



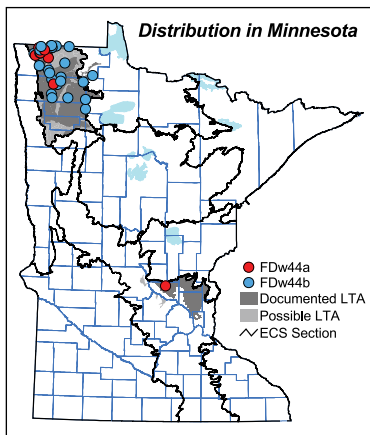
Northwestern Wet-Mesic Aspen Woodland

Wet-mesic woodlands dominated by quaking aspen. Present on poorly drained, flat, sandy soils, occasionally capped with loamy sediment, on the Glacial Lake Agassiz plain and rarely on the Anoka Sand Plain. Surface fires were common historically, and catastrophic crown fires were occasional.

Vegetation Structure & Composition

Description is based on summary of vegetation data from 44 plots (relevés).

- **Ground-layer** cover is sparse to patchy (5–50%). Common species include starry false Solomon's seal (*Smilacina stellata*), common strawberry (*Fragaria virginiana*), northern bedstraw (*Galium boreale*), Maryland black snakeroot (*Sanicula marilandica*), tall meadow-rue (*Thalictrum dasycarpum*), dwarf raspberry (*Rubus pubescens*), Canada goldenrod (*Solidago canadensis*), wild sarsaparilla (*Aralia nudicaulis*), bluejoint (*Calamagrostis canadensis*), and Pennsylvania sedge (*Carex pensylvanica*).
- **Shrub-layer** cover is patchy to interrupted (25–75%). Bur oak, quaking aspen, prickly or smooth wild rose (*Rosa acicularis* or *R. blanda*), junberries (*Amelanchier* spp.), American hazelnut (*Corylus americana*), gray dogwood (*Cornus racemosa*), red-osier dogwood (*Cornus stolonifera*), and poison ivy (*Toxicodendron rydbergii*) are all common.
- **Subcanopy** cover is sparse to patchy (5–50%). Quaking aspen is common although not abundant, with occasional bur oak, balsam poplar, American elm, and green ash.
- **Canopy** cover is patchy to interrupted (25–75%). The most important species is quaking aspen. Bur oak is present occasionally although typically not abundant; balsam poplar can be abundant when present. American elm, white spruce, and green ash may also be present.



Landscape Setting & Soils

- **Glacial lake plains**—Common. Present on flat, sandy sites on the Glacial Lake Agassiz plain and on the Anoka Sand Plain. Parent material is very well sorted, fine sand characteristic of shallow water deposits. Typically this material is > 60in (150cm) deep, stoneless, and leached of carbonates. On occasion the fine sand is deposited over calcareous gravelly till. Soil surface is nearly black in the upper 7–15in (20–40cm) due to incorporated organic matter. Soils lack clayey subsoil horizons capable of perching snowmelt or rainfall. Soil colors and bright mottles indicate that soils are saturated in the spring and dry to about 30in (75cm), but not much deeper, during the growing season. Soils are moderately well drained to somewhat poorly drained. Soil-moisture regime is very moist. (LAP; Anoka Sand Plain Subsection in MIM)

Natural History

In the past, fires were very common throughout the range of FDw44. An analysis of Public Land Survey records indicates that the rotation of catastrophic fires was about 100 years and the rotation of moderate surface fires about 15 years. The rotation of all fires combined is estimated to be 14 years. Windthrow was less frequent than fire but still played a significant role in stand regeneration, with the rotation for catastrophic windthrow estimated at 230 years.

The vegetation within the primary range of FDw44 was described by land surveyors as scattered timber, thickets, and groves of aspen separated by brushland and prairie, with



a few scattered bur oaks present in the landscape. Almost all of the Public Land Survey bearing-tree records within the range of the community were quaking aspen, although balsam poplar is a minor component in very young stands. About 95% of the bearing-tree records were of trees estimated to be less than 55 years old, indicating that most occurrences of the community were young woodlands. There were few areas of mature woodland and no areas of old woodland.

Similar Native Plant Community Classes

• FDw24 Northwestern Dry-Mesic Oak Woodland

FDw24 is somewhat similar to FDw44 but is usually strongly dominated by bur oak with quaking aspen of only minor importance. The ranges of the two classes overlap in the LAP, but FDw24 tends to occur on dry sites on sandy and gravelly beach ridges, while FDw44 is present on moist sites on flat, sandy soils on the Glacial Lake Agassiz plain.

