

Ecological site VX226X00A114 Aleutian Dwarf Shrub Terraces

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General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 226X–Aleutian Islands-Western Alaska Peninsula

MLRA 226X is the only MLRA in the Aleutian Alaska Region. It makes up about 5,190 square miles (13,450 square kilometers). The chain of islands includes west of Unimak Island to Attu Island, the Pribilof Islands, and the Sanak Islands. Characteristics and weather patterns of the far western end of the Alaska Peninsula is being included in this MLRA. It is bordered on the south by the Pacific Ocean and on the north by the Bering Sea (the Pribilof Islands are bordered on all sides by the Bering Sea). The coastline is complex, with many prominent headlands, sea cliffs, and narrow, steep-walled bays. Elevation ranges from sea level to more than 4,000 feet (1,220 meters) on many of the islands. Islands drain into the North Pacific and the Bering Sea by numerous short, steep-gradient rivers and streams. Lakes make up less than 2 percent of the area.

Geology

This MLRA includes more than 50 volcanoes, with an estimated 27 with activity since the 1950s. Volcanic rocks and unconsolidated deposits from the Quaternary and Tertiary period overlie a submarine ridge of Tertiary sedimentary rocks. Glacial ice once covered the eastern part of the area to approximately Umnak Island. West of Umnak, only the upper elevations were glaciated. Glaciers account for only 1.5 percent, occurring on the highest volcanoes. Volcanic activity has mantled most of the area with thick deposits of silty volcanic ash, sandy and gravelly cinders, and volcanic rubble. Lower elevations have areas of glacial influenced landforms. Recent coastal and fluvial deposits occur in scattered areas along the coast and on flood plains.

Water

Precipitation is adequate for crops generally. Permanent mountain streams feed most of

the MLRA. The surface water generally is suitable for all uses. The ground water used in this MLRA is primarily from unconsolidated river valley sediments and bedrock aquifers. Iron is commonly high in the ground water, causing staining and precipitate in pipes. Wells are shallow with constant recharge by freshwater (rainfall and runoff); and are highly susceptible to contamination from runoff. The intrusion of seawater can be a problem along the coast.

Soils

The dominant soil orders in this MLRA are Andisols and Histosols. Miscellaneous areas (cinder land, rock outcrop, water, riverwash, and beaches) make up about 45 percent of this MLRA. The main soils are: Cryofibrists are poorly drained or very poorly drained and formed in thick deposits of organic material, along the margins of streams and lakeshores. Tsammana series, Andic Dystrocryepts, Aquandic Dystrocryepts and Vitrandic Dystrocryepts are coarse marine sediments underlain by volcanic deposits. Zolotoi series and other Haplocryands are shallow to deep, well drained to excessively drained, and formed in moderately thick or thick deposits of silty to sandy volcanic ash and coarse sandy to gravelly cinders over basalt bedrock. Polovina series and other Vitricryands are shallow to deep, well drained to excessively drained, and formed in moderately thick or thick deposits of silty to sandy volcanic ash and coarse sandy to gravelly cinders over basalt bedrock.

Biological Resources

Higher elevation vegetation consists of a mosaic of dwarf shrub scrub and lower elevations are wet and dry grasslands. Peatland vegetation consists of low ericaceous shrub scrub. No naturally occurring forests occur on the islands. Aleutian shield fern, Steller sea lion, and the Aleutian Canada goose are currently listed as threatened or endangered. The area is an important winter habitat and nesting habitat for waterfowl and a variety of other birds. Some of the eastern islands support small herds of caribou.

Land Use

Commercial fishing is the primary enterprise, with fur seal harvesting for pelts and meat, Reindeer herding, and small cattle herds. Subsistence hunting, fishing, and gathering are critical for local residents. The major resource concerns are water erosion and mass wasting of soils. Overgrazing by reindeer has impacted vegetation and introduction of rats, dogs, cats, and foxes has severely impacted the nesting bird populations.

LRU notes

MLRA 226X, although very size-limited, contains a very complex and dynamic of weather patterns driven by the Pacific air currents on the southern exposure of the islands, and the Bering Sea to the north. The mixing or colliding of these two systems, creates very dramatic and intense storm systems that batter the islands. Weather variables from the Pacific to the Bering Sea, extent from west to east, as well as the extreme elevational gradient moving from sea level to Alpine life zone lends to a community diversity that is difficult to describe across an MLRA extent. Land Resource Units (LRUs) will need to be

developed for this MLRA, as more extensive soils survey mapping is completed.

Classification relationships

Alaska-Aleutian province of the Pacific Mountain System.

USFS Description of Ecoregions of the United States

100 Polar Domain

120 Tundra Division

126 Bering Tundra (Southern) Province

M120 Tundra Division - Mountain Province

M127 Aleutian Oceanic Meadow--Heath Province

(USFS, 1994)

United States National Vegetation Classification

C04. Polar & High Montane Scrub, Grassland & Barrens Class

S12. Temperate to Polar Alpine & Tundra Vegetation Subclass

F031. Polar Tundra & Barrens Formation

D044. Arctic Tundra & Barrens Division

(USNVC, 2019)

LandFire BpS Model/Description Version: Nov. 2024

16110 - Western North American Boreal Mesic Bluejoint-Forb Meadow

17200 - Aleutian Ericaceous Dwarf-shrub, heath, and Fell-field

There is not a perfect fit that was identified, but these two communities have many similar characteristics.

