USDA Natural Resources
Conservation Service

Ecological site R241XY160AK
Arctic Scrub Riparian Complex

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Accessed: 03/14/2026

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): 241X–Seward Peninsula Highlands

The Seward Peninsula Highlands (MLRA 241X) occurs in Western Alaska, along the southernmost reaches of Land Resource Region Y, which has an arctic climate and occurs in the zone of continuous permafrost. This MLRA is approximately 13,700 square miles across the central Seward Peninsula. The terrain is defined by broad and extensive rolling hills and plains and solitary groups of rugged mountains expanding from sea level to a high point of 4,714 feet on Mount Osborn. Flood plains systems are common but generally narrow. The MLRA 241X watershed drains into Kotzebue Sound and the Chukchi Sea to the north and the Bering Sea to the West. Major rivers include the Buckland, Kiwalik, Serpentine, Agiapuk-American, Kougarok, and Kuzitrin Rivers. The area is mostly undeveloped wild land that is sparsely populated. Residents use this remote area primarily for subsistence hunting, fishing, and gathering. The largest communities in this predominantly inland MLRA are along the coast and include Teller and Brevig Mission. Reindeer herding is a profitable enterprise and many areas of this MRLA are used for reindeer graze and subsistence activities. Parts of this MLRA were mined for gold during the Nome gold rush. Several mines still operate within this boundary (USDA, 2022). Federally managed lands in this MLRA include parts of the Selawik National Wildlife Refuge and parts of Bering Land Bridge National Preserve.

Geology and Soils

MLRA 241X was mostly unglaciated during the late Pleistocene. Glaciers were present during the middle and early Pleistocene in scattered areas such as the York Mountains in the west, the Kiglauik Mountains to the south, and the Upper Kiwalik River drainage. The present-day landscape is mantled with loess, colluvium, and slope alluvium (USDA, 2022).

Modified glacial moraines are evident in areas of past glacial activity. Bedrock material is a mix of rock types, with areas of sedimentary, volcanic and igneous throughout the MLRA. Bedrock is at or near the surface in most upland areas of this MLRA, which is reflected in soil development and vegetative patterns.

This MLRA is in the zone of continuous permafrost. Frozen soils are common across the landscape, though may be absent from high energy systems on floodplains, around lakes and on gravelly, well drained soils. Permafrost is generally shallow to moderately deep (10 to 40 inches) that results in a restrictive layer that perches water and creates poorly to very poorly drained soils. Alongside these permafrost soils (Gelisols), other common soil orders include soils with little to no development in the Entisol and Inceptisol orders. Periglacial features are common and include solifluction lobes, polygonal ground, and thermokarst pits (USDA, 2022). Non-soil areas (rock outcrop, riverwash, and surface water) make up approximated five percent of the MLRA surface.

Climate

Climate is predominantly continental arctic, with brief, cool summers and long, cold winters. Maritime conditions, where summer temperatures are moderated by the proximity to open water, persist through the summer along the Bering Sea coast. Mean annual precipitation is 10 to 15 inches in the north and west, increasing to 20 to 40 inches in the mountainous areas in the south and east (USDA, 2022). Mean annual temperatures ranges from 20 to 26 degrees Fahrenheit (PRISM, 2018; SNAP, 2014).

Vegetation

Vegetation is mainly influenced by climate, site, and soil characteristics such as temperature-degree days, elevation, exposure to wind, soil depth, and soil hydrology. Dwarf scrublands are present across most of the upland, with vegetation further restricted on shallow soils. Lower elevations generally support more developed soils, and host willow-sedge scrublands, mixed ericaceous shrub scrublands, and herbaceous graminoid meadows. Tussock tundra is ubiquitous across much of the poorly drained, low-sloped landforms across the MRLA. Wetland communities dominate in closed depressions and drainages (USDA, 2022).

LRU notes

There are currently no Land Resource Areas (LRUs) delineated or described in MLRA 241X. There is potential for two or more LRUs along a climatic break between the lowlands and low-elevation hills of the north and west, and the higher, mountainous regions more prevalent in the south and east. However, vegetation and land management may not differ between these areas, as soils and vegetation are already restricted by cold annual temperatures even at low elevations.

Classification relationships

Alaska Vegetation Classification:
Closed tall scrub (II.B.1 - level III) / Willow (II.B.1.a – level IV)
(Viereck et al., 1992)

BioPhysical Settings: 6817150 – Alaska Arctic Floodplain
(LANDFIRE biophysical settings, 2009)

Seward Rangesites
20 – Tall Shrub flood plain
(SCS, 1984; Swanson et al., 1985)

Ecological site concept

Ecological Site characteristics:
• Describes the riparian complex of vegetative communities along the flood plain gradient
• Flooding is the major disturbance associated with this ecological site
• Rarely flooded areas like high floodplains have siltier soil profiles that are wet and frozen. Frequently flooded areas like point bars and low floodplains have comparatively much more sandy and gravelly soils that are dry and unfrozen.
• The reference plant community is a mixed willow and alder scrubland with forbs and graminoids in the understory. Flood regime results in two plant communities within the reference state.