FDw44 Indicator Species	(freq%)	
	FDw44	FDw24
Bluejoint (<i>Calamagrostis canadensis</i>)	66	-
Swamp gooseberry (<i>Ribes hirtellum</i>)	64	-
Dwarf alder (<i>Rhamnus alnifolia</i>)	57	-
Side-flowering aster (<i>Aster lateriflorus</i>)	57	-
Fringed loosestrife (<i>Lysimachia ciliata</i>)	48	-
Bebb's willow (<i>Salix bebbiana</i>)	64	5
Red-osier dogwood (<i>Cornus sericea</i>)	64	5
Dwarf raspberry (<i>Rubus pubescens</i>)	82	11

*Snowberry or Wolfberry (*Symphoricarpos albus* or *S. occidentalis*)

FDw24 Indicator Species	(freq%)	
	FDw44	FDw24
Wild bergamot (<i>Monarda fistulosa</i>)	-	16
Blue giant hyssop (<i>Agastache foeniculum</i>)	2	47
Climbing bittersweet (<i>Celastrus scandens</i>)	2	32
Kalm's brome (<i>Bromus kalmii</i>)	2	32
Lopseed (<i>Phryma leptostachya</i>)	2	26
Hawthorn (<i>Crataegus</i> spp.)	7	37
Snowberry or Wolfberry*	18	95
Veiny pea (<i>Lathyrus venosus</i>)	14	68

• FDw34 Northwestern Mesic Aspen-Oak Woodland

FDw34 is very similar to FDw44. Both classes have abundant quaking aspen in the canopy, although FDw34 is much more likely to have significant cover of bur oak. FDw34 can also have jack pine in the canopy, a species that is absent from FDw44. The ranges of the two classes overlap in the LAP, where both occur on flat, sandy soils on the Glacial Lake Agassiz plain; FDw34, however, is present on drier sites than FDw44.

FDw44 Indicator Species	(freq%)	
	FDw44	FDw34
Dwarf alder (<i>Rhamnus alnifolia</i>)	57	-
Side-flowering aster (<i>Aster lateriflorus</i>)	57	-
Swamp thistle (<i>Cirsium muticum</i>)	43	-
Marsh vetchling (<i>Lathyrus palustris</i>)	34	-
American elm (U)	30	-
Balsam poplar (C)	20	-
Prairie cordgrass (<i>Spartina pectinata</i>)	20	-
Bog birch (<i>Betula pumila</i>)	30	6

FDw34 Indicator Species	(freq%)	
	FDw44	FDw34
Pin cherry (<i>Prunus pensylvanica</i>)	-	28
Hoary puccoon (<i>Lithospermum canescens</i>)	-	17
Wild bergamot (<i>Monarda fistulosa</i>)	-	17
Poverty grass (<i>Danthonia spicata</i>)	2	33
Prairie willow (<i>Salix humilis</i>)	2	22
Veiny pea (<i>Lathyrus venosus</i>)	14	83
Dwarf bilberry (<i>Vaccinium cespitosum</i>)	5	28
Lowbush blueberry (<i>Vaccinium angustifolium</i>)	5	28

• MHw36 Northwestern Wet-Mesic Hardwood Forest

MHw36, like FDw44, frequently has abundant quaking aspen in the tree canopy. MHw36, however, is likely also to have significant cover of bur oak, American elm, or basswood, while FDw44 is more likely to have significant cover of balsam poplar or white spruce. The ranges of the two classes overlap in the LAP where MHw36 occurs on fire-protected sites on alluvial river bottoms and on broad flats associated with shoreline features of the Glacial Lake Agassiz plain.

FDw44 Indicator Species	(freq%)	
	FDw44	MHw36
American vetch (<i>Vicia americana</i>)	67	-
Dwarf alder (<i>Rhamnus alnifolia</i>)	58	-
Bluejoint (<i>Calamagrostis canadensis</i>)	58	-
Bebb's willow (<i>Salix bebbiana</i>)	52	-
Fringed loosestrife (<i>Lysimachia ciliata</i>)	48	-
Swamp thistle (<i>Cirsium muticum</i>)	33	-
Prickly or Smooth wild rose	82	17
American hazelnut (<i>Corylus americana</i>)	70	17

