



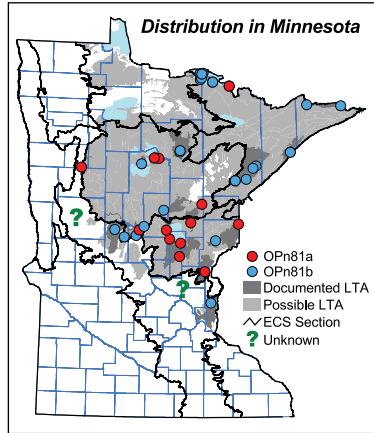
Northern Shrub Shore Fen

Shrub-dominated peatlands on floating mats along margins of peatlands in ponds, lakes, and streams.

Vegetation Structure & Composition

Description is based on summary of vegetation data from 42 plots (relevés) and moss data from 2 bryophyte plots.

- **Moss** cover is variable but frequently > 50%, and dominated by *Sphagnum*.
- **Graminoid** cover is variable, with broad-leaved graminoids prominent, including bluejoint (*Calamagrostis canadensis*), lake sedge (*Carex lacustris*), beaked sedge (*C. utriculata*), and tussock sedge (*C. stricta*).
- **Forb** cover is sparse (usually < 25%), with marsh cinquefoil (*Potentilla palustris*) typically present and northern marsh fern (*Thelypteris palustris*) commonly present.
- **Shrub** cover is > 50% and dominated by leatherleaf (*Chamaedaphne calyculata*), bog birch (*Betula pumila*), speckled alder (*Alnus incana*), or sweet gale (*Myrica gale*), either separately or in combination.
- **Tree** cover is sparse or absent, with scattered stunted tamarack or black spruce occasionally present.



Landscape Setting & Soils

OPn81 typically is present along inland margins of floating mats at the edges of peatlands associated with ponds, lakes, and streams; in linear peatland basins subject to periodic inundation by surface runoff; and in lagg zones at the edges of peatlands. Substrate is peat, usually in the form of a mat held together by live plant roots and rhizomes. The mat is influenced by surface water with circumneutral pH from adjacent lakes, ponds, and streams or by runoff from adjacent uplands.

Natural History

OPn81 occurs where peat depth is sufficient to isolate plant roots from immediate contact with nutrients, but where there is enough influence from mineral-rich surface water or runoff to maintain circumneutral pH (> 5.5) and prevent conversion to an acid peatland. The vegetation in OPn81 is subjected to periodic flooding, either from oscillations in lake- or stream-water levels or from ponding of surface runoff along peatland margins. Characteristic plant species in OPn81 are adapted to low nutrient levels and some periodic flooding. Although moss cover in OPn81 is often high, at some sites mosses are almost absent, possibly because of recent prolonged inundation.

Similar Native Plant Community Classes

• OPn92 Northern Rich Fen (Basin)

OPn92, like OPn81, can occur in peatland basins and on floating mats adjacent to ponds and streams, but unlike OPn81, OPn92 is present in settings seldom inundated by surface water. OPn92 is more likely to have a shrub layer dominated by willows, a graminoid layer dominated by fine-leaved sedges such as fen wiregrass sedge (*Carex lasiocarpa*), and minerotrophic brown mosses as the dominant moss species. OPn81 is more likely to have a shrub layer dominated by leatherleaf, bog birch, speckled alder, or sweet gale, and a graminoid layer dominated by broad-leaved sedges such as lake sedge (*Carex lacustris*). The most common mosses in OPn81 are minerotrophic *Sphagnum* species.



OPn81 Indicator Species	(freq%)	
	OPn81	OPn92
Balsam fir (U)	21	1
White Pine (U)	21	3
Black spruce (C,U)	40	7
Labrador tea (<i>Ledum groenlandicum</i>)	35	9
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	26	7
Speckled alder (<i>Alnus incana</i>)	81	23
Leatherleaf (<i>Chamaedaphne calyculata</i>)	88	28
Balsam willow (<i>Salix pyrifolia</i>)	49	17

OPn92 Indicator Species	(freq%)	
	OPn81	OPn92
Intermediate bladderwort (<i>Utricularia intermedia</i>)	-	25
Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	-	25
Labrador bedstraw (<i>Galium labradoricum</i>)	2	28
Prairie sedge (<i>Carex prairea</i>)	2	18
Clustered muhly grass (<i>Muhlenbergia glomerata</i>)	2	18
Slender cottongrass (<i>Eriophorum gracile</i>)	5	22
Creeping sedge (<i>Carex chordorrhiza</i>)	14	42
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	35	91

• WMn82 Northern Wet Meadow/Carr

WMn82 can have abundant broad-leaved graminoids and speckled alder and can appear similar to occurrences of OPn81, although WMn82 commonly occurs on mineral soil or shallow peat rather than deep peat and is often situated away from lakeshores or other areas subject to fluctuating water levels. WMn82 is more likely to have abundant willows (*Salix* spp.) and red-osier dogwood (*Cornus sericea*) in addition to speckled alder. OPn81 typically occurs on deep peat, often along lakeshores, and is more likely to have high cover of leatherleaf, bog birch, or sweet gale in addition to speckled alder.

