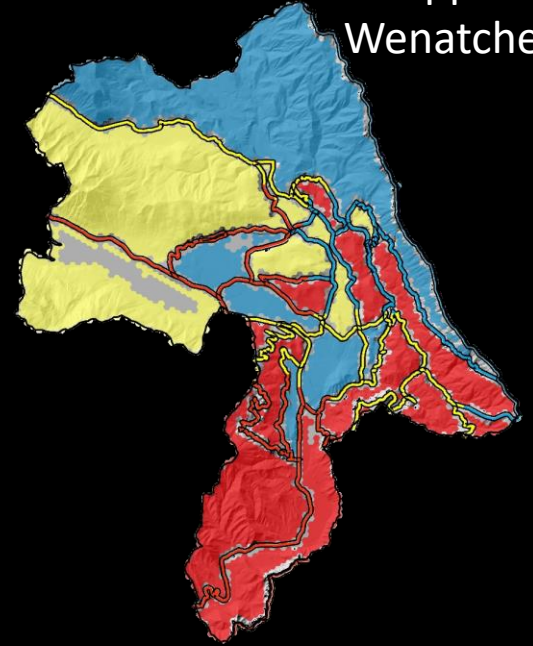
Twisp River



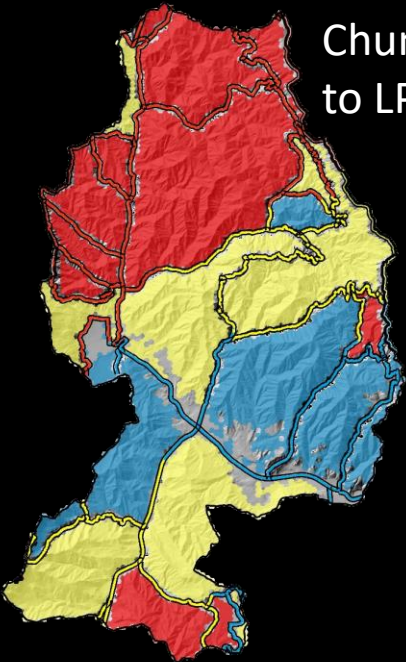
Nason Creek



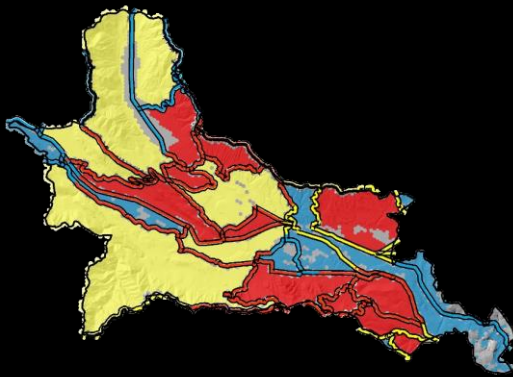
Upper Wenatchee



Chumstick to LP



Cle Elum



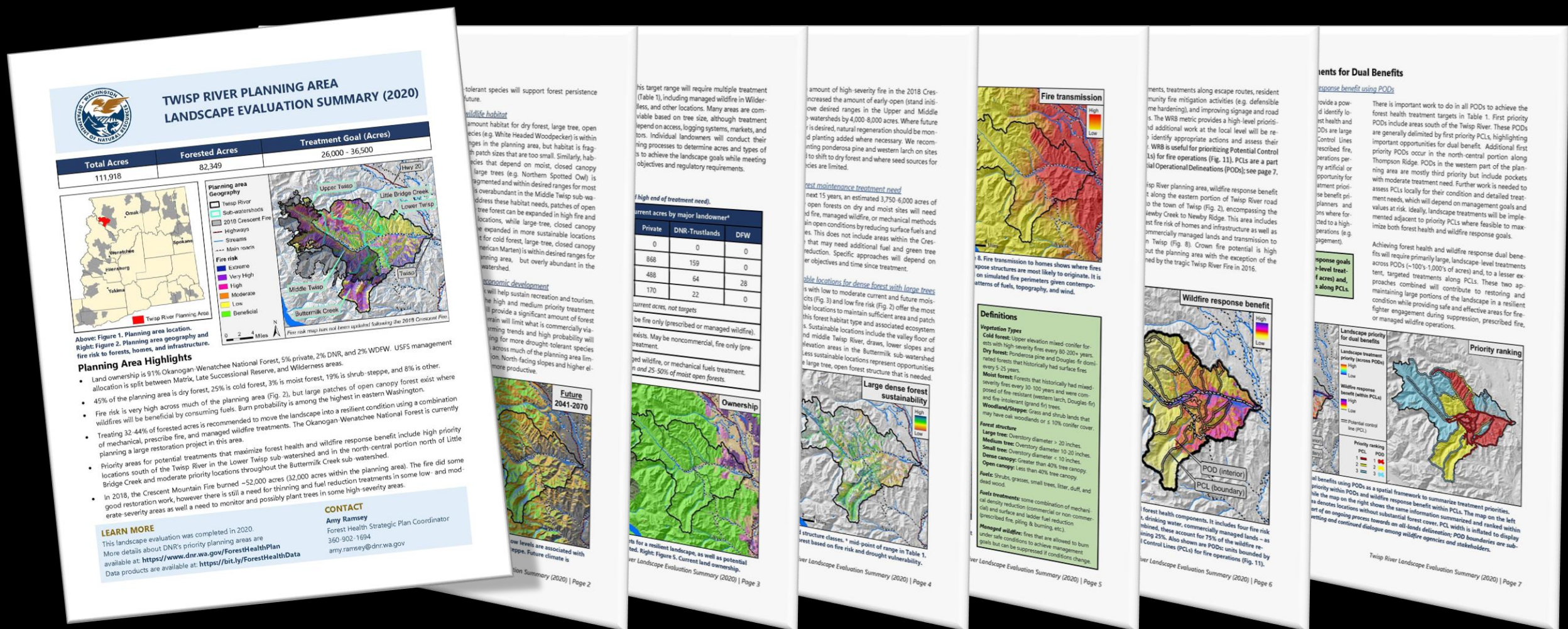
Teanaway



Manastash-Taneum



Legislative report: LE summaries





*Forest health
treatment need
assessment results*

Assessed forest health treatment need for 2018 and 2020 planning areas (30 planning areas)