(Landfire, 2009)

Ecological site concept

- Soils occur on terraces.
- Soils formed in alluvium influenced with silty eolian deposits and/or colluvium.
- Bedrock occasionally occurs at moderate to very deep depths.
- These are well drained soils without a water table in the soil profile.
- Rock outcrops are minor areas that are found across these landforms.
- The vegetation is diverse with several micro-topographical changes. There are areas of scour that have barren soils and gravels, generally with a strong cover of lichens, but overall, the area is well vegetated with crowberry hummocks, sedges and Reindeer lichen.

Associated sites

VX226X00A110	Aleutian Eolian Plains and Hills The Eolian Plains and Hill is similar in appearance, but is typically dominated by herbaceous species, specifically grasses and bryophytes with less hummocking.
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Similar sites

VX226X00A112	Aleutian Rolling Meadow Lowlands The dwarf and low shrubs will have a strong undercover of heath and lichen species on steeper, more exposed sedimentary slopes.
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Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) <i>Empetrum nigrum</i>
Herbaceous	(1) <i>Cladina portentosa ssp. pacifica</i> (2) <i>Carex lyngbyei</i>

Legacy ID

R226XY114AK

Physiographic features

- nearly flat to slightly sloping terraces with slopes up to 8 percent.
- flooding is common on drainages associated with the terraces but is not associated with this ecological site.
- Elevations range from 330 to 1130 feet elevation.
- no water table associated with this ecological site.

Table 2. Representative physiographic features

Landforms	(1) Island > Stream terrace (2) Terrace
Runoff class	Very low to low
Flooding duration	Not specified
Flooding frequency	None
Ponding frequency	None
Elevation	101–344 m
Slope	0–1%
Aspect	W, NW, N, NE, E, SE, S, SW

Table 3. Representative physiographic features (actual ranges)

Runoff class	Not specified
Flooding duration	Long (7 to 30 days)

Flooding frequency	None to frequent
Ponding frequency	Not specified
Elevation	3–344 m
Slope	0–8%

Climatic features

The climate is similar to that on the arctic coastal plain, except Islands are impacted by the tides, air movement, and storms influenced by the Pacific Ocean and Bering Sea, and really no inland influence. Winters are less severe than those on the coastal plain, with temperature ranges of 18 to 27 degrees F (10 to 15C), as compared to a 54 degrees F (30C) range on the coastal plain. The climate is characterized by fog and rain, with the amount of precipitation varying little from month to month. Annual precipitation varies from 21 in (530 mm) to more than 78 in (2,000 mm) across all islands. The higher elevations average 46 to 58 inches per year, with smaller islands receiving less precipitation than larger islands. Winds are often severe on the islands. Pacific Ocean water moving northward through the straits between the islands produces complex mixing with Bering Sea water, including upwelling. The Pribilof Islands in the Bering Sea are the southern limit of the arctic ice pack in winter (USDA-NRCS 2022). Weather information below is captured by climate stations located at Dutch Harbor and Cold Bay. The location of these stations represents only a small segment of the dynamic climate across this chain of islands.

Table 4. Representative climatic features

Frost-free period (characteristic range)	78-92 days
Freeze-free period (characteristic range)	122-136 days
Precipitation total (characteristic range)	1,168-1,473 mm
Frost-free period (actual range)	75-95 days
Freeze-free period (actual range)	119-139 days
Precipitation total (actual range)	1,092-1,549 mm
Frost-free period (average)	85 days
Freeze-free period (average)	129 days
Precipitation total (average)	1,321 mm

