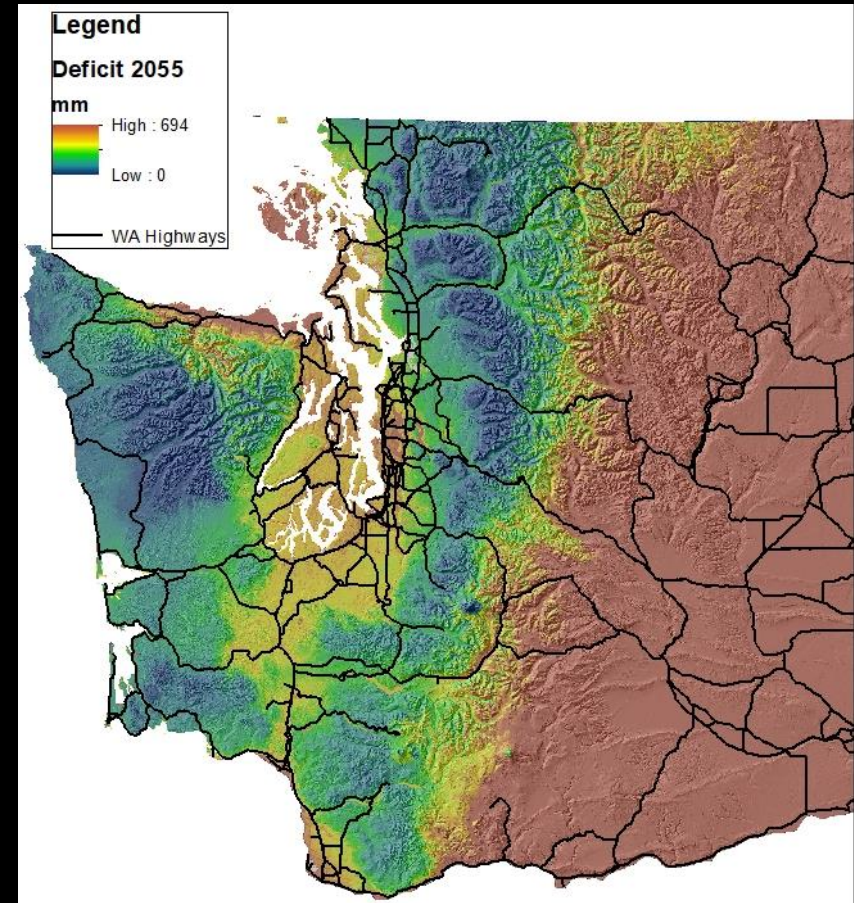
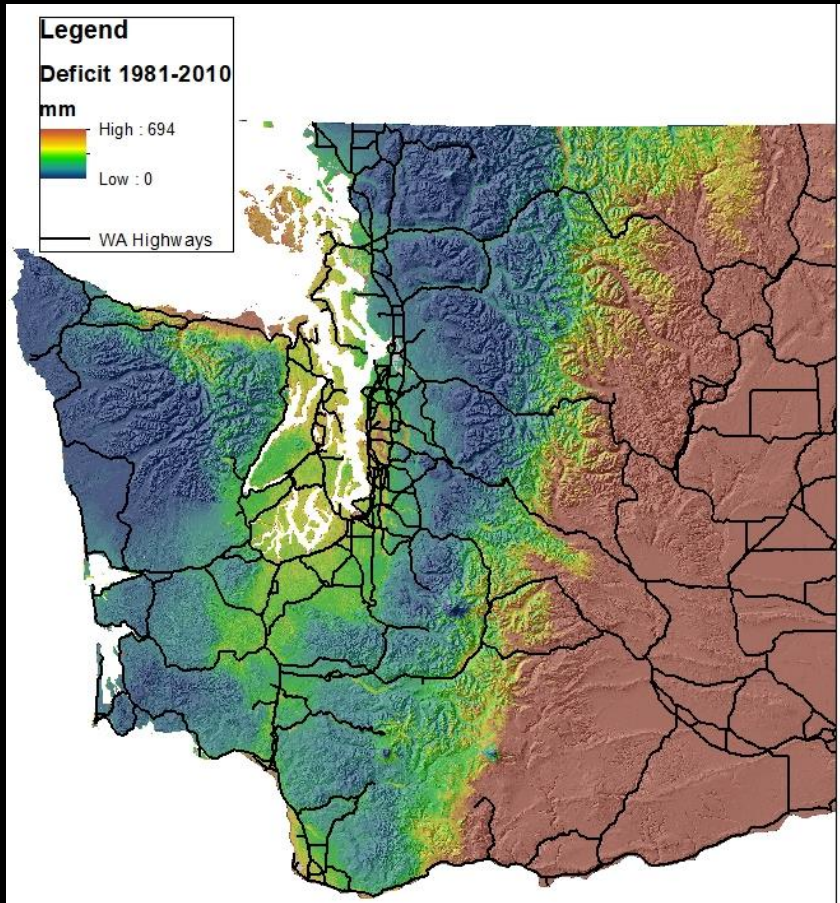


