Connecting Habitat for Washington's Wildlife

Developing the Washington Habitat Connectivity Action Plan

WSDOT

Terradapt

Washington Department of FISH and WILDLIFE

Conservation Biology Institute

The Wildlife Connectivity Institute

Conservation Northwest
Keeping the Northwest Wild

Washington Habitat Connectivity Action Plan

Collaborative partnership to prioritize **places and projects** to **protect and enhance** habitat connectivity statewide.

Providing spatial data and technical assistance to help planners *designate* and *protect* critical fish and wildlife habitat including

Biodiversity Areas and Corridors

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Climate Change
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Climate Change
Research Scientist

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PHS Connectivity
Biologist

Jeff Azerrad
PHS and Landscape
Conservation

Agenda

Part 1: WAHCAP overview

- **Presentation, Julia Michalak, WDFW (30 min presentation; 10 min Q&A)**
  WAHCAP overview and landscape connectivity prioritization methods and results.
- **Presentation, Glen Kalisz, WSDOT (30 min presentation & 15 min Q&A)**
  Transportation prioritization in the context of landscape connectivity.
- **Presentation, Julia Michalak, WDFW (5 minutes)**. Project next steps and vision for end products.

Agenda

Part 2: Break-out groups

Break-out part 1: Review of spatial priorities

***Objective**: Gain input from participants on the accuracy, utility, and actionability of identified statewide connectivity priorities and map outputs.*

Break-out part 2: Action-focused discussion

***Objective:** Identify action priorities for each region. What are the most important connectivity issues and locations for this region?*

WAHCAP overview

Guiding principles

Both road crossings and landscape connectivity.

Focus on terrestrial connectivity.

Build from what we have.

Support and amplify existing connectivity work.

Focus on action not analysis.

State Connectivity Action Plans

Maps showing ***where*** connectivity is.

Priorities for taking action.

Strategies for coordinated ***implementation***.

Technical Advisory Group

- Developing and reviewing new models
- Species data deep dive
- Prioritization metrics
- How to combine/weight data
- Trouble shooting results

Implementation Advisory Group

- What connectivity work do you do?
- What are limitations of existing data we can improve on?
- How do we prioritize locations?
- What data format or displays do you need?

Tribal engagement:

- Invited to TAG and IAG
- 1:1 meetings
- Tribal webinars
- Tribal climate summit

State Connectivity Action Plans

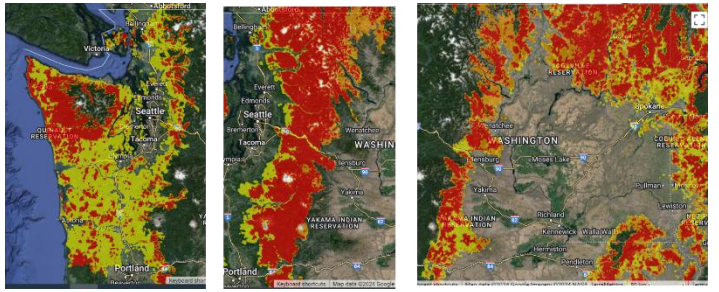
Maps showing ***where*** connectivity is.

Priorities for taking action.

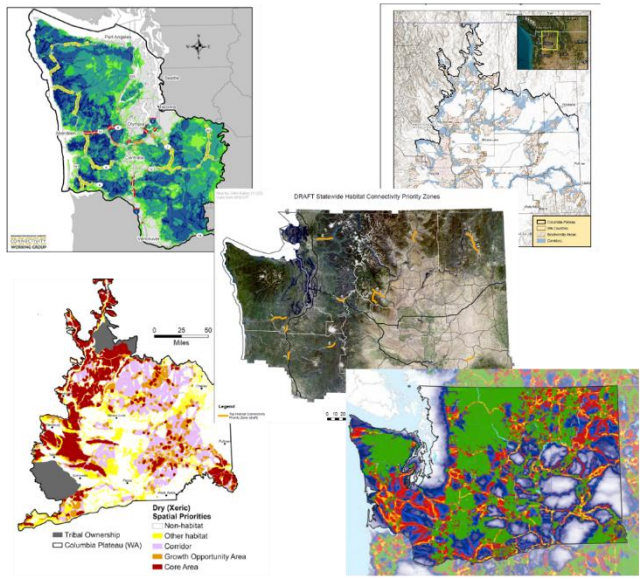
Strategies for coordinated ***implementation***.

Review Compare Understand

New Data



Existing data and priorities



WAHCAP synthesis

WAHCAP Maps and Priority Locations

Select
Prioritize
Revise

Deliverable 1: an adaptive process

Review and revise in future years

Deliverables

2. Maps to inform connectivity conservation action to support biodiversity resilience.

3. Identify statewide priority locations in **urgent** need of transportation crossing structures and/or landscape connectivity conservation.

Connectivity values and mapping

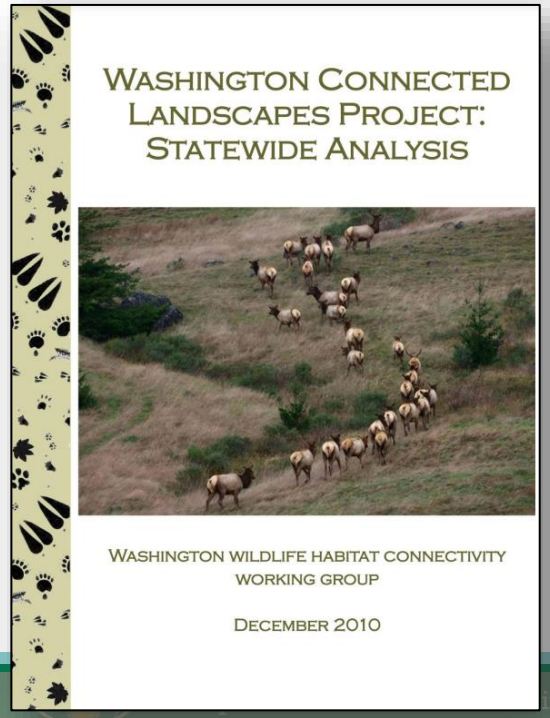
Existing work…

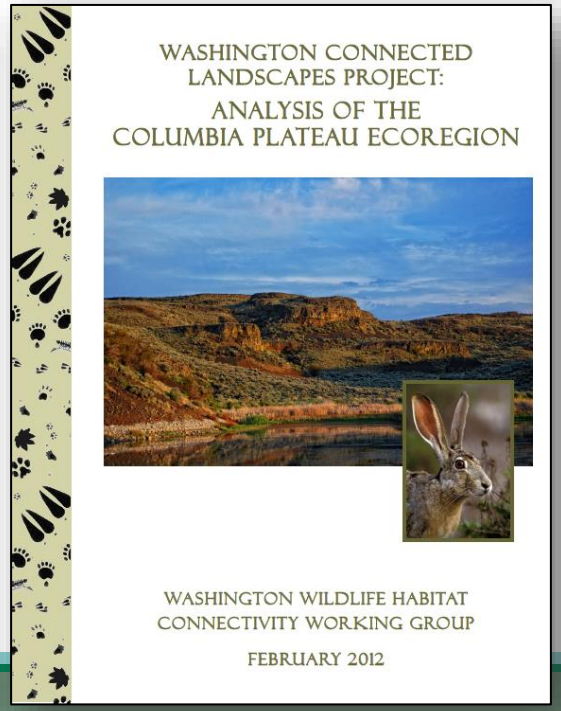
Washington Connected Landscapes Project: Statewide Analysis

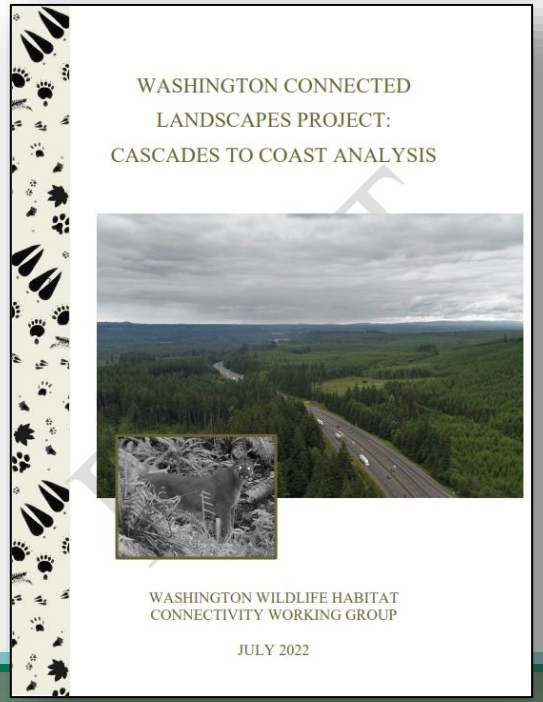
Columbia Plateau Ecoregional Analysis

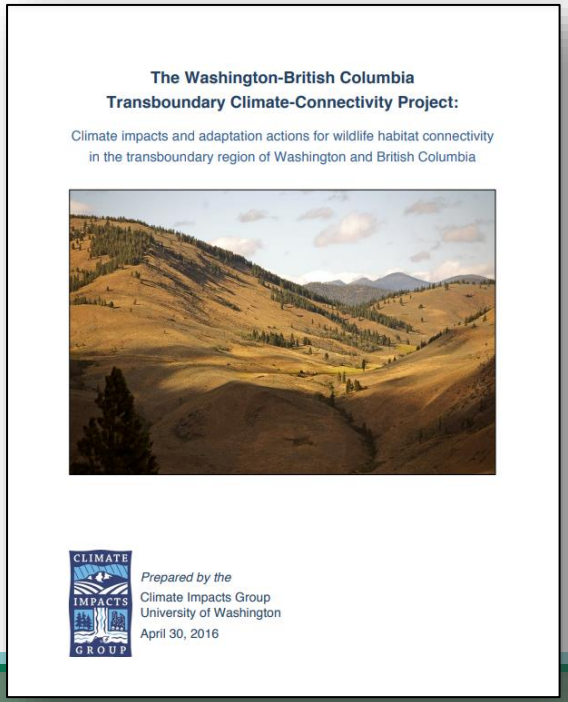
Cascades To Coast Analysis

The Washington-British Columbia Transboundary Climate-connectivity Project





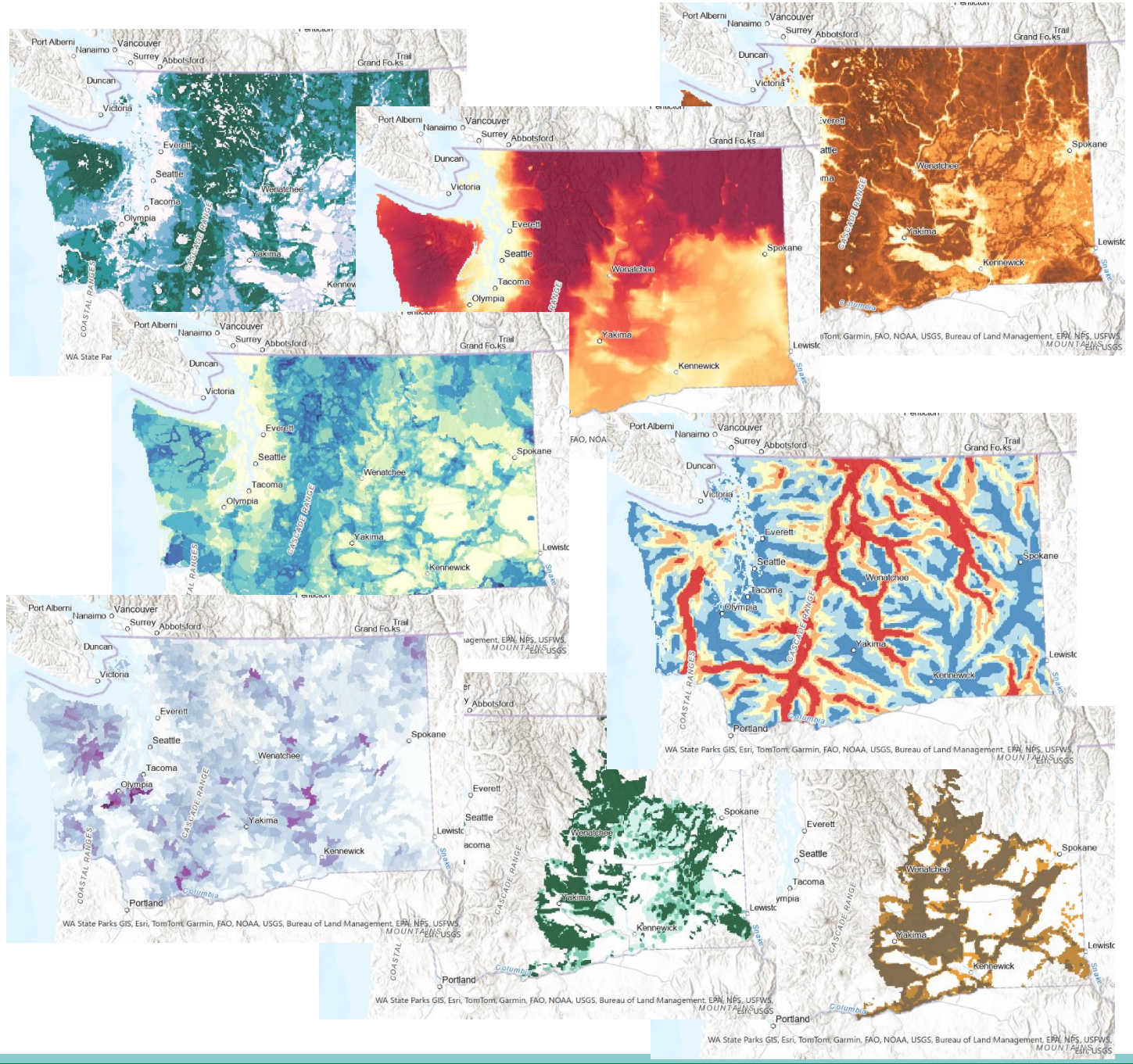




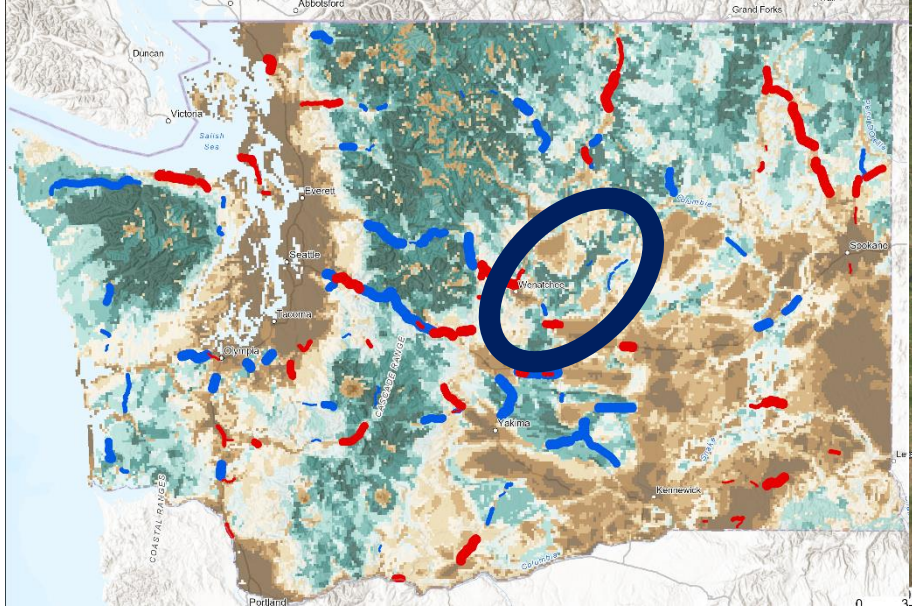
WAHCAP

Connectivity values

1. Ecosystem (structural) connectivity
2. Network importance
3. Local landscape permeability
4. Focal species models
5. Existing prioritizations – ALI-BAC
6. Existing prioritizations - WSRRI
7. Species of greatest conservation need
8. Climate connectivity

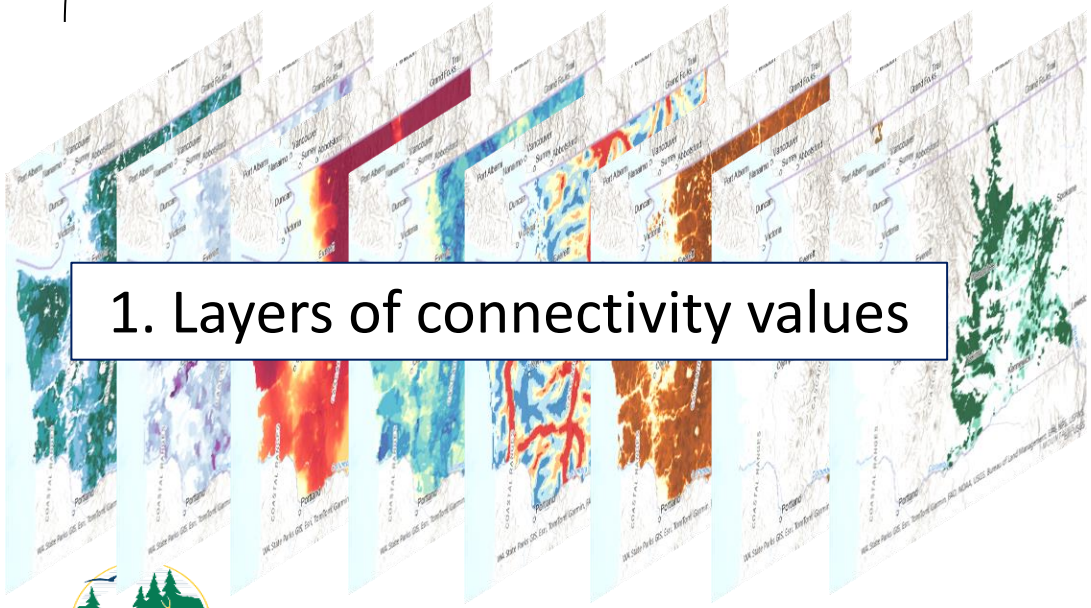


2. Synthesize

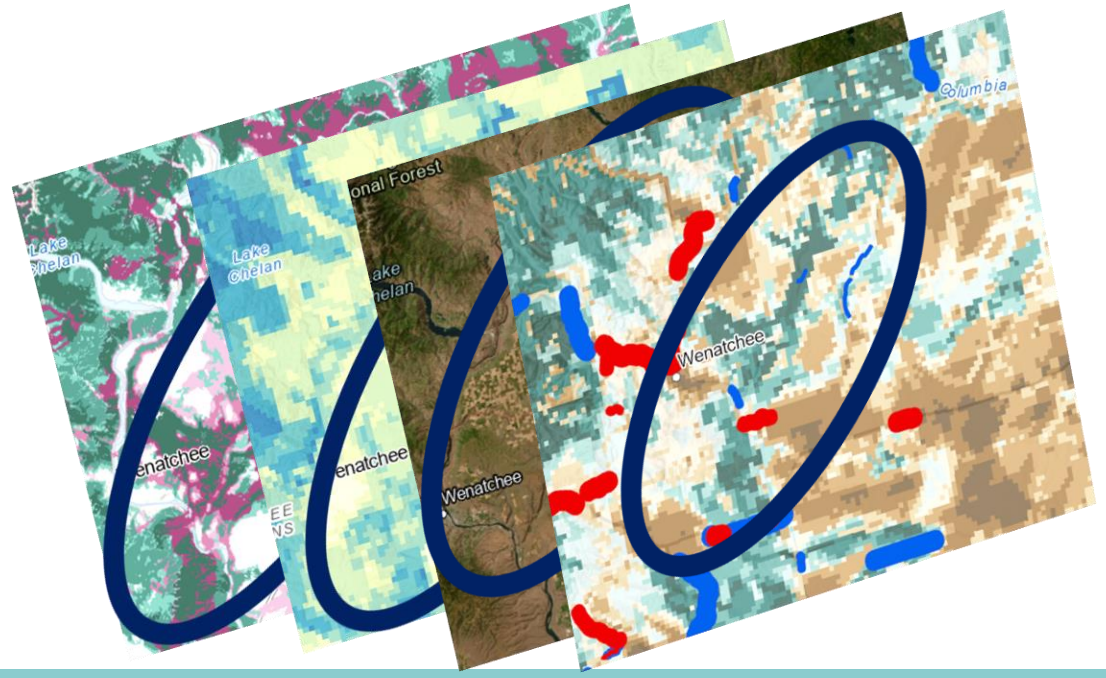


2. Identify priorities

3. Use fine-scaled data to plan and implement



1. Layers of connectivity values



4. Identify issues and solutions appropriate to that location.

New ecosystem connectivity

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Ecosystem cores and corridor network.

