



This map of ecoregions has been produced for Alaska as a framework for organizing and interpreting environmental data for State, national, and international level inventory, monitoring, and research efforts. The map and descriptions for 20 ecological regions were derived by synthesizing information on the geographic distribution of environmental factors such as climate, physiography, geology, permafrost, soils, and vegetation. A qualitative assessment was used to interpret the distributional patterns and relative importance of these factors from place to place.

Numeric identifiers assigned to the ecoregions are coordinated with those used on the map of 'Ecoregions of the Conterminous United States' (Omernik 1987) as a continuation of efforts to map ecoregions for the United States. Additionally, the ecoregions for Alaska and the conterminous United States, along with ecological regions delineated for Canada (Wiken 1986), have been aggregated at a coarser level into a map of North American ecological regions (Omernik 1995).

References:  
Omernik, J.M., 1987. Ecoregions of the Conterminous United States. *Annals of the Association of American Geographers*, v. 77, no. 1, p. 118-125.  
1995. Ecoregions: a Framework for Managing Ecosystems. *The Geographical Magazine*, 12, no. 1, p. 36-51.  
Wiken, E.B., 1986. Terrestrial Ecoregions of Canada. *Land Use/cover, Environment Canada Ecological Land Classification Series 19*, 26 p.

For table of major environmental characteristics occurring in each ecoregion, see reverse side.