MHw36 Indicator Species	(freq%)	
	FDw44	MHw36
Basswood (C,U)	-	33
Common enchanter's nightshade**	-	33
Common false Solomon's seal***	-	33
Giant Solomon's seal (<i>Polygonatum biflorum</i>)	-	33
Lopseed (<i>Phryma leptostachya</i>)	3	67
Box elder (C,U)	6	67
Virginia creeper (<i>Parthenocissus</i> spp.)	6	50
Tall coneflower (<i>Rudbeckia laciniata</i>)	6	50

*Prickly or Smooth wild rose (*Rosa acicularis* or *R. blanda*) **Common enchanter's nightshade (*Circaea lutetiana*) ***Common false Solomon's seal (*Smilacina racemosa*)

• WFW54 Northwestern Wet Aspen Forest

WFW54 is similar to FDw44 when WFW54 is dominated by quaking aspen or balsam poplar. The ranges of the two classes overlap in the LAP and in the western part of the MOP. WFW54 is present in very poorly drained depressions and flats, while FDw44 is present on relatively well drained upland sites.



FDw44 Indicator Species		(freq%)		WFW54 Indicator Species		(freq%)	
		FDw44	WFW54			FDw44	WFW54
Veiny meadow-rue (<i>Thalictrum venulosum</i>)	61	-		Spinulose shield fern (<i>Dryopteris carthusiana</i>)	-	30	
Kalm's hawkweed (<i>Hieracium kalmii</i>)	32	-		Touch-me-not (<i>Impatiens</i> spp.)	-	30	
Wood's rose (<i>Rosa woodsii</i>)	23	-		Big-leaved avens (<i>Geum macrophyllum</i>)	-	26	
Prairie cordgrass (<i>Spartina pectinata</i>)	20	-		Lake sedge (<i>Carex lacustris</i>)	2	33	
American hazelnut (<i>Corylus americana</i>)	70	4		Lady fern (<i>Athyrium filix-femina</i>)	2	26	
Bastard toadflax (<i>Comandra umbellata</i>)	41	4		Black ash (U)	7	74	
Bur oak (C)	34	4		Naked miterwort (<i>Mitella nuda</i>)	7	63	
Golden alexanders (<i>Zizia aurea</i>)	57	7		Spotted Joe pye weed (<i>Eupatorium maculatum</i>)	5	33	

Native Plant Community Types in Class

• FDw44a Aspen - (Cordgrass) Woodland

Canopy and subcanopy are dominated by quaking aspen with lesser amounts of bur oak. Quaking aspen and bur oak are also common in the shrub layer with Bebb's willow (*Salix bebbiana*), red-osier dogwood, pussy willow (*Salix discolor*), American hazelnut, junberries, and prickly wild, smooth wild, or Woods' rose (*Rosa acicularis*, *R. blanda*, or *R. woodsii*). FDw44a is distinguished from FDw44b by the presence of species more commonly associated with mesic or wet prairies including Woods' rose, sand cherry (*Prunus pumila*), black-eyed Susan (*Rudbeckia hirta*), sunflower (*Helianthus giganteus*, *H. grosseserratus*, or *H. nuttallii*), gray goldenrod (*Solidago nemoralis*), slender wheatgrass (*Elymus trachycaulus*), clustered muhly grass (*Muhlenbergia glomerata*), woolly sedge (*Carex pellita*), prairie cordgrass (*Spartina pectinata*), big bluestem (*Andropogon gerardii*), sweet grass (*Hierochloa odorata*), and narrow reedgrass (*Calamagrostis stricta*). Other species more likely to occur in FDw44a include two-flowered Cynthia (*Krigia biflora*) and harebell (*Campanula rotundifolia*). Description is based on summary of vegetation data from 11 plots.

• FDw44b Aspen - (Chokecherry) Woodland

Canopy is dominated by quaking aspen with occasional bur oak, balsam poplar, green ash, American elm, and black spruce. Quaking aspen is also common in the subcanopy. Bur oak and quaking aspen are common in the shrub layer with prickly or smooth wild rose, junberries, highbush cranberry (*Viburnum trilobum*), American hazelnut, chokecherry (*Prunus virginiana*), and red-osier dogwood. Species useful for distinguishing FDw44b from FDw44a include balsam poplar, beaked hazelnut (*Corylus cornuta*), wild black currant (*Ribes americanum*), downy arrowwood (*Viburnum rafinesquianum*), nannyberry (*Viburnum lentago*), red raspberry (*Rubus idaeus*), wild honeysuckle (*Lonicera dioica*), sweet-scented bedstraw (*Galium triflorum*), hog peanut (*Amphicarpaea bracteata*), red baneberry (*Actaea rubra*), bunchberry (*Cornus canadensis*), and nodding trillium (*Trillium cernuum*). Description is based on summary of vegetation data from 33 plots.