3 Tiers of quality

Cores

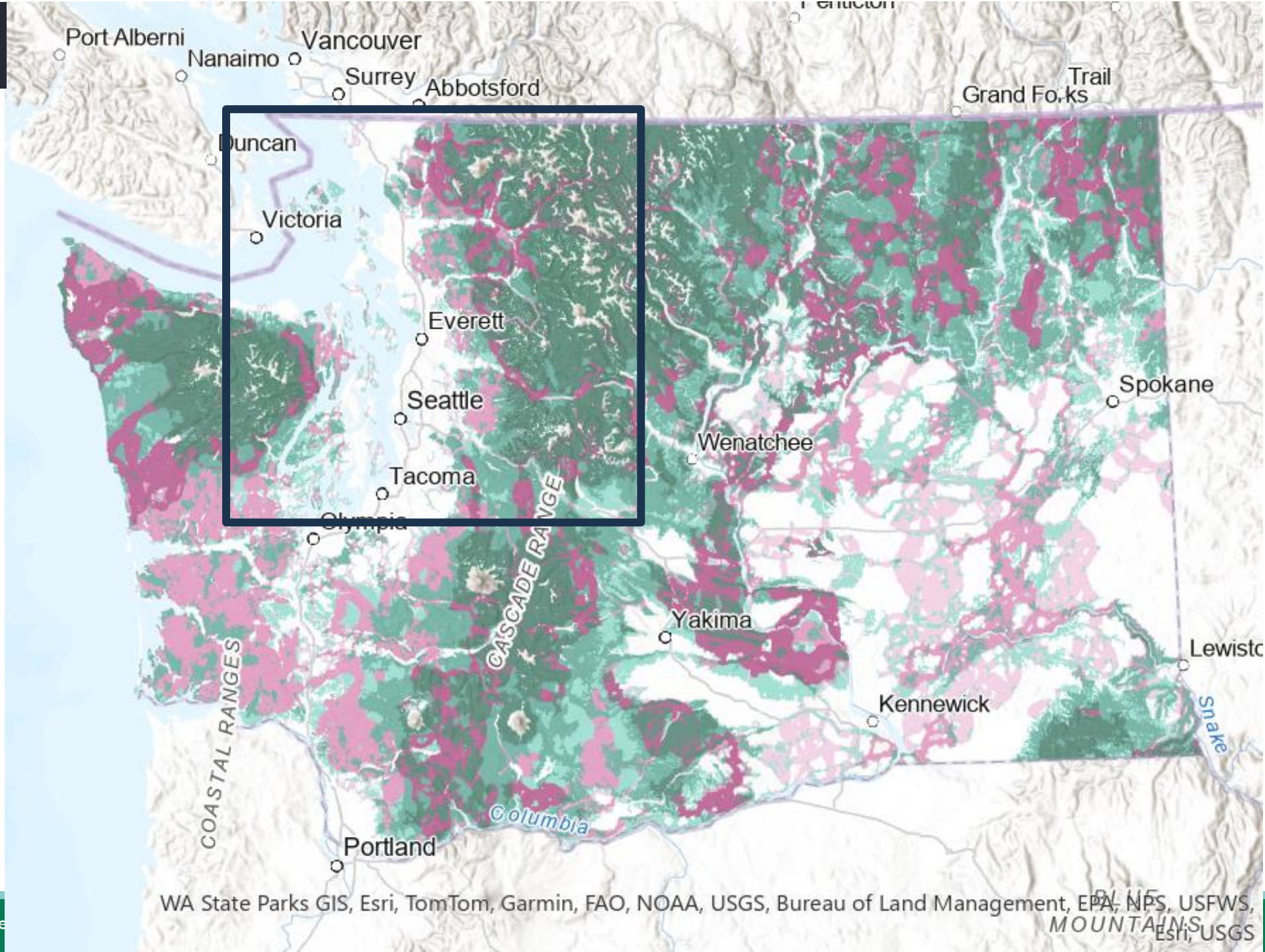
Habitat Intactness

High — Low

Corridors

Habitat Intactness

High — Low



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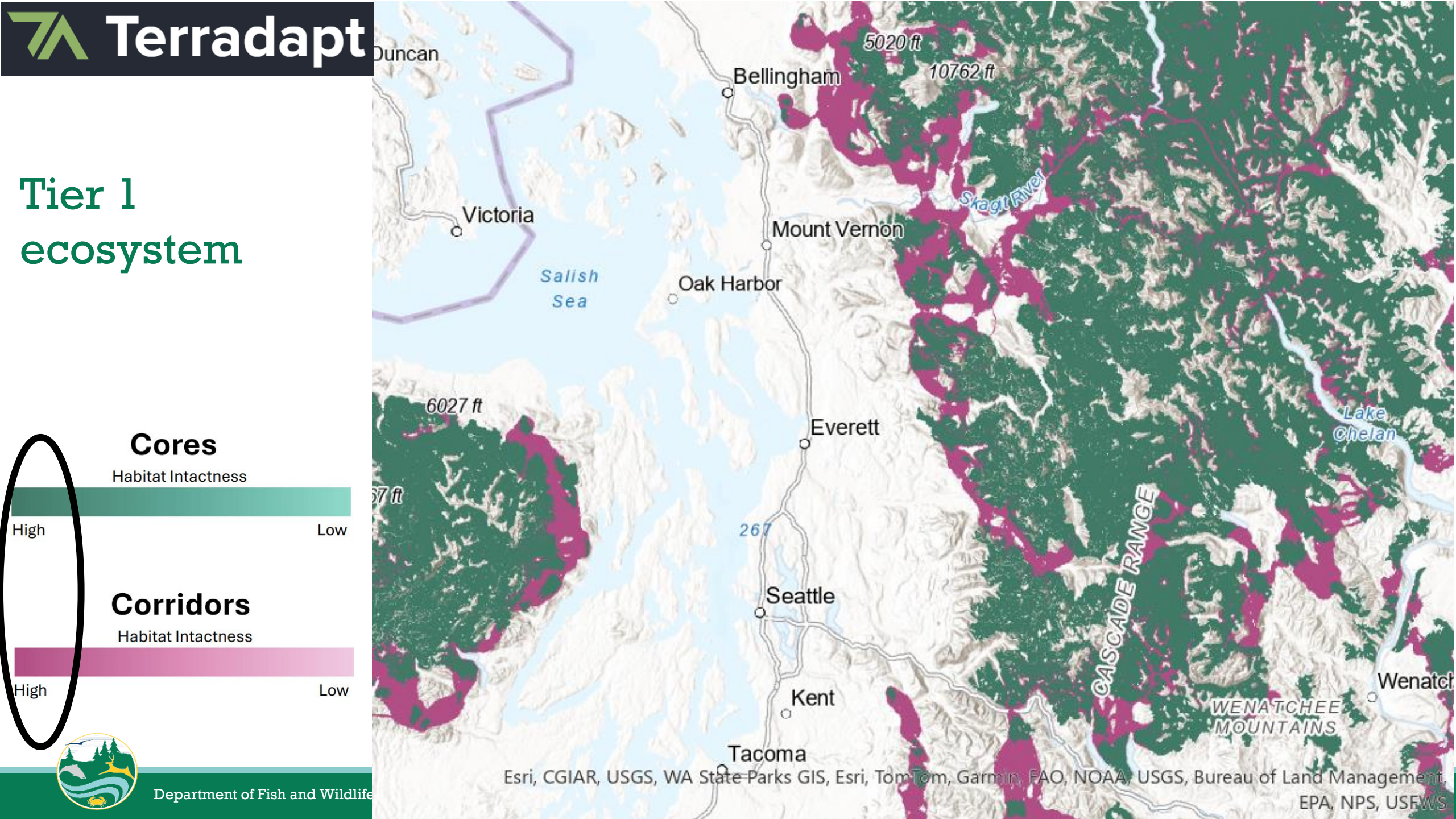
Tier 1 ecosystem



Cores

Habitat Intactness

High — Low

Corridors

Habitat Intactness

High — Low

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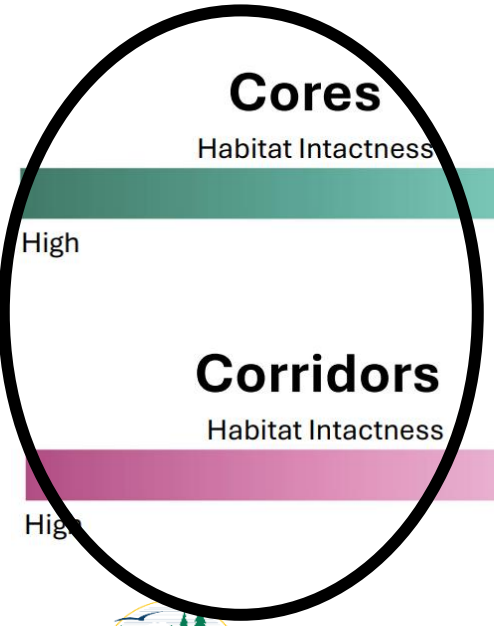
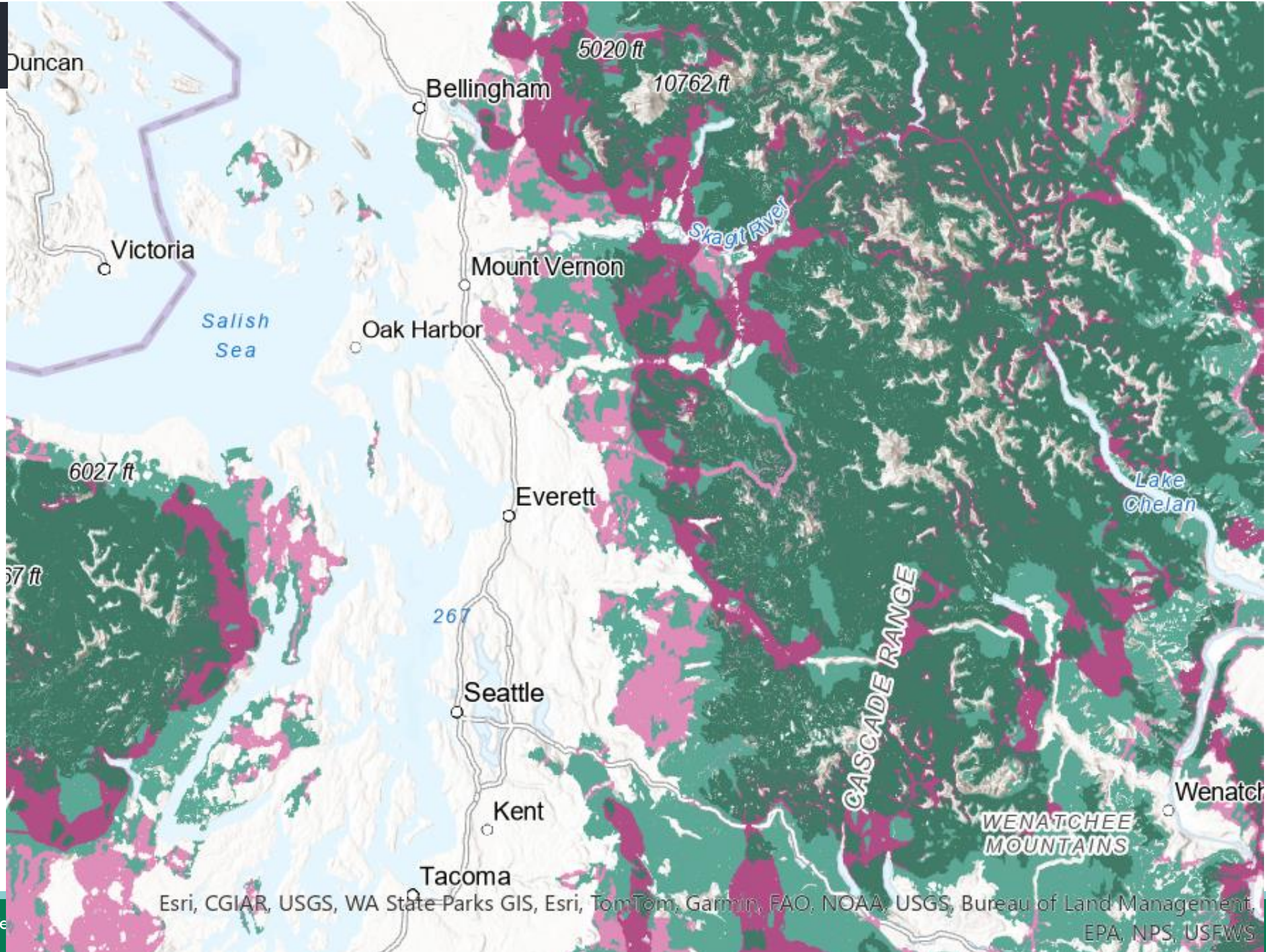
Tier 1 and 2 ecosystem





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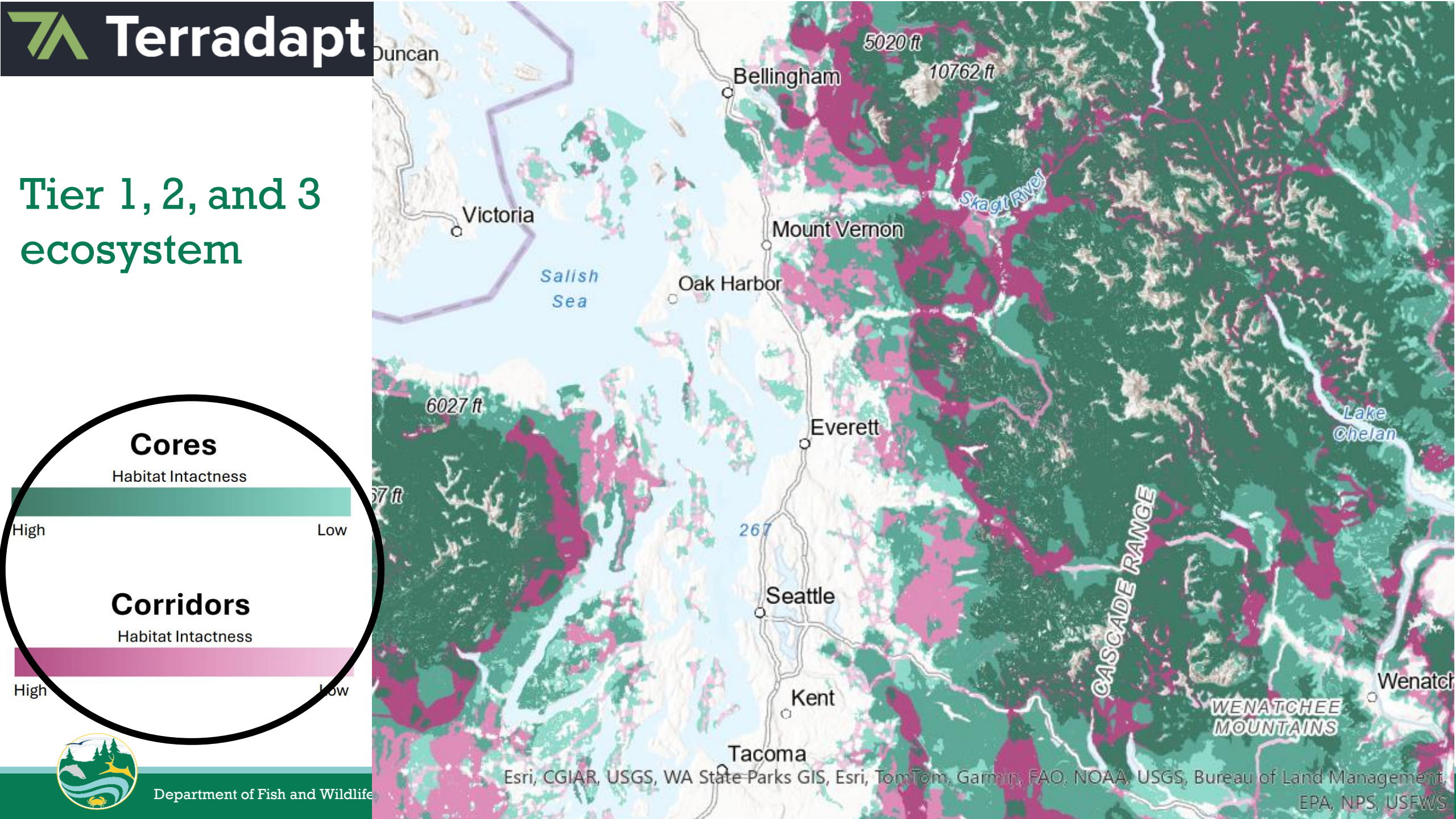
Tier 1, 2, and 3 ecosystem