OPn81 Indicator Species	(freq%)	
	OPn81	WMn82
Small cranberry (<i>Vaccinium oxycoccos</i>)	30	-
Bog rosemary (<i>Andromeda glaucophylla</i>)	19	-
Round-leaved sundew (<i>Drosera rotundifolia</i>)	23	1
Leatherleaf (<i>Chamaedaphne calyculata</i>)	88	6
Black spruce (C,U)	40	3
Labrador tea (<i>Ledum groenlandicum</i>)	35	3
Tamarack (U)	37	4
Balsam willow (<i>Salix pyrifolia</i>)	49	9

WMn82 Indicator Species	(freq%)	
	OPn81	WMn82
Touch-me-not (<i>Impatiens</i> spp.)	2	54
Labrador bedstraw (<i>Galium labradoricum</i>)	2	24
Cut-leaved bugleweed (<i>Lycopus americanus</i>)	2	20
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	2	20
Pussy willow (<i>Salix discolor</i>)	9	56
Spotted Joe yew weed (<i>Eupatorium maculatum</i>)	9	54
Bebb's willow (<i>Salix bebbiana</i>)	9	46
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	16	54

• FPn73 Northern Rich Alder Swamp

FPn73 can resemble OPn81 when OPn81 is dominated by speckled alder (see OPn81a, Bog Birch - Alder Shore Fen below). FPn73 is seldom present along peatland lakeshores (although it may be present along peatland margins) and is more likely to have forest species such as bunchberry (*Cornus canadensis*), starflower (*Trientalis borealis*), and Canada mayflower (*Maianthemum canadense*). OPn81 is often present adjacent to peatland lakeshores and in lags and is more likely to have high cover of bog birch and leatherleaf in the shrub layer.

OPn81 Indicator Species	(freq%)	
	OPn81	FPn73
Large cranberry (<i>Vaccinium macrocarpon</i>)	13	-
Creeping sedge (<i>Carex chordorrhiza</i>)	20	2
Leatherleaf (<i>Chamaedaphne calyculata</i>)	73	16
Candle-lantern sedge (<i>Carex limosa</i>)	20	5
Balsam willow (<i>Salix pyrifolia</i>)	47	11
Bog aster (<i>Aster borealis</i>)	27	7
Bog birch (<i>Betula pumila</i>)	87	27
Marsh cinquefoil (<i>Potentilla palustris</i>)	100	36

FPn73 Indicator Species	(freq%)	
	OPn81	FPn73
Starflower (<i>Trientalis borealis</i>)	-	50
Bunchberry (<i>Cornus canadensis</i>)	-	48
Canada mayflower (<i>Maianthemum canadense</i>)	-	43
Juneberries (<i>Amelanchier</i> spp.)	-	32
Skunk currant (<i>Ribes glandulosum</i>)	-	32
Woodland horsetail (<i>Equisetum sylvaticum</i>)	-	23
Naked miterwort (<i>Mitella nuda</i>)	-	20
Bluebead lily (<i>Clintonia borealis</i>)	-	18

Native Plant Community Types in Class

• OPn81a Bog Birch - Alder Shore Fen

Shrub-dominated fens with *Sphagnum* cover variable but often < 50%. Species that help to differentiate OPn81a from OPn81b include American, purple-leaved, or northern willow-herb (*Epilobium ciliatum*, *E. coloratum*, or *E. glandulosum*), marsh skullcap (*Scutellaria galericulata*), and three-cleft bedstraw (*Galium trifidum*). Description is based on summary of vegetation data from 15 plots.

• OPn81b Leatherleaf - Sweet Gale Shore Fen

Shrub-dominated fens with *Sphagnum* cover > 50% and often nearly continuous. Ericaceous shrubs are typically present, including bog rosemary (*Andromeda glaucophylla*), Labrador tea (*Ledum groenlandicum*), small cranberry (*Vaccinium oxycoccos*), or leatherleaf, along with red-osier dogwood and speckled alder. Characteristic forbs include bog goldenrod (*Solidago uliginosa*), three-leaved false Solomon's seal (*Smilacina trifolia*), poor sedge (*Carex paupercula*), and pitcher plant (*Sarracenia purpurea*). Description is based on summary of vegetation data from 27 plots.



