



# East Cascades – Modoc Plateau and West Cascades

ECOREGIONAL ASSESSMENTS  
MAPS



JUNE 2007

# Index to Maps for the East Cascades – Modoc Plateau and West Cascades Ecoregional Assessments

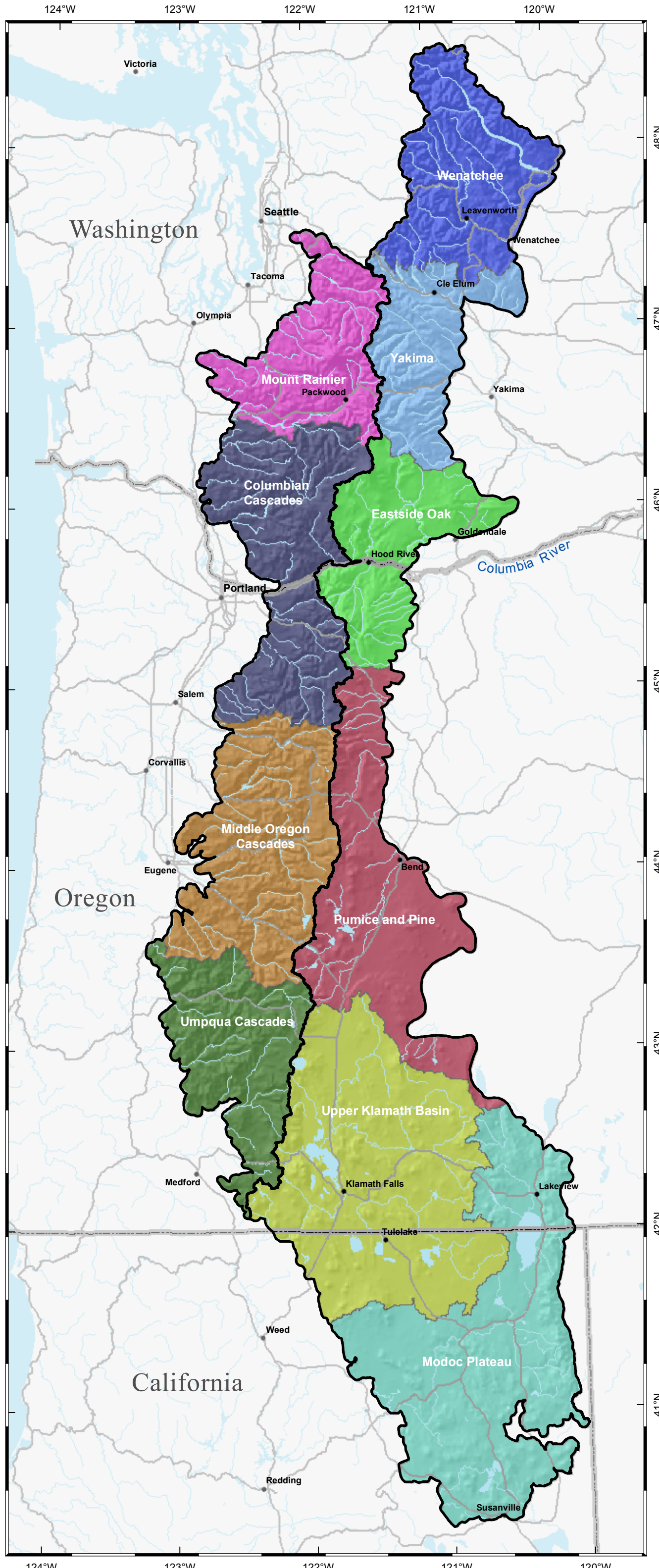
Map numbers correspond to chapter numbers in the Main Report

- 2.1 Terrestrial Ecosections
- 2.2 Land Ownership and Management
- 3.1 Terrestrial Assessment Units
- 4.1 Major Terrestrial Ecological Systems
- 4.2 Ecological Drainage Units
- 4.3 Freshwater Systems
- 5.1 Currently Protected Areas
- 6.1 Terrestrial Suitability Index
- 6.2 Freshwater Suitability Index
- 7.1 Terrestrial Irreplaceability Analysis
- 7.2 Terrestrial Conservation Utility Analysis
- 7.3 Freshwater Irreplaceability Analysis
- 7.4 Freshwater Conservation Utility Analysis
- 7.5 Integrated Irreplaceability
- 7.6 Integrated Conservation Utility
- 8.1 Draft Freshwater Portfolios
- 8.2 Draft Terrestrial Portfolios
- 8.3 Automated Terrestrial and Freshwater Core Portfolios
- 8.4 Final Integrated Portfolios
  - Table 1. West Cascades Ecoregion Portfolio: Alphabetical and Numerical Site Index
  - Table 2. East Cascades Ecoregion Portfolio: Alphabetical and Numerical Site Index
- 8.5 Final Integrated Portfolios (North)
- 8.6 Final Integrated Portfolios (South)
- 8.7 Alternative Integrated Portfolios: High, Middle, and Low Risk
- 9.1 Integrated Portfolio Sites by Relative Importance
  - Table 1. Integrated Portfolio Sites by Relative Importance
- 10.1 Human Population Growth Analysis

## Citation:

Popper, K., G. Wilhere, M. Schindel, D. VanderSchaaf, P. Skidmore, G. Stroud, J. Crandall, J. Kagan, R. Crawford, G. Kittel, J. Azerrad, L. Bach. 2007. *The East Cascades - Modoc Plateau and the West Cascades Ecoregional Assessments*. Prepared by The Nature Conservancy and the Washington Department of Fish and Wildlife with support from the Oregon Natural Heritage Information Center, Washington Heritage Program, and Natureserve. The Nature Conservancy, Portland, Oregon.

Cover photos (clockwise, from top left): sandhill crane © Tupper Ansel Blake, Tom McCall Preserve, Columbia River Gorge, OR © Terry Donnelly, American marten © Tupper Ansel Blake, longbeard mariposa lily (*Calochortus longebarbatus*) © V. Crosby, bull trout © Phil Howell, spotted owl © USFWS, South Sister and Spark Lake, OR © David Wieprecht/USGS



## East and West Cascades Ecoregions



**Map 2.1: Terrestrial Ecoregions**

The boundaries used for the East and West Cascades Ecoregions roughly correspond to those delineated by Omernick (1995). The East Cascades and Modoc Plateau covers 7,912,000 ha., while the West Cascades totals 4,239,400 ha. For the purposes of this assessment, the two ecoregions were further subdivided into 10 terrestrial ecoregions (4 western and 6 eastern). Ecoregion boundaries are based on geology, floristic communities, and watershed boundaries, as defined by USGS. All terrestrial data were stratified by these ecoregions.

**Ecoregion**

- Columbian Cascades
- Eastside Oak
- Middle Oregon Cascades
- Modoc Plateau
- Mount Rainier
- Pumice and Pine
- Umpqua Cascades
- Upper Klamath Basin
- Wenatchee
- Yakima

Ecoregion Boundary

Water Body

Rivers

State Boundary

Major Road

City

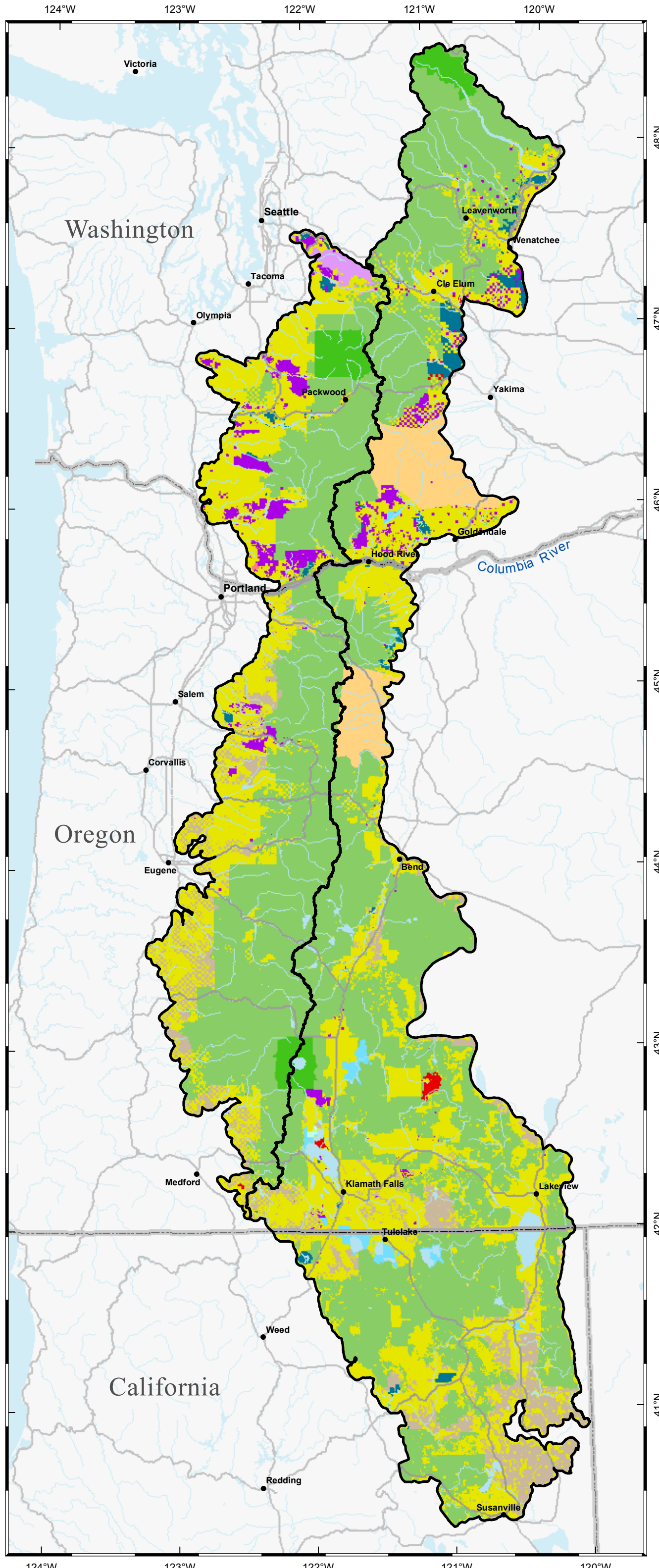


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



### Map 2.2: Land Ownership and Management

Managed Lands	West Cascades	East Cascades
<b>Federal</b>		
U. S. Forest Service	49%	48%
Bureau of Land Mgmt.	6%	7%
National Park Service	3%	1%
<b>State</b>	4%	3%
<b>Tribal</b>	0.2%	6%
<b>Private</b>	36%	33%

#### Land Ownership

- Bureau of Land Management
- Department of Defense
- Municipal Lands
- National Park Service
- Other Federal Lands
- Other State Lands
- Private
- State Parks and Special Designations
- The Nature Conservancy
- Tribal Lands
- United States Fish and Wildlife Service
- United States Forest Service

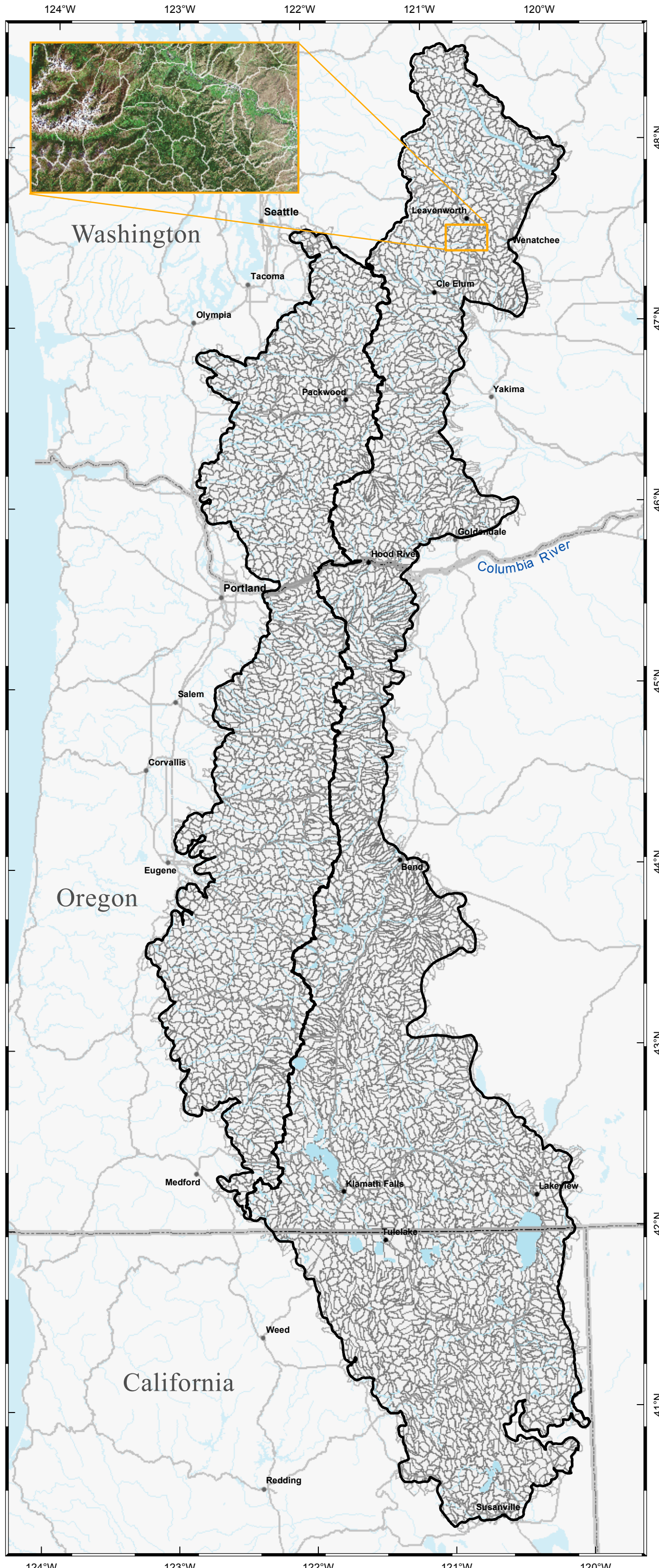
- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



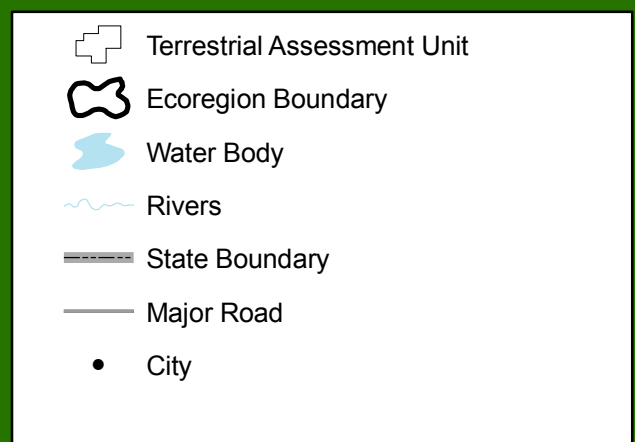
## East and West Cascades Ecoregions



### Map 3.1: Terrestrial Assessment Units

For the purposes of analysis, the two ecoregions were divided into 4,539 assessment units (AUs): 2,931 in the East Cascades and 1,608 in the West Cascades. The vast majority of AUs correspond to watersheds and their boundaries were created by subdividing HUC-6 watersheds along ridgelines defined by a digital elevation model. Using a consistently sized AU eliminates one element of uncertainty in the MARXAN algorithm.

The average and median AU sizes were 2,677 and 2,684 ha, respectively, with a range of 432 to 38,189 ha. (due to the fact that large lakes were kept as individual AUs).