Forests & Drought



Derek Churchill
Washington State DNR

Changes to Fire Dependent Forests

Build up of
Biomass!



Changes to Fire Dependent Forests

Bethel Ridge 1936



1936

Bethel Ridge 2012



2012

Photo: John Marshall



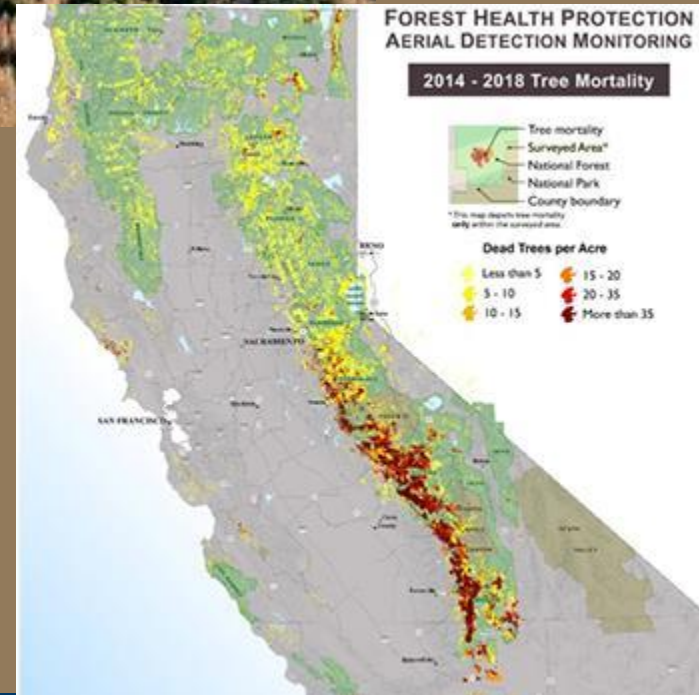
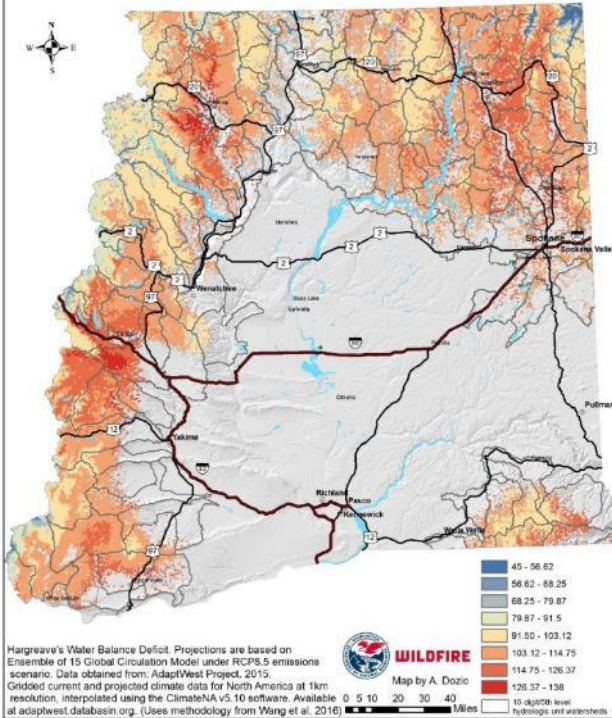
WASHINGTON STATE DEPARTMENT OF
NATURAL RESOURCES