photo by M.D. Lee MN DNR

George Crosby Manitou State Park, Lake County, MN



OPn81 Northern Shrub Shore Fen – Species Frequency & Cover

	freq%	cover		freq%	cover
Forbs, Ferns & Fern Allies					
Marsh cinquefoil (<i>Potentilla palustris</i>)	81	•	Rattlesnake grass (<i>Glyceria canadensis</i>)	17	•••
Northern marsh fern (<i>Thelypteris palustris</i>)	55	•	Brownish sedge (<i>Carex brunnescens</i>)	14	•••
Tufted loosestrife (<i>Lythymachia thysiflora</i>)	55	•	Creeping sedge (<i>Carex chordorrhiza</i>)	14	•
Crested fern (<i>Dryopteris cristata</i>)	45	•	Poor sedge (<i>Carex paupercula</i>)	14	•
Marsh bellflower (<i>Campanula aparimoides</i>)	43	•	Interior sedge (<i>Carex interior</i>)	12	••
Northern bugleweed (<i>Lycopus uniflorus</i>)	38	•	Soft-leaved sedge (<i>Carex disperma</i>)	12	•
Marsh St. John's wort (<i>Triadenum fraseri</i>)	33	•	Low Shrubs		
Water horsetail (<i>Equisetum fluviatile</i>)	33	••	Leatherleaf (<i>Chamaedaphne calyculata</i>)	88	••••
Northern blue flag (<i>Iris versicolor</i>)	31	•	Labrador tea (<i>Ledum groenlandicum</i>)	36	••
Linear-leaved, Marsh, or Downy willow-herb*	29	•	Small cranberry (<i>Vaccinium oxycoccos</i>)	31	••
Great water dock (<i>Rumex orbiculatus</i>)	26	•	Bog rosemary (<i>Andromeda glaucophylla</i>)	19	•
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	26	•	Sweet gale (<i>Myrica gale</i>)	14	••••
Dwarf raspberry (<i>Rubus pubescens</i>)	26	•	Bog laurel (<i>Kalmia polifolia</i>)	12	•
Wild calla (<i>Calla palustris</i>)	21	•	Tall Shrubs		
Marsh skullcap (<i>Scutellaria galericulata</i>)	21	•	Speckled alder (<i>Alnus incana</i>)	81	•••
Round-leaved sundew (<i>Drosera rotundifolia</i>)	21	•	Bog birch (<i>Betula pumila</i>)	71	••••
Arrow-leaved leathumb (<i>Polygonum sagittatum</i>)	21	•	Balsam willow (<i>Salix pyrifolia</i>)	50	•
Bog goldenrod (<i>Solidago uliginosa</i>)	19	•	Bog willow (<i>Salix pedicellaris</i>)	45	•
Red-stemmed aster (<i>Aster puniceus</i>)	19	•	Slender willow (<i>Salix petiolaris</i>)	45	••
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	17	•	Meadowsweet (<i>Spiraea alba</i>)	43	•
Water smartweed (<i>Polygonum amphibium</i>)	12	•	Red-osier dogwood (<i>Cornus sericea</i>)	29	•
Sensitive fern (<i>Onoclea sensibilis</i>)	12	•	Mountain fly honeysuckle (<i>Lonicera villosa</i>)	12	•
Bog aster (<i>Aster borealis</i>)	12	•	Diamond-leaved willow (<i>Salix planifolia</i>)	12	•
Cinnamon fern (<i>Osmunda cinnamomea</i>)	10	•	Steeplebush (<i>Spiraea tomentosa</i>)	10	•••
Spinulose shield fern (<i>Dryopteris carthusiana</i>)	10	•	Autumn willow (<i>Salix serissima</i>)	10	•
Bur matigold and Beggarticks (<i>Bidens</i> spp.)	10	••	Bebb's willow (<i>Salix bebbiana</i>)	10	•
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	10	••			
Grasses & Sedges			Trees		
Bluejoint (<i>Calamagrostis canadensis</i>)	79	••••			
Lake sedge (<i>Carex lacustris</i>)	62	••••	Canopy	freq%	cover
Beaked sedge (<i>Carex utriculata</i>)	38	••••	Tamarack	19	••
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	36	••	Black spruce	12	•
Tussock sedge (<i>Carex stricta</i>)	26	••••	Red maple	-	•
Silvery sedge (<i>Carex canescens</i>)	17	•	Paper birch	-	•
			White pine	-	•
			Balsam fir	-	•
			Shrub Layer	freq%	cover
			Tamarack	36	••
			Black spruce	40	•
			Red maple	31	•
			Paper birch	29	•
			White pine	21	•
			Balsam fir	21	•

* Linear-leaved, Marsh, or Downy willow-herb (*Epilobium leptophyllum*, *E. palustre*, or *E. strictum*)