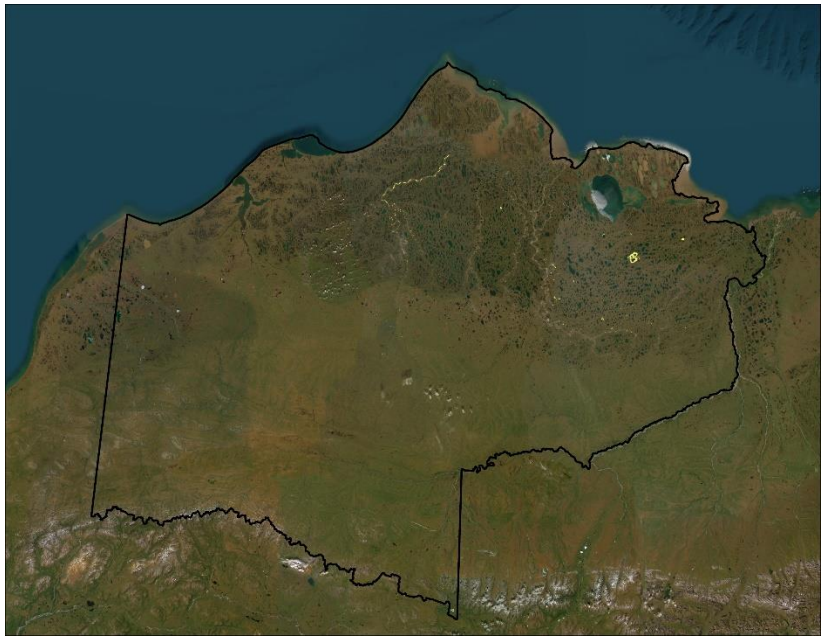
Inland Dune



Stratum code: CPID

Number of plots sampled: 12

Physiography: upland (Sand Sheet physiographic unit)

Geomorphology: aeolian deposit

Landform: dunes

Hydrology: xeric to mesic, well-drained

Classification: A sparely vegetated dune type. Bare ground averages 80.6% cover. Average vegetated cover is 13%. Graminoids, with an average cover of 7% make the greatest proportional contribution to vegetated cover followed by shrub species with an average cover of 5.6%.

Site characteristics: Occurs at low elevations in Pleistocene sands where wind or water erosion has removed vegetation. Inland dunes may be isolated, or occur on bluffs associated with floodplains and lake basins; by definition they are not subjected to riparian flooding. Drained basins where sand has become re-exposed (blowouts) may also develop dune systems (e.g., Pik Dunes). Permafrost is dry and vegetation is small patch and heterogenous.

Soil characteristics: Soil profile development is minimal owing to frequent wind disturbance. The profile is often composed of undifferentiated sand or loamy sand. Where present, organic layers are thin, averaging only 0.4 cm deep. Average soil water pH measured at 10 cm depth is 7.9.

Vegetation: Sites are sparsely vegetated and species composition is variable. Willows often occupy the upper canopy. The most common species is *Salix alaxensis,* but *Salix glauca,* and *Salix niphoclada* may

occur as sub-dominants. The dune grass, *Leymus mollis* is dominant and indicates the type. *Festuca rubra* occurs at high relative cover and frequency. Several rare species including *Koeleria asiatica*, *Poa sublanata*, *Poa hartzii* ssp. *alaskana*, *Rumex graminifolius*, and *Mertensia drummondii* are associated with inland dune habitats. *Rumex graminifolius* and *Mertensia drummondii* are not listed in the species table due to occurrence at less than 1% cover. Mean vascular plant richness is 24 taxa.

Dominant Species: Dunes are a sparsely vegetated type. While it is rare for a single species to reach 25% cover, the most constant species include:

- *Leymus mollis*
- *Salix alaxensis*
- *Festuca rubra*

Indicator Species The only taxon with significant potential ($p<0.0002$) to indicate Inland Dunes is *Leymus mollis.*

Succession and disturbance: An early-successional type that is regularly disturbed by aeolian processes. The location and formation of inland dunes depend primarily on the availability of sand, topography, and wind direction. The main source of sand is the ancient sand sheet, but this sand can be redistributed along floodplain corridors traversing the sand sheet. Tundra vegetation has stabilized most of these sand deposits, but numerous small blowouts and areas of active transport and deposition still exist.

Indicators of change: Change in species composition (stabilization or erosion).

Note*:* Despite their lack of significance, *Artemisia borealis, Juncus arcticus,* and *Koeleria asiatica* are the most appropriate indicator species for this stratum. *Leymus mollis* and *Festuca rubra* are well-documented indicator species of coastal dunes and floodplains, respectively.

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Table 9. Cover and constancy of plant taxa occurring in the Inland Dune stratum. Species listed by habit, in decreasing order of percent cover.

Habit	Scientific Name	Average Cover (%)	Standard Deviation (%)	Minimum Cover (%)	Maximum Cover (%)	Constancy (%)
tall shrub	*Salix glauca*	4.8	3.8	1.3	9.3	33
	Salix alaxensis	4.6	2.2	3.3	9.3	58
	Salix niphoclada	2.9	1.0	2.0	4.0	25
dwarf shrub	*Dryas integrifolia*	3.3	na	3.3	3.3	8
graminoid	*Bromus pumpellianus*	5.3	na	5.3	5.3	8
	Leymus mollis	4.8	2.7	1.3	8.7	67
	Carex maritima	4.7	na	4.7	4.7	8
	Carex aquatilis	3.3	2.8	1.3	5.3	17
	graminoid	2.7	na	2.7	2.7	8
	Poa hartzii ssp. *alaskana*	2.7	na	2.7	2.7	8
	Festuca rubra	2.7	1.3	1.3	4.0	42
	Juncus arcticus	1.3	0.0	1.3	1.3	17
	Koeleria asiatica	1.3	0.0	1.3	1.3	17
	Deschampsia cespitosa	1.3	na	1.3	1.3	8
	Poa arctica	1.3	na	1.3	1.3	8
	Poa sublanata	1.3	na	1.3	1.3	8
forb	*Astragalus alpinus*	3.3	na	3.3	3.3	8
	Artemisia borealis	1.3	na	1.3	1.3	8
	Artemisia glomerata	1.3	na	1.3	1.3	8
	Tanacetum bipinnatum	1.3	na	1.3	1.3	8
spore-bearing	*Equisetum variegatum*	4.0	na	4.0	4.0	8
moss	*Bryum*	2.7	na	2.7	2.7	8