Associated sites

R241XY163AK	**Arctic Scrub-Tussock Silty Stream Terrace** R241XY163AK describes scrub-tussock tundra terraces. Soils are very poorly drained and are susceptible to ponding during the growing season.

Similar sites

R241XY163AK	**Arctic Scrub-Tussock Silty Stream Terrace** Community 1.2 in this ecological site is similar to R241XY163AK. Both are in river valleys. Terrace sites do not undergo flooding and generally support wetter, permafrost-rich soils which is reflected in the vegetation.
R241XY118AK	**Arctic Tall Scrub Loamy Slopes** Ecological site R241XY118AK describes willow scrubland on mesic to wet mountain backslopes. The vegetation is similar, but the underlying soils and prospective management for each site are different.

Table 1. Dominant plant species

Tree	Not specified

Shrub	(1) *Alnus* (2) *Salix pulchra*
Herbaceous	(1) *Calamagrostis canadensis* (2) *Equisetum arvense*

Physiographic features

This ecological site occurs on river valley flood plains. Elevation ranges from 10 to 700 feet above sea level. Slope gradients are nearly level (0 to 2 percent), and this site occurs on all aspects. Areas proximal to the river flood more frequently and with greater energy than distal locations. Ponding does not occur. A shallow to moderately deep water table is present during the growing season along a gradient from areas proximal to distal from the flood source.

Table 2. Representative physiographic features

Slope shape across	(1) Linear
Slope shape up-down	(1) Linear
Landforms	(1) River valley > Flood plain (2) River valley > Flood plain (3) River valley > Flood plain (4) River valley > Flood plain
Runoff class	Negligible to very low
Flooding duration	Brief (2 to 7 days)
Flooding frequency	Occasional to frequent
Ponding frequency	None
Elevation	3–213 m
Slope	0–2%
Water table depth	0–51 cm
Aspect	W, NW, N, NE, E, SE, S, SW

Table 3. Representative physiographic features (actual ranges)

Runoff class	Not specified
Flooding duration	Not specified
Flooding frequency	None to frequent
Ponding frequency	Not specified
Elevation	Not specified

Slope	Not specified
Water table depth	Not specified

Climatic features

The Arctic climate of this ecological site includes short, cool growing seasons and long, cold winters. Mean annual temperature at sea level is about 22 degrees Fahrenheit in the coastal village of Wales. Approximately 35 percent of total precipitation occurs during the growing season months of June through August. Across the MLRA, snowfall ranges from 40 to 100 inches (USDA-NRCS, 2022).

Table 4. Representative climatic features

Frost-free period (characteristic range)	60-90 days
Freeze-free period (characteristic range)	50-80 days
Precipitation total (characteristic range)	356-406 mm
Frost-free period (actual range)	50-90 days
Freeze-free period (actual range)	40-80 days
Precipitation total (actual range)	254-457 mm
Frost-free period (average)	75 days
Freeze-free period (average)	65 days
Precipitation total (average)	381 mm

