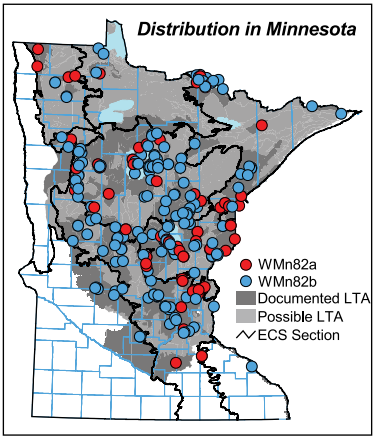
Northern Wet Meadow/Carr

Open wetlands dominated by dense cover of broad-leaved graminoids or tall shrubs. Present on mineral to sapric peat soils in basins and along streams.

Vegetation Structure & Composition

Description is based on summary of vegetation data from 293 plots (relevés) and moss data from 23 bryophyte plots.



- **Moss** cover most often is < 5% but can range to > 75%. Brown mosses are usually dominant, but *Sphagnum* can be dominant on some sites.
- **Graminoid** layer consists of dense stands of mostly broad-leaved graminoids, including bluejoint *(Calamagrostis canadensis)*, lake sedge *(Carex lacustris)*, tussock sedge *(C. stricta)*, and beaked sedge *(C. utriculata)*.
- **Forb** cover is variable, with tufted loosestrife *(Lysimachia thyrsiflora)*, marsh bellflower *(Campanula aparinoides)*, marsh skullcap *(Scutellaria galericulata)*, and great water dock *(Rumex orbiculatus)* common, and small or three-cleft bedstraw *(Galium tinctorium* or *G. trifidum)*, bulb-bearing water hemlock *(Cicuta bulbifera)*, northern bugleweed *(Lycopus uniflorus)*, linear-leaved, marsh, or downy willow-herb *(Epilobium leptophyllum*, *E. palustre*, or *E. strictum)*, water smartweed *(Polygonum amphibium)*, and northern marsh fern *(Thelypteris palustris)* occasional.
- **Shrub** cover is variable. Tall shrubs such as willows *(Salix* spp.), red-osier dogwood *(Cornus sericea)*, and speckled alder *(Alnus incana)* can be dense, along with meadowsweet *(Spiraea alba)*. Paper birch, black ash, red maple, American elm, and tamarack saplings are occasionally present in the shrub layer.
- **Trees** taller than 16ft (5m) are rarely present and if so, have low cover (< 25%).

Landscape Setting & Soils

WMn82 occurs in wetland basins on a variety of landforms. It is also associated with streams and drainageways, drained beaver ponds, shallow bays, and semifloating mats on lakes. Soils range from mineral or muck soil to sapric peat. Organic sediments are typically shallow but can be deep (> 15in [40cm]) in basins filled by sedimentary peat or where WMn82 has succeeded an Open Rich Peatland community following changes to the hydrology of the basin.

Natural History

WMn82 is subjected to moderate inundation following spring runoff and heavy rains, and periodic drawdowns during summer. Peak water levels are high enough and persistent enough to prevent trees (and often shrubs) from becoming established, although there may be little or no standing water much of the growing season. As a result of water-level fluctuations, the surface substrate alternates between aerobic and anaerobic conditions. Any organic matter that may accumulate over time is usually oxidized during drawdowns following drought or is removed by fire. Where deep peat is present in the community, it likely was formed previously on the site by a peat-producing community—such as a forested rich peatland—that was flooded by beaver activity and ultimately converted to a wet meadow. Deep peat may also develop from debris settling into basins with standing water, forming sedimentary peat. Because surface water in WMn82 is derived from runoff, stream flow, and groundwater sources, it has circumneutral pH (6.0–8.0) and high mineral and nutrient content. Although mosses are typically sparse in WMn82 because of alternating flooding and drawdown, moss cover can be relatively

high in settings where water levels have become stabilized. In these situations, it appears that *Sphagnum* can quickly invade the community, especially on floating mats that are completely above the water surface. The water chemistry in these sites can be rapidly converted by *Sphagnum* to rich fen or even poor fen conditions before characteristic wet meadow species, especially wide-leaved sedges, have been replaced by plants of rich or poor fens such as narrow-leaved sedges. The process of succession of WMn82 to rich or poor fens is readily reversed by return of higher or more variable water levels, such as from beaver activity or variation in precipitation.

