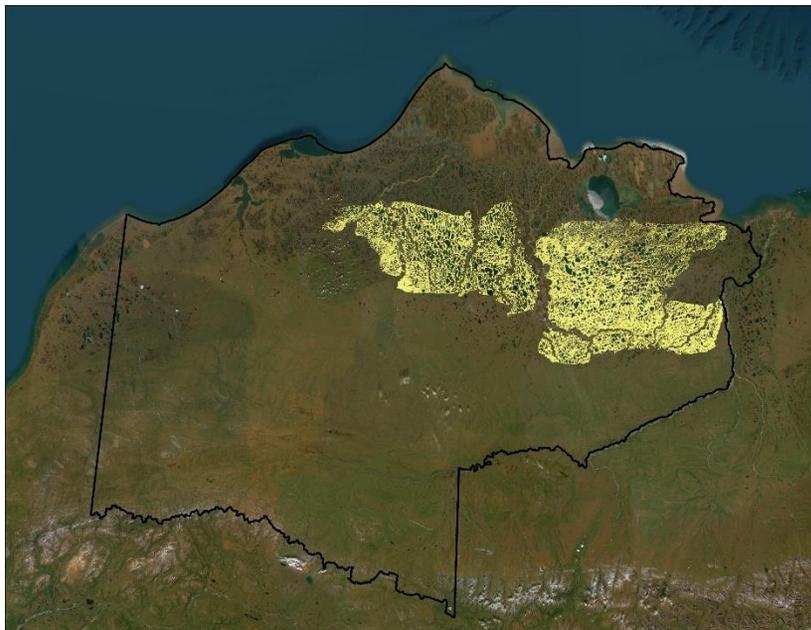
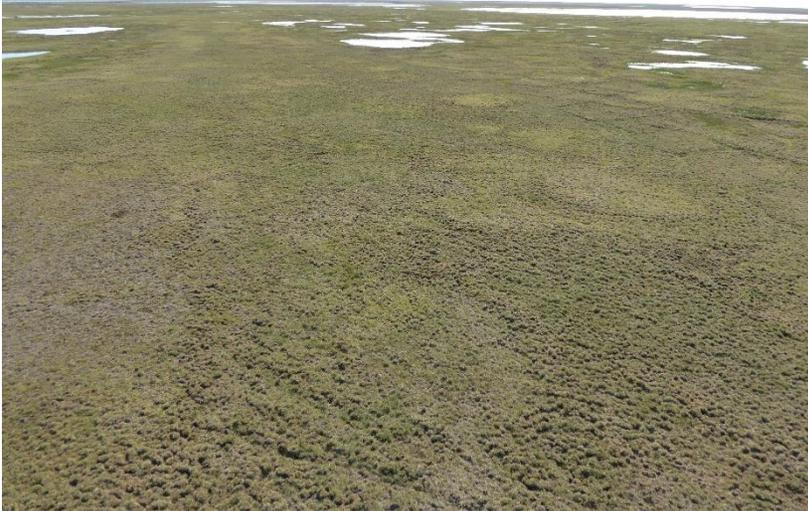


Sand Sheet Moist Tundra



Stratum code: SSMT

Number of plots sampled: 15

Physiography: upland (Sand Sheet physiographic unit)

Geomorphology: coastal plain

Landforms: non-patterned tundra, planoconvex slope

Hydrology: mesic, moderately drained

Classification: An arctic tundra type. Average cover of tussock forming sedges is 42.6%. Average cover of shrub is 49.6% with dwarf shrubs in the *Ericaceae* family (average cover is 40.0%) dominating. Both mesic mosses and lichens are well represented with average covers of 27.7% and 28.0%, respectively.

Site characteristics: Occurs at low elevations on relatively flat ground; underlain by Pleistocene sands. Permafrost is relatively ice-rich; depth of seasonal thaw is moderately deep, averaging 33.4 cm. Developing as a homogenous, large patch type; mix of non-patterned and weakly patterned ground.

Soil characteristics: Mean cumulative moss and duff thickness is 4.9 cm. Moss and duff is underlain by an organic soil horizon with mean thickness of 8.0 cm. Organics typically overly a mineral horizon comprised of sand and silt that extends to depth. A thin A horizon may develop at the transition from organic to mineral soil. Average soil water pH measured at 10 cm is 5.2.

Vegetation: The tussock forming sedge, *Eriophorum vaginatum*, dominates the type. Sand Sheet Moist Tundra is differentiated from other tundra types by the sedge, *Carex bigelowii* ssp. *ensifolia*, and lichens in the *Flavocetraria*, *Thamnolia*, and *Cladonia* genera.

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Dwarf to low shrubs including *Vaccinium vitis-idaea*, *Cassiope tetragona* and *Rhododendron tomentosum* ssp. *decumbens*, show high relative abundance and frequency and dominate the inter-tussock areas. Nonvascular species with high relative abundance and frequency include mosses in the *Dicranum*, *Aulacomnium* and *Sphagnum* genera. Mean vascular plant richness is 20 taxa.

Dominant species (greater than 25% average cover):

- *Eriophorum vaginatum*

Indicator species Taxa with significant potential ($p < 0.0002$) to indicate tundra (listed in decreasing order of indication) include:

- *Eriophorum vaginatum*
- *Rhododendron tomentosum* ssp. *decumbens*
- *Vaccinium vitis-idaea*
- *Betula nana*
- *Salix pulchra*
- *Aulacomnium*
- *Dicranum*
- *Hylocomium*
- *Cladonia*
- *Rubus chamaemorus*

Differential species: Taxa with significant potential to differentiate the Sand Sheet Moist Tundra from other tundra strata include:

- *Flavocetraria* lichen
- *Carex bigelowii* ssp. *ensifolia*
- *Thamnolia* lichen
- *Cladonia* lichen

Succession and disturbance: A late successional type that is relatively stable. Aeolian processes and mechanical disturbance can re-expose sand on ancient dune ridges.