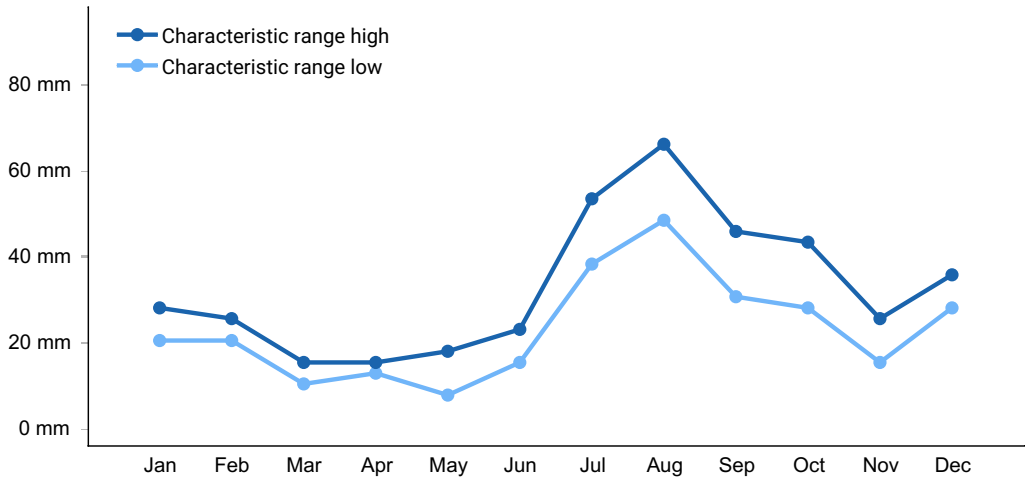


Figure 1. Monthly precipitation range

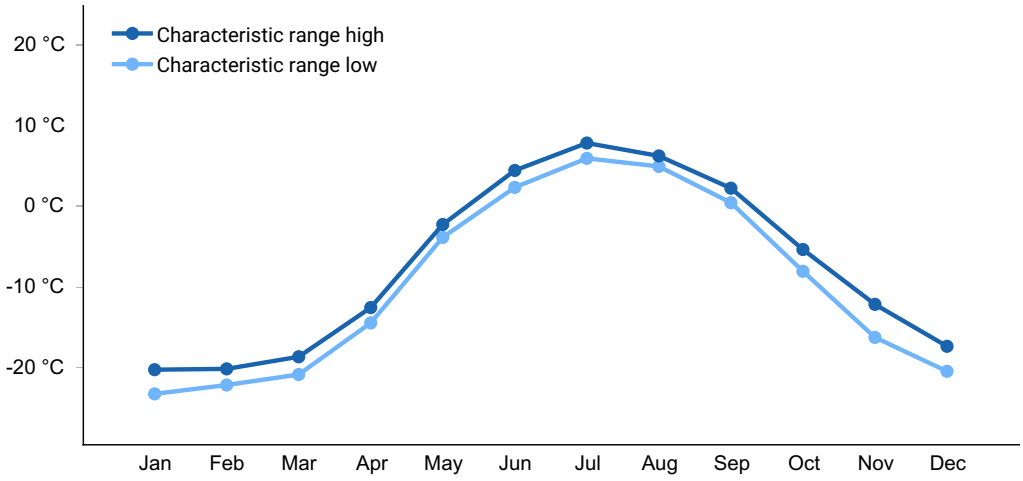


Figure 2. Monthly minimum temperature range

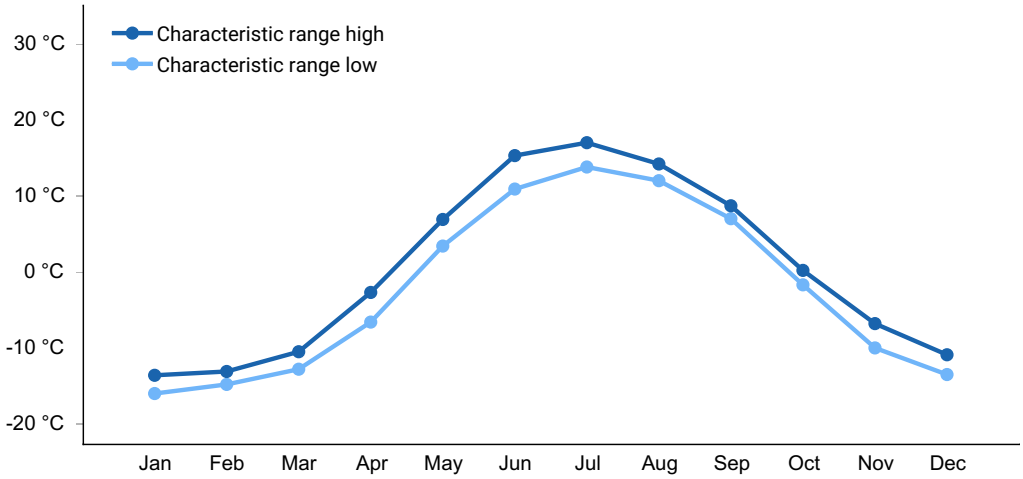


Figure 3. Monthly maximum temperature range

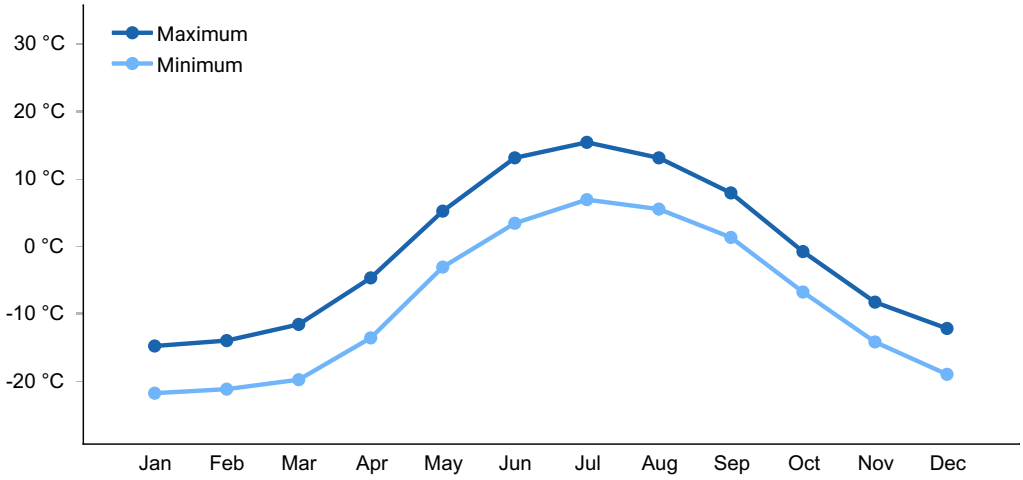


Figure 4. Monthly average minimum and maximum temperature

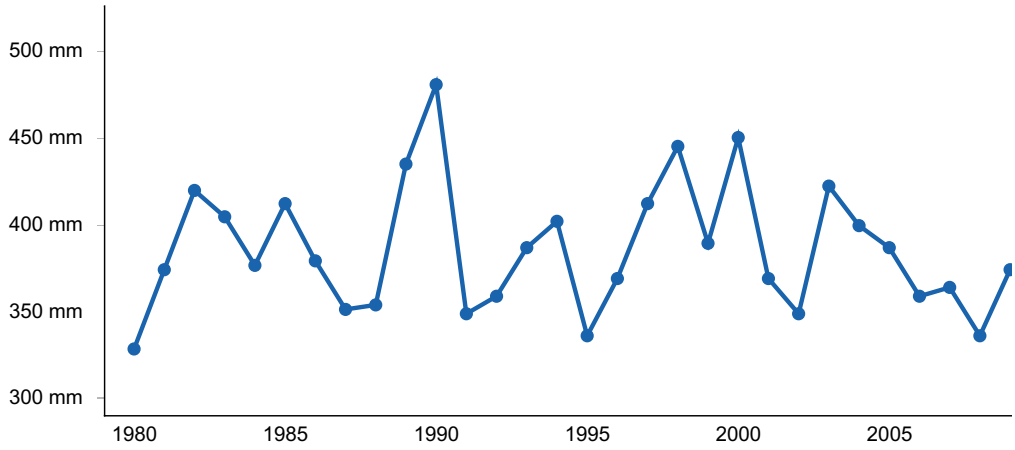


Figure 5. Annual precipitation pattern

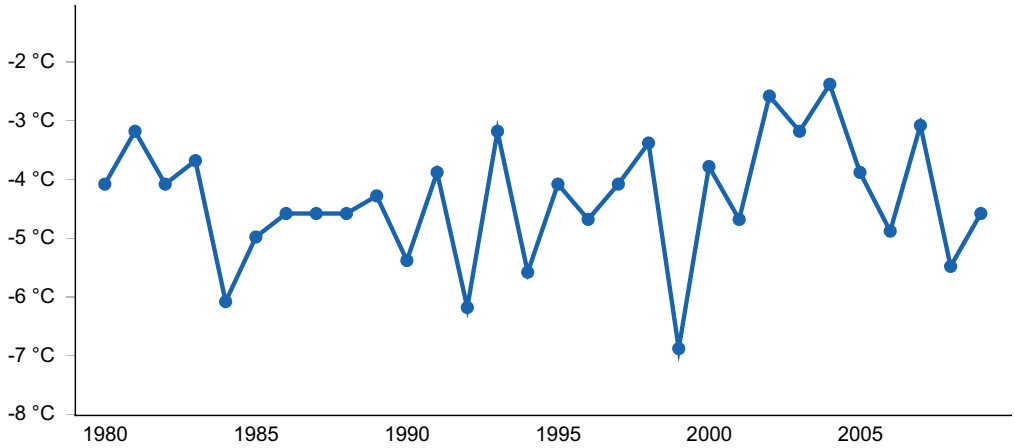


Figure 6. Annual average temperature pattern

Influencing water features

This ecological site is influenced by riparian water features. Precipitation and seasonal snow melt are the main sources of water. This site is usually unbraided but may braid in high energy locations.

Wetland description

This ecological site is classified as a riverine wetland under the Hydrogeomorphic (HGM) classification system (Brinson, 1993; USDA-NRCS 2008). In the associated flood plains, overbank flow from the channel and subsurface hydraulic connections between the stream and adjacent wetlands are the main sources of water (Brinson, 1993).

Depth to the water table may decrease during peak snow melt and following summer storm events and increase during extended dry periods.

