

Level III Ecoregions of Alaska

1995

reproduced 2010

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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 (Gallant and others, 1995).

Numeric identifiers assigned to the ecoregions are coordinated with those used on the map of "Ecoregions of the Conterminous United States" (Omernik 1987, U.S. EPA 2010) 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 for Canada (Wiken 1986) and Mexico, have been combined for maps at three hierarchical levels for North America (Omernik 1995, Commission for Environmental Cooperation, 1997, 2006).

References
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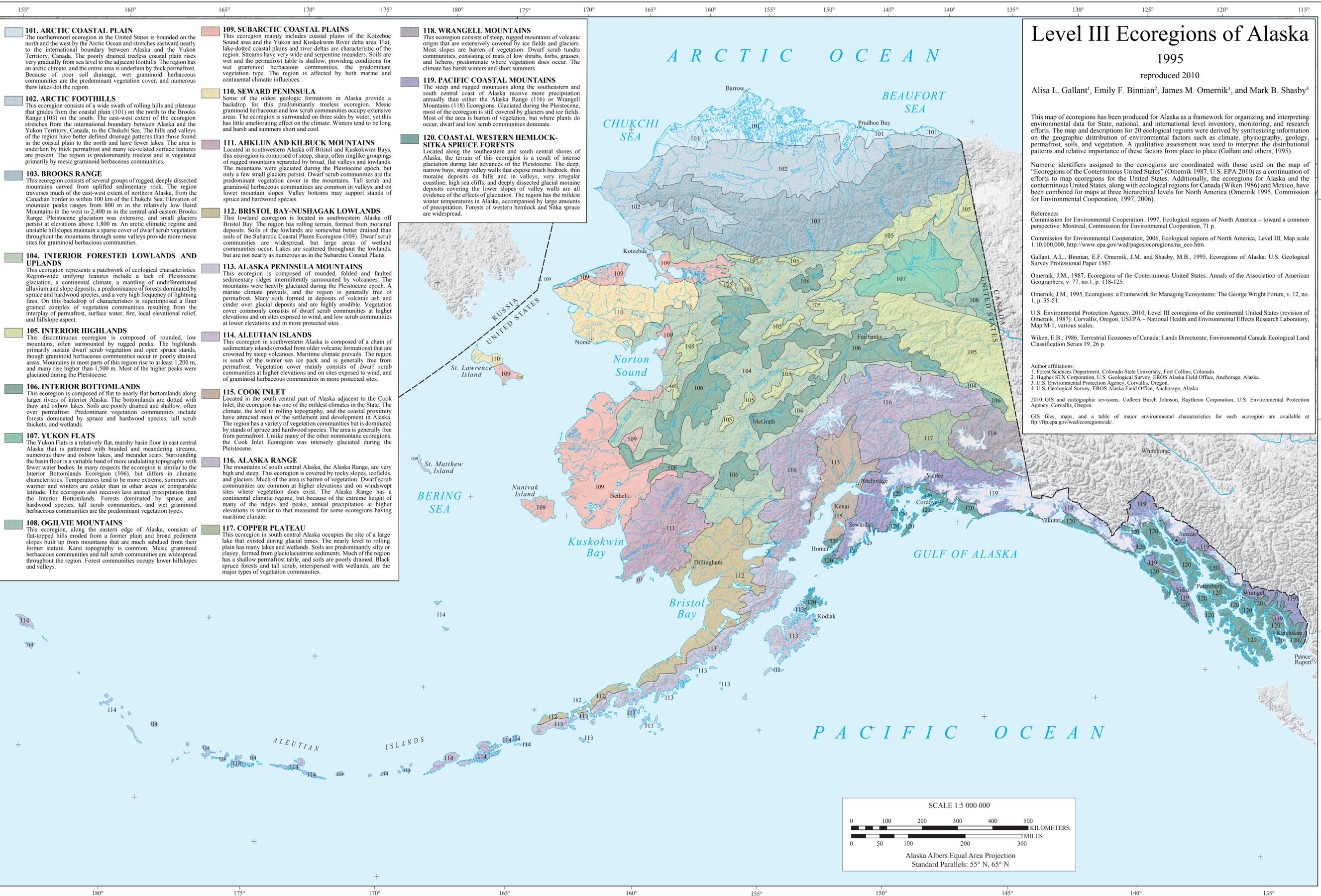
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GIS files, maps, and a table of major environmental characteristics for each ecoregion are available at <http://ftp.epa.gov/wed/ecoregions/ak/>.



101. ARCTIC COASTAL PLAIN
The northernmost ecoregion in the United States is bounded on the north and the west by the Arctic Ocean and stretches 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, wet graminoid herbaceous communities are the predominant vegetation cover, and numerous thaw lakes dot the region.

102. ARCTIC FOOTHILLS
This ecoregion consists of a wide swath of rolling hills and plateaus that grades from the coastal plain (101) on the north to the Brooks Range (103) on the south. The east-west extent of the ecoregion stretches 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 ice-related surface features are present. The region is predominantly treeless and is vegetated primarily by mesic graminoid herbaceous communities.