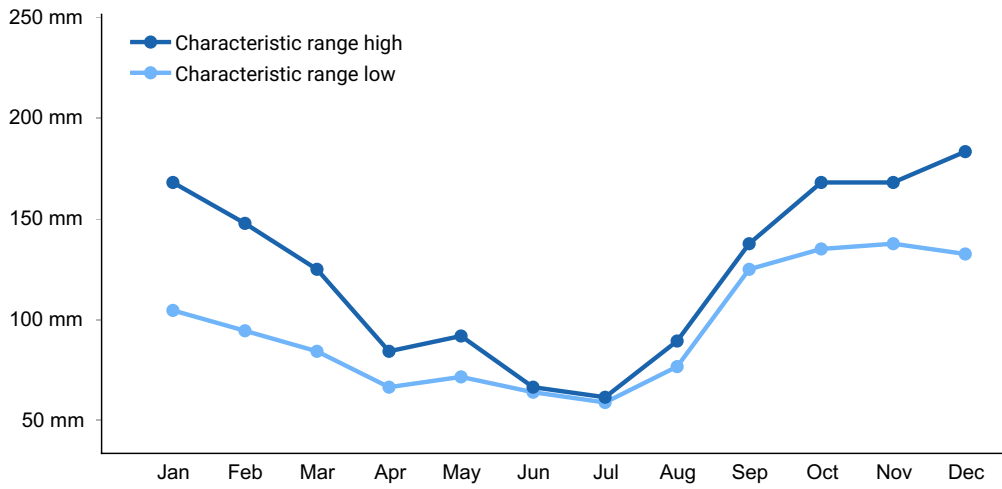


Figure 1. Monthly precipitation range

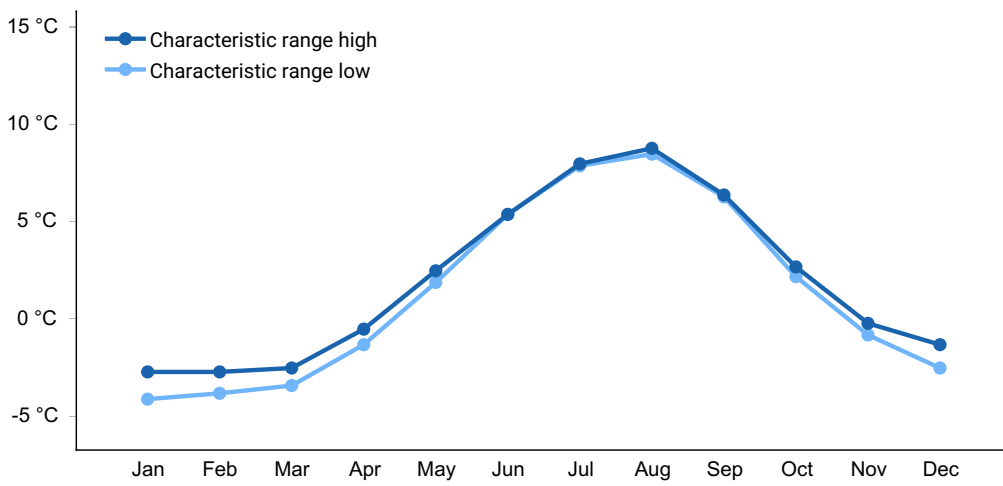


Figure 2. Monthly minimum temperature range

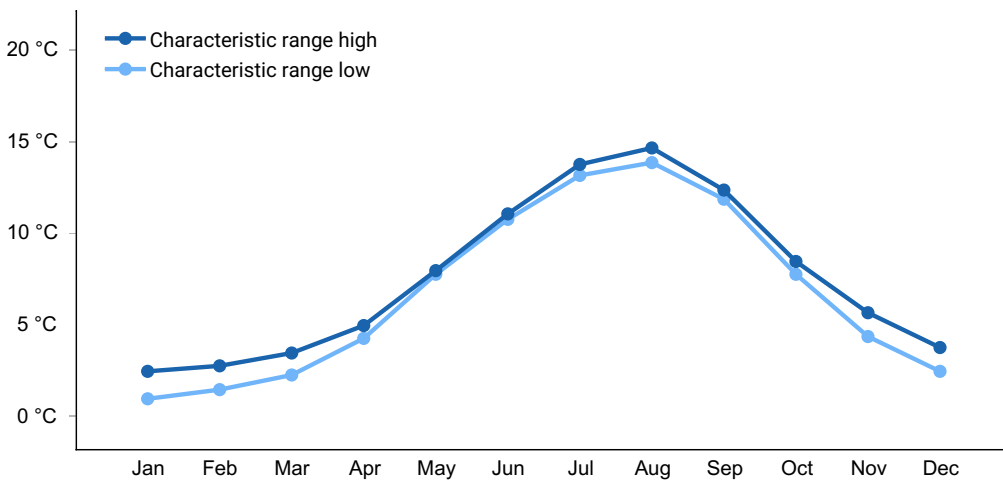


Figure 3. Monthly maximum temperature range

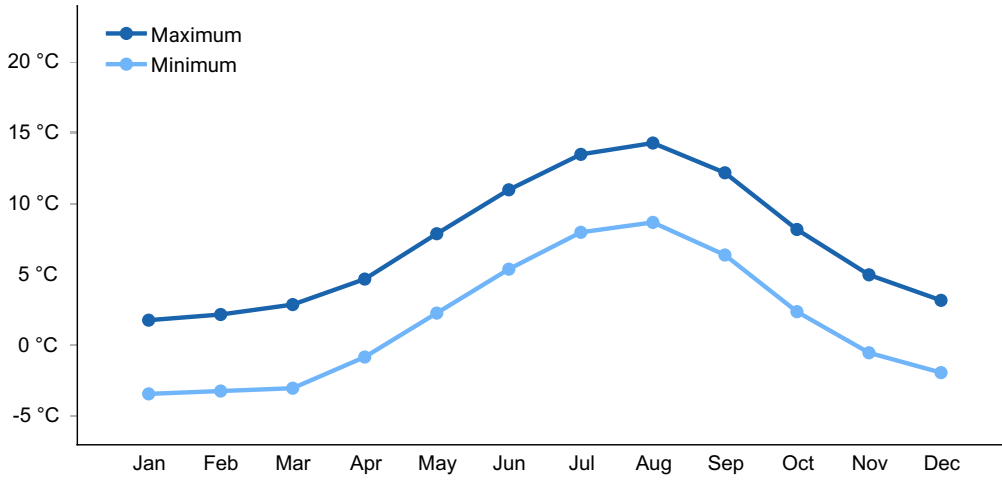


Figure 4. Monthly average minimum and maximum temperature

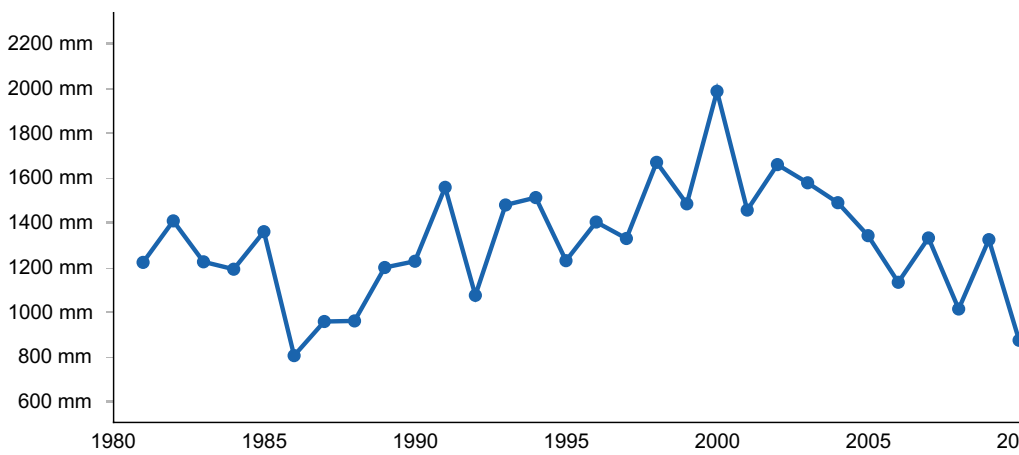


Figure 5. Annual precipitation pattern

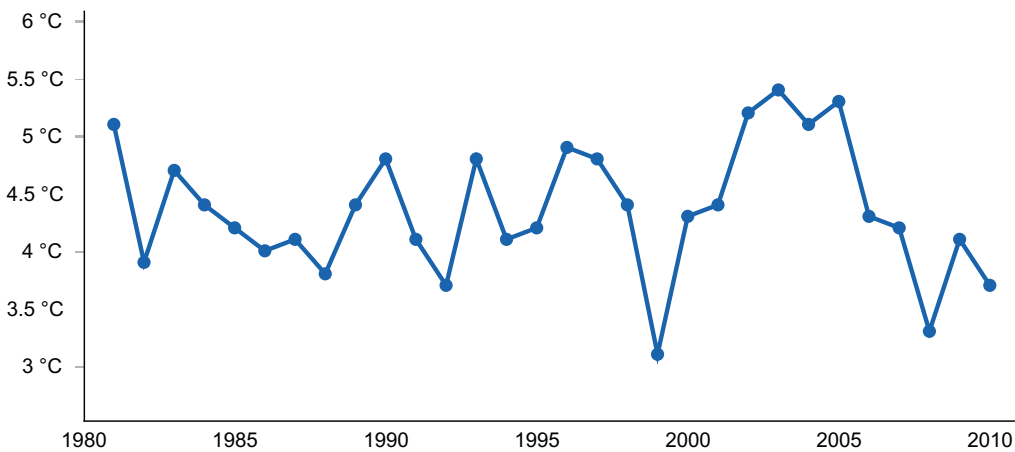


Figure 6. Annual average temperature pattern

Climate stations used

- (1) DUTCH HARBOR [USC00502587], Unalaska, AK
- (2) COLD BAY AP [USW00025624], Cold Bay, AK

Influencing water features

No water table is associated with this ecological site. Runoff from surrounding sites will influence hydrologic characteristics and does contribute to the vegetation on this site.

Wetland description

Seeps and depressions, or pockets may pond water for short periods, providing added benefit to vegetation. These isolated communities, if characteristic of a wetland are included in the Drainage Complex ecological site.