dnr.wa.gov

Climate Change Projections: Drought & Insects



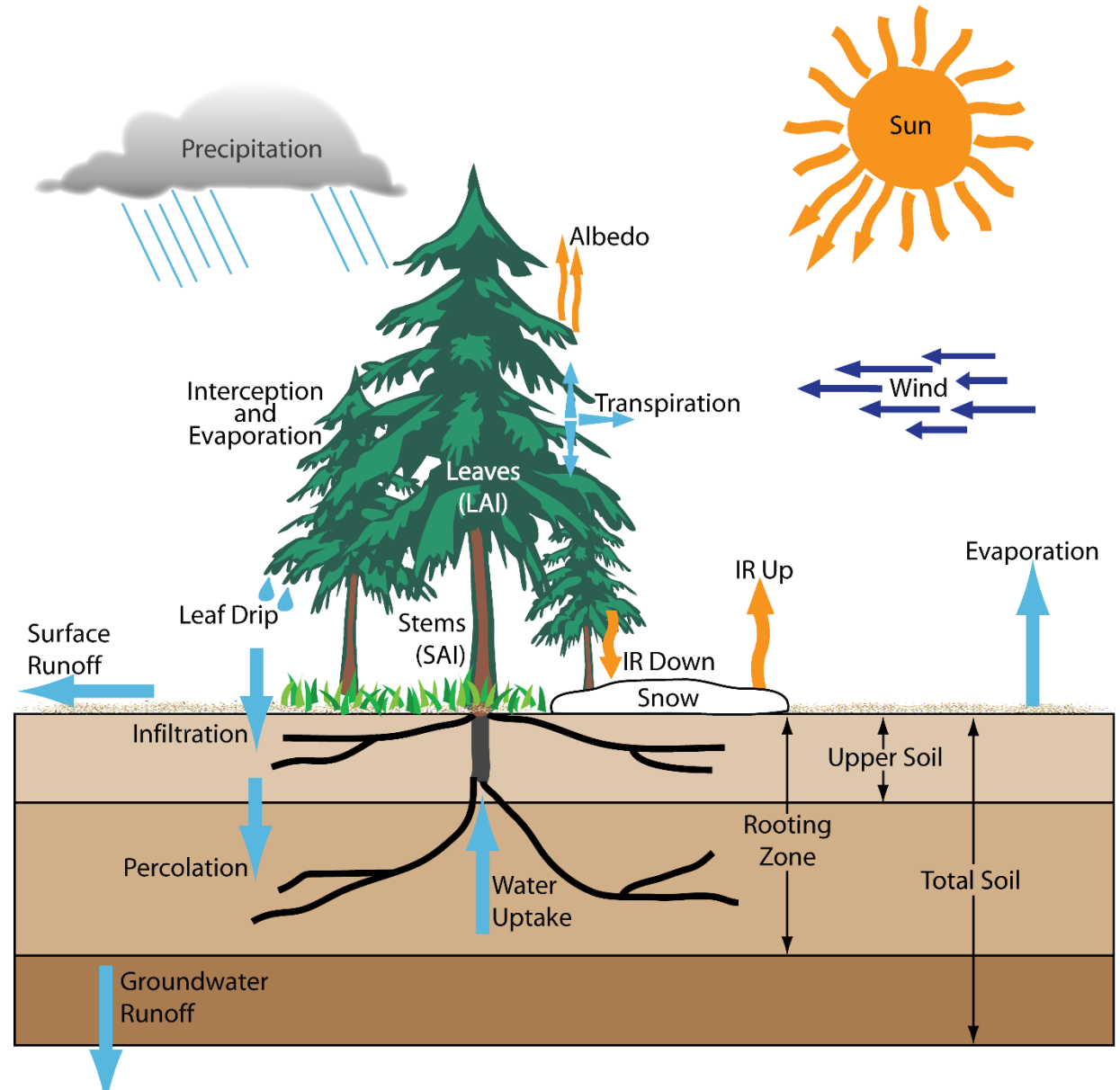
**Climate Change Projections:
Increase in Water Balance Deficit from
1981-2010 period to 2041-2070 period**