103. BROOKS RANGE
This ecoregion consists of several groups of rugged, deeply dissected mountains carved from uplifted sedimentary rock. The region traverses much of the east-west extent of northern Alaska, from the Canadian border to within 100 km of the Chukchi Sea. Elevation of mountain peaks ranges from 800 m in the relatively low Baird Mountains in the west 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 climatic regime and unstable hillslopes maintain a sparse cover of dwarf scrub vegetation throughout the mountains through some valleys provide more mesic sites for graminoid herbaceous communities.

104. INTERIOR FORESTED LOWLANDS AND UPLANDS
This ecoregion represents a patchwork of ecological characteristics. Region-wide unifying features include a lack of Pleistocene glaciation, a continental climate, a mantling of undifferentiated alluvium and slope deposits, a predominance of forests dominated by spruce and hardwood species, and a very high frequency of lightning fires. On this backdrop of characteristics is superimposed a finer grained complex of vegetation communities resulting from the interplay of permafrost, surface water, fire, local elevational relief, and hillslope aspect.

105. INTERIOR HIGHLANDS
This discontinuous ecoregion is composed of rounded, low mountains, often surmounted 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 this 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.

106. INTERIOR BOTTOMLANDS
This ecoregion is composed of flat to nearly flat bottomlands along larger rivers of interior Alaska. The bottomlands are dotted with thaw and oxbow lakes. Soils are poorly drained and shallow, often over permafrost. Predominant vegetation communities include forests dominated by spruce and hardwood species, tall scrub thickets, and wetlands.

107. YUKON FLATS
The Yukon Flats is a relatively flat, marshy basin floor in east central Alaska that is patterned with braided and meandering streams, numerous thaw and oxbow lakes, and meander scars. Surrounding the basin floor is a variable band of more undulating topography with fewer water bodies. In many respects the ecoregion is similar to the Interior Bottomlands Ecoregion (106), 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 hardwood species, tall scrub communities, and wet graminoid herbaceous communities are the predominant vegetation types.

108. OGLIVIE MOUNTAINS
This ecoregion, along the eastern edge of Alaska, consists of flat-topped hills eroded from a former plain and broad pediment slopes built up from mountains that are much subdued 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 hillslopes and valleys.

109. SUBARCTIC COASTAL PLAINS
This ecoregion mainly includes coastal plains of the Kotzebue Sound area and the Yukon and Kuskokwim River delta area. Flat, lake-dotted coastal plains and river deltas are characteristic of the region. Streams have very wide and serpentine meanders. Soils are wet and the permafrost table is shallow, providing conditions for wet graminoid herbaceous communities, the predominant vegetation type. The region is affected by both marine and continental climatic influences.

110. SEWARD PENINSULA
Some of the oldest geologic formations in Alaska provide a backdrop for this predominantly treeless ecoregion. Mesic graminoid herbaceous and low scrub communities occupy extensive areas. The ecoregion is surrounded on three sides by water, yet this has little ameliorating effect on the climate. Winters tend to be long and harsh and summers short and cool.

111. AHKLUN AND KILBUCK MOUNTAINS
Located in southwestern Alaska off Bristol and Kuskokwim Bays, this ecoregion is composed of steep, sharp, often ringlike groupings of rugged mountains separated by broad, flat valleys and lowlands. 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 hardwood species.

112. BRISTOL BAY-NUSHAGAK LOWLANDS
This lowland ecoregion is located in southwestern 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 (109). 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
This ecoregion is composed of rounded, folded and faulted sedimentary ridges intermittently surmounted 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 commonly 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
This ecoregion in southwestern Alaska is composed of a chain of sedimentary islands (eroded from older volcanic formations) that are crowned by steep volcanoes. Maritime climate prevails. The region is south of the winter sea ice pack and is generally free of 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
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 to rolling topography, and the coastal 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 hardwood species. The area is generally free from permafrost. Unlike many of the other nonmontane ecoregions, the Cook Inlet Ecoregion was intensely glaciated during the Pleistocene.

116. ALASKA RANGE
The mountains of south central Alaska, the Alaska Range, are very high and steep. This ecoregion is covered by rocky slopes, icefields, and glaciers. Much of the area is barren of vegetation. Dwarf scrub communities are common at higher elevations and on windswept 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 climate.

117. COPPER PLATEAU
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 silty or clayey, formed from glaciolacustrine 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
This ecoregion consists of steep, rugged mountains of volcanic origin that are extensively covered by ice fields and glaciers. Most slopes are barren 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
The steep and rugged mountains along the southeastern and south central coast of Alaska receive more precipitation annually than either the Alaska Range (116) or Wrangell Mountains (118) Ecoregions. Glaciated during the Pleistocene, most of the area 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
Located along the southeastern and south central shores of Alaska, the terrain of this ecoregion is a result of intense glaciation during late advances of the Pleistocene. The deep, narrow bays, steep valley walls that expose much bedrock, thin moraine deposits on hills and in valleys, very irregular coastline, high sea cliffs, and deeply dissected glacial moraine deposits covering 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.

