



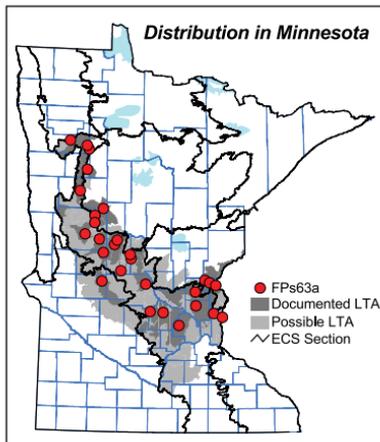
Southern Rich Conifer Swamp

Tamarack-dominated swamps on shallow to deep peat in basins on moraines and outwash plains. Occasionally on floating mats at edges of ponds or lakes.

Vegetation Structure & Composition

Description is based on summary of vascular plant data from 28 plots (relevés).

- **Moss layer** is patchy to continuous (25–100% cover), often with *Sphagnum*-dominated hummocks and brown mosses dominant in hollows.
- **Graminoid layer** has variable cover, with bristle-stalked sedge (*Carex leptalea*) usually present, and fowl manna grass (*Glyceria striata*), bluejoint (*Calamagrostis canadensis*), and soft-leaved sedge (*Carex disperma*) frequently present. Prairie sedge (*Carex prairea*) is sometimes abundant in young, early-successional stands.
- **Forb layer** has 25–75% cover and usually includes dwarf raspberry (*Rubus pubescens*), with common marsh marigold (*Caltha palustris*), northern marsh fern (*Thelypteris palustris*), touch-me-nots (*Impatiens* spp.), tufted loosestrife (*Lysimachia thyrsiflora*), and starflower (*Trientalis borealis*) common.
- **Low-shrub and vine** cover is variable, with Virginia creeper (*Parthenocissus* spp.) and poison ivy (*Toxicodendron rydbergii*) frequent, and red raspberry (*Rubus idaeus*) and wild grape (*Vitis riparia*) occasional.
- **Tall-shrub layer** is variable but frequently includes red-osier dogwood (*Cornus sericea*), with bog birch (*Betula pumila*), swamp gooseberry (*Ribes hirtellum*), and willows (*Salix* spp.) common.
- **Understory trees** commonly include tamarack, elms, and red maple.
- **Canopy** is patchy to interrupted (25–75% cover) and dominated by tamarack. Deciduous trees such as paper birch are occasionally present.



Landscape Setting & Soils

FPs63 occurs in peat-filled basins on glacial moraines and outwash plains and appears to be associated with areas underlain by sandy substrates. FPs63 can also occur on floating mats at the edges of ponds or lakes. Soils are well-decomposed peat of variable depth. Surface water pH is circumneutral. Water table is at or near the surface, and hollows are often water filled. FPs63 can occur in large contiguous sites > 100 acres (40ha) in size but often is present in small patches, mixed with shrub or hardwood swamps.

Natural History

FPs63, like northern rich peatland (FPn) classes, occurs on peat substrates that are poor in nutrients but influenced by mineral-rich groundwater that keeps the pH of surface water above 5.5. FPs63, however, occurs southwest of the zone of ideal climatic conditions for peat development, in an area where severe periodic droughts cause water-table drawdown followed by drying and burning or decomposition of peat in many basins. As a result, unlike FPn classes, FPs63 is restricted to basins fed by groundwater flow that maintains sufficiently saturated conditions to promote peat development.

The sites where FPs63 typically occurs—small peat-filled basins—burned occasionally in the past during periods of severe drought, possibly from spread of fire from forests or woodlands on surrounding uplands or from nearby wet meadows. An analysis of Public



Land Survey records indicates that the historic rotation of catastrophic fires in FPs63 was about 400 years. Because of structurally weak soils and shallow root systems, trees in the community are susceptible to windthrow, with a historic rotation for catastrophic windthrow of about 380 years. Small-scale disturbances resulting in partial mortality of the canopy were relatively common, with a rotation of about 40 years, and are presumed to have involved patchy windthrow of individual trees or small groups of trees. Levels of disturbance from windthrow in contemporary stands are consistent with historical records, with most modern stands having some evidence of recent windthrow.