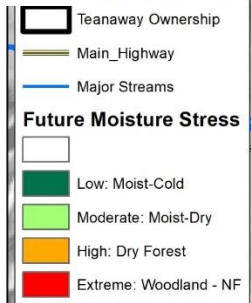
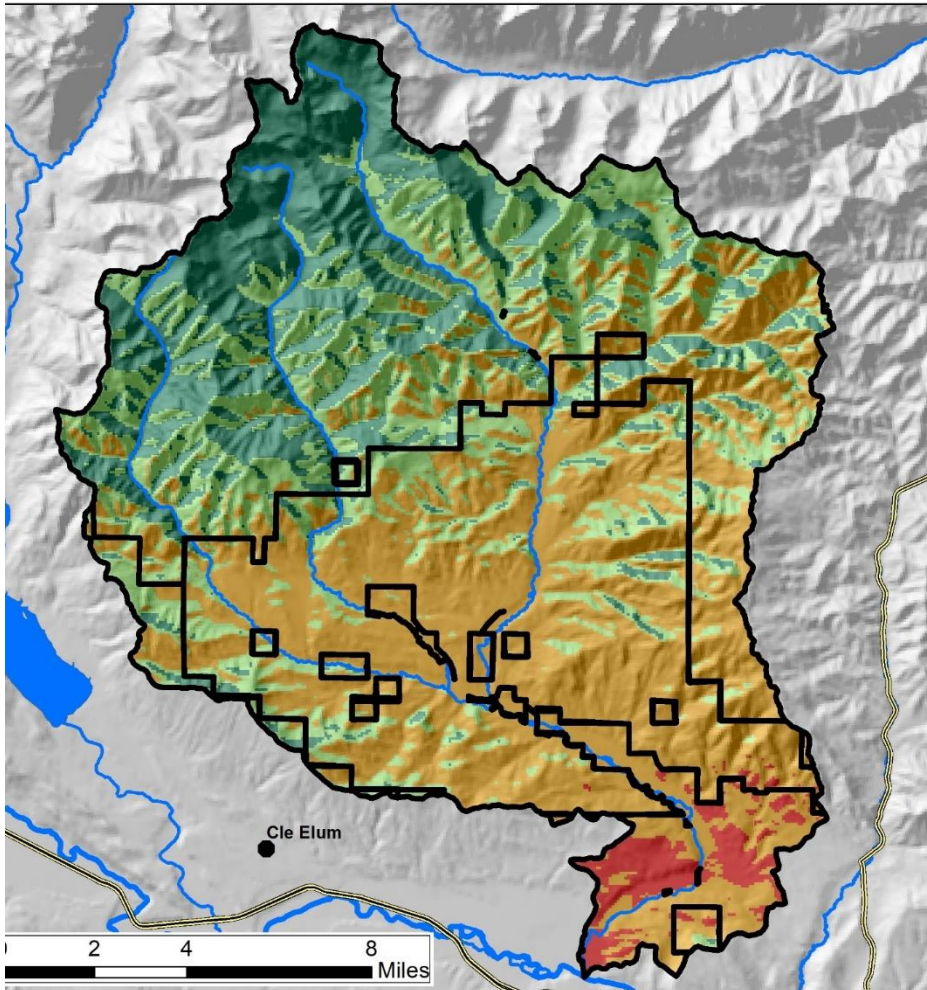
Drought Vulnerability

