



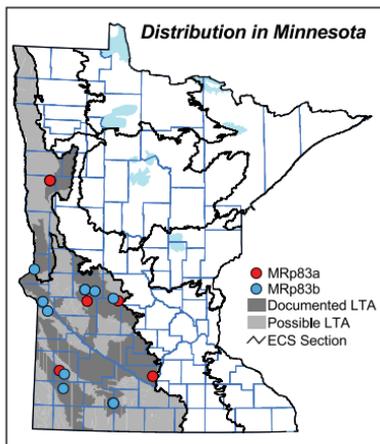
Prairie Mixed Cattail Marsh

Emergent marsh communities, typically dominated by cattails. Present on floating mats or rooted in mineral soil in shallow wetland basins.

Vegetation Structure & Composition

Description is based on summary of field survey records and vascular plant data from 21 plots (relevés).

- **Floating-leaved and submergent aquatic plant** cover is variable. Common species include water smartweed (*Polygonum amphibium* var. *stipulaceum*), star-duckweed (*Lemna trisulca*), lesser duckweed (*L. minor*), common bladderwort (*Utriculata vulgaris*), and greater duckweed (*Spirodela polyrrhiza*).
- **Graminoid** cover is variable, often consisting of dense, clonal, single-species patches interspersed with areas of open water. The most common species include hardstem bulrush (*Scirpus acutus*), slender bulrush (*S. heterochaetus*), beaked sedge (*Carex utriculata*), lake sedge (*C. lacustris*), and slough sedge (*C. atherodes*).
- **Forb** cover is strongly dominated by cattails (*Typha* spp.), usually with >50% cover. Other common forbs include tufted loosestrife (*Lysimachia thyrsiflora*), small or three-cleft bedstraw (*Galium tinctorium* or *G. trifidum*), water parsnip (*Sium suave*), and water horsetail (*Equisetum fluviatile*). Sweet flag (*Acorus calamus*), although not common, can be abundant in some sites.
- **Shrubs** are absent or very sparse.
- **Notes:** Vegetation is often composed of dense stands of cattails interspersed with pools of open water. Associated species are highly variable. MRp83 and other shallow-water wetlands throughout much of the state (particularly the agricultural region) have been invaded by dense stands of the non-native species narrow-leaved cattail (*Typha angustifolia*) and hybrid cattail (*T. x glauca*). Invasion and dominance of marshes by non-native cattail species is likely related to alterations in wetland hydrology, commonly from ditching, drain tiling, and impoundments, and from nutrient-rich and silt-laden runoff from agricultural fields. Marshes dominated by non-native cattail species are considered to be low-quality or disturbed examples of MRp83. Marshes dominated by the native species broad-leaved cattail (*T. latifolia*) are considered higher-quality examples of MRp83 and are increasingly rare in Minnesota.



Landscape Setting & Soils

MRp83 occurs in shallow basins and depressions and in wetland complexes. Substrates range from mineral soil, muck, and shallow, well-decomposed peat to floating peaty mats. Substrate surface is usually covered with plant litter, especially dead cattail stalks. MRp83 is often present in zones that are transitional between shallow aquatic communities and wet meadows. In many marsh settings, MRp83 occurs in close association with Prairie Bulrush-Arrowhead Marsh (MRp93), with MRp83 present in zones of shallow water and areas well protected from wave action, and MRp93 present in deeper water and in areas more exposed to wave action.

Natural History

MRp83 develops in areas where standing water is present most of the year, providing conditions favorable for hydrophytic plants. Occurrences of the community with plants rooted in muck or peat substrates may succeed to shallow aquatic communities if the water table rises for prolonged periods, or to wet meadows if the water table drops



or if silt or sedimentary peat accumulation causes the substrate surface to become elevated above the water surface. Floating mats, which rise and fall with changes in water level, are presumably successional stable but may be fragmented by strong winds or beaver activity. These floating mats are usually dominated by invasive cattail species (i.e., narrow-leaved cattail or hybrid cattail), likely as a result of invasion of wet meadow communities on floating mats by these species. Fires during severe droughts can remove accumulated peat in fens or wet meadows, effectively lowering the growing surface and creating the wetter conditions that favor marsh over fen or wet meadow vegetation. Variation in species composition observed in MRp83 is likely due to variation in water depth, in permanence of standing water, and in substrate.

