

Major Land Resource Area 223X

Cook Inlet Mountains

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Description

Major Land Resource Area (MLRA): 223X–Cook Inlet Mountains Physiography The Cook Inlet Mountains (Major Land Resource Area (MLRA) 223) are part of the Pacific Mountain physiographic system and occur in Southcentral Alaska. Comprising 19,550 square miles, this alpine MLRA includes mountains of the Chugach, Kenai, Talkeetna, Aleutian, and Alaska Ranges that drain into the Cook Inlet via the Cook Inlet Lowlands (MLRA 224). These rugged mountains are primarily undeveloped and sparsely populated. This MLRA concept is defined by the true alpine zone, while the Cook Inlet Lowlands (MLRA 224) are characterized by lower elevation hills and plains of the subalpine and boreal life zones. Large glaciers and icefields make up 15 percent of the Cook Inlet Mountains, and some glaciers extend down into the Cook Inlet Lowlands to elevations of 1,000 feet. The alpine zone in this MLRA ranges in elevation from roughly 2,500 feet near the boundary MLRA 224 to 20,320 feet at the summit of Denali, the tallest mountain in North America. All rivers in this MLRA drain into Cook Inlet including the Matanuska, Susitna and Little Susitna, Knik, Kenai, and Chakachatna Rivers. **Geology** The entire Cook Inlet Mountains area, except for the highest peaks and upper ridges, was glaciated during the Pleistocene. Throughout the Holocene, most of the Pleistocene glacial deposits have eroded or were buried in colluvium and slope alluvium, of which now comprise 65 percent of the current landscape. Mid-to-lower mountain slopes and valleys consist of modified moraine and outwash deposits overlain by varying thickness of eolian loess and volcanic ash. Lower valley bottoms are covered in contemporary fluvial deposits. Underlying bedrock consists of Late Paleozoic and Early Mesozoic sedimentary and Tertiary intrusive rock. **Soils** The dominant soil orders in MLRA 223 are Entisols, Inceptisols, and Spodosols. Soils have a cryic temperature regime or a subgelic soil temperature class, udic or aquic moisture regime, and amorphic or mixed minerology. Miscellaneous areas such as rock outcrop, rubble land, and glaciers, and others make up 70 percent of this MLRA. **Climate** The climate of this area is characterized by short summers, cloudy conditions, and moderate to cold temperatures. The average annual precipitation ranges from 15 to 30 inches at lower elevations to more than 100 inches in the high mountains, with most rain occurring in the late summer and fall. This area sees high levels of snowfall, ranging from 80 to 400 inches or more. Average annual temperatures in this alpine MLRA are near freezing, with freeze-free periods averaging 60 to 80 days, while at higher elevations, freezing temperatures can occur throughout any time of year. **Vegetation** The Cook Inlet Mountains are defined by an alpine life zone and therefore plant communities in this area are void of tree and tall shrub species that are common in subalpine and boreal zones. Alpine vegetation primarily

consists of dwarf scrub, lichen and herbaceous communities. Low willow-graminoid communities are common in drainages, depression, and stream terraces. On shallow soils on mountain slopes and rocky ridges lichen and ericaceous scrub mosaics are accompanied by scattered forbs are alpine grasses. At elevations above 7,500 feet, little to no plant growth takes place.

Ecological site keys

I. Elevations below 2500 feet

A. Boreal life zone. See key for MLRA 224: Cook Inlet Lowlands

II. Elevations above 2500 feet

A. Sparse, stunted trees. Shrubs < 3m in height

1 Subalpine life zone. See key for MLRA 224: Cook Inlet Lowlands

B. Alpine life zone. See key for MLRA 223: Cook Inlet Mountains

Alpine life zone: MLRA 223 key

I. Alpine life zone

A. Occurs in drainageways and depressions ... R223XY706AK – Alpine scrub wet depressions and drainageways

B. Occurs on mountain slopes

1 Associated with earth hummocks ... R223XY702AK – Alpine dwarf scrub earth hummocks

2 Other than above, mountain slopes ... R223XY710AK – Alpine dwarf scrub gravelly slopes