Moisture Deficit: Climate Change Projections

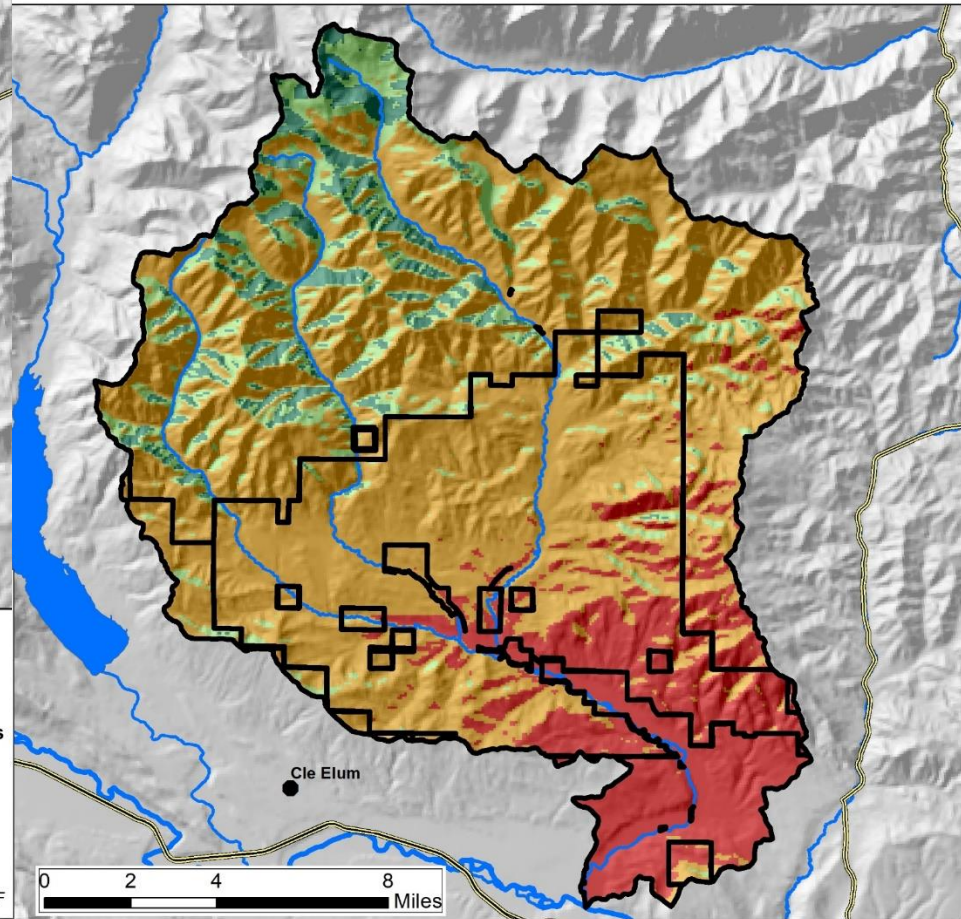
Deficit = amount of drought stress due to lack of water when solar radiation is high



