Level III and IV Ecoregions of EPA Region 6

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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. Ecoregions are directly applicable to the needs of state agencies, including the selection of regional stream reference sites, the development of biological criteria and water quality standards, and the establishment of management goals for nonpoint-source pollution. They are also relevant to integrated ecosystem management, an ultimate goal of many federal and state resource management agencies. This map depicts revisions and subdivisions of ecoregions, compiled originally at a relatively small scale (U.S. EPA 2007, 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), U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), U.S. EPA Region VI, and state environmental resource agencies (Daigle et al. 2006, Griffith et al. 2004, 2006, Woods et al. 2004, 2005). 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 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. A Roman numeral hierarchical scheme has been adopted for different levels of ecological regions. Level I and Level II divide the North American continent into 15 and 50 regions, respectively (Commission for Environmental Cooperation 1997, 2006).

At Level III, the continental United States contains 104 regions and the conterminous U.S. has 84 ecoregions (U.S. EPA 2007). Level IV is a further subdivision of the Level III ecoregions. Explanation of the methods used to define the ecoregions are given in Omernik (1995, 2000, 2004), and Gallant et al. (1989).

Regional collaborative projects such as these state efforts, where the goal is to reach consensus among resource management agencies, comprise a step toward reaching the objectives of the Memorandum of Understanding for developing a common framework of ecological regions (McMahon et al. 2001). 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 (Bailey et al. 1994, Cleland et al. 2007), the U.S. EPA (Omernik 1987, 1995), and the NRCS (U.S. Department of Agriculture-SCS 1981, U.S. Department of Agriculture-NRCS 2006). As each of these frameworks is further developed, the differences between them are decreasing. 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 Glenn Griffith, Dynamac Inc., c/o U.S. EPA, 200 SW 35th Street, Corvallis, OR 97333, (541) 754-4465, email: griffith.glenn@epa.gov., or 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. Electronic versions of ecoregion maps and posters as well as other ecoregion resources are available at www.epa.gov/wed/pages/ecoregions.htm.

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20 Colorado Plateaus
- 20b Shale Deserts and Sedimentary Basins
- 20c Semiarid Benchlands and Canyonlands
- 20d Arid Canyonlands

21 Southern Rockies
- 21a Alpine Zone
- 21b Crystalline Subalpine Forests
- 21c Crystalline Mid-Elevation Forests
- 21d Foothill Woodlands and Shrublands
- 21e Sedimentary Subalpine Forests
- 21f Sedimentary Mid-Elevation Forests
- 21g Volcanic Subalpine Forests
- 21h Volcanic Mid-Elevation Forests
- 21j Grassland Parks

22 Arizona/New Mexico Plateau
- 22a San Luis Shrublands and Hills
- 22b San Luis Alluvial Flats and Wetlands
- 22f Taos Plateau
- 22g Rio Grande Floodplain
- 22h North Central New Mexico Valleys and Mesas
- 22i San Juan/Chaco Tablelands and Mesas
- 22j Semiarid Tablelands
- 22k Lava Malpais
- 22l Plains of San Agustin
- 22m Albuquerque Basin
- 22n Near-Rockies Valleys and Mesas

23 Arizona/New Mexico Mountains
- 23a Chihuahuan Desert Slopes
- 23b Madrean Lower Montane Woodlands
- 23c Montane Conifer Forests
- 23d Arizona/New Mexico Subalpine Forests
- 23e Conifer Woodlands and Savannas
- 23f Rocky Mountain Conifer Forests
- 23g Rocky Mountain Subalpine Forests

24 Chihuahuan Deserts
- 24a Chihuahuan Basins and Playas
- 24b Chihuahuan Desert Grasslands
- 24c Low Mountains and Bajadas
- 24d Chihuahuan Montane Woodlands
- 24e Stockton Plateau
- 24f Rio Grande Floodplain
- 24g Gypsiferous Dunes
- 24h Lava Malpais

25 High Plains
- 25b Rolling Sand Plains
- 25c Moderate Relief Plains
- 25e Canadian/Cimarron High Plains
- 25i Llano Estacado
- 25j Shinnery Sands
- 25k Arid Llano Estacado

26 Southwestern Tablelands
- 26a Canadian/Cimarron Breaks
- 26b Flat Tablelands and Valleys
- 26c Caprock Canyons, Badlands, and Breaks
- 26d Semiarid Canadian Breaks
- 26f Mesa de Maya/Black Mesa
- 26h Pinyon-Juniper Woodlands and Savannas
- 26l Upper Canadian Plateau
- 26m Canadian Canyons
- 26n Conchas/Pecos Plains
- 26o Central New Mexico Plains
- 26p Pluvial Lake Basins
- 26q Southern New Mexico Dissected Plains

