

Important Plant Areas of Saskatchewan

Nominated site name: Athabasca Sand Dunes

General location: south side of Lake Athabasca

Legal land description: n/a

Site coordinates (include source or datum): 59.0851, -108.7394

Size of area (include units): 266,252 hectares

Boundary rationale (attach map indicating boundaries and location): The IPA follows the Provincial Wilderness Area at the north and part of the south boundary. The east, west and southwest boundaries are approximately 10km away from the Provincial Wilderness Area in order to provide a buffer to the dunes there. This boundary encompasses the main dune fields where the majority of core habitat is found for the rare and endemic plants in the area.

Property ownership: Land is mostly included within Athabasca Sand Dunes Provincial Park. A small portion on the eastern side belongs to the Fond Du Lac First Nation.

Other site designations: none

Table 1: Plant species of concern information

#	Category	Plant Species (Scientific Name)	SKCDC Rank			COSEWIC Status	Date last observed	Population size	Trend	Endemic to SK or Canada	Information Source	Notes
			Global (G- rank)	National (N-rank)	Provincial (S-rank)							
1	Vascular Plant	<i>Achillea millefolium</i> <i>var. megacephala</i>	G5T1T2	N1N2	S1S2	Special Concern	2010	910,000-6,950,000 individuals	unknown; dune habitat is declining	Yes - SK	COSEWIC 2018	this taxon is not considered a separable variety by some authorities
2	Vascular Plant	<i>Arabidopsis arenicola</i>	G4G5	N4N5	S2		2000	unknown	unknown		SASK herbarium/Biotics	
3	Vascular Plant	<i>Arethusa bulbosa</i>	G5	N5	S1		1979	unknown	unknown		SASK herbarium/Biotics	
4	Vascular Plant	<i>Armeria maritima</i> <i>ssp. interior</i>	G5T1T2	N1N2	S1S2	Special Concern	2010	1,080,000- 9,360,000 individuals	unknown; dune habitat is declining	Yes - SK	COSEWIC 2018	
5	Vascular Plant	<i>Athyrium filix-femina</i> <i>var. angustum</i>	G5T5	N5	S3?		1979	unknown	unknown		SASK herbarium/Biotics	
6	Vascular Plant	<i>Calamagrostis</i> <i>lapponica</i>	G5	N5	S3		1975	unknown	unknown		SASK herbarium/Biotics	
7	Vascular Plant	<i>Calamagrostis</i> <i>purpurascens var.</i> <i>purpurascens</i>	G5T5?	N5	S3		1980	unknown	unknown		SASK herbarium/Biotics	
8	Vascular Plant	<i>Calypso bulbosa var.</i> <i>americana</i>	G5T5	N5	S3		1979	unknown	unknown		SASK herbarium/Biotics	
9	Vascular Plant	<i>Carex cryptolepis</i>	G4G5	N4N5	S2		1979	unknown	unknown		SASK herbarium/Biotics	
10	Vascular Plant	<i>Carex maritima</i>	G5	N5	S1		1984	unknown	unknown		SASK herbarium/Biotics	
11	Vascular Plant	<i>Carex michauxiana</i>	G5	N5	S3		1979	unknown	unknown		SASK herbarium/Biotics	
12	Vascular Plant	<i>Carex saxatilis</i>	G5	N5	S3		1983	unknown	unknown		SASK herbarium/Biotics	
13	Vascular Plant	<i>Carex trisperma</i>	G5	NNR	S3		2000	unknown	unknown		SASK herbarium/Biotics	
14	Vascular Plant	<i>Carex trisperma var.</i> <i>trisperma</i>	G5T5	N5	S3		2000	unknown	unknown		SASK herbarium/Biotics	
15	Vascular Plant	<i>Castilleja raupii</i>	G5	N5	S2		1984	unknown	unknown		SASK herbarium/Biotics	
16	Vascular Plant	<i>Chimaphila</i> <i>umbellata ssp.</i> <i>umbellata</i>	G5T5	N5	S3?		2000	unknown	unknown		SASK herbarium/Biotics	

