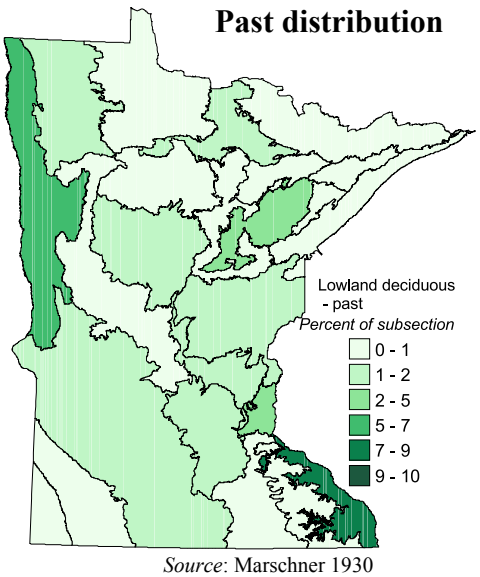
Forest-Lowland Deciduous

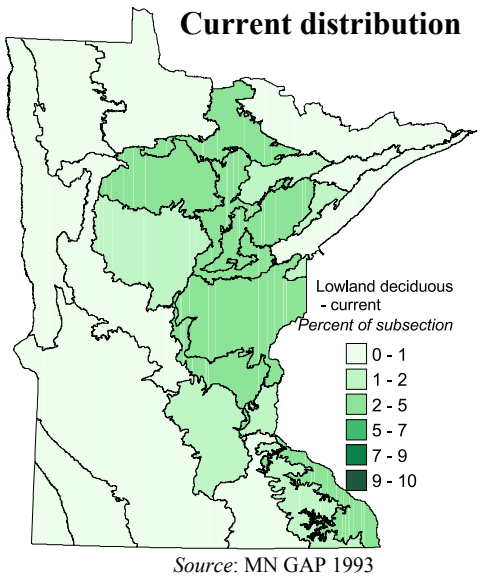
Ecological Systems	Native Plant Community Types (NPC)	NPC Codes
Wet Forest (WF)	Black Ash-Aspen-Balsam Poplar Swamp (Northeastern)	WFn55a
	Black Ash-Yellow Birch-Red Maple-Basswood Swamp (Eastcentral)	WFn55b
	Black Ash-Mountain Maple (Northern)	WFn55c
	Black Ash-Conifer Swamp (Northeastern)	WFn64a
	Black Ash-Yellow Birch-Red Maple-Alder Swamp (Eastcentral)	WFn64b
	Black Ash-Alder Swamp (Northern)	WFn64c
	Black Ash (Red Maple) Seepage Swamp	WFs57a
	Black Ash-Sugar Maple-Basswood (Blue Beech) Seepage Swamp	WFs57b
	Lowland Black Ash-Aspen-Balsam Poplar Forest	WFw54a
Floodplain Forest (FF)	Black Ash-Silver Maple Terrace Forest	FFn57a
	Silver Maple (Sensitive Fern) Floodplain Forest	FFn67a
	Silver Maple-Green Ash-Cottonwood Terrace Forest	FFs59a
	Swamp White Oak Terrace Forest	FFs59b
	Elm-Ash-Basswood Terrace Forest	FFs59c
	Silver Maple (Virginia Creeper) Floodplain Forest	FFs68a

D.S. Wovcha MN DNR

Silver Maple-Green Ash-Cottonwood Terrace Forest (FFs59a)



Source: Marschner 1930



Source: MN GAP 1993

General Description

Lowland deciduous forest habitats occur primarily on floodplains and associated terraces along major rivers and their tributaries, and in shallow, poorly drained basins. Floodplain and terrace forests are seasonally wet forests that flood following spring snowmelt as well as unusually heavy rains. These forests are found on sandy or silty alluvium (soil deposited by flowing water) associated with streams and rivers throughout the Eastern Broadleaf Forest Province and are extensive along the Mississippi, Minnesota, and St. Croix rivers. In the Laurentian Mixed Forest Province, these forests also occur along major rivers but are not as extensive as in the Eastern Broadleaf Forest Province. These forests also rarely occur in the Tallgrass Aspen Parklands and Prairie Parkland provinces.