Treatment need across
30 planning areas:

807,720 acres

to

1,162,620 acres

Planning Area Totals (Year)	Forest Structure Class (acres)		
	Small Dense ¹	Medium-Large Dense ²	Medium-Large Open ³
2018 Structure Class Total	9,500 - 16,500	238,200 - 338,400	32,500 - 65,200
2018 Total	298,220 - 438,120 acres		
2020 Structure Class Total	17,750 - 30,900	378,500 - 516,100	113,250 - 177,500
2020 Total	509,500 - 724,500 acres		
Grand Total (2018 and 2020 areas)	807,720 - 1,162,620 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 regeneration treatment or fire only (prescribed or managed wildfire).		
	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	2018 Total includes acres from planned USDA Forest Service treatments in the Tillicum and Mission Maintenance planning areas that are not in the Structure Class Total.		

Assessed forest health treatment need for 2020 planning areas (18 planning areas)

Planning Area (2020)	Forest Structure Class (acres)		
	Small Dense ¹	Medium-Large Dense ²	Medium-Large Open ³
Chumstick to LP	1,250 - 2,750	25,000 - 33,750	10,250 - 16,500
Glenwood	750 - 1,000	17,000 - 22,000	5,750 - 9,000
lone	250 - 500	15,500 - 19,000	750 - 1,500
Klickitat	4,000 - 6,500	34,000 - 41,500	5,000 - 7,000
Little White	-	17,750 - 27,500	-
Long Lake	-	6,500 - 8,250	7,500 - 11,750
Mad Roaring Mills	7,500 - 11,250	1,000 - 1,750	5,000 - 7,000
Methow Valley	-	33,500 - 50,500	16,000 - 24,500
Mt Hull	250 - 900	6,750 - 9,600	5,000 - 8,000
Nason Creek	750 - 2,000	5,000 - 8,000	1,000 - 1,500
Republic	-	33,000 - 43,500	13,500 - 20,500
Stranger	500 - 1,000	23,500 - 28,000	6,000 - 9,000
Teanaway	1,500 - 3,000	26,000 - 40,000	11,000 - 17,000
Tieton	-	31,250 - 49,500	6,750 - 11,000
Toroda-Tonata	-	43,500 - 54,000	7,500 - 12,000
Trail	750 - 1,500	26,250 - 33,000	5,500 - 9,500
Twisp River	250 - 500	22,000 - 29,500	3,750 - 6,500
Upper Swauk	-	11,000 - 16,750	3,000 - 5,250
Total	17,750 - 30,900	378,500 - 516,100	113,250 - 177,500
Grand Total	509,500 - 724,500 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 regeneration treatment or fire only (prescribed or managed wildfire).		
	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.		