Indicators of change: Change in structure (height of dominant shrubs) or composition. The stratum is considered relatively thaw-stable owing to the low ice content of the permafrost.



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Table 10. Cover and constancy of plant taxa occurring in the Sand Sheet Moist Tundra 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	<i>Betula nana</i>	10.9	6.3	1.3	18.0	40
	<i>Salix pulchra</i>	5.3	3.0	2.0	10.7	47
low shrub	<i>Rhododendron tomentosum</i> ssp. <i>decumbens</i>	15.0	5.9	5.3	24.0	93
	<i>Vaccinium uliginosum</i>	3.8	2.5	2.0	6.7	20
	<i>Salix fuscescens</i>	2.0	na	2.0	2.0	7
dwarf shrub	<i>Vaccinium vitis-idaea</i>	17.5	4.9	6.7	26.0	93
	<i>Dryas integrifolia</i>	9.4	10.4	2.0	16.7	13
	<i>Cassiope tetragona</i>	8.1	4.7	1.3	15.3	93
	<i>Empetrum nigrum</i>	4.7	0.0	4.7	4.7	13
	<i>Salix phlebophylla</i>	3.7	2.5	1.3	6.7	27
	<i>Diapensia obovata</i>	2.0	1.0	1.3	2.7	13
	<i>Salix reticulata</i>	1.3	0.0	1.3	1.3	13
	<i>Andromeda polifolia</i>	1.3	na	1.3	1.3	7
graminoid	<i>Eriophorum vaginatum</i>	42.6	18.4	14.7	76.7	100
	<i>Carex bigelowii</i> ssp. <i>ensifolia</i>	20.2	11.5	4.7	41.3	87
	<i>Carex aquatilis</i>	10.9	8.0	1.3	21.3	40
	<i>Eriophorum angustifolium</i>	4.8	2.4	1.3	6.0	27
	<i>Calamagrostis inexpansa</i>	4.0	na	4.0	4.0	7
	<i>Carex rotundata</i>	3.0	0.4	2.7	3.3	13
	<i>Luzula nivalis</i>	2.7	na	2.7	2.7	7
	<i>Poa arctica</i>	2.7	na	2.7	2.7	7
	<i>Arctagrostis latifolia</i>	2.2	1.6	1.3	4.0	20
	<i>Luzula confusa</i>	1.3	na	1.3	1.3	7
forb	<i>Bistorta plumosa</i>	3.7	3.4	1.3	8.7	27
	<i>Saussurea angustifolia</i>	3.3	na	3.3	3.3	7
	<i>Pyrola asarifolia</i>	2.0	na	2.0	2.0	7

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Habit	Scientific Name	Average Cover (%)	Standard Deviation (%)	Minimum Cover (%)	Maximum Cover (%)	Constancy (%)
	<i>Pyrola grandiflora</i>	2.0	na	2.0	2.0	7
	<i>Rubus chamaemorus</i>	2.0	0.8	1.3	3.3	47
	<i>Stellaria longipes</i>	1.3	0.0	1.3	1.3	13
	<i>Pedicularis lapponica</i>	1.3	na	1.3	1.3	7
moss	<i>Dicranum</i>	9.7	8.8	1.3	34.0	100
	<i>Racomitrium</i>	9.3	na	9.3	9.3	7
	<i>Aulacomnium</i>	8.2	4.7	1.3	16.7	93
	<i>Hylocomium</i>	7.3	3.9	2.7	14.0	53
	<i>Polytrichum</i>	4.3	2.4	1.3	10.0	73
	<i>Sphagnum</i>	3.7	2.1	1.3	9.3	80
	moss	3.3	na	3.3	3.3	7
	<i>Oncophorus</i>	2.4	0.8	2.0	3.3	20
	<i>Tomentypnum</i>	2.2	0.8	1.3	2.7	20
	<i>Distichium</i>	1.3	na	1.3	1.3	7
	<i>Pleurozium</i>	1.3	na	1.3	1.3	7
	<i>Pohlia</i>	1.3	na	1.3	1.3	7
	<i>Ptilium</i>	1.3	na	1.3	1.3	7
	<i>Scorpidium</i>	1.3	na	1.3	1.3	7
lichen	<i>Flavocetraria</i>	4.9	2.8	1.3	10.7	100
	<i>Cladonia</i>	4.8	3.4	1.3	16.7	100
	<i>Peltigera</i>	3.4	4.2	1.3	12.0	40
	<i>Thamnolia</i>	2.8	1.8	1.3	6.0	93
	<i>Dactylina</i>	2.3	0.9	1.3	3.3	33
	<i>Bryocaulon</i>	2.0	0.6	1.3	2.7	27
	<i>Nephroma</i>	2.0	na	2.0	2.0	7
	<i>Cetraria</i>	2.0	1.0	1.3	3.3	40
	<i>Alectoria</i>	1.3	0.0	1.3	1.3	13
liverwort	liverwort	9.9	10.0	2.7	40.7	87

Sand Sheet Moist Tundra

Habit	Scientific Name	Average Cover (%)	Standard Deviation (%)	Minimum Cover (%)	Maximum Cover (%)	Constancy (%)
	<i>Fuscocephaloziopsis</i>	7.8	2.7	4.7	9.3	20
	<i>Ptilidium</i>	3.7	3.1	1.3	8.0	40
	<i>Blepharostoma</i>	3.3	na	3.3	3.3	7