FDw44 Northwestern Wet-Mesic Aspen Woodland – Species Frequency & Cover

		freq% cover				freq% cover	
Forbs, Ferns & Fern Allies							
Starry false Solomon's seal (<i>Smilacina stellata</i>)	93	•		Mountain rice grass (<i>Oryzopsis asperifolia</i>)	45	••	
Common strawberry (<i>Fragaria virginiana</i>)	89	•••		False melle grass (<i>Schizachne purpurascens</i>)	45	•	
Northern bedstraw (<i>Galium boreale</i>)	89	••		Fowl bluegrass (<i>Poa palustris</i>)	32	•	
Maryland black snakeroot (<i>Sanicula marilandica</i>)	84	•		Slender wheatgrass (<i>Elymus trachycaulis</i>)	32	•	
Tall meadow-rue (<i>Thalictrum dasycarpum</i>)	82	••		Marsh straw sedge (<i>Carex tenera</i>)	30	•	
Dwarf raspberry (<i>Rubus pubescens</i>)	82	••		Woody Vines			
Canada goldenrod (<i>Solidago canadensis</i>)	82	••		Wild honeysuckle (<i>Lonicera dioica</i>)	43	•	
Canada mayflower (<i>Maianthemum canadense</i>)	73	••		Low Shrubs			
American vetch (<i>Vicia americana</i>)	73	••		Poison ivy (<i>Toxicodendron rydbergii</i>)	84	•••	
Lindley's aster (<i>Aster ciliolatus</i>)	68	••		Red raspberry (<i>Rubus idaeus</i>)	36	••	
Vernal meadow-rue (<i>Thalictrum venulosum</i>)	61	••		Tall Shrubs			
Wild sarsaparilla (<i>Aralia nudicaulis</i>)	61	•••		Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	77	•	
Flat-topped aster (<i>Aster umbellatus</i>)	59	•		Junoberries (<i>Amelanchier</i> spp.)	73	••	
Golden alexanders (<i>Zizia aurea</i>)	57	••		American hazelnut (<i>Corylus americana</i>)	70	•••	
Side-flowering aster (<i>Aster lateriflorus</i>)	57	••		Gray dogwood (<i>Cornus racemosa</i>)	66	••	
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	50	•		Swamp gooseberry (<i>Ribes hirtellum</i>)	64	•	
Fringed loosestrife (<i>Lythimachia ciliata</i>)	48	••		Bebb's willow (<i>Salix bebbiana</i>)	64	•	
Swamp thistle (<i>Cirsium muticum</i>)	43	•		Red-osier dogwood (<i>Cornus sericea</i>)	64	•••	
Red-stemmed aster (<i>Aster puniceus</i>)	41	•		Chokeberry (<i>Prunus virginiana</i>)	59	•	
Yarrow (<i>Achillea millefolium</i>)	41	•		Highbush cranberry (<i>Viburnum trilobum</i>)	59	•	
Bastard toadflax (<i>Comandra umbellata</i>)	41	•		Dwarf alder (<i>Rhamnus alnifolia</i>)	57	•	
Field horsetail (<i>Equisetum arvense</i>)	39	•		Downy arrowwood (<i>Viburnum rafinesquianum</i>)	39	•	
White rattlesnakeroot (<i>Pteranthes alba</i>)	36	•		Nannyberry (<i>Viburnum lentago</i>)	36	•	
Wood anemone (<i>Anemone quinquefolia</i>)	36	•		Pussy willow (<i>Salix discolor</i>)	34	•	
Marsh veitching (<i>Lathyrus palustris</i>)	34	•		Bog birch (<i>Betula pumila</i>)	30	••	
Pale veitching (<i>Lathyrus ochroleucus</i>)	34	•		Beaked hazelnut (<i>Corylus cornuta</i>)	30	•••	
Kalm's hawkweed (<i>Hieracium kalmii</i>)	32	•					
Rattlesnake fern (<i>Botrychium virginianum</i>)	30	•					
Sweet-scented bedstraw (<i>Galium triflorum</i>)	30	•					
Canada anemone (<i>Anemone canadensis</i>)	30	•					
Grasses & Sedges							
Bluejoint (<i>Calamagrostis canadensis</i>)	66	••					
Pennsylvania sedge (<i>Carex pensylvanica</i>)	59	•••					
Fringed brome (<i>Bromus ciliatus</i>)	57	•					