USDA icon **Natural Resources Conservation Service**

Major Land Resource Area 241X
Seward Peninsula Highlands

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Description

The Seward Peninsula Highlands (MLRA 241X) occurs in Western Alaska, along the southernmost reaches of Land Resource Region Y, which has an arctic climate and occurs in the zone of continuous permafrost. This MLRA is approximately 13,700 square miles across the central Seward Peninsula. The terrain is defined by broad and extensive rolling hills and plains and solitary groups of rugged mountains expanding from sea level to a high point of 4,714 feet on Mount Osborn. Flood plains systems are common but generally narrow. The MLRA 241X watershed drains into Kotzebue Sound and the Chukchi Sea to the north and the Bering Sea to the West. Major rivers include the Buckland, Kiwalik, Serpentine, Agiapuk-American, Kougarok, and Kuzitrin Rivers. The area is mostly undeveloped wild land that is sparsely populated. Residents use this remote area primarily for subsistence hunting, fishing, and gathering. The largest communities in this predominantly inland MLRA are along the coast and include Teller and Brevig Mission. Reindeer herding is a profitable enterprise and many areas of this MRLA are used for reindeer graze and subsistence activities. Parts of this MLRA were mined for gold during the Nome gold rush. Several mines still operate within this boundary (USDA, 2022). Federally managed lands in this MLRA include parts of the Selawik National Wildlife Refuge and parts of Bering Land Bridge National Preserve. Geology and Soils MLRA 241X was mostly unglaciated during the late Pleistocene. Glaciers were present during the middle and early Pleistocene in scattered areas such as the York Mountains in the west, the Kiglauik Mountains to the south, and the Upper Kiwalik River drainage. The present-day landscape is mantled with loess, colluvium, and slope alluvium (USDA, 2022). Modified glacial moraines are evident in areas of past glacial activity. Bedrock material is a mix of rock types, with areas of sedimentary, volcanic and igneous throughout the MLRA. Bedrock is at or near the surface in most upland areas of this MLRA, which is reflected in soil development and vegetative patterns. This MLRA is in the zone of continuous permafrost. Frozen soils are common across the landscape, though may be absent from high energy systems on floodplains, around lakes and on gravelly, well drained soils. Permafrost is generally shallow to moderately deep (10 to 40 inches) that results in a restrictive layer that perches water and creates poorly to very poorly drained soils. Alongside these permafrost soils (Gelisols), other common soil orders include soils with little to no development in the Entisol and Inceptisol orders. Periglacial features are common and include solifluction lobes, polygonal ground, and thermokarst pits (USDA, 2022). Non-soil areas (rock outcrop, riverwash, and surface water) make up approximated five percent of the MLRA surface. Climate Climate is predominantly continental arctic, with brief, cool summers and long, cold winters. Maritime conditions, where summer temperatures are moderated by the proximity to open water, persist through the summer along the Bering Sea coast. Mean annual precipitation is 10 to 15 inches in the north and west, increasing to 20 to 40 inches in the mountainous areas in the south and east (USDA, 2022). Mean annual temperatures ranges from 20 to 26 degrees Fahrenheit (PRISM, 2018; SNAP, 2014). Vegetation Vegetation is mainly influenced by climate, site, and soil characteristics such as temperature-degree days, elevation, exposure to wind, soil depth, and soil hydrology. Dwarf scrublands are present across most of the upland, with vegetation further restricted on shallow soils. Lower elevations generally support more developed soils, and host willow-sedge scrublands, mixed ericaceous shrub scrublands, and herbaceous graminoid meadows. Tussock tundra is ubiquitous across much of the poorly drained, low-sloped landforms across the MRLA. Wetland communities dominate in closed depressions and drainages (USDA, 2022).

Ecological site keys

MLRA 241 Ecological Sites

I. Alluvial soils in river valleys

- **A. Riparian Complex, active flooding ...** R241XY160AK – Arctic Scrub Riparian Complex
- **B. Stream Terrace ...** R241XY163AK – Arctic Scrub-Tussock Silty Stream Terrace

II. Slopes (Mountains, Hills & Plains)

- **A. Mountains**
  - **1 Water table 20in or shallower during growing season**

i. **Tussock tundra, frequent & long ponding ...** R241XY119AK – Alpine Scrub-Tussock Frozen Silty Slopes

ii. **Not a tussock tundra, no ponding**

a. **Acidic soil ...** R241XY111AK – Alpine Sedge-Scrub Frozen Loamy Slopes

b. **Non-acidic soil ...** R241XY112AK – Arctic Scrub Frozen Alkaline Loamy Slopes

2 Water table absent or deeper than 20in during growing season

i. **Dryer soils on upper mountain slopes ...** R241XY117AK – Alpine Dwarf Scrub Gravelly Summits

ii. **Wetter soils on lower mountain footslopes ...** R241XY118AK – Arctic Tall Scrub Loamy Slopes

B. Hills and Plains

1 Warm slopes, Inceptisols ... R241XY130AK – Arctic Scrub Loamy Warm Hillslopes

2 Cold slopes, Gelisols

i. **Very poorly drained, tussock tundra, mounds may be present ...** R241XY131AK – Arctic Tussock Loamy Frozen Slopes

ii. **Poorly drained, scrubland, circles may be present ...** R241XY134AK – Arctic Scrub Loamy Hillslopes