Major Land Resource Area 237X
Ahklun Mountains

Accessed: 05/10/2025

Description

The Ahklun Mountains Major Land Resource Area (MLRA 237) is located in western Alaska (fig. 1). Covering approximately 14,555 square miles, this MLRA includes the mountains, hills, and valleys of the Kilbuck Mountains in the north and the Ahklun Mountains in the south. With the exception of the Kilbuck Mountains and the highest ridges of the Ahklun Mountains, this MLRA was extensively glaciated during the Pleistocene (Kautz et al., 2004). Today, a few small glaciers persist in mountainous cirques (Gallant et al., 1995). The present-day landscape and landforms reflect this glacial history, with glacial moraines and drift covering much of the area (USDA-NRCS, 2006). The MLRA landscape is primarily defined by low, steep rugged mountains cut by narrow-to-broad valleys. Flood plains and terraces of varying sizes are common at lower elevations in valley bottoms. Glacially carved valleys host many lakes. Togiak Lake is one of the largest lakes in the region, measuring 13 miles long and about 9,500 acres in size. Major rivers include the Goodnews, Togiak, Kanektok, Osviak, Eek, and Arolik. Where the Goodnews and Togiak rivers reach the coast, the nearly-level to rolling deltas support numerous small lakes. This MLRA has two distinct climatic zones: subarctic continental and maritime continental (fig. 2). High elevation areas are considered subarctic continental, which have annual precipitation over 75 inches and mean annual temperatures below -3°C in extreme locations. Warmer, dryer areas at lower elevations are maritime continental. Mean annual precipitation ranges from 20 to 50 inches and mean annual temperature ranges from -0.2°C to 1.2°C (PRISM). This climate zone is influenced by both maritime and continental factors. Summer temperatures are moderated by the open waters of the Bering Sea, while winter temperatures are more continental in nature due to the presence of sea ice (Western Regional Climate Center, 2017). Seasonal sea ice reaches its southernmost extent off the coast of Alaska in Bristol Bay (Alaska Climate Research Center, 2017). The western Alaskan coast is also influenced by high winds from strong storms and from air masses in the Interior region (Hartmann, 2002). The Ahklun Mountains MLRA is principally undeveloped wilderness. Federally managed lands include the Togiak and Alaska Maritime National Wildlife Refuges. While sparsely populated, this area contains several communities, including Togiak, Manokotak, Twin Hills and Goodnews Bay. The largest village is Togiak, with a population of approximately 855 predominantly Yup'ik Alaska Natives (U.S. Census Bureau, 2016). Major land uses include subsistence activities (fishing, hunting, and gathering) and wildlife recreation (USDA-NRCS, 2006; Kautz et al., 2004).

Ecological site keys

AK637

I. Miscellaneous Areas - unvegetated

II. Vegetated Areas - supports an ecological site

A. Western Maritime, High Elevation (Uplands, Mountains)

1 Summits, Shoulders, Upper Mtn Backslopes

i. Summits & Shoulders - shallow to lithic contact, no glacial parent material ... R237XY217AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, High Elevation

ii. Summits & Shoulders - Moderately deep to lithic contact, glacial parent material present. R237XY217AK

iii. Very Steep Backslopes - high elevation, very gravelly ... R237XY219AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, Very Steep

2 Backslopes & Footslopes - concave upper backslopes and footslopes on upper third of mountains ... R237XY218AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, Concave

3 Drainageways - upper third of mountain slopes (alpine), slope alluvium, gravelly soil ... R237XY206AK – Western Alaska Maritime Dwarf Scrubland Loamy Drainage, High Elevation

4 Swales - upper third of mountain slopes (alpine), slope alluvium ... R237XY205AK – Western Alaska Maritime Scrubland Loamy Swales

