

20-Year Forest Health Plan Landscape Evaluation Update

20-YEAR FOREST HEALTH STRATEGIC PLAN
EASTERN WASHINGTON

NEAR-TERM ACTIONS

- 1 Identify Planning Areas
- 2 Conduct Landscape Evaluations
- 3 Develop Landscape Prescriptions
- 4 Develop a Prioritized List of Treatments for Appropriations Request

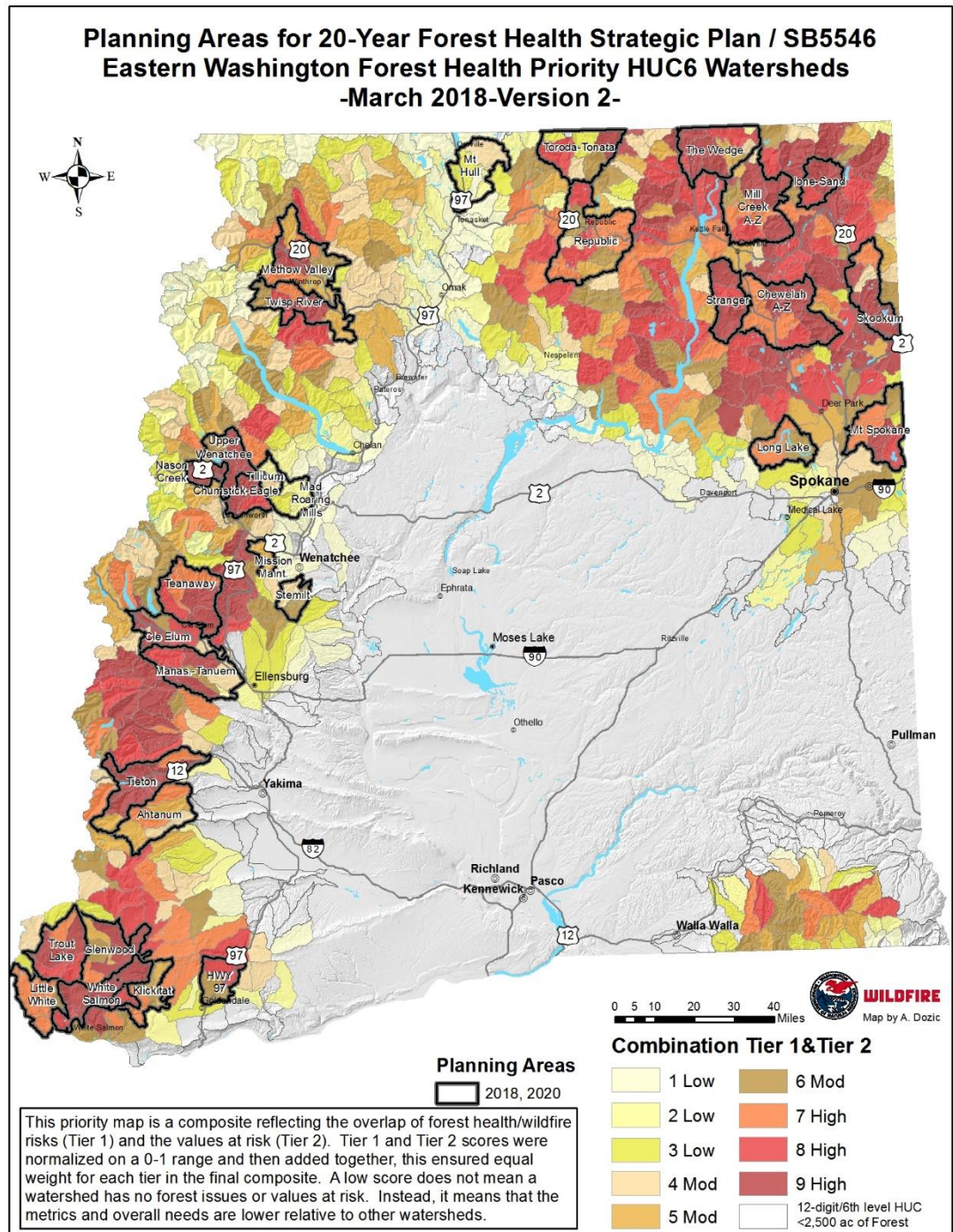
Jan	Feb	March	April	May	June	July	August	Sept - Oct
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Derek Churchill, WA DNR
October 4, 2018



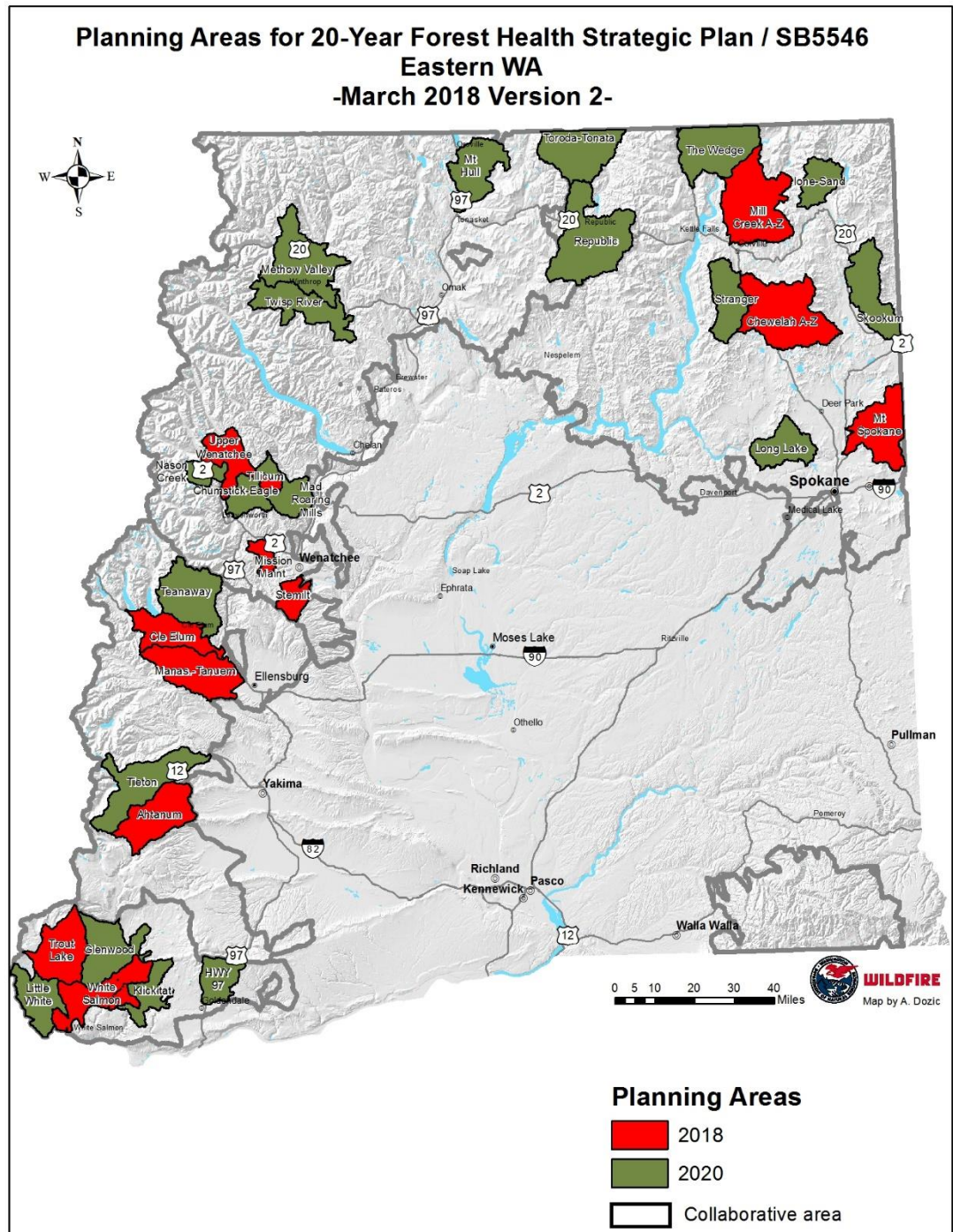
Planning Areas

- Combined data driven prioritization with local priorities and input
- Multiple projects in each “collaborative zone”.



Planning Areas

- Manager and stakeholder meetings: Modifications to boundaries.
- Next update of boundary changes this Fall.



2018 Planning Areas

Plan Area	Total Acres	Forested Acres	Collab Area
Stemilt	38,960	25,164	NCW-FHC
Upper Wenatchee	74,778	67,109	NCW-FHC
Tillicum	14,326	13,134	NCW-FHC
Mission Maint.	49,121	37,923	NCW-FHC
Chewelah A-Z	195,407	151,500	NEW-FC
Mill Creek A-Z	186,305	158,574	NEW-FC
Mt Spokane	121,766	93,062	NEW-FC
Trout Lake	117,154	106,970	South GP
White Salmon	126,691	95,351	South GP
Ahtanum	120,478	104,856	Tapash
Cle Elum	91,320	69,415	Tapash
Manas.-Taneum	135,470	99,707	Tapash
Totals	1,271,776	1,022,766	

2020 Planning Areas

Plan Area	Total Acres	Forested Acres	Collab Area
Chumstick-Eagle	50,310	46,431	NCW-FHC
Mad Roaring Mills	65,008	40,610	NCW-FHC
Methow Valley	183,290	116,104	NCW-FHC
Mt Hull	105,430	34,308	NCW-FHC
Nason Creek	31,679	28,661	NCW-FHC
Twisp River	84,710	70,375	NCW-FHC
Ione-Sand	59,571	54,671	NEW-FC
Long Lake	80,297	35,519	NEW-FC
Republic	208,002	163,920	NEW-FC
Skookum	115,066	92,737	NEW-FC
Stranger	89,904	70,419	NEW-FC
The Wedge	138,548	118,811	NEW-FC
Toroda-Tonata	129,879	93,403	NEW-FC
Glenwood	116,773	101,313	South GP
HWY 97	60,397	45,418	South GP
Klickitat	143,535	104,828	South GP
Little White	95,756	71,696	South GP
Teanaway	132,119	120,634	Tapash
Tieton	148,634	130,315	Tapash
Totals	2,038,910	1,540,173	

2018	1,271,776	1,022,766
Total 2018 & 2020	3,310,686	2,562,938

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NEAR-TERM ACTIONS

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2 Conduct Landscape Evaluations

Jan	Feb	March	April	May	June	July	August	Sept - Oct

- Goals: treatment targets and general spatial locations
- Developed datasets and methodologies
- Conducted 8 new landscape evaluations in 6 months
 - Further developed 2 existing evaluations
 - 2 planning areas did not need evaluation
- Presented Draft LE's to stakeholders

20-Year Forest Health Plan Landscape Evaluation Update

Landscape Ecol
DOI 10.1007/s10980-015-0218-0



REVIEW ARTICLE

Restoring fire-prone Inland Pacific landscapes: seven core principles

Paul F. Hessburg · Derek J. Churchill · Andrew J. Larson · Ryan D. Haugo · Carol Miller · Thomas A. Spies · Malcolm P. North · Nicholas A. Povak · R. Travis Belote · Peter H. Singleton · William L. Gaines · Robert E. Keane · Gregory H. Aplet · Scott L. Stephens · Penelope Morgan · Peter A. Bisson · Bruce E. Rieman · R. Brion Salter · Gordon H. Reeves



Landscape Evaluations

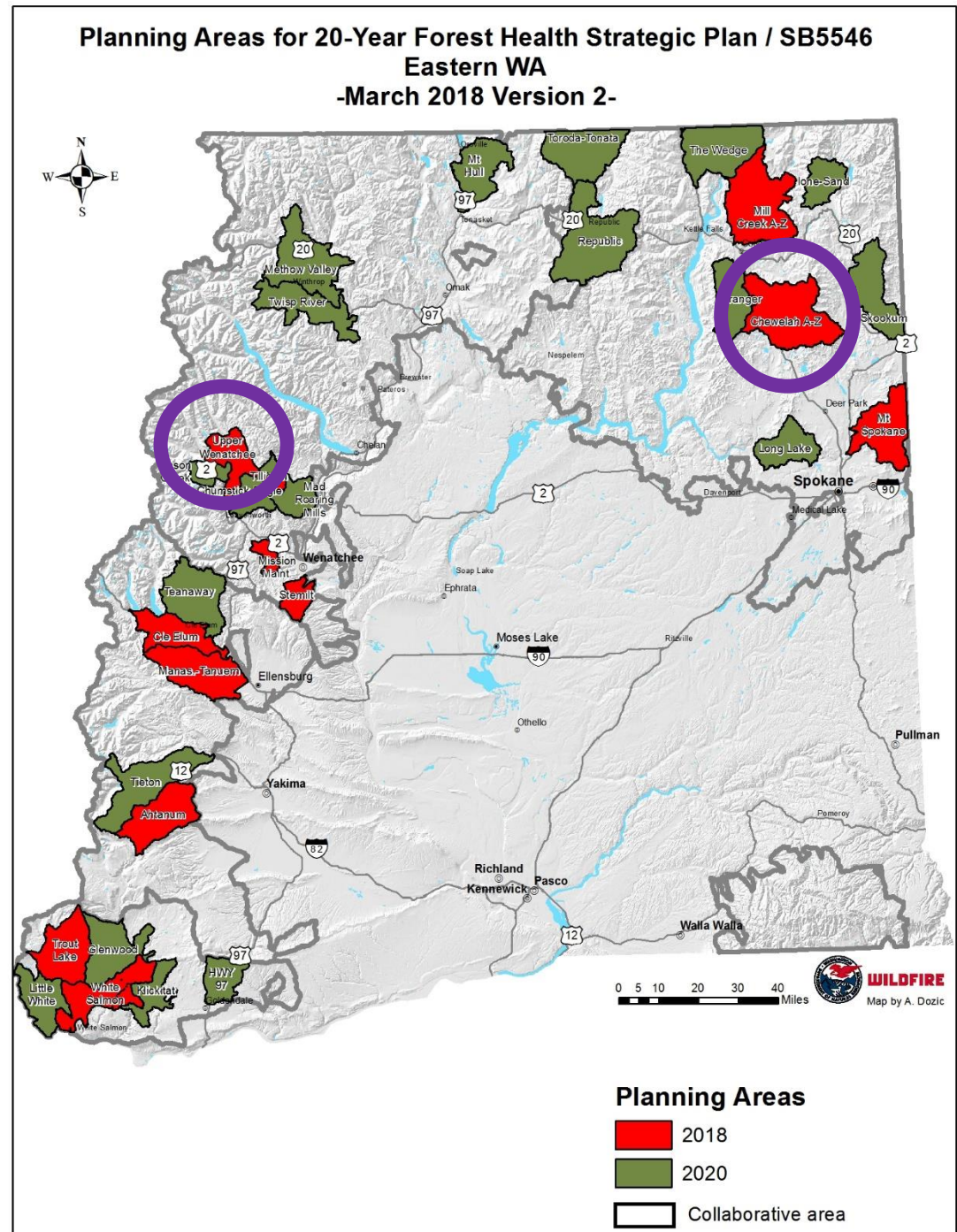
1. Identify zones & ownerships with different primary management objectives
2. Departure Analysis
 - PI Approach: OWNF-Hessburg
 - State & Transition Model + LiDAR: CNF – South GP/Mt Adams.
3. Fire Behavior & Risk Analysis
4. Climate change adaptation: Drought Stress and Biophysical Alignment
5. Assessment of focal species habitat
 - ➔ General treatment targets & spatial locations
6. Aquatic Evaluation
7. Economic and operational analysis
8. Other resource needs

