

# ECOLOGICAL PROVINCES

The program organizes the more than 50 subbasins of the Columbia River Basin into 11 ecological provinces, which are groups of adjoining subbasins with similar climates and geology. Because each province has its own distinct environment and fish and wildlife populations, each will have its own vision, biological objectives, and strategies. Those elements will be adopted in a later rulemaking. The province level visions, objectives, and strategies will be consistent with those adopted at the basin level.

## A. GEOGRAPHICAL STRUCTURE

The Columbia River is an integrated biophysical system, but the basin is too large and complex for us to understand or manage as a single entity. At the same time, managing each piece as an independent entity risks losing appreciation for the interaction between components and their collective performance as a system. For this reason, the Council is adopting an ecologically based structure for the Columbia River ecosystem that emphasizes the interrelationships of the parts, including the Canadian portion of the basin to the extent information is available.

Within the Columbia River ecosystem, the scientific foundation defines areas with distinct ecological character that it termed ecological provinces (Figure 1). Ecological provinces are distinct subdivisions of the landscape containing ecologically related subbasins. The provinces are distinguished primarily on patterns related to hydrology, climate and regional geology.

These physical patterns relate to biological population patterns as well. Populations within a province are more likely to be related to other populations within that province than to populations in other provinces. Life history and other characteristics

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should group into patterns that reflect physical habitat structure.

Each province consists of a set of adjoining watersheds with similar ecological conditions and tributaries that ultimately connect, flowing into the same river or lake. These provinces are thus appropriate units around which to organize and evaluate recovery objectives and efforts.

For our purposes, a subbasin can only be in one province; boundaries do not cut across subbasins. Hydroelectric dams, including the major dams on the Columbia and Snake rivers, are also considered to be within provinces.

Based on patterns of terrestrial vegetation, the headwaters of a subbasin are often distinct from the lower reaches and have been put into separate areas in other schemes. However, for purposes of planning, it makes little sense to split subbasins. Instead, we treat each subbasin as an integral component of a set of related subbasins forming a province. Table 1 displays the provinces and subbasins of the Columbia River Basin.