Cores

Habitat Intactness

High — Low

Corridors

Habitat Intactness

High — Low

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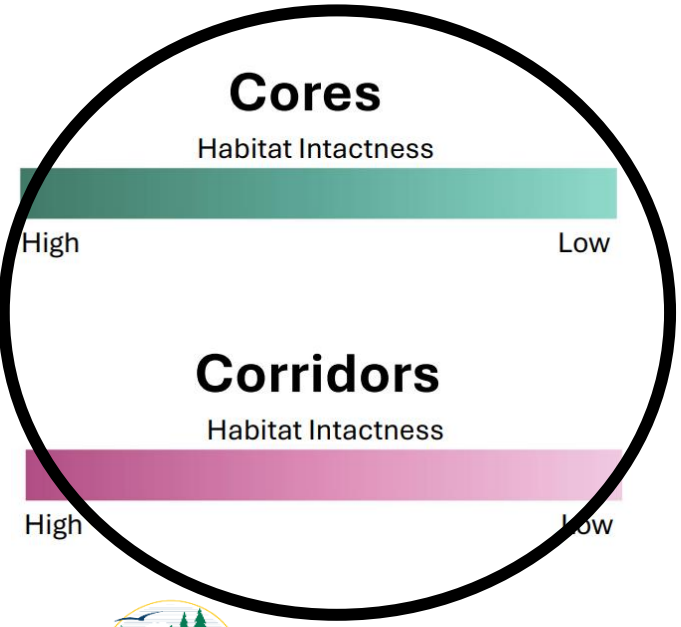
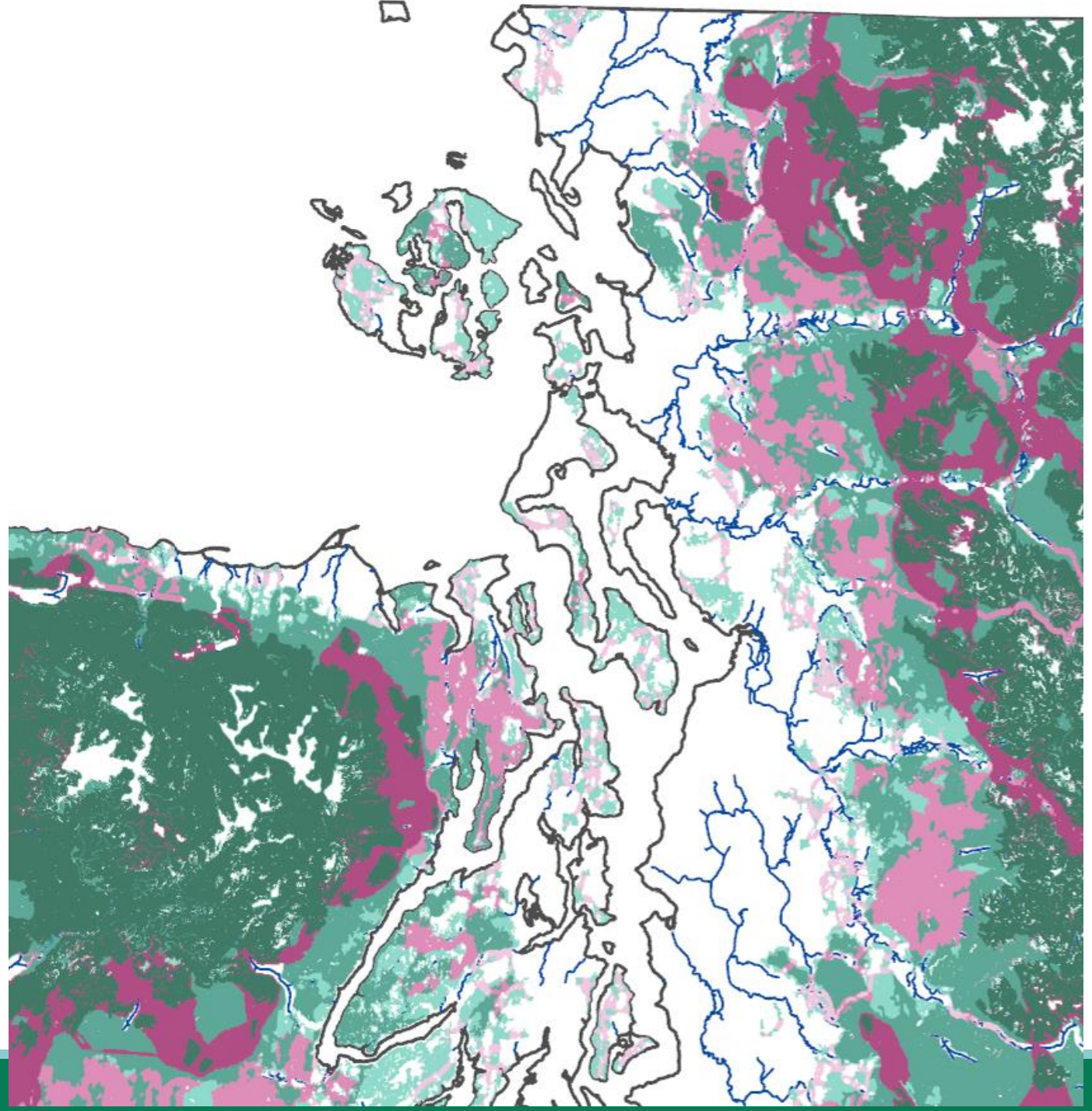
Tier 1, 2, and 3 ecosystem

+ Riparian





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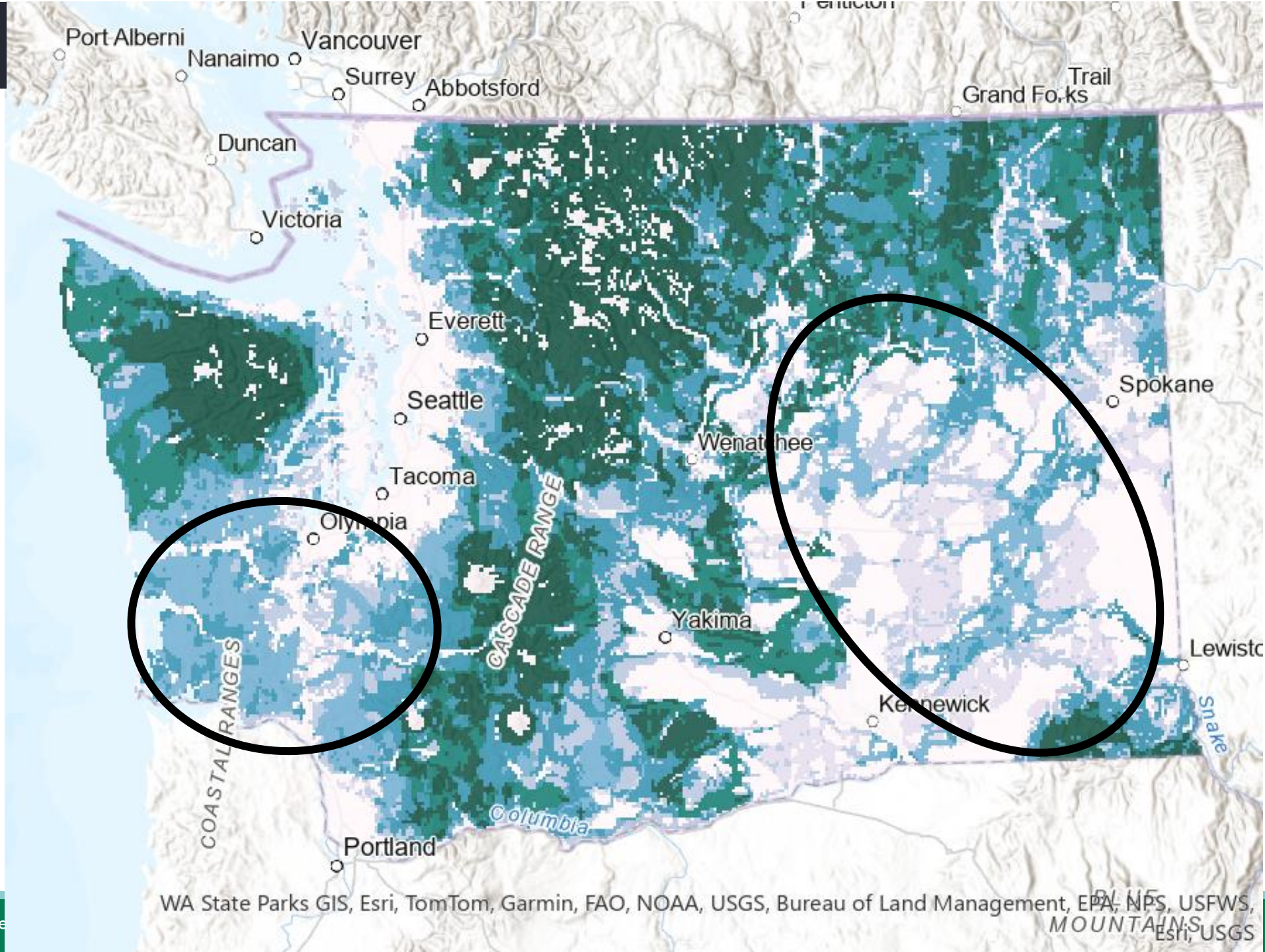
Ecosystem cores and corridor network scores.

Tier 1 > 2 > 3
Cores > corridors

Highest value



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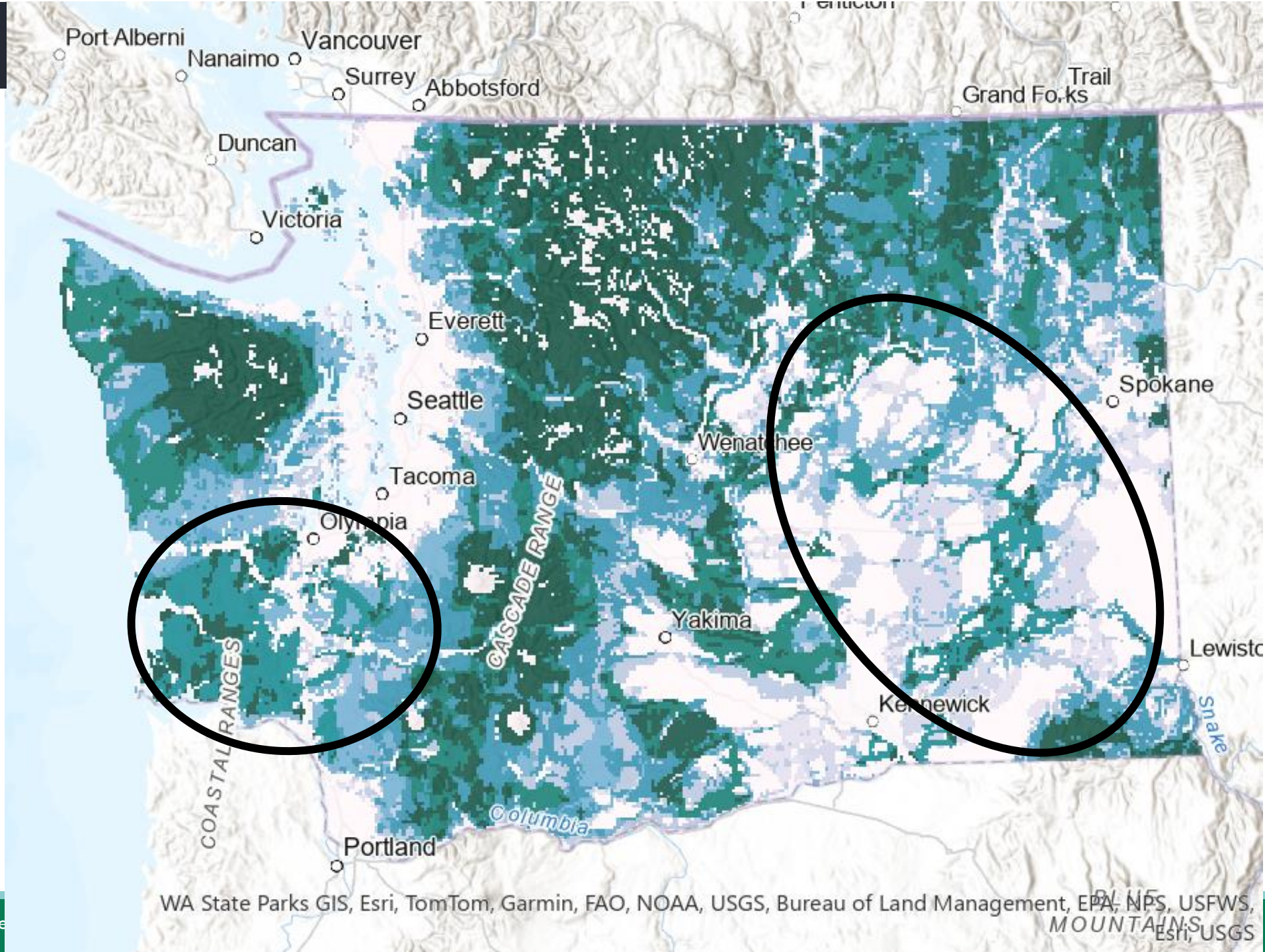
1. Ecosystem cores and corridor network.

Rescaled using moving window

Highest value



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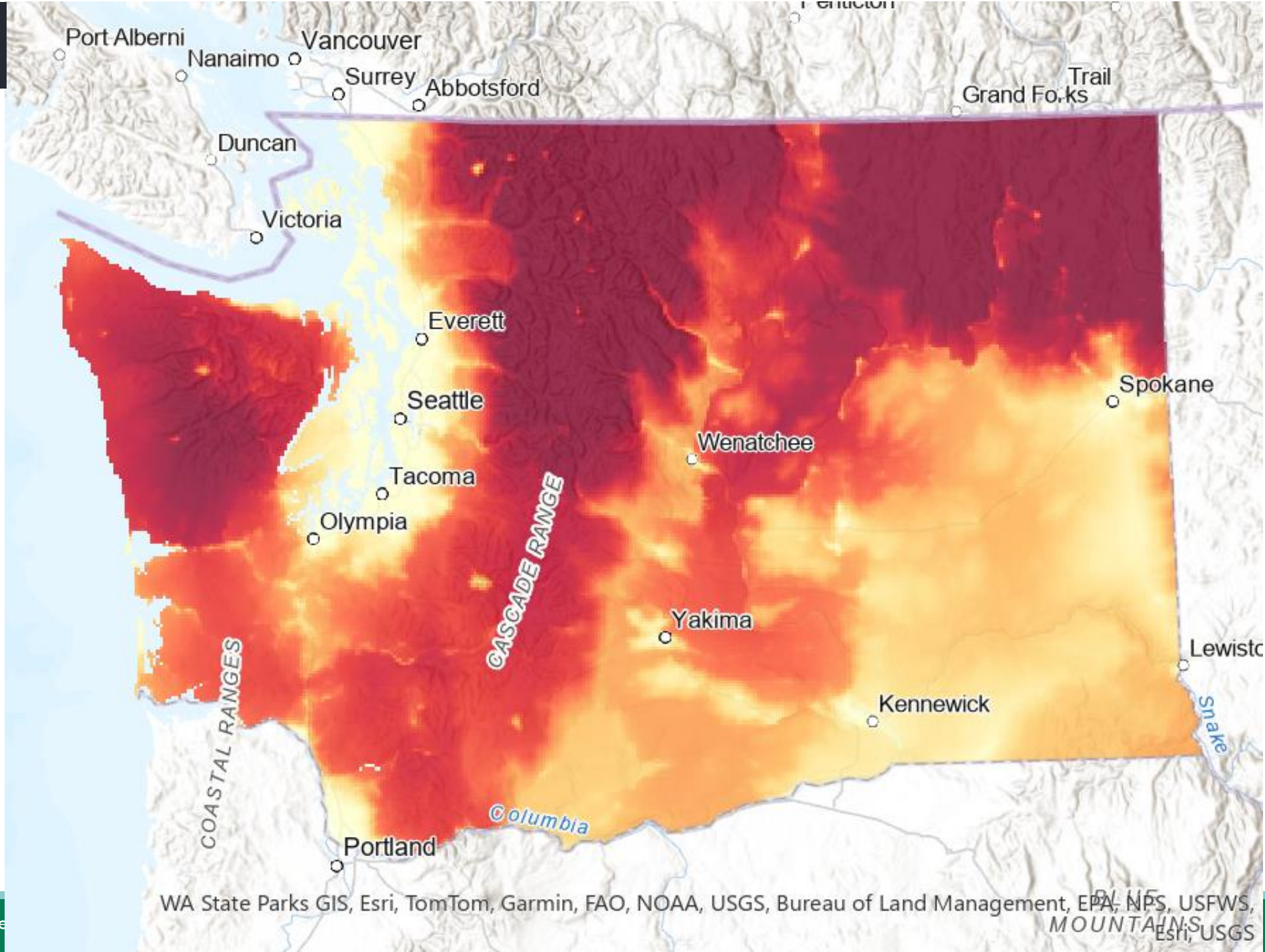
2. Network importance

Dispersal kernel density

Highest value



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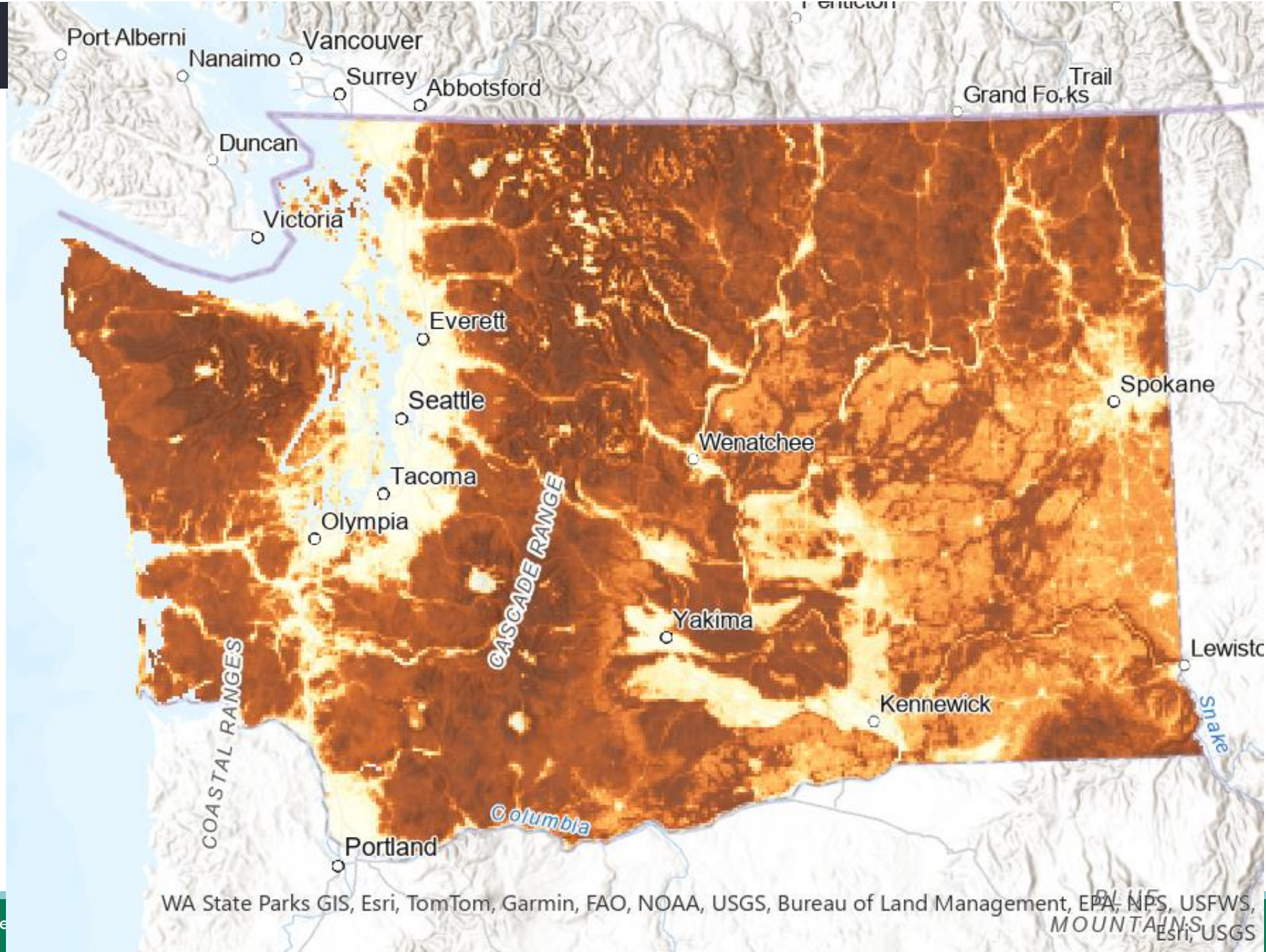
3. Local landscape permeability