Landscape Rx:

- Treatment Targets
- Recommended treatment locations & types

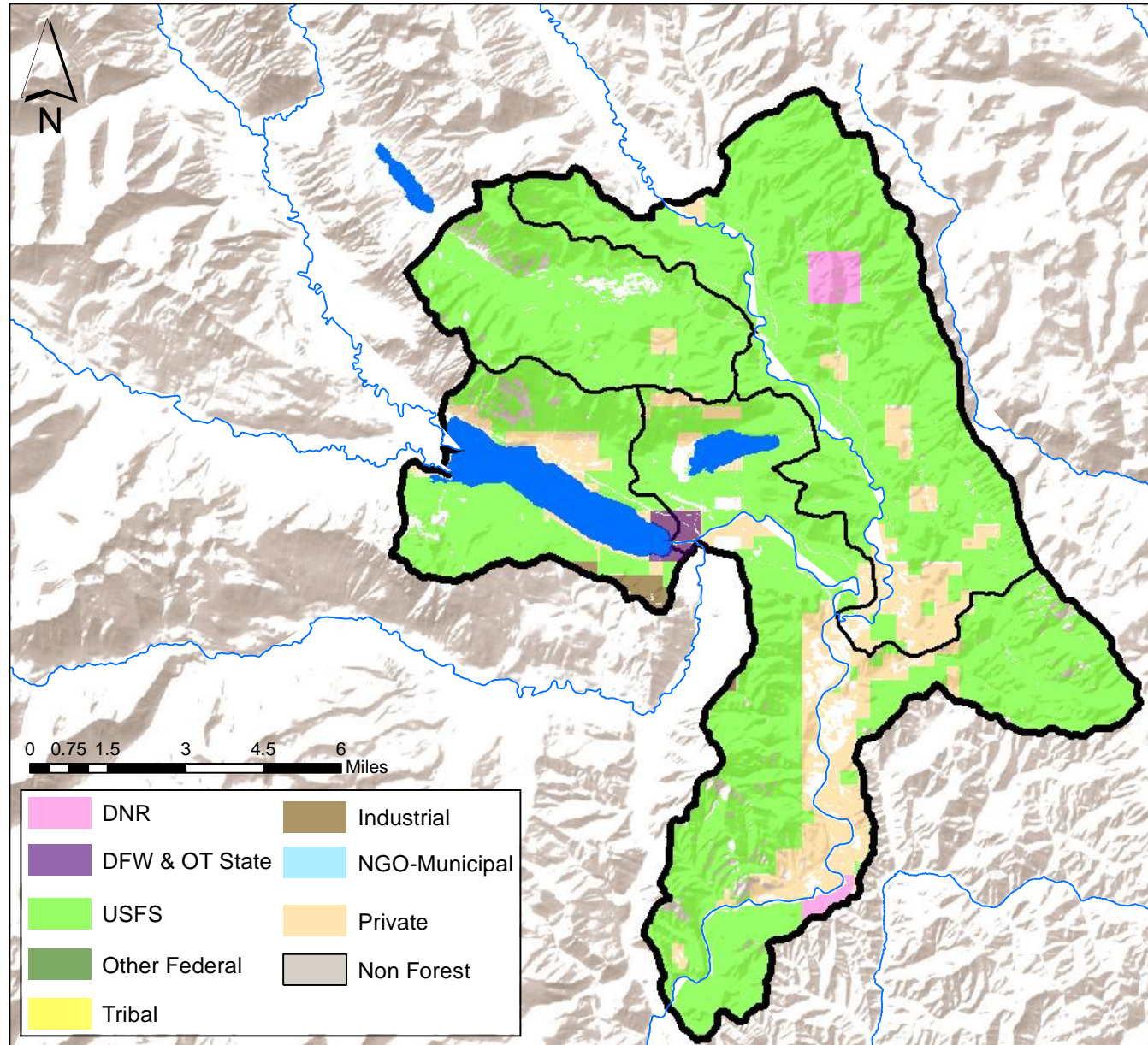
Examples of LE's

1. Upper Wenatchee
- PI approach
2. Chewelah
- STM-LiDAR approach

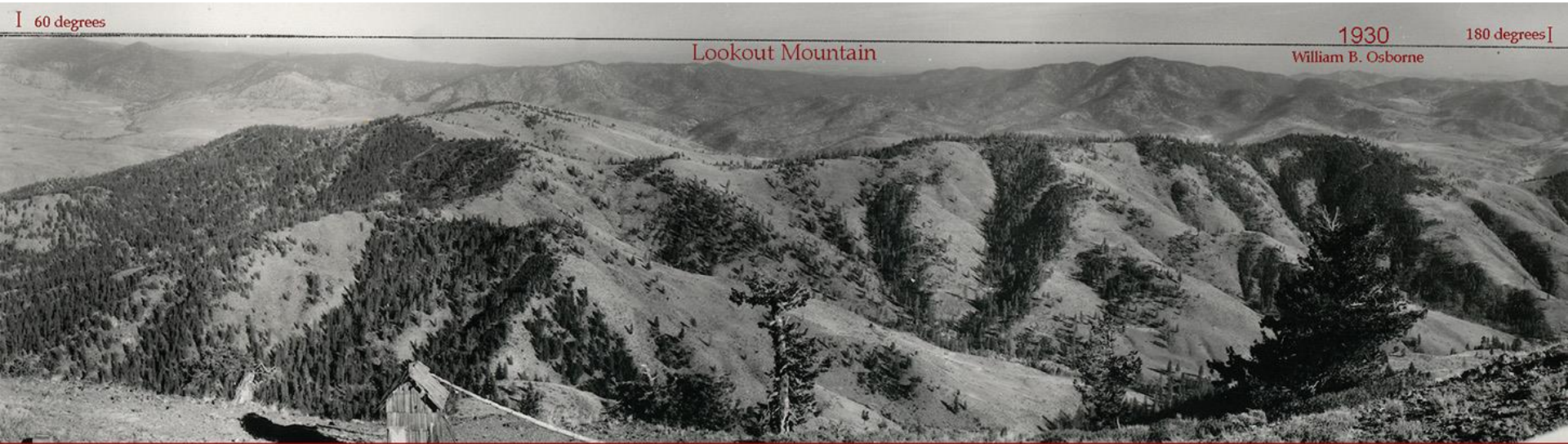


Upper Wenatchee Planning Area

- 85% Forest Service
- 13% private
- 2% DNR and State Parks.



Departure Analysis



Historic image from National Archives and Records Administration
Seattle, WA.

2011 Image by John F Marshall.
Okanogan-Wenatchee National Forest
Wenatchee Forestry Sciences Lab

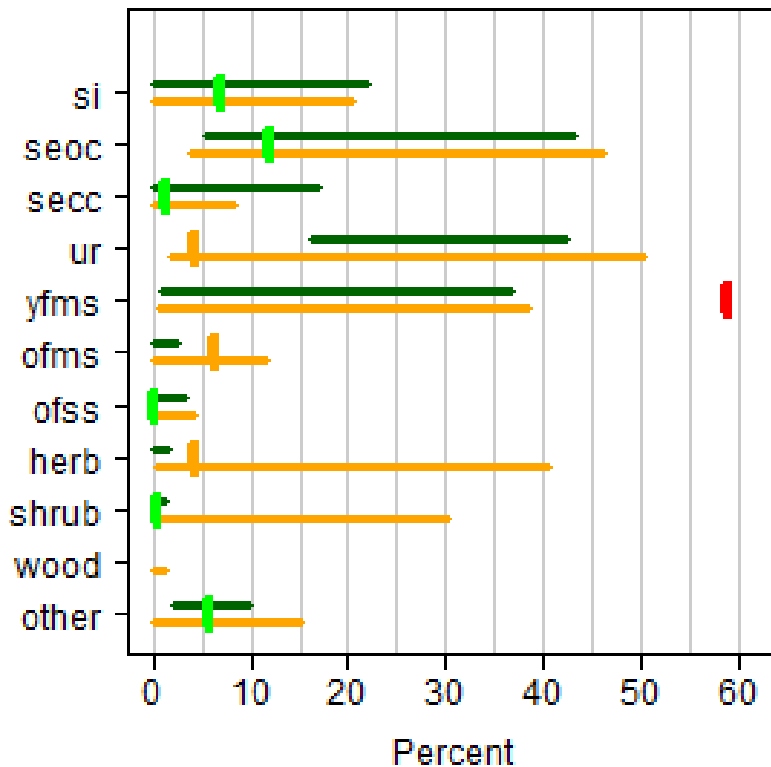
Departure Analysis

- Photo-interpretation (PI) for current and historical conditions
- OWNF Restoration Strategy. “Hessburg” approach.