Soil features

- Soils are derived from alluvium with occasional influences from eolian deposits and/or colluvium
 - Mineral soils are commonly capped with up to 2 inches of organic material
 - Moderately deep to very deep bedrock is present in some areas of the terraces
 - Soils are moist, although not tied to a water table, which impedes permeability and may aid in some runoff from this ecological site having an effect on surrounding sites.
- Soil components correlated to this ecological site are classified as the following:
Bogoslof silt loam and Spodic Dystrocrypets

Table 5. Representative soil features

Parent material	(1) Alluvium (2) Colluvium–basalt (3) Eolian deposits–scoria
Surface texture	(1) Medial silt loam (2) Mucky silt loam
Drainage class	Well drained
Permeability class	Moderately slow to moderate
Depth to restrictive layer	152–183 cm
Soil depth	152–183 cm
Surface fragment cover <=3"	0%
Surface fragment cover >3"	0%
Available water capacity (0-101.6cm)	19.81–32.77 cm
Soil reaction (1:1 water) (0-25.4cm)	4.2–5.2
Subsurface fragment volume <=3" (0-152.4cm)	0%

Subsurface fragment volume >3" (0-152.4cm)	0%
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Table 6. Representative soil features (actual values)

Drainage class	Not specified
Permeability class	Moderately slow to moderately rapid
Depth to restrictive layer	99–183 cm
Soil depth	99–183 cm
Surface fragment cover ≤3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	3.56–32.77 cm
Soil reaction (1:1 water) (0-25.4cm)	4.2–6.5
Subsurface fragment volume ≤3" (0-152.4cm)	0–10%
Subsurface fragment volume >3" (0-152.4cm)	0–30%

Ecological dynamics

The old beach terraces and stream terraces that are inland from the coastal influence are a dominant landform across the lowland fringes of many of the islands. The vegetation is classified as a tundra cover, with crowberry hummocks. Depressional areas around the hummocks are a combination of bryophytes and bare ground. The larger part of this relatively flat landforms is a dense mat of crowberry, carex, mosses and lichens. Flowering herbaceous species are common throughout the community.

Across the Aleutian Islands, on the plains, hills, and terraces, a mound community is found that is comprised of either mosses or rocks. These mounds serve as a great roosting, nesting, and resting zone for many bird species. The extensive supply of bird manure will create a very unique plant community in and around the mounds. Although these are common across the landscape, they are small and not typically recognized in the soils information. They are a unique characteristic to note in the story of the island landscape.

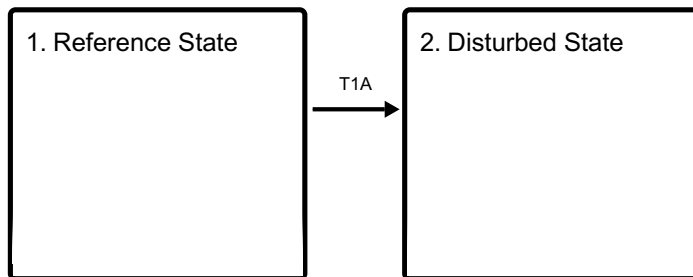
Although rare, there is the potential for infrequent fires across the hills and terraces associated with this ecological site. No specific data was located to provide any substantial findings on the impacts of these rare occurrences. The organic mat is a source of tinder and source of fuel for a burn on the landscape.

The Aleutian Islands experienced extensive disturbance from construction and military

operations during World War II. The denuded and torn ground was a great place for plants to colonize that were adapted to mineral soils. The community colonizers were native species but were not necessarily the common plants found pre-disturbance. Often, species in these disturbed areas are more vigorous and showier.

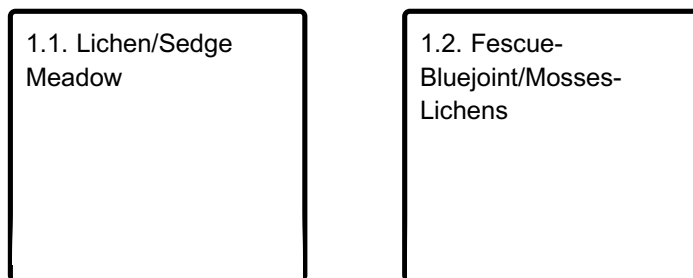
State and transition model

Ecosystem states

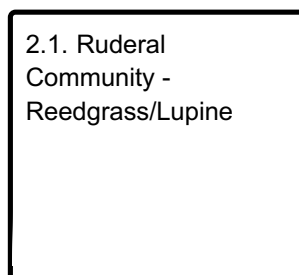


T1A - Military Operations historically, and Human development

State 1 submodel, plant communities



State 2 submodel, plant communities



State 1 Reference State

The Aleutian Dwarf Shrub Terraces ecological site is closely associated with the Aleutian Eolian Hills and Plains ecological site. Handsford et. al. 1969 Geologic Survey Report capture the typical community as an Cladonia-Carex meadow community. The black crowberry (*Empetrum nigrum*) cover is reduced in this ecological site with the dominant cover being sedges, lichen, and other bryophytes. Areas of hummocks are still present but not as prevalent and are interspersed with large extents of meadow and other flowering plants. A unique community complex found on the Aleutian Islands are interspersed mounds formed by moss and in some instances rocks. These distinct mounds provide a

roosting or nesting zone for birds creating isolated micro-communities that are fed by the bird manure deposited by the migrating bird populations over the centuries.