Highest value

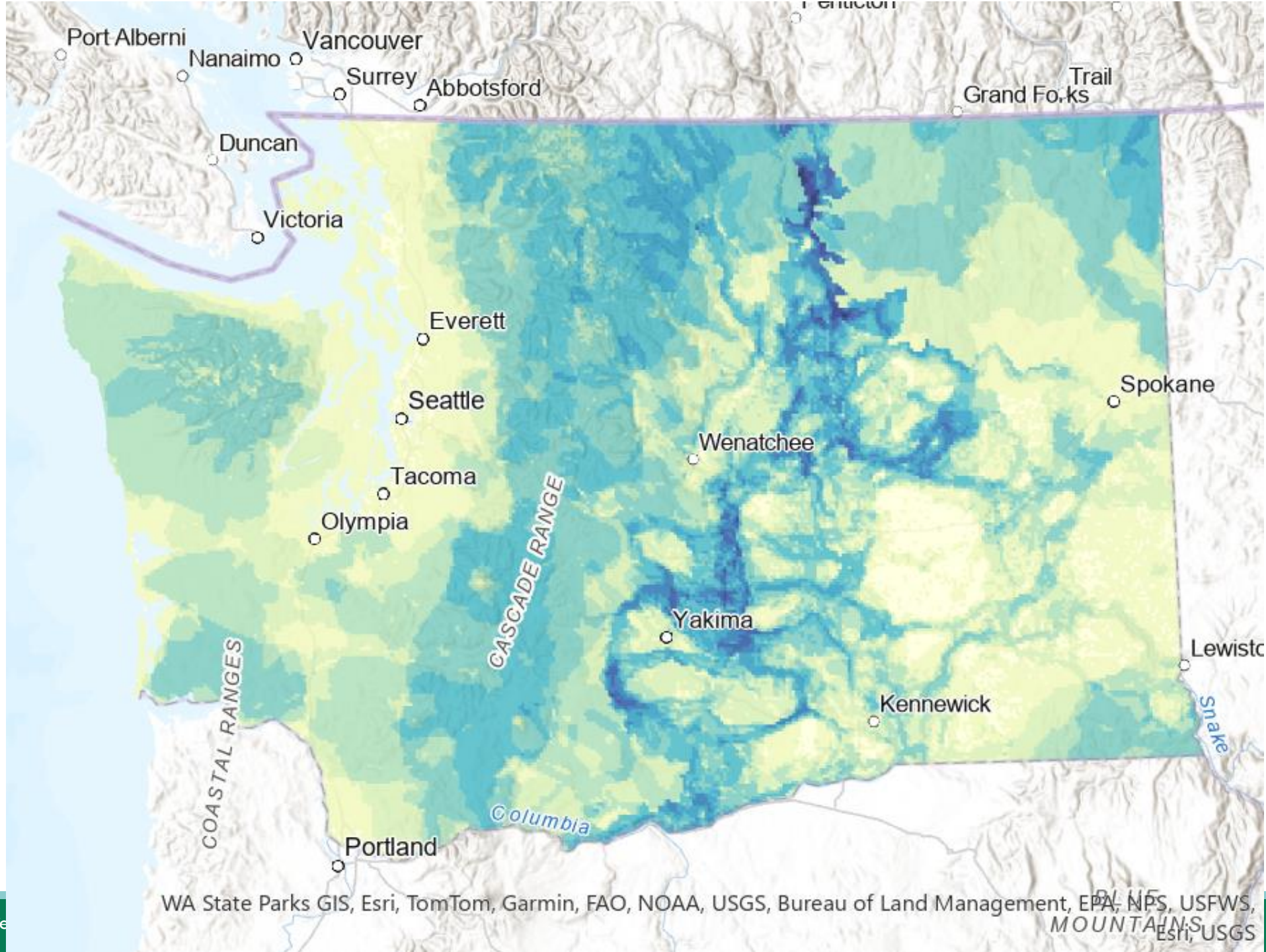


Existing focal species modeled cores and corridors

Existing focal species modeled cores and corridors (Columbia Plateau)

Focal species overlay

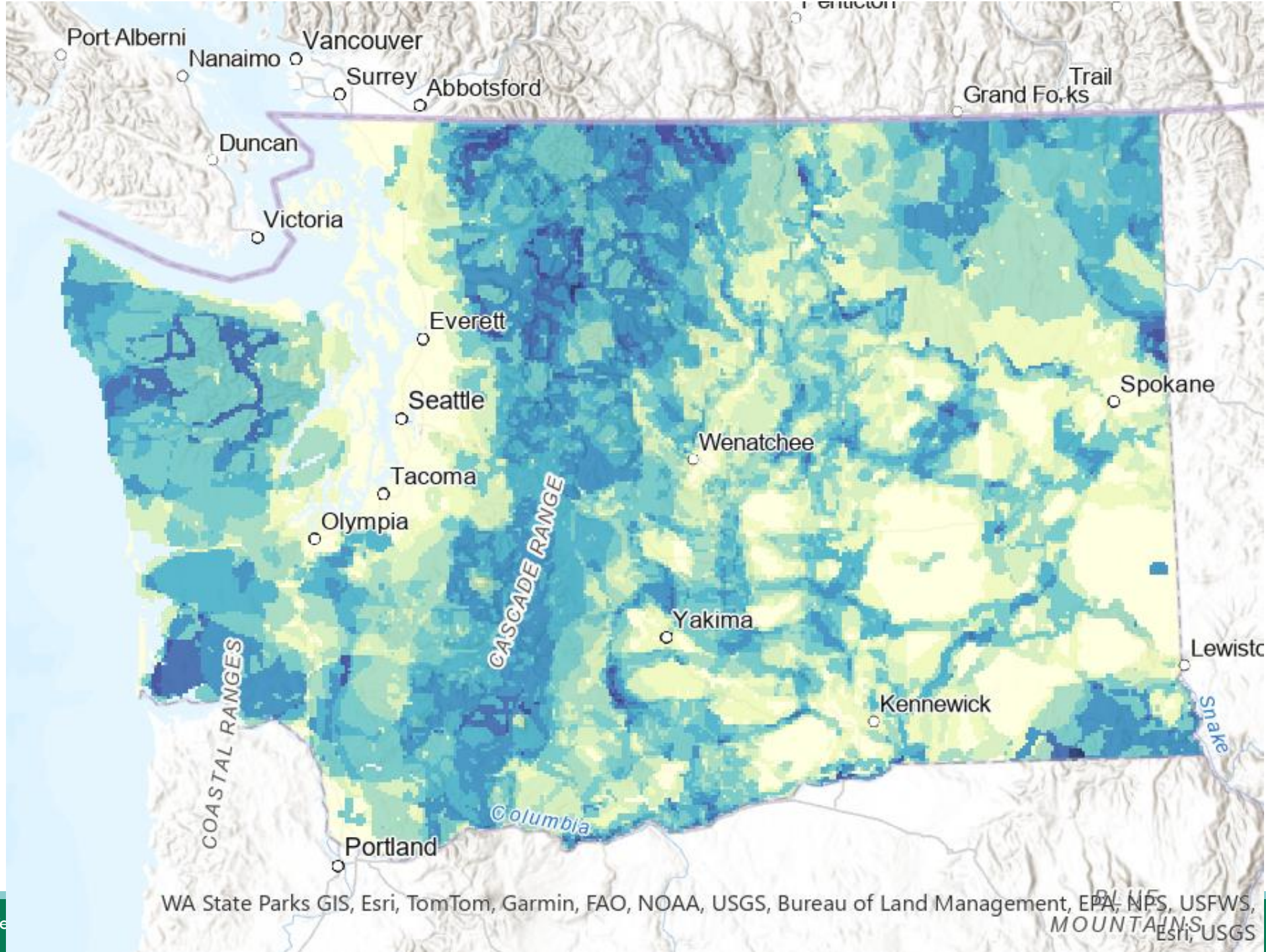
Highest value (most overlapping species)



4. Focal species overlay

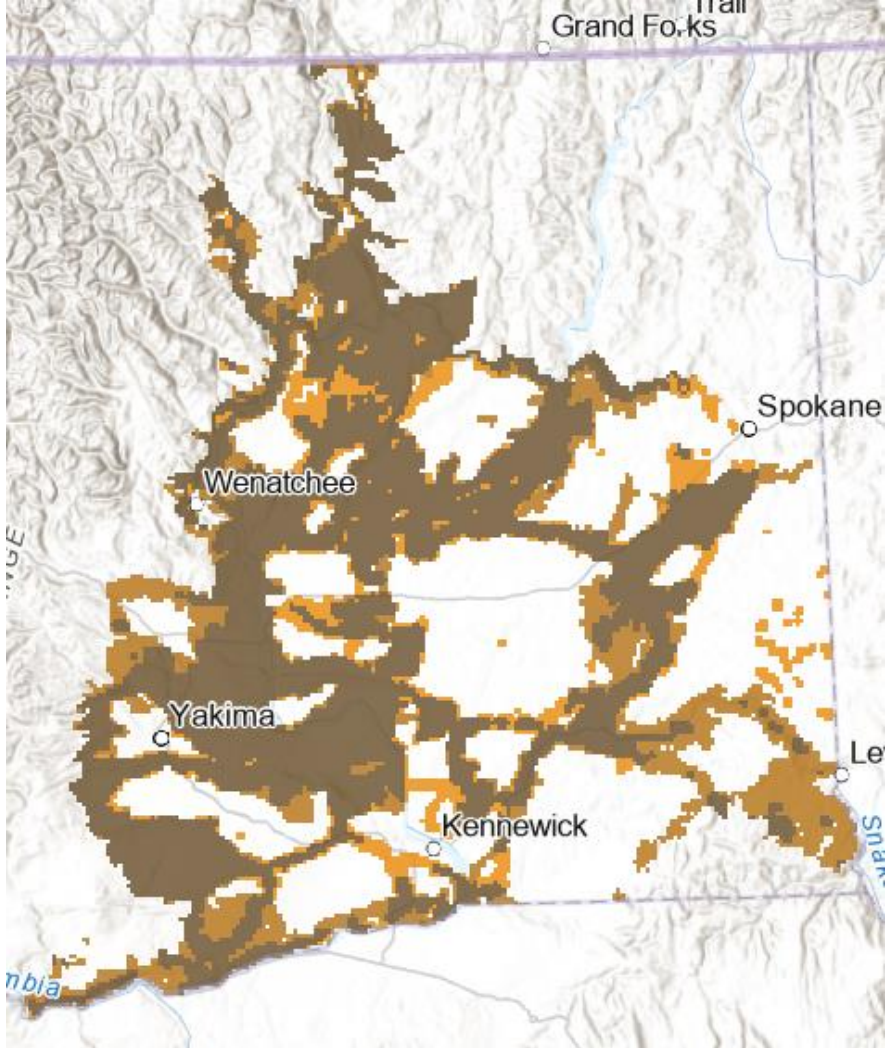
Rescaled

Highest value



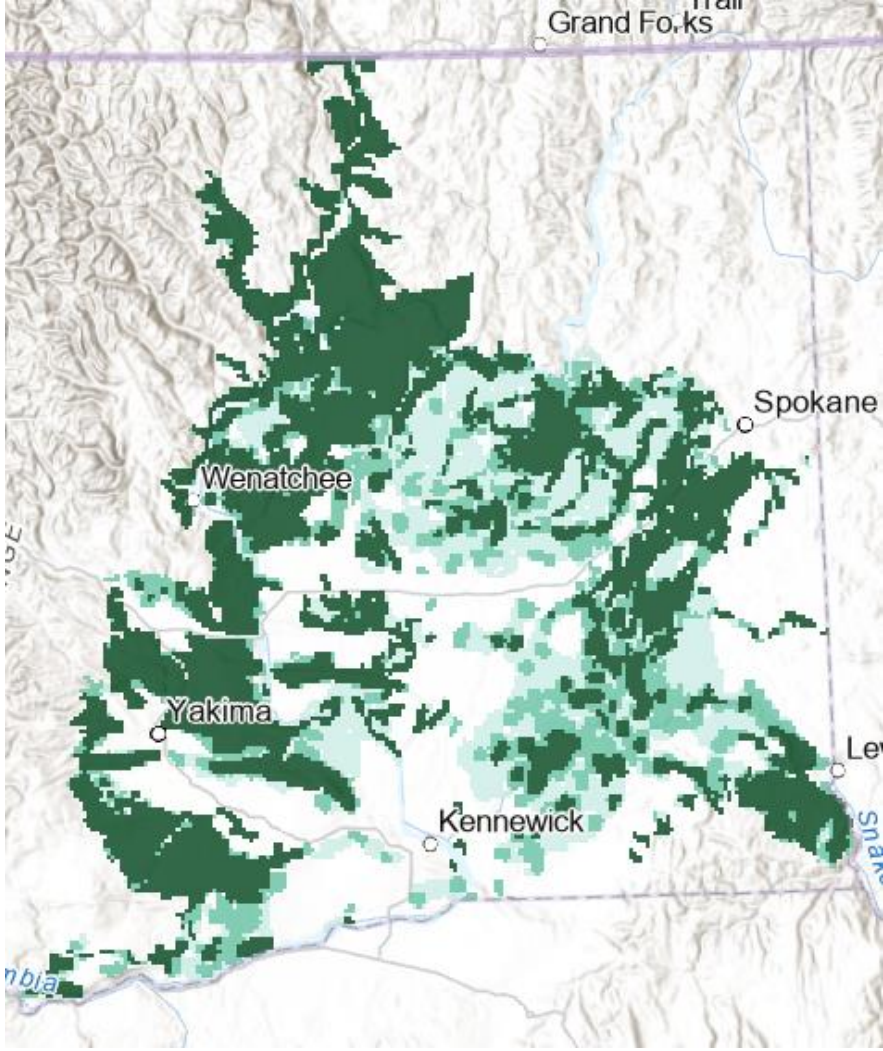
5. And 6. Existing prioritizations

Includes Columbia Plateau focal species models



Weight 0.5

Arid Lands Initiative and WDFW Biodiversity Areas and Corridors



Weight 2

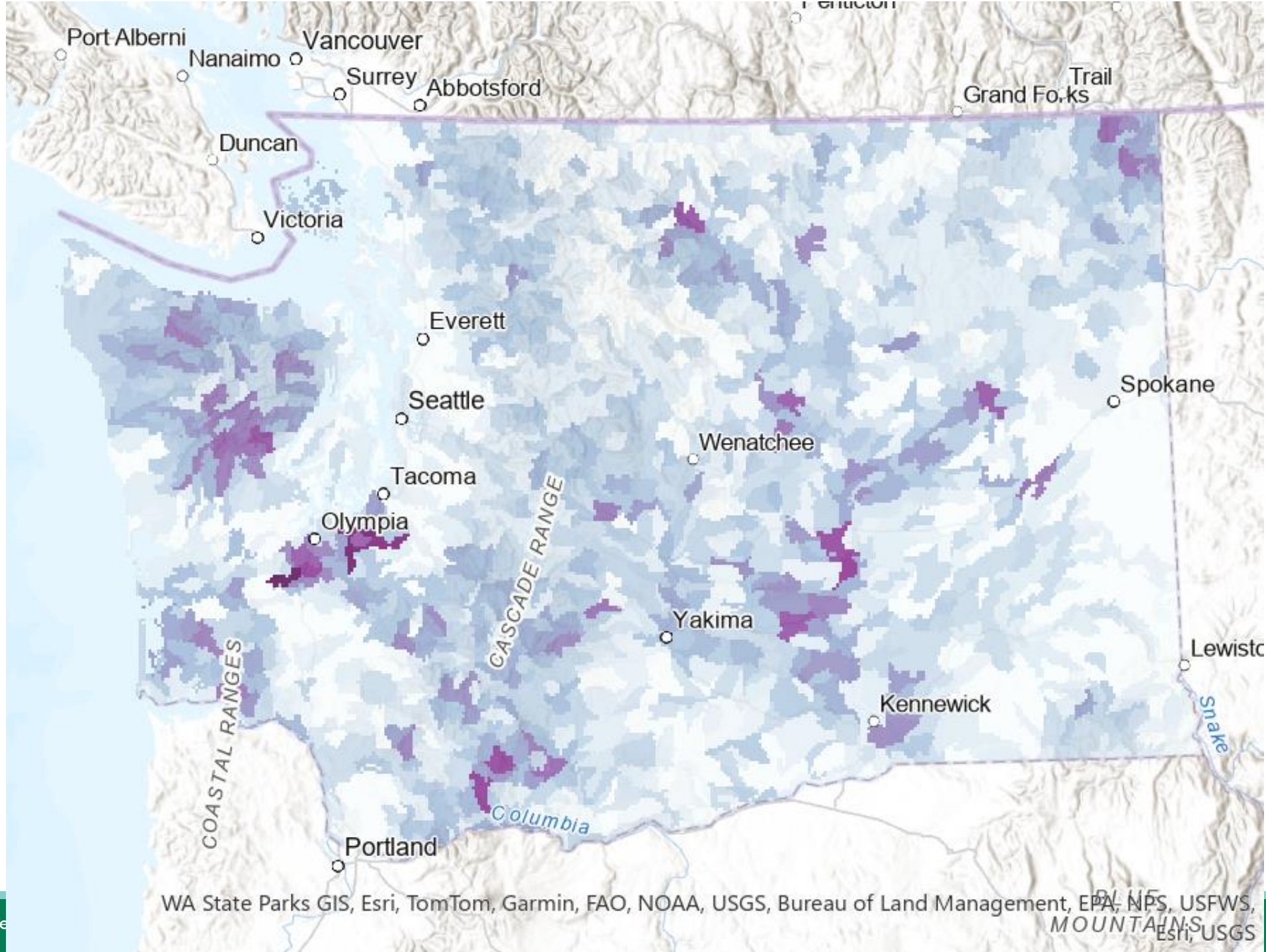
Washington Shrubsteppe Restoration and Resilience Xeric and Mesic Priorities