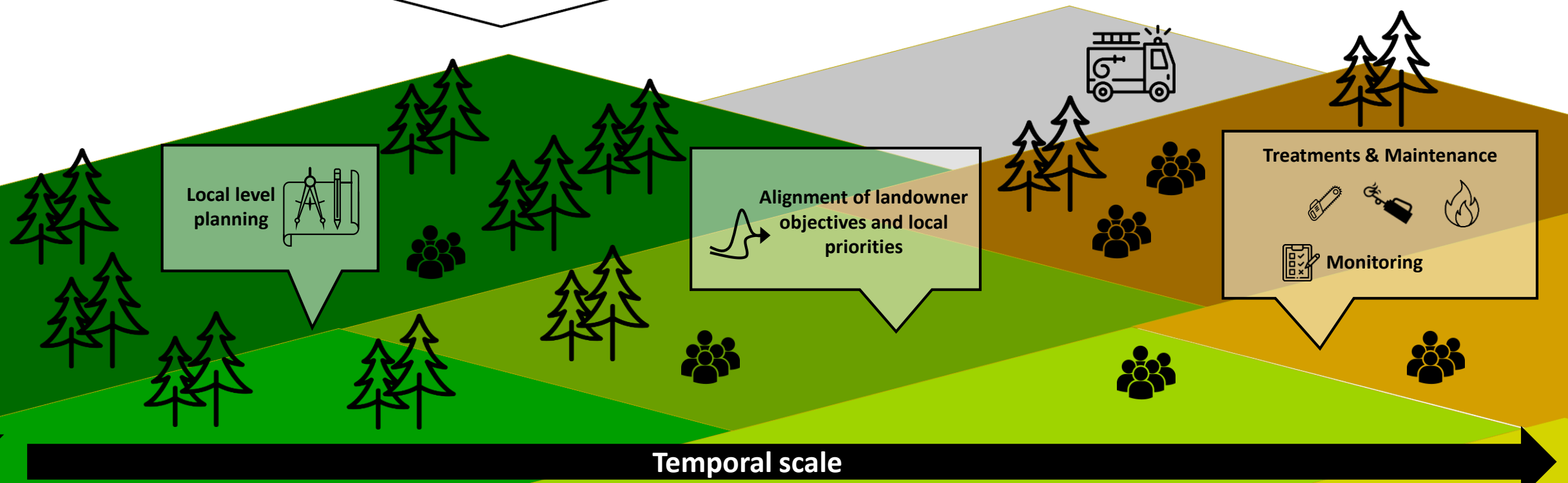
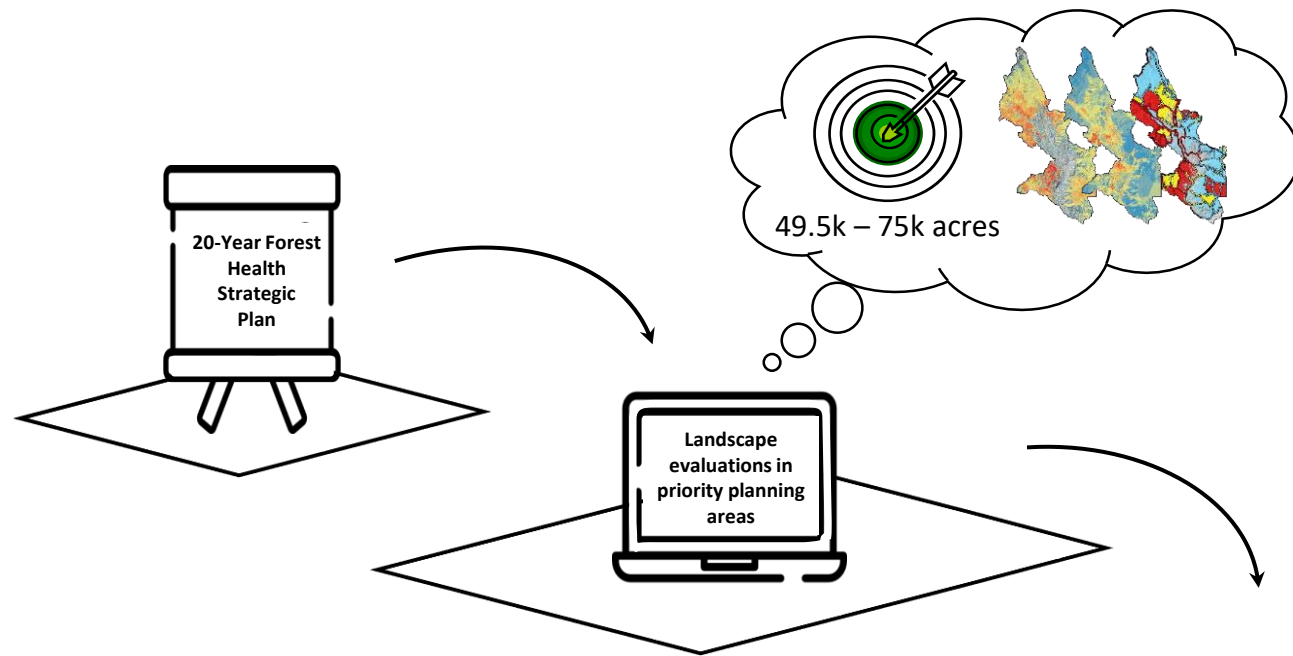
Assessed forest health treatment need for 2018 planning areas (12 planning areas)

Planning Area (2018)	Forest Structure Class (acres)		
	Small Dense ¹	Medium-Large Dense ²	Medium-Large Open ³
Chewelah ⁴	500 - 1,000	50,000 - 65,000	8,500 - 14,000
Mill Creek	1,000 - 2,000	54,000 - 72,000	2,000 - 6,000
Mt Spokane	500 - 1,000	21,000 - 29,000	4,000 - 8,500
Upper Wenatchee	-	15,000 - 25,000	500 - 2,000
Stemilt	-	6,200 - 7,900	3,000 - 5,700
Manastash-Taneum	3,500 - 6,500	11,000 - 19,000	2,000 - 4,000
Cle Elum ⁴	1,500 - 2,500	15,500 - 24,000	5,000 - 9,000
Ahtanum	2,000 - 2,500	13,000 - 18,500	4,000 - 8,000
Trout Lake	-	17,500 - 31,000	1,000 - 2,000
White Salmon	500 - 1,000	35,000 - 47,000	2,500 - 6,000
2018 Structure Class Total	9,500 - 16,500	238,200 - 338,400	32,500 - 65,200
2018 Subtotal	280,200 - 420,100 acres		
Tillicum ⁵	7,614		
Mission Maintenance ⁵	10,406		
2018 Total	298,220 - 438,120 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 regeneration treatment or fire only (prescribed or managed wildfire).		
	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	⁴ Chewelah and Cle Elum acre targets were updated in 2020. Cle Elum includes an additional sub-watershed.		
	⁵ Full landscape evaluations were not conducted for Tillicum and Mission Maintenance. Acres for these two areas reflect planned USDA Forest Service treatments and were added to bottom and top of range in 2018 subtotal.		



