



Central Poor Dry Pine Woodland

Dry jack pine woodlands on level, sandy lacustrine and outwash deposits in northcentral Minnesota. Crown fires and surface fires were common historically.

Vegetation Structure & Composition

Description is based on summary of vegetation data from 25 plots (relevés).

- **Ground layer** is characterized by low, broad-leaved evergreen half-shrubs and herbs, which are common and often abundant, especially lowbush blueberry (*Vaccinium angustifolium*), wintergreen (*Gaultheria procumbens*), and bearberry (*Arctostaphylos uva-ursi*). Other ground-layer plants are sparse to patchy (5-50% cover) and consist mainly of dry woodland and shade-intolerant species such as northern bedstraw (*Galium boreale*), Canada mayflower (*Maianthemum canadense*), common strawberry (*Fragaria virginiana*), balsam ragwort (*Senecio pauperculus*), spreading dogbane (*Apocynum androsaemifolium*), pussytoes (*Antennaria* spp.), and sharp-pointed rice grass (*Oryzopsis pungens*).
- **Shrub layer** is sparse to patchy, with sand cherry (*Prunus pumila*) and juneberries (*Amelanchier* spp.) most common.
- **Subcanopy** is usually absent.
- **Canopy** is patchy to interrupted (25-75% cover) and strongly dominated by jack pine, occasionally with some red pine.

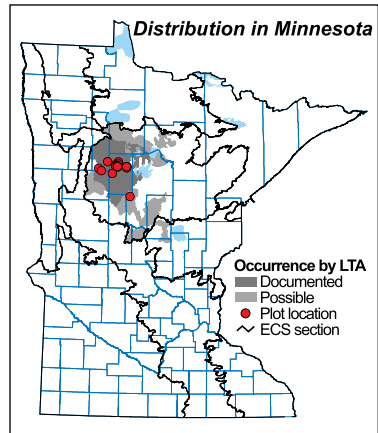
Landscape Setting & Soils

• **Outwash plains and sandy glacial lake plains.** Landscape is level. Parent material is gravelly outwash and well-sorted sandy lacustrine sediments. Originally the parent material was calcareous, but free carbonates are typically leached from the upper 60in (150cm). Subsoil horizons that retain snowmelt or rainfall are absent. Soils have very low nutrient levels because of a long history of conifer cover and severe crown fires. Soils are excessively drained. Soil-moisture regime is moderately dry. (Chippewa Plains and Pine Moraines & Outwash Plains in MDL)

Natural History

In the past, fires were very common throughout the range of FDc12. An analysis of Public Land Survey records indicates that the rotation of catastrophic fires was about 120 years, and the rotation of mild surface fires about 30 years. The rotation of all fires combined is estimated to be 25 years. Windthrow was not common, with an estimated rotation exceeding 1,000 years. Based on the historic composition and age structure of these woodlands, FDc12 had two growth stages separated by a long period of transition.

- **0-55 years**—Young woodlands recovering from fire, strongly dominated by jack pine with minor amounts of red pine and quaking aspen.
- **55-115 years**—A long transition period marked by the gradual replacement of jack pine by red pine.
- **>115 years**—Mature woodlands dominated by red pine. Cohorts of red pine and jack pine become established in the understory following surface fires.





Similar Native Plant Community Classes

● FDC23 Central Dry Pine Woodland

Both communities are strongly dominated by jack pine and develop on sandy, drought-prone landscapes. FDC23 is present, however, on former prairie sites that have been occupied by jack pine for only about 1,000 years, compared to about 3,000 years for FDC12. As a result, soils in FDC23 contain more organic matter and nutrients, which is reflected in a denser canopy of jack pine and more deciduous species in the subcanopy and sapling layer, particularly bur oak, northern red oak, and quaking aspen.