Similar Native Plant Community Classes

● **FPn72 Northern Rich Tamarack Swamp (Eastern Basin)**

FPn72 is similar to FPs63 but occurs mainly to the north and east of FPs63 in the Laurentian Mixed Forest Province, with the ranges of the two classes overlapping along the southern edge of the WSU.

FPs63 Indicator Species	(freq%)		FPn72 Indicator Species	(freq%)	
	FPs63	FPn72		FPs63	FPn72
Touch-me-not (<i>Impatiens</i> spp.)	70	-	Black chokeberry (<i>Aronia melanocarpa</i>)	-	21
Fowl manna grass (<i>Glyceria striata</i>)	43	-	Beaked hazelnut (<i>Corylus cornuta</i>)	-	21
Wild grape (<i>Vitis riparia</i>)	40	-	Creeping snowberry (<i>Gaultheria hispida</i>)	-	21
Tall Northern bog orchid (<i>Platanthera hyperborea</i>)	40	-	Swamp holly (<i>Nemopanthes mucronatus</i>)	3	43
Wild honeysuckle (<i>Lonicera dioica</i>)	37	-	Leatherleaf (<i>Chamaedaphne calyculata</i>)	3	36
Alpine enchanter's nightshade (<i>Circaea alpina</i>)	37	-	Royal fern (<i>Osmunda regalis</i>)	3	36
Showy lady's slipper (<i>Cypripedium reginae</i>)	33	-	Three-fruited bog sedge (<i>Carex trisperma</i>)	7	71
Poison ivy (<i>Toxicodendron rydbergii</i>)	57	7	Lowbush blueberry or velvet-leaved blueberry*	10	64

*Lowbush blueberry or velvet-leaved blueberry (*Vaccinium angustifolium* or *V. myrtilloides*)

● **FPw63 Northwestern Rich Conifer Swamp**

FPw63 is similar to FPs63 but occurs to the north in the LAP, with the ranges of the two classes possibly overlapping along the northern border of the MIM.

FPs63 Indicator Species	(freq%)		FPw63 Indicator Species	(freq%)	
	FPs63	FPw63		FPs63	FPw63
Wild grape (<i>Vitis riparia</i>)	40	-	Shrubby cinquefoil (<i>Potentilla fruticosa</i>)	-	36
Red maple (<i>U</i>)	37	-	Arrow-leaved sweet coltsfoot (<i>Petasites sagittatus</i>)	-	21
Clearweed (<i>Pilea</i> spp.)	33	-	Drooping woodreed (<i>Cinna latifolia</i>)	-	21
Bristly sedge (<i>Carex comosa</i>)	30	-	Lingonberry (<i>Vaccinium vitis-idaea</i>)	-	18
Red elm (<i>U</i>)	20	-	Northern bedstraw (<i>Galium boreale</i>)	-	18
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	37	4	Flat-topped aster (<i>Aster umbellatus</i>)	3	29
Big-leaf white violet or Northern white violet*	37	4	Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	3	29
Swamp saxifrage (<i>Saxifraga pensylvanica</i>)	33	4	Swamp fly honeysuckle (<i>Lonicera oblongifolia</i>)	7	57

*Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)

Native Plant Community Types in Class

● **FPs63a Tamarack Swamp (Southern)**

FPs63a is the only community type recognized in this class at present.