Soil features

Soils formed in stratified sandy, silty and gravelly alluvium. Rock fragments on the soil surface are common though often in low amounts. These are mineral soils without an organic cap. The surface mineral horizon typically has minimal rock fragments. Soils are very deep. High floodplains and similar areas with less frequent flooding have permafrost at shallow to moderate depth. Point bars and low floodplains with more frequent flooding lack permafrost in the soil profile. Soil pH is slightly acidic to neutral. Soil wetness varies by time of year and location, and drainage likewise ranges from moderately well drained to poorly drained, often depending on the presence of permafrost.

Table 5. Representative soil features

Parent material	(1) Alluvium (2) Organic material (3) Alluvium
Surface texture	(1) Mucky fine sandy loam (2) Silt loam (3) Sandy loam
Drainage class	Poorly drained to moderately well drained
Permeability class	Moderate to moderately rapid
Depth to restrictive layer	23–84 cm
Soil depth	152 cm
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0–10%
Available water capacity (0-101.6cm)	14.99–18.03 cm
Soil reaction (1:1 water) (0-101.6cm)	6.1–7.2
Subsurface fragment volume <=3" (0-152.4cm)	0–5%
Subsurface fragment volume >3" (0-152.4cm)	0–5%

Table 6. Representative soil features (actual values)

Drainage class	Not specified
Permeability class	Not specified
Depth to restrictive layer	3–89 cm
Soil depth	152 cm
Surface fragment cover <=3"	0–5%

Surface fragment cover >3"	0–10%
Available water capacity (0-101.6cm)	Not specified
Soil reaction (1:1 water) (0-101.6cm)	Not specified
Subsurface fragment volume <=3" (0-152.4cm)	0–53%
Subsurface fragment volume >3" (0-152.4cm)	0–29%

Ecological dynamics

The Seward Peninsula Highlands (MLRA 241X) is in the arctic where the harsh climate limits the composition and structure of plant communities. This area has cool, short summers and long, cold winters. Limited warmth during the short growing season inhibits trees from occurring. Both lowland and upland landscapes are a mix of shrubs, graminoids, forbs, mosses, and lichens. Cold temperatures limit the vertical structure of shrubs and other functional groups (Raynolds et al., 2006). The exception is microclimates where accumulated snow protects vegetation from harsh winds and insulates soils. These microclimates allow for shrubs to grow much taller and occur on landforms such as flood plains.

This ecological site describes the floodplain riparian complex. Local site factors such as relative site elevation, soil characteristics, and flood energy support two communities. The reference plant community is a willow scrubland. Areas that undergo high energy flooding are typically proximal to the flood source. These areas typically support community 1.1. Community 1.2 typically develops in areas away from the flood source, where permafrost is nearer the surface.

Spatial and temporal patterns in soil and site hydrology create two flood plain communities. Depth to permafrost greatly influences vegetation. The presence of water close to a flood source supports unfrozen talik. Additionally, a high volume of subsurface rock fragments, which transfer and store heat in the soil, is also prohibitive towards permafrost. Both conditions are common in community 1.1.

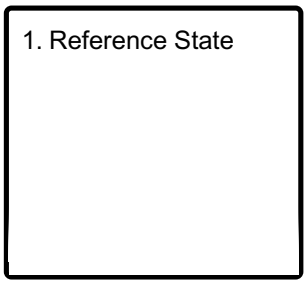
River channel migration across this site is a major disturbance (Landfire, 2009). This action affects site hydrology and can shift one community to the another. This change is generally slow. Channel movement cuts and erodes existing banks while simultaneously depositing sediments on new bars.

The information in this Ecological Dynamics section, including the state-and-transition model (STM), was developed based on professional experience and a review of available scientific literature. As a result, all possible scenarios or plant species may not be included. Key indicator plant species, disturbances, and ecological processes are described to

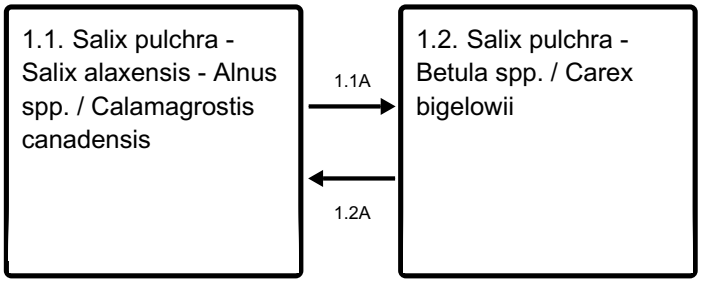
inform land management decisions.

State and transition model

Ecosystem states



State 1 submodel, plant communities



1.1A - Increase in flood energy

1.2A - Decrease in flooding energy, decrease in depth to permafrost

State 1
Reference State

This reference state is developed and characterized using available vegetation models, most notably United States Department of Agriculture - Soil Conservation Service range surveys (SCS, 1984; Swanson et al., 1985). The reference state describes two distinct vegetative communities across the flood plain complex. Flooding energy and depth to permafrost appear to be the major factors influencing vegetation, though other factors may be of concern.