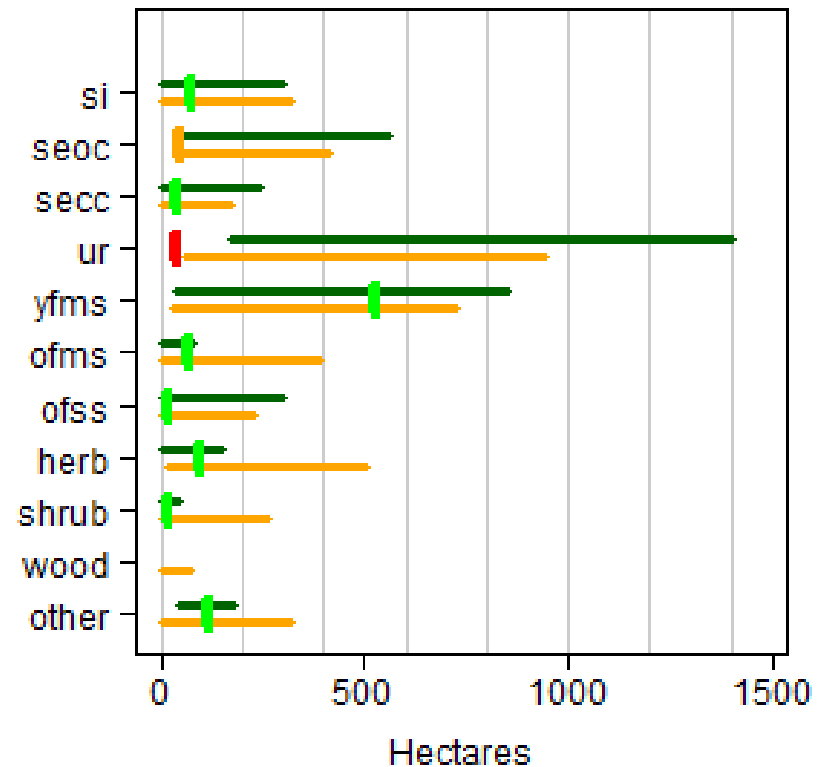


Structure Class

Percent Land



Mean Patch Size



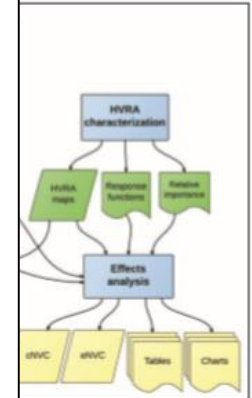
Fire: Quantitative Risk Assessment

Pacific N
Wildfire I
metho

Julie Gilbertson-Day, J



Framework
management



Rick Stratton
United States Forest Service

January 12, 2018

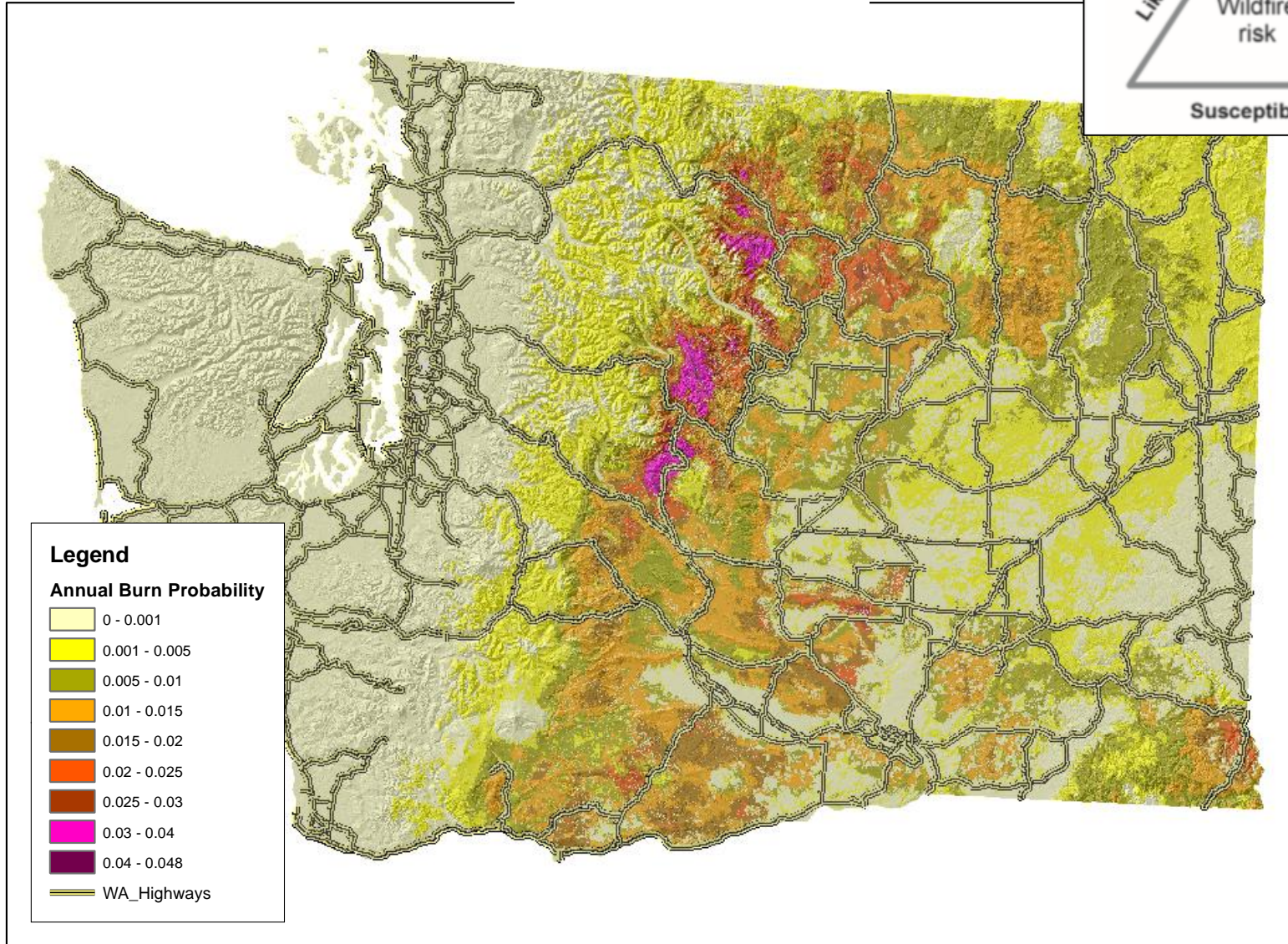
USDA United States Department of Agriculture / Forest Service
Rocky Mountain Research Station
General Technical Report RMRS-GTR-315
October 2013



Fire: Quantitative Risk Assessment

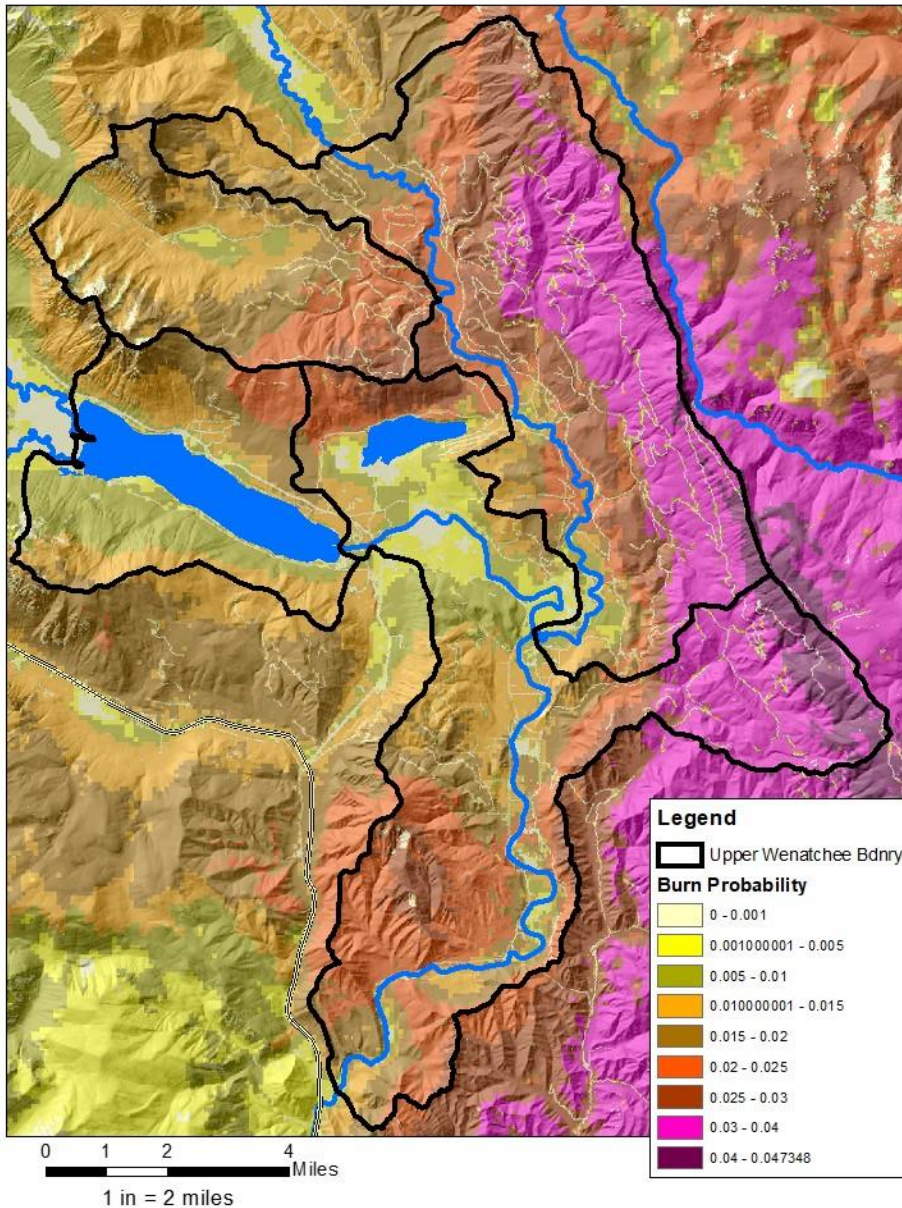
FS SIM:

Fire Intensity

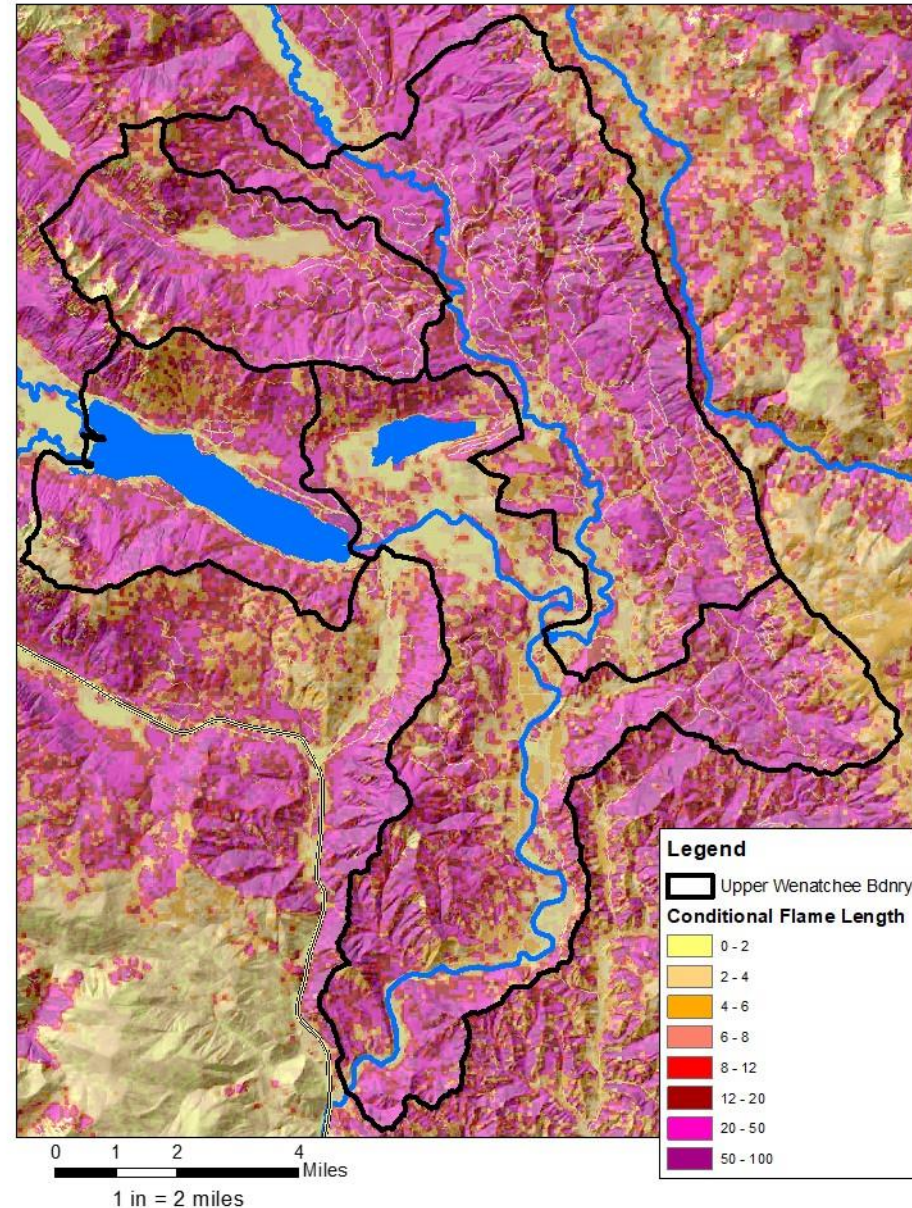


Fire: Quantitative Risk Assessment

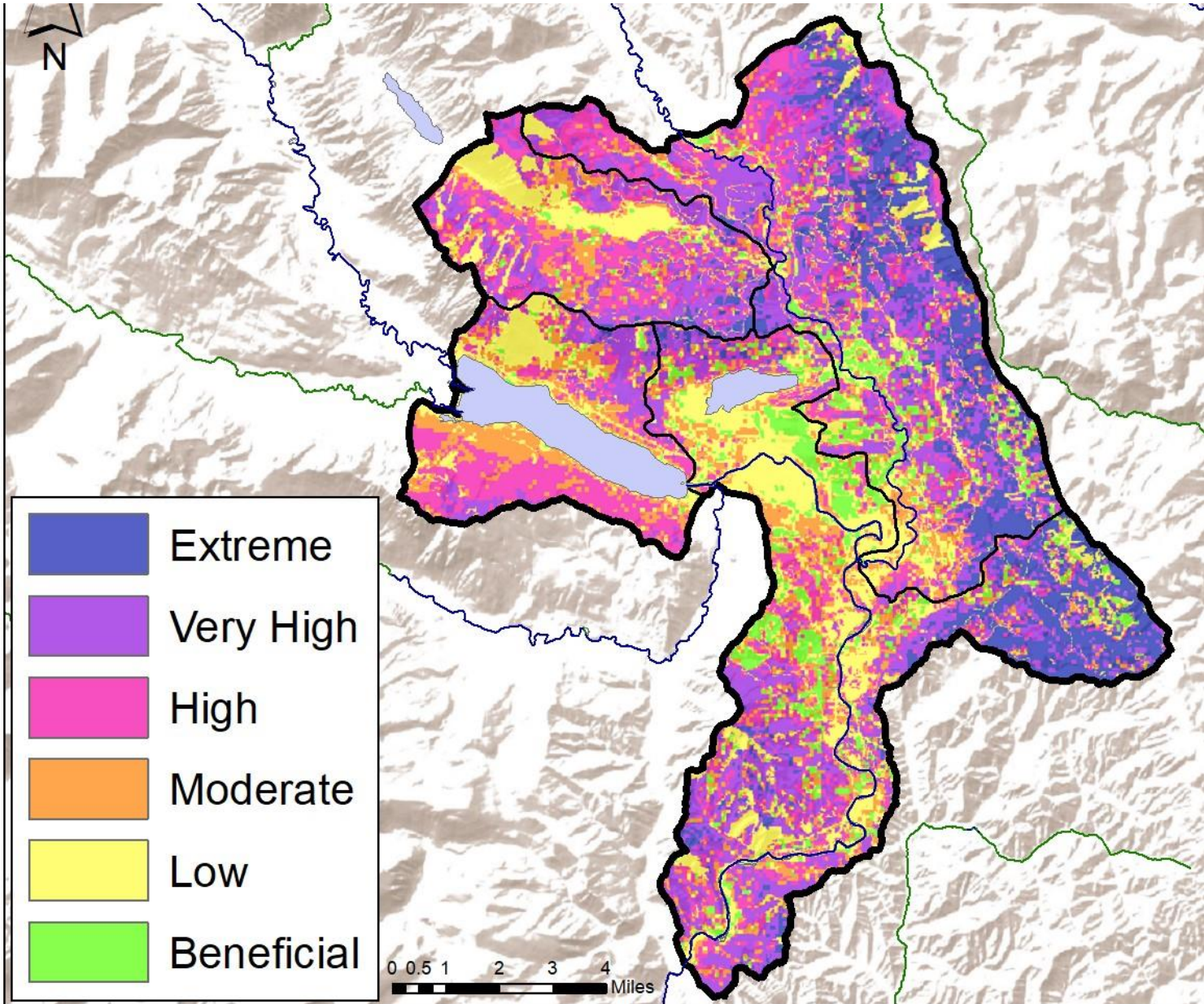
Burn Probability



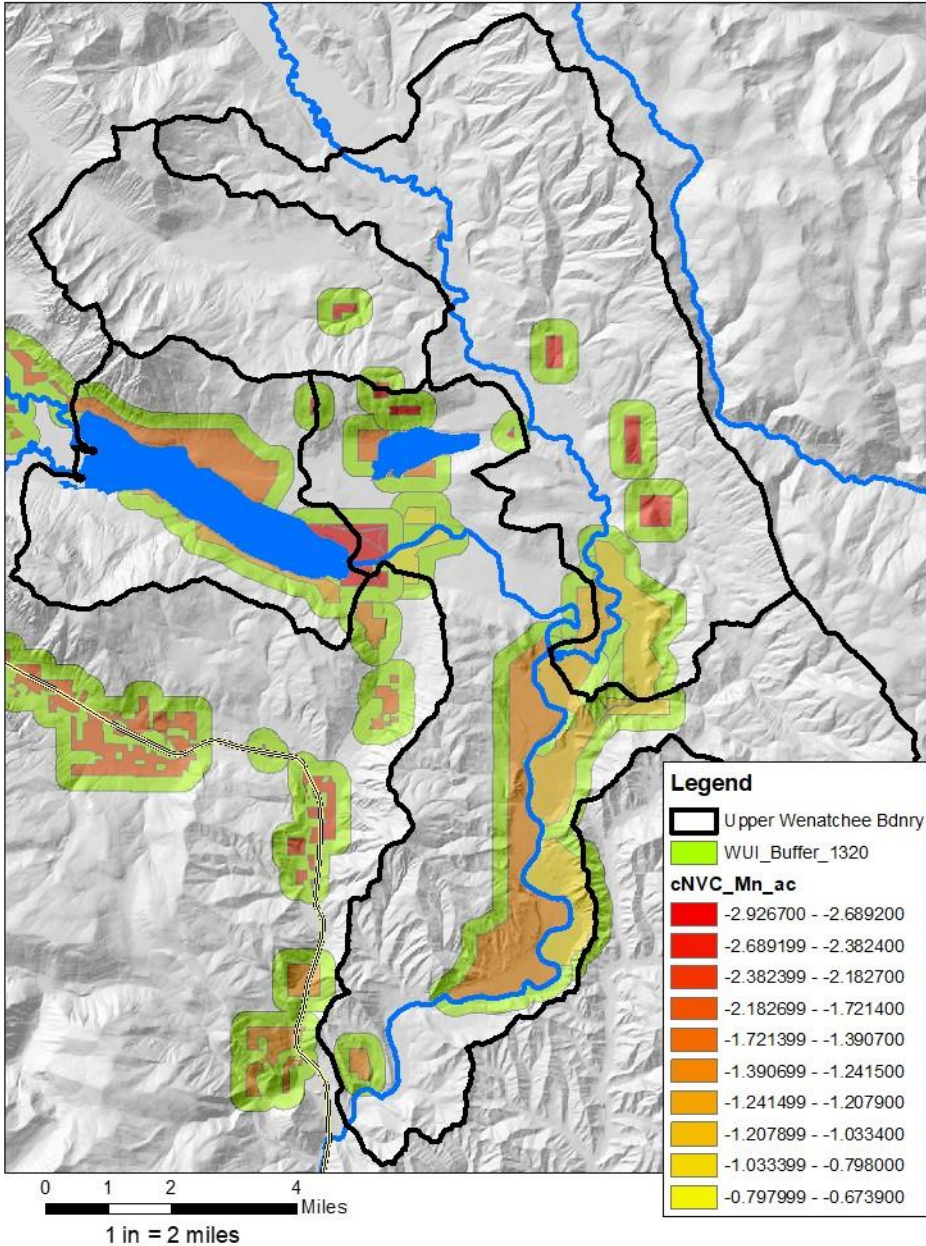
Fire Intensity



Fire Risk



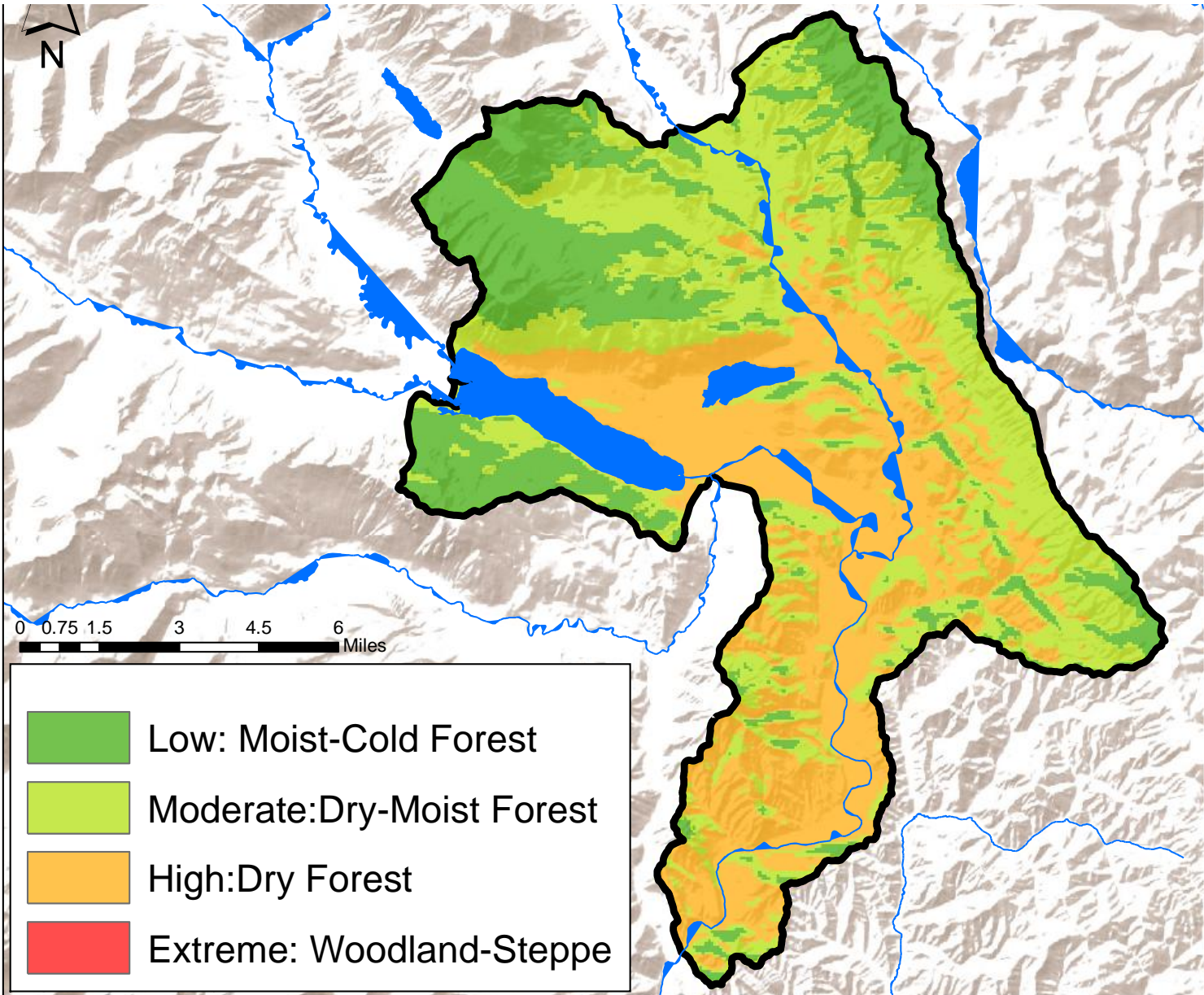
Community Protection Zone



- Use QRA to evaluate risk to private property
- Defensible Space: ¼ mile buffer on USFS land