photo by M.D. Lee, MN DNR



Stearns County, MN



FPs63 Southern Rich Conifer Swamp — Species Frequency & Cover

	freq% cover		freq% cover
Forbs, Ferns & Fern Allies			
Dwarf raspberry (<i>Rubus pubescens</i>)	87	Soft-leaved sedge (<i>Carex disperma</i>)	47
Common marsh marigold (<i>Caltha palustris</i>)	77	Bluejoint (<i>Calamagrostis canadensis</i>)	43
Touch-me-not (<i>Impatiens</i> spp.)	70	Fowl manna grass (<i>Glyceria striata</i>)	43
Northern marsh fern (<i>Thelypteris palustris</i>)	70	Fringed brome (<i>Bromus ciliatus</i>)	33
Sweet-scented bedstraw (<i>Galium triflorum</i>)	63	Interior sedge (<i>Carex interior</i>)	33
Starflower (<i>Trientalis borealis</i>)	63	Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	30
Tufted loosestrife (<i>Lysimachia thysiflora</i>)	63	Climbing Plants	
Canada mayflower (<i>Maianthemum canadense</i>)	57	Virginia creeper (<i>Parthenocissus</i> spp.)	60
Great water dock (<i>Rumex orbiculatus</i>)	57	Wild grape (<i>Vitis riparia</i>)	40
Three-leaved false Solomon's seal (<i>Smilacina trifolia</i>)	53	Wild honeysuckle (<i>Lonicera dioica</i>)	37
Bulb-bearing water hemlock (<i>Cicuta bulbifera</i>)	47	Low Shrubs	
Bog aster (<i>Aster borealis</i>)	47	Poison ivy (<i>Toxicodendron rydbergii</i>)	57
Northern bugleweed (<i>Lycopus uniflorus</i>)	47	Red raspberry (<i>Rubus idaeus</i>)	43
Red-stemmed aster (<i>Aster puniceus</i>)	47	Mountain fly honeysuckle (<i>Lonicera villosa</i>)	37
Marsh bellflower (<i>Campanula aparinooides</i>)	47	Labrador tea (<i>Ledum groenlandicum</i>)	30
Spinulose shield fern or Glandular wood fern*	47	Tall Shrubs	
Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	43	Red-osier dogwood (<i>Cornus sericea</i>)	77
Water horsetail (<i>Equisetum fluviatile</i>)	43	Bog birch (<i>Betula pumila</i>)	77
Crested fern (<i>Dryopteris cristata</i>)	40	Swamp gooseberry (<i>Ribes hirtellum</i>)	60
Bunchberry (<i>Cornus canadensis</i>)	40	Dwarf alder (<i>Rhamnus alnifolia</i>)	50
Tall Northern bog orchid (<i>Platanthera hyperborea</i>)	40	Speckled alder (<i>Alnus incana</i>)	50
Pink shinleaf (<i>Pyrola asarifolia</i>)	40	Swamp red currant (<i>Ribes triste</i>)	47
Big-leaf white violet or Northern white violet**	37	Juneberries (<i>Amelanchier</i> spp.)	43
Alpine enchanter's nightshade (<i>Circaea alpina</i>)	37	Pussy willow (<i>Salix discolor</i>)	30
Bur marigold and Beggarticks (<i>Bidens</i> spp.)	37	Trees	
Common strawberry (<i>Fragaria virginiana</i>)	33	Canopy freq% cover	Understorey freq% cover
Clearweed (<i>Pilea</i> spp.)	33	Tamarack	93
Showy lady's slipper (<i>Cypripedium reginae</i>)	33	Paper birch	37
Marsh skullicap (<i>Scutellaria galericulata</i>)	33	American elm	23
Swamp saxifrage (<i>Saxifraga pensylvanica</i>)	33	Black spruce	17
Naked miterwort (<i>Mitella nuda</i>)	33	Red maple	13
Mad dog skullcap (<i>Scutellaria lateriflora</i>)	30	Black ash	13
Grasses & Sedges			
Bristle-stalked sedge (<i>Carex leptalea</i>)	70	Northern red oak	37
		Box elder	30
			27

*Spinulose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*) **Big-leaf white violet or Northern white violet (*Viola blanda* or *V. macloskeyi*)