

Level III and IV Ecoregions of EPA Region 7

December 2010

Ecoregions denote areas of general similarity in ecosystems and in the type, quality, and quantity of environmental resources. They are designed to serve as a spatial framework for environmental resource management. This map depicts revisions and subdivisions of ecoregions, compiled originally at a relatively small scale (U.S. EPA 2010, Omernik 1987). Compilation of this map, performed at the larger 1:250,000-scale, is part of several collaborative projects primarily between the U.S. Environmental Protection Agency (EPA) National Health and Environmental Effects Research Laboratory (NHEERL), the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), U.S. EPA Region VII, and state environmental resource agencies (Chapman et al. 2001, 2002; Griffith et al. 1994). Collaboration and consultation also occurred with other state and federal agencies, including the U.S. Forest Service and U.S. Geological Survey, in an effort to obtain consensus regarding alignments of ecological regions.

The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of the patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity. These phenomena include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each characteristic varies from one ecological region to another regardless of the hierarchical level. Explanations of the methods used to define the ecoregions are given in Omernik (1995, 2000, 2004).

Regional collaborative projects such as these state efforts, where the goal is to reach consensus among resource management agencies, comprise a step toward developing a common framework of ecological regions. A common spatial framework would allow integrated ecosystem-type resource management across agencies having different responsibilities and interests for the same geographic areas. Reaching that objective requires recognition of the differences in the conceptual approaches and mapping methodologies that have been used to develop the most commonly used existing ecoregion-type frameworks, including those developed by the U.S. Forest Service, the U.S. EPA, and the NRCS. Collaborative projects at the state and regional level, where some agreement has been reached among multiple resource management agencies, are a step toward attaining consensus and consistency in ecoregion frameworks for the entire nation.

Comments or questions should be addressed to James Omernik, USGS, c/o U.S. EPA-NHEERL, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4458, email: omernik.james@epa.gov, or to Glenn Griffith, Dynamac Inc., c/o U.S. EPA, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4465, email: griffith.glenn@epa.gov.

Literature Cited:

Chapman, S.S., J.M. Omernik, J.A. Freeouf, D.G. Huggins, J.R. McCauley, C.C. Freeman, G. Steinauer, R.T. Angelo, and R.L. Schlepp. 2001. Ecoregions of Nebraska and Kansas. (2 sided color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, VA. Scale 1:1,950,000.

Chapman, S.S., J.M. Omernik, G.E. Griffith, W.A. Schroeder, T.A. Nigh, and T.F. Wilton. 2002. Ecoregions of Iowa and Missouri. (2 sided color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, VA. Scale 1:1,800,000.

Griffith, G.E., J.M. Omernik, T.F. Wilton, and S.M. Pierson. 1994. Ecoregions and subregions of Iowa: a framework for water quality assessment and management. The Journal of the Iowa Academy of Science 101(1):5-13.

Omernik, J.M. 1987. Ecoregions of the conterminous United States. Map Supplement (scale 1:7,500,000). Annals of the Association of American Geographers 77(1):118-125.

Omernik, J.M. 1995. Ecoregions: A spatial framework for environmental management. In: Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. W.S. Davis and T.P. Simon (eds.). Lewis Publishers, Boca Raton, FL. pp. 49-62.

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

Omernik, J.M., S.S. Chapman, R.A. Lillie, and R.T. Dumke. 2000. Ecoregions of Wisconsin. Transactions of the Wisconsin Academy of Science, Arts and Letters 88(2000):77-103.

U.S. Environmental Protection Agency. 2010. Level III Ecoregions of the Continental United States, Map M-1 (revision of Omernik, 1987). U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Corvallis, OR.