Similar Native Plant Community Classes

• MRn83 Northern Mixed Cattail Marsh

MRn83 is very similar to MRp83, but by convention the range of MRn83 is limited to the Eastern Broadleaf Forest and Laurentian Mixed Forest provinces, and the range of MRp83 is limited to the Prairie Parkland Province. There are too few detailed records available to identify species differences between the two classes. Collection of additional data and further analysis may result in revision of the floristic and geographic relationships between the two classes.

• MRp93 Prairie Bulrush-Arrowhead Marsh

MRp93 can be similar to MRn83 but is usually dominated by bulrushes (*Scirpus* spp.), bur reeds (*Sparganium* spp.), spikerushes (*Eleocharis* spp.), or arrowheads (*Sagittaria* spp.) and may have abundant submergent aquatic species, while MRp83 is usually dominated by cattails or a mixture of cattails, sedges, bulrushes, and grass species and has at most sparse presence of submergent aquatic species. MRp93 typically occurs in deeper water than MRn83 and is more often adjacent to open water.

MRp83 Indicator Species	(freq%)		MRp93 Indicator Species	(freq%)	
	MRp83	MRp93		MRp83	MRp93
Water horsetail (<i>Equisetum fluviatile</i>)	20	-	Sago pondweed (<i>Stuckenia pectinata</i>)	-	31
Common reed grass (<i>Phragmites australis</i>)	20	-	Rice cut grass (<i>Leersia oryzoides</i>)	-	31
Slough sedge (<i>Carex atherodes</i>)	20	-	Flexuous naiad (<i>Najas flexilis</i>)	-	23
Bluejoint (<i>Calamagrostis canadensis</i>)	10	-	Mad dog skullcap (<i>Scutellaria lateriflora</i>)	-	23
Narrow reedgrass (<i>Calamagrostis stricta</i>)	10	-	Richardson's pondweed (<i>Potamogeton richardsonii</i>)	-	23
Cattails (<i>Typha</i> spp.)	95	8	Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	5	38
Common bladderwort (<i>Utricularia vulgaris</i>)	50	8	Red-stalked spikerush (<i>Eleocharis palustris</i>)	10	54
Lake sedge (<i>Carex lacustris</i>)	30	8	River bulrush (<i>Scirpus fluviatilis</i>)	15	54

Native Plant Community Types in Class

Although MRp83 has not been thoroughly sampled across its range in Minnesota, vegetation plot data and field observations indicate that the class can be divided into two community types based on dominant species.

• MRp83a Cattail - Sedge Marsh (Prairie)

Emergent marshes typically dominated by broad-leaved cattail but with a significant component of graminoids—including drying woolly sedge (*Carex pellita*) and bulrushes (*Scirpus acutus* or *S. heterochaetus*)—that distinguish it from MRp83b. Forbs, such as water horsetail and sweet flag, are also abundant in MRp83a. MRp83a was likely common in the past but is now very uncommon. Description is based on summary of vegetation data from 8 plots.

• MRp83b Cattail Marsh (Prairie)

Depauperate emergent marshes dominated by nearly pure stands of cattails; if sedges and grass species are present, they are minor components. It is not known whether marshes dominated by monotypic stands of the native species broad-leaved cattail existed historically. At present, most marshes dominated by pure stands of cattails are dominated by non-native cattails and often occur in basins with altered hydrology or other factors that favor invasion and dominance by narrow-leaved cattail or hybrid cattail; these marshes are considered degraded or disturbed examples of MRp83b. Description is based on summary of vegetation data from 13 plots.