- 101 Arctic Coastal Plain** 58,000 sq km  
The northernmost ecoregion is bounded on the north and the west by the Arctic Ocean and extends eastward nearly to the international boundary between Alaska and the Yukon Territory, Canada. The poorly drained, treeless coastal plain rises very gradually from sea level to the adjacent foothills. The region has an arctic climate, and the entire area is underlain by thick permafrost. Because of poor soil drainage, well-grained herbaceous communities are the predominant vegetation cover, and numerous tundra sites dot the region.
- 102 Arctic Foothills** 124,000 sq km  
The ecoregion consists of a wide swath of rolling hills and plateaus that grades from the coastal plain on the north to the Brooks Range to the south. The eastward extent of the ecoregion overlaps from the international boundary between Alaska and the Yukon Territory, Canada, to the Chukchi Sea. The hills and valleys of the region have better defined drainage patterns than those found in the coastal plain to the north and have fewer lakes. The area is underlain by thick permafrost and many well-related surface features are present. The region is predominantly treeless and is vegetated primarily by mesic graminoid-herbaceous communities.
- 103 Brooks Range** 734,000 sq km  
The ecoregion consists of several groups of rugged, deeply dissected mountains carved from unmetamorphosed rocks. The rugged lowlands north of the coast were formed during the Pleistocene epoch. The region extends from the coast to the Brooks Range in the east to 2,400 m in the central and eastern Brooks Range. Pleistocene glaciation was extensive, and small glaciers persist at elevations above 1,800 m. An arctic climate regime and unstable landscapes maintain a sparse cover of dwarf scrub-vegetation throughout the mountains, though some valleys provide more mesic sites for graminoid-herbaceous communities.
- 104 Interior Forested Lowlands and Uplands** 269,000 sq km  
This ecoregion represents a catchment of ecological characteristics. Regions include a lack of Pleistocene glaciation, a continental climate, a mantling of proffered siltstone and shale deposits, a predominance of forests dominated by spruce and firwood species, and a very high frequency of lightning fires. On the basis of characteristics it is distinguished as a forest-grassland complex of vegetation communities resulting from the interplay of permafrost, surface water, local elevational relief, and historic aspect.
- 105 Interior Highlands** 775,000 sq km  
This discontinuous ecoregion is composed of rounded, low mountains, often surrounded by rugged peaks. The highlands primarily sustain dwarf scrub-vegetation and open spruce stands, though graminoid-herbaceous communities occur in poorly drained areas. Mountains in most parts of the region rise to at least 1,200 m, and many rise higher than 1,500 m. Most of the higher peaks were glaciated during the Pleistocene epoch.
- 106 Interior Bottomlands** 103,000 sq km  
This ecoregion is composed of flat to nearly flat bottomlands along larger rivers of interior Alaska. The bottomlands are dotted with bogs and boulder lakes. Soils are poorly drained and shallow, often over permafrost. Predominant vegetation communities include forests dominated by spruce and firwood species, tall scrub birchlands, and wetlands.
- 107 Yukon Flats** 30,000 sq km  
This ecoregion is a relatively flat, marshy basin floor in east-central Alaska that is defined by braided and meandering streams, numerous flow and oxbow lakes, and meadow areas. Surrounding the basin floor is a variable band of poorly draining topography with lower water tables. In many respects, the ecoregion is similar to the Interior Bottomlands ecoregion, but differs in climatic characteristics. Temperatures tend to be more extreme, summers are warmer and winters are colder than in other areas of comparable latitude. The ecoregion also receives less annual precipitation than the Interior Bottomlands. Forests dominated by spruce and firwood species, tall scrub communities, and well-grained herbaceous communities are the predominant vegetation types.
- 108 Ogilvie Mountains** 11,000 sq km  
This ecoregion, along the eastern edge of Alaska, consists of tall-peaked hills eroded from a former plain and forested plateau slopes built up from mountains that are poorly eroded from their former stature. Karst topography is common. Mesic graminoid-herbaceous communities and tall scrub communities are widespread throughout the region. Forest communities occupy lower hillsides and valleys.
- 109 Subarctic Coastal Plains** 91,000 sq km  
This ecoregion mainly includes coastal plains of the Kotzebue Sound area and the Tuluksuk and Kupukuk River delta areas. Flat, lake-dotted coastal plains and river deltas are characteristic of the region. Streams have meandering and anastomosing meanders. Soils are well drained and permafrost is thin, providing conditions for well-grained herbaceous communities. The predominant vegetation type. The region is affected by both marine and continental climate influences.
- 110 Seward Peninsula** 47,000 sq km  
Some of the oldest geologic formations in Alaska provide a backdrop for the predominantly treeless ecoregion. Mesic graminoid-herbaceous and low scrub-vegetation occupy extensive areas. The ecoregion is surrounded on three sides by water, yet this has little ameliorating effect on the climate. Rivers tend to be long and marsh and summers short and cool.
- 111 Athabasca and Kilbuck Mountains** 51,000 sq km  
Located in southeastern Alaska of Bristol and Kupukuk Bays, this ecoregion is composed of steep, sharp, often rugged groups of rugged mountains separated by broad, flat valleys and plateaus. The mountains were glaciated during the Pleistocene epoch, but only a few small glaciers persist. Dwarf scrub communities are the predominant vegetation cover in the mountains. Tall scrub and graminoid-herbaceous communities are common in valleys and on lower mountain slopes. Valley bottoms may support stands of spruce and firwood species.