B. Western Maritime, Low Elevation

1 Uplands

i. Plains and Terraces

a. Depressions ... R237XY208AK – Western Alaska Maritime Scrubland Peat Depressions

b. Undulating and Rolling Landforms

1) Convex Positions & High Linear positions shallow to sandy-skeletal material (well drained soil) ... R237XY201AK – Western Alaska Maritime Scrubland Gravelly Slopes

2) Linear positions (well-drained soils), short slope length ... R237XY204AK – Western Alaska Maritime Scrubland Loamy Slopes

3) Swales (Concave positions). R237XY205AK

c. Outwash Plains (slightly convex) ... R237XY215AK – Western Alaska Maritime Scrubland Loamy Plains

d. Linear Landforms

1) Earth hummocks present

a) Mosaic hummocks (microtopography creates unique veg communities on tops and bottoms of hummocks) ... R237XY220AK – Western Alaska Maritime Mosaic Loamy Hummocks

b) Non-mosaic hummocks ... R237XY222AK – Western Alaska Maritime Scrubland Loamy Hummocks

e. Talf - adjacent to rises. R237XY230AK

ii. Mountains & Hills

a. Alluvial Fans

b. Backslopes

1) Linear to concave, center and upper third slopes ... R237XY202AK – Western Alaska Maritime Mosaic Gravelly Slopes

2) Convex to linear slopes, center and upper third slopes. R237XY204AK

c. Footslopes & Toeslopes

1) Swales. R237XY205AK

2) Linear to Concave slopes ... R237XY230AK – Western Alaska Maritime Scrubland Silty Plains and Mountain Slopes, Lower

3) Convex to Concave Slopes, not a swale

a) Proximal to northern three-quarters of Togiak Lake ... F237XY221AK – Boreal Woodland Loamy Slopes

b) Linear to Concave sites. R237XY202AK

c) Convex sites. R237XY204AK

d. Summits & Shoulders, upper third of slopes

2 Lowlands

i. Drainageways - steep escarpments; gravelly, well-drained soils ... R237XY203AK – Western Alaska Maritime Scrubland Gravelly Drainage, Escarpment

ii. Floodplains

a. Low Floodplain - frequent flooding, often confined by escarpments ... R237XY210AK – Western Alaska Maritime Scrubland Gravelly Flood Plains

b. Mid Floodplain - occasional flooding, moderately well to well drained ... R237XY211AK – Western Alaska Maritime Scrubland Loamy Flood Plains

c. Mid Floodplain - occasional flooding, somewhat poorly to poorly drained ... R237XY212AK – Western Alaska Maritime Scrubland Silty Flood Plains

d. Mid to High Floodplain along Izaveiknik River - occasional to rare flooding ... F237XY216AK –

Boreal Woodland Loamy Flood Plains

e. Broad Floodplain / Terrace - no to rare flooding. F237XY212AK

f. Depressions on Floodplain

1) Organic depression. R237XY208AK

2) Mineral depression ... R237XY226AK – Western Alaska Maritime Grassland Peat Flood Plains, Depression

iii. Discharge Slopes, Fans, Seeps on Mountains ... F237XY239AK – Boreal Forest Loamy Slopes

iv. Shore Complexes

a. Depressions. R237XY208AK

b. Talf ... R237XY236AK – Western Alaska Maritime Graminoid Peat Plains

c. Rises

1) Windward side of berm, proximal to bay ... R237XY223AK – Western Alaska Maritime Graminoid Gravelly Plains, Berms

2) Leeward side of berm, set back from bay ... R237XY224AK – Western Alaska Maritime Scrubland Gravelly Plains, Berms

MLRA 237 Key - PES project

I. Western Alaska Maritime Climate Zone

A. High Elevation (Uplands & Mountains)

1 Summits, Shoulders and Mountain Slopes

i. Summits and Shoulders

a. Permafrost present - unsorted circles possible ... R237XY251AK – Western Alaska Alpine Dwarf Scrubland, Unsorted Circles

b. Permafrost absent ... R237XY217AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, High Elevation

ii. Mountain Slopes

a. Convex to linear slopes - very steep, very gravelly soil ... R237XY219AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, Very Steep

b. Concave to linear slopes; mountain flanks and mountain bases ... R237XY218AK – Western Alaska Maritime Dwarf Scrubland Gravelly Slopes, Concave