7. Species of Greatest Conservation Need 2015

Count weighted by listing status

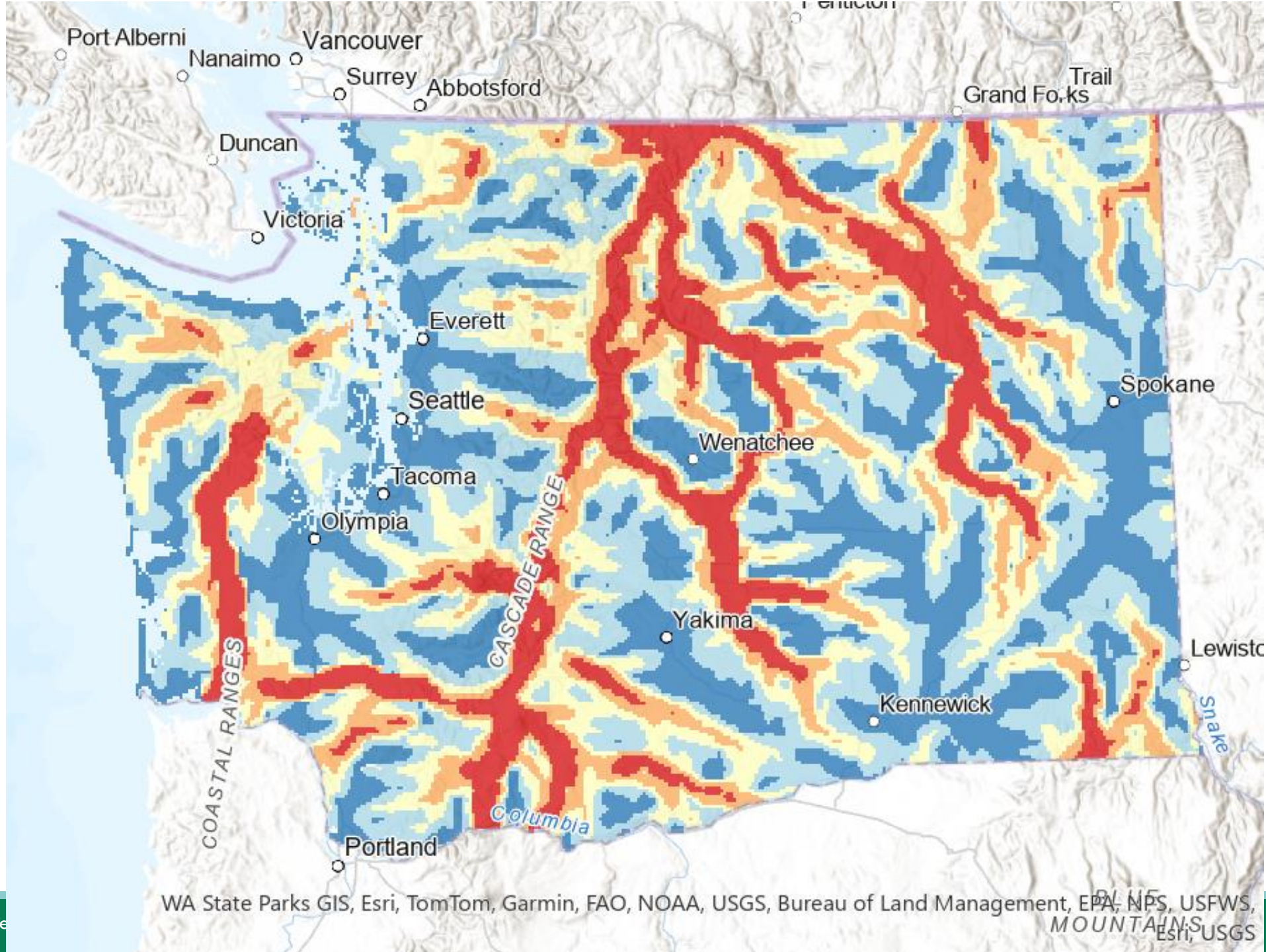
Excludes birds except grouse and listed species

Highest value

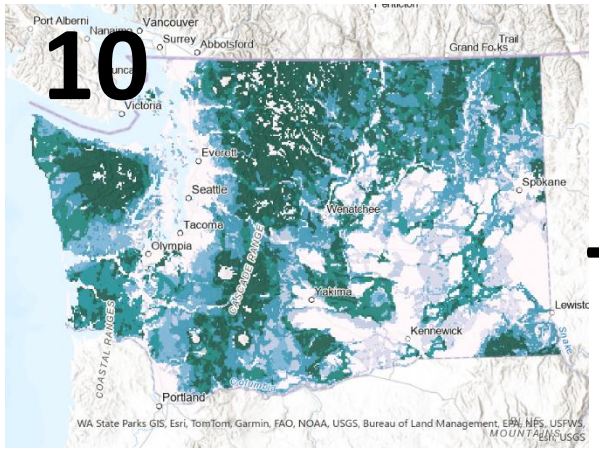


8. Climate path corridors

Highest value

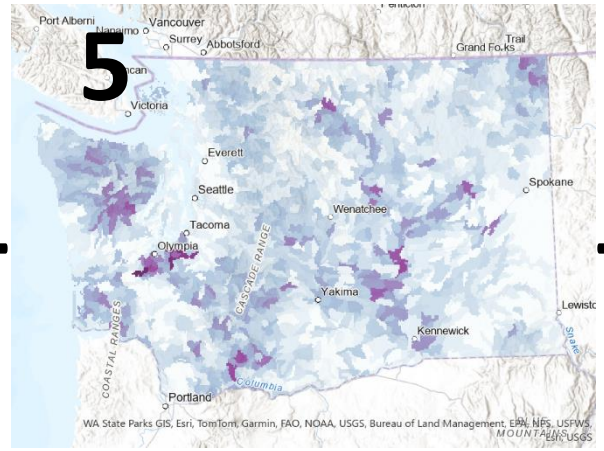


Parks et al. 2020 Global Change Biology



Rescaled ecosystem tiers

+



Species of Greatest Conservation Need

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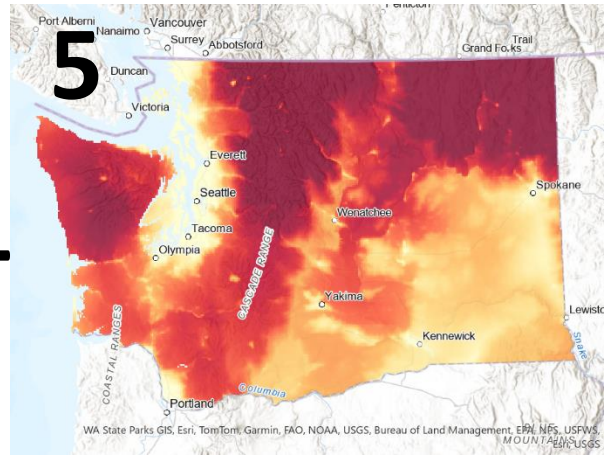
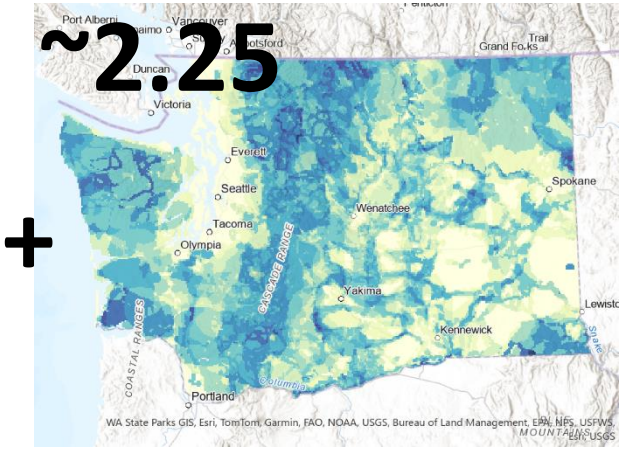
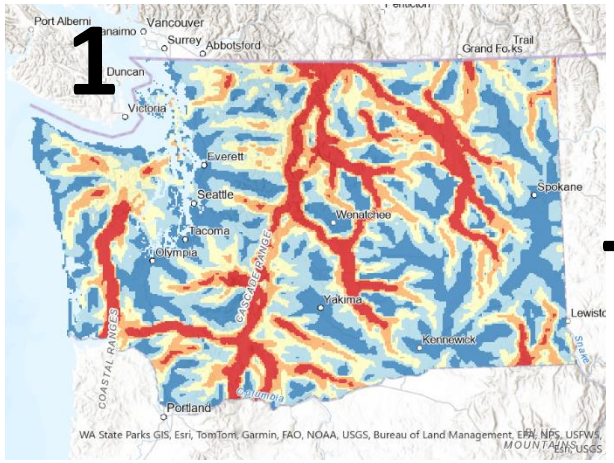


Network importance

+

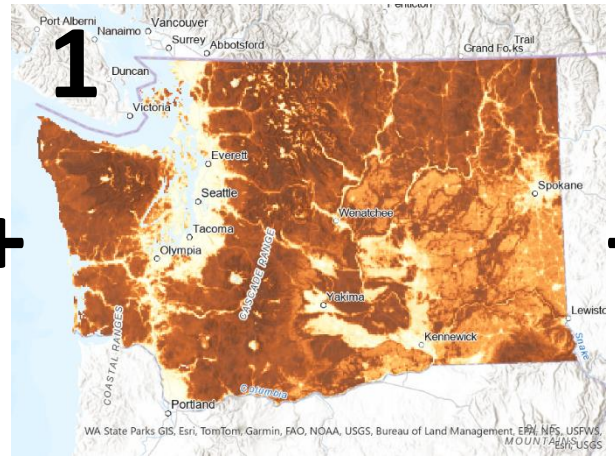


Rescaled focal species



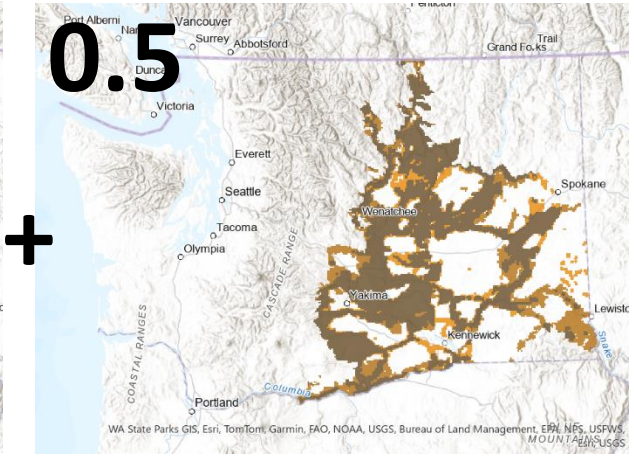
Climate path corridors

+



Permeability

+



ALI-BAC

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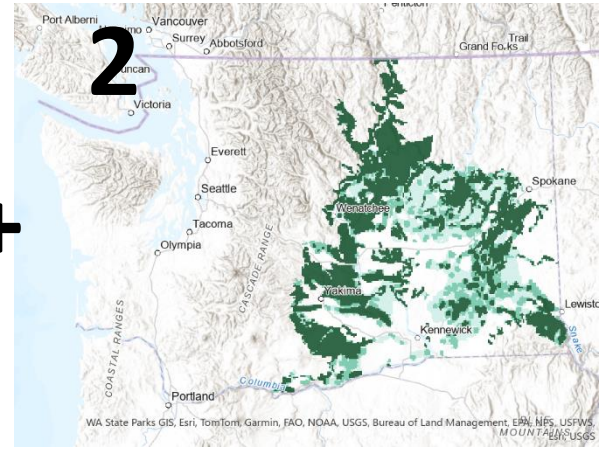
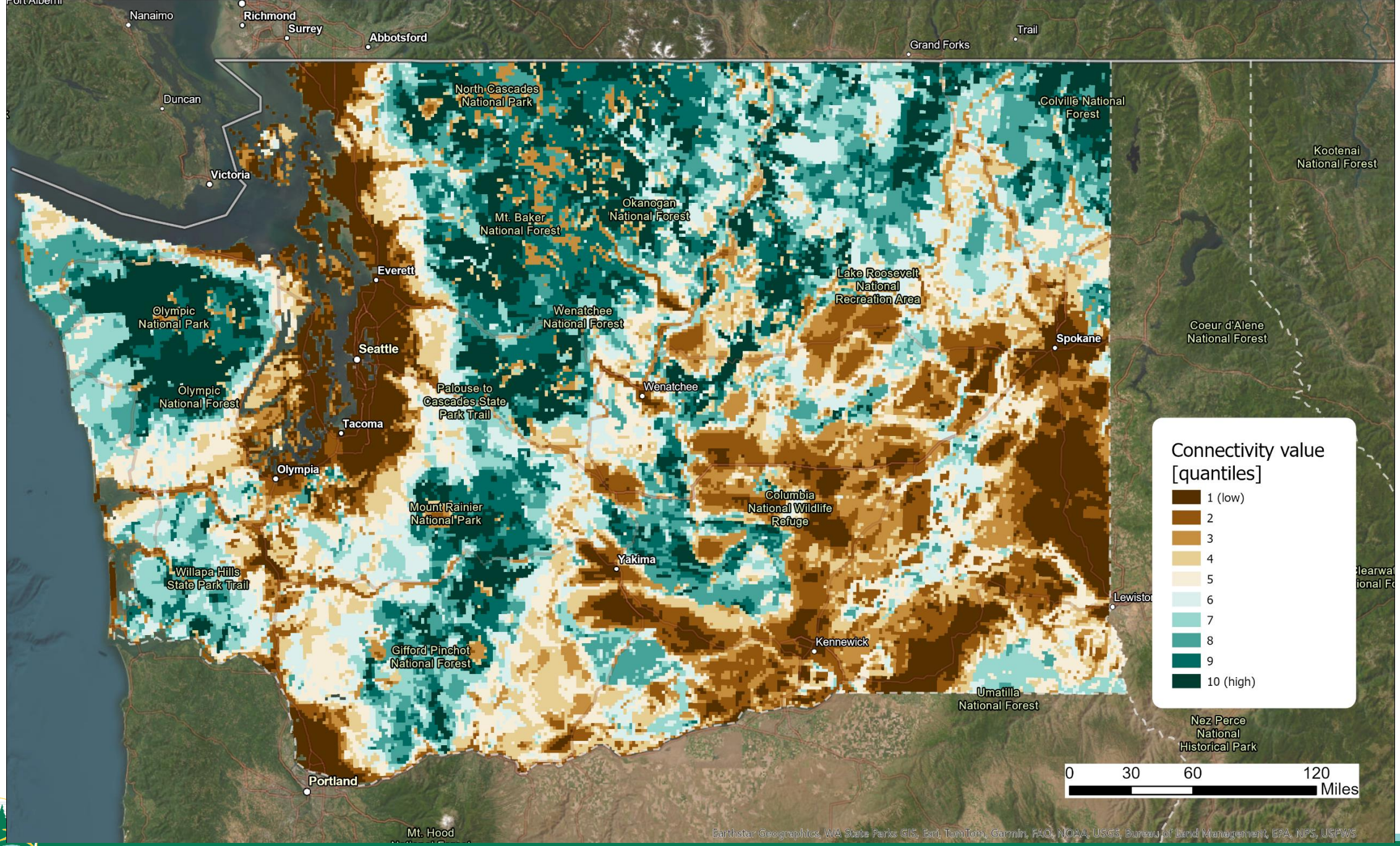
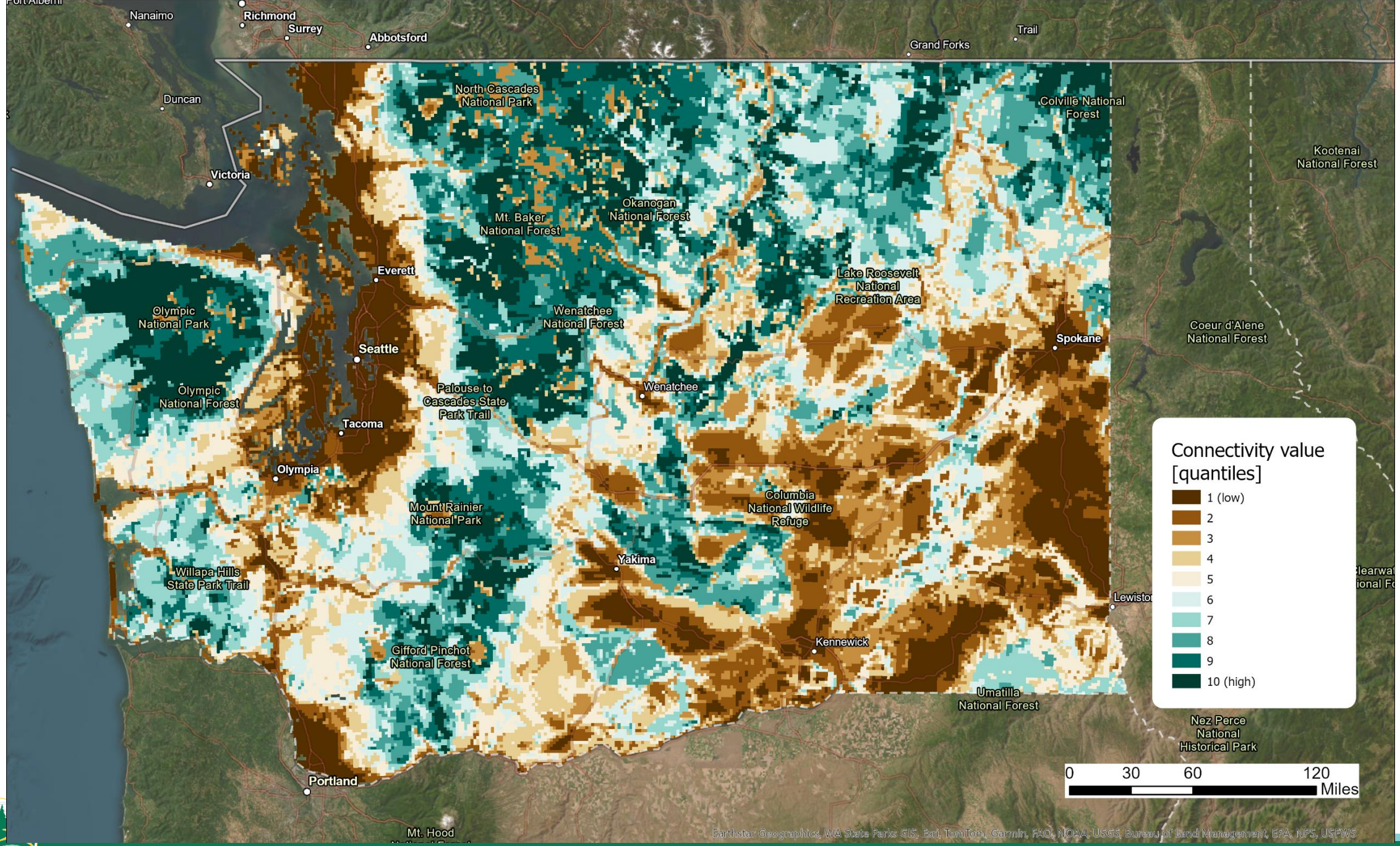