Dominant plant species

- black crowberry (*Empetrum nigrum*), shrub
- longawn sedge (*Carex macrochaeta*), grass
- Lyngbye's sedge (*Carex lyngbyei*), grass
- Pacific reindeer lichen (*Cladina portentosa ssp. pacifica*), other herbaceous

Community 1.1

Lichen/Sedge Meadow

The flat, wet soils across this ecological site hosts a large assortment of potential bryophytes, as well as other plants. The dense cover of the mosses, lichens, and liverworts fill in between the sedges, grasses and dwarf shrubs. Scattered hummocks of either mosses, or black crowberry are common on the landscape. The key characteristic species are Pacific reindeer lichen (*Cladina portentosa ssp. pacifica*), Lyngbye's sedge (*Carex lyngbyei*), and longawn sedge (*Carex macrochaeta*). Other common species are *Brachythecium cisperrimum*, Pacific reedgrass (*Calamagrostis nutkaensis*), *Calypogeia trichomanis*, umbel bittercress (*Cardamine oligosperma* var. *kamtschatica*), hairy pouchwort (*Calypogeia fissa*), grassy slope arctic sedge (*Carex anthoxanthea*), ceratodon moss (*Ceratodon purpureus*), heartleaf springbeauty (*Claytonia cordifolia*), Bering's tufted hairgrass (*Deschampsia beringensis*), (*Diplophyllum albicans*), sanionia moss (*Sanionia uncinata* var. *uncinata*), black crowberry (*Empetrum nigrum*), Chamisso's cottongrass (*Eriophorum chamissonis*), alpine fescue (*Festuca brachyphylla*), inflated notchwort (*Gymnocolea inflata*), northern white rush (*Juncus albescens*), (*Lophozia groenlandica*), stiff clubmoss (*Lycopodium annotinum*), Taylor's flapwort (*Mylia taylorii*), Wahlenberg's oncophorus moss (*Oncophorus wahlenbergii*), Binstead's pawwort (*Barbilophozia binsteadii*), arctic sweet coltsfoot (*Petasites frigidus*), California butterwort (*Pinguicula macroceras*), slender bog orchid (*Platanthera stricta*), scentbottle (*Platanthera dilatata*), alpine polytrichastrum moss (*Pogonatum alpinum* var. *alpinum*), heath earwort (*Scapania irrigua*), floppy earwort (*Scapania paludosa*), tufted bulrush (*Trichophorum cespitosum*), and Aleutian violet (*Viola langsdorffii*).

Dominant plant species

- black crowberry (*Empetrum nigrum ssp. nigrum*), shrub
- longawn sedge (*Carex macrochaeta*), grass
- Lyngbye's sedge (*Carex lyngbyei*), grass
- Pacific reindeer lichen (*Cladina portentosa ssp. pacifica*), other herbaceous

Community 1.2

Fescue-Bluejoint/Mosses-Lichens

The unique microfeature that is common across this ecological site are large mounds.

These mounds are comprised of either soil mounds stabilized by dense moss cover or rocks. These tall mounds are great bird perches and nesting areas and so often are well manured from centuries of use. The mounds have distinct communities on the top (apex) sides, and base of the mound. The apex of mound has a species that ordinarily forms the dominant vegetation but is accompanied by the others. The potential species are racomitrium moss (*Racomitrium lanuginosum*), elongate dicranum moss (*Dicranum elongatum*), Greenland dicranum moss (*Dicranum groenlandicum*), Howell's dicranum moss (*Dicranum howellii*), dicranum moss (*Dicranum fuscescens*), and Wahlenberg's oncophorus moss (*Oncophorus wahlenbergii*). Intermixed with these mosses are a few strands of leafy liverworts, including (*Anastrophyllum sphenoloboides*), bazzania liverwort (*Bazzania tricrenata*), bog pouchwort (*Calypogeia sphagnicola*), Twotoothed Cephalozia (*Cephalozia bicuspidata*), White spruce moss (*Cephalozia leucantha*), (*Kurzia makinoana*), brown flapwort (*Odontoschisma elongatum*), Binstead's pawwort (*Barbilophozia binsteadii*), bog germanderwort (*Riccardia latifrons*), and comb notchwort (*Anastrophyllum minutum*). Where bird manure is abundant, alpine fescue (*Festuca brachyphylla*), arctic bluegrass (*Poa arctica* ssp. *arctica*), tundra alkaligrass (*Puccinellia tenella* ssp. *Alaskana*), rinodina lichen (*Rinodina turfacea*), Star-tipped reindeer lichen (*Cladonia alpestris*), and eurhynchium moss (*Eurhynchium praelongum*) will replace much of the moss cover. Sides of mound: Pacific reedgrass (*Calamagrostis nutkaensis*), longawn sedge (*Carex macrochaeta*), manyflower sedge (*Carex pluriflora*), quill lichen (*Cladonia amaurocraea*), Bering reindeer lichen (*Cladina arbuscula* ssp. *beringiana*), toy soldiers cup lichen (*Cladonia bellidiflora*), Pacific reindeer lichen (*Cladina portentosa* ssp. *pacifica*), mealy forked cup lichen (*Cladonia scabriuscula*), threeleaf goldthread (*Coptis trifolia*), bryocaulon lichen (*Bryocaulon divergens*), Lapland cornel (*Cornus suecica*), sanionia moss (*Sanionia uncinata* var. *uncinata*), eurhynchium moss (*Eurhynchium praelongum*), inflated notchwort (*Gymnocolea inflata*), splendid feather moss (*Hylocomium splendens*), lung lichen (*Lobaria linita*), alpine blood lichen (*Mycoblastus alpinus*), Taylor's flapwort (*Myliia taylorii*), shield lichen (*Parmelia omphalodes*), felt lichen (*Peltigera aphthosa*), Schreber's big red stem moss (*Pleurozium schreberi*), alpine polytrichastrum moss (*Pogonatum alpinum* var. *alpinum*), polytrichum mosses (*Polytrichum* spp.), ciliated fringewort (*Ptilidium ciliare*), goose neck moss (*Rhytidiadelphus loreus*), rough goose neck moss (*Rhytidiadelphus triquetrus*), arctic raspberry (*Rubus arcticus* ssp. *stellatus*), cloudberry (*Rubus chamaemorus*), arctic willow (*Salix arctica*), globe ball lichen (*Sphaerophorus globosus*), northern asphodel (*Tofieldia coccinea*), northern mountain cranberry (*Vaccinium vitis-idaea* L. ssp. *minus*), and mountain hairgrass (*Vahlodea atropurpurea*). The nutrient richness of the bird manure, causes many of the mosses and lichens to succumb to the manure levels and will be replaced by species such as antitrichia moss (*Antitrichia curtispindula*), brachythecium moss (*Brachythecium albicans*), mealy forked cup lichen (*Cladonia scabriuscula*), (*Diplophyllum albicans*), American dunegrass (*Leymus mollis* ssp. *mollis*), common cowparsnip (*Heracleum lanatum*), felt lichen (*Peltigera canina*), Nelson's buttercup (*Ranunculus occidentalis* Nutt. var. *nelsonii*), racomitrium moss (*Racomitrium lanuginosum*), rinodina lichen (*Rinodina turfacea*), stickystem pearlwort (*Sagina maxima* ssp. *crassicaulis*), ulota moss (*Ulota phyllantha*), orange wall lichen (*Xanthoria candelaria*). Around the base of each mound there is a shift back to the expected

