



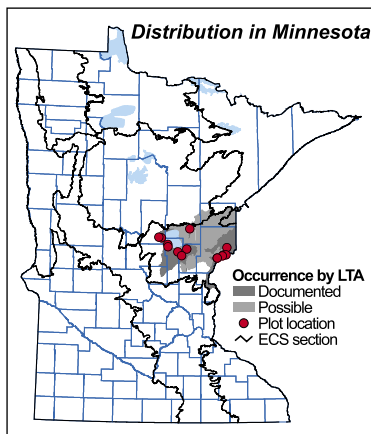
Northern Rich Tamarack Swamp (Eastern Basin)

Tamarack-dominated swamps on shallow to deep peat in basins and in depressions in abandoned river channels.

Vegetation Structure & Composition

Description is based on summary of vegetation data from 14 plots (relevés).

- **Moss layer** is interrupted to continuous (50-100% cover) with hummocks dominated by *Sphagnum*, and hollows dominated by brown mosses.
- **Forb layer** has variable cover and usually includes starflower (*Trientalis borealis*) and Canada mayflower (*Maianthemum canadense*), with bunchberry (*Cornus canadensis*), three-leaved false Solomon's seal (*Smilacina trifolia*), crested fern (*Dryopteris cristata*), spinulose shield fern (*Dryopteris carthusiana*), and royal fern (*Osmunda regalis*) common.
- **Graminoid layer** is sparse (5-25% cover) and dominated by three-fruited bog sedge (*Carex trisperma*) and to a lesser extent lake sedge (*C. lacustris*).
- **Low-shrub layer** typically has <25% cover and is usually dominated by Labrador tea (*Ledum groenlandicum*) with blueberries (*Vaccinium angustifolium* / *myrtilloides*) and mountain fly honeysuckle (*Lonicera villosa*) common.
- **Tall-shrub layer** commonly has >50% cover of shrubs >6ft (2m) in height, and is usually dominated by speckled alder (*Alnus incana*), often with winterberry (*Ilex verticillata*) and occasionally with swamp holly (*Nemopanthes mucronatus*) and juneberries (*Amelanchier* spp.). Tamarack, red maple, and northern red oak saplings are also common.
- **Subcanopy** trees frequently include tamarack, black spruce, yellow birch, black ash, red maple, and paper birch.
- **Canopy** is patchy to interrupted (25-75% cover), dominated by tamarack, occasionally with black spruce. Deciduous tree species including red maple, yellow birch, and black ash are typically present with varying cover.



Landscape Setting & Soils

FPn72 occurs in peat-filled basins on moraines, outwash plains, and drumlin fields, and in depressions in abandoned river channels. Substrate is shallow (<4in [10 cm]) to deep (>15in [40cm]), well-decomposed peat. Surface water pH is assumed to be circumneutral. FPn72 typically occurs as the predominant vegetation in isolated basins or adjacent to hardwood or shrub swamps in basins with more varied vegetation.

Natural History

In FPn72, plants root in peat substrate that is low in available nutrients but in contact with mineral-influenced groundwater and surface runoff from adjacent uplands. Although no data are available, the pH of surface water in FPn72 is probably circumneutral, much like conditions in rich tamarack swamps in similar settings to the west (see FPn82, Northern Rich Tamarack Swamp [Western Basin]). In the basins where FPn72 occurs, the groundwater does not have significant lateral flow, and water track features are absent, unlike conditions in large peatlands. The water table is subject to oscillations during the year but is typically high in spring and falls during the summer. FPn72 occurs in an area of the state that receives greater annual precipitation than tamarack swamps in basins in other areas (see Northern Rich Tamarack Swamp [Western Basin]). However, it is not known to what extent higher precipitation influences the class. The absence of some characteristically northern peatland species and the common



occurrence of black ash, elm, and yellow birch in FPn72 may indicate that many sites are in the process of transition from hardwood swamps to forested peatlands due to accumulation of peat. Additional analysis may show that FPn72 actually represents an "eastern" floristic class with affinities to forested rich peatlands in Wisconsin and Michigan. The peatland sites where FPn72 occurs can alternate between FPn72 and Northern Alder Swamps (FPn73), depending on the presence or absence of disturbance. Fire or flooding by beaver activity can convert FPn72 to Northern Alder Swamp or to other communities such as Northern Wet Meadow/Carr (WMn82), while the prolonged absence of disturbance can result in succession of alder-dominated wetlands to tamarack swamps.

Similar Native Plant Community Classes

● **FPs63 Southern Rich Conifer Swamp**

FPs63 is similar to FPn72 but is generally confined to the Eastern Broadleaf Forest Province, although it extends into the southern edge of WSU.

► **FPs63**—More likely to have touch-me-nots (*Impatiens* spp.), fowl manna grass (*Glyceria striata*), poison ivy (*Toxicodendron rydbergii*), poison sumac (*Toxicodendron vernix*), wild honeysuckle (*Lonicera dioica*), skunk cabbage (*Symplocarpus foetidus*), alpine enchanter's nightshade (*Circaea alpina*), and cattails (*Typha* spp.).

► **FPn72**—More likely to have northerly species such as goldthread (*Coptis trifolia*), black spruce, balsam fir, velvet-leaved blueberry, leatherleaf (*Chamaedaphne calyculata*), bluebead lily (*Clintonia borealis*), and twinflower (*Linnaea borealis*).

● **FPn82 Northern Rich Tamarack Swamp (Western Basin)**

FPn82 is present in peat-filled basins and is dominated by tamarack but occurs primarily to the north and west of FPn72, in MDL, NSU, MOP, and MIM. Because of geography, FPn82 has more species characteristic of peatlands in northern Minnesota and Canada, while FPn72 has more species typical of peatlands east of Minnesota in Wisconsin and Michigan.

► **FPn82**—More likely to have northern species such as bog rosemary (*Andromeda glaucophylla*) and white cedar, along with violets (*Viola* spp.), long-leaved chickweed (*Stellaria longifolia*), and three-cleft bedstraw (*Galium trifidum*). Red maple and black ash are uncommon and, if present, have <5% cover.

► **FPn72**—More likely to have "eastern" peatland species such as winterberry and swamp holly, as well as elms, black ash, red maple, Virginia creepers (*Parthenocissus* spp.), and royal fern. Red maple and black ash often have >5% cover.

Native Plant Community Types in Class

● **FPn72a Rich Tamarack Swamp (Eastcentral)**

Because of limited data, only one community type is currently recognized in FPn72. It appears, however, that there are groups within FPn72 that parallel the two community types recognized in Northern Rich Tamarack Swamp (Western Basin), which is a northern and western analogue of FPn72 in Minnesota. These groups include a more mineral-rich variant and a mineral-poor variant. In FPn72, the rich group is characterized by a dense layer (>50% cover) of shrubs taller than 6ft (2m) and dominated by speckled alder, and high species diversity (>45 species per 400m² plot). The poorer group is characterized by <50% cover of tall shrubs (with speckled alder having <5% cover) and lower species diversity (<40 species per 400 m² plot). Black ash, elms, dwarf raspberry (*Rubus pubescens*), marsh cinquefoil (*Potentilla palustris*), and northern marsh fern appear to be restricted to the richer group, whereas black spruce and yellow birch are more common in the poor group. With collection of more data, it may become evident that two community types should be recognized in FPn72. It is also possible that the poor group in FPn72 should be combined with the poorer community type recognized in FPn82, Rich Tamarack - (Alder) Swamp (FPn82a).