17	Vascular Plant	<i>Corispermum hookeri</i> <i>var. hookeri</i>	G4G5T4T5	N4N5	S2		1975	unknown	unknown		SASK herbarium/Biotics	
18	Vascular Plant	<i>Corispermum</i> <i>ochotense var.</i> <i>ochotense</i>	G3G4T3T4	N3N4	S1		1979	unknown	unknown		SASK herbarium/Biotics	
19	Vascular Plant	<i>Deschampsia</i> <i>mackenzieana</i>	G2	N2	S2	Special Concern	2010	3,040,000- 25,800,000 individuals	unknown; dune habitat is declining	Yes - Canada	COSEWIC 2018	
20	Vascular Plant	<i>Dichanthelium</i> <i>acuminatum var.</i> <i>fasciculatum</i>	G5T5	N5	S3		1980	unknown	unknown		SASK herbarium/Biotics	
21	Vascular Plant	<i>Drosera anglica</i>	G5	N5	S3		2000	unknown	unknown		SASK herbarium/Biotics	
22	Vascular Plant	<i>Drosera linearis</i>	G4G5	N4N5	S1		1979	unknown	unknown		SASK herbarium/Biotics	
23	Vascular Plant	<i>Eriophorum</i> <i>scheuchzeri</i>	G5	N5	S2		1979	unknown	unknown		SASK herbarium/Biotics	
24	Vascular Plant	<i>Eriophorum tenellum</i>	G5	N5	SH		1975	unknown	unknown		SASK herbarium/Biotics	
25	Vascular Plant	<i>Euphrasia subarctica</i>	G5	N4N5	S1S2		1984	unknown	unknown		SASK herbarium/Biotics	
26	Vascular Plant	<i>Festuca prolifera var.</i> <i>lasiolepis</i>	G4G5T3	N3	SH		1962	unknown	unknown		SASK herbarium/Biotics	
27	Vascular Plant	<i>Huperzia selago var.</i> <i>densa</i>	G5TNR	N3	S1		1979	unknown	unknown		SASK herbarium/Biotics	
28	Vascular Plant	<i>Huperzia selago var.</i> <i>selago</i>	G5T5?	N5	S1		1935	unknown	unknown		SASK herbarium/Biotics	
29	Vascular Plant	<i>Isoetes lacustris</i>	G5	NNR	S2		1979	unknown	unknown		SASK herbarium/Biotics	
30	Vascular Plant	<i>Isoetes x hickeyi</i>	GNA	NNA	S1		1980	unknown	unknown		SASK herbarium/Biotics	hybrid with at least one rare parent species
31	Vascular Plant	<i>Juncus stygius ssp.</i> <i>americanus</i>	G5T5	N5	S1S2		1980	unknown	unknown		SASK herbarium/Biotics	
32	Vascular Plant	<i>Juncus triglumis var.</i> <i>albescens</i>	G5	N5	S2		1979	unknown	unknown		SASK herbarium/Biotics	
33	Vascular Plant	<i>Lechea intermedia</i> <i>var. depauperata</i>	G5T1T2	N1N2	S1	Data Deficient	1980	unknown	unknown	Yes - Canada	SASK herbarium/Biotics	
34	Vascular Plant	<i>Leymus mollis ssp.</i> <i>mollis</i>	G5T5	N5	S2		2000	unknown	unknown		SASK herbarium/Biotics	

35	Vascular Plant	<i>Listera cordata</i> var. <i>cordata</i>	G5T5	N5	S2		1984	unknown	unknown		SASK herbarium/Biotics	
36	Vascular Plant	<i>Lobelia dortmanna</i>	G5	N5	S2S3		1980	unknown	unknown		SASK herbarium/Biotics	
37	Vascular Plant	<i>Luzula multiflora</i> ssp. <i>frigida</i>	G5T5	N5	S3		1981	unknown	unknown		SASK herbarium/Biotics	
38	Vascular Plant	<i>Lycopodiella inundata</i>	G5	N5	S1		1979	unknown	unknown		SASK herbarium/Biotics	
39	Vascular Plant	<i>Malaxis paludosa</i>	G3G4	N3N4	S1		1979	unknown	unknown		SASK herbarium/Biotics	
40	Vascular Plant	<i>Myriophyllum alterniflorum</i>	G5	N5	S1		1980	unknown	unknown		SASK herbarium/Biotics	
41	Vascular Plant	<i>Nymphaea leibergii</i>	G5	N4N5	S2		1975	unknown	unknown		SASK herbarium/Biotics	
42	Vascular Plant	<i>Nymphaea tetragona</i>	G5	N3N4	S2		1975	unknown	unknown		SASK herbarium/Biotics	
43	Vascular Plant	<i>Poa arctica</i>	G5	N5	S2		1935	unknown	unknown		SASK herbarium/Biotics	likely <i>Poa arctica</i> ssp. <i>arctica</i>
44	Vascular Plant	<i>Potamogeton epihydrus</i>	G5	N5	S2S3		1962	unknown	unknown		SASK herbarium/Biotics	
45	Vascular Plant	<i>Ranunculus hyperboreus</i>	G5	N5	S2		1979	unknown	unknown		SASK herbarium/Biotics	
46	Vascular Plant	<i>Rhinanthus minor</i> ssp. <i>minor</i>	G5T5	N4N5	S2S3		1984	unknown	unknown		SASK herbarium/Biotics	
47	Vascular Plant	<i>Rhododendron tomentosum</i>	G5	N5	S3		2000	unknown	unknown		SASK herbarium/Biotics	
48	Vascular Plant	<i>Rhynchospora alba</i>	G5	N5	S3		1980	unknown	unknown		SASK herbarium/Biotics	
49	Vascular Plant	<i>Rhynchospora fusca</i>	G4G5	N4N5	S1S2		1980	unknown	unknown		SASK herbarium/Biotics	
50	Vascular Plant	<i>Sagina nodosa</i> ssp. <i>borealis</i>	G5T5	N4N5	S3		1984	unknown	unknown		SASK herbarium/Biotics	
51	Vascular Plant	<i>Salix brachycarpa</i> var. <i>psammophila</i>	G5T3	N3	S3	Special Concern	2010	4,240,000-90,500,000	unknown; dune habitat is declining	Yes - SK	COSEWIC 2018	
52	Vascular Plant	<i>Salix commutata</i>	G5	N5	S1		1979	unknown	unknown		SASK herbarium/Biotics	