community with a ring of black crowberry (*Empetrum nigrum*), Pacific reedgrass (*Calamagrostis nutkaensis*), and Lyngbye's sedge (*Carex lyngbyei*). Those mounds with high influence from bird manure there is an increase in peppermint drop lichen (*Icmadophila ericetorum*), nested polypody (*Polypodium glycyrrhiza*), and bowl lichen (*Psoroma hypnorum*).

Dominant plant species

- black crowberry (*Empetrum nigrum ssp. nigrum*), shrub
- Pacific reedgrass (*Calamagrostis nutkaensis*), grass
- alpine fescue (*Festuca brachyphylla*), grass
- Lyngbye's sedge (*Carex lyngbyei*), grass
- arctic bluegrass (*Poa arctica ssp. arctica*), grass
- tundra alkaligrass (*Puccinellia tenella ssp. alaskana*), grass
- rinodina lichen (*Rinodina*), other herbaceous
- reindeer lichen (*Cladina*), other herbaceous
- felt lichen (*Peltigera*), other herbaceous
- peppermint drop lichen (*Icmadophila ericetorum*), other herbaceous

State 2

Disturbed State

The events of World War II impacted much of the Alaska Coastline, including the Aleutian Islands and the villages. The establishment of Military installations, the roads and other infrastructure installed, and the equipment movement around these installations had a significant impact. As such the current increase in development and some expansion in these village communities has continued to create disturbance on the landscape. Much of these communities were/are left to recover naturally. The colonization of these areas leads to a notable community.

Dominant plant species

- Pacific reedgrass (*Calamagrostis nutkaensis*), grass
- Nootka lupine (*Lupinus nootkatensis*), other herbaceous
- Alaska arnica (*Arnica unalaschcensis*), other herbaceous
- field horsetail (*Equisetum arvense*), other herbaceous
- trailing pearlwort (*Sagina decumbens*), other herbaceous
- ceratodon moss (*Ceratodon purpureus*), other herbaceous

Community 2.1

Ruderal Community - Reedgrass/Lupine

These disturbance communities are highly variable. Research brought forward a few main communities with characteristic species; however, these communities were located on one of many islands. The list here provides only a partial list of potential species:

Characteristic species: Pacific reedgrass (*Calamagrostis nutkaensis*), Nootka lupine