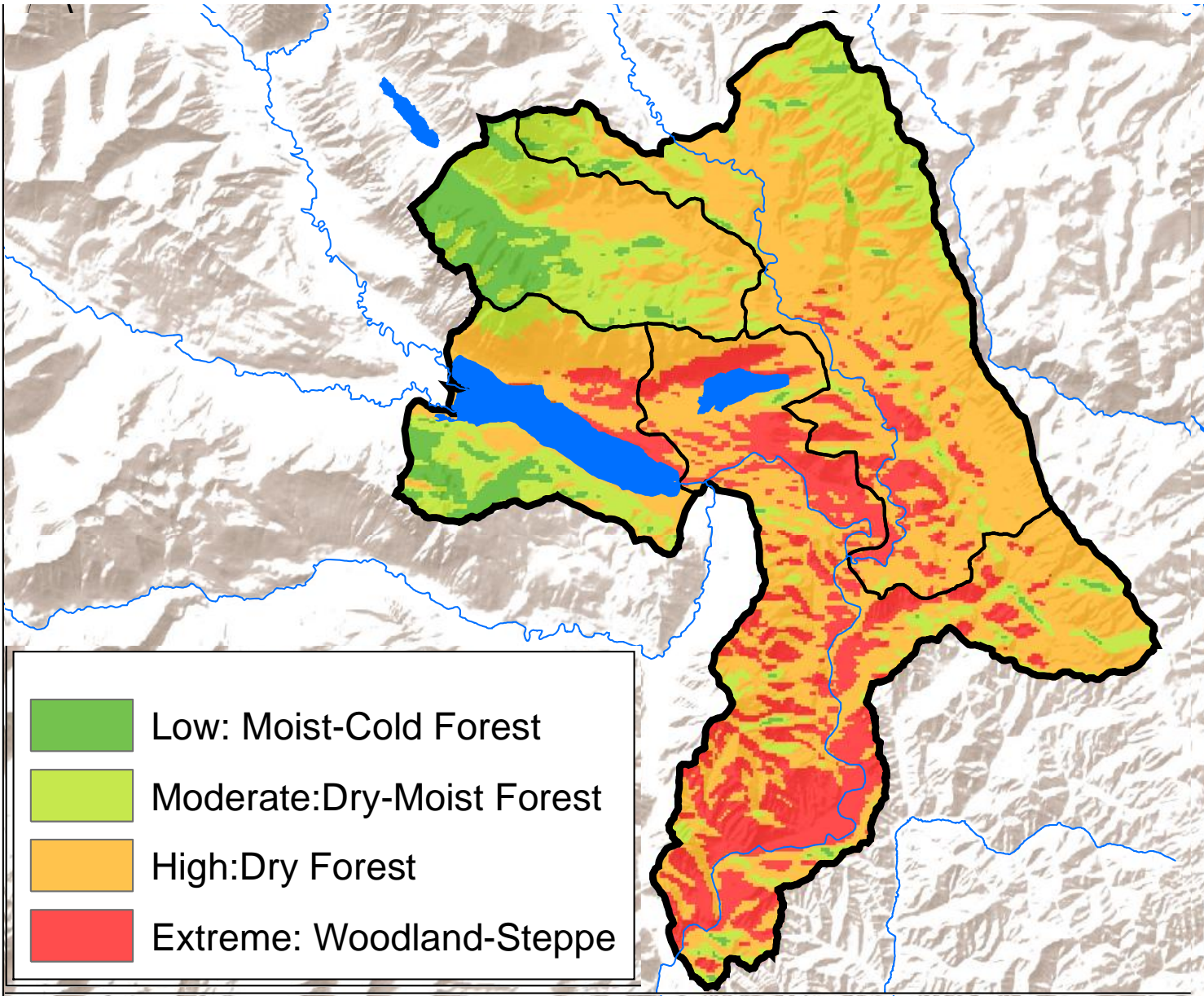
Climate Adaption: Biophysical Alignment

Current: 1981-2010



Climate Adaption: Biophysical Alignment

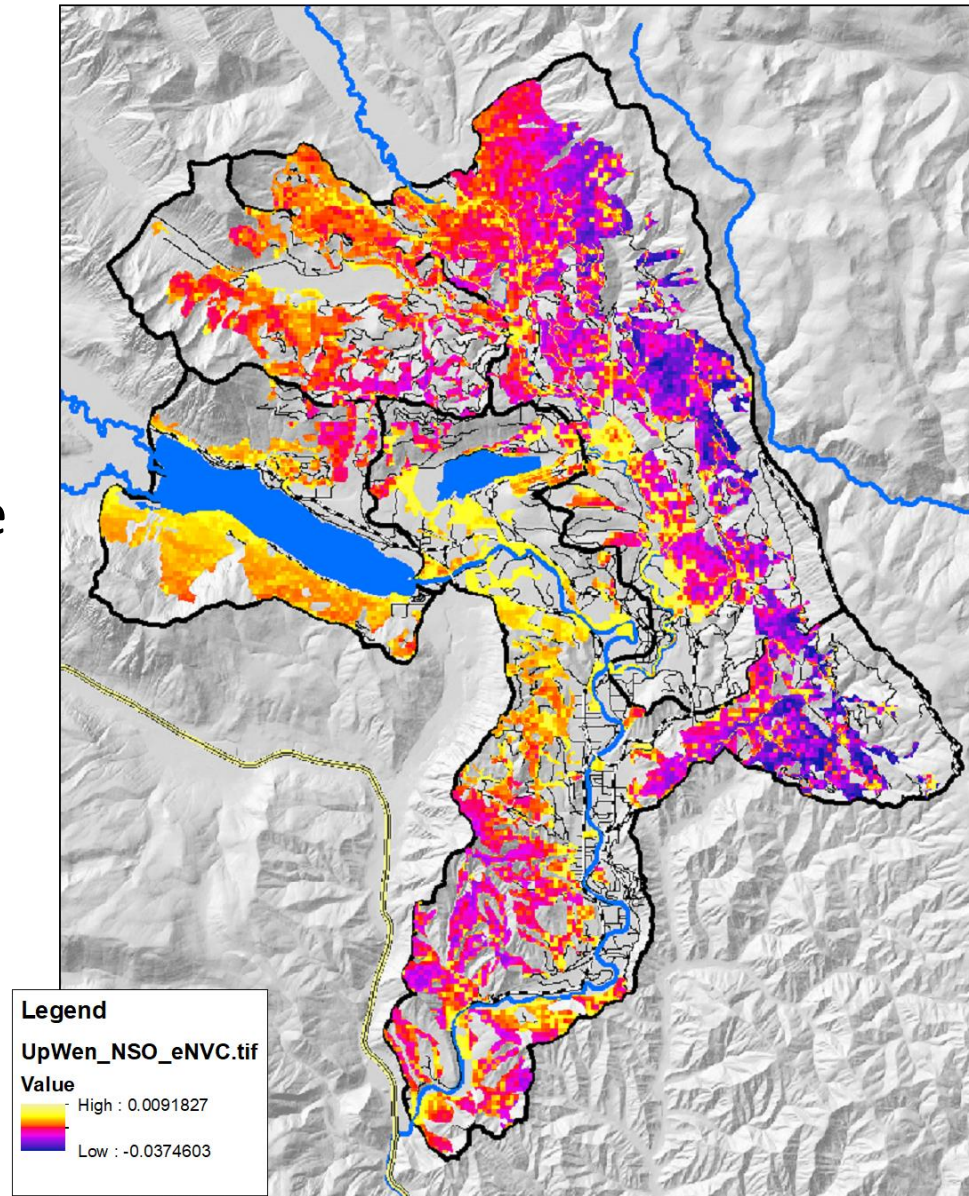
Future: 2045-2075



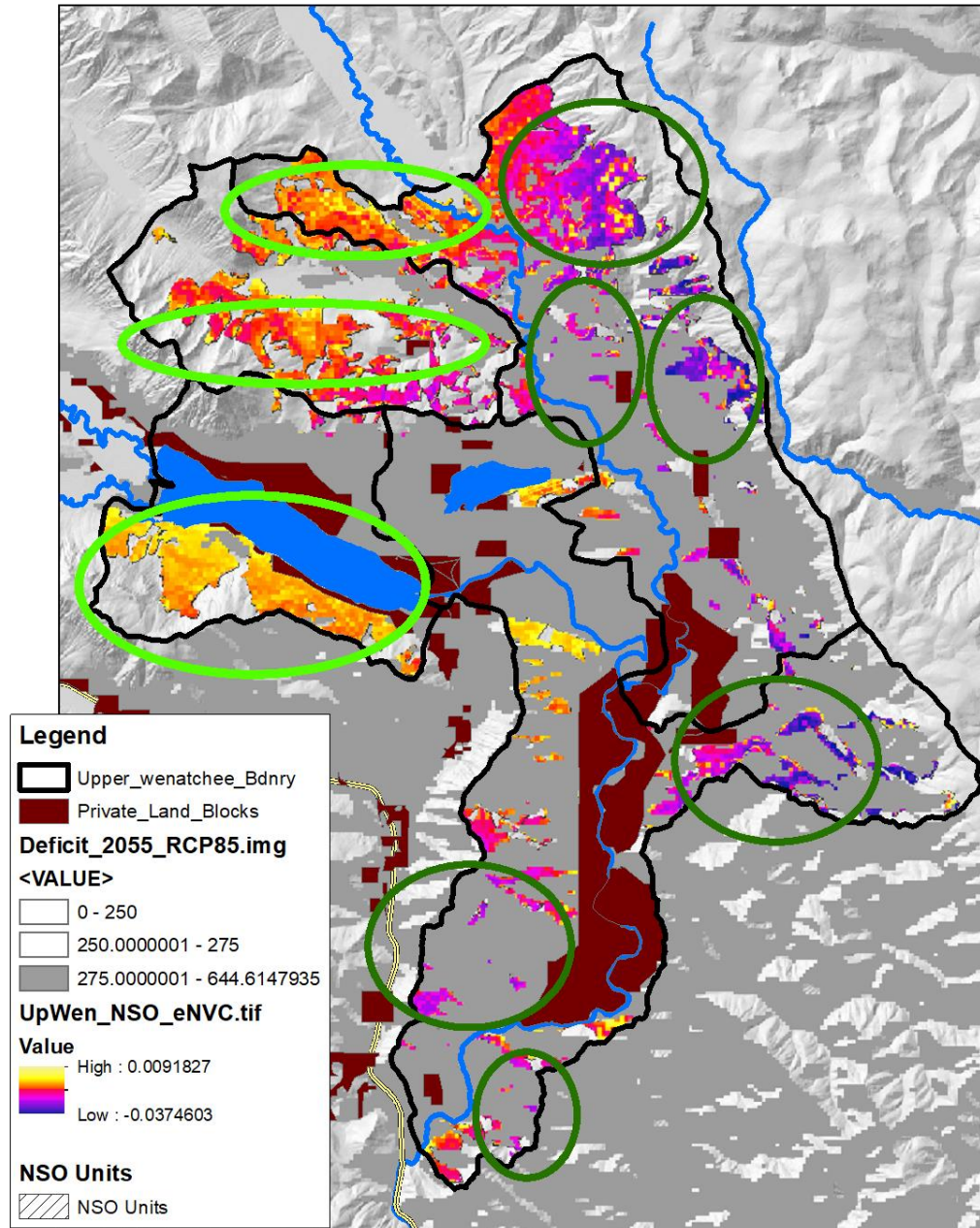
Fire Risk & NSO

Upper Wen NSO

- NSO Habitat from PI Layer
- Calculate Risk: Net Value Change



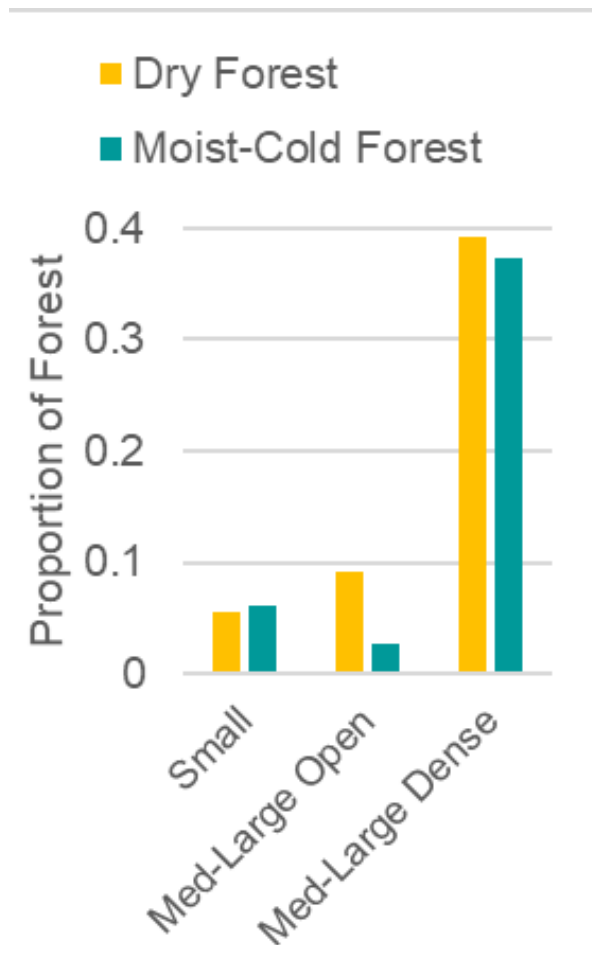
Fire Risk x Future NSO Sites



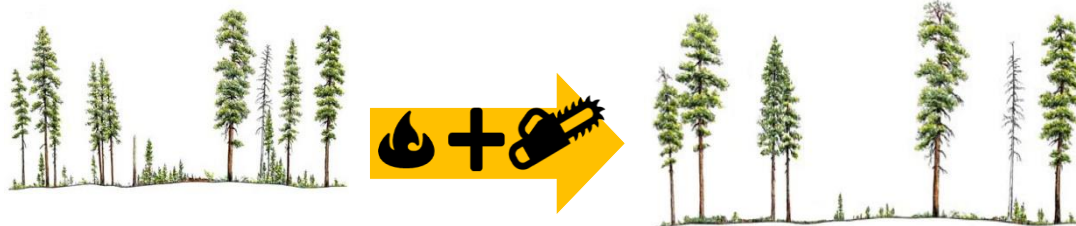
Treatment Need

Table 1

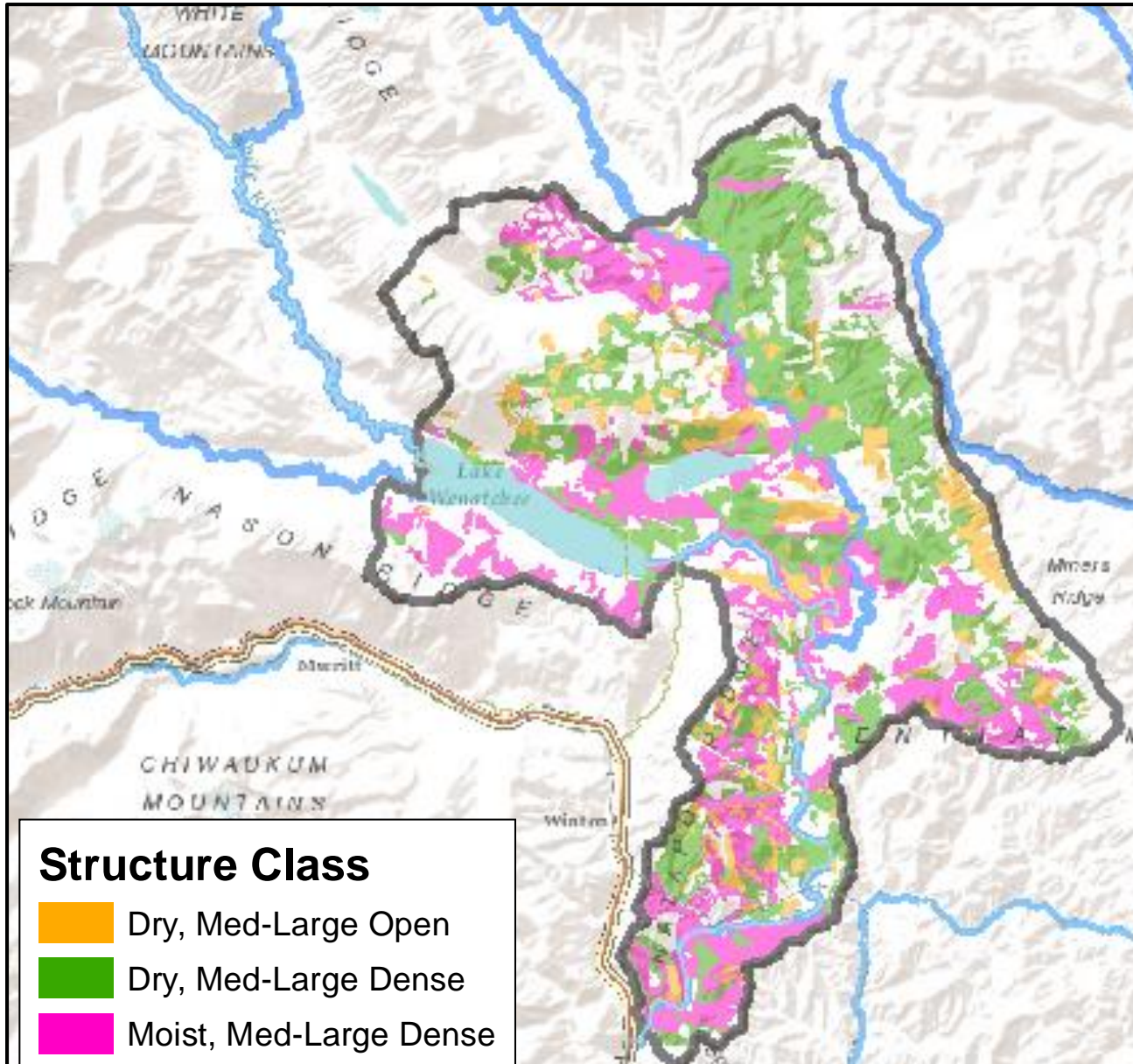
Forest Conditions that need Treatment		Treatment Need Acres	Current Acres by Major Landowner*		
Forest Type	Structure Class		USFS	Private	State
Dry	Med.-Large Dense	12,000-18,000	21230	2386	830
Moist	Med.-Large Dense	3000-7000	13156	1686	240
Dry	Med.-Large Open	500-2000	5007	707	4
Total Acres		15,500-27,000	*These are total current acres, not targets		
Anticipated Treatment Type	Commerical thin + fuels treatment. (Maybe regen, non-commercial, or fire only in some cases)				
	Maintenance: prescribed fire or mechanical fuels treat.				