53	Vascular Plant	<i>Salix planifolia ssp. tyrrellii</i>	G5T2	N2	S2		2010	unknown	unknown; dune habitat is declining	Yes - Canada	SASK herbarium/Biotics	this taxon is not considered a separable subspecies by some authorities
54	Vascular Plant	<i>Salix silicicola</i>	G2G3	N2N3	S2	Special Concern	2010	2,340,000-37,070,000 individuals	unknown; dune habitat is declining	Yes - SK	COSEWIC 2018	
55	Vascular Plant	<i>Salix turnorii</i>	G2	N2	S2	Special Concern	2010	1,520,000-33,300,000 individuals	unknown; dune habitat is declining	Yes - SK	COSEWIC 2018	
56	Vascular Plant	<i>Salix x brachypurpurea</i>	GNA	N1	SH		1962	unknown	unknown		SASK herbarium/Biotics	hybrid with at least one rare parent taxon
57	Vascular Plant	<i>Schoenoplectus subterminalis</i>	G5	N5	SH		1975	unknown	unknown		SASK herbarium/Biotics	
58	Vascular Plant	<i>Silene acaulis</i>	G5	N5	S2		2000	unknown	unknown		SASK herbarium/Biotics	
59	Vascular Plant	<i>Sorbus scopulina</i>	G5	N5	S3		2000	unknown	unknown		SASK herbarium/Biotics	
60	Vascular Plant	<i>Stellaria longipes ssp. arenicola</i>	G5T3	N3	S3		2010	unknown	unknown; dune habitat is declining	Yes - Canada	SASK herbarium/Biotics	
61	Vascular Plant	<i>Subularia aquatica ssp. americana</i>	G5T5	N5	S3		1980	unknown	unknown		SASK herbarium/Biotics	
62	Vascular Plant	<i>Tanacetum huronense</i>	G5T4T5	N4N5	S3		2000	unknown	unknown		SASK herbarium/Biotics	some records are not identified to subspecies
63	Vascular Plant	<i>Tanacetum huronense var. bifarium</i>	G5T4?Q	N4	S2?		1984	unknown	unknown		SASK herbarium/Biotics	
64	Vascular Plant	<i>Tanacetum huronense var. floccosum</i>	G5T3	N3	S3	Special Concern	2010	2,780,000-21,380,000	unknown; dune habitat is declining	Yes - Canada	COSEWIC 2018	this taxon is not considered a separable variety by some authorities
65	Vascular Plant	<i>Torreyochloa pallida var. fernaldii</i>	G5T5Q	N5	S3		1982	unknown	unknown		SASK herbarium/Biotics	
66	Vascular Plant	<i>Trientalis europaea</i>	G5	N4N5	S2		1984	unknown	unknown		SASK herbarium/Biotics	
67	Vascular Plant	<i>Trisetum spicatum</i>	G5	N5	S3		1979	unknown	unknown		SASK herbarium/Biotics	
68	Vascular Plant	<i>Utricularia cornuta</i>	G5	N5	S3		1979	unknown	unknown		SASK herbarium/Biotics	
69	Vascular Plant	<i>Utricularia minor</i>	G5	N5	S2S3		2000	unknown	unknown		SASK herbarium/Biotics	