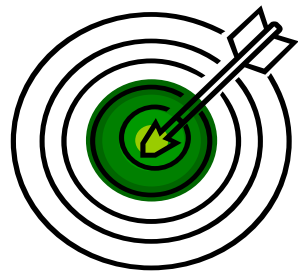
*Understanding
treatment need &
spatial priorities*

Spatial scale



Landscape treatments

Forest health treatment **goals** will primarily be achieved with **large, landscape-level** treatments

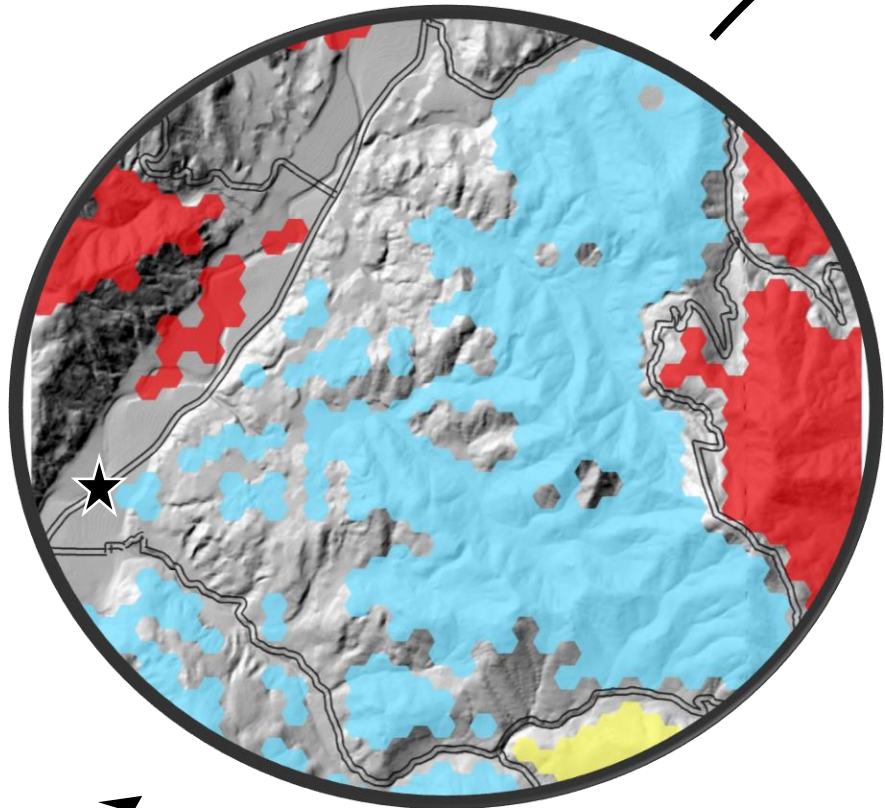
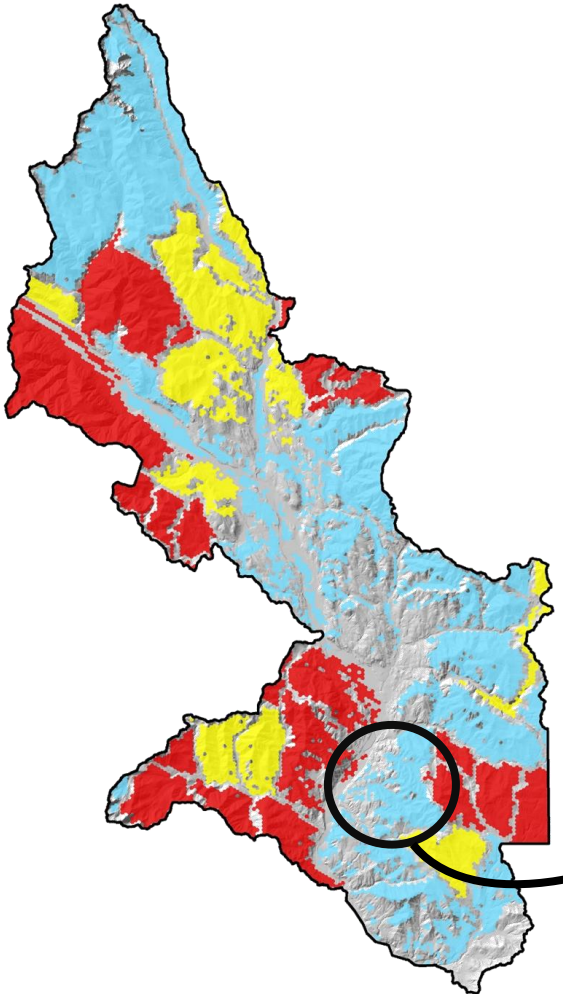