photo by R. P. Dana MN DNR

Swift County, MN



MRp83 Prairie Mixed Cattail Marsh — Species Frequency & Cover

	freq%	cover		freq%	cover
Grasses & Sedges					
Bulrush (<i>Scirpus acutus</i> or <i>S. heterochaetus</i>)	33	•••	Emergent Forbs		
Beaked sedge (<i>Carex utriculata</i>)	29	•••	Tufted loosestrife (<i>Lysimachia thyrsoiflora</i>)	38	•
Lake sedge (<i>Carex lacustris</i>)	19	••	Broad-leaved cattail (<i>Typha latifolia</i>)	33	••••
Slough sedge (<i>Carex atherodes</i>)	19	••	Three-cleft or Small bedstraw (<i>Galium trifidum</i> or <i>G. tinctorium</i>)	29	•
Common reed grass (<i>Phragmites australis</i>)	19	•••	Water parsnip (<i>Sium suave</i>)	24	•
River bulrush (<i>Scirpus fluviatilis</i>)	14	•	Water horsetail (<i>Equisetum fluviatile</i>)	19	••••
Bluejoint (<i>Calamagrostis canadensis</i>)	10	•	Broad-leaved arrowhead (<i>Sagittaria latifolia</i>)	19	•
Narrow reedgrass (<i>Calamagrostis stricta</i>)	10	••	Marsh skullcap (<i>Scutellaria galericulata</i>)	19	•
Porcupine sedge (<i>Carex hystericina</i>)	10	••	Giant bur reed (<i>Sparganium eurycarpum</i>)	19	••
Fen wiregrass sedge (<i>Carex lasiocarpa</i>)	10	•	Marsh bellflower (<i>Campanula aparinoides</i>)	14	•
Whit-top (<i>Scolochloa festucacea</i>)	10	••••	Bur marigold and Beggarticks (<i>Bidens</i> spp.)	14	•
Red-stalked spikerush (<i>Eleocharis palustris</i>)	10	•	Clearweed (<i>Pilea</i> spp.)	14	•
Soft stem bulrush (<i>Scirpus validus</i>)	10	•	Marsh horsetail (<i>Equisetum palustre</i>)	14	•
Aquatic sedge (<i>Carex aquatilis</i>)	5	•	Sweet flag (<i>Acorus calamus</i>)	10	••••
Woolly sedge (<i>Carex pellita</i>)	5	•	Rough bugleweed (<i>Lycopus asper</i>)	10	•
Tall manna grass (<i>Glyceria grandis</i>)	5	•	Fringed loosestrife (<i>Lysimachia ciliata</i>)	5	•
Tussock sedge (<i>Carex stricta</i>)	5	•	Heart-leaved water plantain (<i>Alisma subcordatum</i>)	5	•
Floating-Leaved & Submergent Forbs					
Water smartweed (<i>Polygonum amphibium</i>)	71	••	Northern bugleweed (<i>Lycopus uniflorus</i>)	5	•
Star-duckweed (<i>Lemna trisculata</i>)	67	••••	Swamp milkweed (<i>Asclepias incarnata</i>)	5	•
Lesser-duckweed (<i>Lemna minor</i>)	67	••••	Labrador bedstraw (<i>Galium labradoricum</i>)	5	•
Common bladderwort (<i>Utricularia vulgaris</i>)	48	•••	Common boneset (<i>Eupatorium perfoliatum</i>)	5	•
Greater duckweed (<i>Spirodela polyrrhiza</i>)	33	•••	Linear-leaved, Marsh, or Downy willow-herb*	5	•
Common pontial (<i>Ceratophyllum demersum</i>)	33	••	Cut-leaved bugleweed (<i>Lycopus americanus</i>)	5	•
Flat-stemmed pondweed (<i>Potamogeton zosteriformis</i>)	10	•	Germander (<i>Teucrium canadense</i>)	5	•
Lesser bladderwort (<i>Utricularia minor</i>)	10	•	Great water dock (<i>Rumex orbiculatus</i>)	5	•
Whorled water milfoil (<i>Myriophyllum verticillatum</i>)	10	•	Northern marsh fern (<i>Thelypteris palustris</i>)	5	•
Straight-leaved pondweed (<i>Potamogeton strictifolius</i>)	5	•	Arum-leaved arrowhead (<i>Sagittaria cuneata</i>)	5	•
Blunt-leaved pondweed (<i>Potamogeton obtusifolius</i>)	5	•	Lady's thumb (<i>Polygonum persicaria</i>)	5	•
Unbranched bur reed (<i>Sparganium emersum</i>)	5	•	Common mint (<i>Mentha arvensis</i>)	5	•
	5	•	Woundwort (<i>Stachys palustris</i>)	5	•
	5	•	Cursed crowfoot (<i>Ranunculus sceleratus</i>)	5	•

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