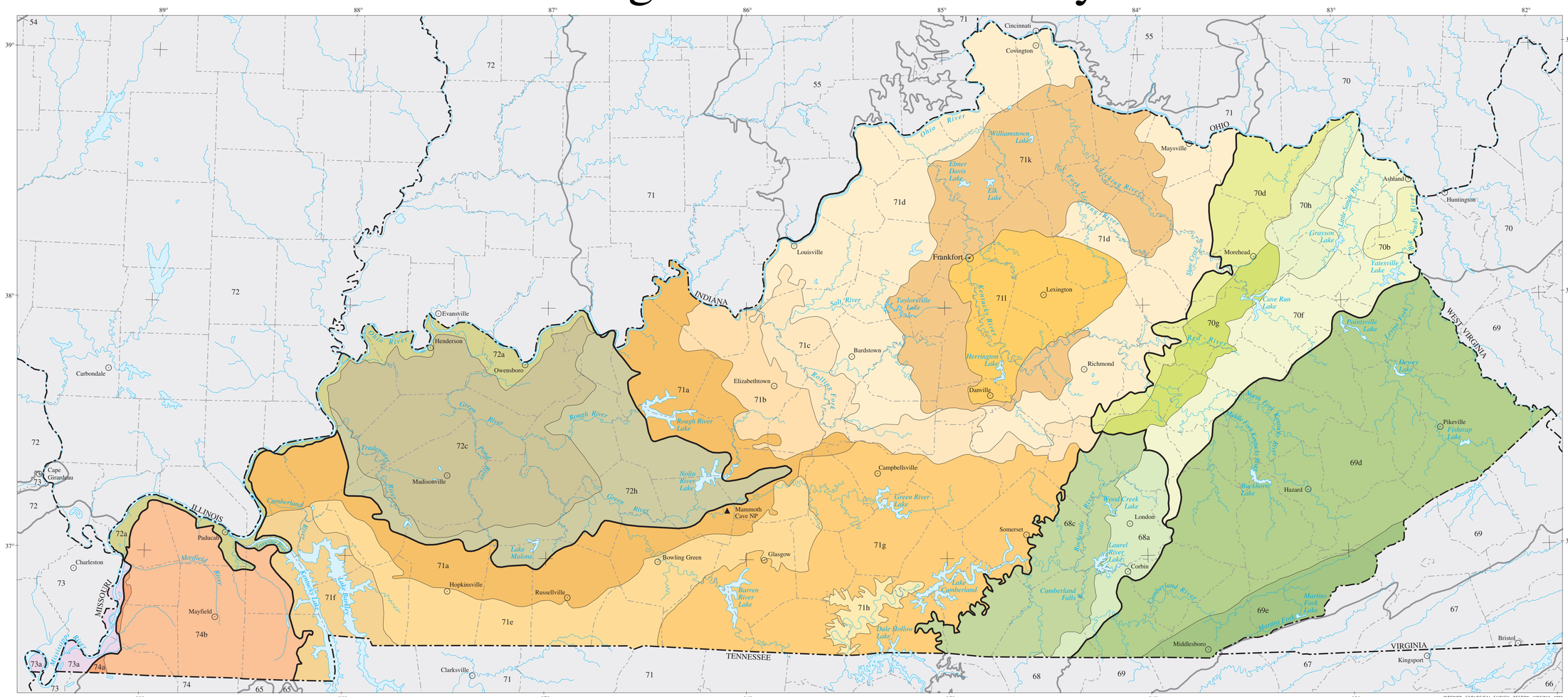
Ecoregions of Kentucky



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 the research, assessment, management, and monitoring of ecosystems and ecosystem components. By recognizing the spatial differences in the capacities and potentials of ecosystems, ecoregions stratify the environment by its probable response to disturbance (Bryce and others, 1999). Ecoregions are general purpose regions that are critical for structuring and implementing ecosystem management strategies across federal agencies, state agencies, and nongovernment organizations that are responsible for different types of resources in the same geographical areas (Omernik and others, 2000).