49.5k – 75k acres

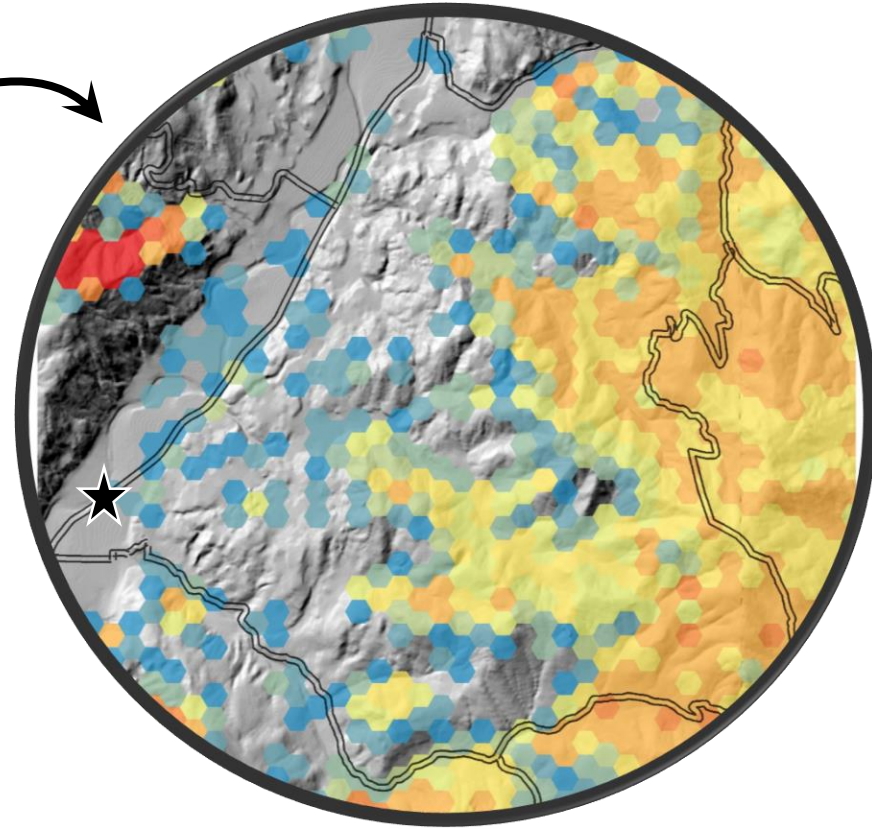


Recently completed 700-acre forest health treatment on DNR trust lands in the Methow Valley priority planning area. Credit: John Marshall.

Are blue PODs all good?

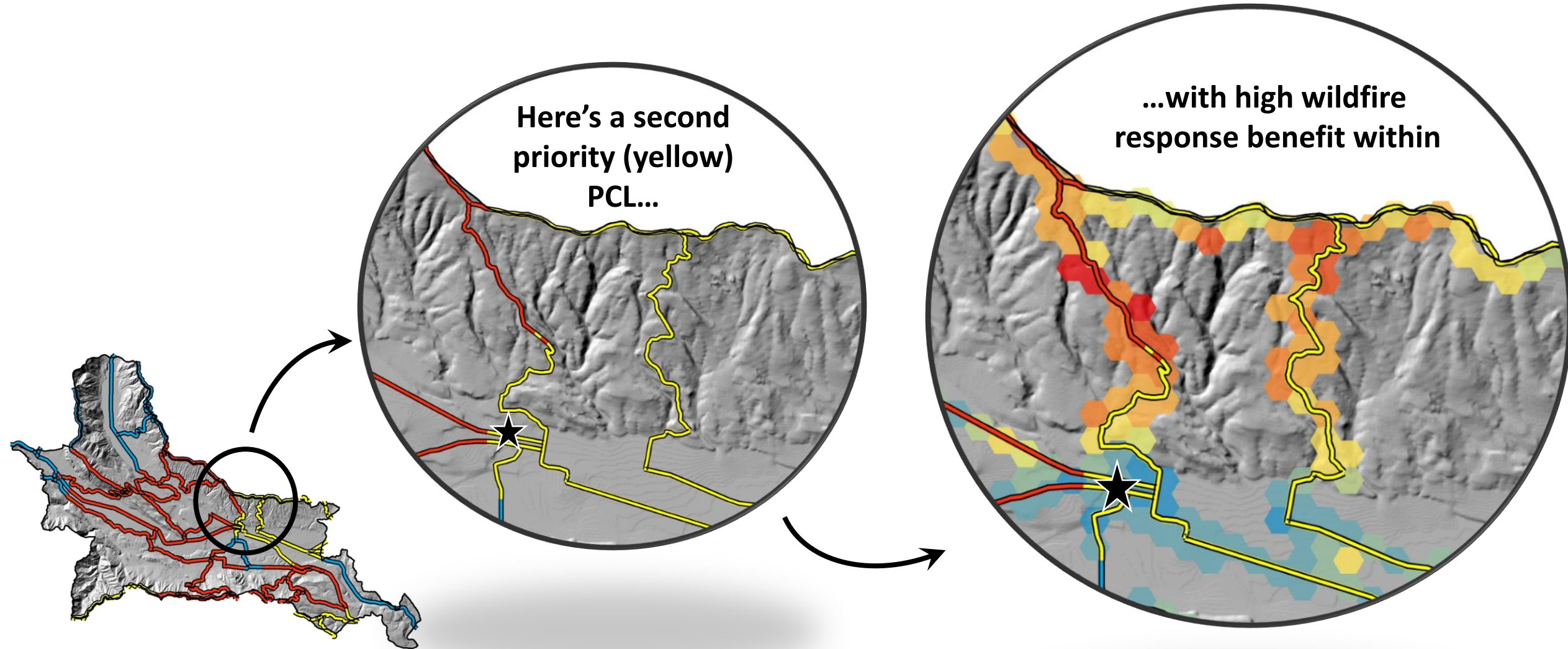


Here's a third priority (blue) POD...



...with forest health treatment needs within

Qualitative ranking or hexels?



