

# Major Land Resource Area 236X

## Bristol Bay-Northern Alaska Peninsula Lowlands

Accessed: 04/28/2026

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### Description

The Bristol Bay-Northern Alaska Peninsula Lowland Major Land Resource Area (MLRA 236) is located in Western Alaska. This MLRA covers approximately 19,500 square miles and is defined by an expanse of nearly level to rolling lowlands, uplands and low to moderate hills bordered by long, mountain footslopes. Major rivers include the Egegik, Mulchatna, Naknek, Nushagak, and Wood River. MLRA 236 is in the zone of discontinuous permafrost. It is primarily in areas with finer textured soils on terraces, rolling uplands and footslopes. This MLRA was glaciated during the early to middle Pleistocene. Moraine and glaciofluvial deposits cover around sixty percent of the MLRA. Alluvium and coastal deposits make up a large portion of the remaining area (Kautz et al., 2012; USDA, 2006). Climate patterns across this MLRA shift as one moves away from the coast. A maritime climate is prominent along the coast, while continental weather, commonly associated with Interior Alaska, is more influential inland. Across the MLRA, summers are general short and warm while winters are long and cold. Mean annual precipitation is 13 to 50 inches, with increased precipitation at higher elevations and areas away from the coast. Mean annual temperatures is between 30 and 36 degrees F (USDA, 2006). The Bristol Bay-Northern Alaska Peninsula MLRA is principally undeveloped wilderness. Federally managed land includes parts of the Katmai and Aniakchak National Parks, and the Alaska Peninsula, Becharof, Togiak and Alaska Maritime National Wildlife Refuges. The MLRA is sparsely populated. Principal communities include Dillingham, Naknek, and King Salmon. Commercial fishing in Bristol Bay and the Bering Sea comprises a major part of economic activity in the MLRA. Other land uses include subsistence activities (fishing, hunting, and gathering) and sport hunting and fishing (USDA, 2006).

### Ecological site keys

#### MLRA 236

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#### I. Boreal Climatic Zone

##### A. Upland

##### 1 Escarpments on Mountains and Hills

- i. **Planar to concave slope shape** ... F236XY114AK – Boreal Forest Loamy Wet, Steep Slopes
- ii. **Planar to convex slope shape** ... F236XY113AK – Boreal Forest Loamy Steep Slopes

##### 2 All Other Mountain, Hill & Plains Landforms

##### i. Mountains

##### a. Glaciated & Rugged Mountains

- 1) **Loamy, frozen soil; all aspects** ... F236XY202AK – Boreal Forest Frozen Loamy Slopes
- 2) **Silty, wet soil; warm slopes** ... F236XY201AK – Boreal Open Forest Wet Loamy Warm Mountain Slopes

##### b. **Rounded, non-glaciated mountains; colluvial backslopes** ... F236XY115AK – Boreal Forest Loamy Moist Slopes

##### ii. Hills and Plains

##### a. Swale and Depression Features

- 1) **Swales** ... F236XY152AK – Boreal Forest Volcanic Loamy Swales

2) **Depression Features** ... F236XY117AK – Boreal Forest Wet Loamy Plain

Drainageways

**b. All Other Landforms**

1) **Adjacent to gallery forest or within a few miles of Nushagak River** ... F236XY139AK – Boreal Woodland Loamy Rises

2) **Not As Above**

a) **Planar to Concave Slopes (common near Aleknagik, often surrounded by wetlands)** ... F236XY117AK – Boreal Forest Wet Loamy Plain Drainageways

b) **Planar to Convex Slopes**

(1) **Loess, wet soils** ... F236XY116AK – Boreal Forest Loamy Wet Slopes

(2) **Silty, moist soils**

(a) **Nearly level terrain; low slope gradient, high slope length** ... F236XY157AK – Boreal Woodland Moist Loamy Plains

(b) **Undulating or rolling terrain** ... F236XY115AK – Boreal Forest Loamy Moist Slopes