Similar Native Plant Community Classes

- **OPn81 Northern Shrub Shore Fen**

OPn81 often has abundant broad-leaved graminoids and can appear similar to occurrences of WMn82 with abundant speckled alder (WMn82a). OPn81 typically occurs on deep peat, often along lakeshores, and is more likely to have high cover of leatherleaf *(Chamaedaphne calyculata)*, bog birch *(Betula pumila)*, or sweet gale *(Myrica gale)* in addition to speckled alder. WMn82 commonly occurs on mineral soil or shallow peat and is often situated away from lakeshores; WMn82 is more likely to have abundant willows and red-osier dogwood in addition to speckled alder.

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

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

- **FPn73 Northern Rich Alder Swamp**

FPn73 may resemble occurrences of WMn82 that have significant amounts of speckled alder (WMn82a). FPn73 is typically associated with other communities of the Forested Rich Peatland System and is more likely to have trees > 6ft (2m) tall, including paper birch, red maple, and black ash, and shade-tolerant swamp forest species in the ground layer.

WMn82 Indicator Species	(freq%) ***WMn82***	FPn73
Cut-leaved bugleweed *(Lycopus americanus)*	**20**	2
Swamp milkweed *(Asclepias incarnata)*	**16**	2
Water smartweed *(Polygonum amphibium)*	**29**	5
Tussock sedge *(Carex stricta)*	**47**	11
Slender willow *(Salix petiolaris)*	**71**	18
Beaked sedge *(Carex utriculata)*	**27**	9
Bebb's willow *(Salix bebbiana)*	**46**	16
Bulb-bearing water hemlock *(Cicuta bulbifera)*	**54**	20

FPn73 Indicator Species	(freq%) WMn82	***FPn73***
Starflower *(Trientalis borealis)*	1	**50**
Bunchberry *(Cornus canadensis)*	1	**48**
Canada mayflower *(Maianthemum canadense)*	1	**43**
Three-fruited bog sedge *(Carex trisperma)*	1	**27**
Lowbush or Velvet-leaved blueberry*	1	**27**
Labrador tea *(Ledum groenlandicum)*	3	**50**
White cedar (C,U)	1	**23**
Balsam fir (C,U)	4	**45**

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

Native Plant Community Types in Class

- **WMn82a Willow - Dogwood Shrub Swamp**

Open wetlands with abundant broad-leaved graminoids, and shrub cover typically > 25%. Shrubs that may be abundant include willows, red-osier dogwood, speckled alder, and occasionally bog birch. Description is based on summary of vegetation data from 69 plots.

- **WMn82b Sedge Meadow**

Open wetlands with abundant broad-leaved graminoids, and shrub cover typically < 25%. The invasive species common reed grass *(Phragmites australis)* and reed canary grass *(Phalaris arundinacea)* have become increasingly abundant in this community type over the past several decades, reducing species diversity in many occurrences. WMn82b is divided into four subtypes, based on dominant graminoid species. Description is based on summary of vegetation data from 224 plots.

