USDA icon **Natural Resources Conservation Service**

Major Land Resource Area 224X
Cook Inlet Lowlands

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Description

Major Land Resource Area (MLRA) 224X consists of lowlands and lower mountain slopes of the Susitna and Matanuska Valleys, western Kenai Peninsula, and west side of Cook Inlet. It makes up about 10,965 square miles (28,400 square kilometers). The terrain is a broad expanse of braided flood plains, high gradient rivers, rolling plains, terraces and hills bordered by the surrounding mountains. This MLRA contains a large percentage of Alaska's total population and includes the most extensive road systems in the state. Major rivers include the Susitna, Yentna, Little Susitna, Matanuska, Kenai, and Deep Creek that all drain into Cook Inlet. The largest lakes are Tustumena, Skilak, and Beluga Lake. Climate is highly variable ranging from temperate maritime to continental subarctic. Winter arctic weather systems are common in the northern portion of the MLRA. The average annual precipitation ranges from 15 to 60 inches (380 to 1,525 millimeters). The average annual snowfall is about 60 to 120 inches (150 to 305 centimeters). The average annual temperature is about 27 to 36 degrees F (-3 to 2 degrees C). The freeze-free period averages 65 to 160 days, decreasing with elevation. Vegetation ranges from spruce/birch forests to dwarf scrub/herbaceous alpine communities at high elevations. Saltwater meadows along the coast and wetlands and extensive marsh occur throughout the lowlands across the valley. In most years precipitation is adequate for crops, with limited irrigation. Major rivers are affected by high sediment-laden glacial meltwater and ice dam damage and flooding is a risk during spring thaw. Water is hard or very hard, with high potential levels of iron, but is otherwise of excellent quality. The dominant soil orders in this MLRA are Spodosols, Histosols, Entisols, and Inceptisols. Water, riverwash, beaches, and other miscellaneous (non-soil) areas are 15 percent of this MLRA. Glacial and volcanic ash wind-blown deposits influence much of the area. Glacial deposits and active fluvial deposits are common. The MLRA is visited by a great number of migrating birds and supports large populations of waterfowl. Most of the rivers and streams are important spawning grounds for salmon (Chinook, coho, and red salmon). Peonies, hay, potatoes, and hardy vegetables are important agriculture with a few dairy and beef cattle farms present. Commercial logging and subsistence firewood gathering are locally important, as is subsistence gathering. Other major industries in the area include commercial fishing, fish processing, and oil and gas extraction. Tourism and wildland recreation are becoming increasingly important. The major resource concerns are water erosion and water quality. Aquifers are highly susceptible to contamination from runoff. The intrusion of seawater can be a problem along Cook Inlet. Rapid development and off-road recreation are creating significant damage to the wildlands.

Ecological site keys

Cook Inlet Lowlands - Lifezone and MLRA key

I. Elevation typically between 0 and 2500 feet and vegetation representative of the subalpine and boreal life zones. This vegetation represents the Cook Inlet Lowlands Area (MLRA 224X).

- **A. Elevation between 1500 and 2500 feet and vegetation representative of the subalpine life zone, which is shrub and herbaceous dominant.**
- **B. Elevation typically between 0 and 1500 feet and vegetation representative of the boreal life zone, which is dominated by forests.**

II. Elevation ? 2500 feet and vegetation representative of the alpine life zone. Alpine vegetation belongs to the Cook Inlet Mountains Area (MLRA 223X).

Cook Inlet Lowlands (MLRA 224X) - Provisional Ecological Site Key - Subalpine

I. Occurs in high-elevation, drainageways and other flooded landforms...R223XY706 - Alpine scrub wet depressions and drainageways

II. Occurs on slopes of plains, hills, and mountains

A. Soils with a water table at very shallow for extended portions of the growing season. These are very poorly and poorly drained soils. ... R224XY741AK – Subalpine Herbaceous Wet Slopes Ecological Site Group

B. Drier soils then above.

1 Soils have a deep water table or no apparent water table during the growing season. These are somewhat excessive and well drained soils. ... R224XY743AK – Subalpine Scrub Dry Slopes Ecological Site Group

2 Soils have a shallow to moderately deep water table for portions of the growing season. Soils are considered somewhat poorly and moderately well drained. ... R224XY742AK – Subalpine Scrub Moist Slopes Ecological Site Group

Cook Inlet Lowlands (MLRA 224X) - Provisional Ecological Site Key - Lowlands

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I. Soils are within the tidal basin, responding to tidal inundation and saltwater intrusion. ... R224XY102AK – Tidal Basin Provisional Ecological Site Group

II. Soils are inland soils (generally not affected by saltwater inundation) and part of the rolling terrain and foothills of the MLRA, not coastally influenced.