70	Nonvascular Plant	<i>Atrichum tenellum</i>	G4G5	N4N5	SU		2000	unknown	unknown		Biotics (FEC Project)
71	Nonvascular Plant	<i>Aulacomnium androgynum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
72	Nonvascular Plant	<i>Barbilophozia hatcheri</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
73	Nonvascular Plant	<i>Blasia pusilla</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
74	Nonvascular Plant	<i>Bryum lisae</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
75	Nonvascular Plant	<i>Calypogeia sphagnicola</i>	G4G5	N4N5	S2S4		2000	unknown	unknown		Biotics (FEC Project)
76	Nonvascular Plant	<i>Cladopodiella fluitans</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
77	Nonvascular Plant	<i>Dicranum acutifolium</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
78	Nonvascular Plant	<i>Dicranum fragilifolium</i>	G4G5	N4N5	SU		2000	unknown	unknown		Biotics (FEC Project)
79	Nonvascular Plant	<i>Gymnocolea inflata</i>	G5T5	N5	S1?		2000	unknown	unknown		Biotics (FEC Project)
80	Nonvascular Plant	<i>Leiomylia anomala</i>	G5	N5	S3S4		2000	unknown	unknown		Biotics (FEC Project)
81	Nonvascular Plant	<i>Lepidozia reptans</i>	G5	N5	S3S4		2000	unknown	unknown		Biotics (FEC Project)
82	Nonvascular Plant	<i>Lophozia longidens</i>	G5?	N5	S2S4		2000	unknown	unknown		Biotics (FEC Project)
83	Nonvascular Plant	<i>Pogonatum urnigerum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
84	Nonvascular Plant	<i>Pohlia bulbifera</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
85	Nonvascular Plant	<i>Pohlia filum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
86	Nonvascular Plant	<i>Polytrichastrum formosum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
87	Nonvascular Plant	<i>Ptilidium pulcherrimum</i>	G5	N5	S3S4		2000	unknown	unknown		Biotics (FEC Project)
88	Nonvascular Plant	<i>Sphagnum recurvum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
89	Nonvascular Plant	<i>Sphagnum subsecundum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
90	Nonvascular Plant	<i>Splachnum ampullaceum</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)

91	Lichen/Fungus	<i>Arctocetraria nigricascens</i>	GNR	N3N5	S1		2000	unknown	unknown		Biotics (FEC Project)
92	Lichen/Fungus	<i>Bryoria glabra</i>	G4G5	N4	S1		2000	unknown	unknown		Biotics (FEC Project)
93	Lichen/Fungus	<i>Bryoria implexa</i>	GNR	NNA	S1		2000	unknown	unknown		Biotics (FEC Project)
94	Lichen/Fungus	<i>Bryoria nadvornikiana</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
95	Lichen/Fungus	<i>Bryoria pikei</i>	G5	N5	S1S2		2000	unknown	unknown		Biotics (FEC Project)
96	Lichen/Fungus	<i>Bryoria simplicior</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
97	Lichen/Fungus	<i>Bryoria trichodes</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
98	Lichen/Fungus	<i>Calicium tigillare</i>	G5	NNR	S2S4		2000	unknown	unknown		Biotics (FEC Project)
99	Lichen/Fungus	<i>Caloplaca epithallina</i>	G3G5	NNR	S3S5		2000	unknown	unknown		Biotics (FEC Project)
100	Lichen/Fungus	<i>Cetraria ericetorum</i>	G5	N5	S3S4		2000	unknown	unknown		Biotics (FEC Project)
101	Lichen/Fungus	<i>Cetraria islandica</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
102	Lichen/Fungus	<i>Cladonia amaurocraea</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
103	Lichen/Fungus	<i>Cladonia arbuscula</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
104	Lichen/Fungus	<i>Cladonia cenotea</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
105	Lichen/Fungus	<i>Cladonia coccifera</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
106	Lichen/Fungus	<i>Cladonia coniocraea</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
107	Lichen/Fungus	<i>Cladonia cornuta ssp. cornuta</i>	G5T5	N5	S3S5		2000	unknown	unknown		Biotics (FEC Project)
108	Lichen/Fungus	<i>Cladonia deformis</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
109	Lichen/Fungus	<i>Cladonia maxima</i>	G5	N5	S1		2000	unknown	unknown		Biotics (FEC Project)
110	Lichen/Fungus	<i>Cladonia pleurota</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
111	Lichen/Fungus	<i>Cladonia ramulosa</i>	G5?	N4N5	S1		2000	unknown	unknown		Biotics (FEC Project)