2 Concave Microfeatures on Mountain Slopes

i. Drainageways - upper third of mountain slopes, slope alluvium and gravelly soil ... R237XY206AK – Western Alaska Maritime Dwarf Scrubland Loamy Drainage, High Elevation

ii. Swales - upper third of mountain slopes (alpine), slope alluvium ... R237XY205AK – Western Alaska Maritime Scrubland Loamy Swales

B. Low Elevation

1 Uplands

i. Plains

a. Depressions ... R237XY208AK – Western Alaska Maritime Scrubland Peat Depressions

b. Other Landforms

1) Non-Linear Landforms

a) Outwash Plains ... R237XY215AK – Western Alaska Maritime Scrubland Loamy Plains

b) Other Landforms

(1) Concave to linear slopes, including swales ... R237XY205AK – Western Alaska Maritime Scrubland Loamy Swales

(2) Convex and linear upper slope positions; well drained soil ... R237XY201AK – Western Alaska Maritime Scrubland Gravelly Slopes

2) Linear Landforms

a) Earth hummocks present

(1) Mosaic hummocks ... R237XY220AK – Western Alaska Maritime Mosaic Loamy Hummocks

(2) Non-mosaic hummocks ... R237XY222AK – Western Alaska Maritime Scrubland Loamy Hummocks

b) No earth hummocks present

(1) Undulating drift plains - short slope lengths, well drained soil ... R237XY204AK – Western Alaska Maritime Scrubland Loamy Slopes

(2) Talf ... R237XY230AK – Western Alaska Maritime Scrubland Silty Plains and Mountain Slopes, Lower

ii. Mountains and Hills

a. Mountain and Hill Slopes

1) Drainageway ... R237XY255AK – Western Alaska Maritime Tall Scrubland Mountain and Hill Drainageways

2) Other

a) Backslopes, shoulders & center to upper third mountain flanks

(1) Slopes with earth hummocks ... R237XY256AK – Western Alaska Maritime Tussock-Scrub Mountain Slopes, Hummocked

(2) Slopes without earth hummocks

(a) Concave to linear slope shape (Colluvial backslopes) ... R237XY202AK – Western Alaska Maritime Mosaic Gravelly Slopes

(b) Convex to linear slope shape (more stable slope position) ... R237XY204AK – Western Alaska Maritime Scrubland Loamy Slopes

b) Footslopes, toeslopes, lower backslopes and mountain bases

(1) Swales ... R237XY205AK – Western Alaska Maritime Scrubland Loamy Swales

(2) Other

(a) Moderately well drained soil (linear to concave slopes) ... R237XY230AK – Western Alaska Maritime Scrubland Silty Plains and Mountain Slopes, Lower

(b) Well to excessively well drained soil (convex to concave slopes)

(1) Proximal to northern three-quarters of Togiak Lake ... F237XY221AK – Boreal Woodland Loamy Slopes

(2) Not proximal to northern three-quarters of Togiak Lake

(a) Linear to concave slopes ... R237XY202AK – Western Alaska Maritime Mosaic Gravelly Slopes

(b) Linear to convex sites ... R237XY204AK – Western Alaska Maritime Scrubland Loamy Slopes

b. Other Mountain and Hill Landforms

1) Alluvial fans

a) Shallow to root restrictive layer ... F237XY221AK – Boreal Woodland Loamy Slopes

b) Very deep to root restrictive layer ... F237XY239AK – Boreal Forest Loamy Slopes

2) Saddles - earth hummocks present ... R237XY256AK – Western Alaska Maritime Tussock-Scrub Mountain Slopes, Hummocked