Dominant plant species

- tealeaf willow (*Salix pulchra*), shrub
- feltleaf willow (*Salix alaxensis*), shrub
- grayleaf willow (*Salix glauca*), shrub
- mountain alder (*Alnus viridis ssp. crispa*), shrub
- bluejoint (*Calamagrostis canadensis*), grass
- field horsetail (*Equisetum arvense*), other herbaceous
- tall bluebells (*Mertensia paniculata*), other herbaceous

Community 1.1

Salix pulchra - Salix alaxensis - Alnus spp. / Calamagrostis canadensis

This community is a tall shrub scrubland (Viereck et al., 1992). The major plant groups are tall shrubs, medium shrubs, tall graminoids, and medium forbs (Swanson et al., 1985). This community supports a mix of alder and willow species in the canopy. The shaded understory is comprised of bluejoint, horsetails, mosses, and lichens. Ground cover is predominantly herbaceous litter but also contains mosses and lichens. Tabular data for this community is from the 1984 Seward range site publication (SCS, 1984), with supplemental information from Swanson et al. (1985)

Forest understory. Lichen and moss biomass data below refers to total biomass, while vascular plants biomass refers to annual production.

Dominant plant species

- tealeaf willow (*Salix pulchra*), shrub
- feltleaf willow (*Salix alaxensis*), shrub
- grayleaf willow (*Salix glauca*), shrub
- mountain alder (*Alnus viridis ssp. crispa*), shrub
- bluejoint (*Calamagrostis canadensis*), grass
- field horsetail (*Equisetum arvense*), other herbaceous
- tall bluebells (*Mertensia paniculata*), other herbaceous

Table 7. Annual production by plant type

Plant Type	Low (Kg/Hectare)	Representative Value (Kg/Hectare)	High (Kg/Hectare)
Shrub/Vine	2309	2802	3284
Moss	1569	1670	1866
Grass/Grasslike	129	157	179
Forb	129	157	179
Lichen	–	6	11
Total	**4136**	**4792**	**5519**

Table 8. Soil surface cover

Tree basal cover	0%
Shrub/vine/liana basal cover	25-50%
Grass/grasslike basal cover	6-12%
Forb basal cover	12-25%
Non-vascular plants	6-18%
Biological crusts	0%
Litter	50-75%

Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	0%

Community 1.2
Salix pulchra - Betula spp. / Carex bigelowii

This community is a low shrub scrubland (Viereck et al., 1992). The major plant groups are low shrubs, medium shrubs, tall graminoids, and medium forbs (Swanson et al., 1985). This community supports a mix of willow and ericaceous species in the canopy. Open areas and the understory include bluejoint, horsetails, mosses, and lichens. Ground cover is predominantly herbaceous litter but also contains mosses and lichens.

Dominant plant species

- tealeaf willow (*Salix pulchra*), shrub
- willow (*Salix*), shrub
- Bigelow's sedge (*Carex bigelowii*), grass
- sedge (*Carex*), grass
- bluejoint (*Calamagrostis canadensis*), grass
- water sedge (*Carex aquatilis*), grass
- field horsetail (*Equisetum arvense*), other herbaceous
- tall bluebells (*Mertensia paniculata*), other herbaceous
- northern bedstraw (*Galium boreale*), other herbaceous

Table 9. Soil surface cover

Tree basal cover	0%
Shrub/vine/liana basal cover	12-25%
Grass/grasslike basal cover	12-25%
Forb basal cover	6-12%
Non-vascular plants	12-30%
Biological crusts	0%
Litter	12-25%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%

Bare ground	0-6%

Pathway 1.1A
Community 1.1 to 1.2

Flooding is the major disturbance in this ecological site. It is a frequent occurrence in community 1.1. A talik of unfrozen soil is supported by the continual presence of unfrozen water that occurs near rivers. When flooding energy decreases due to decreased flow or a shift in the river channel, the organic mat thickens. This causes permafrost to form or rise in the soil profile. Soil becomes more poorly drained and permafrost becomes a root-restrictive layer (SCS, 1984).

Pathway 1.2A
Community 1.2 to 1.1

Flooding is the major disturbance in this ecological site. Flooding is responsible for determining the depth to permafrost, which influences the vegetative community. Deeper rooting willows are able to colonize. Additionally, scouring creates opportunities for seed dispersal and colonization. Fast growing herbaceous species flourish.