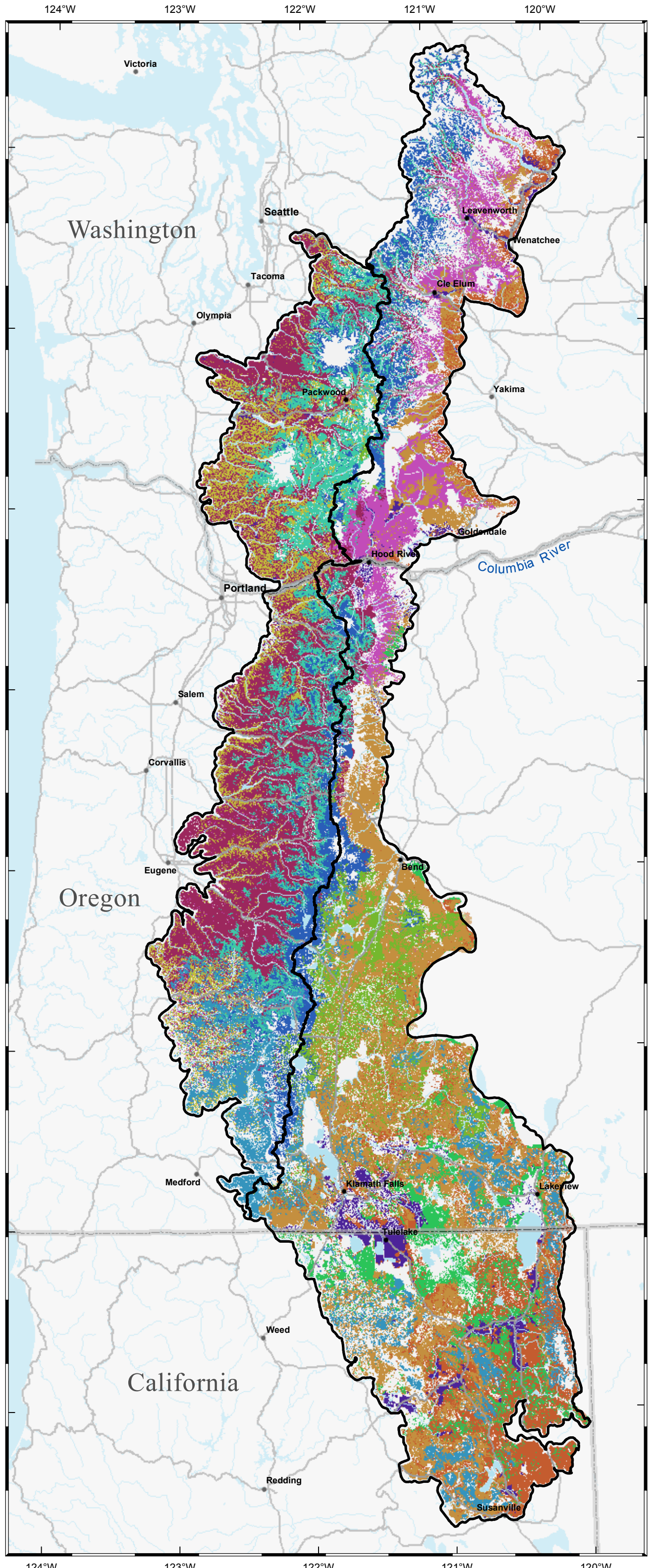
Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

**The Nature Conservancy**  
SAVING THE LAST GREAT PLACES ON EARTH

**Washington Department of FISH and WILDLIFE**  
SAVING THE LAST GREAT PLACES ON EARTH

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



### Map 4.1: Major Terrestrial Ecological Systems

This map represents the distribution of the ecological systems, or “coarse filter” conservation targets, used to guide conservation area selection for the ecoregional assessment. Terrestrial ecological systems are groups of plant community types that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients. Their mapping is based on land cover data, satellite imagery, and predictive models. See Chapter 4 for more information. This map depicts the 11 most common of the 74 terrestrial ecological systems found in the two ecoregions. These 11 systems comprise 79% of the two ecoregions.

#### Major Ecosystems

- Annual/Biannual Farmland
- Columbia Plateau Western Juniper Woodland
- Inter-Mountain Basins Big Sagebrush Steppe
- Mediterranean California Mesic Mixed Conifer
- N. Pacific Maritime Dry-Mesic Doug Fir/W. Hemlock
- North Pacific Maritime Wet-Mesic Doug Fir/W. Hemlock
- North Pacific Mountain Hemlock Forest
- North Pacific Western Hemlock-Silver Fir Forest
- N. Rocky Mountain Dry-Mesic Montane Mixed Conifer
- Rocky Mountain Lodgepole Pine Forest
- Rocky Mountain Ponderosa Pine Woodland

Ecoregion Boundary

Water Body

Rivers

State Boundary

Major Road

City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers

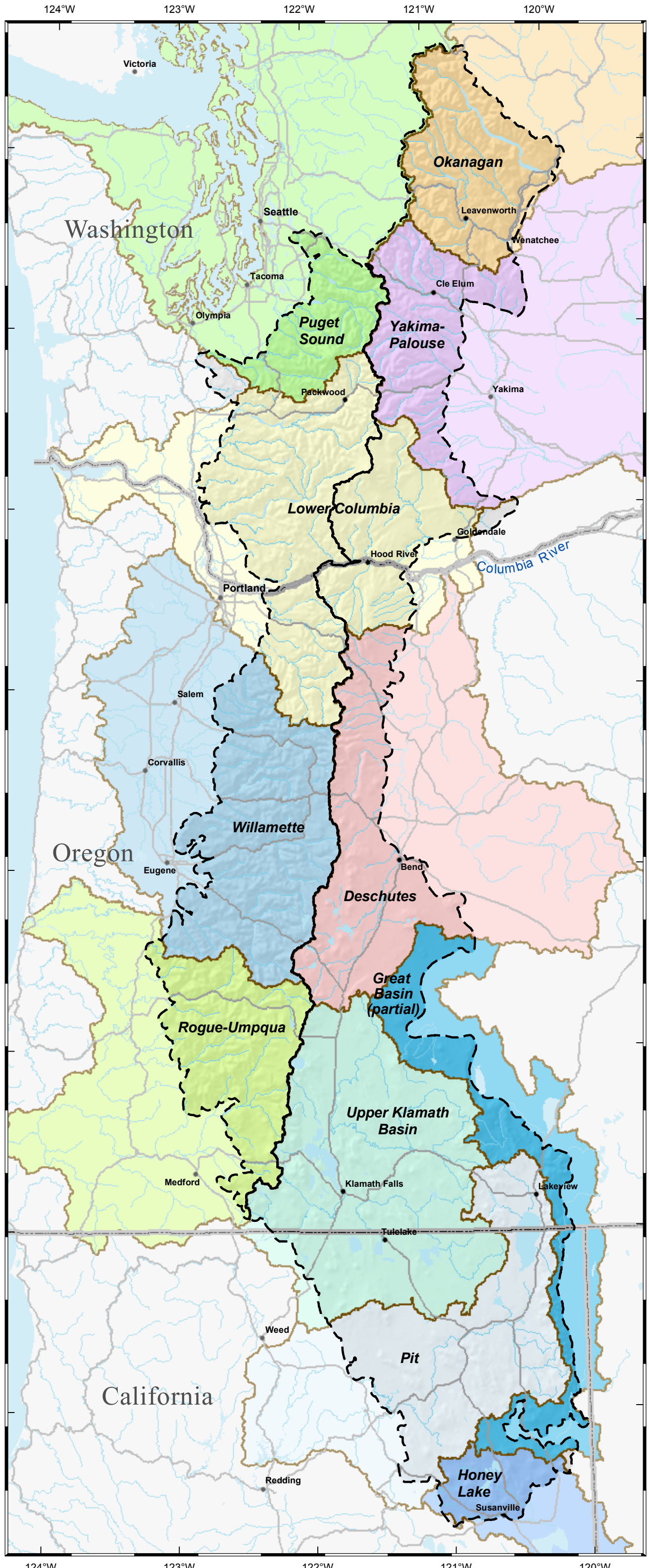


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



**Map 4.2: Ecological Drainage Units**

Ecological drainage units (EDUs) are comprised of river systems that share a common zoogeographic history and are therefore likely to have similar freshwater species assemblages and habitats. Four EDUs intersect the West Cascades, 8 EDUs intersect the East Cascades and 1 EDU, the Lower Columbia, intersects both ecoregions. All freshwater data were stratified by these EDUs.

**Ecological Drainage Unit**

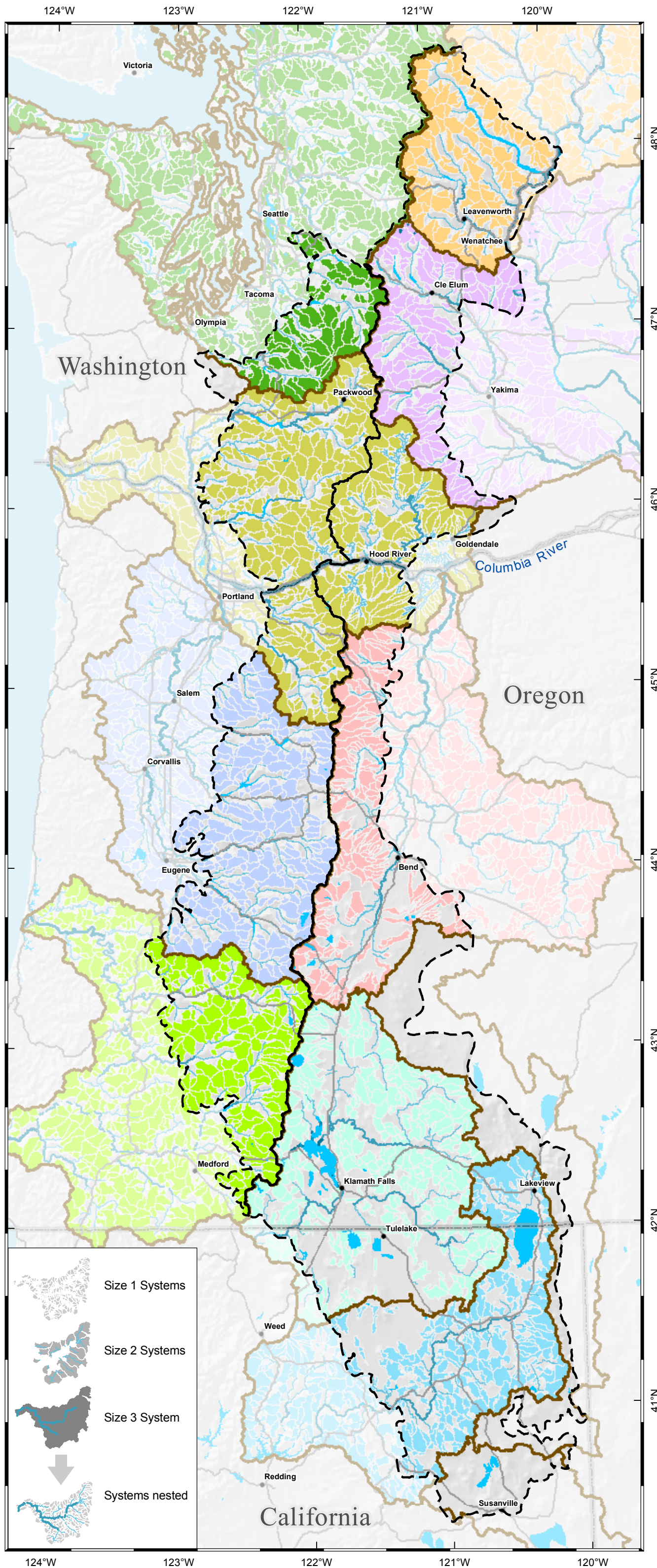
- Deschutes
- Great Basin (Partial)
- Lower Columbia
- Okanagan
- Pit
- Puget Sound
- Honey Lake
- Rogue-Umpqua
- Upper Klamath Basin
- Willamette
- Yakima-Palouse
- Ecoregion Boundary
- EDU Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City



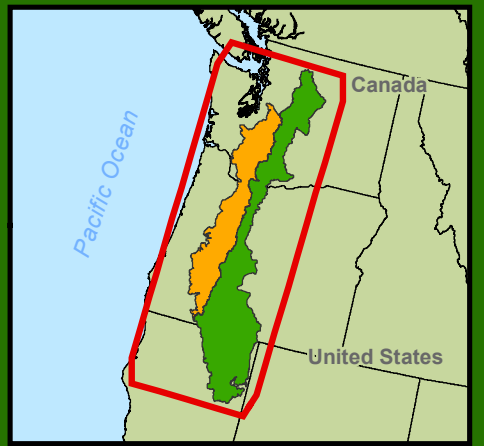
Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



**Map 4.3: Freshwater Systems**

This map represents the distribution of freshwater systems developed for 9 ecological drainage units (EDUs) that were part of the East and West Cascades Ecoregional assessment. Freshwater systems are nested spatial units that are composed of stream networks that are distinct in geomorphological patterns, tied together by similar ecological characteristics and processes such as watershed size, stream gradient, substrate, and elevation. The systems were defined separately for each EDU. Class 1 systems represent watersheds which are less than 100 km<sup>2</sup>, Class 2s are 100-1,000 km<sup>2</sup>, Class 3s are 1,000-10,000 km<sup>2</sup> and Class 4s watersheds are greater than 10,000 km<sup>2</sup>. For this map and the Portfolio maps, the Class 2, 3 and 4 systems are displayed as buffered river corridors, rather than the entire watersheds they drain (see inset graphic). Freshwater systems are used as “coarse-filter” conservation targets to guide conservation area selection for the freshwater component of this assessment. See Chapter 4.4 for more information.

### Ecological Drainage Unit

#### Class 1 Freshwater Systems

- Puget Sound
- Okanagan
- Yakima
- Lower Columbia
- Willamette
- Deschutes
- Rogue
- Upper Klamath
- Pit

#### Class 2-4 Freshwater Systems

- 2
- 3
- 4
- Ecoregion Boundary
- EDU Boundary
- Lake
- State Boundary
- City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers

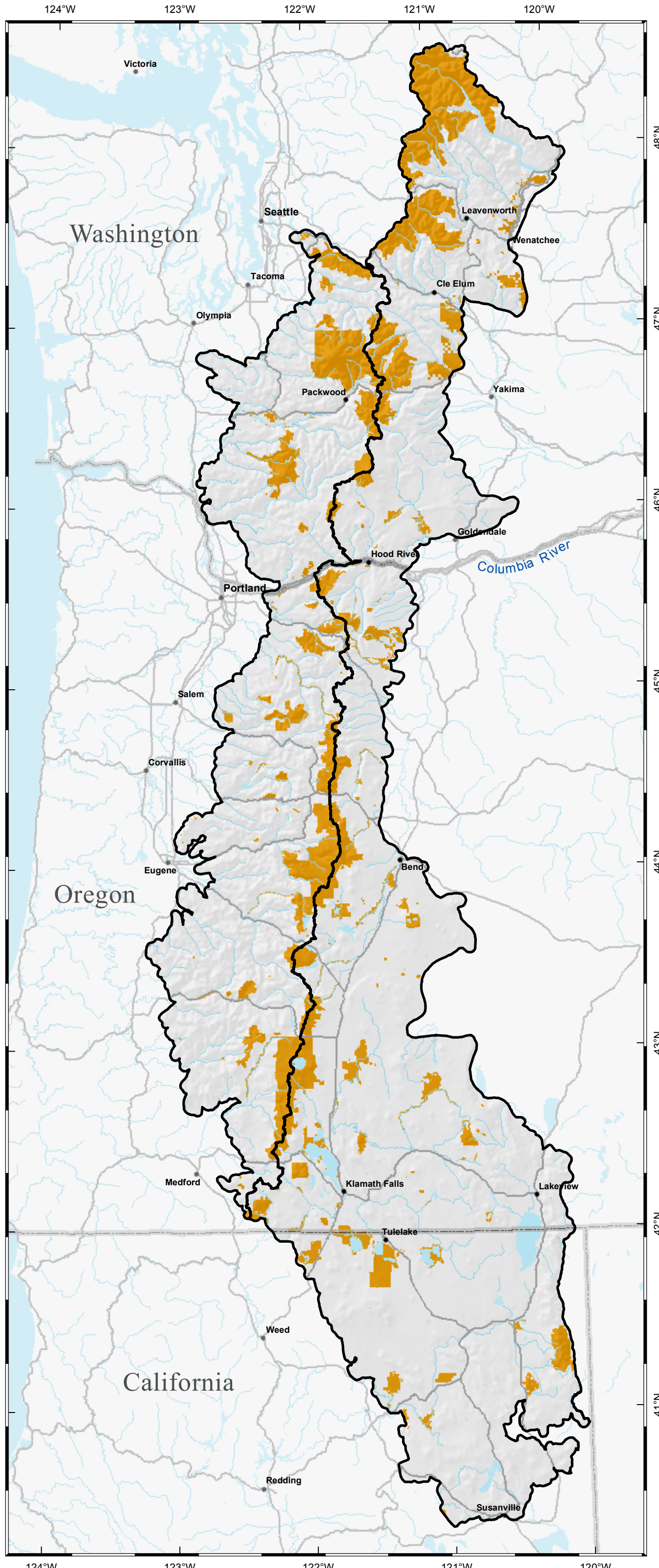
Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.












## East and West Cascades Ecoregions




**Map 5.1: Currently Protected Areas**

These areas are identified as permanently protected from conversion of natural land cover and managed for conservation objectives. This includes all GAP 1 and most GAP 2 status lands (Scott et al. 1993). A total of 1,010,000 ha (14.6%) are permanently protected in the West Cascades and 619,000 ha (12.8%) in the East Cascades. These areas are used in the protected areas analysis in Chapter 5 and are listed in Appendix 5, Table 1.

