

# Ecological site R226XY054AK Beach Dunes and Ridges (Old) (AK653 St Paul Island)

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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.

**Table 1. Dominant plant species**

|            |               |
|------------|---------------|
| Tree       | Not specified |
| Shrub      | Not specified |
| Herbaceous | Not specified |

## Physiographic features

This site occurs on the inland side of active beach dunes and beach ridges. This site is comparable to Beach Dunes and Ridges. Because of the inland nature and development of this site, relief is smoother and the site more stable than the more recent Beach Dunes and Ridges. This site consists of low discontinuous rounded sand ridges that have been deposited by high velocity winds from active Beach Dunes and Ridges and Sandy Beach sites.

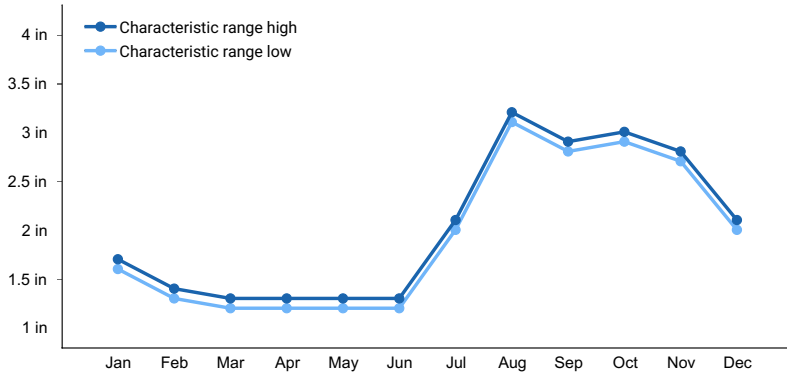
**Table 2. Representative physiographic features**

|           |                             |
|-----------|-----------------------------|
| Landforms | (1) Beach ridge<br>(2) Dune |
| Elevation | 40–80 ft                    |
| Slope     | 0–30%                       |

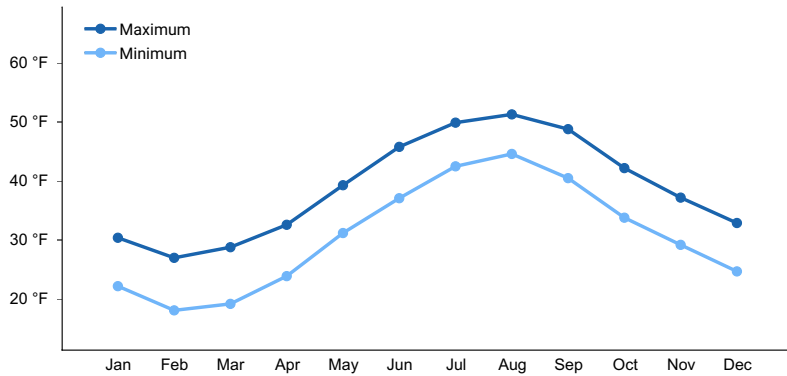
## Climatic features

**Table 3. Representative climatic features**

|                               |          |
|-------------------------------|----------|
| Frost-free period (average)   | 120 days |
| Freeze-free period (average)  | 100 days |
| Precipitation total (average) | 24 in    |



**Figure 1. Monthly precipitation range**



**Figure 2. Monthly average minimum and maximum temperature**

## Influencing water features

### Soil features

Soils are deep to very deep and well drained. Textures are medium to coarse and soil pH is moderately acid to slightly acid. Runoff is very low and permeability is moderately rapid to very rapid.

**Table 4. Representative soil features**

|                                       |                                |
|---------------------------------------|--------------------------------|
| Surface texture                       | (1) Peaty fine sandy loam      |
| Family particle size                  | (1) Sandy                      |
| Drainage class                        | Well drained                   |
| Permeability class                    | Moderately rapid to very rapid |
| Soil depth                            | 40–60 in                       |
| Surface fragment cover ≤3"            | 0%                             |
| Surface fragment cover >3"            | 0%                             |
| Available water capacity (0-40in)     | 6.9–7.1 in                     |
| Calcium carbonate equivalent (0-40in) | 0%                             |
| Electrical conductivity (0-40in)      | 0 mmhos/cm                     |
| Sodium adsorption ratio (0-40in)      | 0                              |
| Soil reaction (1:1 water) (0-40in)    | 5.6–6.5                        |

|  |    |
|--|----|
| Subsurface fragment volume <=3"<br>(Depth not specified) | 0% |
| Subsurface fragment volume >3"<br>(Depth not specified)  | 0% |