112	Lichen/Fungus	<i>Cladonia straminea</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
113	Lichen/Fungus	<i>Cladonia sulphurina</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
114	Lichen/Fungus	<i>Flavocetraria cucullata</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
115	Lichen/Fungus	<i>Flavocetraria nivalis</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
116	Lichen/Fungus	<i>Flavoparmelia caperata</i>	G5	N5	S1S3		2000	unknown	unknown		Biotics (FEC Project)
117	Lichen/Fungus	<i>Imshaugia aleurites</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)
118	Lichen/Fungus	<i>Lecania dubitans</i>	G4?	NNR	S1		2000	unknown	unknown		Biotics (FEC Project)
119	Lichen/Fungus	<i>Lecanora allophana</i>	G5	N5	S2S4		2000	unknown	unknown		Biotics (FEC Project)
120	Lichen/Fungus	<i>Lecanora pulicaris</i>	G5	N5	S2S3		2000	unknown	unknown		Biotics (FEC Project)
121	Lichen/Fungus	<i>Melanohalea olivacea</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
122	Lichen/Fungus	<i>Parmelia saxatilis</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
123	Lichen/Fungus	<i>Parmeliopsis hyperopta</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
124	Lichen/Fungus	<i>Peltigera aphthosa</i>	G5	N5	S2S3		2000	unknown	unknown		Biotics (FEC Project)
125	Lichen/Fungus	<i>Peltigera horizontalis</i>	G5	N5	S1		2000	unknown	unknown		Biotics (FEC Project)
126	Lichen/Fungus	<i>Peltigera malacea</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
127	Lichen/Fungus	<i>Phaeophyscia orbicularis</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)
128	Lichen/Fungus	<i>Physcia stellaris</i>	G5	N5	S3S4		2000	unknown	unknown		Biotics (FEC Project)
129	Lichen/Fungus	<i>Polycauliona candelaria</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
130	Lichen/Fungus	<i>Polycauliona polycarpa</i>	G5	N5	SU		2000	unknown	unknown		Biotics (FEC Project)
131	Lichen/Fungus	<i>Ramalina obtusata</i>	G5	N4N5	S3		2000	unknown	unknown		Biotics (FEC Project)
132	Lichen/Fungus	<i>Stereocaulon paschale</i>	G5	N5	S2		2000	unknown	unknown		Biotics (FEC Project)

133	Lichen/Fungus	<i>Tuckermannopsis americana</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)	
134	Lichen/Fungus	<i>Tuckermannopsis sepincola</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)	
135	Lichen/Fungus	<i>Usnea cavernosa</i>	G5	N5	S3		2000	unknown	unknown		Biotics (FEC Project)	
136	Lichen/Fungus	<i>Xylographa parallela</i>	G5	N4	S2		2000	unknown	unknown		Biotics (FEC Project)	

Table 2: Threat information

Given the large number of rare plant species in the area threat information is focused on the endemics, since an in-depth assessment has already been conducted for them (see COSEWIC 2018). The overall threat impact to the area is considered to be low due to its remote location but this could change quickly if human presence increases (COSEWIC 2018). Most threats are not considered likely in the near future.

Threat # (from Appendix A)	Threat	Plant Species of Concern Affected (#s from Table 1 above or "all")	Level (High, moderate, low, very low, NA)	Comments
3.2	Mines and quarrying	Endemics	negligible	Unlikely to directly impact the endemics, however, if mining in the area increases, the increased presence of people with more roads, suppression of fire, access to dunes, etc. could greatly increase the threats to the dunes.
4.1	Roads	Endemics	negligible	At present, not a concern, but if industrial activity increases, more roads will be built, increasing access to the area.
5.2	Gathering terrestrial plants	Endemics	Negligible	Unlikely given the remoteness of the area.
6.1	Recreational activities	Endemics	negligible	ATV traffic could be damaging but at the present time the area is too inaccessible for recreation.
6.3	Work and other activities	Endemics	negligible	Subsistence hunting occurs in the area but effects on the endemics are negligible.
7.1	Fire and fire suppression	Endemics	negligible	Fire is generally positive as a natural disturbance that mitigates dune stabilization. Fire suppression would be a threat but fires in the area are currently usually left to burn.
8.1	Invasive non-native/alien species	Endemics	negligible	Threat is mostly potential, establishment of non-native species is not yet a problem.
8.2	Problematic native species	Endemics	negligible	This is a threat as it relates to dune stabilization. Stabilization is very slow.

9.5	Air-borne pollutants	Endemics	negligible	Acid deposition from industrial activity may affect individual plants and benefit fast growing species (increasing dune stabilization).
11.1	Habitat shifting and alteration	Endemics	negligible	The area is projected to become warmer and drier which will increase fire frequency. This may actually benefit the endemics by mitigating dune stabilization.
11.2	Drought	Endemics	negligible	May contribute to increased fire frequency, benefitting the endemics. May have a negative effect on any rare species found in dune slacks.

