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Major Land Resource Area 245X
Arctic Foothills

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Description

The Arctic Foothills MLRA (MLRA 245X) includes the broad, rounded hills and nearly level uplands at the northern base of the Brooks Range from Point Hope, in the west, to Demarcation Point, in the east. It makes up about 45,565 square miles. Periglacial features occur throughout the area. The area is entirely undeveloped wildland and is sparsely populated. It is in the zone of continuous permafrost. MLRA 245X has boundaries based on physiography with MLRAs 242X, 243X, 244X, and 246X. MLRA 242X (Northern Seward Peninsula-Selawik Lowlands), near Kivalina Lagoon, is distinguishable by nearly level to rolling plains, river deltas, and extended mountain footslopes. MLRA 243X (Western Brooks Range Mountains), encompasses the southern slopes of the De Long Mountains, the Baird Mountains, the Noatak River drainage, and the lower Kobuk River drainage. MLRA 244X (Northern Brooks Range Mountains) has steep, rugged, high mountains and narrow valleys. MLRA 246X (Arctic Coastal Plain) has a level to gently rolling plain along the coast of the Arctic Ocean. MLRA 245 also is bordered by the Chukchi Sea. Land ownership: MLRA 245X encompasses the northernmost portions of the Noatak National Preserve, Gates of the Arctic National Park, and the Arctic National Wildlife Refuge (ANWR). The Noatak National Preserve is located along the Noatak River Corridor. The Noatak River is the nation’s largest unaltered river basin, and the preserve is around 6.5 million acres. 5.7 million acres of the preserve is designated as wilderness. The Noatak River is also a designated National Wild and Scenic River. Gates of the Arctic National Park is the northernmost national park in the United States, situated entirely north of the Arctic Circle. The area of the park and preserve is the second largest in the US at 8,472,506 acres, second only to Wrangell-St. Elias National Park and Preserve. The park features six Wild and Scenic Rivers. The Arctic National Wildlife Refuge (ANWR) is a 19,286,772-acre wildlife refuge located in northeastern Alaska. It is the largest wildlife refuge in the country. The ANWR is home to a diverse range of endemic mammal species and hundreds of species of migratory birds. The majority of MLRA 245 is managed by the BLM, USFWS, and the State of Alaska. The BLM manages 17,027,543 acres, around 58 percent of the MLRA. The USFWS manages 4,650,388 acres, around 16 percent of the MLRA, and the State of Alaska has a patent on 10,375,908 acres of the MLRA, around 36 percent of the MLRA. Climate: Brief, cool summers and long, very cold winters characterize the arctic climate of the Arctic Foothills MLRA. The average annual precipitation ranges 11.9 and 12.8 inches. Average annual snowfall ranges from about 40 to 60 inches. The average annual temperature ranges from 12 to 29 degrees Fahrenheit. The average freeze-free period is between 10 and 55 days. Geology: This MLRA remained unglaciated during the Pleistocene Epoch, except possibly for the upper areas along the edge of the Northern Brooks Range Mountains MLRA. Bedrock and coarse to fine rubble cover the surface of convex uplands. Elsewhere, Quaternary surface deposits include various alluvial, eolian, or glaciofluvial materials. Slightly modified to highly modified moraines and drift occur in areas adjacent to the Brooks Range. The bedrock geology consists primarily of Cretaceous and Late Paleozoic to Lower Mesozoic stratified sedimentary rocks or uplifted Cretaceous and Tertiary continental deposits. Soils: The dominant soil order within this MLRA is Gelisols with Inceptisols covering a comparatively minor extent. These Gelisols are shallow or moderately deep to permafrost and are typically poorly to very poorly drained. Miscellaneous (nonsoil) areas make up about 6 percent of this area and are primarily rock outcrop, talus, and ice. Gelisols are soils that have permafrost within 100 cm of the soil surface and/or have gelic materials within 100 cm of the soil surface and have permafrost within 200 cm. Gelic materials are mineral or organic soil materials that have evidence of cryoturbation (frost churning) and/or ice segregation in the active layer (seasonal thaw layer) and/or the upper part of the permafrost (NRCS 2024). The common suborders of Gelisols within this MLRA are Turbels, Histels, and Orthels. The Histels have thick accumulations of surface organic material and are associated with high-center polygons. The Orthels and Turbels have comparably thinner surface organic material and occur on high floodplains, stream terraces, low-center polygons, and the slopes of hills and plains. Turbels show signs of cryoturbation while Orthels do not. Inceptisols lack permafrost and are soils that have altered horizons that have lost bases or iron and aluminum but retain some weatherable minerals. They do not have an illuvial horizon enriched with either silicate clay or with an amorphous mixture of aluminum and organic carbon (NRCS 2024). The common suborder of Inceptisols in this MLRA are Gelepts, which are associated with dry and gravelly soils on the slopes of hills and plains. Vegetation dynamics: The hills and plains in this MLRA support dwarf scrub vegetation dominated by Dryas, black crowberry, and dwarf willow communities. On shallow, rocky soils and exposed landforms, lichens and scattered herbs dominate the ground layer. On more mesic soils, sedges, forbs, and mosses cover most of the surface. The mesic and deeper soils in valleys and basins and on terraces generally support low and dwarf willow and ericaceous shrub scrub and mesic graminoid herbaceous communities, commonly with extensive areas of tussock-forming sedges. Depressions, drainageways, and other saturated sites support wet sedge meadows and wet sedge-moss meadows. Flood plains support a mixture of tall and low scrub dominated by various willows, shrub birch, and some alder.

Ecological site keys

Arctic Foothills MLRA 245

I. Flood plains

A. Rarely floods, permafrost in soil profile, water table near the soil surface ... R245XY406AK – Arctic scrub loamy frozen floodplain

B. Floods occasionally, permafrost absent in soil profile, dry soils ... R245XY405AK – Arctic scrub loamy frozen floodplain wet

II. All other landforms

A. Massive ice wedges present resulting in low- or high-center polygons, slope negligible to gentle ... R245XY401AK – Arctic polygon complex

B. Low- or high-center polygons absent

1 Wetland soils, include soils that pond, have a water table at very shallow to shallow depth for long periods of time (0 to 20 inches), and/or are classified as very poorly to poorly drained.

i. Site frequently ponds and/or shows evidence of ponding ... R245XY201AK – Arctic tussock gravelly frozen slopes

ii. Site does not pond and/or shows no evidence of ponding ... R245XY402AK – Arctic scrub gravelly frozen slopes

2 Not as above, non-wetland soils ... R245XY403AK – Arctic scrub gravelly slopes