(*Lupinus nootkatensis*), Alaska arnica (*Arnica unalaschcensis*), field horsetail (*Equisetum arvense*), western pearlwort (*Sagina decumbens* ssp. *occidentalis*), and ceratodon moss (*Ceratodon purpureus*). Other species: boreal yarrow (*Achillea borealis*), western pearly everlasting (*Anaphalis margaritacea*), seacoast angelica (*Angelica lucida*), stoloniferous pussytoes (*Antennaria dioica*), umbel bittercress (*Cardamine oligosperma* var. *kamtschatica*), longawn sedge (*Carex macrochaeta*), big chickweed (*Cerastium fontanum* ssp. *Vulgare*), keyflower (*Dactylorhiza aristata*), tufted hairgrass (*Deschampsia cespitosa*), black crowberry (*Empetrum nigrum*), Hornemann's willowherb (*Epilobium hornemannii* ssp. *behringianum*), fourpart dwarf gentian (*Gentianella propinqua* ssp. *aleutica*), autumn dwarf gentian (*Gentianella amarella* ssp. *acuta*), Alaska hawkweed (*Hieracium gracile* var. *alaskanum*), common cowparsnip (*Heracleum lanatum*), alpine azalea (*Loiseleuria procumbens*), common woodrush (*Luzula multiflora* ssp. *multiflora*), smallflowered woodrush (*Luzula parviflor*), Chimisso's orchid (*Platanthera chorisiana*), alpine bluegrass (*Poa alpina*), largeglume bluegrass (*Poa macrocalyx*), alpine bistort (*Polygonum viviparum*), Pacific silverweed (*Argentina egedii* ssp. *Egedii*), wedgeleaf primrose (*Primula cuneifolia* subsp. *Saxifragifolia*), arctic rattlebox (*Rhinanthus minor* L. ssp. *groenlandicus*), *Sagina intermedia*, heartleaf saxifrage (*Saxifraga nelsoniana* D. Don ssp. *Insularis*), creeping sibbaldia (*Sibbaldia procumbens*), northern starwort (*Stellaria calycantha*), and brightblue speedwell (*Veronica serpyllifolia* L. ssp. *humifusa*). Other common bryophytes are braehythecium and bryum mosses, pebble cup lichen (*Cladonia pyxidata*), Twotoothed Cephalozia (*Cephalozia bicuspidata*), dicranella moss (*Dicranella subulata*), ditrichum moss (*Ditrichum heteromallum*), sanionia moss (*Sanionia uncinata* var. *uncinata*), eurhynchium moss (*Eurhynchium praelongum*), splendid feather moss (*Hylocomium splendens*), porpidia lichen (*Porpidia macrocarpa*), fir clubmoss (*Huperzia selago* var. *selago*), umbrella liverwort (*Marchantia polymorpha*), rhizomnium moss (*Rhizomnium glabrescens*), ladder flapwort (*Nardia scalaris*), cold crabseye lichen (*Ochrolechia frigida*), American philonotis moss (*Philonotis fontana* var. *americana*), bullseye lichen (*Placopsis gelida*), pogonatum moss (*Pogonatum urnigerum*), polytrichum moss (*Polytrichum formosum*), pohlia moss (*Pohlia nutans*), racomitrium moss (*Racomitrium ericoides*), snow pearlwort (*Sagina nivalis*), intermediate snow lichen (*Stereocaulon intermedium*), and tomentose snow lichen (*Stereocaulon tomentosum*).

Dominant plant species

- Pacific reedgrass (*Calamagrostis nutkaensis*), grass
- Nootka lupine (*Lupinus nootkatensis*), other herbaceous
- Alaska arnica (*Arnica unalaschcensis*), other herbaceous
- field horsetail (*Equisetum arvense*), other herbaceous
- trailing pearlwort (*Sagina decumbens*), other herbaceous
- ceratodon moss (*Ceratodon purpureus*), other herbaceous

Transition T1A

State 1 to 2

Extensive military operations occurred several of the islands leading to significant disturbance. Road systems, base developments, housing, and military equipment movement removed vast areas of cover and altered the landscape. Most of these areas were left to recover naturally. Current development around villages and port access on the islands are expanding to a minor degree on these remote islands, providing a source for further disturbance.

Additional community tables

Animal community

The area provides nesting habitat for a variety of birds, including rock sandpiper, whiskered auklet, rock ptarmigan, song sparrow, rosy finch, and winter wren. Some of the eastern islands support small herds of caribou that may utilize ridgelines, and accessible slopes.

Recreational uses

Tourism and wildland recreation are becoming increasingly important. Subsistence hunting and gathering provide food and a variety of other resources to local residents and are a major component of the local economy.

Wood products

None

Inventory data references

Very limited data is available and resides more on the coastal zone than the higher volcanics. Information used to build this ecological site was obtained from existing land cover and vegetation maps, literature review, and vegetative summaries from partnering agencies.

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	04/03/2026
Approved by	Blaine Spellman
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. Number and extent of rills:

2. Presence of water flow patterns:

3. Number and height of erosional pedestals or terracettes:

4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):

5. Number of gullies and erosion associated with gullies:

6. Extent of wind scoured, blowouts and/or depositional areas:

7. Amount of litter movement (describe size and distance expected to travel):

8. Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):

9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):

10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:

11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):

-
12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

Dominant:

Sub-dominant:

Other:

Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**
-

14. **Average percent litter cover (%) and depth (in):**
-

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**
-

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**
-

17. **Perennial plant reproductive capability:**
-