## Ecological dynamics

### State and transition model

#### Ecosystem states

|   |
|---|
| 1. Elymus mollis/<br>Lupinus nootkatensis |
|---|

#### State 1 submodel, plant communities

|   |
|---|
| 1.1. Elymus mollis/<br>Lupinus nootkatensis |
|---|

### State 1

#### Elymus mollis/ Lupinus nootkatensis

#### Community 1.1

#### Elymus mollis/ Lupinus nootkatensis

Sedges and grasses make up about 40% and forbs about 60% of the composition. Total annual vascular herbage production is 4100 pounds/acre.

### Additional community tables

Table 5. Community 1.1 plant community composition

| Group                  | Common Name            | Symbol | Scientific Name                                | Annual Production (Lb/Acre) | Foliar Cover (%) |
|------------------------|------------------------|--------|--|-----------------------------|------------------|
| <b>Grass/Grasslike</b> |                        |        |  |                             |                  |
| 1                      |                        |        |  | 1500–1600                   |                  |
|                        | American dunegrass     | LEMOM2 | <i>Leymus mollis ssp. mollis</i>               | 1430–1440                   | –                |
|                        | red fescue             | FERU2  | <i>Festuca rubra</i>                           | 95–100                      | –                |
|                        | Gmelin's sedge         | CAGM   | <i>Carex gmelinii</i>                          | 5–10                        | –                |
|                        | oatgrass               | TRISE  | <i>Trisetum</i>                                | 2–8                         | –                |
|                        | sedge                  | CAREX  | <i>Carex</i>                                   | 0–5                         | –                |
| <b>Forb</b>            |                        |        |  |                             |                  |
| 1                      |                        |        |  | 2500–2600                   |                  |
|                        | Nootka lupine          | LUNO   | <i>Lupinus nootkatensis</i>                    | 1150–1200                   | –                |
|                        | seacoast angelica      | ANLU   | <i>Angelica lucida</i>                         | 500–520                     | –                |
|                        | Pacific hemlockparsley | COGM   | <i>Conioselinum gmelinii</i>                   | 260–270                     | –                |
|                        | field horsetail        | EQAR   | <i>Equisetum arvense</i>                       | 185–195                     | –                |
|                        | Hornemann's willowherb | EPHOB  | <i>Epilobium hornemannii ssp. behringianum</i> | 65–75                       | –                |
|                        | boreal yarrow          | ACMIB  | <i>Achillea millefolium var. borealis</i>      | 60–70                       | –                |
|                        | Aleutian violet        | VILA6  | <i>Viola langsдорffii</i>                      | 20–30                       | –                |
|                        | Tilesius' wormwood     | ARTI   | <i>Artemisia tilesii</i>                       | 15–25                       | –                |
|                        | tall Jacob's-ladder    | POAC   | <i>Polemonium acutiflorum</i>                  | 10–20                       | –                |
|                        | whorled lousewort      | PEVE   | <i>Pedicularis verticillata</i>                | 2–8                         | –                |
|                        | arctic starflower      | TREU   | <i>Trientalis europaea</i>                     | 3–8                         | –                |
|                        | draba                  | DRABA  | <i>Draba</i>                                   | 3–8                         | –                |
|                        | larkspurleaf monkshood | ACDE2  | <i>Aconitum delphiniifolium</i>                | 0–5                         | –                |
|                        | starwort               | STELL  | <i>Stellaria</i>                               | 0–5                         | –                |
|                        | beach pea              | LAJAM  | <i>Lathyrus japonicus var. maritimus</i>       | 0–1                         | –                |

## Animal community

The grass portion of the vegetation production for this site has very little grazing value for reindeer. Winter forage is low quality. Reindeer do not utilize lyme grass, to any great extent, even during spring and summer. The large number of forbs provides excellent spring and summer forage.

## Recreational uses

Because of the rolling terrain and sandy soils, this site is sometimes used by four wheeler enthusiasts. This site's vegetation does not hold up well to four wheeler traffic, however, and when the soil is exposed the area is susceptible to wind erosion and blow outs.

## Contributors

Swanson

## 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  |                   |
| Approved by                                 |                   |
| 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):

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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:

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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:**
-