-  Protected Areas
-  Ecoregion Boundary
-  Water Body
-  Rivers
-  State Boundary
-  Major Road
-  City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers



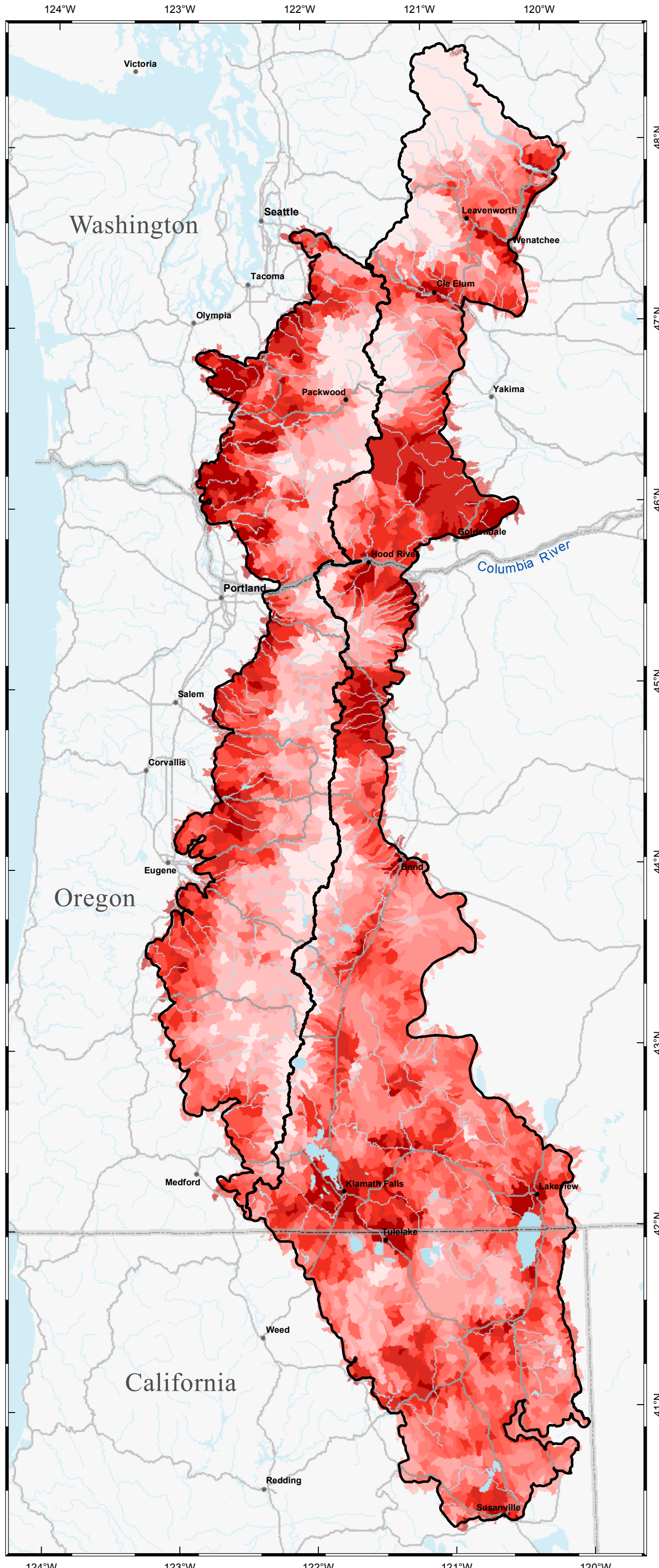
Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007




SAVING THE LAST GREAT PLACES ON EARTH

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions

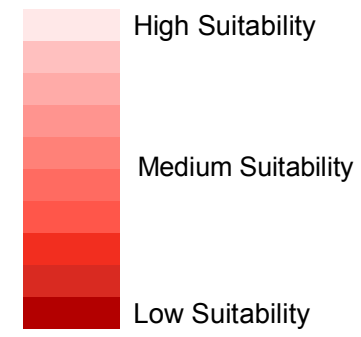


**Map 6.1: Terrestrial Suitability Index**

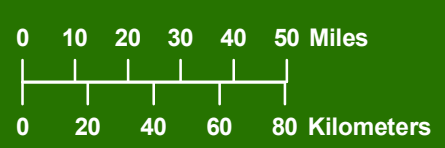
The suitability index indicates the relative likelihood of successful conservation at an assessment unit. The terrestrial suitability indices were based on three main factors: management status; land use; and road density. The values in each ecoregion were normalized so that each ecoregion had a full range of values.

Management status was based on the GAP categories (Cassidy et al. 1997), which were divided into a total of 10 subfactors. Land use was the percent of converted land (agriculture, urban/suburban) in the assessment unit. The values for each factor were determined through expert opinion using the methods of Saaty (1977). We recognize that other qualities influence the likelihood of successful conservation, but the terms in the index equation are limited to ecoregion-wide data readily available in GIS. See Chapter 6 for more information.

### Suitability Index



- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City

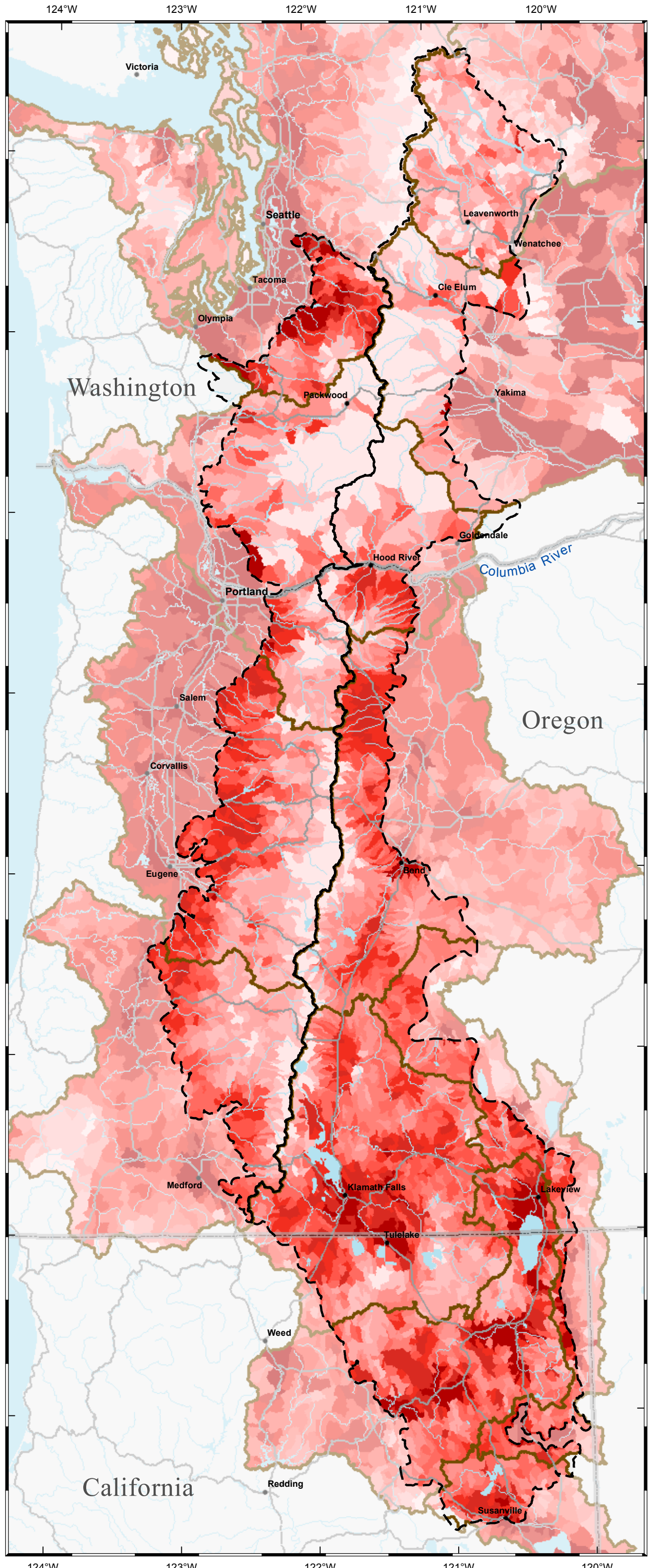


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



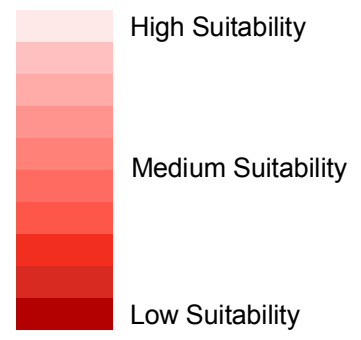
## East and West Cascades Ecoregions



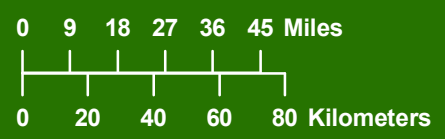
**Map 6.2: Freshwater Suitability Index**

The suitability index indicates the relative likelihood of successful conservation at an assessment unit. The freshwater suitability indices were based on five factors: management status; land use; road density; dams; and mines. The values in each EDU were normalized so that each EDU had a full range of values. Management status was based on the GAP categories (Cassidy et al. 1997), divided into 10 subfactors. Land use was the percent of converted land (urban/suburban, agriculture) in the assessment unit. The values for each factor were determined through expert opinion using the methods of Saaty (1977). We recognize that other qualities influence the likelihood of successful conservation, but the terms in the index equation are limited to EDU-wide data readily available in GIS. See Chapter 6 for more information.

### Suitability Index



- EDU Boundary
- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City

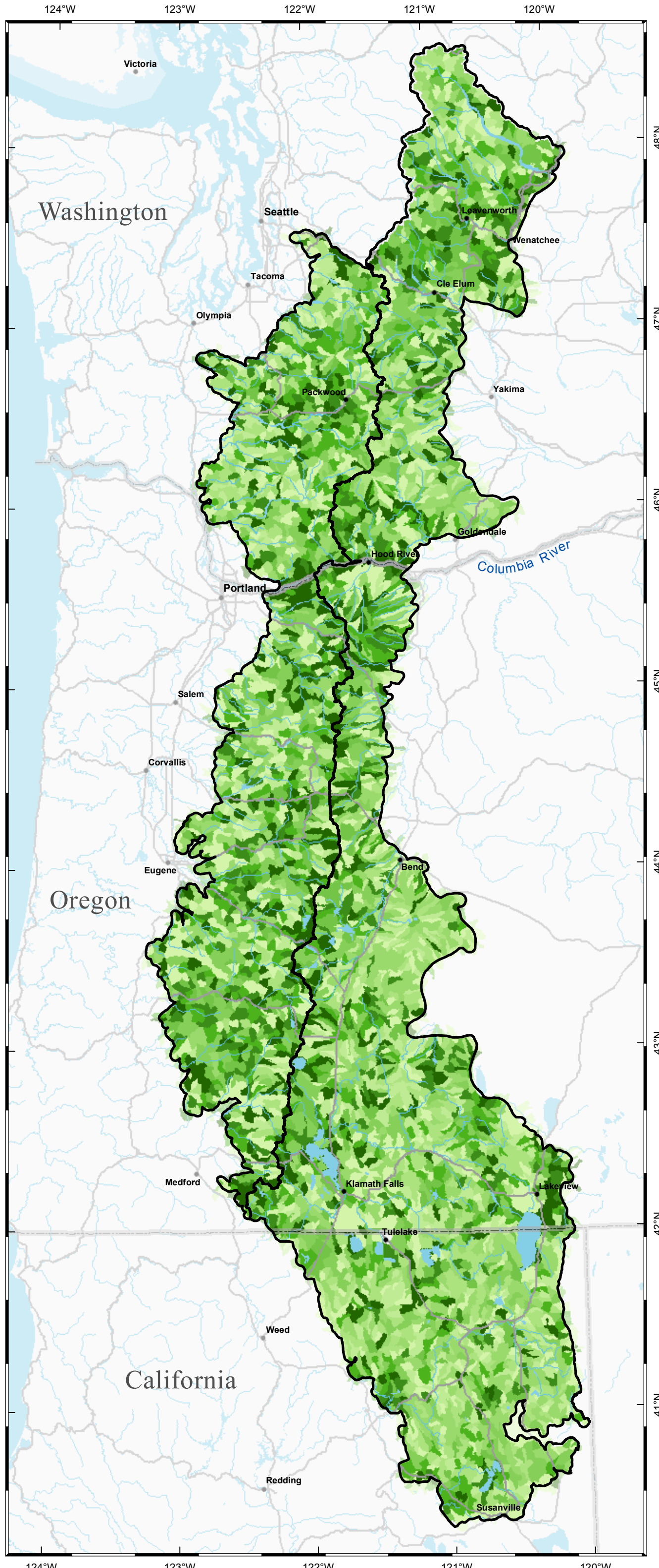


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions












### Map 7.1: Terrestrial Irreplaceability Analysis

Irreplaceability scores indicate the biodiversity value of an assessment unit (AU). The scores are generated using MARXAN under the assumption that all AUs are equally suitable for conservation (i.e., the suitability index was not used).

MARXAN assigns a high irreplaceability score for AUs that contain rare targets, contain a large amount of a target (high representation), or have a high number of different targets (high richness). See Chapter 7 for more information.

**Irreplaceability Index**

-  High Irreplaceability
-  Medium Irreplaceability
-  Low Irreplaceability

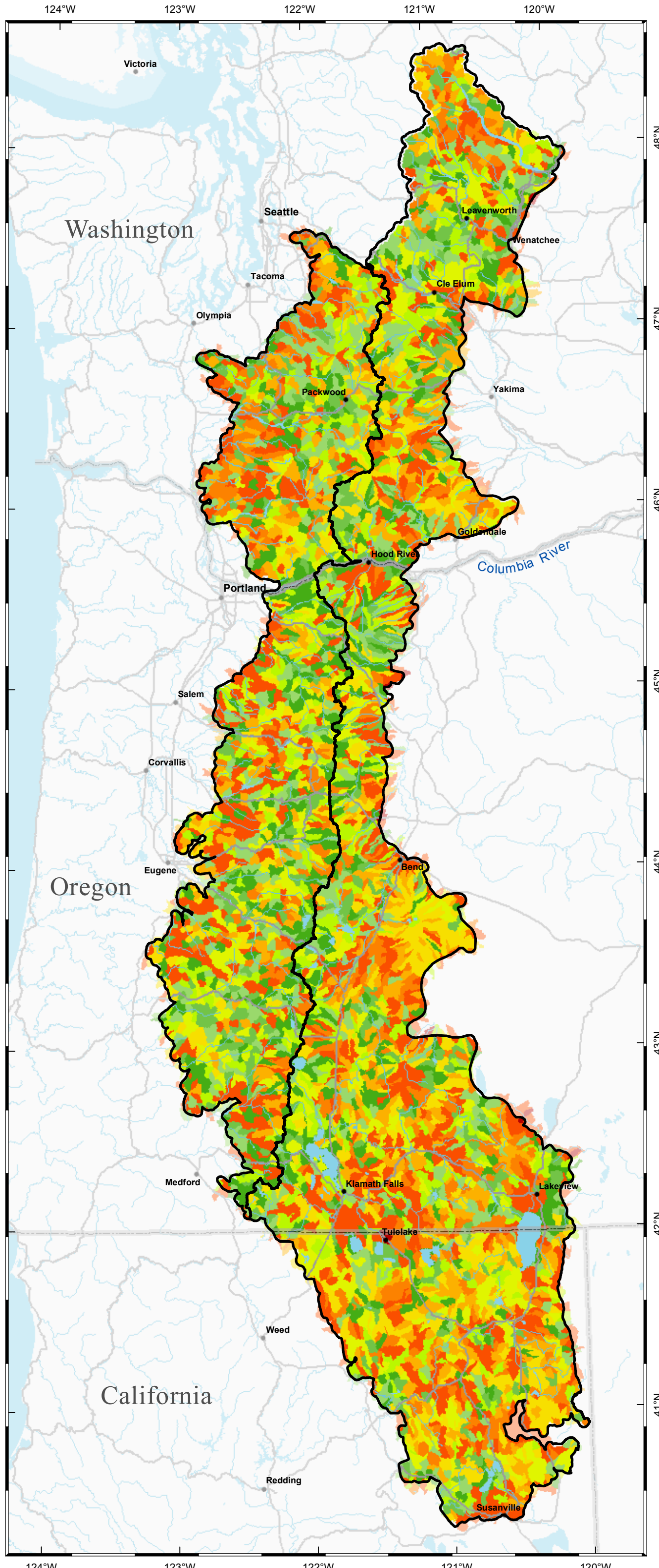
-  Ecoregion Boundary
-  Water Body
-  Rivers
-  State Boundary
-  Major Road
-  City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



**Map 7.2: Terrestrial Conservation Utility Analysis**

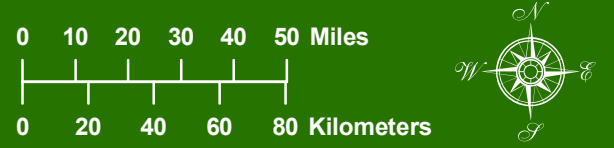
Utility scores indicate both the biodiversity value (irreplaceability) of an assessment unit (AU) and its suitability for conservation. The scores are generated with MARXAN under the assumption that all AUs are not equally suitable for conservation (i.e., the suitability index was used). For example, lands currently used for intensive agriculture or commercial and residential development are assumed to be less suitable than lands adjacent to undisturbed forest or properly managed rangeland.

See Maps 6.1 and 7.1 for the Irreplaceability and Suitability Indices that were used for this Utility Analysis. See Chapter 7 for more information.