★ Cle Elum

Landscape treatments

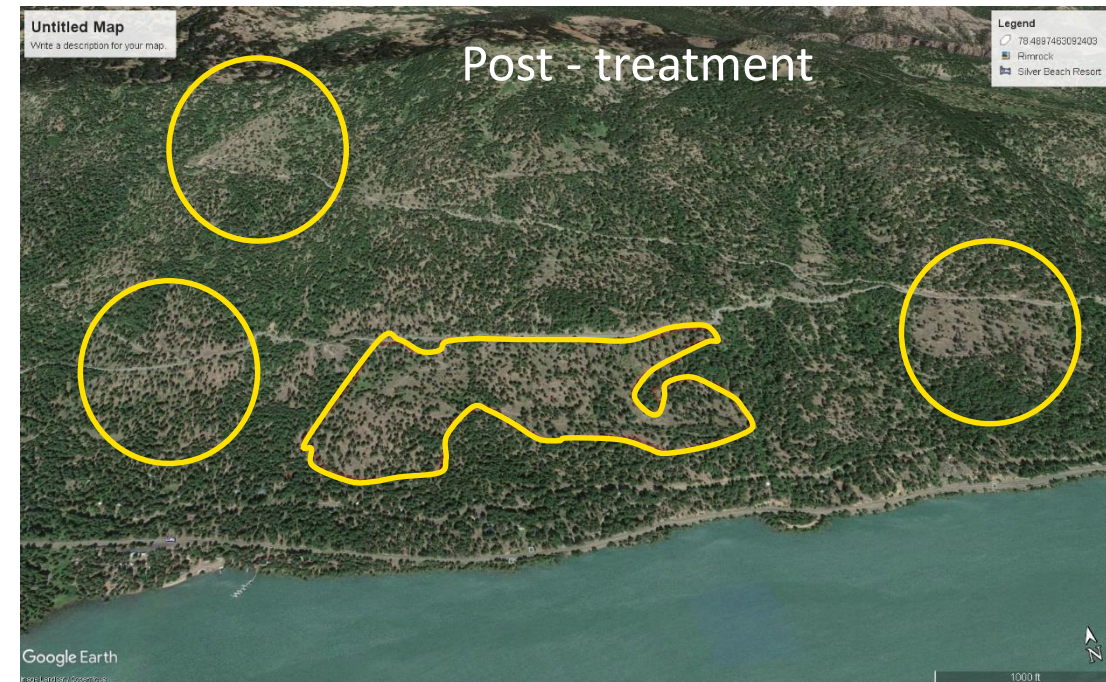
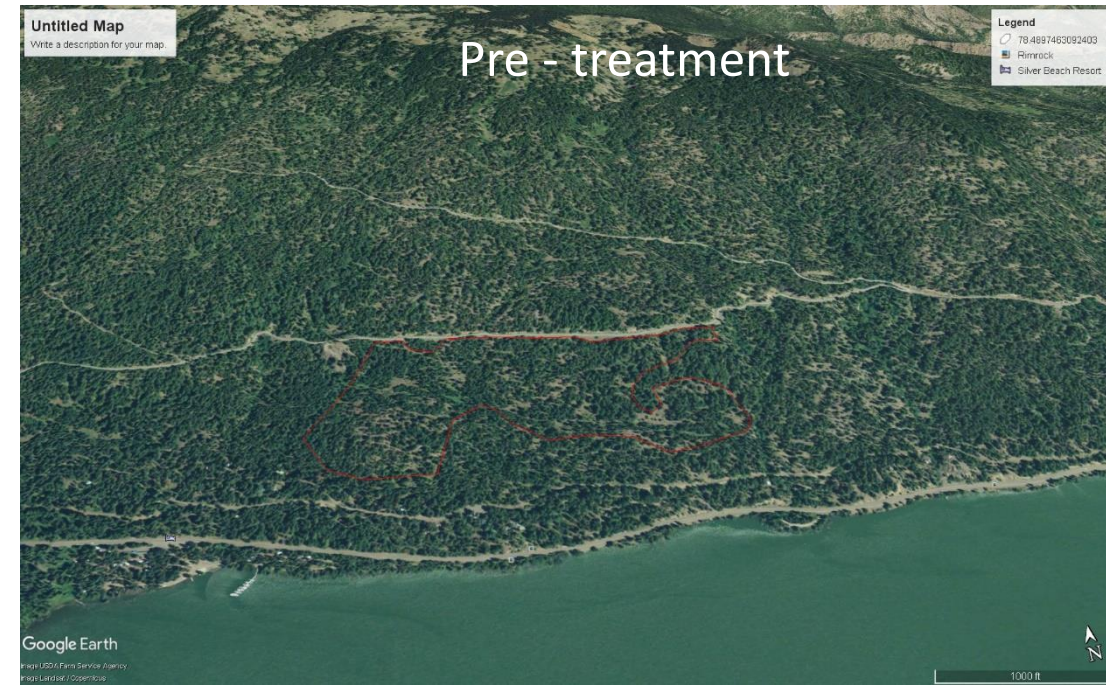
Landscape-level treatments should intersect with potential control lines wherever possible



Example of a landscape-level treatment melding with a potential control line. Credit: John Marshall

Landscape treatments

- **Large:** 100's or 1000's of acres - need to treat 30 to 40% of a watershed to create resilient, healthy forests
- **Heterogeneous:** leave untreated areas to provide closed canopy forest for habitat and a mosaic of forest structures and patch sizes
- **Resilient:** reduce severe fire behavior and risk and also provide strategic opportunities for firefighters



Treatments along PCLs

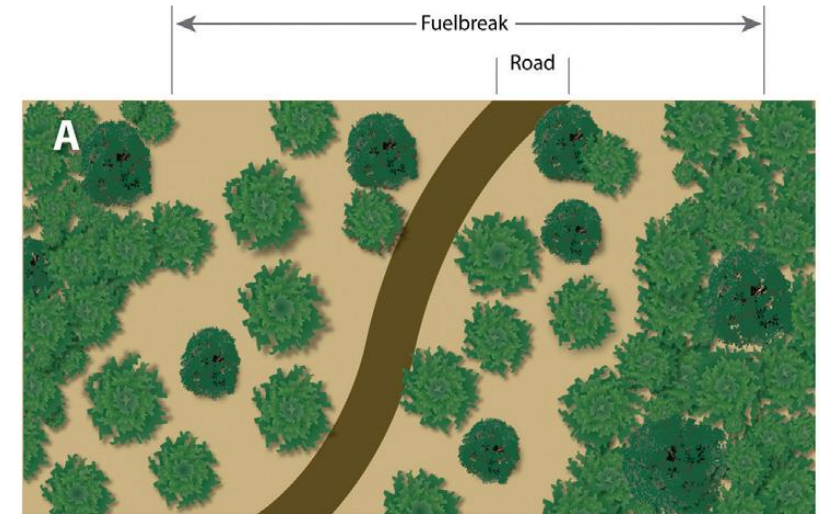
Targeted treatments along potential control lines should be **limited** to areas near communities (or other highly valued resources), that are likely to be exposed to fire and where treatments can be easily maintained.