WSRRI

*Please provide feedback on weighting by **March 3***


Nanaimo
Richmond
Surrey
Abbotsford
Grand Forks
Trail
Duncan
North Cascades National Park
Colville National Forest
Kootenai National Forest
Victoria
Okanogan National Forest
Mt. Baker National Forest
Everett
Lake Roosevelt National Recreation Area
Olympic National Park
Wenatchee National Forest
Coeur d'Alene National Forest
Seattle
Spokane
Olympic National Forest
Palouse to Cascades State Park Trail
Wenatchee
Tacoma
Olympia
Columbia National Wildlife Refuge
Mount Rainier National Park
Yakima
Willapa Hills State Park Trail
Kennewick
Gifford Pinchot National Forest
Umatilla National Forest
Nez Perce National Historical Park
Portland
Mt. Hood
Connectivity value [quantiles]
1 (low)
2
3
4
5
6
7
8
9
10 (high)
0 30 60 120
Miles
Earthstar Geographics, WA State Parks GIS, Esri, TomTom, Garmin, FAO, NOAA, USGS, Bureau of Land Management, EPA, NPS, USFWS

Questions?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Miles
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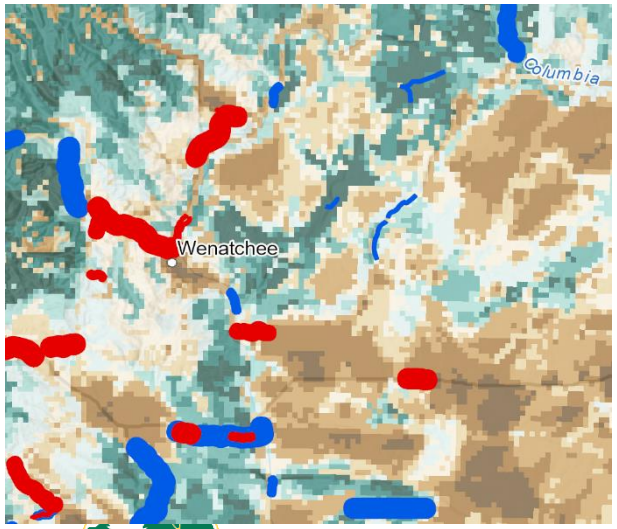
Landscape connectivity applications

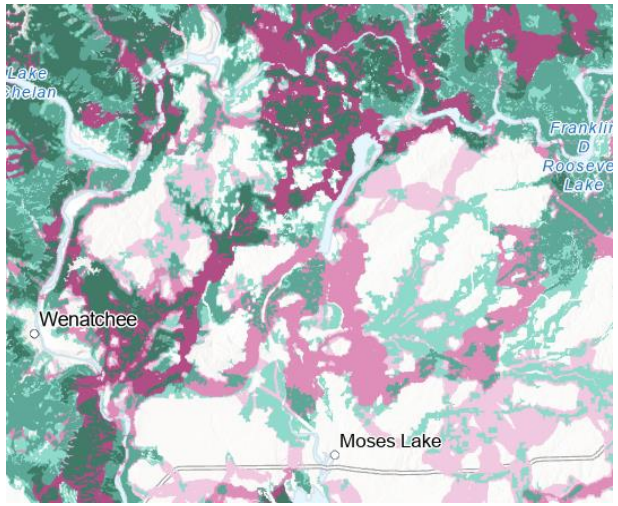
(Besides informing transportation priorities)

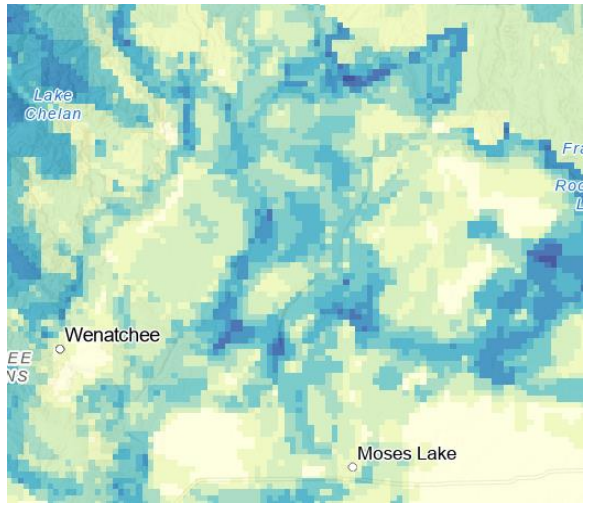
Goal 2: Provide spatial data to inform connectivity conservation at multiple scales

Objective 1: Avoid negative impacts to biodiversity functions and values through planning.

Objective 2: Evaluate values and benefits of conservation actions on any site.

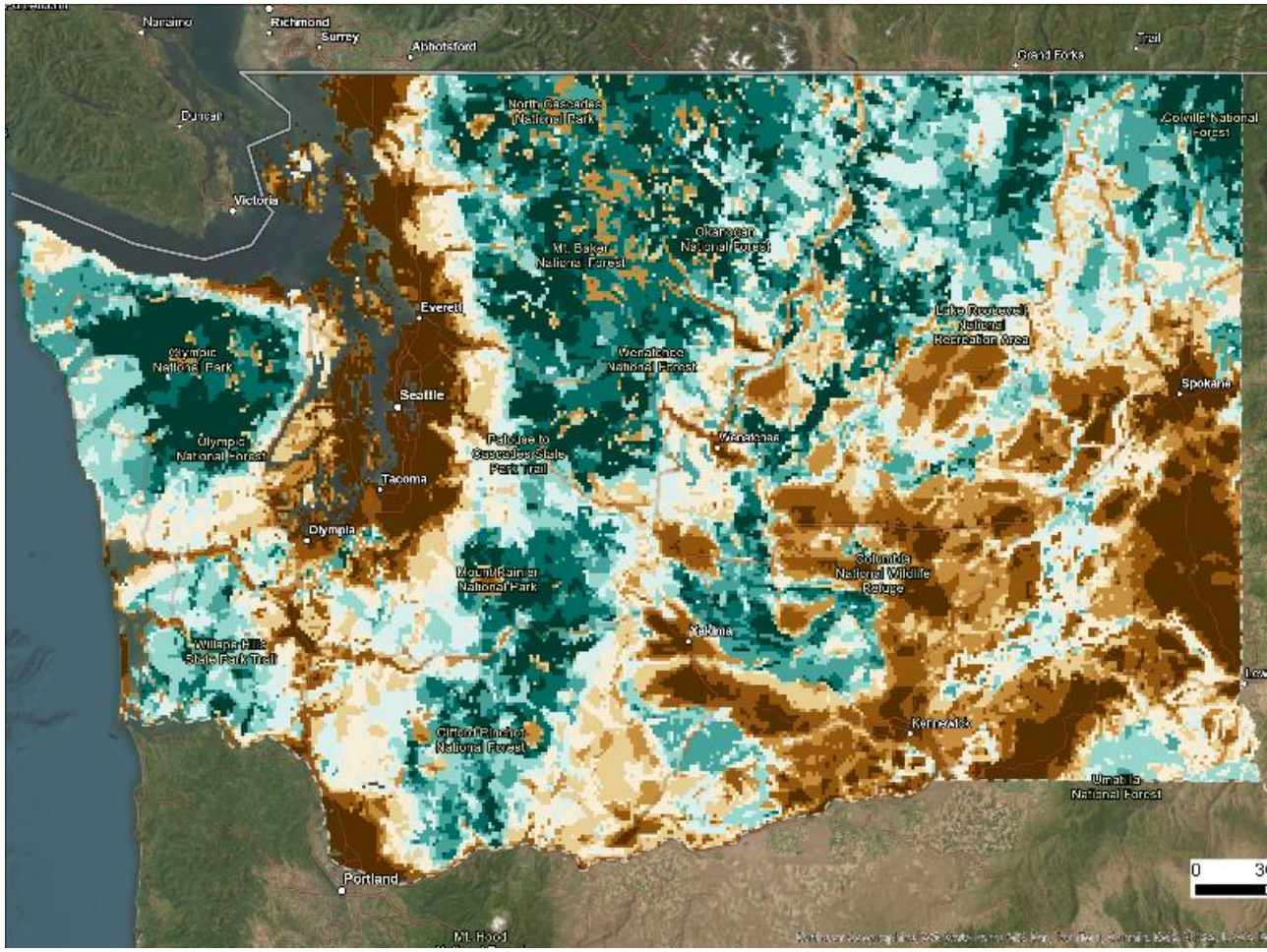






Goal 3: Identify priority locations

- Critical to statewide connectivity.
- High conservation value based on multiple connectivity values.
- Urgently threatened with loss or degradation.
- Different priorities for different actions/funding opportunities.



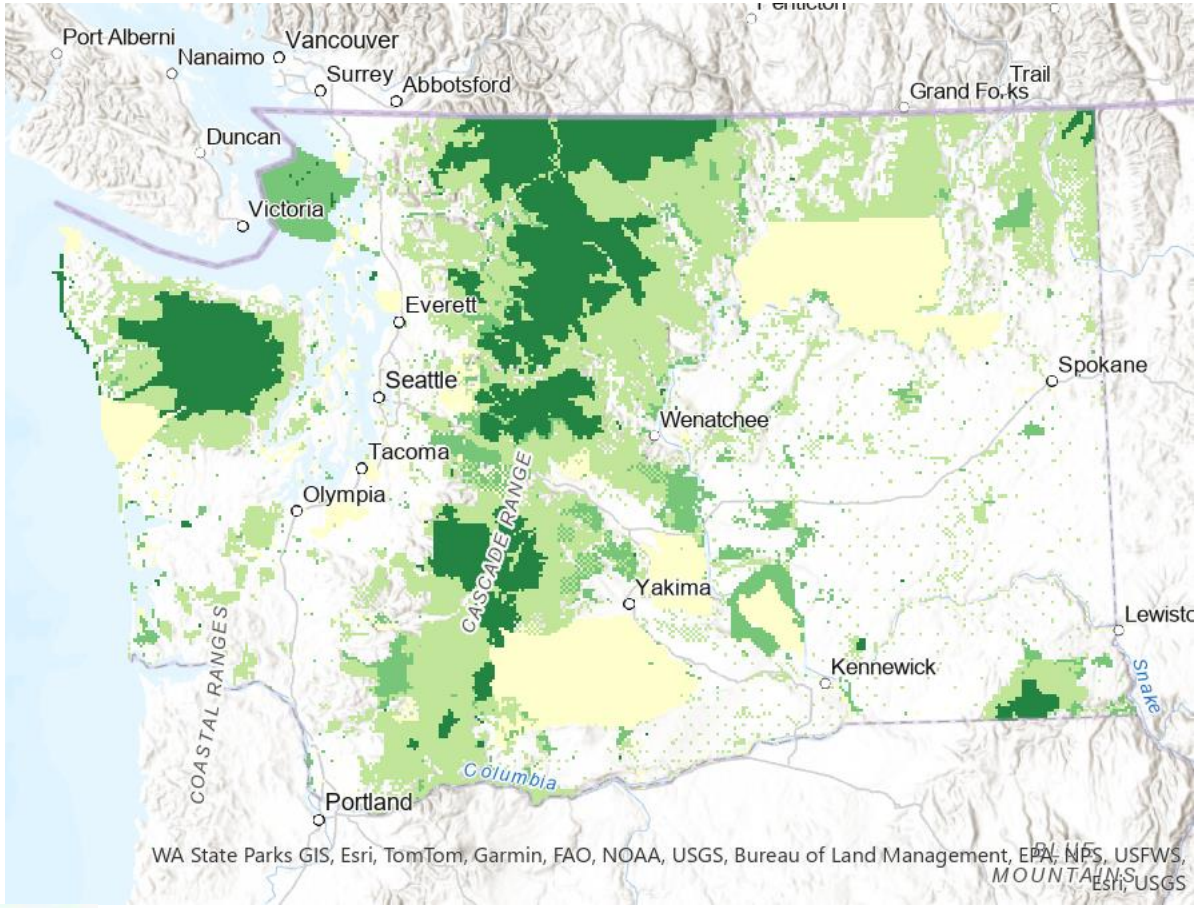
Public and private lands

Both critically important.

Both need conservation attention.

Conservation actions, approaches, funding, and opportunities are very different.

All proposed conservation actions are voluntary.



GAP 1: Managed for biodiversity – natural disturbance allowed

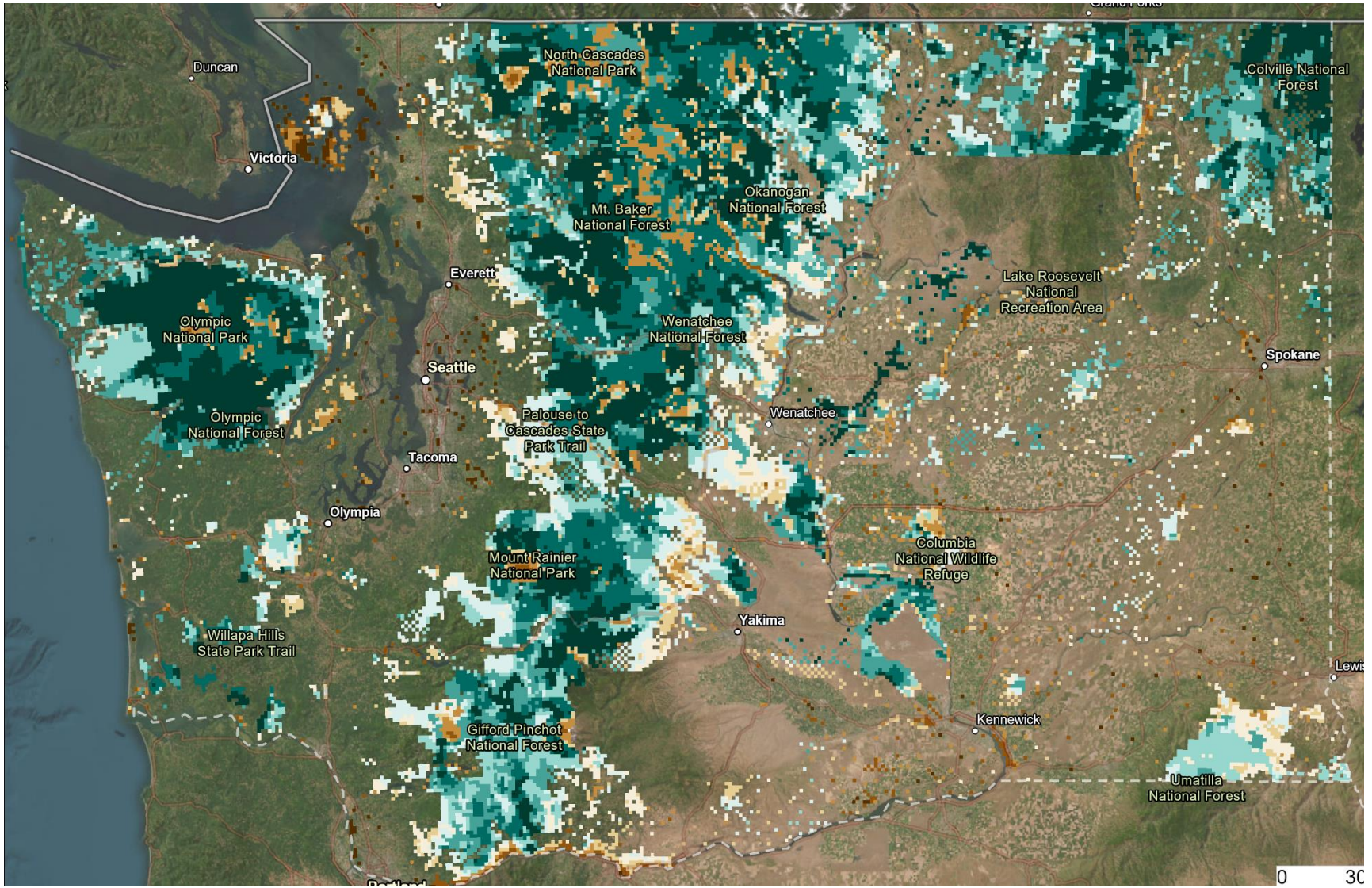
GAP 2: Managed for biodiversity – natural disturbance suppressed

GAP 3: No conversion, extraction permitted

GAP 4: No protection mandate

WAHCAP for public lands

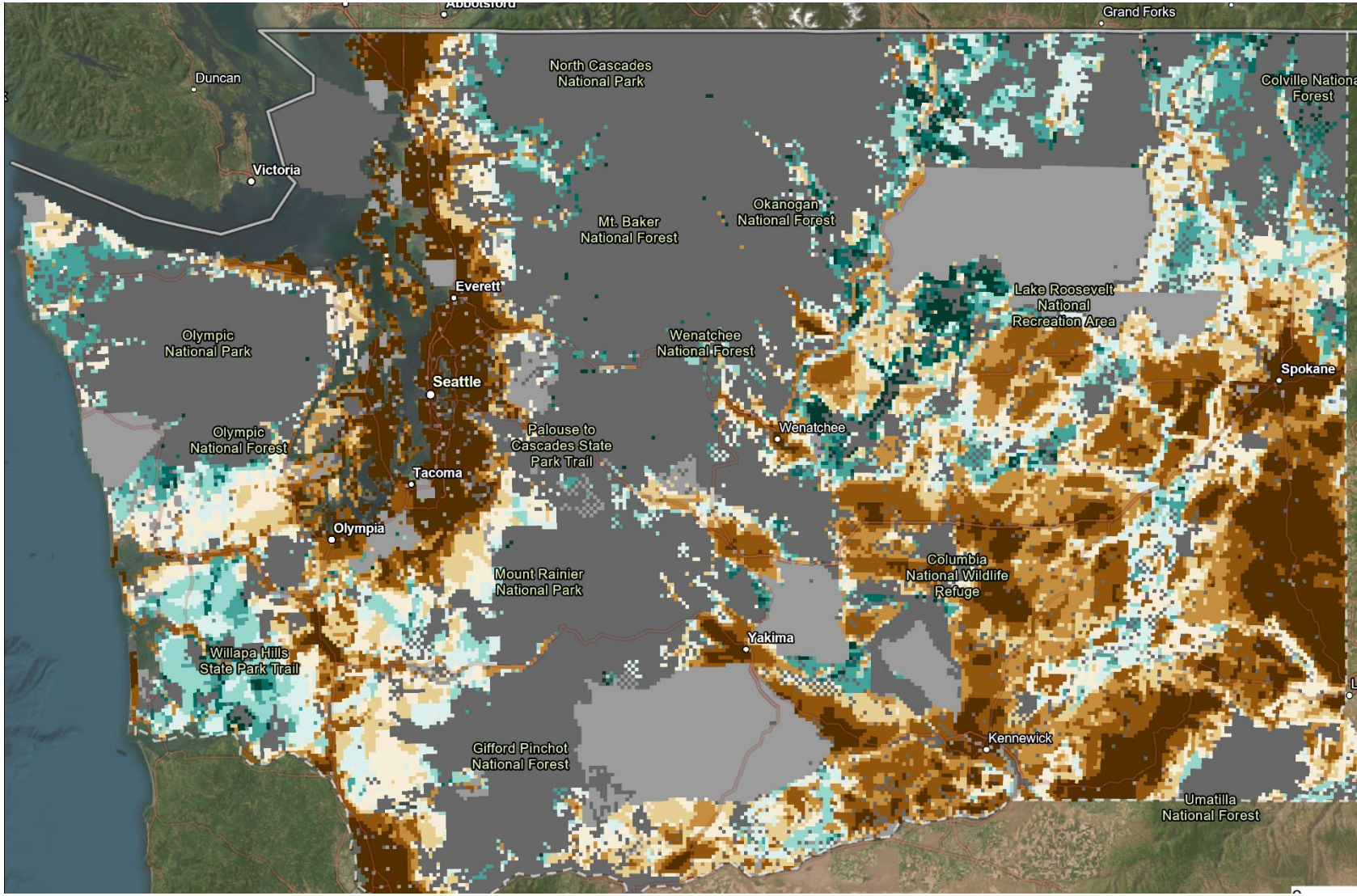
- What connectivity values are present where?
- Where are there opportunities to improve connectivity?
- How does this protected area support the network?