**Utility Index**

- High Utility
- Medium Utility
- Low Utility

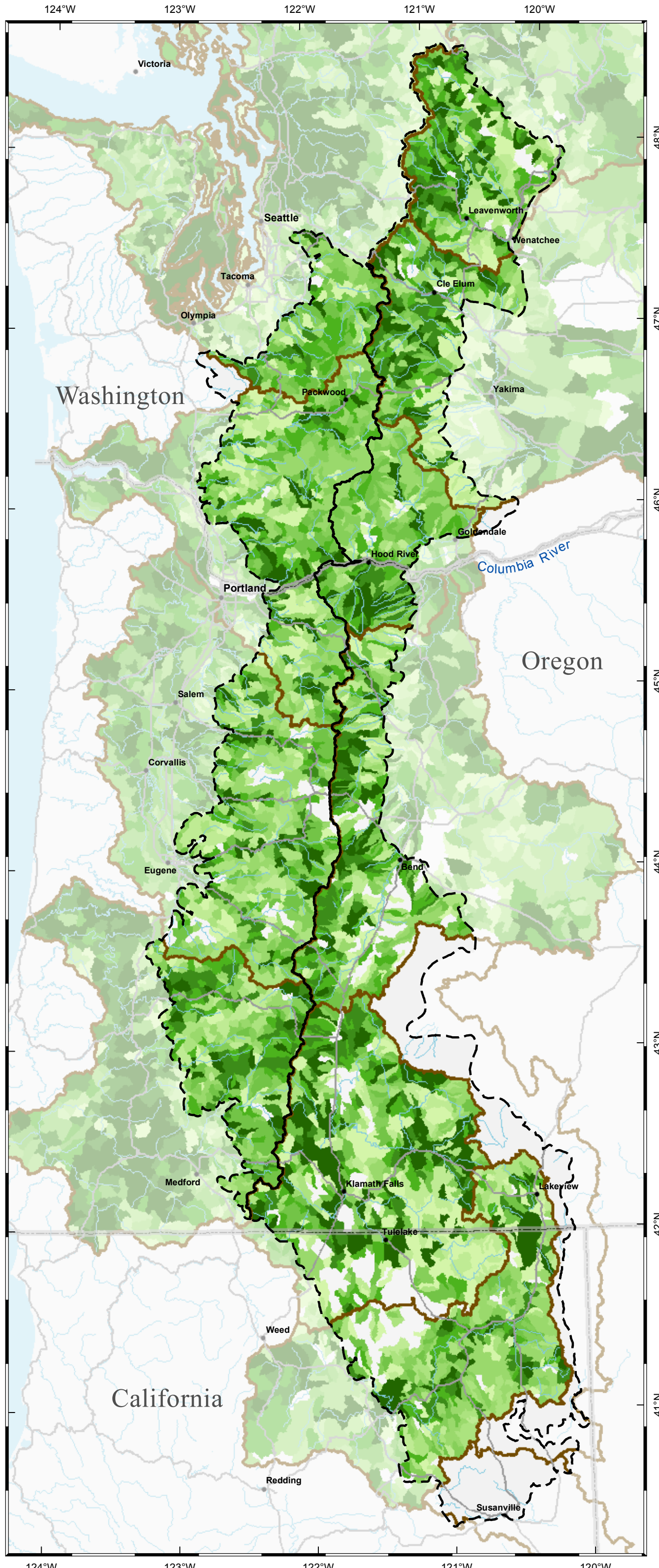
- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



**Map 7.3: Freshwater Irreplaceability Analysis**

Irreplaceability scores indicate the biodiversity value of an assessment unit (AU). The scores are generated using MARXAN under the assumption that all AUs are equally suitable for conservation (i.e., the suitability index was not used).

MARXAN assigns a high irreplaceability score for AUs that contain rare targets, contain a large amount of a target (high representation), or have a high number of different targets (high richness). See Chapter 7 for more information.

**Irreplaceability Index**

- High Irreplaceability
- Medium Irreplaceability
- Low Irreplaceability

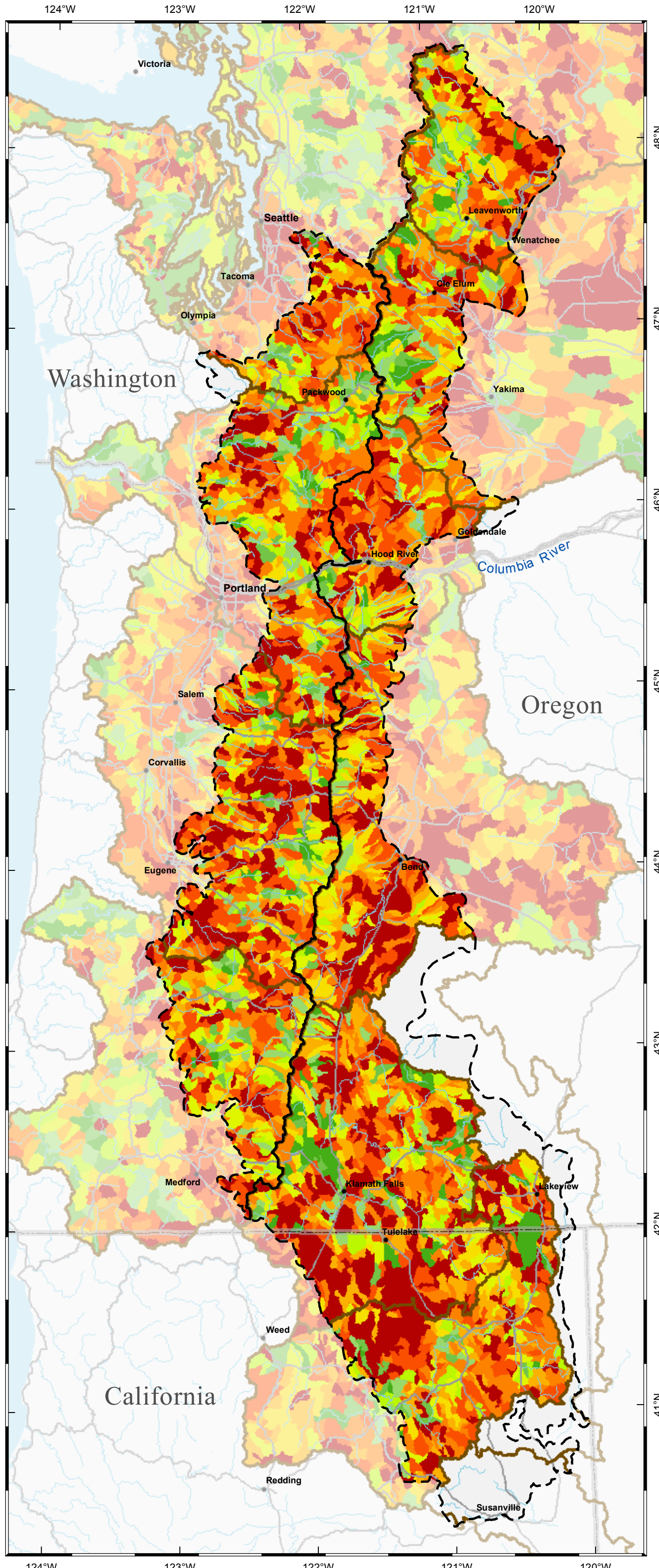
- Ecoregion Boundary
- EDU Boundary
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



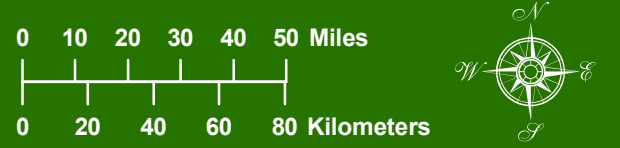
**Map 7.4: Freshwater Conservation Utility Analysis**

Utility scores indicate both the biodiversity value (irreplaceability) of an assessment unit (AU) and its suitability for conservation. The scores are generated with MARXAN under the assumption that all AUs are not equally suitable for conservation (i.e., the suitability index was used). For example, waters with dams are assumed to be less suitable than those without dams. See Maps 6.2 and 7.3 for the Irreplaceability and Suitability Indices that were used for this Utility Analysis. See Chapter 7 for more information.

**Utility Index**

- High Utility
- Medium Utility
- Low Utility

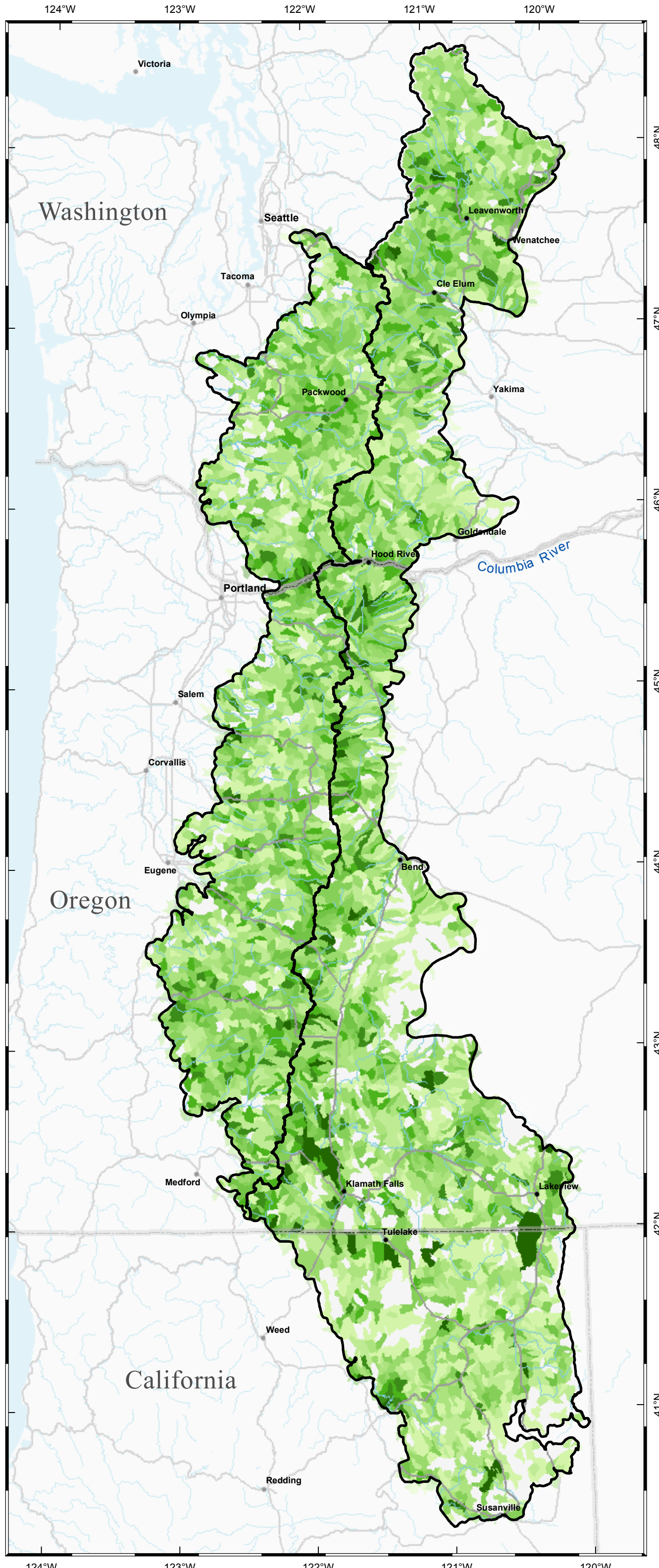
- Ecoregion Boundary
- EDU Boundary
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



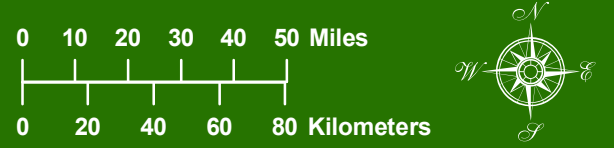
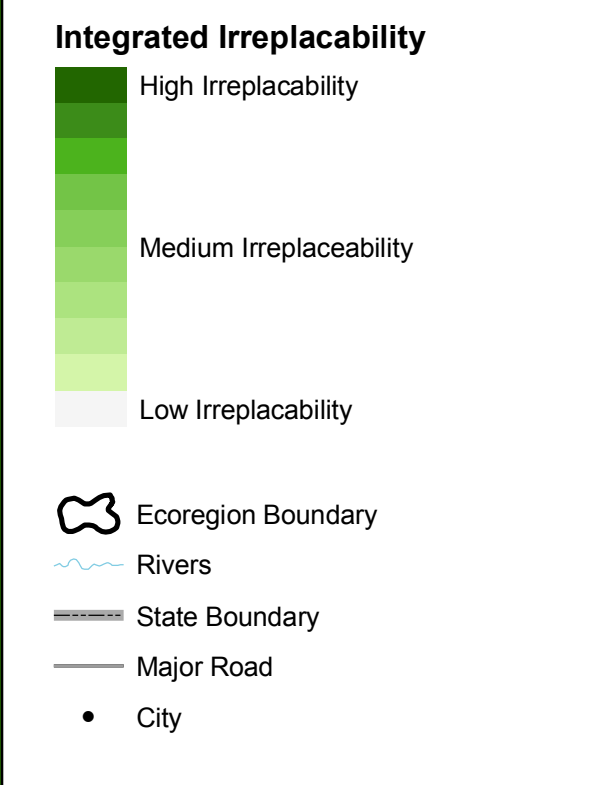
## East and West Cascades Ecoregions



**Map 7.5: Integrated Irreplaceability**

Irreplaceability scores indicate the biodiversity value of an assessment unit (AU). The scores are generated using MARXAN under the assumption that all AUs are equally suitable for conservation (i.e., the suitability index was not used).

MARXAN assigns a high irreplaceability score for AUs that contain rare targets, contain a large amount of a target (high representation), or have a high number of different targets (high richness). See Chapter 7 for more information.

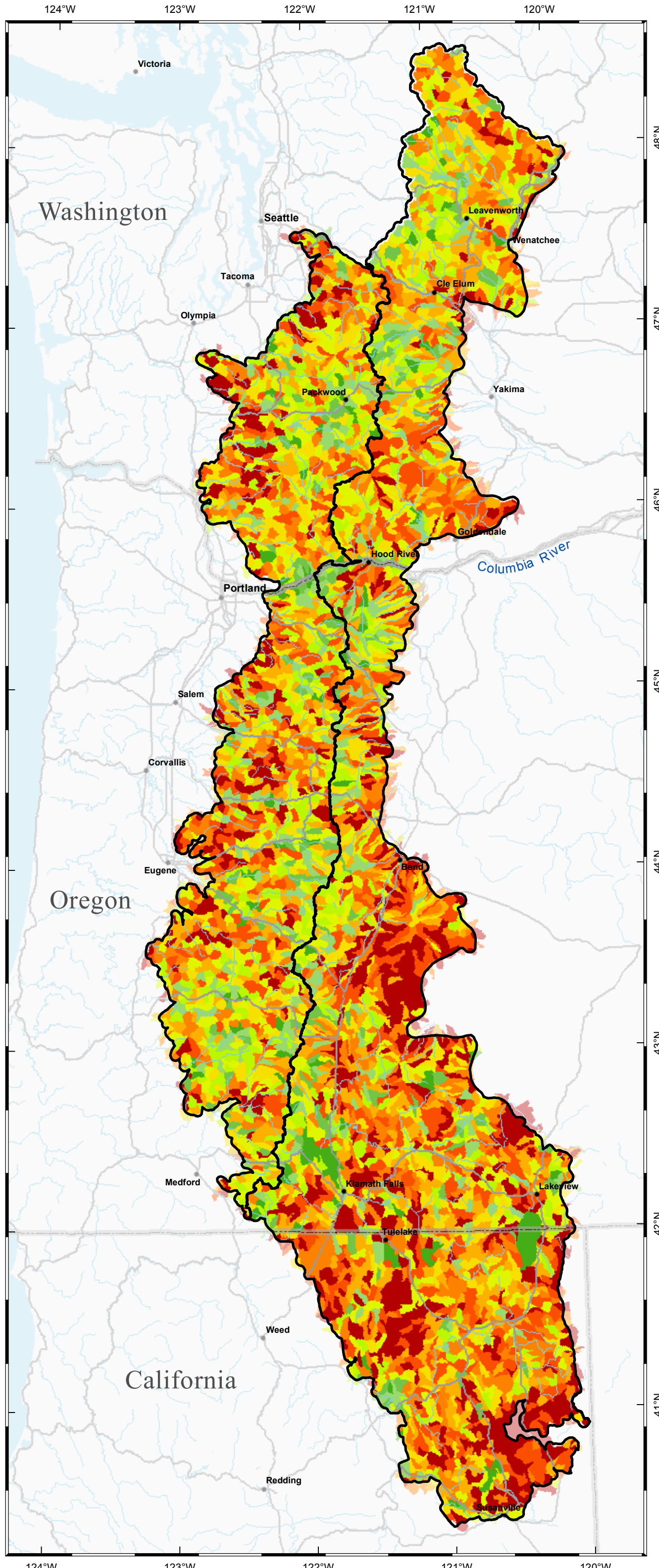


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.





