



Northern Floodplain Forest

Deciduous riparian forests on sandy or silty alluvium on low, level, annually flooded sites along medium and large rivers in central and northern Minnesota. Characterized by pools and evidence of recent flooding, such as rows and piles of debris, ice scars on trees, and freshly deposited silt and sand.

Vegetation Structure & Composition

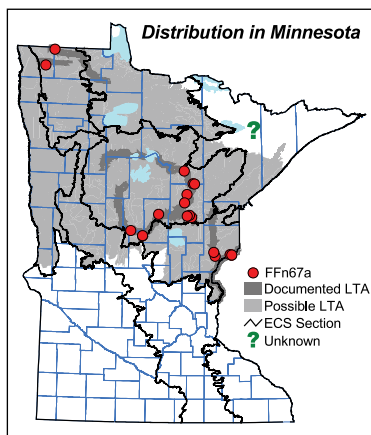
Description is based on summary of vegetation data from 19 plots (relevés).

- **Ground layer** is patchy (25–50% cover) and characterized by annual or flood-tolerant perennial species. Wood nettle (*Laportea canadensis*), Virginia wild rye (*Elymus virginicus*), and Tuckerman's sedge (*Carex tuckermanii*) are often abundant. Species typical of wetland communities are also often present, including mad dog skullcap (*Scutellaria lateriflora*), sensitive fern (*Onoclea sensibilis*), fringed loosestrife (*Lysimachia ciliata*), northern blue flag (*Iris versicolor*), three-cleft bedstraw (*Galium trifidum*), clearweeds (*Pilea* spp.), and touch-me-not (*Impatiens* spp.). Reed canary grass (*Phalaris arundinacea*) is highly invasive on sites where the canopy has been opened by disturbance.

- **Shrub layer and subcanopy** are sparse to patchy (5–50% cover); silver maple, green ash, and American elm are the only woody species commonly present in the understory and are seldom abundant.

- **Canopy** is interrupted to continuous (50–100% cover) and strongly dominated by silver maple, with occasional green ash, black ash, or American elm.

- **Note:** Most of the vegetation samples used to describe FFn67 are east of the PPA and TAP provinces in regions where silver maple is common. Silver maple is uncommon as a naturally occurring tree in the RRV and LAP. The other tree species mentioned above (with the exception of black ash) are correspondingly more important in FFn67 in the RRV and LAP.



Landscape Setting & Soils

- **Floodplains**—Occasional. Present only on active floodplains of major rivers. Parent material is complexly stratified sandy alluvium, often with a silty cap. The parent material may or may not have been calcareous originally, although free carbonates are rarely present now. Biogenic carbonates such as snail shells are occasionally present. Gray soil colors occur within 30in (75cm) of the surface and indicate permanently saturated conditions below. Annual flooding is typical. Soils are somewhat poorly or poorly drained. Soil-moisture regime is very moist. (Laurentian Mixed Forest and Tallgrass Aspen Parkland provinces; RRV; and northern part of Hardwood Hills in MIM)

Natural History

Because of the limited extent of this community, Public Land Survey data are insufficient to reliably calculate natural disturbance regimes. Windthrow and fire were not explicitly referenced at any survey corners along northern rivers, and their influence on the community is believed to have been much less than that of flooding. The data are also too sparse to determine historic tree composition or define growth stages. The most frequent trees in modern floodplain forests—silver maple, green ash, black ash, American elm, and bur oak—were also the most common bearing trees along rivers. The historic notes indicate that ash and American elm occurred more frequently than silver maple, in contrast to modern forests, where silver maple is dominant, with ash and American elm occurring less frequently and mainly in the understory.



Similar Native Plant Community Classes

• FFn57 Northern Terrace Forest

FFn57 often occurs along the same rivers as FFn67, and the two communities can grade into one another. FFn57 generally is present on sites that flood only occasionally—such as terraces and levees—and usually for just a few days at most, while FFn67 is present on sites that are flooded every spring (and sometimes following heavy rain) for several days to several weeks and have regular deposition of silt and sand. Recently deposited sediment, rows and piles of debris, and ice scars on trees are all useful evidence for distinguishing active floodplain sites from sites where terrace forests occur. In much of the range of the two classes, the canopy of FFn57 often has abundant black ash, basswood, green ash, bur oak, or American elm in addition to silver maple, while FFn67 tends to be strongly dominated by silver maple with other trees only of minor importance.