Maintenance Treatments



Treatment Need



Pattern

Untitled Map
Write a description for your map.

Legend

-  78.4897463092403
-  Rimrock
-  Silver Beach Resort



Google Earth

Image USDA Farm Service Agency
Image Landsat / Copernicus



1000 ft

Pattern

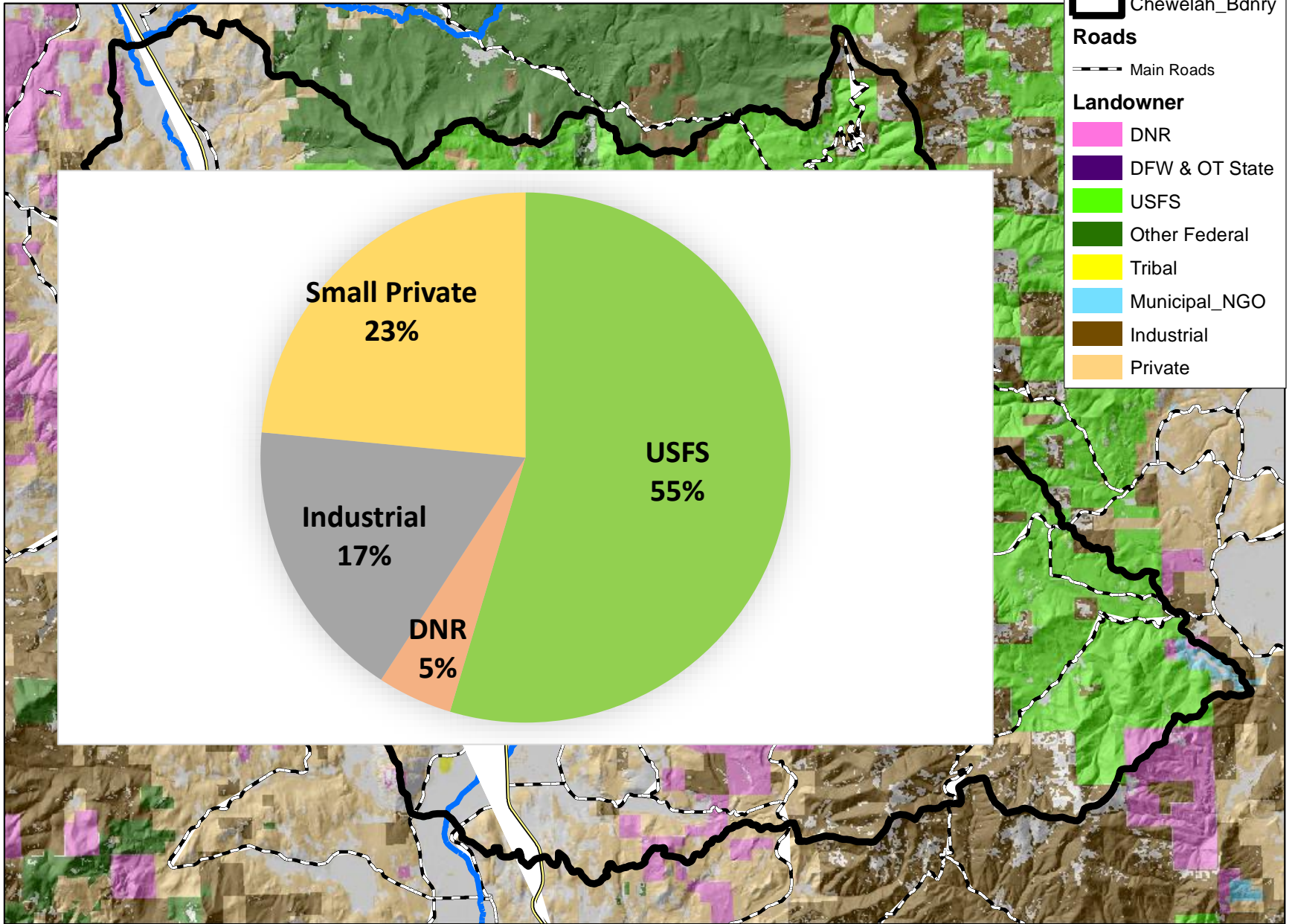
Untitled Map
Write a description for your map.

Legend

-  78.4897463092403
-  Rimrock
-  Silver Beach Resort



Chewelah Planning Area



0 2.5 5 10 Miles

Departure Analysis

Departure Analysis

- Historical ranges from State and Transition Models
- Models From CNF, ILAP + modifications by Josh Halofsky + Derek Churchill
- Additional review underway by Miles Hemstrom + local feedback.

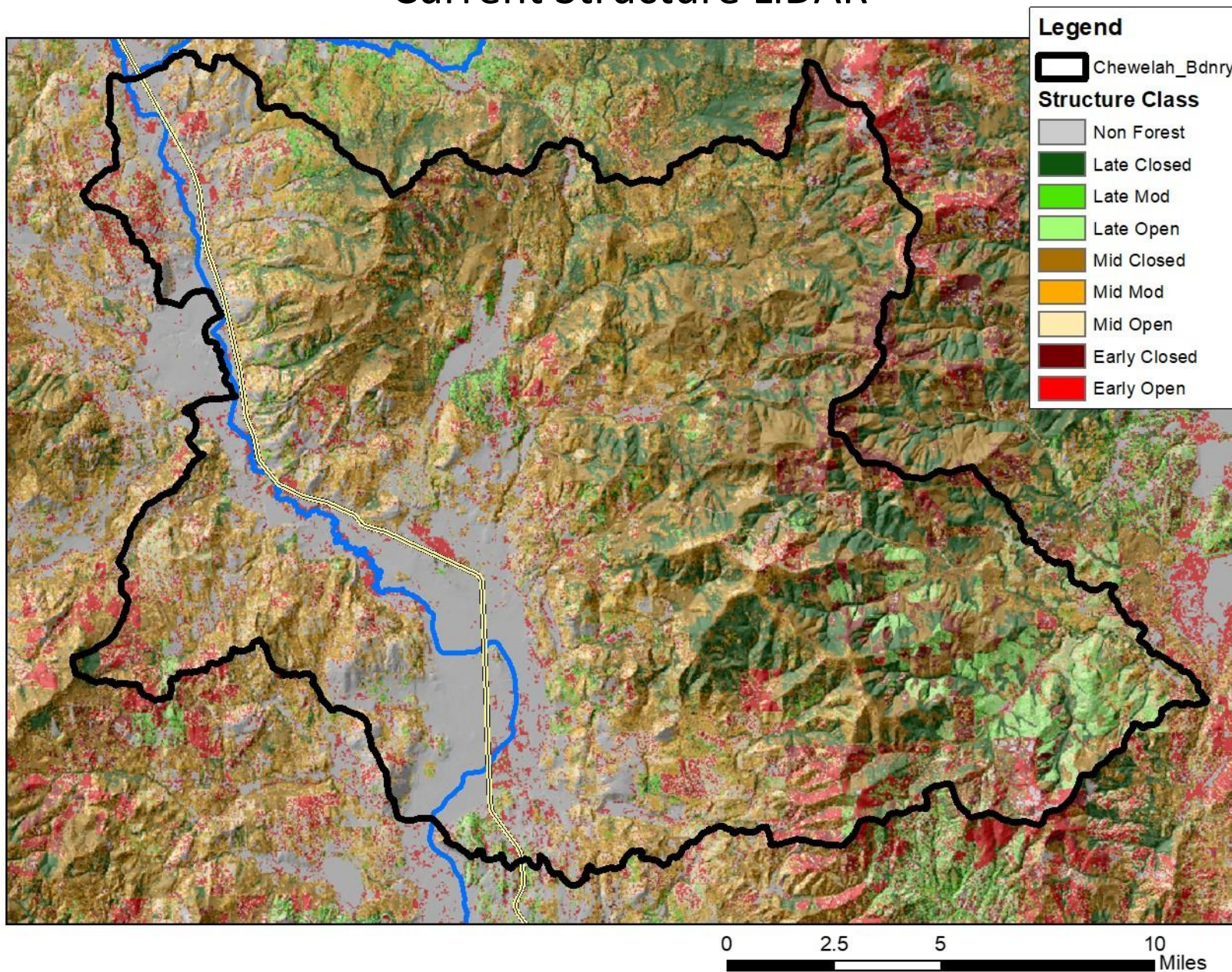
- Current conditions from LiDAR. GNN inserted where LiDAR does not exist

CNF-SC8 - CNF Structure classes: 8 classes

Class	Structure	Definition
1	Early Open	Canopy Cover <10% or Trees less than 10" dbh & canopy cover 10 - 39.9%
2	Early Closed	Trees less than 10" dbh canopy cover \geq 40%
3	Mid Open	Trees 10-20" dbh, canopy cover \geq 10% and < 40%
4	Mid – Mod	Trees 10-20" dbh, canopy cover \geq 40% - <60%
5	Mid Closed	Trees 10-20" dbh, canopy cover \geq 60%
6	Late Open	Trees \geq 20" dbh, canopy cover \geq 10% and < 40%
7	Late - Mod	Trees \geq 20" dbh, canopy cover \geq 40% - <60%
8	Late Closed	Trees \geq 20" dbh, canopy cover \geq 60%