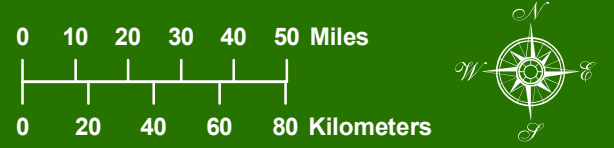
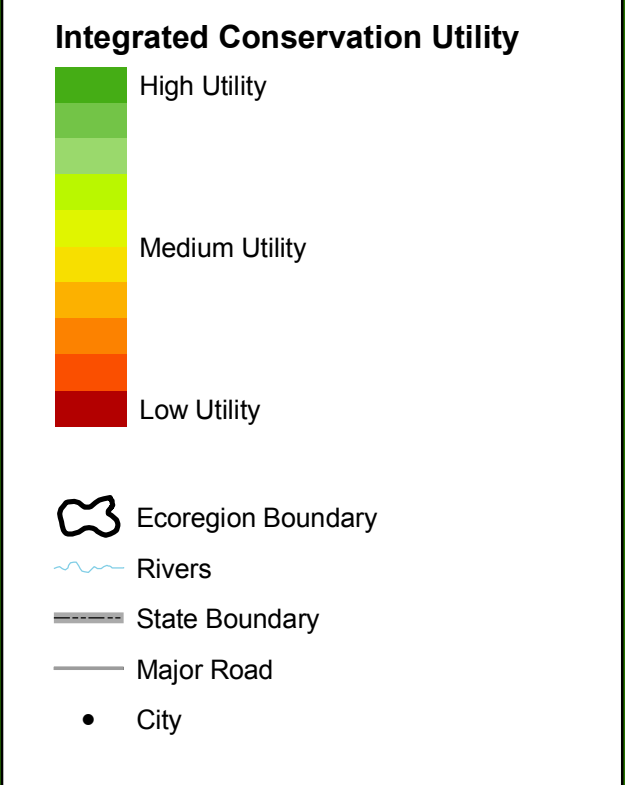
## East and West Cascades Ecoregions



### Map 7.6: Integrated Conservation Utility

Utility scores indicate the biodiversity value of an assessment unit (AU). The scores are generated using MARXAN under the assumption that all AUs are not equally suitable for conservation (i.e., the suitability index was used).

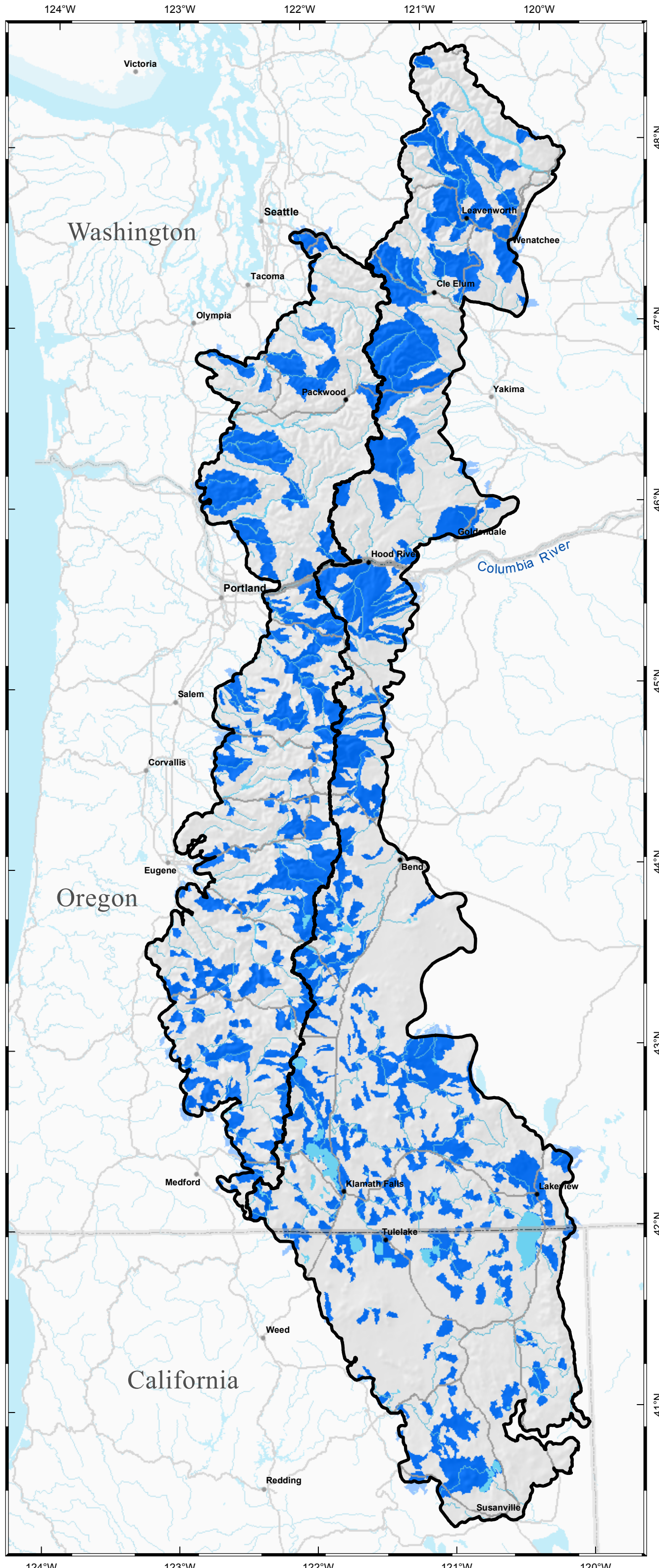
Terrestrial suitability (Map 6.1) was combined with freshwater suitability (Map 6.2) to form the integrated suitability index. Those scores were then run in MARXAN with the integrated irreplaceability data (Map 7.5) to create the integrated utility scores. For more information see Chapter 7.



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.










## East and West Cascades Ecoregions



**Map 8.1: Draft Automated Freshwater Portfolios**

The draft freshwater portfolio is the product of an automated data analysis done with MARXAN for each EDU. This is the result of the freshwater analysis prior to extensive expert review of the freshwater and integrated portfolios. Only the portions of the Ecological Drainage Units (EDUs) within the two ecoregions are shown. Goals were set at the “mid-risk” level and the results were overlaid with the draft terrestrial portfolio to form the ‘core’ of the integrated portfolio. See Chapter 8.4 for more information.

-  Selected in Automated Portfolio
-  Ecoregion Boundary
-  Water Body
-  Rivers
-  State Boundary
-  Major Road
-  City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers

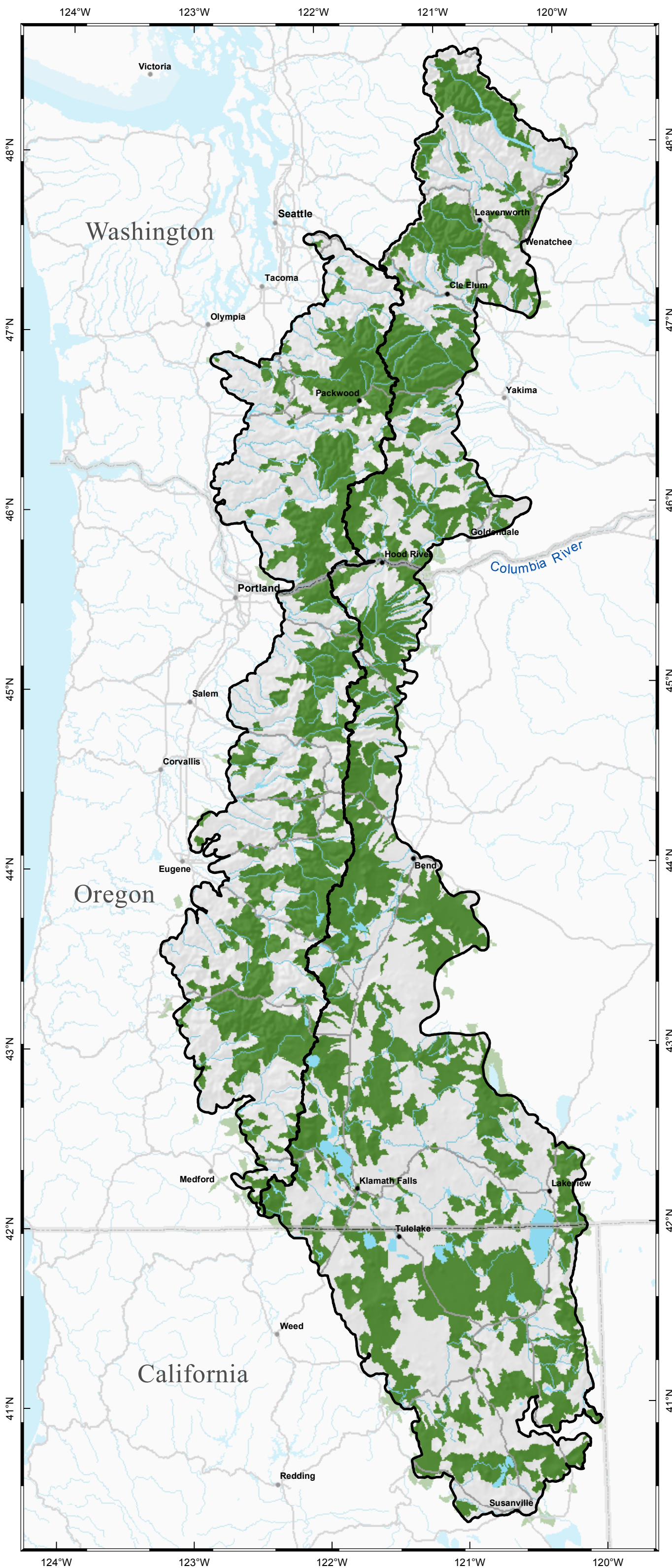


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007




The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.










## East and West Cascades Ecoregions



### Map 8.2: Draft Terrestrial Portfolios

The draft terrestrial portfolio is the product of an automated data analysis done with MARXAN. This is the result of the terrestrial analysis prior to extensive expert review of the terrestrial and integrated portfolios. Goals were set at the “mid-risk” level and the results were overlaid with the draft freshwater portfolio to form the ‘core’ of the integrated portfolio. See Chapter 8.5 for more information.

-  Selected in Automated Portfolio
-  Ecoregion Boundary
-  Water Body
-  Rivers
-  State Boundary
-  Major Road
-  City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers

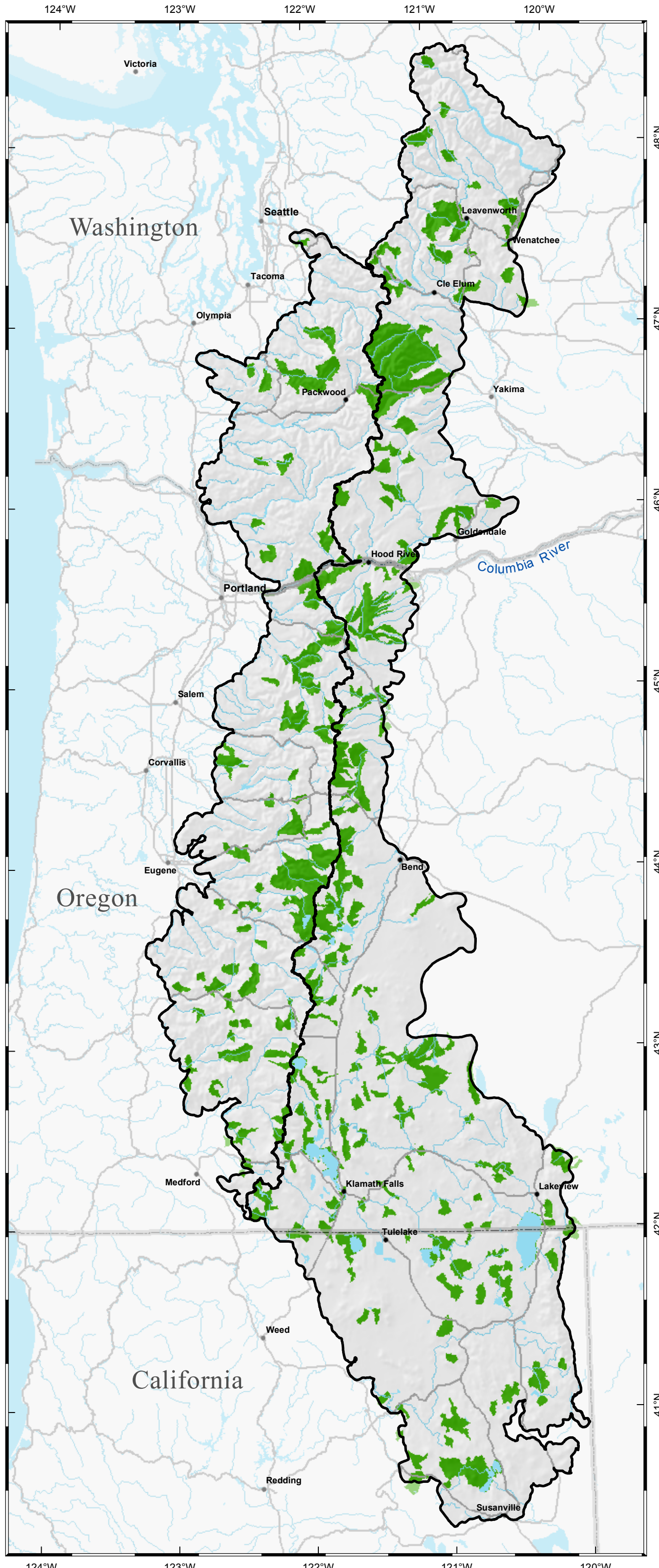


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.










## East and West Cascades Ecoregions




**Map 8.3: Automated Terrestrial & Freshwater Core Portfolio**

This set of assessment units (AUs) was produced by overlapping the independent draft terrestrial with the draft freshwater portfolios (Maps 8.1 and 8.2) for the East and West Cascade Ecoregions. These AUs were locked into subsequent MARXAN runs, to ensure they would always be selected, in order to 'seed' the solutions which formed the basis for the final peer-reviewed integrated portfolios (Map 8.5). See maps 8.4 - 8.6 for more information.

-  Core Portfolio
-  Ecoregion Boundary
-  Water Body
-  Rivers
-  State Boundary
-  Major Road
-  City


0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers

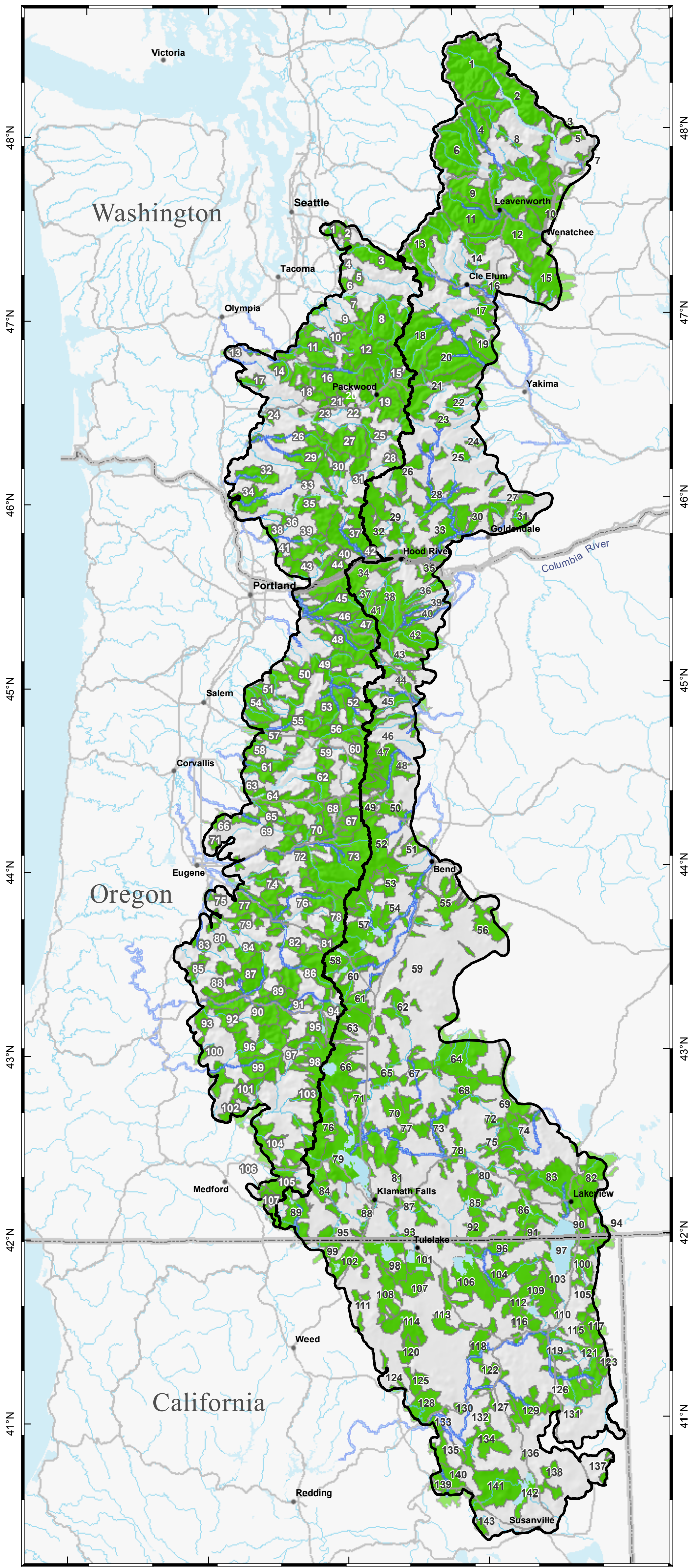


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

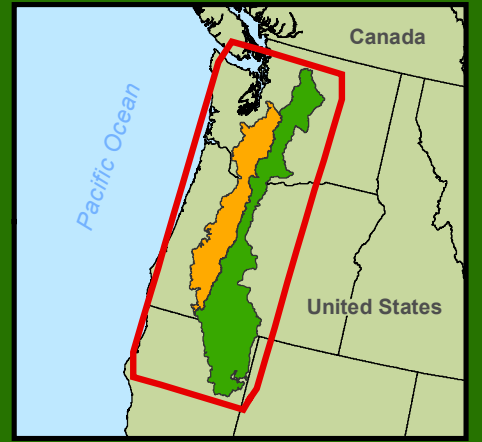
June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.