27 Central Great Plains
- 27d Prairie Tableland
- 27h Red Prairie
- 27i Broken Mesquite Plains
- 27j Limestone Plains
- 27k Wichita Mountains
- 27l Pleistocene Sand Dunes
- 27m Red River Tablelands
- 27n Gypsum Hills
- 27o Cross Timbers Transition
- 27p Salt Plains
- 27q Rolling Red Hills
- 27r Limestone Hills

28 Flint Hills
- 28a Flint Hills

29 Cross Timbers
- 29a Cross Timbers
- 29b Eastern Cross Timbers
- 29c Western Cross Timbers
- 29d Grand Prairie
- 29e Limestone Cut Plain
- 29f Carbonate Cross Timbers
- 29g Arbuckle Uplift
- 29h Northwestern Cross Timbers
- 29i Arbuckle Mountains

30 Edwards Plateau
- 30a Edwards Plateau Woodland
- 30b Llano Uplift
- 30c Balcones Canyonlands
- 30d Semiarid Edwards Plateau

31 Southern Texas Plains
- 31a Northern Nueces Alluvial Plains
- 31b Semiarid Edwards Bajada
- 31c Texas-Tamaulipan Thornscrub
- 31d Rio Grande Floodplain and Terraces

32 Texas Blackland Prairies
- 32a Northern Blackland Prairie
- 32b Southern Blackland/Fayette Prairie
- 32c Floodplains and Low Terraces

33 East Central Texas Plains
- 33a Northern Post Oak Savanna
- 33b Southern Post Oak Savanna
- 33c San Antonio Prairie
- 33d Northern Prairie Outliers
- 33e Bastrop Lost Pines
- 33f Floodplains and Low Terraces

34 Western Gulf Coastal Plain
- 34a Northern Humid Gulf Coastal Prairies
- 34b Southern Subhumid Gulf Coastal Prairies
- 34c Floodplains and Low Terraces
- 34d Coastal Sand Plain
- 34e Lower Rio Grande Valley
- 34f Lower Rio Grande Alluvial Floodplain
- 34g Texas-Louisiana Coastal Marshes
- 34h Mid-Coast Barrier Islands and Marshes
- 34i Laguna Madre Barrier Islands and Coastal Marshes
- 34j Lafayette Loess Plains

35 South Central Plains
- 35a Tertiary Uplands
- 35b Floodplains and Low Terraces
- 35c Pleistocene Fluvial Terraces
- 35d Cretaceous Dissected Uplands
- 35e Southern Tertiary Uplands
- 35f Flatwoods
- 35g Red River Bottomlands
- 35h Blackland Prairie

36 Ouachita Mountains
- 36a Athens Plateau
- 36b Mountainous Core
- 36c Central Hills, Ridges, and Valleys
- 36d Fourche Mountains
- 36e Western Ouachitas
- 36f Western Ouachita Valleys

37 Arkansas Valley
- 37a Scattered High Ridges and Mountains
- 37b Arkansas River Floodplain
- 37c Arkansas Valley Hills
- 37d Arkansas Valley Plains
- 37e Lower Canadian Hills

38 Boston Mountains
- 38a Upper Boston Mountains
- 38b Lower Boston Mountains

39 Ozark Highlands
- 39a Springfield Plateau
- 39b Dissected Springfield Plateau–Elk River Hills
- 39c White River Hills
- 39d Central Plateau

40 Central Irregular Plains
- 40b Osage Cuestas
- 40d Cherokee Plains

65 Southeastern Plains
- 65f Southern Pine Plains and Hills
- 65p Southeastern Floodplains and Low Terraces

73 Mississippi Alluvial Plain
- 73a Northern Holocene Meander Belts
- 73b Northern Pleistocene Valley Trains
- 73c St. Francis Lowland
- 73d Northern Backswamps
- 73e Grand Prairie
- 73f Western Lowlands Holocene Meander Belts
- 73g Western Lowlands Pleistocene Valley Trains
- 73h Arkansas/Ouachita River Holocene Meander Belts
- 73i Arkansas/Ouachita River Backswamps
- 73j Macon Ridge
- 73k Southern Holocene Meander Belts
- 73l Southern Pleistocene Valley Trains
- 73m Southern Backswamps
- 73n Inland Swamps
- 73o Deltaic Coastal Marshes and Barrier Islands

74 Mississippi Valley Loess Plains
- 74a Bluff Hills
- 74c Southern Rolling Plains
- 74d Baton Rouge Terrace

75 Southern Coastal Plain
- 75a Gulf Coast Flatwoods
- 75i Floodplains and Low Terraces
- 75k Gulf Barrier Islands and Coastal Marshes