2 Lowlands

i. Flood Plains and Coastal Plains

a. Flood Plains & Terraces

1) Flood Plains &Terraces - linear slopes

a) Flood Plain

(1) Flood Plain along Izaveiknik River - mid to high floodplain ... F237XY216AK – Boreal Woodland Loamy Flood Plains

(2) Other Flood Plains

(a) Low Flood Plains

(1) Proximal to river system, frequent flooding ... R237XY210AK – Western Alaska Maritime Scrubland Gravelly Flood Plains

(2) Distal from river system, less than frequent flooding ... R237XY268AK – Western Alaska Maritime Scrubland on Low Flood Plains, distal from river

(b) Mid Flood Plains

(1) Moderately well to well drained soil ... R237XY211AK – Western Alaska Maritime Scrubland Loamy Flood Plains

(2) Somewhat poorly to poorly drained soil ... R237XY212AK – Western Alaska Maritime Scrubland Silty Flood Plains

b) Terrace

(1) Hummocks absent ... R237XY212AK – Western Alaska Maritime Scrubland Silty Flood Plains

(2) Hummocks present ... R237XY257AK – Western Alaska Maritime Low Scrub Flood Plain Terrace, Hummocks

2) Microfeatures on Flood Plains & Terraces - concave

a) Depressions on Flood Plains

(1) Scrub wetland, very poorly drained ... R237XY208AK – Western Alaska Maritime Scrubland Peat Depressions

(2) Herbaceous wetland (grassland) - permanent water table, very long ponding ... R237XY226AK – Western Alaska Maritime Grassland Peat Flood Plains, Depression

b) Oxbow Lake ... R237XY258AK – Western Alaska Maritime Sedge-Shrub Oxbow Lakes

b. Coastal Plains

1) Shore Complex

a) Berms

(1) Windward side of berm, proximal to bay ... R237XY223AK – Western Alaska Maritime Graminoid Gravelly Plains, Berms

(2) Leeward side of berm, distal from bay ... R237XY224AK – Western Alaska Maritime Scrubland Gravelly Plains, Berms

b) Other (not a rise)

(1) Depression ... R237XY208AK – Western Alaska Maritime Scrubland Peat Depressions

(2) Talf ... R237XY236AK – Western Alaska Maritime Graminoid Peat Plains

2) Not a Shore Complex

a) Tidal Flats ... R237XY254AK – Western Alaska Maritime Grassland Tidal Flats, Subaqueous

b) Flood Plain ... R237XY264AK – Western Alaska Maritime Tall Shrub Coastal Flood Plain

ii. Other Landforms

a. Discharge Slopes & Seeps on Mountains ... F237XY239AK – Boreal Forest Loamy Slopes

b. Drainageways - steep escarpments, gravelly, well drained soil ... R237XY203AK – Western Alaska Maritime Scrubland Gravelly Drainage, Escarpment

II. Boreal Climate Zone

A. Rounded Mountains - subalpine, linear to concave, backslopes to footslopes ... F237XY259AK – Boreal

Subalpine Woodland on Slopes of Rounded Mountains

B. Rugged Mountains

1 Alpine and Subalpine

i. Alpine

a. Summits and Shoulders - Convex ... R237XY270AK – Boreal Alpine Dwarf Scrub Mountain Summits and Shoulders, Convex

b. Summits and Shoulders - Linear ... R237XY260AK – Boreal Alpine Tussock Mountain Summits and Shoulders, Linear

ii. Subalpine - linear to concave backslopes and footslopes ... F237XY265AK – Boreal Subalpine Woodland on Slopes of Rugged Mountains

2 Other

i. Backslopes and Footslopes

a. Linear to Convex slopes ... F237XY261AK – Boreal Forest Mountain Backslopes and Footslopes, Linear to Convex

b. Linear to Concave slopes ... F237XY262AK – Boreal Forest Mountain Backslopes and Footslopes, Linear to Concave

ii. Drainageways ... F237XY263AK – Boreal Woodland Mountain Drainageway