## East and West Cascades Ecoregions



**Map 8.4: Final Integrated Portfolios**

These conservation portfolios identify the places that can make the greatest contribution to conserving representative biodiversity of the East and West Cascades ecoregions. They create a common focus to galvanize actions among partners and are designed to meet the mid-risk conservation goals set for targets in the smallest area possible. Site numbers correspond to the separate East and West Cascades lists on the following pages. Maps 8.5 and 8.6 show the portfolio at a finer scale

The final integrated portfolios totaled 6,144,500 ha, covering 56 % of the West Cascades and 48 % of the East Cascades Ecoregions. Data on the species, natural communities, ecological systems and other targets that reside in these biologically significant areas are included in the Site Summaries. Refer to Chapter 8 in the report and the large maps on the CD for more detailed information about the portfolios.

-  Final Integrated Portfolio
-  Ecoregion Boundary
-  Water Body
-  River Corridor Sites
-  Rivers
-  State Boundary
-  Major Road
-  City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.

# West Cascades Ecoregion

## Map 8.4, Table 1: Alphabetical and Numerical Index of Final Integrated Portfolios

Index numbers refer to Sites on Maps 8.4, 8.5 and 8.6.

### NUMERICAL

Index	Conservation Area Name	Hectares
1	Issaquah Creek	7,964
2	Raging River	4,966
3	Upper Cedar River	34,567
4	Kanaskat	2,895
5	Howard Hanson	4,724
6	Boise Ridge	5,321
7	Clearwater	7,396
8	Upper White River	57,152
9	Carbon River	14,318
10	Upper Puyallup River	12,832
11	Mashel / Ohop	36,474
12	Mt Rainier	50,058
13	Scatter Creek - Cascades	2,305
14	Deschutes (WA)	15,894
15	Cowlitz Headwaters	40,217
16	Upper Nisqually River	57,727
17	Newaukum Headwaters	9,863
18	Tilton Headwaters	8,729
19	Upper Cowlitz River	50,437
20	Whalehead Ridge	6,575
21	Kiona Creek	3,051
22	Purcell Slough	2,803
23	Cowlitz Riffe Lake	12,294
24	Winston Creek	3,179
25	Cispus River	23,562
26	Toutle Green River	23,210
27	Lower Cispus Tributaries	34,650
28	Mt. Adams - West	12,333
29	Toutle St Helens	25,559
30	Muddy River Tributaries	22,010
31	Upper Lewis River	15,161
32	Coweeman River	20,421
33	South St Helens	5,074
34	Kalama River	24,334
35	Middle Lewis River	41,301
36	Lower Lewis River	6,203
37	Wind River	46,401
38	East Fork Lewis River	9,119
39	East Fork Lewis Headwaters	19,847
40	Rock Creek	5,032
41	Morgan Creek	1,986
42	Columbia Gorge - Collins Cr	4,543
43	Washougal River	20,928
44	Columbia Gorge - West	39,632
45	Bull Run	32,806
46	Sandy River - Cascades	24,455
47	Mount Hood - West	27,409
48	Salmon - Huckleberry	34,991
49	Roaring River / Oak Grove Fork Clackamas	48,441
50	Upper Molalla	34,254
51	Butte Creek	7,771
52	Upper Clackamas	28,843
53	Bull of the Woods	28,946
54	Silver and Abiqua Creeks	27,174
55	Opal Creek	17,807
56	Breitenbush River	24,865
57	Middle North Santiam	27,025
58	Snow Peak / Thomas Creek	12,852
59	Blowout Cr. / Coopers Ridge	12,911
60	Mt. Jefferson - West	34,288
61	Crabtree Creek and Mtn.	30,335
62	Middle Santiam	23,187
63	McDowell Creek	3,009
64	South Santiam	43,794
65	Wiley Creek	11,598
66	Horse Rock Ridge	5,366
67	Mt. Washington - West	19,430
68	Upper McKenzie	40,397
69	Upper Calapooia River	17,389
70	Blue River	16,768
71	Mohawk / McGowan Creek	3,091

72	South Fork and Lower McKenzie	33,488
73	Three Sisters - West	95,185
74	Fall Creek	26,715
75	Coast Fork Willamette	6,641
76	North Fork Middle Fork Willamette	36,566
77	Middle Fork Willamette	36,714
78	Waldo Lake	23,820
79	Row River / Mt. June	15,038
80	Mosby Creek	6,574
81	Salt Creek	19,955
82	Hills Creek	14,989
83	Upper Coast Fork Willamette	6,849
84	Fairview Peak	15,784
85	Upper Calapooia Creek	8,379
86	Upper Middle Fork Willamette	38,901
87	Steamboat and Canton Creeks	38,672
88	Rock Creek (North Umpqua)	13,171
89	Boulder Creek	7,890
90	Middle North Umpqua	45,074
91	Upper North Umpqua	31,020
92	Little River	16,638
93	Cavitt Creek / Peel	11,767
94	Mt. Thielsen - West	11,707
95	Mt. Bailey	14,974
96	Upper South Umpqua	38,723
97	Rogue River Headwaters	21,569
98	Crater Lake - West	30,927
99	Jackson Creek	27,662
100	Middle South Umpqua	22,700
101	Elkhorn Peak	15,861
102	Elk Trail Foothills	21,513
103	Sky Lakes - West	29,221
104	Big Butte Creek	33,658
105	Little Butte Creek - Cascades	37,850
106	Antelope Creek - Cascades	2,573
107	Walker Creek	7,342

### ALPHABETICAL

Index	Conservation Area Name	Hectares
106	Antelope Creek - Cascades	2,573
104	Big Butte Creek	33,658
59	Blowout Cr. / Coopers Ridge	12,911
70	Blue River	16,768
6	Boise Ridge	5,321
89	Boulder Creek	7,890
56	Breitenbush River	24,865
45	Bull Run	32,806
53	Bull of the Woods	28,946
51	Butte Creek	7,771
9	Carbon River	14,318
93	Cavitt Creek / Peel	11,767
25	Cispus River	23,562
7	Clearwater	7,396
75	Coast Fork Willamette	6,641
42	Columbia Gorge - Collins Cr.	4,543
44	Columbia Gorge - West	39,632
32	Coweeman River	20,421
15	Cowlitz Headwaters	40,217
23	Cowlitz Riffe Lake	12,294
61	Crabtree Creek and Mtn.	30,335
98	Crater Lake - West	30,927
14	Deschutes (WA)	15,894
39	East Fork Lewis Headwaters	19,847
38	East Fork Lewis River	9,119
102	Elk Trail Foothills	21,513
101	Elkhorn Peak	15,861
84	Fairview Peak	15,784
74	Fall Creek	26,715
82	Hills Creek	14,989
66	Horse Rock Ridge	5,366
5	Howard Hanson	4,724
1	Issaquah Creek	7,964
99	Jackson Creek	27,662

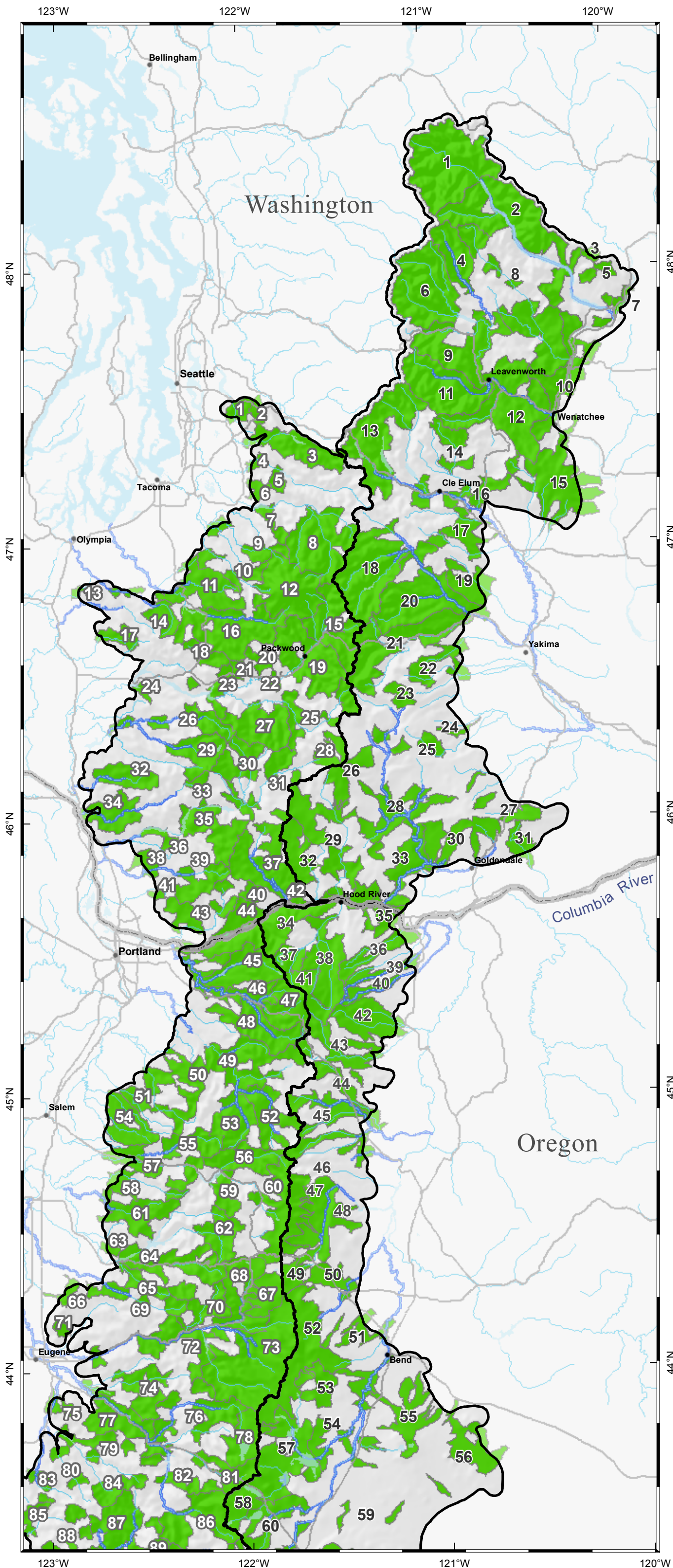
34	Kalama River	24,334
4	Kanaskat	2,895
21	Kiona Creek	3,051
105	Little Butte Creek - Cascades	37,850
92	Little River	16,638
27	Lower Cispus Tributaries	34,650
36	Lower Lewis River	6,203
11	Mashel / Ohop	36,474
63	McDowell Creek	3,009
77	Middle Fork Willamette	36,714
35	Middle Lewis River	41,301
57	Middle North Santiam	27,025
90	Middle North Umpqua	45,074
62	Middle Santiam	23,187
100	Middle South Umpqua	22,700
71	Mohawk / McGowan Creek	3,091
41	Morgan Creek	1,986
80	Mosby Creek	6,574
47	Mount Hood - West	27,409
12	Mt Rainier	50,058
28	Mt. Adams - West	12,333
95	Mt. Bailey	14,974
60	Mt. Jefferson - West	34,288
94	Mt. Thielsen - West	11,707
67	Mt. Washington - West	19,430
30	Muddy River Tributaries	22,010
17	Newaukum Headwaters	9,863
76	North Fork Middle Fork Willamette	36,566
55	Opal Creek	17,807
22	Purcell Slough	2,803
2	Raging River	4,966
49	Roaring River / Oak Grove Fork Clackamas	48,441
40	Rock Creek	5,032
88	Rock Creek (North Umpqua)	13,171
97	Rogue River Headwaters	21,569
79	Row River / Mt. June	15,038
48	Salmon - Huckleberry	34,991
81	Salt Creek	19,955
46	Sandy River - Cascades	24,455
13	Scatter Creek - Cascades	2,305
54	Silver and Abiqua Creeks	27,174
103	Sky Lakes - West	29,221
58	Snow Peak / Thomas Creek	12,852
72	South Fork and Lower McKenzie	33,488
64	South Santiam	43,794
33	South St Helens	5,074
87	Steamboat and Canton Creeks	38,672
73	Three Sisters - West	95,185
18	Tilton Headwaters	8,729
26	Toutle Green River	23,210
29	Toutle St Helens	25,559
69	Upper Calapooia River	17,389
85	Upper Calapooia Creek	8,379
3	Upper Cedar River	34,567
52	Upper Clackamas	28,843
83	Upper Coast Fork Willamette	6,849
19	Upper Cowlitz River	50,437
31	Upper Lewis River	15,161
68	Upper McKenzie	40,397
86	Upper Middle Fork Willamette	38,901
50	Upper Molalla	34,254
16	Upper Nisqually River	57,727
91	Upper North Umpqua	31,020
10	Upper Puyallup River	12,832
96	Upper South Umpqua	38,723
8	Upper White River	57,152
78	Waldo Lake	23,820
107	Walker Creek	7,342
43	Washougal River	20,928
20	Whalehead Ridge	6,575
65	Wiley Creek	11,598
37	Wind River	46,401
24	Winston Creek	3,179

# East Cascades Ecoregion

## Map 8.4, Table 2: Alphabetical and Numerical Index of Final Integrated Portfolios

Index numbers refer to Sites on Maps 8.4, 8.5 and 8.6.