## B. PROVINCE VISIONS, OBJECTIVES, AND STRATEGIES

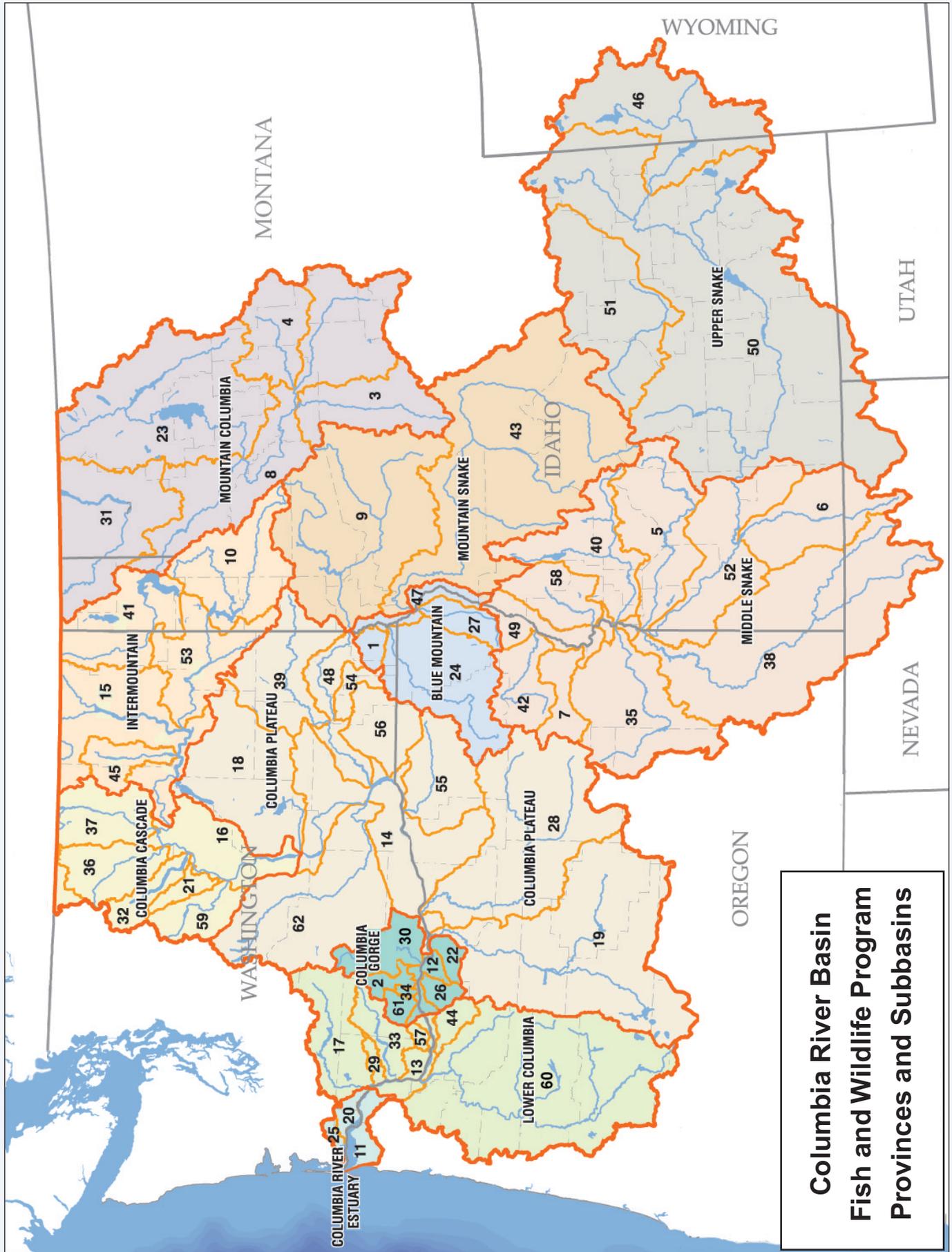
The Council has not yet adopted specific visions, objectives, or strategies for ecological provinces. Before offering more specific guidance at the province level, the Council believes that it is important to complete a preliminary assessment at the province level, identifying the attributes, needs, and opportunities that are unique to each province. That assessment is expected to be completed by early 2001. Upon completion of subbasin planning, the Council expects to amend into the program appropriate visions, objectives, and strategies for the provinces.

Biological objectives at the province scale guide development of the program at the subbasin scale. It is likely that there will be some iteration among biological objectives at the various scales as information is developed. However, the Council intends to develop a provisional set of objectives at the province scale to provide planning guidelines for subbasin planning. These may be revisited in the future to reflect the experience gained in planning at the subbasin level.

Biological objectives at the province level will be used to 1) “size” the program and describe the amount of change needed across the province; 2) help determine cost effectiveness of program measures; and 3) provide the basis for program accountability and the monitoring, evaluation and research associated with this program. The biological objectives at the province level are not intended to be prescriptive or regulatory in nature. Instead, they provide guidance for planning at the subbasin level.

## C. OCEAN

For planning purposes under this program, the Council also recognizes the North Pacific Ocean as a geographic unit that should be considered in research, monitoring, and evaluation actions.