Credit: Chuck Hersey, DNR

Treatments along PCLs

- Provide safe zones for firefighter engagement
- Provide opportunities for prescribed fire and managed wildfire
- Do not greatly alter fire risk and fire effects
- Can increase probability of fire containment
- Do not act as stand-alone firebreaks
- Can have negative ecological consequences
- Integrated into large landscape treatments



Credit: Kara Karboski\TREX

Treatment types

-Commercial thinning

-Managed wildfire

-Prescribed fire

-Non-commercial treatments





*Monitoring forest
health conditions*

Monitoring Progress

-Three scales:

*Regional, priority planning area,
and stand/unit levels*

- Two driving questions:

*How are forest conditions and
associated forest health
indicators changing over time?*

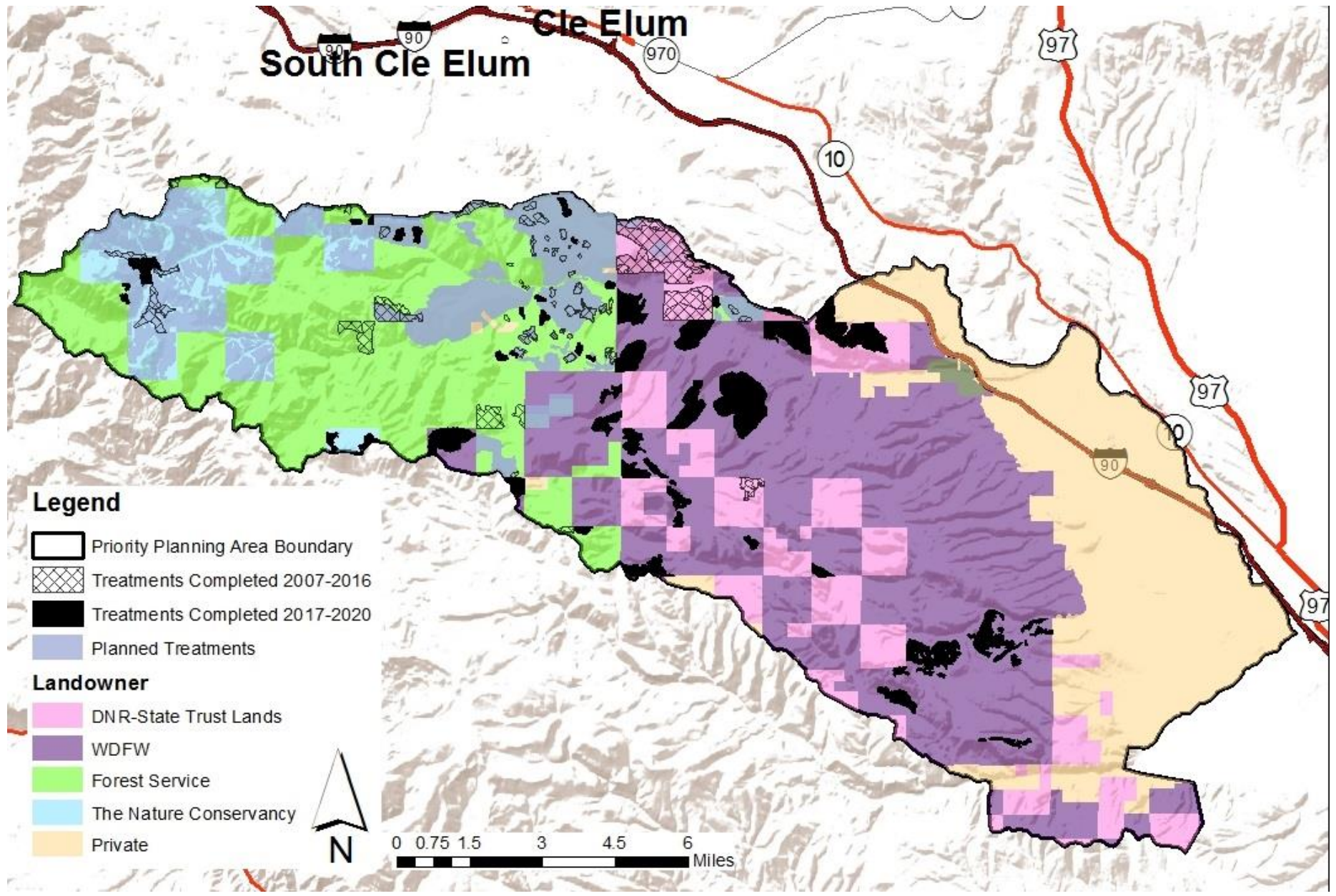
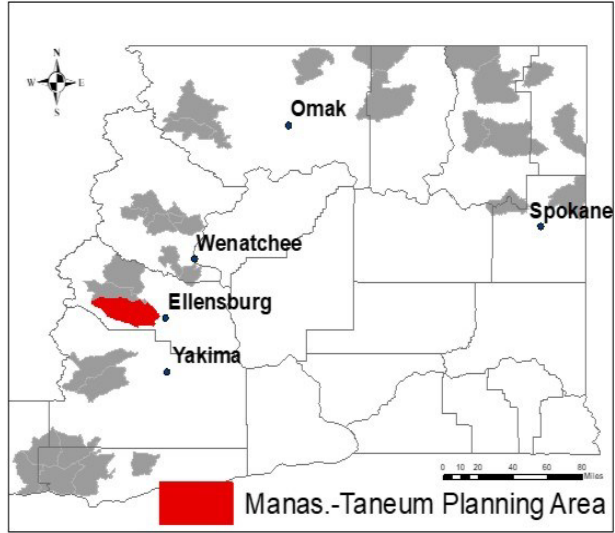
*What are the outcomes of forest
health treatments?*