Departure Analysis

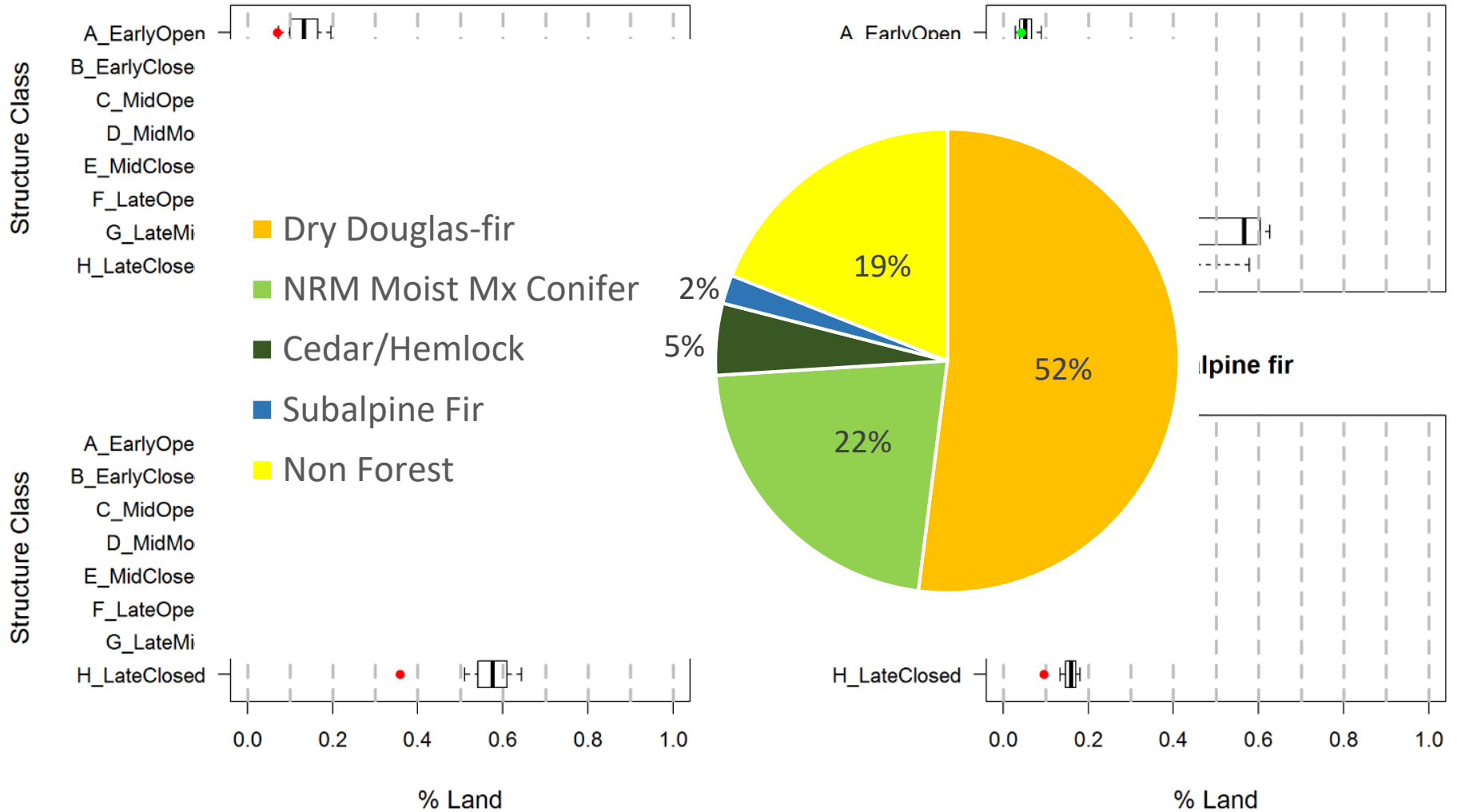
Current Structure LiDAR



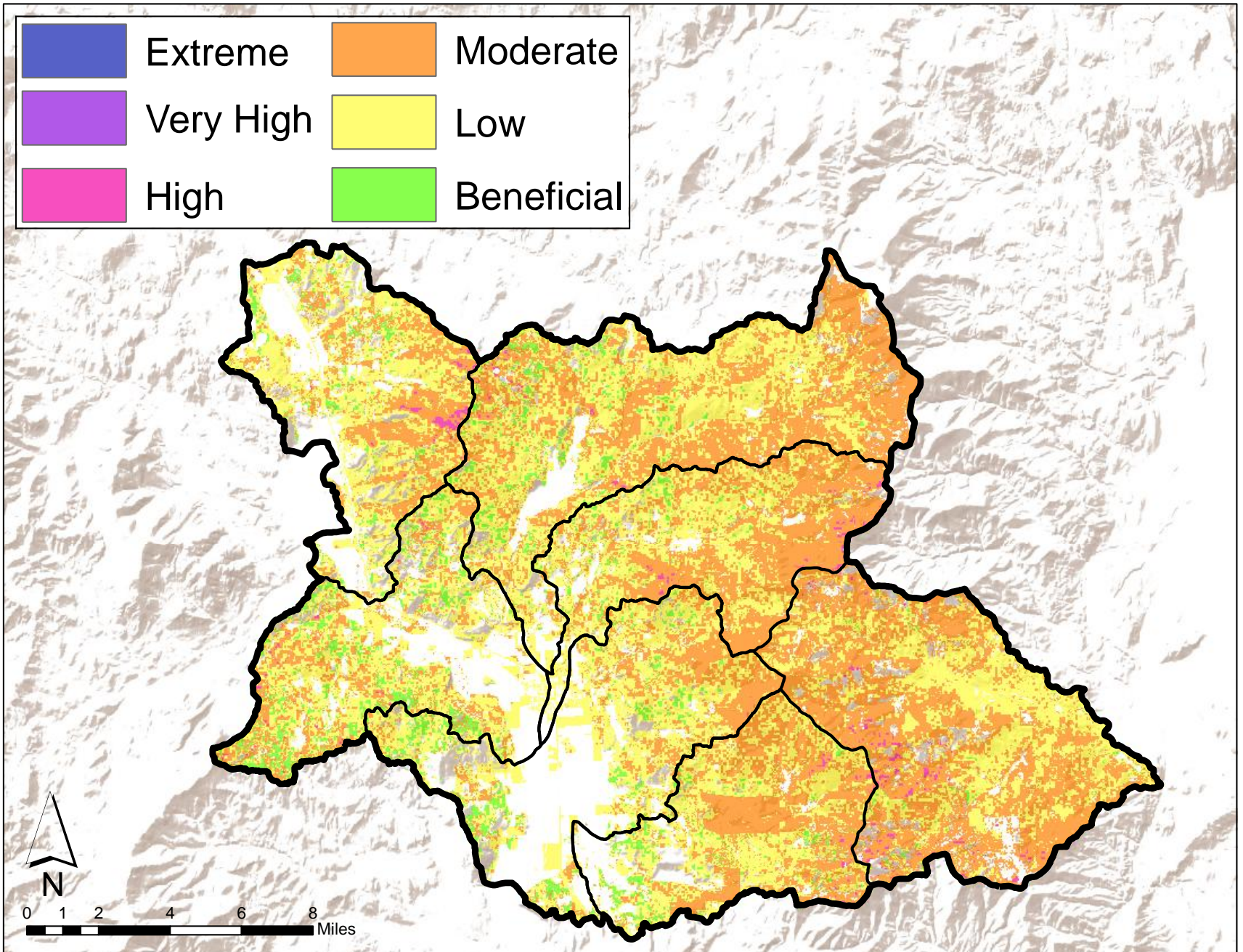
Departure Analysis

Dry Douglas-fir

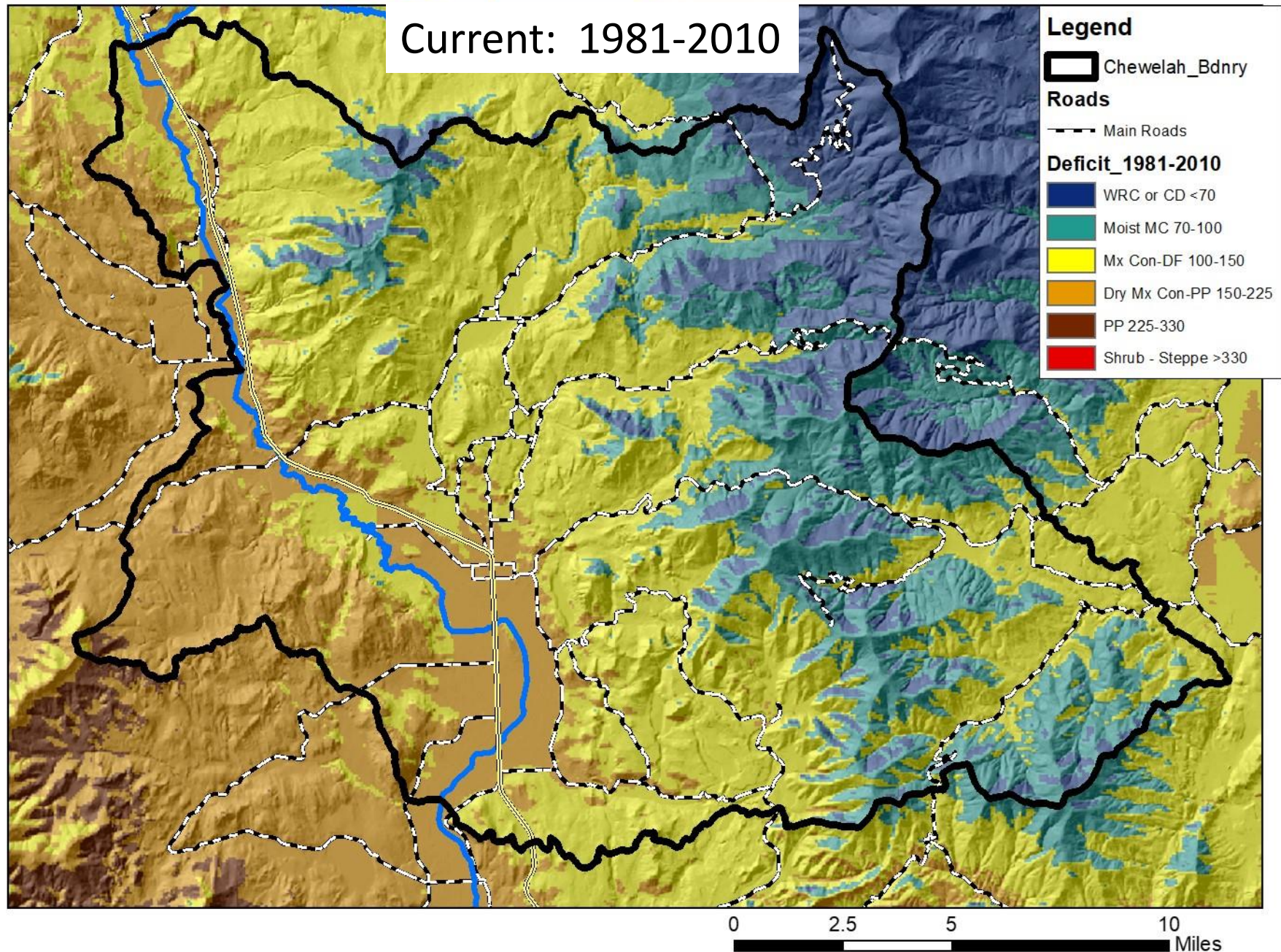
Northern Rockies Moist Mix-Con



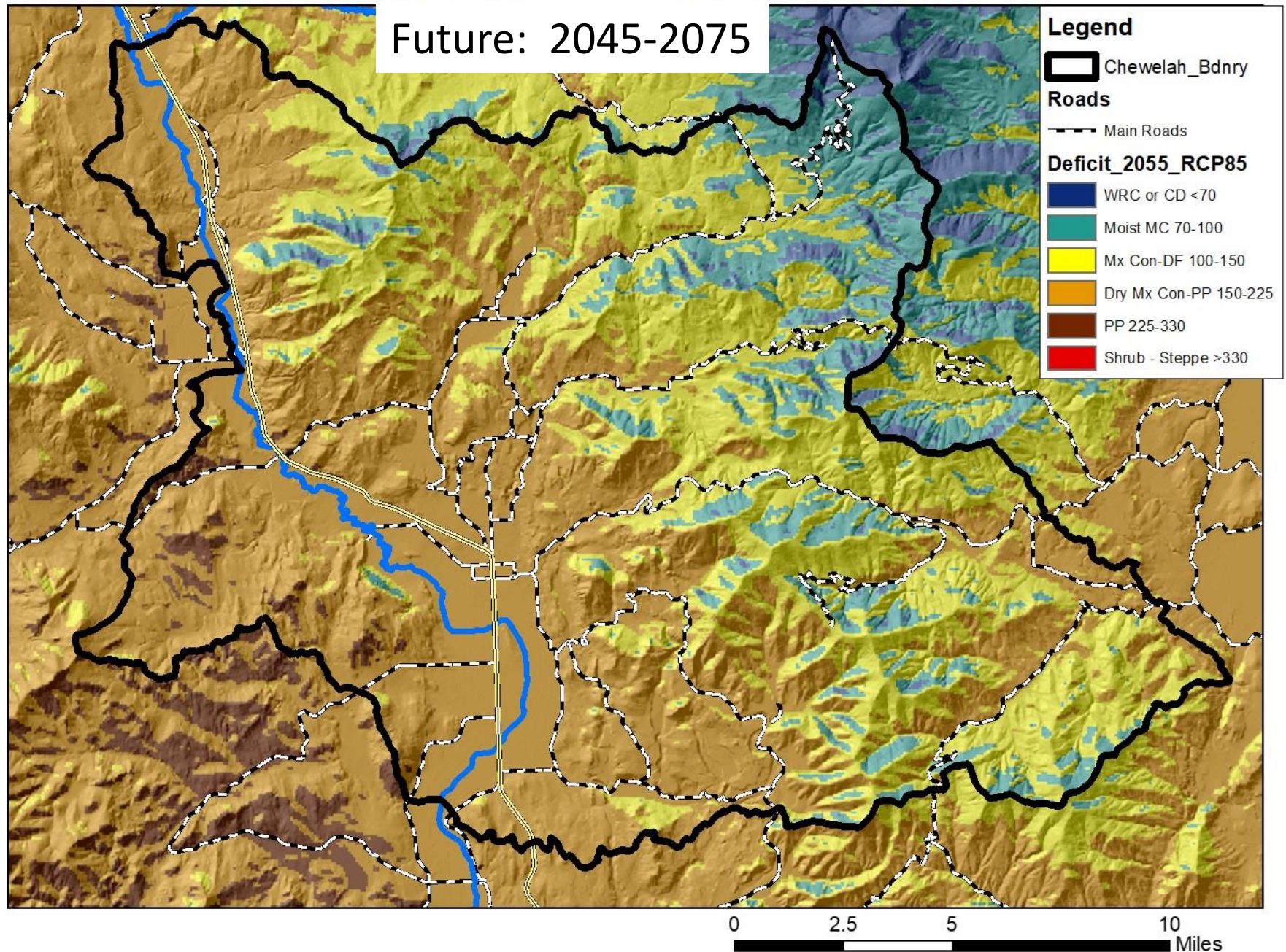
Fire Risk



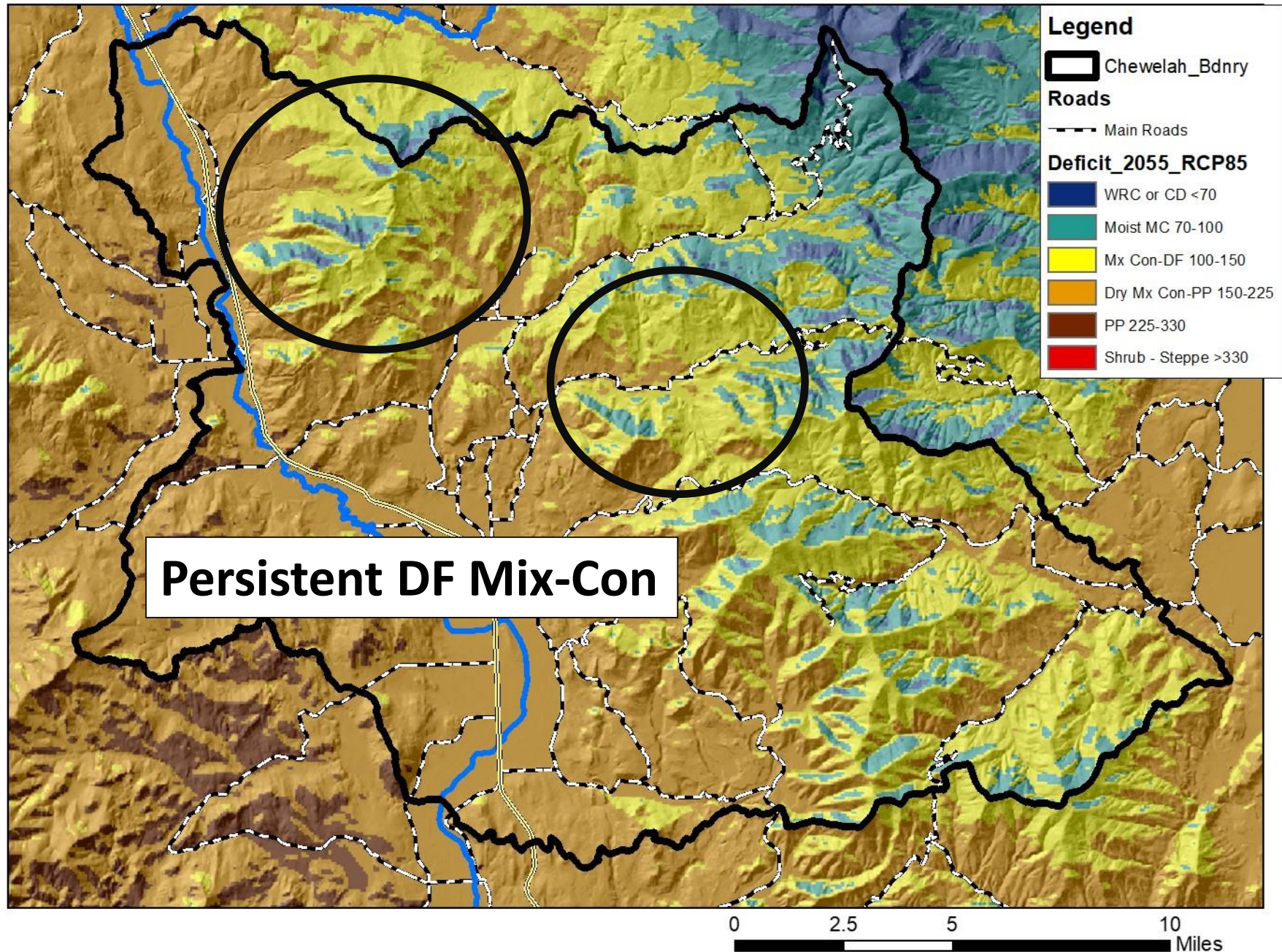
Climate Adaption: Biophysical Alignment



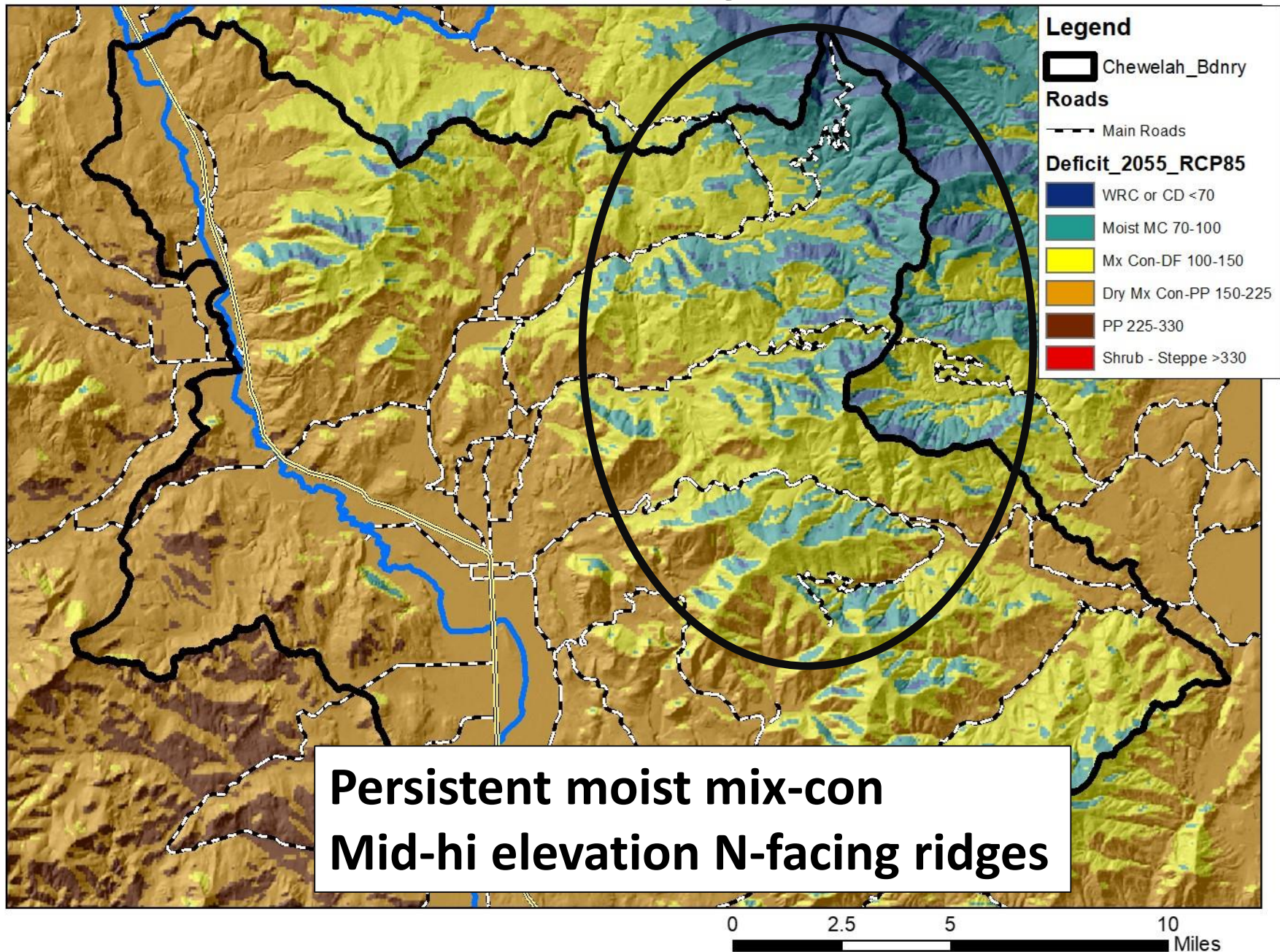
Climate Adaption: Biophysical Alignment



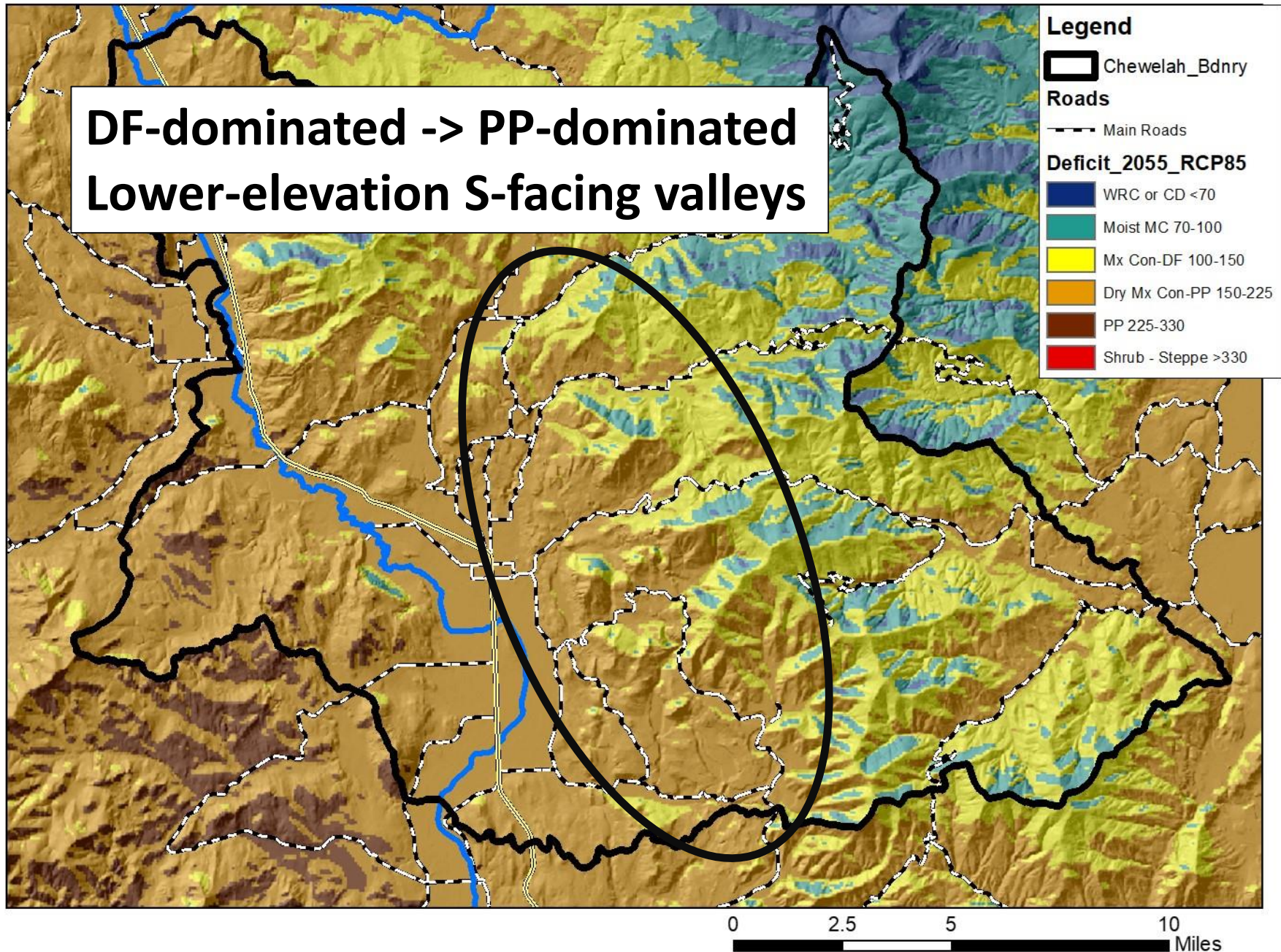
Stability



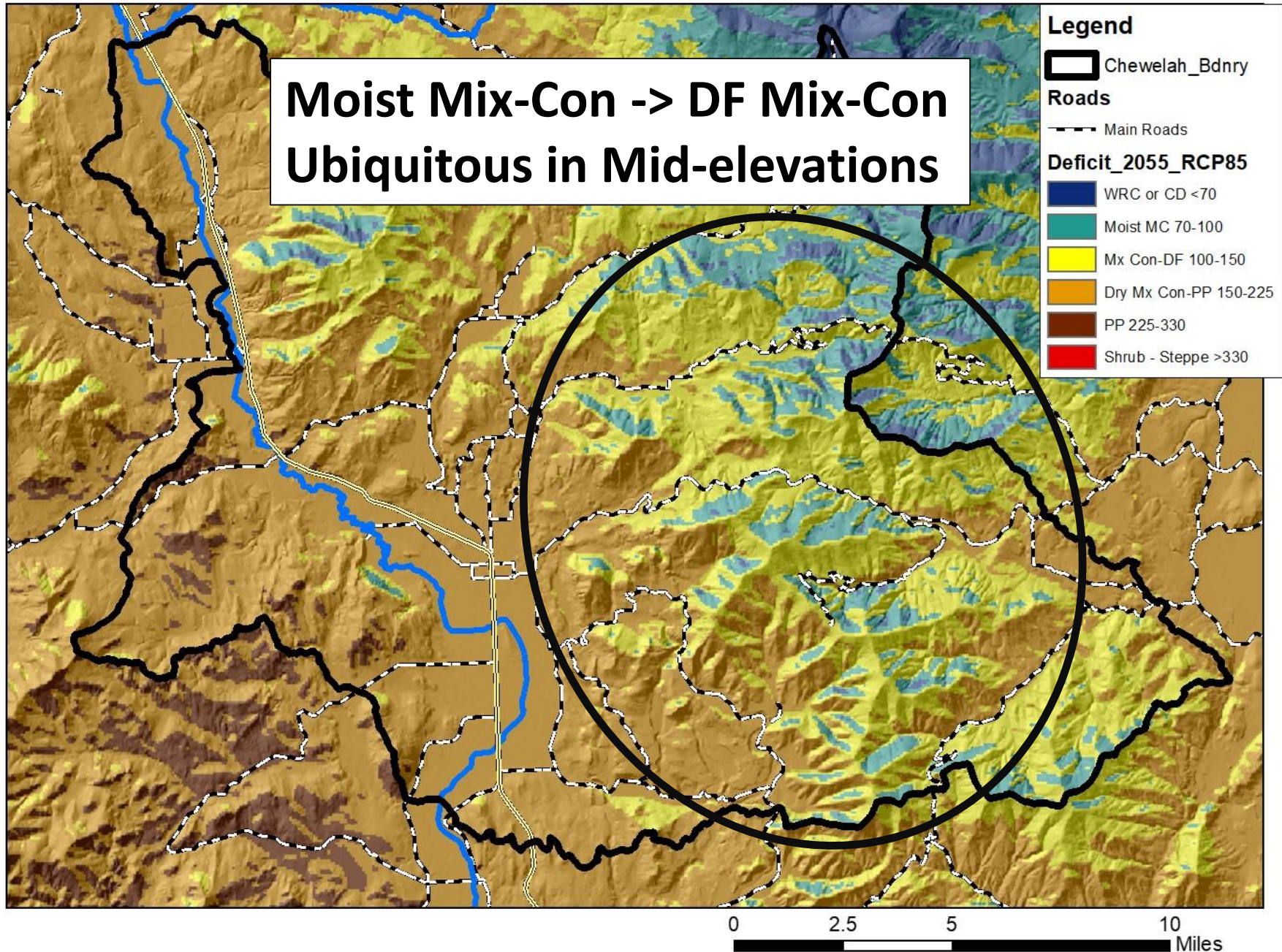
Stability



Change



Change



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Active	Active	Active						
	Active	Active	Active	Active	Active	Active	Active	
					Active	Active	Active	Active
							Active	Active



Overall Treatment Needs

20-Year Forest Health Plan Landscape Evaluation Update

Next Steps

- Finish 2 page summaries (End of October)
 - ➔ Feedback from stakeholders by early Nov.
- “Finalize” LE’s and data products
- Report to Legislature by Dec 1.



20-Year Forest Health Plan Landscape Evaluation Update

Next Steps

- Ongoing work with local stakeholders on refining Landscape Rx.
- Upgrades: economics, deficit, species, pattern.
- 2020 planning areas
 - Trail, Teanaway ...



