

Ecoregions of the Pacific Northwest

(Idaho, Oregon, Washington)

Ecoregions are areas where ecosystems (and the type, quality, and quantity of environmental resources) are generally similar. They are designed to serve as a spatial framework for the research, assessment, management, and monitoring of ecosystems and ecosystem components. These Level III and IV ecoregions, compiled at a scale of 1:250,000, revise and subdivide an earlier, smaller-scale national ecoregion map (Omernik, 1987). The ecoregions were identified by analyzing the spatial patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity (Omernik, 1987, 1995). These phenomena include geology, landforms, soils, vegetation, climate, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. An ecoregion framework is critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources within the same geographic areas (McMahon and others, 2001; Omernik and Griffith, 2014).

A Roman numeral hierarchical scheme has been adopted for different levels of ecological regions. Level I is the most general level, dividing North America into 15 ecological regions. Level II divides the continent into 30 regions (Commission for Environmental Cooperation, 1997, 2006). At level III, the continent contains 183 ecological regions of which 105 occur in the continental United States (United States Environmental Protection Agency [U.S. EPA], 2013; Wiken and others, 2011).

The Level III and IV ecoregions of the Pacific Northwest were mapped in state-level projects in Idaho (McGrath and others, 2001), Oregon (Thorson and others, 2003) and Washington (Clarke and Bryce, 1997; Pater and others, 1998). These projects were conducted primarily by the U.S. EPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon) in collaboration with U.S. EPA Region 10, state resource management agencies, and other federal agencies, such as the U.S. Department of Agriculture

(USDA)–Natural Resources Conservation Service, USDA–Forest Service, U.S. Geological Survey, and the Bureau of Land Management. The mapping was associated with an interagency effort to develop a common framework of ecological regions (McMahon and others, 2001). Although there are differences in the conceptual approaches and mapping methodologies used by the different federal agencies for developing their own regional frameworks, these collaborative ecoregion projects were a step toward attaining consensus and consistency in ecoregion frameworks for the entire nation.

Explanations of the methods used to define these ecoregions are given in Omernik (1995, 2004) and Omernik and Griffith (2014). Additional maps, publications, and GIS data for U.S. and North American ecoregions can be obtained at www.epa.gov/eco-research/ecoregions.

REFERENCES

- Clarke, S.E., and Bryce, S.A., eds., 1997, Hierarchical subdivisions of the Columbia Plateau and Blue Mountains Ecoregions, Oregon and Washington. Portland: U.S. Department of Agriculture–Forest Service General Technical Report PNW-GTR-395, 114 p.
- Commission for Environmental Cooperation, 1997, Ecological regions of North America – toward a common perspective: Montreal, Quebec, Canada, Commission for Environmental Cooperation, 71 p. (map revised 2006), www.epa.gov/eco-research/ecoregions-north-america.
- McGrath C.L., Woods A.J., Omernik, J.M., Bryce, S.A., Edmondson, M., Nesser, J.A., Shelden, J., Crawford, R.C., Comstock, J.A., and Plocher, M.D., 2002, Ecoregions of Idaho (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,350,000).
- McMahon, G., Gregonis, S.M., Waltman, S.W., Omernik, J.M., Thorson, T.D., Freouf, J.A., Rorick, A.H., and Keys, J.E., 2001, Developing a spatial framework of common ecological regions for the conterminous United States: Environmental Management, v. 28, no. 3, p. 293-316.

Omernik, J.M., 1987, Ecoregions of the conterminous United States (map supplement): Annals of the Association of American Geographers, v. 77, no. 1, p. 118-125, scale 1:7,500,000.

Omernik, J.M., 1995, Ecoregions – a framework for environmental management, in Davis, W.S. and Simon, T.P., eds., Biological assessment and criteria-tools for water resource planning and decision making: Boca Raton, Florida, Lewis Publishers, p. 49-62.

Omernik, J.M., 2004, Perspectives on the nature and definition of ecological regions: Environmental Management, v. 34, Supplement 1, p. s27-s38.