WAHCAP for unprotected lands

- High ecological integrity.
- Provide multiple connectivity benefits
- Connect existing protected lands.
- Face threat of conversion.

NOTE: Reservation lands are grayed out but not assumed to be protected or unprotected



Highly DRAFT WAHCAP priority landscapes

Your comments and feedback are requested!!

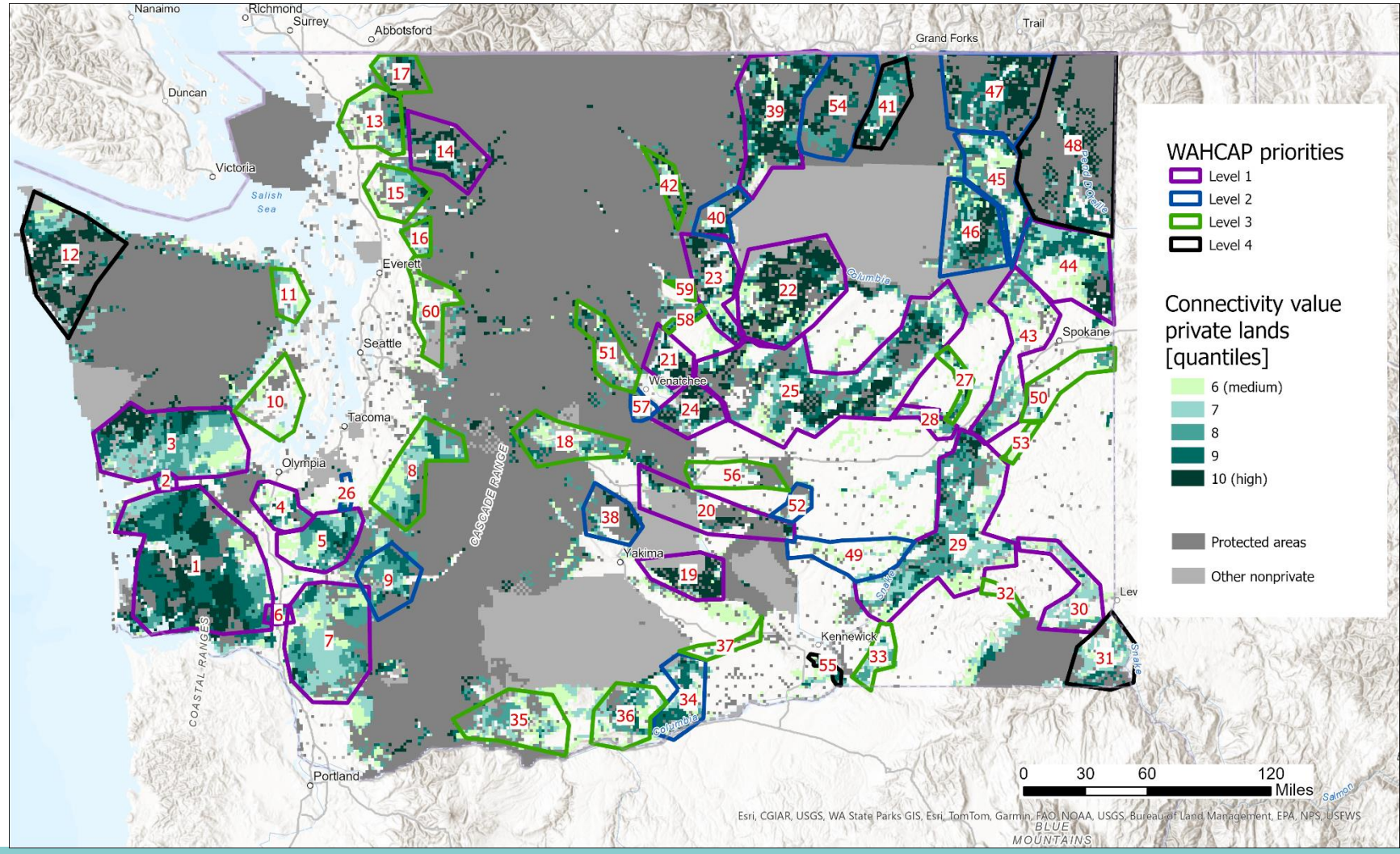
Level 1:

- High connectivity value score.
- Essential to the network.
- Threat of conversion.

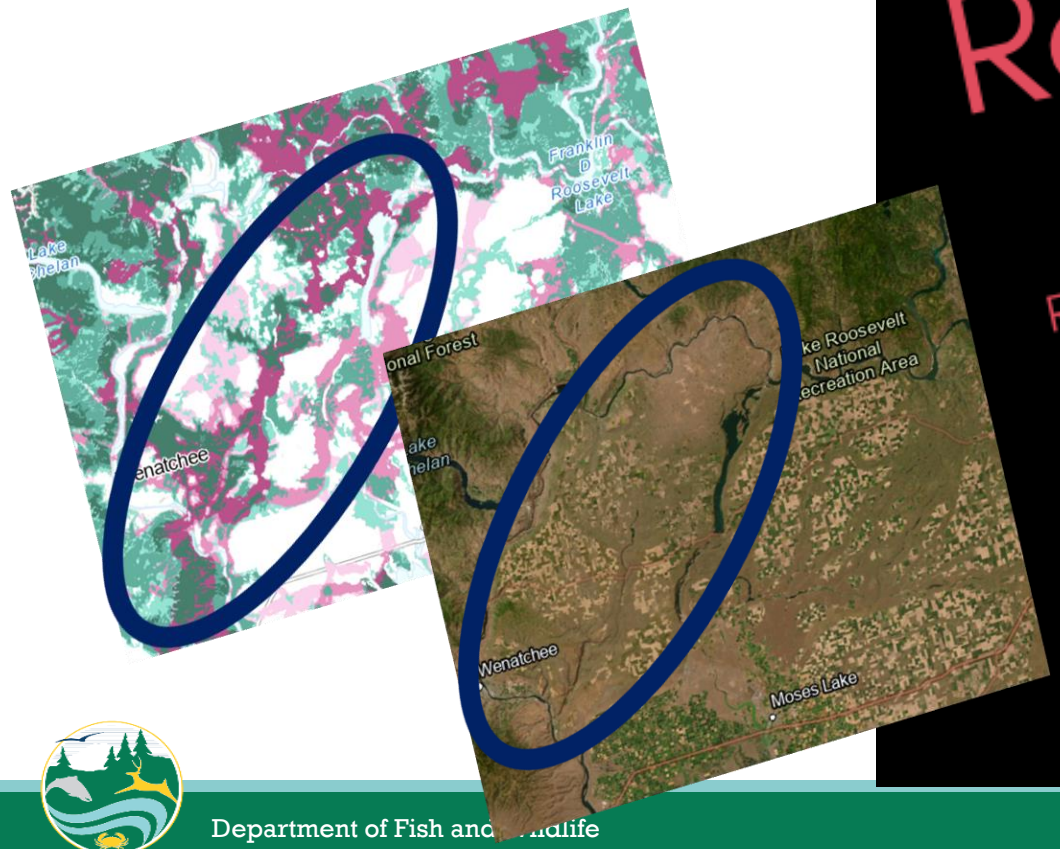
Level 2: Support the network not essential to it.

Level 3: Moderate connectivity scores.

Level 4: High quality location, low threat of conversion.



Identify actions appropriate to that location.



Next steps

Monday, January 27	Columbia Plateau and Blue Mountains	9 am – 12 pm
Monday, January 27	Southwest WA and Olympic Peninsula	1 – 4 pm
Wednesday, January 29	Northeast Washington	1 – 4 pm
Thursday, January 30	Cascade Crest	9 am -12 pm
Friday, January 31	Northwest Washington	9 am – 12 pm
Wednesday, February 5	Dedicated Tribal Workshop	1 – 4 pm

Next steps

***March 3: Deadline for comments on spatial and action priorities*.**

Est. March 17-April 11, 2025: Workshop series on implementation strategies, exact dates TBD.

- Land use planning.
- Private lands incentives.
- Public lands management.
- Land protection through voluntary acquisitions and/or easements.

Early May 2025: Final comment period on draft report.

June 30, 2025: Final report due to the legislature.

Thank you!

Julia.Michalak@dfw.wa.gov

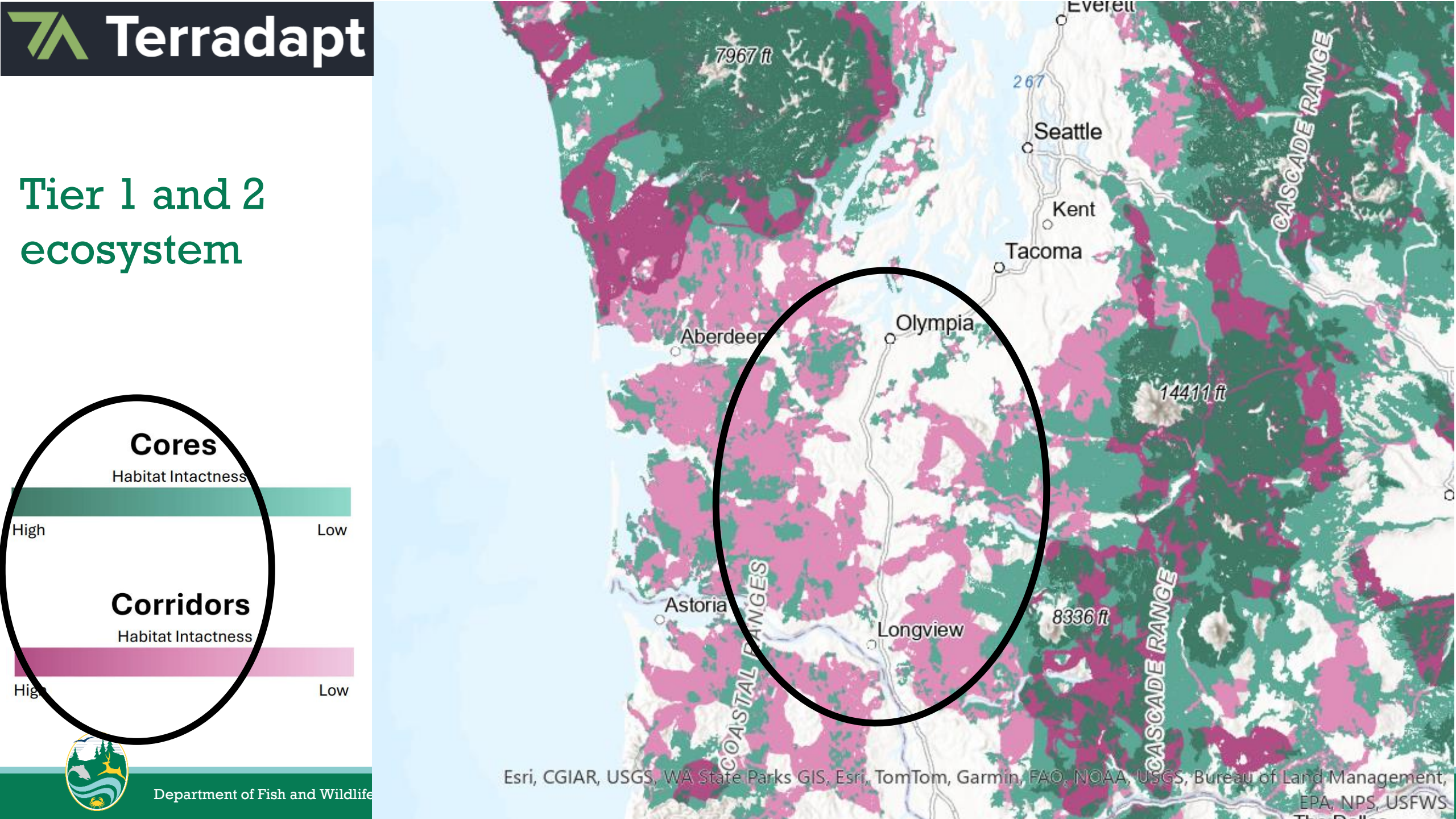
https://wdfw.wa.gov/species-habitats/habitat-recovery/connectivity/action-plan

Things we can still change

1. Weighting for the 8 input data layers.
2. Raw versus rescaled ecosystem and focal species data
3. Species data:
   - Which species we include.
   - How species are weighted.
   - *Maybe* swap data for some species (depending on time and data format).
4. Potentially adding omniscape climate connectivity layer.

Terradapt

Tier 1 and 2 ecosystem



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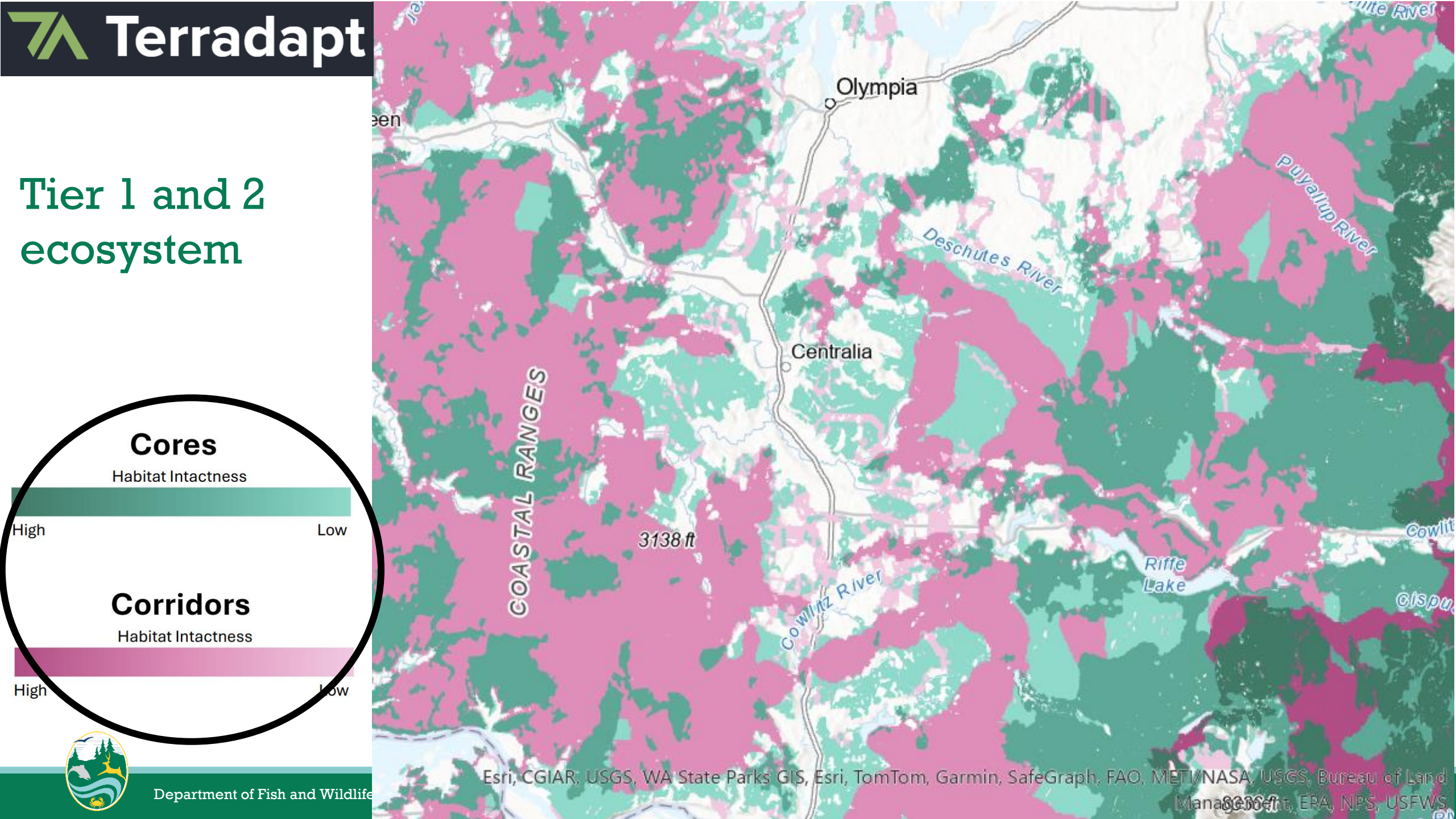
Terradapt