**B. Lowland**

1 **Terraces** ... F236XY165AK – Boreal Woodland Loamy Stream Terraces

2 **Floodplain**

i. **Unbraided river channels at higher elevations: tributaries to Nushagak and Mulchatna Rivers, generally over 60m elevation** ... F236XY176AK – Boreal Woodland Loamy Flood Plains

ii. **Braided river systems at lower elevations: along Nushagak River or other braided glacial river systems, generally below 60m elevation**

a. **Floodplains**

1) **Low Floodplain**

a) **In a channel/depression** ... R236XY163AK – Boreal Herbaceous Loamy Flood Plain Sloughs

b) **Not in a channel/depression** ... R236XY153AK – Boreal Willow Silty Low Flood Plains

2) **Mid and High Floodplains**

a) **Mid Floodplains**

(1) **In a channel** ... R236XY155AK – Boreal Scrub Loamy Flood Plains, Wet

(2) **Not in a channel**

(a) **Long ponding period** ... R236XY120AK – Boreal Open Scrub Loamy Mid Flood Plains

(b) **Short or absent ponding period**

(1) **Landscape cut by deep river channel** ... R236XY119AK – Boreal Scrubland Sandy Flood Plains

(2) **Deep river channel absent**

(a) Somewhat poorly drained, proximal to flood source ... R236XY158AK – Boreal Tall Scrub Gravelly Flood Plains

(b) Well drained to somewhat poorly drained, distal from flood source ... R236XY121AK – Boreal Tall Scrub Loamy Flood Plains

**b) High Floodplains**

(1) Ponding present ... F236XY150AK – Boreal Forest Loamy Wet Flood Plains

(2) Ponding absent ... F236XY111AK – Boreal Forest Loamy Flood Plains

**b. Floodplain microfeature**

1) Linear depression ... R236XY172AK – Boreal Dwarf Scrub Peat Flood Plains  
Depressions

2) Levee ... R236XY118AK – Boreal Graminoid Loamy Flood Plains

**II. Western Maritime Climatic Zone**

**A. Upland**

**1 Escarpments**

i. Along coastline ... R236XY175AK – Subarctic Scrub Loamy Steep Coastal Bluffs

ii. Along drainageway or river ... R236XY174AK – Subarctic Mosaic Loamy Steep Bluffs

**2 Not an escarpment**

**i. Plains and Hills**

a. Surface gravels present ... R236XY132AK – Subarctic Dwarf Scrub Dry Loamy Slopes

**b. Surface gravels absent**

1) Earth hummocks present ... R236XY102AK – Subarctic Dwarf Scrub Gravelly Slopes

**2) Earth hummocks absent**

a) Steep slopes less than three (3) meters in length ... R236XY128AK – Western Alaska  
Maritime Dwarf Scrub Loamy Slopes, Steep

**b) Slopes otherwise**

**(1) Concave microfeatures**

**(a) Swales**

(1) Circular swale ... R236XY151AK – Subarctic Open Willow Loamy Plain  
Swales

(2) Linear swale ... R236XY154AK – Subarctic Ericaceous Scrub Loamy  
Plain Swales

**(b) Depressions**

(1) Adjacent to large glacial lake ... R236XY127AK – Subarctic Sedge Peat  
Plain Depressions

(2) Not adjacent to a large glacial lake ... R236XY109AK – Subarctic Low Scrub  
Peat Drainages

**(2) Rolling and undulating hills and plains**

(a) **Exposed convex slopes of tall, rolling landscape; lake margins** ... R236XY124AK – Subarctic Tall Scrub Loamy Convex Hillslopes

(b) **Not as above**

(1) **On or surrounded by peat mounds** ... R236XY131AK – Subarctic Tussock-Scrub Frozen Plains

(2) **Not as above**

(a) **Exposed slopes (convex/convex), and long (400+ meters) slopes with <1% slope gradient** ... R236XY132AK – Subarctic Dwarf Scrub Dry Loamy Slopes

(b) **Linear/Linear and Linear/Convex slopes**

(1) **Proximal to organic drainageway or depression**

(a) **Warmer climate, forested (coastal)** ... F236XY171AK – Subarctic Woodland Loamy Slopes

(b) **Cooler climate, non-forested (Inland positions)** ... R236XY140AK – Subarctic Tussock Tundra Wet Loamy Plains