79 Madrean Archipelago
- 79a Apachian Valleys and Low Hills
- 79b Lower Madrean Woodlands
- 79c Madrean Pine-Oak and Mixed Conifer Forests

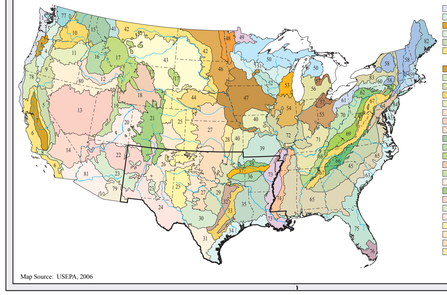
Level III boundary
Level IV boundary
International boundary
State boundary
County boundary

SCALE 1:3 000 000

60 30 0 60 120 mi
120 60 0 120 240 km

Albers Equal Area Projection
Standard parallels 29.5° N and 45.5° N

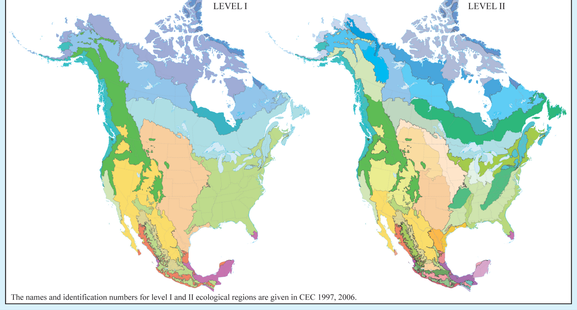
Level III Ecoregions of the Conterminous United States



1 Coast Range
2 Puget Lowland
3 Willamette Valley
4 Cascades
5 Sierra Nevada
6 Southern and Central California Chaparral and Oak Woodlands
7 Central California Valley
8 Southern California Mountains
9 Eastern Cascades Slopes and Foothills
10 Columbia Plateau
11 Blue Mountains
12 Snake River Plain
13 Central Basin and Range
14 Mojave Basin and Range
15 Northern Rockies
16 Idaho Batholith
17 Middle Rockies
18 Wyoming Basin
19 Wasatch and Uinta Mountains
20 Colorado Plateaus
21 Southern Rockies
22 Arizona/New Mexico Plateau
23 Arizona/New Mexico Mountains
24 Chihuahuan Deserts
25 High Plains
26 Southwestern Tablelands
27 Central Great Plains
28 Flint Hills
29 Cross Timbers
30 Edwards Plateau
31 Southern Texas Plains
32 Texas Blackland Prairies
33 East Central Texas Plains
34 Western Gulf Coastal Plain
35 South Central Plains
36 Ouachita Mountains
37 Arkansas Valley
38 Boston Mountains
39 Ozark Highlands
40 Central Irregular Plains
41 Canadian Rockies
42 Northwestern Glaciated Plains
43 Northwestern Great Plains
44 Nebraska Sand Hills
45 Piedmont
46 Northern Glaciated Plains
47 Western Corn Belt Plains
48 Lake Agassiz Plain
49 Northern Minnesota Wetlands
50 Northern Lakes and Forests
51 North Central Hardwood Forests
52 Driftless Area
53 Southeastern Wisconsin Till Plains
54 Central Corn Belt Plains
55 Eastern Corn Belt Plains
56 Southern Michigan/Northern Indiana Drift Plains
57 Huron/Erie Lake Plains
58 Northeastern Highlands
59 Northeastern Coastal Zone
60 Northern Appalachian Plateau and Uplands
61 Erie Drift Plain
62 North Central Appalachians
63 Middle Atlantic Coastal Plain
64 Northern Piedmont
65 Southeastern Plains
66 Blue Ridge
67 Ridge and Valley
68 Southwestern Appalachians
69 Central Appalachians
70 Western Allegheny Plateau
71 Interior Plateau
72 Interior River Valleys and Hills
73 Mississippi Alluvial Plain
74 Mississippi Valley Loess Plains
75 Southern Coastal Plain
76 Southern Florida Coastal Plain
77 North Cascades
78 Klamath Mountains
79 Madrean Archipelago
80 Northern Basin and Range
81 Sonoran Basin and Range
82 Laurentian Plains and Hills
83 Eastern Great Lakes and Hudson Lowlands
84 Atlantic Coastal Pine Barrens

Map Source: USEPA, 2006

ECOLOGICAL REGIONS OF NORTH AMERICA



The names and identification numbers for level I and II ecological regions are given in CEC 1997, 2006.

GULF OF MEXICO