A. Soils are driving by hydrologic processes, are wet or potentially wet sites.

1 Active water table is present

i. Soils are affected by ponding, generally in depressional areas of various landforms, or influence of subsurface seep, snow melt, and fluctuating water tables. ... R224XY201AK – Depressions and Seep Provisional Ecological Site Group

ii. Soils are within a riparian or drainage system. Linear landforms with flowing water (perennial or intermittent). ... R224XY202AK – Drainage Complex Provisional Ecological Site Group

2 No water table present. Sites are influenced by overland flow or seasonal subsurface seep. Directly tied to the floodplains. Alluvial soils that have stratified layers, may have organic cap, and have increasing gravels with profile depth. ... F224XY204AK – Mixed Forest/Meadow Flood Plains Provisional Ecological Site Group

B. Soils are upland soils that are not hydrologically controlled (small inclusions of water affected soils may be included.)

1 Alluvium and eolian derived soils, on plains, outwash, benches, terraces, and alluvial fans.

i. Eolian and wind affected soils, eolian sands, loess, and soils deposited in dunes, both on coastal plains, benches and upland plains. ... R224XY103AK – Sand Dunes Provisional Ecological Site Group (R/F)

ii. Alluvial influenced soils on alluvial fans, outwash plains, terraces, and stream terraces. ... F224XY302AK – Alluvial Uplands Provisional Ecological Site Group

2 Colluvium and residuum driven hills, foot slopes, and mountain slopes.

i. Soils are shallow on steeper hills, bedrock-controlled sites. ... F224XY301AK – Bedrock Hills Provisional Ecological Site Group

ii. Soils are mod-deep to deep, may have bedrock, but not directly controlled by bedrock.

a. **Soils are silty, highly ash influenced soils associated with forested slopes and plains. ...** F224XY303AK – Silty Ash Slopes Provisional Ecological Site Group

b. **Soils are skeletal soils with a potential for a silty, ash, or medial cap and occur on shrubby and herbaceous meadows. ...** R224XY304AK – Skeletal Slopes Provisional Ecological Site Group

MLRA 224X Archived Provisional Key

I. Organic rich soils

A. Depressions

1 Wet Depressions ... R224XY534AK – Organic Depressions, Very Wet

2 Depressions not excessively wet ... R224XY535AK – Organic Depressions

B. Floodplains

1 Wet Floodplains

2 Floodplains not excessively wet

II. Non-organic rich soils

A. Glacial influenced Soils

1 Moraine ice influenced soils

2 Till soils

i. Wet Till slopes ... F224XY362AK – Till Slopes, Wet Boreal-forested silty wet till slopes

ii. Till slopes, not wet ... F224XY359AK – Till Slopes Boreal-forested silty till slopes

B. Alluvium influenced soils

1 Gravelly floodplains

i. Riparian scrub floodplains

a. Alpine Floodplains ... R224XY257AK – Gravelly Flood Plains, Cool Alpine-riparian scrub gravelly diorite flood plains, Alpine-riparian scrub gravelly flood plains

b. Subalpine and boreal floodplains ... R224XY200AK – Gravelly Low Flood Plains Subalpine-riparian scrub gravelly diorite flood plains, Boreal-riparian scrub gravelly flood plains

ii. Forested floodplains ... F224XY201AK – Gravelly Flood Plains

2 Loamy Floodplains

i. Loamy forested floodplains ... F224XY100AK – Loamy Flood Plains

ii. Scrub and herbaceous driven wet floodplains

a. Boreal riparian scrub ... R224XY500AK – Loamy Wet Flood Plains Boreal-riparian scrub loamy wet flood plains

b. upland and high elevation floodplains

1) **Alpine herbaceous floodplains ...** R224XY152AK – Loamy Wet Flood Plains, High Elevation

2) **Subalpine upland wet floodplains ...** R224XY156AK – Loamy Wet High Flood Plains