Referencing the criteria, explain why the nominated site deserves recognition as an Important Plant Area (500 words or less):

The Athabasca Sand Dunes meet IPA criteria 1, 2, 3, and 4. The site provides habitat for ten Canadian endemic plant species (five of which are only found in Saskatchewan), as well as 126 other plant (vascular, non-vascular, and lichen/fungi) taxa that are considered rare in Saskatchewan. 71 of those taxa have S-ranks of S1 or S2. Fourteen of these taxa meet the global rarity criterion as outlined in criterion 1. Seven taxa are listed federally as Special Concern. The unique plant taxa in this area are associated with a number of unique communities such as active sand dunes, gravel pavements and the Lake Athabasca shoreline. These communities have not yet been formally described and ranked but likely some of them would likely be rare as well.

The area currently has high ecological integrity. Many potential threats exist (see Table 2), but due to the remote location, significant degradation has not occurred.

Additional unique features: The Athabasca Sand Dunes are the most northerly active sand dune formations in the world. They developed from sand eroding from the Athabasca Sandstone Formation in conjunction with lake shore processes from Lake Athabasca. The site includes parabolic dunes, gravel pavements, dune slacks, braided river channels, bogs, forests and an active lakeshore. The area contains seven major dune areas, plus several smaller ones (COSEWIC 2018).

Animals of conservation concern that have been documented at the site include:

Scientific Name	Common Name	G-rank	N-rank	S-rank	COSEWIC Listing
<i>Aeshna tuberculifera</i>	Black-Tipped Darner	G5	N5B, N5N, N3M	S3S4	
<i>Bombus terricola</i>	Yellow-banded Bumblebee	G3G4	N5	S5	Special Concern
<i>Charadrius melodus circumcinctus</i>	Piping Plover	G3T3	N3B	S3B	
<i>Chordeiles minor</i>	Common Nighthawk	G5	N4B, N3M	S4B, S4M	
<i>Surnia ulula</i>	Northern Hawk Owl	G5	N5B, N5N, N3M	S3B, S5N	

Plant species list (optional): These are an additional 250 plant taxa documented for the area (not including those found in table 1).

Plant Species (Scientific Name)		
<i>Agrostis scabra</i>	<i>Callitriche palustris</i>	<i>Comandra umbellata ssp. pallida</i>
<i>Agrostis scabra var. scabra</i>	<i>Caltha palustris</i>	<i>Comarum palustre</i>
<i>Alnus incana ssp. rugosa</i>	<i>Calypso bulbosa</i>	<i>Coptis trifolia</i>
<i>Alnus viridis</i>	<i>Campanula rotundifolia</i>	<i>Corallorhiza trifida</i>
<i>Alnus viridis ssp. crispa</i>	<i>Capsella bursa-pastoris</i>	<i>Corispermum americanum var. americanum</i>
<i>Anaphalis margaritacea</i>	<i>Cardamine pensylvanica</i>	<i>Corispermum hyssopifolium</i>
<i>Andromeda polifolia</i>	<i>Carex abdita</i>	<i>Corispermum nitidum</i>
<i>Antennaria microphylla</i>	<i>Carex aquatilis var. aquatilis</i>	<i>Cornus canadensis</i>
<i>Antennaria neglecta</i>	<i>Carex brunnescens</i>	<i>Corydalis sempervirens</i>
<i>Antennaria rosea</i>	<i>Carex buxbaumii</i>	<i>Cypripedium acaule</i>
<i>Apocynum androsaemifolium</i>	<i>Carex canescens</i>	<i>Cystopteris fragilis</i>
<i>Arabidopsis lyrata</i>	<i>Carex chorderrhiza</i>	<i>Diphasiastrum complanatum</i>
<i>Aralia nudicaulis</i>	<i>Carex deflexa</i>	<i>Diphasiastrum sitchense</i>
<i>Arceuthobium americanum</i>	<i>Carex diandra</i>	<i>Drosera rotundifolia</i>
<i>Arctostaphylos uva-ursi</i>	<i>Carex foenea</i>	<i>Eleocharis acicularis</i>
<i>Artemisia borealis ssp. borealis</i>	<i>Carex lasiocarpa</i>	<i>Eleocharis quinqueflora</i>
<i>Athyrium filix-femina</i>	<i>Carex lenticularis var. lenticularis</i>	<i>Elymus trachycaulus</i>
<i>Barbarea orthoceras</i>	<i>Carex leptalea</i>	<i>Empetrum nigrum</i>
<i>Betula nana</i>	<i>Carex limosa</i>	<i>Epilobium ciliatum ssp. glandulosum</i>
<i>Betula neoalaskana</i>	<i>Carex livida</i>	<i>Epilobium leptophyllum</i>
<i>Betula occidentalis</i>	<i>Carex magellanica</i>	<i>Epilobium palustre</i>
<i>Betula papyrifera var. commutata</i>	<i>Carex magellanica ssp. irrigua</i>	<i>Equisetum arvense</i>
<i>Betula pumila var. glandulifera</i>	<i>Carex oligosperma</i>	<i>Equisetum fluviatile</i>
<i>Betula x sargentii</i>	<i>Carex pauciflora</i>	<i>Equisetum palustre</i>
<i>Betula x utahensis</i>	<i>Carex praticola</i>	<i>Equisetum sylvaticum</i>
<i>Betula x winteri</i>	<i>Carex pseudocyperus</i>	<i>Erigeron acris var. kamtschaticus</i>
<i>Bromus pumpellianus</i>	<i>Carex rostrata</i>	<i>Eriophorum angustifolium ssp. angustifolium</i>
<i>Calamagrostis canadensis</i>	<i>Carex rufina</i>	<i>Eriophorum brachyantherum</i>
<i>Calamagrostis canadensis var. canadensis</i>	<i>Carex tenuiflora</i>	<i>Eriophorum chamissonis</i>
<i>Calamagrostis lapponica var. nearctica</i>	<i>Chamaedaphne calyculata</i>	<i>Eriophorum gracile</i>
<i>Calamagrostis purpurascens</i>	<i>Chamerion angustifolium ssp. angustifolium</i>	<i>Eriophorum vaginatum var. spissum</i>
<i>Calamagrostis stricta ssp. inexpansa</i>	<i>Chenopodium album</i>	<i>Euthamia graminifolia</i>
<i>Calamagrostis stricta ssp. stricta</i>	<i>Chimaphila umbellata</i>	<i>Euthamia graminifolia var. graminifolia</i>
<i>Calla palustris</i>	<i>Chimaphila umbellata ssp. occidentalis</i>	<i>Eutrochium maculatum</i>
	<i>Cicuta bulbifera</i>	
	<i>Cicuta maculata var. angustifolia</i>	
	<i>Cicuta virosa</i>	