NUMERICAL								
Index	Conservation Area Name	Hectares	Index	Conservation Area Name	Hectares	Index	Conservation Area Name	Hectares
1	Stehekin River	83,932	95	Middle Upper Klamath River	14,426	11	Icicle Creek	55,525
2	Chelan	93,806	96	North Fork Willow Creek	23,326	50	Indian Ford Creek	14,786
3	Black Canyon	3,030	97	Goose Lake	38,189	62	Jack Creek	29,058
4	Chiwawa River	26,842	98	Lower Klamath Lake	42,172	65	Klamath Marsh	26,095
5	Antoine Creek	3,231	99	Ball Mountain	4,912	23	Klickitat Headwaters	13,710
6	Upper Wenatchee	66,670	100	Goose Lake East Shore	22,845	17	L T Murray	20,376
7	Chelan Butte	4,251	101	Ancient Tule Lake	18,747	107	Lava Beds	18,969
8	Entiat River	61,461	102	Butte Valley	23,357	30	Little Klickitat River	32,504
9	Middle Wenatchee	51,793	103	Goose Lake West Shore	11,605	18	Little Naches Headwaters	66,505
10	Columbia Rocky Reach	49,366	104	Boles / Fletcher Creek	46,344	32	Little White Salmon River	21,280
11	Icicle Creek	55,525	105	Upper Alkali Lake	13,988	140	Lost Creek	30,077
12	Lower Wenatchee	77,675	106	Clear Lake	57,620	121	Lower Alkali Lake	4,770
13	Upper Yakima	77,387	107	Lava Beds	18,969	127	Lower Ash and Willow Creeks	15,300
14	Teanaway River	16,822	108	Badger Basin / Willow Creek	29,107	98	Lower Klamath Lake	42,172
15	Naneum Ridge	61,306	109	Rattlesnake Creek	37,175	33	Lower Klickitat River	27,536
16	Swauk Creek	9,715	110	Round Mountain	5,847	93	Lower Lost River	4,761
17	L T Murray	20,376	111	Antelope and Butte Creeks	8,449	119	Lower South Fork Pit River	26,936
18	Little Naches Headwaters	66,505	112	Warm Springs Valley	14,969	77	Lower Sprague	45,438
19	Upper Wenas Creek	19,647	113	Egg Lake	21,212	73	Lower Sycan River	15,635
20	Naches River / Rattlesnake Creek	68,490	114	Medicine Lake	30,580	12	Lower Wenatchee	77,675
21	Tieton	54,876	115	North Fork Pit River	10,937	71	Lower Williamson	16,932
22	Ahtanum / Cowiche	20,346	116	Pit River Confluence	10,554	131	Madeline Plains West	4,022
23	Klickitat Headwaters	13,710	117	Middle Alkali Lake	18,136	114	Medicine Lake	30,580
24	Simcoe Creek	2,627	118	Big Valley North	21,563	48	Metolius River	44,584
25	Upper Toppenish Creek	6,749	119	Lower South Fork Pit River	26,936	117	Middle Alkali Lake	18,136
26	Mt. Adams - East	16,590	120	Whitehorse Flat	11,630	122	Middle Ash Creek	7,377
27	Satus Headwaters	12,400	121	Lower Alkali Lake	4,770	28	Middle Klickitat River	34,653
28	Middle Klickitat River	34,653	122	Middle Ash Creek	7,377	126	Middle South Fork Pit River	32,770
29	White Salmon River	45,729	123	Upper South Fork Pit River	18,474	78	Middle Sprague	16,065
30	Little Klickitat River	32,504	124	Bear Creek	6,896	95	Middle Upper Klamath River	14,426
31	Upper Rock Creek	11,255	125	Adobe Flat	12,194	9	Middle Wenatchee	51,793
32	Little White Salmon River	21,280	126	Middle South Fork Pit River	32,770	36	Mill Creek Forks	19,415
33	Lower Klickitat River	27,536	127	Lower Ash and Willow Creeks	15,300	88	Miller Island	8,864
34	Columbia Gorge - East	42,534	128	Fall River	30,987	41	Mount Hood - East	16,477
35	Rowena	12,817	129	Upper Ash Creek	21,405	26	Mt. Adams - East	16,590
36	Mill Creek Forks	19,415	130	Big Valley	2,929	53	Mt. Bachelor	17,368
37	West Fork Hood River	10,817	131	Madeline Plains West	4,022	47	Mt. Jefferson - East	20,177
38	Hood River	39,480	132	Big Valley South	4,097	63	Mt. Thielsen - East	25,567
39	Eightmile Creek	12,035	133	Pit River	5,901	49	Mt. Washington - East	9,421
40	Fifteenmile Creek	9,374	134	Horse Creek	33,106	20	Naches River / Rattlesnake Creek	68,490
41	Mount Hood - East	16,477	135	Hat Creek Rim	15,799	15	Naneum Ridge	61,306
42	Badger Creek	33,163	136	Grasshopper Valley	1,671	55	Newberry / Paulina	36,327
43	White River	26,249	137	Smoke Creek	4,513	115	North Fork Pit River	10,937
44	Beaver Creek	16,411	138	Horse Lake	11,816	96	North Fork Willow Creek	23,326
45	Warm Springs River	22,748	139	Hat Creek	8,028	75	North Sprague	14,971
46	Olallie Basin / Mill Creek	19,154	140	Lost Creek	30,077	46	Olallie Basin / Mill Creek	19,154
47	Mt. Jefferson - East	20,177	141	Pine Creek	57,610	141	Pine Creek	57,610
48	Metolius River	44,584	142	Eagle Lake	18,910	133	Pit River	5,901
49	Mt. Washington - East	9,421	143	Thorn Lake	5,039	116	Pit River Confluence	10,554
50	Indian Ford Creek	14,786				87	Poe Valley / Bonanza	24,517
51	Three Creek / Tumalo	14,853				109	Rattlesnake Creek	37,175
52	Three Sisters - East	59,111				110	Round Mountain	5,847
53	Mt. Bachelor	17,368				35	Rowena	12,817
54	Upper Deschutes	32,191				56	Sand Springs	28,370
55	Newberry / Paulina	36,327				27	Satus Headwaters	12,400
56	Sand Springs	28,370				24	Simcoe Creek	2,627
57	Cascade Lakes	56,395				76	Sky Lakes - East	44,627
58	Diamond Peak	17,318				137	Smoke Creek	4,513
59	Dry Pine	4,663				89	Soda Mtn. / Jenny Creek	43,292
60	Crescent Creek	26,916				80	South Sprague	30,507
61	Upper Little Deschutes	18,998				84	Spencer Creek	19,470
62	Jack Creek	29,058				1	Stehekin River	83,932
63	Mt. Thielsen - East	25,567				81	Swan Lake	4,399
64	Thompson	80,783				16	Swauk Creek	9,715
65	Klamath Marsh	26,095				68	Sycan Marsh	25,738
66	Crater Lake - East	56,125				14	Teanaway River	16,822
67	Upper Williamson	28,603				83	Thomas Creek	60,491
68	Sycan Marsh	25,738				64	Thompson	80,783
68	Sycan Marsh	25,738				143	Thorn Lake	5,039
69	Winter Rim	20,148				51	Three Creek / Tumalo	14,853
70	Applegate Flats	18,763				52	Three Sisters - East	59,111
71	Lower Williamson	16,932				21	Tieton	54,876
72	Upper Sycan River	8,070				94	Twelvemile Creek	8,816
73	Lower Sycan River	15,635				105	Upper Alkali Lake	13,988
74	Upper Chewaucan	26,612				129	Upper Ash Creek	21,405
75	North Sprague	14,971				74	Upper Chewaucan	26,612
76	Sky Lakes - East	44,627				54	Upper Deschutes	32,191
77	Lower Sprague	45,438				91	Upper Dry Creek	5,224
78	Middle Sprague	16,065				79	Upper Klamath Lake	88,231
79	Upper Klamath Lake	88,231				61	Upper Little Deschutes	18,998
80	South Sprague	30,507				92	Upper Lost River	23,006
81	Swan Lake	4,399				31	Upper Rock Creek	11,255
82	Warner Mountains	59,025				123	Upper South Fork Pit River	18,474
83	Thomas Creek	60,491				72	Upper Sycan River	8,070
84	Spencer Creek	19,470				25	Upper Toppenish Creek	6,749
85	Gerber	25,579				19	Upper Wenas Creek	19,647
86	Drews Creek	34,777				6	Upper Wenatchee	66,670
87	Poe Valley / Bonanza	24,517				67	Upper Williamson	28,603
88	Miller Island	8,864				13	Upper Yakima	77,387
89	Soda Mtn. / Jenny Creek	43,292				45	Warm Springs River	22,748
90	Warner Foothills	8,443				112	Warm Springs Valley	14,969
91	Upper Dry Creek	5,224				90	Warner Foothills	8,443
92	Upper Lost River	23,006				82	Warner Mountains	59,025
93	Lower Lost River	4,761				37	West Fork Hood River	10,817
94	Twelvemile Creek	8,816				43	White River	26,249
						29	White Salmon River	45,729
						120	Whitehorse Flat	11,630
						69	Winter Rim	20,148



## East and West Cascades Ecoregions



### Map 8.5: Final Integrated Portfolios (North)

These conservation portfolios identify the places that can make the greatest contribution to conserving representative biodiversity of the East and West Cascades ecoregions. They create a common focus to galvanize actions among partners and are designed to meet the mid-risk conservation goals set for targets in the smallest area possible. Site numbers (hollow for West Cascades, bold for East Cascades) correspond to the separate lists on Map 8.4, Tables 1 and 2.

Portions of each site were selected for terrestrial, freshwater, or both sets of targets. For details on the species, natural communities, ecological systems and other targets that reside in these biologically significant areas are included Appendix in the Site Summaries. Refer to Chapter 8 in the report and the large maps on the CD for more detailed information about the portfolios.

- Final Integrated Portfolio
- Ecoregion Boundary
- Water Body
- River Corridor Sites
- Rivers
- State Boundary
- Major Road
- City

0 8 16 24 32 40 Miles

0 10 20 30 40 Kilometers



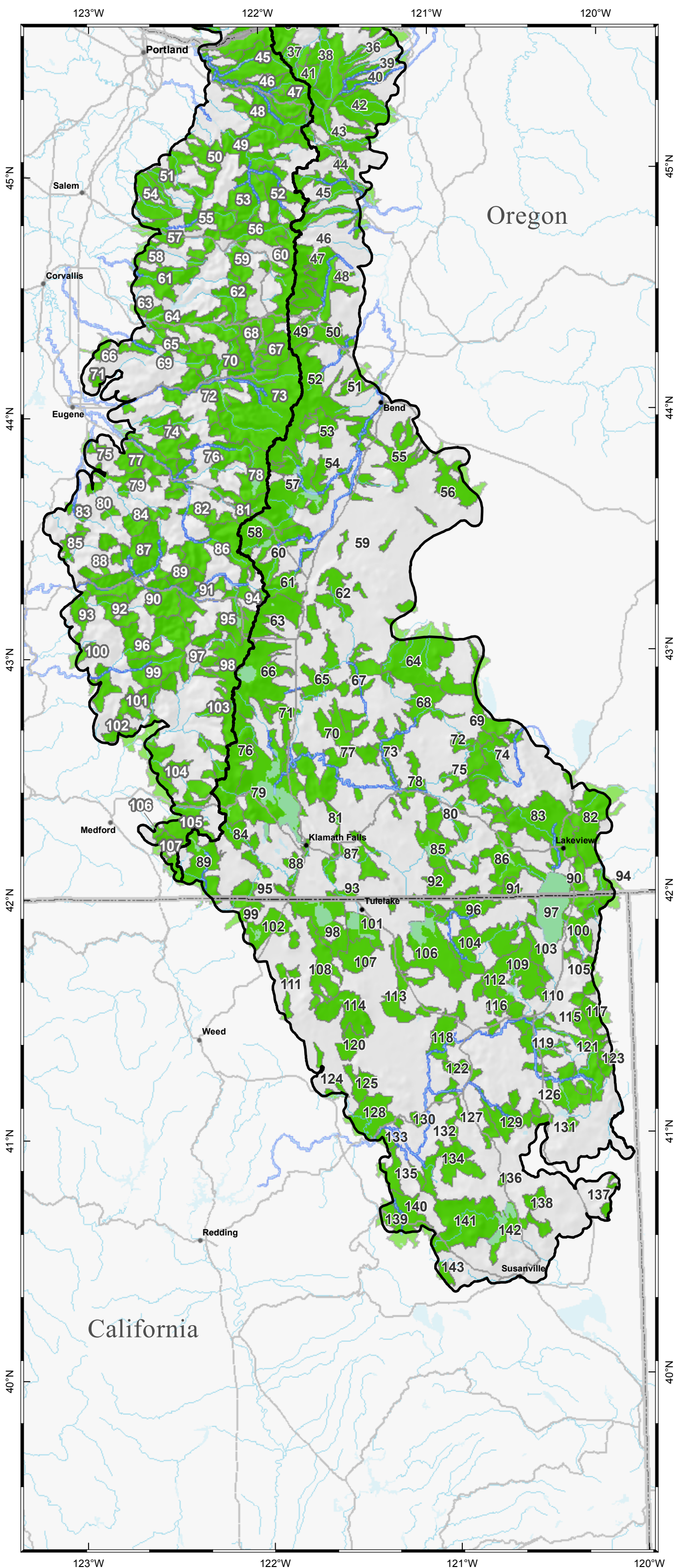
Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.













## East and West Cascades Ecoregions

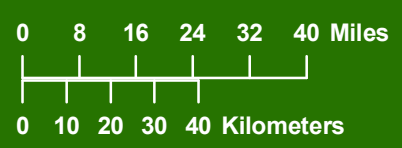


**Map 8.6: Final Integrated Portfolios (South)**

These conservation portfolios identify the places that can make the greatest contribution to conserving representative biodiversity of the East and West Cascades ecoregions. They create a common focus to galvanize actions among partners and are designed to meet the mid-risk conservation goals set for targets in the smallest area possible. Site numbers (hollow for West Cascades, bold for East Cascades) correspond to the separate lists on Map 8.4, Tables 1 and 2.

Portions of each site were selected for terrestrial, freshwater, or both sets of targets. For details on the species, natural communities, ecological systems and other targets that reside in these biologically significant areas are included in the Site Summaries. Refer to Chapter 8 in the report and the large maps on the CD for more detailed information about the portfolios.

-  Final Integrated Portfolio
-  Ecoregion Boundary
-  Water Body
-  River Corridor Sites
-  Rivers
-  State Boundary
-  Major Road
-  City

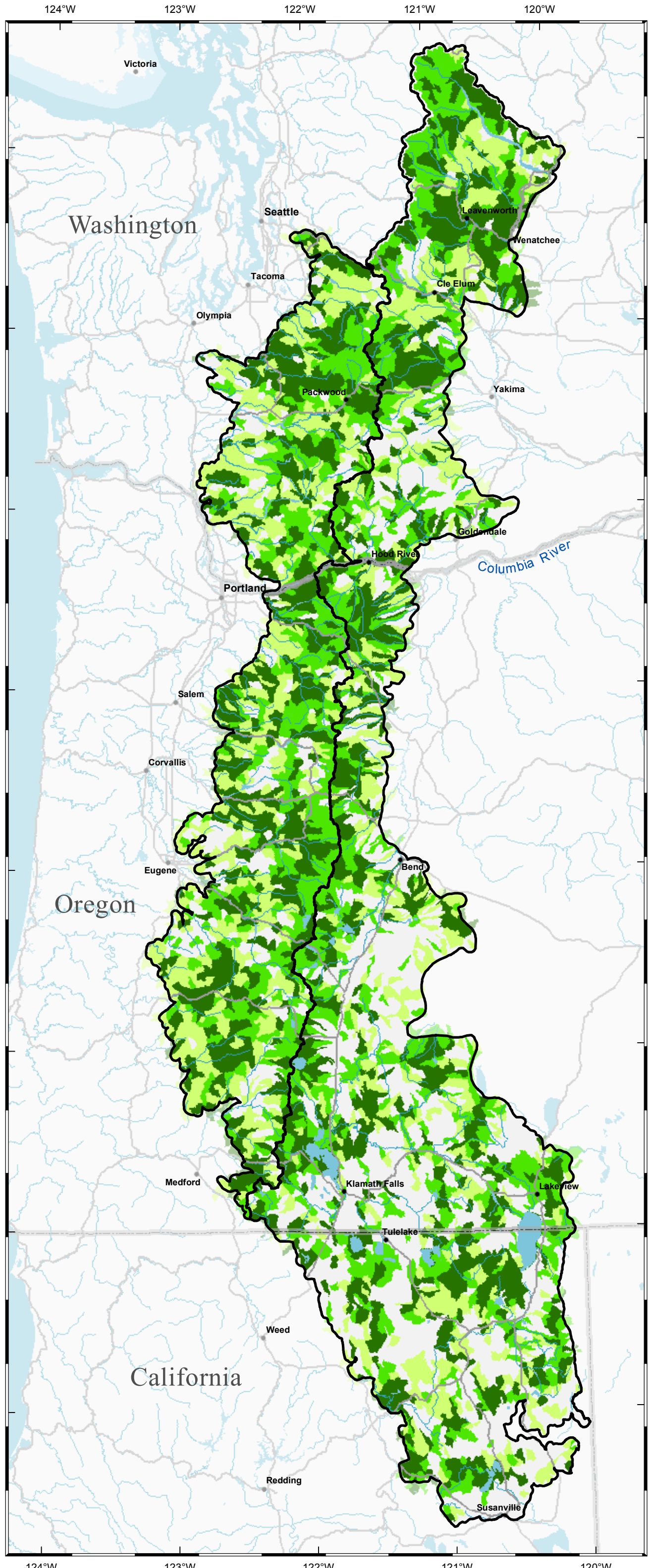


Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



## East and West Cascades Ecoregions



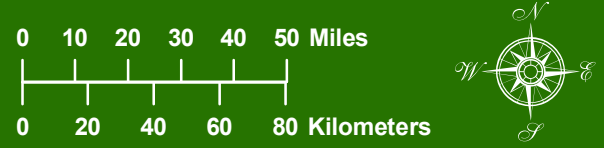
**Map 8.7: Alternative Integrated Portfolios: High, Middle, and Low Risk**

The size of the conservation portfolio is mainly determined by the goals - the larger the goals, the larger the portfolio. To explore how the goals influence the size of the portfolio, we created higher and lower risk alternative portfolios that were derived from the main, or mid-risk, portfolio. The alternative portfolios are nested. That is, all the assessment units (AUs) in the higher risk portfolio belong to the mid-risk portfolio, and all AUs in the mid-risk portfolio belong to the lower risk portfolio. The mid risk portfolio is also found on Map 8.4 and 8.5. See Chapter 8.10 for more information.