Current Moisture Deficit

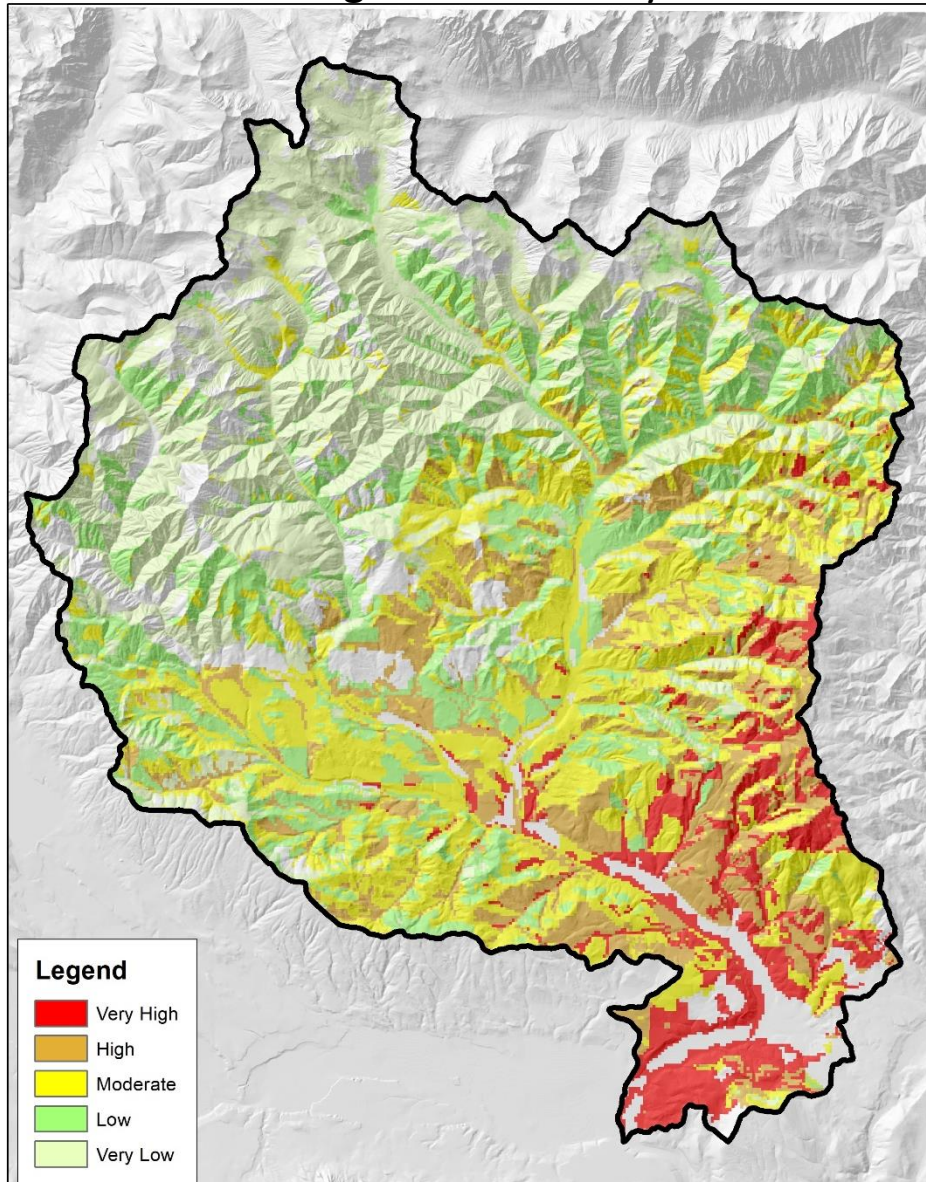


Future Moisture Deficit: Mid-Century



Treatment Prioritization

Drought Vulnerability



Climate + Soils + Vegetation

0 1.5 3 6 Miles

Moisture Deficit

Legend

Deficit 1981-2010