(2) **Not proximal to organic drainageway or depression**

(a) **Areas of increased out-flow** ... R236XY130AK – Subarctic Scrub Scrub Tundra Loamy Plains and Hills

(b) **Areas of increased in-flow**

(1) **Well drained soil** ... R236XY130AK – Subarctic Scrub Scrub Tundra Loamy Plains and Hills

(2) **Very poorly drained soil** ... R236XY204AK – Subarctic Low Scrub Loamy Glaciated Hill Depressions

## ii. Mountains

### a. Rounded Mountains

#### 1) Summits, Shoulders, Upper Backslopes

a) **Alpine** ... R236XY104AK – Alpine Dwarf Scrub Gravelly Slopes

b) **Subalpine** ... R236XY106AK – Subarctic Dwarf Scrub Dry Loamy Slopes

2) **Lower Backslopes and Footslopes** ... R236XY131AK – Subarctic Tussock-Scrub Frozen Plains

### b. Not as above

1) **Depressions** ... R236XY103AK – Subarctic Graminoid Loamy Mountain Depressions

#### 2) Slopes (Summits, Shoulders, Backslopes, Footslopes)

a) **Summits and Shoulders** ... R236XY104AK – Alpine Dwarf Scrub Gravelly Slopes

b) **Backslopes and Footslopes**

(1) **Well drained soil**

(a) **Concave to Linear slope shape** ... R236XY105AK – Subarctic Scrub Mosaic Gravelly Hillslopes

(b) **Convex to Linear slope shape** ... R236XY106AK – Subarctic Dwarf Scrub Dry Loamy Slopes

(2) **Poorly drained soil** ... R236XY203AK – Subarctic Tall Scrub Wet Loamy Mountain Slopes

## **B. Lowlands**

### **1 Plains (non-coastal) Concave Microfeatures**

i. **Depressions** ... R236XY110AK – Western Alaska Maritime Graminoid Loamy Depressions

#### **ii. Drainageways**

a. **Wider than 10m across** ... R236XY109AK – Subarctic Low Scrub Peat Drainages

#### **b. Narrower than 10 meter across**

1) **Surrounding slopes >10%** ... R236XY136AK – Subarctic Low Scrub Loamy Plain Drainages

2) **Surrounding slopes <10%** ... R236XY107AK – Western Alaska Maritime Scrub Gravelly Drainages

### **2 Coastal Plains and Floodplains**

#### **i. Coastal Plains**

##### **a. Plains**

##### **1) Presence of surface soil or rock fragments**

a) **Surface gravel present** ... R236XY133AK – Subarctic Graminoid Loamy Tidal Coastal Plains

b) **Surface gravel absent** ... R236XY170AK – Subarctic Graminoid Loamy Coastal Plain Rises

##### **2) Absence of surface soil or fragments**

a) **Adjacent to tidal gut** ... R236XY135AK – Western Alaska Maritime Scrub Loamy Plains, Coastal

b) **Not adjacent to tidal gut** ... R236XY170AK – Subarctic Graminoid Loamy Coastal Plain Rises

b. **Depression on coastal plain (surface water present)** ... R236XY129AK – Subarctic Low Scrub Peat Coastal Plains

#### **ii. Floodplains & Terraces**

##### **a. Terraces**

##### **1) On Nushagak River corridor (or similarly braided glacial river system)**

a) **Linear depression on terrace** ... R236XY144AK – Subarctic Scrub Peat Terraces

b) **Terrace talf** ... R236XY156AK – Subarctic Ericaceous Scrub Loamy Terraces

2) **Not as above** ... R236XY144AK – Subarctic Scrub Peat Terraces

**b. Floodplains**

1) **Floodplain depression** ... R236XY163AK – Boreal Herbaceous Loamy Flood Plain  
Sloughs

2) **Floodplain**

a) **Convex slope, run off medium to high** ... R236XY173AK – Subarctic Riparian Complex  
Loamy Flood Plains

b) **Linear slope, surface water may be present** ... R236XY108AK – Subarctic Graminoid Peat  
Flood Plains