Major Land Resource Area 238X
Yukon-Kuskokwim Coastal Plain

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Description

Geography The Yukon-Kuskokwim Coastal Plain area (MLRA 238x) consists of the broad, nearly level delta along the lower reaches of the Yukon and Kuskokwim rivers, where the rivers empty into the Bering Sea. The Yukon River runs along the northern edge of the area while the Kuskokwim River runs along the southern edge. This MLRA makes up 31,565 square miles. MLRA 238x is bordered by MLRA 240x (Nulato Hills-Southern Seward Peninsula Highlands) to the North, MLRA 237x (Ahklun Mountains) to the South, and MLRAs 230x (Yukon-Kuskokwim Highlands) and 229x (Interior Alaska Lowlands) to the East. Although the MLRA is mostly undeveloped wild land and is sparsely populated, there are 42 villages scattered along the coast or the banks of the Yukon and Kuskokwim Rivers. The principal communities are Aniak, Bethel, Emmonak, Hooper Bay, and Saint Mary's. Physiography Although primarily comprised of deltaic lowlands, in a few areas, isolated low hills rise above the surrounding coastal plain. Numerous low-gradient streams meander through this MLRA, many of which are tributaries or former channels of the Yukon and Kuskokwim Rivers. Depressions and shallow basins on the coastal plain are dotted with interconnecting stream channels, wetlands, and countless small and medium-size lakes. On the floodplains between channels and wetlands, low escarpments, meander scars, oxbow lakes, sloughs, and islands can be found. The coastline is broken by several large inlets and bays, including Baird Inlet, which forms a large inland sea behind Nelson Island. Elevations generally range from sea level to 300 feet but reach heights of 2,342 feet at the summit of Towak Mountain. A vast majority of the surface water from interior and western Alaska drains into the Bering Sea through MLRA 238x. Major rivers include the Yukon, Kuskokwim, Tovers, Black, Azun, Kashunuk, and Izaviknek Rivers. In addition to the various rivers and tributaries, lakes make up about 40 percent of this MLRA. This area is in the zone of discontinuous permafrost, where permafrost is thin to moderately thick and primarily occurs in fine textured soils. Permafrost does not generally occur on flood plains or in areas near bodies of water. Geology MLRA 238x was unglaciated during the Pleistocene, except for along the southern edge, where glaciers from the Ahklun mountains may have extended into portions of the lowlands. A majority of the sediments across the area are fine textured Holocene and Pleistocene deltaic deposits from the Yukon and Kuskokwim Rivers, and loamy and sandy Holocene fluvial deposits on flood plains and stream terraces. In the western part of the MLRA, low basalt hills, cinder cones, and volcanic craters from the Cretaceous and Tertiary can be found. Climate The climate of MLRA 238x is primarily maritime throughout the summer, and when Bering Sea ice pack forms in the winter, it

becomes more characteristic of a continental climate. Summers are short, cloudy, and rainy while winters are long, cold, and foggy, especially in coastal areas. Windy conditions are common throughout the year. Mean annual precipitation is 12 to 30 inches and mean annual snowfall ranges from 40 to 90 inches. Freeze-free period range 116 to 150 days, but freezing temperatures can occur year-round, although rare in June, July, and August. This cold climate leads to MLRA 238x being included in the Arctic. Soils The dominant soil orders in MLRA 238x are Gelisols, Histosols, Inceptisols, and Entisols. Soils have a subgelic or cryic temperature regime, and an aquic or udic moisture regime. Fibristels, Hemistels, Histoturbels, and Aquiturbels are the most common Gelisol great groups. Fibristels and Hemistels have thick accumulations of organic material and occur in depressions and shallow basins. The Orthels and Turbels have comparably thinner surface organic material. The Histoturbels are common in elevated and convex areas and Aquiturbels are common on terraces and drainageways. Inceptisols, Entisols, and Histosols do not have permafrost within the soil profile. Histosols occur in depressions with thick accumulations of organic material. Inceptisols occur on the slopes of hills and mountains, swales, terraces, and flood plains. Entisols occur on shore complex and flood plains. Vegetation Lakes, ponds, and other types of surface water are common in this area and vegetation near these water bodies include wet sedge meadows, sedge-shrub meadows, and sedge-moss meadows. Low uplands support low and dwarf ericaceous shrubs, tussock-forming sedges, other hydrophytic plants, and mosses. Sites with higher local relief and better drainage support low ericaceous scrub with mosses, lichens, willows, and forbs. Low ericaceous shrubs, willow, alder, and mosses are understory associated in these forests and woodlands. Land use Residents use this area primarily for subsistence hunting, fishing, and gathering. Less than one percent of the MLRA is urban, and most communities are along the coast or major rivers and lakes. Disturbance of fragile permafrost soils is the major soil resource concern in this area, resulting from damage of insulating organic material that allows permafrost in upper soil layers to thaw. This can lead to ponding, soil subsidence, erosion, and altered hydrologic function. In order to slow the thawing of permafrost, management is needed to protect organic material and promote thermal balance of soils.

Ecological site keys

MLRA Decision Key - Yukon-Kuskokwim Coastal Plain MLRA and adjacent MLRA

I. Elevation above 2000 feet, elevation is above MLRA concept. See provisional ecological site keys for Ahklun Mountains (237X) or Nulato Hills-Southern Seward Peninsula Highlands (240X).

II. Elevation below 2000 feet.

A. Arctic climate that does not support forested plant communities. ... Key 2 – Yukon-Kuskokwim Coastal Plain MLRA - Provisional Ecological Site Key

B. Boreal climate that does support forested plant communities. See provisional

ecological site keys for Interior Alaska Lowlands MLRA (229X).

Yukon-Kuskokwim Coastal Plain MLRA - Provisional Ecological Site Key

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I. Occurs on shore complex and low coastal plain that are tidally influenced. Parent material includes marine deposits. ... R238XY101AK – Arctic Silty Shore Complex

II. Not as above, inland ecological sites.

A. Depressions. Soils commonly have 15 or more inches of peat and classify as Histosols that lack permafrost. ... R238XY407AK – Arctic Sedge Peat Depressions

B. Not as above. Vegetation on flood plains, stream terraces, and slopes of hills, plains, and mountains.

1 Riparian wetlands, including flood plains, swales, and drainageways.

i. Flood plains. Soils flood frequently to rarely. Soils are typically not underlain by permafrost. ... R238XY405AK – Arctic Scrub Loamy Flood Plain

ii. Swales and drainageways. Soils are wet and commonly underlain by permafrost. ... R238XY408AK – Arctic Scrub Loamy Frozen Swales and Drainageways

2 Stream terraces and slopes of of plains, hills, and mountains.

i. Wetlands. Soils are underlain by permafrost. ... R238XY404AK – Arctic Loamy Frozen Tussock Tundra

ii. Uplands. Soils are typically not underlain by permafrost. ... R238XY402AK – Arctic Scrub Hills and Mountains Complex