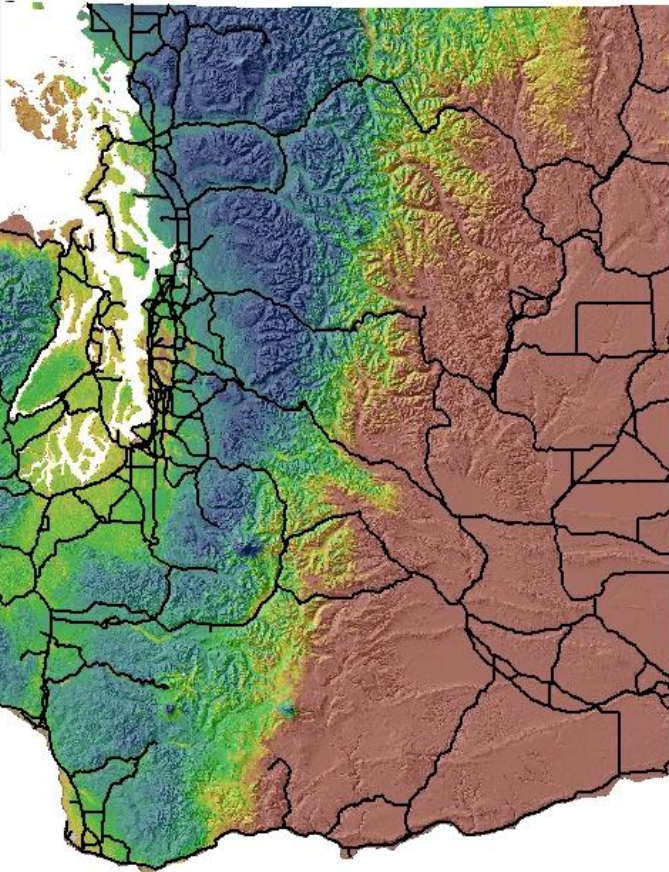
mm



High : 694

Low : 0

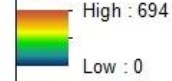
WA Highways



Legend

Deficit 2055

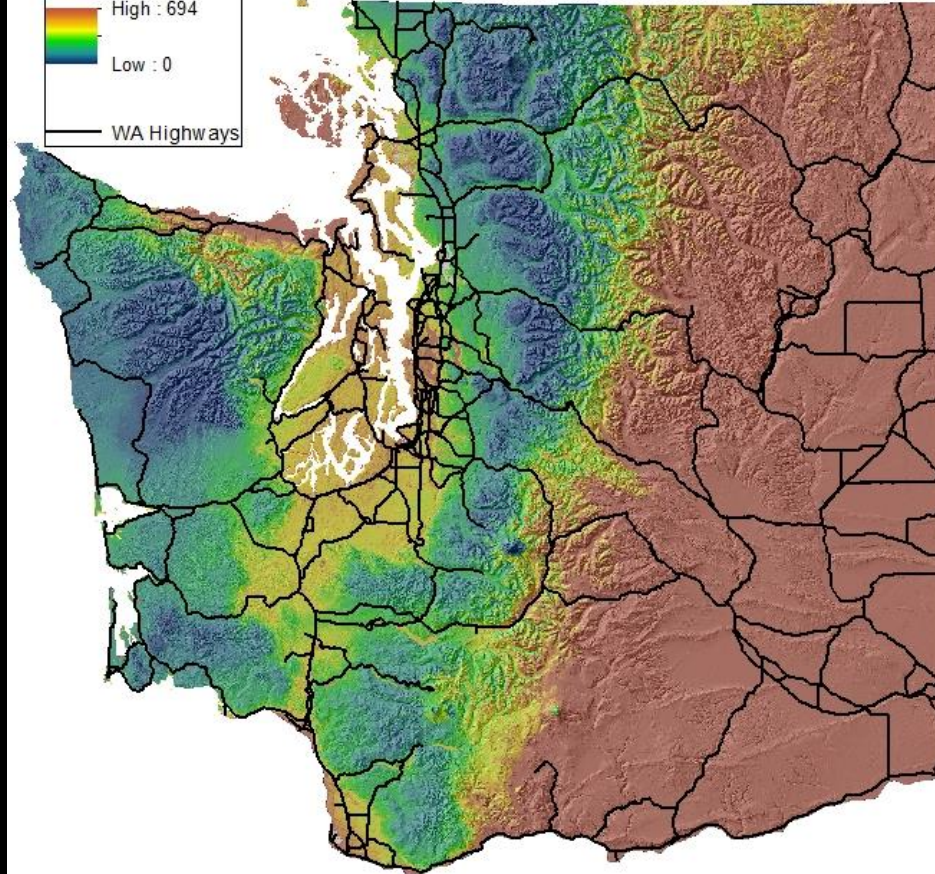
mm



High : 694

Low : 0

WA Highways



Tools:



Shift species composition

Reduce Tree Density



Tools: Reduce Tree Density

Shift species composition


Reduce Tree Density



Photos: John Marshall

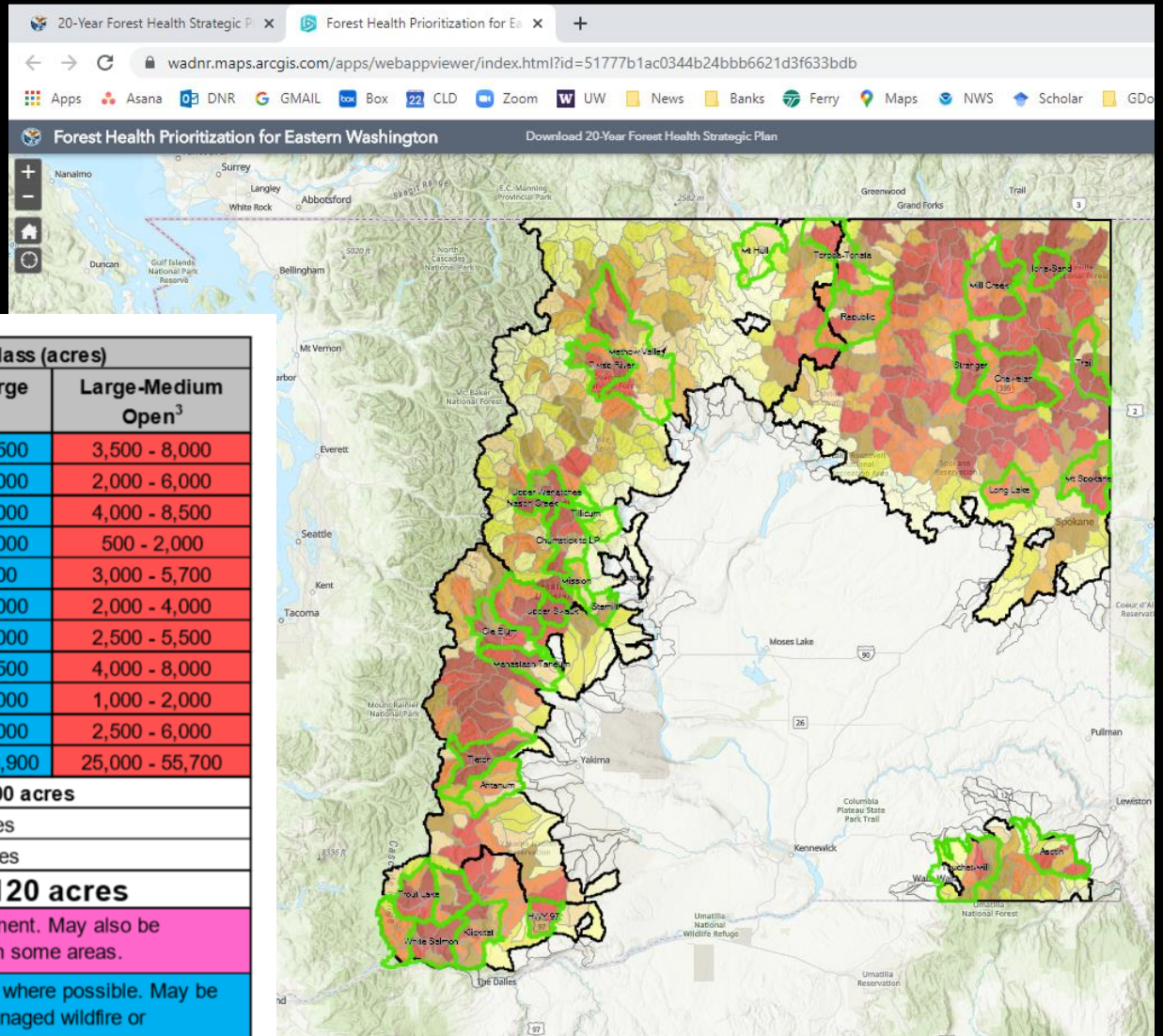
Washington's 20 Year Forest Health Strategic Plan: Preparing Landscapes for the Future.

**20-YEAR
FOREST HEALTH
STRATEGIC PLAN**
EASTERN WASHINGTON

 WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**
HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS



Landscape Scale



Planning Area	Forest Structure Class (acres)		
	Small Dense ¹	Medium-Large Dense ²	Large-Medium Open ³
Chewelah A-Z	2,000 - 3,500	45,500 - 66,500	3,500 - 8,000
Mill Creek A-Z	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	1,500 - 3,000	14,000 - 20,000	2,500 - 5,500
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 - 48,000	2,500 - 6,000
Total	11,000 - 19,500	232,200 - 336,900	25,000 - 55,700
Subtotal	268,200 - 412,100 acres		
Tillicum	7,614 acres		
Mission Maintenance	10,406 acres		
Grand Total	286,220 - 430,120 acres		
Anticipated Treatment Type	¹ Non-commercial thin + fuels treatment. May also be prescribed fire or managed wildfire in some areas.		
	² Commercial thin + fuels treatment where possible. May be non-commercial, prescribed fire, managed wildfire or regeneration harvest in some areas.		
	³ Maintenance treatments: prescribed fire or mechanical fuels treatments.		