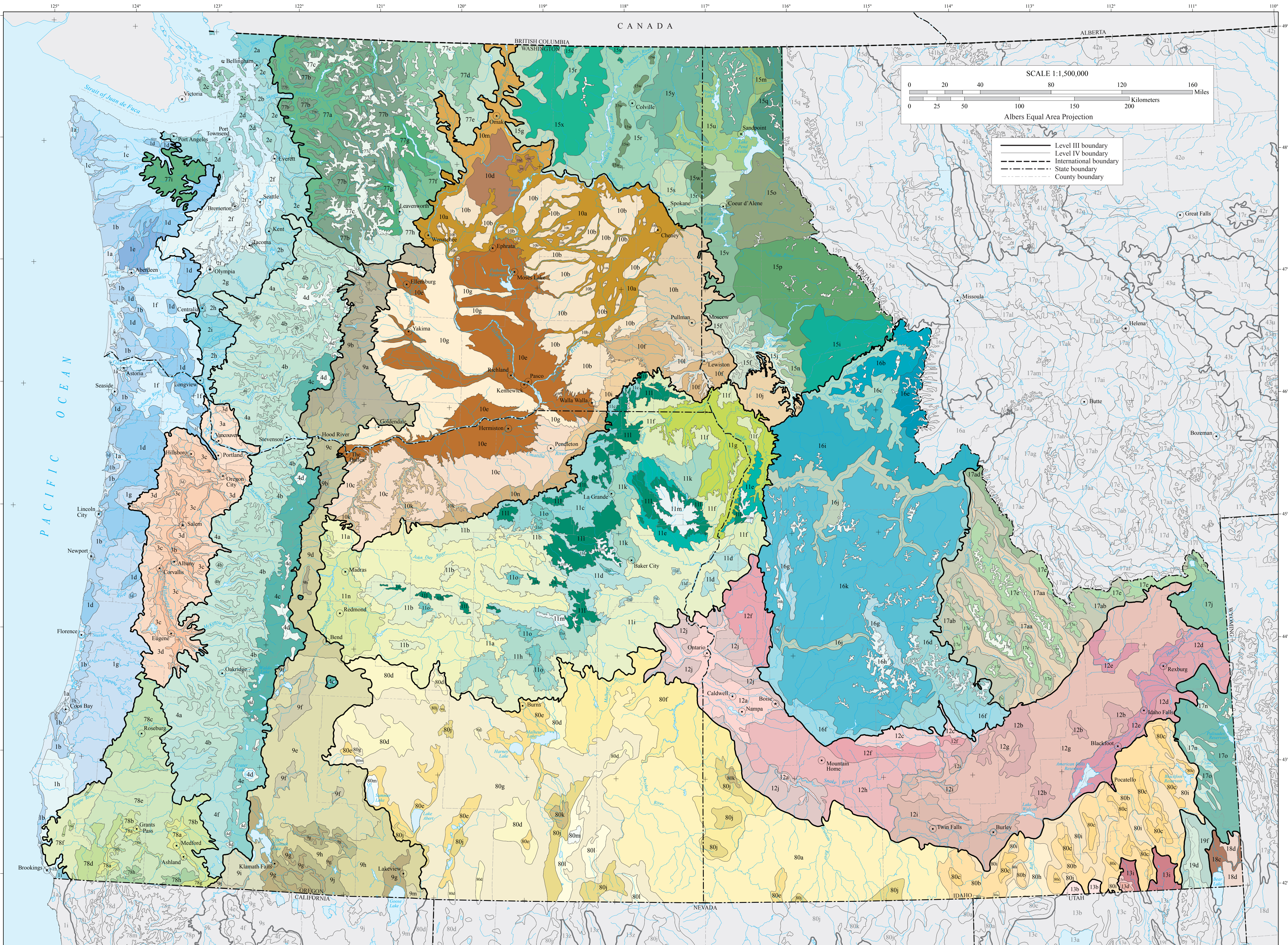
Omernik, J.M., and Griffith, G.E., 2014, Ecoregions of the conterminous United States – evolution of a hierarchical spatial framework: Environmental Management, v. 54, no. 6, p. 1249-1266, <http://dx.doi.org/10.1007/s00267-014-0364-1>

Pater, D.E., Bryce, S.A., Thorson, T.D., Kagan, J., Chappell, C., Omernik, J.M., Azevedo, S.H., and Woods, A.J., 1998, Ecoregions of Western Washington and Oregon (2 sided color poster with map, descriptive text, summary tables, and photographs): U.S. Geological Survey, Reston, VA. Scale 1:1,350,000.