- 112 Bristol Bay-Nushagak Lowlands** 47,000 sq km  
This ecoregion is located in southeastern Alaska off Bristol Bay. The region has rolling terrain, formed from moraine deposits. Soils of the lowlands are somewhat better drained than soils of the Subarctic Coastal Plains ecoregion. Dwarf scrub communities are widespread, but large areas of wetland communities occur. Lakes are scattered throughout the lowlands, but are not nearly as numerous as in the Subarctic Coastal Plains.
- 113 Alaska Peninsula Mountains** 48,000 sq km  
This ecoregion is composed of rounded, folded and faulted sedimentary rocks intricately surrounded by volcanoes. The mountains were heavily glaciated during the Pleistocene epoch. A marine climate prevails, and the region is generally free of permafrost. Many soils formed in deposits of volcanic ash and cinder over glacial deposits and are highly erodible. Vegetation cover consists of dwarf scrub communities at higher elevations and on sites exposed to wind, and low scrub communities at lower elevations and in more protected sites.
- 114 Aleutian Islands** 12,000 sq km  
This ecoregion in southwestern Alaska is composed of a chain of sedimentary rocks eroded from older volcanic formations that are covered by steep volcanoes. Marine climate prevails. The region is south of the timber line and is generally free from permafrost. Vegetation cover mainly consists of dwarf scrub communities at higher elevations and on sites exposed to wind, and of graminoid-herbaceous communities in more protected sites.
- 115 Cook Inlet** 28,000 sq km  
Located in the south-central part of Alaska adjacent to the Cook Inlet, the ecoregion has one of the mildest climates in the State. The climate, the level of rising topography, and the marine proximity have attracted most of the settlement and development in Alaska. The region has a variety of vegetation communities but is dominated by stands of spruce and hemlock species. The area is generally free from permafrost. Unlike many of the other nonmontane ecoregions, the Cook Inlet ecoregion was heavily glaciated during the Pleistocene epoch.
- 116 Alaska Range** 117,000 sq km  
The mountains of south-central Alaska, the Alaska Range, are very high and sharp. This ecoregion is covered by rocky slopes, scree, and glaciers. Much of the area is barren of vegetation. Dwarf scrub communities are common at higher elevations and on windward sites where vegetation does exist. The Alaska Range has a continental climatic regime, but because of the extreme height of many of the ridges and peaks, annual precipitation at higher elevations is similar to that measured for some ecoregions having maritime climates.
- 117 Copper Plateau** 17,000 sq km  
This ecoregion in south-central Alaska occupies the site of a large lake that existed during glacial times. The nearly level to rolling plain has many lakes and wetlands. Soils are predominantly very silty or clayey, formed from glacial outwash sediments. Much of the region has a shallow permafrost table, and soils are poorly drained. Black spruce forests and tall scrub, interspersed with wetlands, are the major types of vegetation communities.
- 118 Wrangell Mountains** 29,000 sq km  
This ecoregion consists of steep, rugged mountains of volcanic origin that are extensively covered by tall forests and glaciers. Steep slopes and basins of vegetation. Dwarf scrub tundra communities, consisting of mats of low shrubs, forbs, grasses, and lichens, predominate where vegetation does occur. The climate has harsh winters and short summers.
- 119 Pacific Coastal Mountains** 106,000 sq km  
The steep and rugged mountains along the southeastern and south-central coast of Alaska receive more precipitation annually than either the Alaska Range or Wrangell Mountains ecoregions. Glaciated during the Pleistocene epoch, most of the ecoregion is still covered by glaciers and ice fields. Most of the area is barren of vegetation, but where plants do occur, dwarf and low scrub communities dominate.
- 120 Coastal Western Hemlock-Sitka Spruce Forests** 41,000 sq km  
Located along the southeastern and south-central shores of Alaska, the western part of this ecoregion is a result of intense glaciation during the Pleistocene epoch. The steep, narrow hills, steep valleys with tall spruce-fir forests, and deep, dissected glacial moraine deposits towering the lower slopes of valley walls are all evidence of the effects of glaciation. The region has the mildest winter temperatures in Alaska, accompanied by large amounts of precipitation. Forests of western hemlock and Sitka spruce are widespread.

**AUTHOR AFFILIATIONS**  
<sup>1</sup>Forest Sciences Department, Colorado State University, Fort Collins, Colorado.  
Work performed under USGS Cooperative Agreement #1434-93-A-00760.  
<sup>2</sup>Maptek SRS Corporation, U.S. Geological Survey, EROS Alaska Field Office, Anchorage, Alaska.  
Work performed under USGS Contract #13M-92-C-4000.  
<sup>3</sup>Environmental Process Agency, Environmental Research Laboratory, Corvallis, Oregon.  
<sup>4</sup>U.S. Geological Survey, EROS Alaska Field Office, Anchorage, Alaska.

Prepared by USGS in cooperation with Colorado State University and Environmental Protection Agency.



**Transitional Areas**  
Cross-hatched portions along the ecoregion boundaries represent transitional areas sharing characteristics of two or more adjacent ecoregions. Due to the map scale and resolution, as well as the resolution of the information used to derive the map, not all transition areas can be represented.