*Treatment tracking
and forest health
accomplishments*

	EASTERN WASHINGTON TREATMENT ACRES					PRIORITY PLANNING AREA TREATMENT ACRES				
	2017	2018	2019	2020	TOTAL ACRES	2017	2018	2019	2020	TOTAL ACRES
WA DNR State Trust Lands	18,119.75	24,095.50	16,994.90	20,751.85	79,962.00	7,428.80	8,324.80	7,935.19	8,975.65	32,664.44
Commercial Vegetation	7,950.78	5,832.30	7,444.13	5,197.42	26,424.63	3,320.37	1,656.64	3,583.69	2,240.81	10,801.51
Non-commercial Vegetation	10,168.97	18,263.20	9,550.77	15,554.43	53,537.37	4,108.43	6,668.16	4,351.50	6,734.84	21,862.92
WA DNR Landowner Assistance	2,723.98	3,174.67	4,251.53	3,888.05	14,038.24	1,087.89	1,413.82	1,817.87	1,825.52	6,145.10
Non-commercial Vegetation	2,723.98	3,174.67	4,251.53	3,888.05	14,038.24	1,087.89	1,413.82	1,817.87	1,825.52	6,145.10
WA State Parks	66.10	247.55	1,461.45	348.49	2,123.59	66.10	247.55	1,447.25	344.29	2,105.19
Commercial Vegetation	61.80	92.07			153.87	61.80	92.07			153.87
Non-commercial Vegetation	4.30	155.48	1,461.45	348.49	1,969.73	4.30	155.48	1,447.25	344.29	1,951.33
WA Dept. Fish & Wildlife	5,169.60	4,331.42	4,749.66	782.39	15,033.07	3,429.55	2,247.25	2,326.75	535.23	8,538.77
Commercial Vegetation	1,930.80	1,538.46	521.39		3,990.64	1,500.24	1,047.15	518.34		3,065.73
Non-commercial Vegetation	479.85	447.34	3,509.84	770.47	5,207.51	381.46	51.26	1,267.27	523.32	2,223.31
Prescribed Fire	2,758.96	2,345.62	718.43	11.91	5,834.93	1,547.86	1,148.83	541.14	11.91	3,249.74
US Forest Service	34,445.42	39,047.17	44,148.75	19,080.14	136,721.48	17,211.93	16,274.69	20,382.50	10,996.29	64,865.41
Prescribed Fire	11,389.51	10,459.63	16,900.11		38,749.25	2,785.93	6,354.64	5,891.53	3,047.22	18,079.32
Non-commercial Vegetation	12,036.50	17,620.18	15,926.20	13,994.36	59,577.24	8,684.12	6,248.52	7,182.28	7,949.06	30,063.98
Commercial Vegetation	11,019.41	10,967.35	11,322.44	5,085.78	38,394.98	5,741.88	3,671.54	7,308.70		16,722.11
US Fish & Wildlife Service	549.45	779.50	1,041.48	1,151.03	3,521.45	549.45	779.50	1,041.48	1,151.03	3,521.45
Commercial Vegetation			492.55	572.42	1,064.97			492.55	572.42	1,064.97
Non-commercial Vegetation		26.41	105.20	240.48	372.09		26.41	105.20	240.48	372.09
Prescribed Fire	549.45	753.08	443.74	338.13	2,084.39	549.45	753.08	443.74	338.13	2,084.39
Natural Resource Conservation Service	1,244.20	924.40	911.00	896.40	3,976.00	1,244.20	924.40	911.00	896.40	3,976.00
Non-commercial Vegetation	1,244.20	924.40	911.00	896.40	3,976.00	1,244.20	924.40	911.00	896.40	3,976.00
The Nature Conservancy	206.59	108.67		123.35	438.61	206.64	108.70		123.38	438.72
Commercial Vegetation	206.59	108.67			315.26	206.64	108.70			315.34
Non-commercial Vegetation				123.35	123.35				123.38	123.38
Kalispel Tribe of Indians	81.58	96.62	103.30	115.79	397.30	81.58	96.62	103.30	115.79	397.30
Commercial Vegetation	81.58	96.62	103.30	115.79	397.30	81.58	96.62	103.30	115.79	397.30
Colville Confederated Tribes	175.60				175.60	175.60				175.60
Commercial Vegetation	175.60				175.60	175.60				175.60
TOTAL TREATMENT ACRES	62,782.26	72,805.50	73,662.08	47,137.49	256,387.33	31,481.74	30,417.33	35,965.34	24,963.58	122,827.98



Tracking investments

- Description of state dollars towards forest health from over last 2 biennia
- Identification of federal dollars invested in forest health in Washington through US Forest Service and NRCS in similar timeframe
- Case studies throughout the document of implementation occurring in place





Questions