Tier 1 and 2 ecosystem



Cores

Habitat Intactness

High — Low

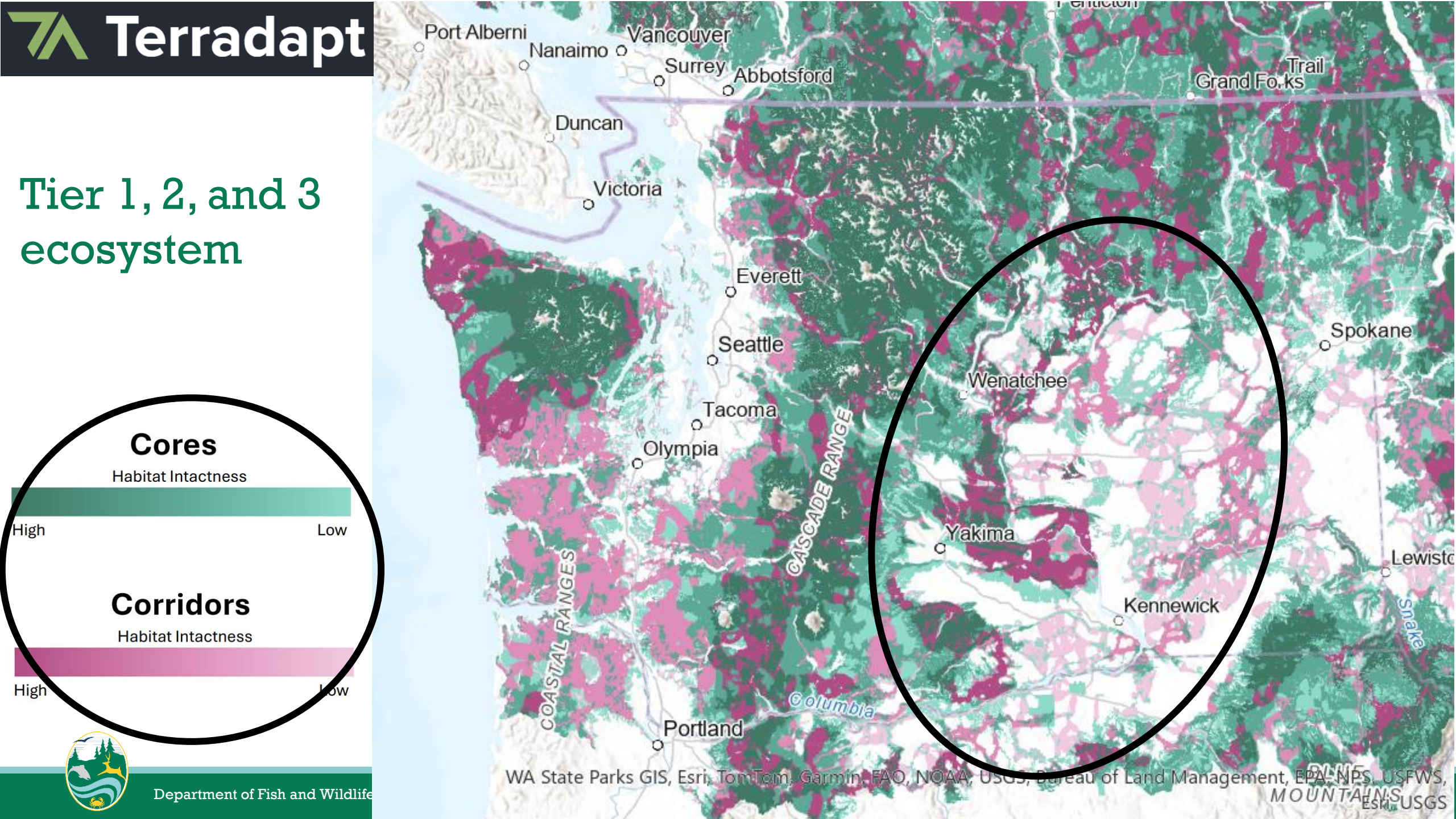
Corridors

Habitat Intactness

High — Low

Terradapt

Tier 1, 2, and 3 ecosystem



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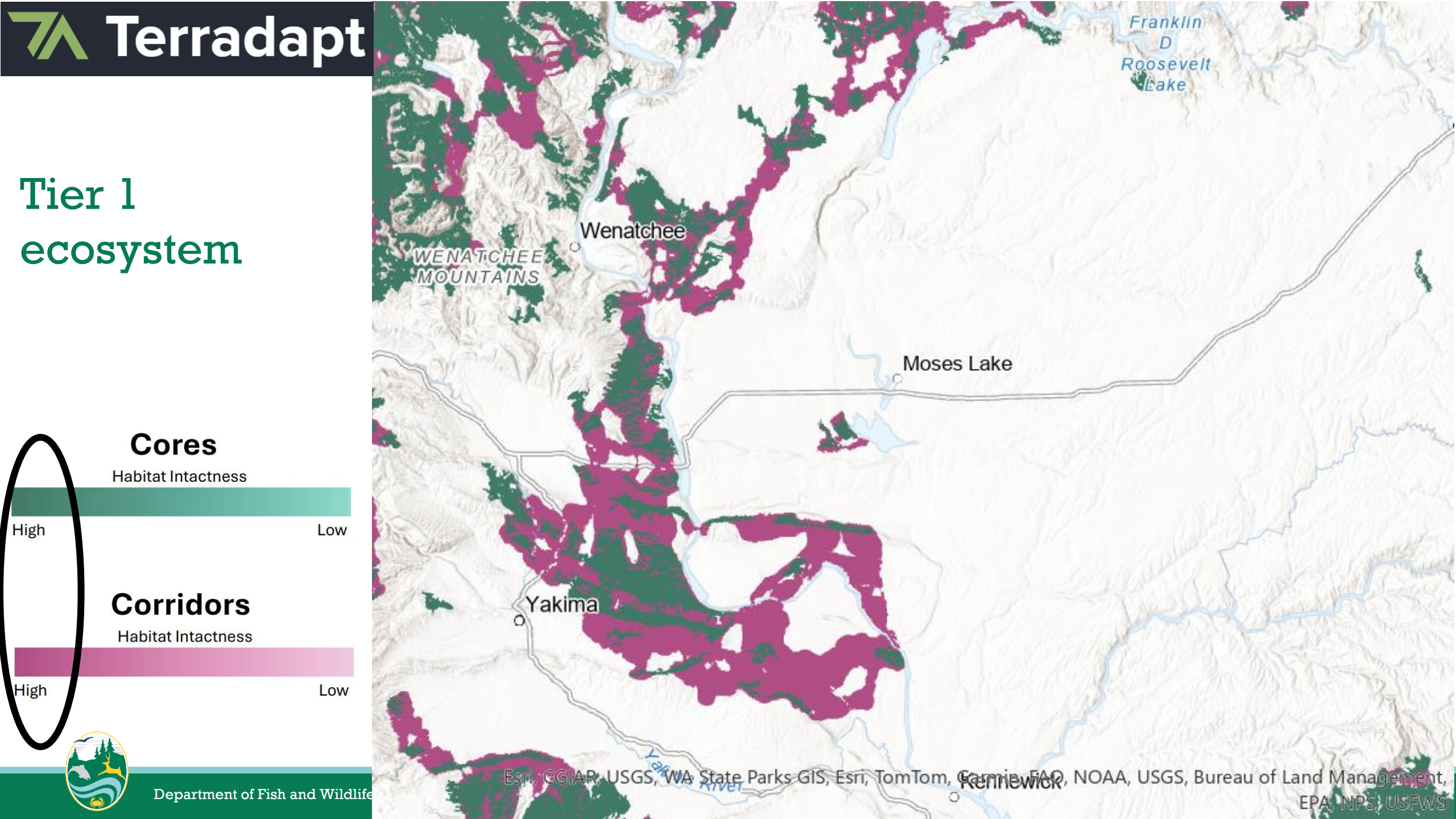
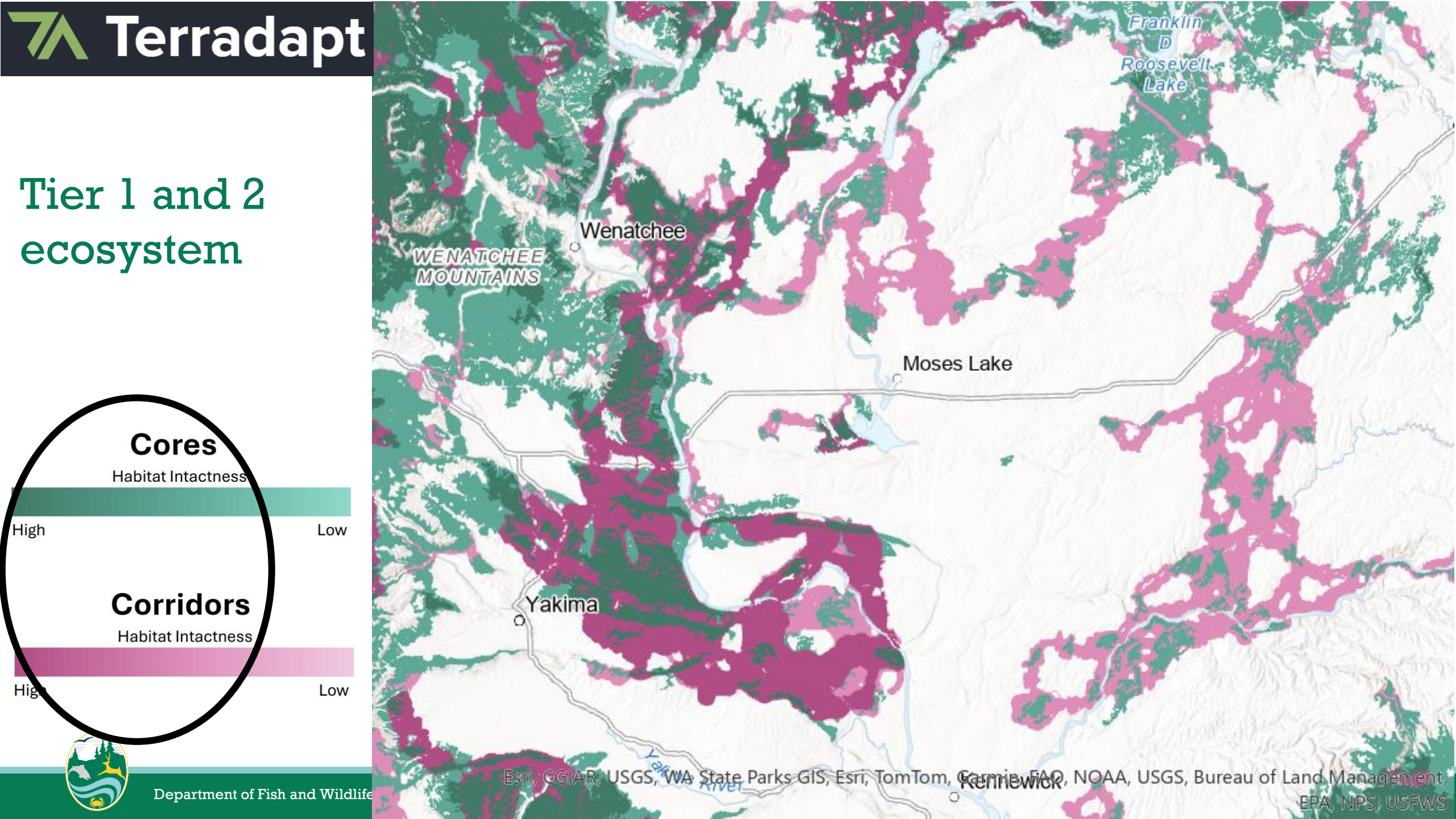
Terradapt

Tier 1 ecosystem



Terradapt

Tier 1 and 2 ecosystem



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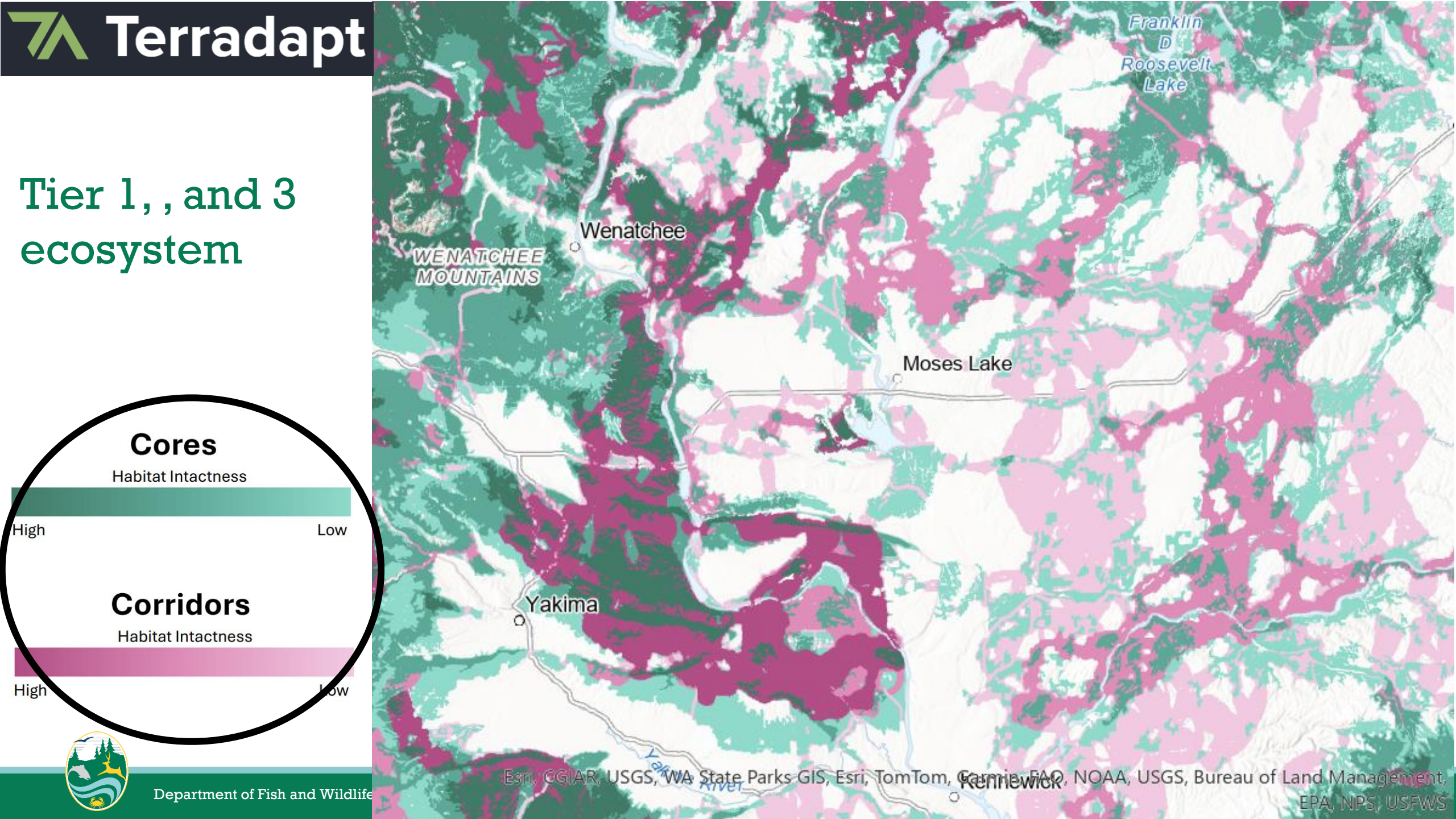
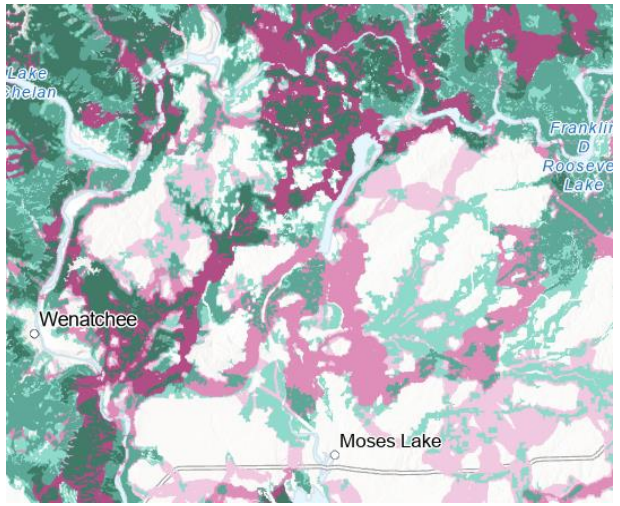
Terradapt

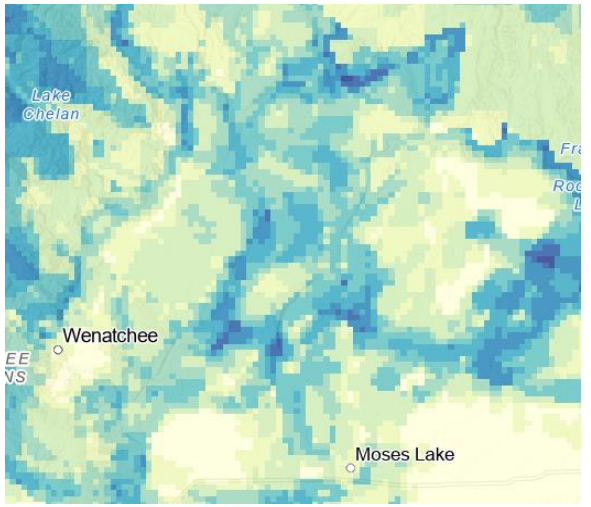
Tier 1, , and 3 ecosystem

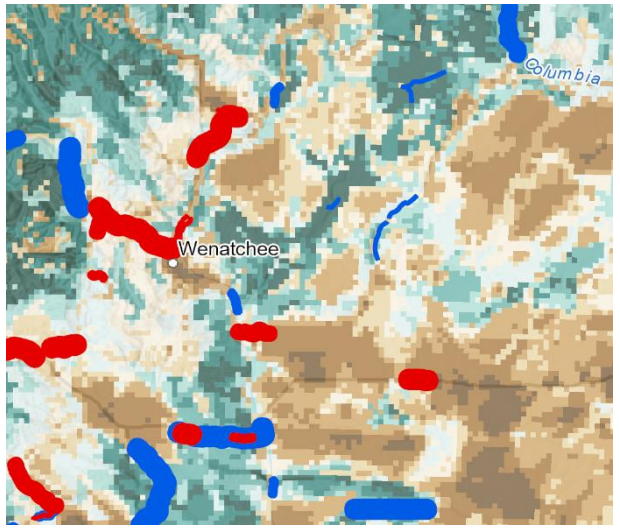


Objective 1: Avoid negative impacts to biodiversity functions and values through planning.

- What connectivity data are available for that location?
- What are the functions and values of this site?
- How would loss of functions and values impact the larger network?







Objective 2: Evaluate values and benefits of conservation actions on any site.

- Evaluate conservation opportunities.
- What are the connectivity values of this location?
- Which of these options should I choose?