<i>Festuca rubra ssp. rubra</i>
<i>Festuca saximontana</i>
<i>Fragaria virginiana ssp. glauca</i>
<i>Galium trifidum</i>
<i>Geocaulon lividum</i>
<i>Glyceria borealis</i>
<i>Glyceria pulchella</i>
<i>Goodyera repens</i>
<i>Gymnocarpium dryopteris</i>
<i>Gymnocarpium robertianum</i>
<i>Hieracium umbellatum</i>
<i>Hippuris vulgaris</i>
<i>Hordeum jubatum</i>
<i>Hudsonia tomentosa</i>
<i>Huperzia selago</i>
<i>Hypericum majus</i>
<i>Isoetes echinospora</i>
<i>Isoetes macrospora</i>
<i>Juncus ambiguus</i>
<i>Juncus balticus</i>
<i>Juncus brevicaudatus</i>
<i>Juncus bufonius var. bufonius</i>
<i>Juncus filiformis</i>
<i>Juncus vaseyi</i>
<i>Juniperus communis</i>
<i>Kalmia polifolia</i>
<i>Koeleria macrantha</i>
<i>Larix laricina</i>
<i>Lathyrus ochroleucus</i>
<i>Leymus mollis</i>
<i>Linnaea borealis</i>
<i>Listera borealis</i>
<i>Listera cordata</i>
<i>Luzula multiflora</i>
<i>Lycopodium annotinum</i>
<i>Lycopodium clavatum</i>
<i>Lycopodium obscurum</i>
<i>Lycopus uniflorus</i>
<i>Lysimachia thysiflora</i>
<i>Maianthemum canadense</i>
<i>Maianthemum trifolium</i>
<i>Matteuccia struthiopteris</i>
<i>Melampyrum lineare</i>