Level of Risk to Biodiversity	Systems Goal Level (% of historical)	Size (% of Ecoregions)
Higher	48%	73%
Middle	30%	50%
Lower	18%	28%

**Portfolio Risk Level**

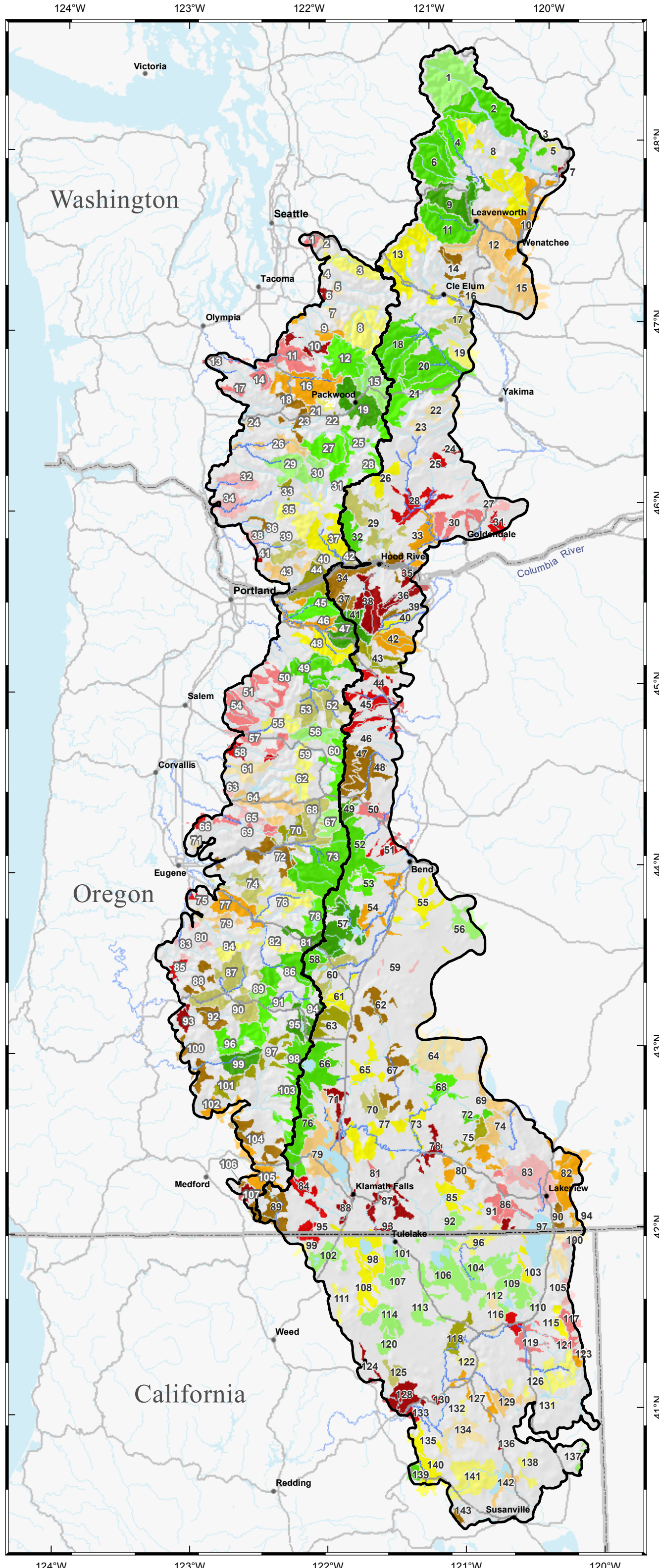
- High Risk
- Middle Risk
- Low Risk
- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Service

June, 2007

The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.



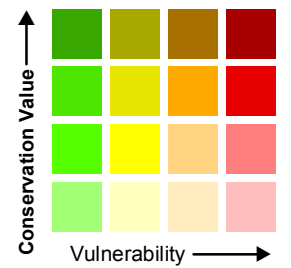
## East and West Cascades Ecoregions



**Map 9.1: Integrated Portfolio Sites by Relative Importance**

The integrated portfolio consists of 250 conservation sites - 107 in the West Cascades and 143 in the East Cascades Ecoregions. Every conservation area is worthy of action, however, not all areas are of equal value or in need of attention with the same degree of urgency. We developed a tool that can be customized for a variety of users and used it for an automated prioritization of the mid-risk Final Portfolios. Prioritization evaluated the relative importance among sites using criteria for measuring conservation value (Irreplaceability) and vulnerability (Suitability). See Chapter 9 for more information. See Map 9.1, Table 1 for the list of sites in each category.

### Conservation Value vs. Vulnerability



- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City

0 10 20 30 40 50 Miles

0 20 40 60 80 Kilometers



Data Sources:  
 The Nature Conservancy  
 Washington Department of Fish and Wildlife  
 Washington Department of Natural Resources  
 United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.

Conservation Value

<p>Cascade Lakes (57e) Jackson Creek (99w) Middle Wenatchee (9e) Mount Hood - East (41e) Mount Hood - West (47w) Mt. Bailey (95w) Mt. Thielsen - West (94w) Mt. Washington - East (49e) Salt Creek (81w) Upper Cowlitz River (19w)</p>	<p>Big Valley North (118e) Blue River (70w) Columbia Gorge - West (44w) Elkhorn Peak (101w) Mt. Thielsen - East (63e) North Sprague (75e) Purcell Slough (22w) Rogue River Headwaters (97w) South St Helens (33w) White River (43e)</p>	<p>Antelope Creek - Cascades (106w) Big Butte Creek (104w) Columbia Gorge - East (34e) Cowlitz Riffe Lake (23w) Eightmile Creek (39e) Jack Creek (62e) Little River (92w) Lower Lewis River (36w) Metolius River (48e) Middle South Umpqua (100w) Mt. Jefferson - East (47e) Rock Creek (North Umpqua) (88w) Soda Mtn. / Jenny Creek (89e) South Fork and Lower McKenzie (72w) Teanaway River (14e) Thorn Lake (143e) Tilton Headwaters (18w) Upper Williamson (67e) Warner Foothills (90e) West Fork Hood River (37e)</p>	<p>Bear Creek (124e) Big Valley (130e) Boise Ridge (6w) Cavitt Creek / Peel (93w) Chelan Butte (7e) Fall River (128e) Grasshopper Valley (136e) Hood River (38e) Lower Lost River (93e) Lower Williamson (71e) Middle Sprague (78e) Mill Creek Forks (36e) Miller Island (88e) Morgan Creek (41w) Poe Valley / Bonanza (87e) Rowena (35e) Scatter Creek - Cascades (13w) Simcoe Creek (24e) Upper Dry Creek (91e) Upper Puyallup River (10w) Walker Creek (107w)</p>
<p>Chelan (2e) Crater Lake - East (66e) Crater Lake - West (98w) Diamond Peak (58e) Hat Creek (139e) Icicle Creek (11e) Little Naches Headwaters (18e) Little White Salmon River (32e) Naches River / Rattlesnake Creek (20e) Roaring River / Oak Grove Fork Clackamas (49w) Sky Lakes - East (76e) Three Sisters - East (52e) Three Sisters - West (73w) Upper Middle Fork Willamette (86w) Upper Sycan River (72e) Upper Wenatchee (6e)</p>	<p>Adobe Flat (125e) Applegate Flats (70e) Bull of the Woods (53w) Columbia Gorge - Collins Cr. (42w) Crescent Creek (60e) East Fork Lewis Headwaters (39w) Fall Creek (74w) L T Murray (17e) Middle North Umpqua (90w) Rock Creek (40w) Steamboat and Canton Creeks (87w) Upper Clackamas (52w) Upper McKenzie (68w) White Salmon River (29e)</p>	<p>Badger Creek (42e) Carbon River (9w) Columbia Rocky Reach (10e) Elk Trail Foothills (102w) Kiona Creek (21w) Little Butte Creek - Cascades (105w) Lower Alkali Lake (121e) Lower Ash and Willow Creeks (127e) Lower Klickitat River (33e) Middle Fork Willamette (77w) Sandy River - Cascades (46w) South Sprague (80e) Upper Deschutes (54e) Upper Nisqually River (16w) Warner Mountains (82e)</p>	<p>Beaver Creek (44e) Coast Fork Willamette (75w) Horse Rock Ridge (66w) Middle Klickitat River (28e) Middle Upper Klamath River (95e) Olallie Basin / Mill Creek (46e) Pit River (133e) Pit River Confluence (116e) Snow Peak / Thomas Creek (58w) Spencer Creek (84e) Three Creek / Tumalo (51e) Upper Calapooya Creek (85w) Upper Rock Creek (31e) Upper Toppenish Creek (25e) Warm Springs River (45e)</p>
<p>Bull Run (45w) Chiwawa River (4e) Cispus River (25w) Lower Cispus Tributaries (27w) Mt Rainier (12w) Mt. Adams - West (28w) Mt. Bachelor (53e) Mt. Jefferson - West (60w) Sky Lakes - West (103w) Sycan Marsh (68e) Tieton (21e) Upper Lewis River (31w) Upper North Umpqua (91w) Upper South Umpqua (96w) Waldo Lake (78w)</p>	<p>Badger Basin / Willow Creek (108e) Entiat River (8e) Fifteenmile Creek (40e) Gerber (85e) Goose Lake West Shore (103e) Hat Creek Rim (135e) Klamath Marsh (65e) Lost Creek (140e) Lower Klamath Lake (98e) Lower Sprague (77e) Lower Sycan River (73e) Mt. Adams - East (26e) Newberry / Paulina (55e) North Fork Pit River (115e) Salmon - Huckleberry (48w) Upper Little Deschutes (61e) Upper Yakima (13e) Wind River (37w)</p>	<p>Eagle Lake (142e) Lower Wenatchee (12e) Naneum Ridge (15e) Row River / Mt. June (79w) South Santiam (64w) Toutle Green River (26w) Upper Ash Creek (129e) Upper Chewaucan (74e) Upper Klamath Lake (79e) Washougal River (43w) Winston Creek (24w) Winter Rim (69e)</p>	<p>Deschutes (WA) (14w) Draws Creek (86e) Indian Ford Creek (50e) Issaquah Creek (1w) Little Klickitat River (30e) Lower South Fork Pit River (119e) Mashel / Ohop (11w) Middle Alkali Lake (117e) Middle North Santiam (57w) Newaukum Headwaters (17w) Silver and Abiqua Creeks (54w) Swan Lake (81e) Upper Calapooya River (69w) Upper Molalla (50w)</p>
<p>Ancient Tule Lake (101e) Black Canyon (3e) Boles / Fletcher Creek (104e) Boulder Creek (89w) Breitenbush River (56w) Butte Valley (102e) Clear Lake (106e) Cowlitz Headwaters (15w) Egg Lake (113e) Goose Lake (97e) Lava Beds (107e) Medicine Lake (114e) Mt. Washington - West (67w) Muddy River Tributaries (30w) Rattlesnake Creek (109e) Round Mountain (110e) Sand Springs (56e) Smoke Creek (137e) Stehekin River (1e) Toutle St Helens (29w) Upper Lost River (92e) Whitehorse Flat (120e)</p>	<p>Antelope and Butte Creeks (111e) Antoine Creek (5e) Ball Mountain (99e) Big Valley South (132e) Blowout Cr. / Coopers Ridge (59w) Fairview Peak (84w) Hills Creek (82w) Horse Lake (138e) Middle Ash Creek (122e) Middle Lewis River (35w) Middle Santiam (62w) Middle South Fork Pit River (126e) North Fork Middle Fork Willamette (76w) North Fork Willow Creek (96e) Opal Creek (55w) Pine Creek (141e) Upper Cedar River (3w) Upper South Fork Pit River (123e) Upper Wenas Creek (19e) Upper White River (8w) Whalehead Ridge (20w)</p>	<p>Ahtanum / Cowiche (22e) Clearwater (7w) Crabtree Creek and Mtn. (61w) Goose Lake East Shore (100e) Horse Creek (134e) Howard Hanson (5w) Kanaskat (4w) Klickitat Headwaters (23e) Madeline Plains West (131e) Mohawk / McGowan Creek (71w) Raging River (2w) Swauck River (16e) Thompson (64e) Twelvemile Creek (94e) Warm Springs Valley (112e)</p>	<p>Butte Creek (51w) Coweeman River (32w) Dry Pine (59e) East Fork Lewis River (38w) Kalama River (34w) McDowell Creek (63w) Mosby Creek (80w) Satus Headwaters (27e) Thomas Creek (83e) Upper Alkali Lake (105e) Upper Coast Fork Willamette (83w) Wiley Creek (65w)</p>

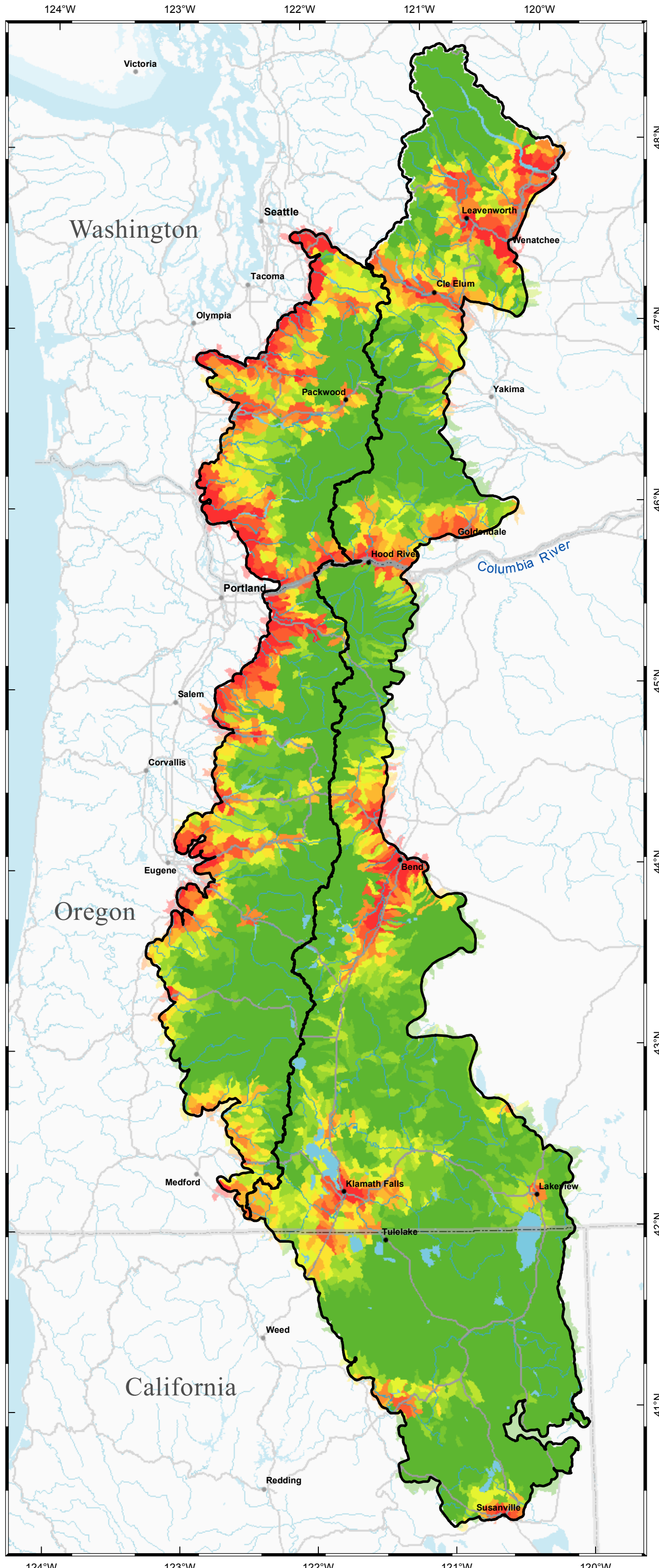
## Vulnerability

**Map 9.1, Table 1: Integrated Portfolio Sites by Relative Importance**



This table identifies the automated relative importance of 250 integrated portfolio sites across the East and West Cascades Ecoregions using criteria for measuring conservation value and vulnerability, as depicted in Map 9.1. We based conservation value on irreplaceability measures, one of the MARXAN model outputs. Vulnerability was based on the suitability index which was an input to the model.

Portfolio sites are sorted in the table according to factors important for biodiversity value as well as those that pose threats. The site names are listed according to their relative ranking, followed by the index number and "e" or "w" for East Cascades or West Cascades Ecoregion for ease of reference to Map 9.1.



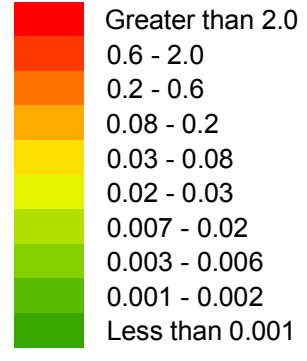
## East and West Cascades Ecoregions



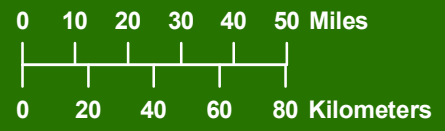
### Map 10.1: Population Growth Analysis

To gauge the threat of population growth on our conservation priorities, we compared our assessment units (AUs) against Western Future's growth forecasts (Theobald, 2003). Using Western Future's 2000 and 2020 population density grids, the average change (humans/hectare) was calculated for each AU. See Chapter 10 for more details and the list of portfolio sites with the highest population density increases.

#### Population Change / ha



- Ecoregion Boundary
- Water Body
- Rivers
- State Boundary
- Major Road
- City



Data Sources:  
The Nature Conservancy  
Washington Department of Fish and Wildlife  
Washington Department of Natural Resources  
United States Geological Survey

June, 2007



The Nature Conservancy (TNC) does not verify or guarantee the accuracy, reliability, or completeness of any data provided. TNC provides this data without any warranty of any kind whatsoever, either express or implied. TNC shall not be liable for incidental, consequential, or special damages arising out of the use of any data provided by TNC.