Ecoregions of Mississippi

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 ecosystem management and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecoregions, ecologists identify the environment by its predictable response to disturbances (Omernik and others, 1994). These general purpose regions are critical for undertaking and implementing ecosystem management strategies across linked ecoregions, states, and provinces, and improvement operations that are responsible for different types of resources within the same geographical area (Omernik and others, 1988).

The approach used to compile the maps is based on the premise that ecological regions are hierarchical and can be identified through the analysis of the spatial patterns and the composition of flora and fauna, phenomena that affect or reflect differences in ecosystem quality and integrity (Wilson, 1986; Omernik, 1987, 1995). These phenomena include geography, physiography, climate, soils, land use, and biodiversity. The relative importance of such characteristics varies from one ecological region to another regardless of the hierarchical level. A hierarchical classification scheme has been adopted for different levels of ecological regions. Level IV in this compilation is a Level IV ecoregion map of the United States (inclusive of Puerto Rico and the U.S. Virgin Islands) at a scale of 1:1,000,000. This is to be used as a further subdivision of level III ecoregions. Explanation of the methods used to divide the USEPA’s ecoregions are given in Omernik (1985), Omernik and others (1994), and Gaffin and others (1989).

Ecological and biological diversity within Mississippi's large, state contains barrier islands and coastal flatlands, large river floodplains, forests, rolling hilly coastal plains, and a variety of aquatic habitats. These four level III ecoregions and the level IV ecoregion in Mississippi and coastal flatlands are ecologically similar parts of adjacent states.

The level III and IV ecoregions on the poster were compiled at a scale of 1:250,000 and depict revisions and subdivisions of earlier level III ecoregions that were originally compiled at a smaller scale (USEPA 2003; Omernik 1987). This poster is part of a collaborative project primarily between USEPA Region IV, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Mississippi Department of Environmental Quality, and the Arkansas Water Pollution Control Commission. Collaborations and consultation also occurred with the United States Department of Agriculture Forest Service (USFS), United States Department of Agriculture Natural Resources Conservation Service (NRCS), and the United States Army Corps of Engineers (USACE) and with other State of Mississippi agencies.

The project is part of an interagency effort to develop a common framework of ecological regions (McMahon and others, 2001). Reaching that objective requires recognition of the differences in the conceptual approaches and mapping methodologies applied to develop the most common ecoregion-type frameworks, including those developed by the USFS, BLM and others, 1994; the USEPA (Omernik 1995, 1997) and the National Agricultural Conservation Database, 1998. At each of these frameworks being further refined, their differences are becoming less discernible. Regional collaborative projects such as the one in Mississippi, where some agreement has been reached, are to be compiled at a smaller scale (USEPA 2003; Omernik 1987). This poster is part of a collaborative project primarily between USEPA Region IV, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Mississippi Department of Environmental Quality.

CITING THIS POSTER: Chapman, S.S, Griffith, G.E., Omernik, J.M., Comstock, J.A., Beiser, M.C., and reviewer list below, 2005, Ecoregions of the conterminous United States: U.S. Environmental Protection Agency, Map M-1, various scales. Digital files of ecoregions of the Mississippi ecoregion boundaries can be downloaded from ftp://ftp.epa.gov/wed/ecoregions/ms. For additional information about ecoregions, see http://www.epa.gov/wed/pages/ecoregions/ecoregions.htm. Digital files compiled at a smaller scale (USEPA 2003; Omernik 1987). This poster is part of a collaborative project primarily between USEPA Region IV, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), Mississippi Department of Environmental Quality, and the United States Department of Agriculture Natural Resources Conservation Service (NRCS). Collaborations and consultation also occurred with the United States Department of Agriculture Forest Service (USFS), United States Department of Agriculture Natural Resources Conservation Service (NRCS), and the United States Army Corps of Engineers (USACE) and with other State of Mississippi agencies.

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REVIEWERS: David Beckett (University of Southern Mississippi), J. Stephen Brewer (University of Mississippi), Chip Bray (MS DEQ), and Tom Loveland (USGS). DEQ), Larry Handley (USGS), Barb Kleiss (USACE), Alice Dossett (MS DEQ), Katherine Williams (MS DEQ), COLLABORATORS AND CONTRIBUTORS: Jim Harrison (USEPA), Mike Lilly (NRCS), Mike Bograd (MS Corporation), James M. Omernik (USEPA, retired), Jeffrey A. Comstock (Indus Corporation), Michael C. Beiser (USDA-ARS), Jon E. Cooper (EPA), David Smith (U.S. Geological Survey), George Wallace (U.S. Geological Survey), and Robert B. Anderson (U.S. Geological Survey). This project was partially supported by funds from the Mississippi Department of Environmental Quality through grants 99-01-08 and 99-01-09. CONTRIBUTIONS AND COORDINATIONS: Tom Loveland (USGS), Chip Bray (MS DEQ), and Jon E. Cooper (EPA). REFERENCES: David Beckett (University of Southern Mississippi), J. 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