Additional community tables

Table 10. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Kg/Hectare)	Foliar Cover (%)
Undefined					
1	**Vascular Plants**			2567–3654	
Shrub/Vine					
2	**Shrub**			2309–3284	
	tealeaf willow	SAPU15	*Salix pulchra*	605–863	–
	feltleaf willow	SAAL	*Salix alaxensis*	600–857	–
	mountain alder	ALVIC	*Alnus viridis ssp. crispa*	325–465	–
	Richardson's willow	SARI4	*Salix richardsonii*	291–415	–
	grayleaf willow	SAGL	*Salix glauca*	241–342	–
	bog blueberry	VAUL	*Vaccinium uliginosum*	62–90	–
	shrubby cinquefoil	DAFR6	*Dasiphora fruticosa*	39–56	–
	red fruit bearberry	ARRU	*Arctostaphylos rubra*	17–28	–
	dwarf birch	BENA	*Betula nana*	8–11	–
	littletree willow	SAAR3	*Salix arbusculoides*	6–8	–

	blueberry willow	SAMY	*Salix myrtillifolia*	6–8	–
	halberd willow	SAHA	*Salix hastata*	2–3	–
	Alaska bog willow	SAFU	*Salix fuscescens*	2–3	–
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	2–3	–
	beauverd spirea	SPST3	*Spiraea stevenii*	2–3	–
	prickly rose	ROAC	*Rosa acicularis*	0–1	–
	black crowberry	EMNI	*Empetrum nigrum*	0–1	–
	marsh Labrador tea	LEPAD	*Ledum palustre ssp. decumbens*	0–1	–
	lingonberry	VAVI	*Vaccinium vitis-idaea*	0–1	–
	russet buffaloberry	SHCA	*Shepherdia canadensis*	0–1	–
Grass/Grasslike					
3	**Grass/Grasslike**			129–179	
	bluejoint	CACA4	*Calamagrostis canadensis*	151–219	–
	wideleaf polargrass	ARLA2	*Arctagrostis latifolia*	17–28	–
	water sedge	CAAQ	*Carex aquatilis*	2–3	–
	Bigelow's sedge	CABI5	*Carex bigelowii*	2–3	–
	Ramensk's sedge	CARA4	*Carex ramenskii*	2–3	–
	Altai fescue	FEAL	*Festuca altaica*	2–3	–
	bluegrass	POA	*Poa*	2–3	–
	red fescue	FERU2	*Festuca rubra*	0–1	–
	alpine sweetgrass	ANMOA3	*Anthoxanthum monticola ssp. alpinum*	0–1	–
	Pumpelly's brome	BRINP5	*Bromus inermis ssp. pumpellianus var. pumpellianus*	0–1	–
Forb					
4	**Forb**			129–179	
	field horsetail	EQAR	*Equisetum arvense*	73–106	–
	northern bedstraw	GABO2	*Galium boreale*	22–28	–
	tall bluebells	MEPA	*Mertensia paniculata*	22–28	–
	arctic sweet coltsfoot	PEFR5	*Petasites frigidus*	10–15	–
	arctic raspberry	RUAR	*Rubus arcticus*	10–15	–
	cloudberry	RUCH	*Rubus chamaemorus*	10–15	–
	tall Jacob's-ladder	POAC	*Polemonium acutiflorum*	6–8	–
	largeflowered	PYGR	*Pyrola grandiflora*	2–3	

	largeflowered wintergreen	PYGR	*Pyrola grandiflora*	2–3	–
	buttercup	RANUN	*Ranunculus*	2–3	–
	alpine sweetvetch	HEAL	*Hedysarum alpinum*	2–3	–
	Rocky Mountain goldenrod	SOMU	*Solidago multiradiata*	2–3	–
	arctic starflower	TREU	*Trientalis europaea*	2–3	–
	fireweed	CHAN9	*Chamerion angustifolium*	2–3	–
	dwarf fireweed	CHLA13	*Chamerion latifolium*	0–1	–
	gentian	GENTI	*Gentiana*	0–1	–
	scouringrush horsetail	EQHY	*Equisetum hyemale*	0–1	–
	variegated scouringrush	EQVA	*Equisetum variegatum*	0–1	–
	larkspurleaf monkshood	ACDE2	*Aconitum delphiniifolium*	0–1	–
	seacoast angelica	ANLU	*Angelica lucida*	0–1	–
	Tilesius' wormwood	ARTI	*Artemisia tilesii*	0–1	–
	arctic aster	EUSI13	*Eurybia sibirica*	0–1	–
	daisy	CHRYS2	*Chrysanthemum*	0–1	–
	captiate valerian	VACA3	*Valeriana capitata*	0–1	–
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	0–1	–
	starwort	STELL	*Stellaria*	0–1	–
	fleshy starwort	STCR	*Stellaria crassifolia*	0–1	–
	heartleaf saxifrage	SANEN	*Saxifraga nelsoniana ssp. nelsoniana*	0–1	–
	roseroot stonecrop	RHRO3	*Rhodiola rosea*	0–1	–
	ragwort	SENEC	*Senecio*	0–1	–
	beachhead iris	IRSE	*Iris setosa*	0–1	–
	Jacob's-ladder	POLEM	*Polemonium*	0–1	–
	alpine bistort	POVI3	*Polygonum viviparum*	0–1	–
	purple marshlocks	COPA28	*Comarum palustre*	0–1	–
Lichen					
5	**Live lichen biomass**			0–11	
	cetraria lichen	CETRA2	*Cetraria*	0–11	–
Moss					
6	**Moss/Clubmoss biomass**			1569–1866	