The canopy of these forests is dominated by deciduous trees that are tolerant of saturated soils, prolonged inundation, frequent erosion, and sediment deposition. Species less tolerant of these conditions occur on terraces, which flood only in very wet years. In southern Minnesota, silver maple (which often occurs as nearly pure stands), black willow, and cottonwood are common canopy dominants. Less common species include river birch, elms, green ash, and swamp white oak. In the north, black ash and silver maple are important canopy trees with lesser amounts of green ash, American elm, bur oak, and basswood. Canopy coverage in these forests is highly variable; areas of continuous canopy are punctuated with large gaps, which may be vegetated with ephemeral herbaceous plants or may remain largely unvegetated if flood disturbance is repeated and severe. The understory is typically open, with few shrubs or saplings. Pools or mucky depressions in old river channels are often present on actively flooded sites.

Hardwood swamp forests are another form of the lowland deciduous forest. Hardwood swamps are found in shallow depressions or in narrow zones along the margins of lakes, rivers, and peatlands. In southeastern Minnesota, this habitat occurs as small patches in areas of groundwater seepage, usually at the base of steep slopes on level river terraces. In such settings, the water table is almost always within reach of plant roots but does not remain above the mineral soil surface for long periods during the growing season. Soils are peaty or mucky mineral soils. Black ash is the dominant canopy tree in swamp forests statewide; yellow birch, red maple, aspens, and balsam poplar are common associates in the Laurentian Mixed Forest Province; and basswood, elms, paper birch, and yellow birch in the Eastern Broadleaf Forest Province. Conifer species, especially white cedar and balsam fir, are sometimes present in the canopy and understory.

Understories are characterized by patches of shrubs, including speckled alder (*Alnus incana*), mountain maple (*Acer spicatum*), dogwoods (*Cornus* spp.), gooseberries or currants (*Ribes* spp), and winterberry (*Ilex verticillata*). Mosses and upland forest herbs occur on raised hummocks, down logs, and tip-up mounds, and sedges and wetland forbs occur in wet or mucky hollows. These swamp forests have the highest plant species diversity of all the forested habitats in Minnesota.

Since settlement by people of European descent, large areas of floodplain forests in southern Minnesota have been lost due to urbanization and conversion to agriculture. Now, these forests, which once formed continuous bands of habitat along the major rivers in southeastern Minnesota, persist as a broken chain of forest patches. In addition, the damming of major rivers has greatly reduced the annual pulse of flooding that maintained the ecological integrity of the floodplain forests. Other factors that have reduced the value of the habitat for wildlife include the loss of most canopy American elms from Dutch elm disease and the invasive spread of reed canary grass (*Phalaris arundinacea*), which impedes establishment of seedlings of native plants. Most hardwood swamps are still intact, but threats include dieback of black ash, flooding due to an increased beaver population, and the potential of the emerald ash borer to invade Minnesota.

Examples of Features Important for Species in Greatest Conservation Need

Key habitat features for **prothonotary warblers** are lowland hardwood forests greater than 250 acres (100 hectares) in size, waterways with at least a 100 foot (30 meters) strip of lowland hardwood forest, and the presence of suitable nest cavities within 15 feet (five meters) of low-lying or seasonally flooded areas.

Cerulean warblers require large tracts of mature deciduous forest. **Red-shouldered hawks** are most commonly found in large tracts of mature lowland deciduous forest, with scattered wetland openings and diverse topography such as numerous small hills, ridges, and depressions. They prefer nesting sites in large-diameter trees in high, thick canopies.

Crayfish burrows in floodplain forests may be key habitat requirements for **eastern massasaugas.** This species also uses mammal burrows, sawdust piles, and canals from old plant roots.

Management Options to Support Species in Greatest Conservation Need

Explore opportunities to implement forest management practices that:

- Use natural disturbance return intervals to guide rotation periods; employ management techniques to promote uneven aged stands with mature trees.
- Mimic landscape disturbance patterns with timber harvest (such as, more large patches).
- Manage stands to retain biological legacies (at site level) such as large trees with cavities.
- Develop management practices to minimize reed canary grass invasions.