USEPA Ecoregions (Omernik)

The U.S. EPA (Omernik) ecoregions framework is a commonly-used, hierarchical classification for the U.S. Ecoregions define relatively homogeneous geographical areas that contain similarities in the character of environmental resources. The approach used to compile ecoregion maps is based on the premise that ecoregions can be identified through the analysis of spatial patterns in biotic and abiotic attributes such as climate, physiography, vegetation, soils, and water resources.

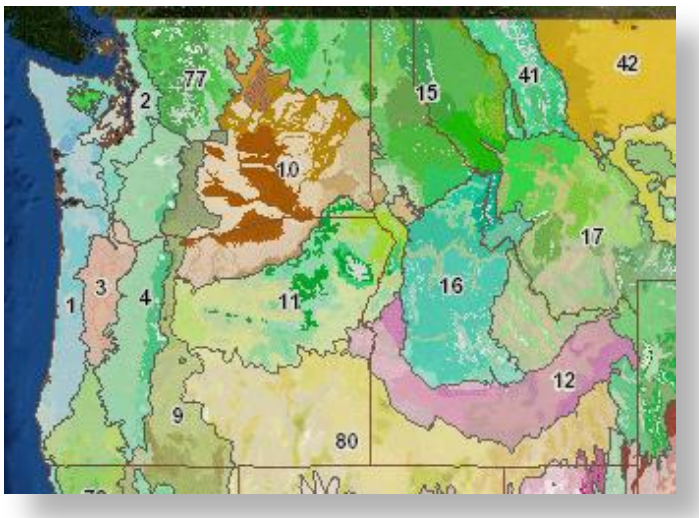
Ecoregions serve as an organizing, interpretive, and reporting framework for an ecosystem approach to land and water resource management. An ecoregion framework delineated at various scales describes an area's natural potential as well as its capabilities, vulnerabilities, and expected response to human disturbance. Using ecoregions, land managers can develop management strategies that are predictive of ecosystem response to various land use practices and consistent with regional expectations for the attainable quality of regional resources. Ecoregions also provide the context for the interpretation of research and assessment analyses. Ecoregions at the appropriate scale can represent the largest relatively homogeneous areas in which to distribute sample points and extrapolate results.

A hierarchical numbering system has been adopted for the various levels of ecological regions. Levels I and II are useful at the continental or coarse national scale. The levels most suited to the regional and state scale of EnviroAtlas are Levels III (about 1:3,000,000) and IV (1:250,000).

Things to know before using these data:

Various states have used this ecoregion framework for developing regional biological criteria and water quality standards (e.g., for aquatic oxygen and nutrients) and for setting management goals for nonpoint-source pollution. The presence and condition of aquatic biota compared to a regional ecological standard assists in quantitative assessments of aquatic ecological health.

Ecoregions describe general similarities in biotic and abiotic characteristics within a delineated boundary. Ecoregion lines are a representation using the best mapped and written information available at the time of their delineation. Evaluation field trips were conducted after each state's Level IV ecoregions were completed to inspect the accuracy of the lines relative to visual topographic and ecological changes. However, this could only be accomplished for a portion of the lines; a broader assessment of the accuracy of ecoregion lines will occur over time with use.



The ecoregion framework is a complement to other frameworks such as hierarchical hydrologic units (HUCs). While ecoregions do not explain the distribution or response of every ecological phenomenon or wildlife species, use of the framework will often expose different and useful patterns in data that may not be apparent using other frameworks.

Where can I go for more information?

USEPA Level III and IV ecoregion maps and downloadable data are available online (website or ftp) by state or region or as two-sided posters with photos, regional descriptions, and tables of regional attributes.

EPA maintains a list of ecoregions publications that focus on state and regional ecoregion delineation and applications.

NOTE: The data described in this fact sheet have not been prepared or reviewed by the EnviroAtlas team; they are sourced from publicly available external web services and as such are prepared, stored, and managed by the organization listed above. With current technology, the EnviroAtlas team has no control over the way these data display in our application. Please go to the sources listed here for more information.