FFn67 Indicator Species	(freq%)	
	FFn67	FFn57
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)	32	-
Dotted smartweed (<i>Polygonum punctatum</i>)	32	-
Yellow loosestrife (<i>Lysimachia terrestris</i>)	32	2
Retrorsed sedge (<i>Carex retrorsa</i>)	53	4
Hop umbrella sedge (<i>Carex lupulina</i>)	42	4
Small or Three-cleft bedstraw*	53	6
Common mint (<i>Mentha arvensis</i>)	32	4
Clearweed (<i>Pilea</i> spp.)	42	6

*Small or Three-cleft bedstraw (*Galium tinctorium* or *G. trifidum*)

FFn57 Indicator Species	(freq%)	
	FFn67	FFn57
Basswood (C,U)	-	54
Chokecherry (<i>Prunus virginiana</i>)	-	54
Clayton's sweet cicely (<i>Osmorhiza claytonii</i>)	-	48
Graceful sedge (<i>Carex gracillima</i>)	-	48
Pale bellwort (<i>Uvularia sessilifolia</i>)	-	42
Jack-in-the-pulpit (<i>Arisaema triphyllum</i>)	5	50
Canada mayflower (<i>Maianthemum canadense</i>)	5	50
Ostrich fern (<i>Matteuccia struthiopteris</i>)	11	79

• FFs68 Southern Floodplain Forest

FFs68 also occurs on annually flooded sites along medium or large rivers and is strongly dominated by silver maple but is restricted to the southern half of Minnesota. The ranges of the two classes border one another in east-central and west-central Minnesota.

FFn67 Indicator Species	(freq%)	
	FFn67	FFs68
Small or Three-cleft bedstraw*	53	-
Retrorsed sedge (<i>Carex retrorsa</i>)	53	-
Tuckerman's sedge (<i>Carex tuckermanii</i>)	47	-
Yellow loosestrife (<i>Lysimachia terrestris</i>)	32	-
Northern blue flag (<i>Iris versicolor</i>)	42	4
Sensitive fern (<i>Onoclea sensibilis</i>)	58	7
Black ash (C,U)	53	7
Fringed loosestrife (<i>Lysimachia ciliata</i>)	47	7

*Small or Three-cleft bedstraw (*Galium tinctorium* or *G. trifidum*)

FFs68 Indicator Species	(freq%)	
	FFn67	FFs68
Hackberry (C,U)	-	41
Greenbrier (<i>Smilax tamnoides</i>)	-	33
Cottonwood (C)	-	30
Rice cut grass (<i>Leersia oryzoides</i>)	-	30
Moneywort (<i>Lysimachia nummularia</i>)	-	26
Tall coneflower (<i>Rudbeckia laciniata</i>)	5	41
Poison ivy (<i>Toxicodendron rydbergii</i>)	5	33
Wild grape (<i>Vitis riparia</i>)	21	81

Native Plant Community Types in Class

• FFn67a Silver Maple - (Sensitive Fern) Floodplain Forest

Only one community type is recognized in this class at present. Variation in the class may become evident with collection of more vegetation data along some of the larger rivers in northern, northwestern, and west-central Minnesota.