Thorson, T.D., Bryce, S.A., Lammers, D.A., Woods, A.J., Omernik, J.M., Kagan, J., Pater, D.E., and Comstock, J.A., 2003, Ecoregions of Oregon (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1:1,500,000).

U.S. Environmental Protection Agency, 2013, Level III ecoregions of the continental United States: Corvallis, Oregon, U.S. EPA, Western Ecology Division, National Health and Environmental Effects Research Laboratory, www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states.

Wiken, E., Jimenez Nava, F., and Griffith, G., 2011, North American Terrestrial Ecoregions - Level III. Commission for Environmental Cooperation, Montreal, Canada, 149 p., http://ecologicalregions.info/btm/pubs/NA_TerrestrialEcoregions.level3_Final-2june11_CEC.pdf



1 Coast Range

- 1a Coastal Lowlands
- 1b Coastal Uplands
- 1c Low Olympics
- 1d Volcanics
- 1e Outwash
- 1f Willapa Hills
- 1g Mid-Coastal Sedimentary
- 1h Southern Oregon Coastal Mountains
- 1i Northern Franciscan Redwood Forest

2 Puget Lowland

- 2a Fraser Lowland
- 2b Eastern Puget Riverine Lowlands
- 2c San Juan Islands
- 2d Olympic Rainshadow
- 2e Eastern Puget Uplands
- 2f Central Puget Lowland
- 2g Southern Puget Prairies
- 2h Cowitz/Chehalis Foothills
- 2i Cowitz/Newaukum Prairie Floodplains

3 Willamette Valley

- 3a Portland/Vancouver Basin
- 3b Willamette River and Tributaries Gallery Forest
- 3c Prairie Terraces
- 3d Valley Foothills

4 Cascades

- 4a Western Cascades Lowlands and Valleys
- 4b Western Cascades Montane Highlands
- 4c Cascade Crest Montane Forest
- 4d Cascades Subalpine/Alpine
- 4e High Southern Cascades Montane Forest
- 4f Low Southern Cascades Mixed Conifer Forest

9 Eastern Cascades Slopes and Foothills

- 9a Yakima Plateau and Slopes
- 9b Grand Fir Mixed Forest
- 9c Oak/Conifer Foothills
- 9d Ponderosa Pine/Bitterbrush Woodland
- 9e Pumice Plateau
- 9f Pumice Plateau Basins
- 9g Klamath/Goose Lake Basins
- 9h Fremont Pine/Fir Forest
- 9i Southern Cascades Slope
- 9j Klamath Juniper Woodland/Devils Garden
- 9m Warner Mountains
- 9n Old Cascades

10 Columbia Plateau

- 10a Channeled Scablands
- 10b Loess Islands
- 10c Umatilla Plateau
- 10d Okanogan Drift Hills
- 10e Pleistocene Lake Basins
- 10f Dissected Loess Uplands
- 10g Yakima Folds
- 10h Palouse Hills
- 10i Deep Loess Foothills
- 10j Nez Perce Prairie
- 10k Deschutes/John Day Canyons
- 10l Lower Snake and Clearwater Canyons
- 10m Okanogan Valley
- 10n Umatilla Dissected Uplands

11 Blue Mountains

- 11a John Day/Clarno Uplands
- 11b John Day/Clarno Highlands
- 11c Maritime-Influenced Zone
- 11d Melange
- 11e Wallawas/Seven Devils Mountains
- 11f Canyons and Dissected Uplands
- 11g Canyons and Dissected Uplands
- 11h Continental Zone Highlands
- 11i Continental Zone Foothills
- 11j Blue Mountain Basins
- 11k Mesic Forest Zone
- 11m Subalpine Zone
- 11n Deschutes River Valley
- 11o Cold Basins

12 Snake River Plain

- 12a Treasure Valley
- 12b Lava Fields
- 12c Camas Prairie
- 12d Dissected Plateaus and Teton Basin
- 12e Upper Snake River Plain
- 12f Semiarid Foothills
- 12g Eastern Snake River Basalt Plains
- 12h Mountain Home Uplands
- 12i Magic Valley
- 12j Unwooded Alkaline Foothills