► **FDC23**—More likely to have pin cherry (*Prunus pensylvanica*) and abundant American hazelnut (*Corylus americana*) in the shrub layer, and prairie species such as skyblue aster (*Aster oolentangiensis*), Virginia ground cherry (*Physalis virginiana*), oval-leaved milkweed (*Asclepias ovalifolia*), and alumroot (*Heuchera richardsonii*) in the ground layer, along with yarrow (*Achillea millefolium*), Pennsylvania sedge (*Carex pensylvanica*), and mountain rice grass (*Oryzopsis asperifolia*).

► **FDC12**—Lowbush blueberry and broad-leaved evergreen species such as wintergreen and bearberry, are much more abundant in FDC12.

● FDN12 Northern Dry-Sand Pine Woodland

Both communities develop on sandy outwash and lacustrine plains and can be similar when FDN12 is dominated by jack pine. FDN12, however, is generally present to the north and east of FDC12 in MOP, NSU, and the eastern part of MDL; the communities border one another in the central part of MDL.

► **FDN12**—More likely to have mountain rice grass, wild sarsaparilla (*Aralia nudicaulis*), twinflower (*Linnaea borealis*), and bunchberry (*Cornus canadensis*) in the ground layer.

► **FDC12**—More likely to have prairie species such as hoary puccoon (*Lithospermum canescens*), heart-leaved alexanders (*Zizia aptera*), big bluestem (*Andropogon gerardii*), and wood lily (*Lilium philadelphicum*) in the ground layer, along with northern bedstraw, balsam ragwort (*Senecio pauperculus*), and bearberry.

Native Plant Community Types in Class

FDc12a Jack Pine-(Bearberry) Woodland

FDc12a is the only community type recognized in this class.