Table 11. Community 1.1 forest understory composition

Common Name	Symbol	Scientific Name	Nativity	Height (M)	Canopy Cover (%)

Animal community

Tall shrub sites in floodplains can be of high value to wildlife, particularly if they are dominated by willow species. Five attributes enhance the potential wildlife values of this site: 1) floodplain soils tend to be well-drained, and may be enriched by deposits from periodic flooding: 2) the lower elevations at which this site occurs tend to experience relatively lower snowfalls and milder climates than upland sites; 3) proximity of open water is important to many wildlife species; 4) tall shrubs generally protrude ·above winter snows, and hence can provide winter forage and cover as well as summer; and 5) this site tends to be narrow and linear and bordered by other ecosites, most commonly shorter shrublands or, less often, forests. As a result, it can provide food to species preferring neighboring sites for cover, or cover to species using neighboring sites for food. (This intermixing of ecosites, which often enhances the wildlife value of all types intermixed. is called "interspersion.") Tall shrub sites supporting relatively dense stands of alder, however, are used by fewer kinds of wildlife than those dominated by willow because they tend to have a poorly developed understory of shorter herbs and shrubs (lower primary productivity) and because fewer wildlife species prefer alder forage. Mammals commonly found in this site include species that are primarily riparian, such as river otter, mink, beaver, and muskrat; species that use riparian areas seasonally, such as moose, black and brown bear, and species that use tall or medium shrublands regardless of proximity to water, e.g., snowshoe hare, red fox, lynx, ermine, and least weasel. Similar categories of birds also use this site. Riparian species include blackpoll warblers, gray-cheeked thrushes, orange-crowned and yellow warblers, northern shrikes, and northern waterthrushes; shrubland species include willow ptarmigan and redpolls. A variety of ground-nesting birds may also use this site, including pintail ducks, and white-crowned and savannah sparrows. Because this site provides winter forage, it may be critical to certain species as snows accumulate. Moose, in particular, are known to depend heavily on tall shrub riparian areas during winter. The denser the willow shrubs they support, the more effective this site will be in providing winter food and cover to moose and other wildlife present during winter (See Table 1).

Recreational uses

This site is excellent for wildlife observation because of the diversity of vegetation and accessibility to the site. Hunting (bear, muskox, moose, wolverine, and lynx), trapping, and fishing are excellent; generally, this site is near char and grayling streams and in the larger rivers, river chum salmon migrate. Boating, picnicing, gold panning, photography and sightseeing, especially where abandoned gold dredges are found, are a few of the potential recreational activities on this site.

Other products

Grazing

This site is a fair spring range, and a supreme summer and fall range. Associated windswept gravel bars and beaches can provide some insect relief to grazing reindeer.

Willows (Salix spp.) can provide high quality forage during the summer months. Dense shrub cover makes herding difficult during the summer months.

Other information

These interpretive narratives were developed for USDA reports of range sites on the Seward Peninsula and appear here as written when originally published (SCS, 1984; Swanson et al., 1985).

Inventory data references

Vegetative communities and transitions are described using existing models and expert knowledge. There are no vegetation inventory data points in NASIS associated with this ecological site.

External data sources:
The Alaska Vegetation Classification (Viereck et al., 1992)

LANDFIRE Biophysical Settings Models (LANDFIRE Biophysical Settings, 2009)

Ecological site descriptions of the Seward Peninsula (SCS, 1984).

Range survey of the Seward Peninsula reindeer ranges (Swanson et al., 1985)

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This ecological site description (ESD) fulfills the requirements of the Provisional Ecological Site (PES) national initiative. This ESD is published to fit current site-soil correlations as they are currently mapped and understood. Further data collection may provide the information to update this ESD from the provisional level to the approved level.

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	03/14/2026
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:**

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3. **Number and height of erosional pedestals or terracettes:**

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

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5. **Number of gullies and erosion associated with gullies:**

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

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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):**

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

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

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

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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):**

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

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

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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:**

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17. **Perennial plant reproductive capability:**