The approach used to compile this map is based on the premise that ecological regions can be identified through the analysis of the spatial patterns and the composition of biotic and abiotic phenomena that affect or reflect differences in ecosystem quality and integrity (Wiken, 1986; Omernik, 1987, 1995). These phenomena include geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology. The relative importance of each phenomenon varies from one ecological region to another regardless of ecoregion hierarchical level. A Roman numeral hierarchical scheme has been adopted for different levels of ecological regions. Level I is the coarsest level, dividing North America into 15 ecological regions. Level II divides the continent into 52 regions (Commission for Environmental Cooperation Working Group, 1997). At level III, the continental United States contains 104 ecoregions and the conterminous United States has 84 ecoregions (U.S. Environmental Protection Agency [USEPA], 2002). Level IV is a further subdivision of level III ecoregions. Explanations of the methods used to define the USEPA's ecoregions are given in Omernik (1995), Omernik and others (2000), and Gallant and others (1989).

In Kentucky, there are 7 level III ecoregions and 25 level IV ecoregions; all but four level IV ecoregions continue into ecologically similar parts of adjacent states (Griffith, Omernik, and Azevedo, 1998; Woods and others, 1998). Ecological and biological diversity in Kentucky is very strongly related to regional physiographic, geologic, land use, and soil characteristics. Deciduous forests widely covered Kentucky at the time of European settlement. About half is still forested. Extensive "barrens" (i.e. bluestem prairies) were once maintained by fires set by Native Americans on rolling to flat parts of the Interior Plateau (71) and Mississippi Valley Loess Plains (74). Today, these areas are dominated by cropland and pastureland and the historic "barrens" are nearly extinct. Major coal fields occur in the Southwestern Appalachians (68), Central Appalachians (69), Western Allegheny Plateau (70), and Interior River Valleys and Hills (72).

The level III and IV ecoregion map on this poster was compiled at a scale of 1:250,000 and depicts revisions and subdivisions of earlier level III ecoregions that were originally compiled at a smaller scale (USEPA, 2002; Omernik, 1987). This poster is part of a collaborative project primarily between USEPA Region 4, USEPA National Health and Environmental Effects Research Laboratory (Corvallis, Oregon), and the Kentucky Natural Resources and Environmental Protection Cabinet–Department for Environmental Protection (KDEP). Collaboration and consultation also occurred with the U.S. Department of Agriculture–Forest Service (USFS), U.S. Department of Interior–Geological Survey (USGS), The Nature Conservancy, Eastern Kentucky University (EKU), USGS–Earth Resources Observation Systems Data Center, Kentucky Geological Survey, and other Commonwealth of Kentucky agencies.

The project is associated with 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 (Bailey and others, 1994), the USEPA (Omernik 1987, 1995), and the U.S. Department of Agriculture–Soil Conservation Service (1981). As each of these frameworks is further refined, their differences are becoming less discernible. Each collaborative ecoregion project, such as this one in Kentucky, comprises a step toward attaining consensus and consistency in ecoregion frameworks for the entire nation.

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68 Southwestern Appalachians
- 68a Cumberland Plateau
- 68c Plateau Escarpment

69 Central Appalachians
- 69d Dissected Appalachian Plateau
- 69e Cumberland Mountain Thrust Block

70 Western Allegheny Plateau
- 70b Monongahela Transition Zone
- 70d Knobs–Lower Scioto Dissected Plateau
- 70f Ohio/Kentucky Carboniferous Plateau
- 70g Northern Forested Plateau Escarpment
- 70h Carter Hills

71 Interior Plateau
- 71a Crawford–Mammoth Cave Uplands
- 71b Mitchell Plain
- 71c Knobs–Norman Upland
- 71d Outer Bluegrass
- 71e Western Pennyroyal Karst Plain
- 71f Western Highland Rim
- 71g Eastern Highland Rim
- 71h Outer Nashville Basin
- 71k Hills of the Bluegrass
- 71l Inner Bluegrass

72 Interior River Valleys and Hills
- 72a Wabash–Ohio Bottomlands
- 72c Green River–Southern Wabash Lowlands
- 72h Caseyville Hills

73 Mississippi Alluvial Plain
- 73a Holocene Meander Belts

74 Mississippi Valley Loess Plains
- 74a Bluff Hills
- 74b Loess Plains

SCALE 1:1 000 000

15 10 5 0 30 60 mi

30 20 10 0 60 120 km

Albers Equal Area Projection
Standard parrallels 37° N and 39° N

- Level III ecoregion
- Level IV ecoregion
- County boundary
- State boundary
- International boundary

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