## Subbasins

- |                          |                             |
|--------------------------|-----------------------------|
| 1 Asotin                 | 32 Lake Chelan              |
| 2 Big White Salmon       | 33 Lewis                    |
| 3 Bitterroot             | 34 Little White Salmon      |
| 4 Blackfoot              | 35 Malheur                  |
| 5 Boise                  | 36 Methow                   |
| 6 Bruneau                | 37 Okanogan                 |
| 7 Burnt                  | 38 Owyhee                   |
| 8 Clark Fork             | 39 Palouse                  |
| 9 Clearwater             | 40 Payette                  |
| 10 Coeur D'Alene         | 41 Pend Oreille             |
| 11 Columbia Estuary      | 42 Powder                   |
| 12 Columbia Gorge        | 43 Salmon                   |
| 13 Columbia Lower        | 44 Sandy                    |
| 14 Columbia Lower Middle | 45 San Poil                 |
| 15 Columbia Upper        | 46 Snake Headwater          |
| 16 Columbia Upper Middle | 47 Snake Hells Canyon       |
| 17 Cowlitz               | 48 Snake Lower              |
| 18 Crab                  | 49 Snake Lower Middle       |
| 19 Deschutes             | 50 Snake Upper              |
| 20 Elochoman             | 51 Snake Upper Closed Basin |
| 21 Entiat                | 52 Snake Upper Middle       |
| 22 Fifteenmile           | 53 Spokane                  |
| 23 Flathead              | 54 Tucannon                 |
| 24 Grande Ronde          | 55 Umatilla                 |
| 25 Grays                 | 56 Walla Walla              |
| 26 Hood                  | 57 Washougal                |
| 27 Imnaha                | 58 Weiser                   |
| 28 John Day              | 59 Wenatchee                |
| 29 Kalama                | 60 Willamette               |
| 30 Klickitat             | 61 Wind                     |
| 31 Kootenai              | 62 Yakima                   |

## Ecological Provinces

- |   |                        |   |                   |
|---|------------------------|---|-------------------|
|  | Columbia River Estuary |  | Blue Mountain     |
|  | Lower Columbia         |  | Mountain Columbia |
|  | Columbia Gorge         |  | Mountain Snake    |
|  | Columbia Plateau       |  | Middle Snake      |
|  | Columbia Cascade       |  | Upper Snake       |
|  | Intermountain          |   |                   |

## Columbia River Basin Including Canada

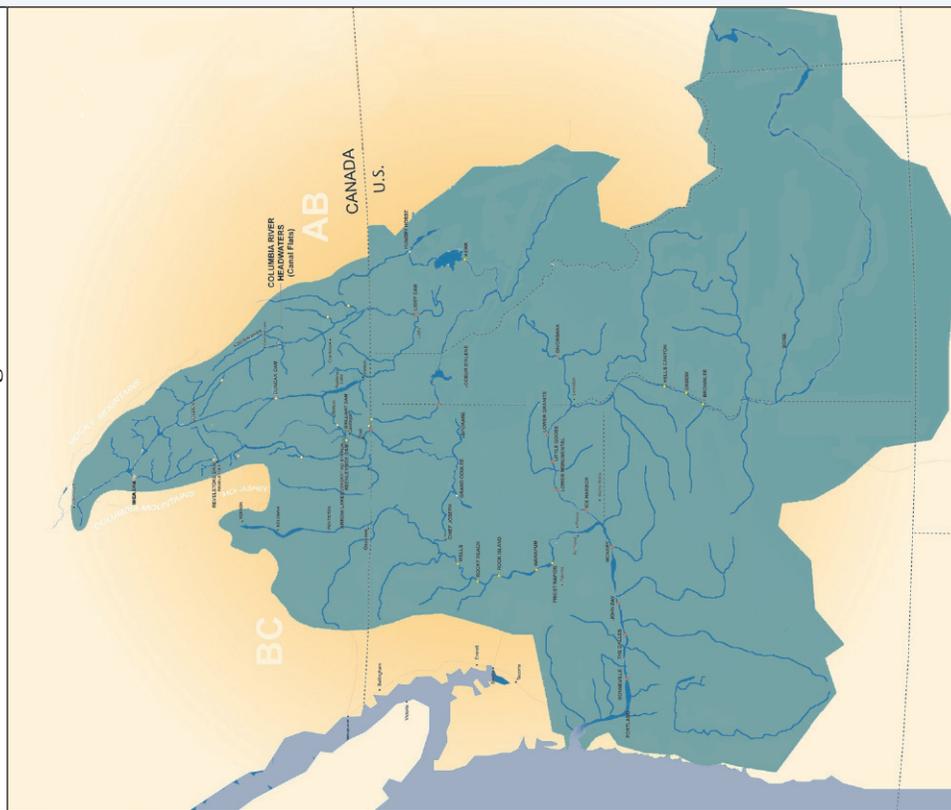


Table 1: Geographic Structure of the Columbia River Ecosystem Excluding the Marine Landscape