photo by N.E. Aaseng MN DNR

Kettle River, Pine County, MN



FFn67 Northern Floodplain Forest — Species Frequency & Cover

		freq. %	cover			freq. %	cover
Forbs, Ferns & Fern Allies							
Wood nettle (<i>Laportea canadensis</i>)		74	•••	Blue monkey flower (<i>Mimulus ringens</i>)		16	•
Sensitive fern (<i>Onoclea sensibilis</i>)		58	•	Small bedstraw (<i>Galium tinctorum</i>)		16	••
Mad dog skullcap (<i>Scutellaria lateriflora</i>)		53	•	Virginia bugleweed (<i>Lycopus virginicus</i>)		16	••
Fringed loosestrife (<i>Lysimachia ciliata</i>)		47	•	Cut-leaved bugleweed (<i>Lycopus americanus</i>)		16	•
Northern blue flag (<i>Iris versicolor</i>)		42	•	Hispid buttercup (<i>Ranunculus hispidus</i>)		16	•
Side-flowering aster (<i>Aster lateriflorus</i>)		42	•	Ditch stonecrop (<i>Penthorum sedoides</i>)		16	•
Clearweed (<i>Pilea</i> spp.)		42	••	Grasses & Sedges			
Touch-me-not (<i>Impatiens</i> spp.)		37	•	Virginia wild rye (<i>Elymus virginicus</i>)		58	•••
Dotted smartweed (<i>Polygonum punctatum</i>)		37	••	Retorse sedge (<i>Carex retrorsa</i>)		53	•
Bur marigold and Beggarlicks (<i>Blitens</i> spp.)		37	•	Tuckerman's sedge (<i>Carex tuckermanii</i>)		47	•••
Three-cleft bedstraw (<i>Galium trifidum</i>)		37	•	Hop umbrella sedge (<i>Carex lupulina</i>)		42	••
Common mint (<i>Mentha arvensis</i>)		32	•	Stout woodreed (<i>Cinna arundinacea</i>)		32	•
Water parsnip (<i>Sium suave</i>)		32	•	Fringe sedge (<i>Carex crinita</i>)		32	•
Northern bugleweed (<i>Lycopus uniflorus</i>)		32	•	Projecting sedge (<i>Carex projecta</i>)		26	••
Yellow loosestrife (<i>Lysimachia terrestris</i>)		32	•	Bladder sedge (<i>Carex intumescens</i>)		21	••
Tufted loosestrife (<i>Lysimachia thyrsiflora</i>)		32	•	Bluejoint (<i>Calamagrostis canadensis</i>)		21	•
False nettle (<i>Boehmeria cylindrica</i>)		26	••	White grass (<i>Leersia virginica</i>)		16	•
Canada anemone (<i>Anemone canadensis</i>)		26	•	Marsh straw sedge (<i>Carex tenera</i>)		16	••
Narrow-leaved hedge nettle (<i>Stachys tenuifolia</i>)		26	•	Starry sedge (<i>Carex rosea</i>)		16	•
Spotted water hemlock (<i>Cicuta maculata</i>)		26	•	Foxtail sedge (<i>Carex alopecoidea</i>)		16	••
Ontario aster (<i>Aster ontariensis</i>)		26	•	Northern clustered sedge (<i>Carex arcta</i>)		16	•
Bristly buttercup (<i>Ranunculus pennsylvanicus</i>)		21	•	Woody Vines			
Erect, Smooth, or Illinois carion-flower*		21	•	Wild grape (<i>Vitis riparia</i>)		21	•
Sweet-scented bedstraw (<i>Galium triflorum</i>)		21	•	Shrubs			
Singing nettle (<i>Urtica dioica</i>)		21	•••	Gray dogwood (<i>Cornus racemosa</i>)		26	•
Obedient plant (<i>Physostegia virginiana</i>)		21	•	Wild black currant (<i>Ribes americanum</i>)		26	•
Wild cucumber (<i>Echinocystis lobata</i>)		21	•				
Eastern panicled aster (<i>Aster lanceolatus</i>)		16	•	Trees			
Spinuose shield fern or Glandular wood fern**		16	•	Canopy freq. %	cover	Subcanopy freq. %	cover
Early meadow-rue (<i>Thalictrum dioicum</i>)		16	•	89	•••••	68	••
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)		16	•	53	••••	53	••
Marsh skullcap (<i>Scutellaria galericulata</i>)		16	•	32	•••	32	••
Giant goldenrod (<i>Solidago gigantea</i>)		16	•	16	•••	47	••
Halberd-leaved tearthumb (<i>Polygonum arifolium</i>)		16	•	11	•	-	-
		16	•		-	-	-
		16	•		-	-	-

* Erect, Smooth, or Illinois carion-flower (*Smilax ecirrata*, *S. herbacea*, or *S. illinoensis*) **Spinuose shield fern or Glandular wood fern (*Dryopteris carthusiana* or *D. intermedia*)