photo by J. Rendall MN DNR

Hubbard County, MN



FDC12 Central Poor Dry Pine Woodland – Species Frequency & Cover

	freq %	cover		freq %	cover		freq %	cover
Forbs, Ferns & Fern Allies								
Northern bedstraw (<i>Galium boreale</i>)	100	•••	False melic grass (<i>Schizachne purpurascens</i>)			False melic grass (<i>Schizachne purpurascens</i>)	46	••
Common strawberry (<i>Fragaria virginiana</i>)	88	••	Fringed or Kalm's brome (<i>Bromus ciliatus</i> or <i>B. Kalmii</i>)			Fringed or Kalm's brome (<i>Bromus ciliatus</i> or <i>B. Kalmii</i>)	46	••
Canada mayflower (<i>Maianthemum canadense</i>)	88	••	Big bluestem (<i>Andropogon gerardii</i>)			Big bluestem (<i>Andropogon gerardii</i>)	38	•••
Field or Variable pussytoes (<i>Antennaria neglecta</i> or <i>A. neglecta</i>)	81	••	Poverty grass (<i>Danthonia spicata</i>)			Poverty grass (<i>Danthonia spicata</i>)	35	••
Spreading dogbane (<i>Apocynum androsaemifolium</i>)	77	••	Pennsylvania sedge (<i>Carex pensylvanica</i>)			Pennsylvania sedge (<i>Carex pensylvanica</i>)	27	••
Balsam or Prairie ragwort (<i>Senecio pauperculus</i> or <i>S. platensis</i>)	77	••	Yellow panic grass (<i>Panicum xanthophyllum</i>)			Yellow panic grass (<i>Panicum xanthophyllum</i>)	23	••
Smooth blue aster (<i>Aster laevis</i>)	73	••	Slender wheatgrass (<i>Elymus trachycalus</i>)			Slender wheatgrass (<i>Elymus trachycalus</i>)	23	••
Harebell (<i>Campanula rotundifolia</i>)	69	••	Mountain rice grass (<i>Oryzopsis asperifolia</i>)			Mountain rice grass (<i>Oryzopsis asperifolia</i>)	15	••
Hoary puccoon (<i>Lithospermum canescens</i>)	65	••	Low Shrubs			Lowbush blueberry (<i>Vaccinium angustifolium</i>)	96	••••
Veiny pea (<i>Lathyrus venosus</i>)	62	••	Wintergreen (<i>Gaultheria procumbens</i>)			Wintergreen (<i>Gaultheria procumbens</i>)	92	••••
Lindley's aster (<i>Aster ciliolatus</i>)	54	••	Beaberry (<i>Arctostaphylos uva-ursi</i>)			Beaberry (<i>Arctostaphylos uva-ursi</i>)	88	••••
Cow wheat (<i>Melampyrum lineare</i>)	50	••	Pipissewa (<i>Chimaphila umbellata</i>)			Pipissewa (<i>Chimaphila umbellata</i>)	38	••
Wood betony (<i>Pedicularis canadensis</i>)	38	••	Red raspberry (<i>Rubus idaeus</i>)			Red raspberry (<i>Rubus idaeus</i>)	23	••
Wood anemone (<i>Anemone quinquefolia</i>)	38	••	Trailing arbutus (<i>Epigaea repens</i>)			Trailing arbutus (<i>Epigaea repens</i>)	19	••
Hairy goldenrod (<i>Solidago hispida</i>)	38	••	Shrubs			Sand cherry (<i>Prunus pumila</i>)	65	••
Gray goldenrod (<i>Solidago nemoralis</i>)	38	••	Junberries (<i>Amanlanche</i> spp.)			Junberries (<i>Amanlanche</i> spp.)	62	••
White rattlesnakeroot (<i>Prenanthes alba</i>)	38	••	Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)			Prickly or Smooth wild rose (<i>Rosa acicularis</i> or <i>R. blanda</i>)	42	••
Hearth-leaved alexanders (<i>Zizia aptera</i>)	35	••	Prairie willow (<i>Salix humilis</i>)			Prairie willow (<i>Salix humilis</i>)	38	••
One-sided pyrola (<i>Pyrola secunda</i>)	31	••	American hazelnut (<i>Corylus americana</i>)			American hazelnut (<i>Corylus americana</i>)	31	••
Two-flowered Cynritha (<i>Krigia biflora</i>)	31	••	Beaked hazelnut (<i>Corylus cornuta</i>)			Beaked hazelnut (<i>Corylus cornuta</i>)	31	••
Pale veiching (<i>Lathyrus ochroleucus</i>)	31	••	Chokeberry (<i>Prunus virginiana</i>)			Chokeberry (<i>Prunus virginiana</i>)	31	••
Sand or Dog Violet (<i>Viola adunca</i> or <i>V. conspersa</i>)	31	••	Bush honeysuckle (<i>Dierilla lonicera</i>)			Bush honeysuckle (<i>Dierilla lonicera</i>)	27	••
American vetch (<i>Vicia americana</i>)	31	••	Snowberry or Wolfberry (<i>Symphoricarpos albus</i> or <i>S. occidentalis</i>)			Snowberry or Wolfberry (<i>Symphoricarpos albus</i> or <i>S. occidentalis</i>)	27	••
Bracken (<i>Pteridium aquilinum</i>)	27	••••	Trees					
Gaywings (<i>Polypolia paucifolia</i>)	27	••		Canopy	Subcanopy	Shrub Layer		
Kalm's hawkweed (<i>Hieracium kalmii</i>)	27	••		freq %	freq %	freq %		
Round-leaved pyrola (<i>Pyrola rotundifolia</i>)	23	••		cover	cover	cover		
Fireweed (<i>Epilobium angustifolium</i>)	23	••	Jack pine	77	•••••	42	••••	42
Wood lily (<i>Lilium philadelphicum</i>)	23	••	Red pine	31	••••	35	••	23
Large-leaved aster (<i>Aster macrophyllus</i>)	19	••	Paper birch	4	•	–	–	8
Upright bindweed (<i>Calystegia sphegodes</i>)	19	••	Quaking aspen	–	–	4	•	15
Early goldenrod (<i>Solidago juncea</i>)	19	••	White spruce	–	–	4	•	19
Sticky hawkweed (<i>Hieracium scabrum</i>)	19	••	Balsam fir	–	–	–	–	31
			Bur oak	–	–	–	–	27
			Northern red oak	–	–	–	–	27