<i>Menyanthes trifoliata</i>
<i>Moehringia lateriflora</i>
<i>Moneses uniflora</i>
<i>Monotropa uniflora</i>
<i>Myrica gale</i>
<i>Myriophyllum sibiricum</i>
<i>Myriophyllum verticillatum</i>
<i>Nuphar variegata</i>
<i>Orthilia secunda</i>
<i>Parnassia palustris</i>
<i>Pedicularis labradorica</i>
<i>Pedicularis parviflora</i>
<i>Persicaria amphibia var. stipulacea</i>
<i>Persicaria lapathifolia</i>
<i>Petasites frigidus var. palmatus</i>
<i>Petasites frigidus var. sagittatus</i>
<i>Phragmites australis</i>
<i>Picea glauca</i>
<i>Picea mariana</i>
<i>Pinus banksiana</i>
<i>Pinus contorta var. latifolia</i>
<i>Piptatherum pungens</i>
<i>Platanthera hyperborea var. hyperborea</i>
<i>Poa arctica ssp. lanata</i>
<i>Poa glauca</i>
<i>Poa pratensis</i>
<i>Polygonum achoreum</i>
<i>Polypodium virginianum</i>
<i>Populus balsamifera</i>
<i>Populus tremuloides</i>
<i>Potamogeton alpinus</i>
<i>Potamogeton gramineus</i>
<i>Potamogeton obtusifolius</i>
<i>Potamogeton praelongus</i>
<i>Potamogeton pusillus ssp. tenuissimus</i>
<i>Potamogeton richardsonii</i>
<i>Potentilla norvegica</i>
<i>Prunus pensylvanica</i>
<i>Puccinellia distans</i>

<i>Pyrola asarifolia</i>
<i>Pyrola chlorantha</i>
<i>Pyrola elliptica</i>
<i>Pyrola minor</i>
<i>Ranunculus flammula var. reptans</i>
<i>Ranunculus gmelinii</i>
<i>Ranunculus lapponicus</i>
<i>Rhinanthus minor</i>
<i>Rhododendron groenlandicum</i>
<i>Ribes hudsonianum</i>
<i>Ribes triste</i>
<i>Rosa acicularis</i>
<i>Rubus arcticus ssp. acaulis</i>
<i>Rubus chamaemorus</i>
<i>Rubus pubescens</i>
<i>Rumex occidentalis</i>
<i>Sagittaria cuneata</i>
<i>Salix bebbiana</i>
<i>Salix discolor</i>
<i>Salix lasiandra var. lasiandra</i>
<i>Salix lutea</i>
<i>Salix pedicellaris</i>
<i>Salix pellita</i>
<i>Salix pyrifolia</i>
<i>Salix scouleriana</i>
<i>Sarracenia purpurea</i>
<i>Saxifraga tricuspidata</i>
<i>Scheuchzeria palustris ssp. americana</i>
<i>Scirpus microcarpus</i>
<i>Scutellaria galericulata</i>
<i>Selaginella rupestris</i>
<i>Sibbaldiopsis tridentata</i>
<i>Silene acaulis var. exscapa</i>
<i>Sium suave</i>
<i>Solidago nemoralis ssp. decemflora</i>
<i>Solidago simplex ssp. simplex</i>
<i>Sparganium angustifolium</i>
<i>Sparganium fluctuans</i>
<i>Sparganium natans</i>
<i>Spiranthes romanzoffiana</i>

<i>Stellaria calycantha</i>
<i>Stellaria crassifolia</i>
<i>Stellaria longifolia</i>
<i>Symphyotrichum puniceum</i>
<i>Tephrosia palustris</i>
<i>Trichophorum alpinum</i>
<i>Trichophorum cespitosum</i>
<i>Trientalis europaea ssp. arctica</i>
<i>Triglochin maritima</i>
<i>Typha latifolia</i>
<i>Utricularia intermedia</i>
<i>Utricularia vulgaris</i>
<i>Vaccinium myrtilloides</i>
<i>Vaccinium oxycoccos</i>
<i>Vaccinium uliginosum</i>
<i>Vaccinium vitis-idaea</i>
<i>Vaccinium vitis-idaea ssp. minus</i>
<i>Veronica americana</i>
<i>Viburnum edule</i>
<i>Vicia americana</i>
<i>Viola palustris</i>
<i>Pleurozium schreberi</i>
<i>Pohlia drummondii</i>

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Map included showing site boundaries and location (required)

Photos included (optional)

References

COSEWIC. 2018. COSEWIC assessment and status report on the Athabasca Endemics, Large-headed Woolly Yarrow (*Achillea millefolium* var. *megacephala*), Athabasca Thrift (*Armeria maritima* ssp. *interior*), Mackenzie Hairgrass (*Deschampsia mackenzieana*), Sand-dune Short-capsuled Willow (*Salix brachycarpa* var. *psammophila*), Turnor's Willow (*Salix turnorii*), Blanket-leaved Willow (*Salix silicicola*), and Floccose Tansy (*Tanacetum huronense* var. *floccosum*) in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa xvii + 83 pp. (<http://www.registrelepsararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>).



Map showing the boundary of the Athabasca Sand Dunes IPA.

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