Landscape	Province	Subbasin
Columbia River Basin	Columbia River Estuary	<ul style="list-style-type: none"> <li>• Elochoman</li> <li>• Grays</li> <li>• Columbia Estuary (Columbia River and all other tributaries from the ocean upstream to the confluence with the Cowlitz river)</li> </ul>
	Lower Columbia	<ul style="list-style-type: none"> <li>• Cowlitz</li> <li>• Kalama</li> <li>• Lewis</li> <li>• Sandy</li> <li>• Washougal</li> <li>• Willamette</li> <li>• Columbia Lower (Columbia River and all other tributaries upstream of the Cowlitz to, but not including, Bonneville Dam)</li> </ul>
	Columbia Gorge	<ul style="list-style-type: none"> <li>• Big White Salmon</li> <li>• Fifteenmile</li> <li>• Hood</li> <li>• Klickitat</li> <li>• Little White Salmon</li> <li>• Wind</li> <li>• Columbia Gorge (Columbia River and all other tributaries between, and including Bonneville and The Dalles dams)</li> </ul>
	Columbia Plateau	<ul style="list-style-type: none"> <li>• Crab</li> <li>• Deschutes</li> <li>• John Day</li> <li>• Palouse</li> <li>• Tucannon</li> <li>• Umatilla</li> <li>• Walla Walla</li> <li>• Yakima</li> <li>• Columbia Lower Middle (Columbia River and all other tributaries upstream of The Dalles up to and including Wanapum Dam)</li> <li>• Snake Lower (Snake River and all other tributaries between the confluence with the Columbia river and the confluence with the Clearwater River)</li> </ul>
	Columbia Cascade	<ul style="list-style-type: none"> <li>• Entiat</li> <li>• Lake Chelan</li> <li>• Methow</li> <li>• Okanogan</li> <li>• Wenatchee</li> <li>• Columbia Upper Middle (Columbia River and all other tributaries upstream of Wanapum Dam to, but not including, chief Joseph Dam)</li> </ul>
	Intermountain	<ul style="list-style-type: none"> <li>• Coeur d'Alene, including Coeur d'Alene Lake</li> <li>• Pend Oreille</li> <li>• San Poil</li> <li>• Spokane</li> <li>• Columbia Upper (Columbia River and all other tributaries from Chief Joseph Dam to the international border)</li> </ul>
	Mountain Columbia	<ul style="list-style-type: none"> <li>• Bitterroot</li> <li>• Blackfoot</li> <li>• Clark Fork</li> <li>• Flathead</li> <li>• Kootenai</li> </ul>
	Blue Mountain	<ul style="list-style-type: none"> <li>• Asotin</li> <li>• Grande Ronde</li> <li>• Imnaha</li> <li>• Snake Hells Canyon (Snake River and all other tributaries upstream of the confluence with the Clearwater River to, and including, Hells Canyon Dam)</li> </ul>
	Mountain Snake	<ul style="list-style-type: none"> <li>• Clearwater</li> <li>• Salmon</li> </ul>
	Middle Snake	<ul style="list-style-type: none"> <li>• Boise</li> <li>• Bruneau</li> <li>• Burnt</li> <li>• Malheur</li> <li>• Owyhee</li> <li>• Payette</li> <li>• Powder</li> <li>• Weiser</li> <li>• Snake Lower Middle (Snake River and all other tributaries upstream of Hells Canyon Dam to the confluence with the Boise River)</li> <li>• Snake Upper Middle (Snake River and all other tributaries from the confluence with the Boise River upstream to the confluence with Clover Creek near the town of King Hill)</li> </ul>
Upper Snake	<ul style="list-style-type: none"> <li>• Upper Snake (Snake River and tributaries from Clover Creek upstream to the headwaters of the Henry's Fork)</li> <li>• Upper Closed Basin</li> <li>• Headwaters of the Snake (Snake River and all tributaries from the Heise gauging station upstream to headwaters in Wyoming)</li> </ul>	