- *WMn82b1 Bluejoint Subtype*
- *WMn82b2 Tussock Sedge Subtype*
- *WMn82b3 Beaked Sedge Subtype*
- *WMn82b4 Lake Sedge Subtype*

photo by E.R. Rowe MN DNR

Becker County, MN

WMn82 Northern Wet Meadow/Carr — Species Frequency & Cover

	freq%	cover
Grasses & Sedges		
Bluejoint *(Calamagrostis canadensis)*	80	●●●●
Lake sedge *(Carex lacustris)*	72	●●●●
Tussock sedge *(Carex stricta)*	41	●●●●
Beaked sedge *(Carex utriculata)*	33	●●●
Fen wiregrass sedge *(Carex lasiocarpa)*	29	●●●
Woolgrass *(Scirpus cyperinus)*	22	●●
Aquatic sedge *(Carex aquatilis)*	11	●●●
Forbs, Ferns & Fern Allies		
Tufted loosestrife *(Lysimachia thyrsiflora)*	59	●
Marsh bellflower *(Campanula aparinoides)*	58	●
Marsh skullcap *(Scutellaria galericulata)*	53	●
Great water dock *(Rumex orbiculatus)*	52	●
Three-cleft or small bedstraw *(Galium trifidum* or *G. tinctorium)*	46	●
Bulb-bearing water hemlock *(Cicuta bulbifera)*	46	●
Northern bugleweed *(Lycopus uniflorus)*	45	●
Linear-leaved, Marsh, or Downy willow-herb*	44	●
Water smartweed *(Polygonum amphibium)*	42	●
Northern marsh fern *(Thelypteris palustris)*	40	●●
Touch-me-not *(Impatiens* spp.)	39	●●
Marsh cinquefoil *(Potentilla palustris)*	38	●
Spotted Joe pye weed *(Eupatorium maculatum)*	34	●
Broad-leaved cattail *(Typha latifolia)*	32	●●
Arrow-leaved tearthumb *(Polygonum sagittatum)*	28	●
Crested fern *(Dryopteris cristata)*	24	●
Marsh St. John's wort *(Triadenum fraseri)*	23	●
Swamp milkweed *(Asclepias incarnata)*	22	●
Northern blue flag *(Iris versicolor)*	22	●
Broad-leaved arrowhead *(Sagittaria latifolia)*	22	●●
Labrador bedstraw *(Galium labradoricum)*	21	●
Bur marigold and Beggarticks *(Bidens* spp.)	21	●●

	freq%	cover
Sensitive fern *(Onoclea sensibilis)*	20	●
Common mint *(Mentha arvensis)*	19	●
Red-stemmed aster *(Aster puniceus)*	19	●
Marsh vetchling *(Lathyrus palustris)*	17	●
Common marsh marigold *(Caltha palustris)*	17	●
Cut-leaved bugleweed *(Lycopus americanus)*	17	●
Long-leaved chickweed *(Stellaria longifolia)*	13	●
Bog aster *(Aster borealis)*	12	●
Mad dog skullcap *(Scutellaria lateriflora)*	12	●
Giant goldenrod *(Solidago gigantea)*	12	●
Big-leaf white violet or Northern white violet**	12	●
Lesser-duckweed *(Lemna minor)*	12	●
Dwarf raspberry *(Rubus pubescens)*	11	●
Sweet flag *(Acorus calamus)*	11	●●
Rough cinquefoil *(Potentilla norvegica)*	11	●
Common boneset *(Eupatorium perfoliatum)*	11	●
Water horsetail *(Equisetum fluviatile)*	10	●
Low Shrubs		
Red raspberry *(Rubus idaeus)*	13	●
Tall Shrubs		
Slender willow *(Salix petiolaris)*	42	●●●
Pussy willow *(Salix discolor)*	29	●●
Red-osier dogwood *(Cornus sericea)*	24	●●
Speckled alder *(Alnus incana)*	24	●●●
Meadowsweet *(Spiraea alba)*	23	●
Bebb's willow *(Salix bebbiana)*	20	●●
Bog birch *(Betula pumila)*	14	●●
Tree Seedlings & Saplings (< 16ft)		
Paper birch	8	●
Black ash	7	●
Red maple	5	●

*Linear-leaved, Marsh, or Downy willow-herb *(Epilobium leptophyllum*, *E. palustre*, or *E. strictum)* **Big-leaf white violet or Northern white violet *(Viola blanda* or *V. macloskeyi)*