13 Central Basin and Range

- 13a Shadscale-Dominated Saline Basins
- 13c Sagebrush Basins and Slopes
- 13d Woodland- and Shrub-Covered Low Mountains
- 13i Malad and Cache Valleys

15 Northern Rockies

- 15f Grassy Potlatch Ridges
- 15g Western Okanogan Semiarid Foothills
- 15h High Northern Rockies
- 15i Clearwater Mountains and Breaks
- 15j Lower Clearwater Canyons
- 15m Kootenai Valley
- 15n Weippe Prairie
- 15o Coeur d'Alene Metasedimentary Zone
- 15p St. Joe Schist-Gneiss Zone
- 15q Purcell-Cabinet-North Bitterroot Mountains
- 15r Okanogan-Colville Xeric Valleys and Foothills
- 15s Spokane Valley Outwash Plains
- 15u Inland Maritime Foothills and Valleys
- 15v Northern Idaho Hills and Low Relief Mountains
- 15w Western Selkirk Maritime Forest
- 15x Okanogan Highland Dry Forest
- 15y Selkirk Mountains

16 Idaho Batholith

- 16b Lochsa Uplands
- 16c Lochsa-Selway-Clearwater Canyons
- 16d Dry, Partly Wooded Mountains
- 16e Glaciated Bitterroot Mountains and Canyons
- 16f Foothill Shrublands-Grasslands
- 16g High Glacial Drift-Filled Valleys
- 16h High Idaho Batholith
- 16i South Clearwater Forested Mountains
- 16j Hot Dry Canyons
- 16k Southern Forested Mountains

17 Middle Rockies

- 17e Baren Mountains
- 17h Alpine Zone
- 17i West Yellowstone Plateau
- 17j Gneissic-Schistose Forested Mountains
- 17n High Elevation Valleys
- 17o Partly Forested Mountains
- 17aa Dry Intermontane Sagebrush Valleys
- 17ab Dry Gneissic-Schistose-Volcanic Hills
- 17ad Western Beaverhead Mountains

18 Wyoming Basin

- 18c Sub-Irrigated High Valleys
- 18d Foothill Shrublands and Low Mountains

19 Wasatch and Uinta Mountains

- 19d Wasatch Montane Zone
- 19f Semiarid Foothills

77 North Cascades

- 77a North Cascades Lowland Forests
- 77b North Cascades Highland Forests
- 77c North Cascades Subalpine/Alpine
- 77d Pasayten/Sawtooth Highlands
- 77e Okanogan Pine/Fir Hills
- 77f High Glacial Drift-Filled Valleys
- 77g Wenatchee/Chelan Highlands
- 77h Chiwaukum Hills and Lowlands
- 77i High Olympics

78 Klamath Mountains

- 78a Rogue/Illinois/Scott Valleys
- 78b Oak Savanna Foothills
- 78c Umpqua Interior Foothills
- 78d Serpentine Siskiyou
- 78e Inland Siskiyou
- 78f Coastal Siskiyou
- 78g Klamath River Ridges
- 78h Border High-Siskiyou

80 Northern Basin and Range

- 80a Dissected High Lava Plateau
- 80b Semiarid Hills and Low Mountains
- 80c High Elevation Forests and Shrublands
- 80d Pluvial Lake Basins
- 80e High Desert Wetlands
- 80f Owyhee Uplands and Canyons
- 80g High Lava Plateaus
- 80h Saltbrush-Dominated Valleys
- 80i Sagebrush Steppe Valleys
- 80j Semiarid Uplands
- 80k Partly Forested Mountains
- 80l Salt Shrub Valleys
- 80m Barren Playas



Support for the production of this map was provided by the U.S. Geological Survey, Western Geographic Science Center, Menlo Park, California, and the U.S. Environmental Protection Agency, National Health and Ecological Effects Research Laboratory, Western Ecology Division, Corvallis, Oregon.

CITING THIS MAP: U.S. Environmental Protection Agency, 2016, Ecoregions of the Pacific Northwest (Idaho, Oregon, Washington), U.S. EPA, National Health and Ecological Effects Research Laboratory, Western Ecology Division, Corvallis, Oregon. Map scale 1:1,500,000. <https://www.epa.gov/eco-research/ecoregion-download-files-region-10>.

