Forest-Upland Deciduous (Aspen)

Ecological Systems	Native Plant Community Types (NPC)	NPC Codes
Fire-dependent Forest (FD)	Aspen-Birch Woodland	FDn33b
	Aspen-Birch Forest	FDn43b
	Aspen (Prairie Herb) Woodland	FDw34a
	Aspen (Beaked Hazel) Woodland	FDw34b
	Aspen (Cord grass) Woodland	FDw44a
	Aspen (Chokecherry) Woodland	FDw44b
Mesic Hardwood Forest (MH)	Aspen-Birch-Basswood Forest	MHn35a
	Aspen-Fir Forest	MHn44c
	Oak-Aspen-Red Maple Forest	MHc26a
	Aspen (Sugar Maple-Basswood) Forest	MHc37a

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Aspen-Birch Forest (FDn43b)

Past distribution

Aspen - past
Percent of subsection
- 0 - 5.0
- 5.0 - 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 55

Source: Marschner 1930

Current distribution

Aspen - current
Percent of subsection
- 0 - 5.0
- 5.0 - 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 55
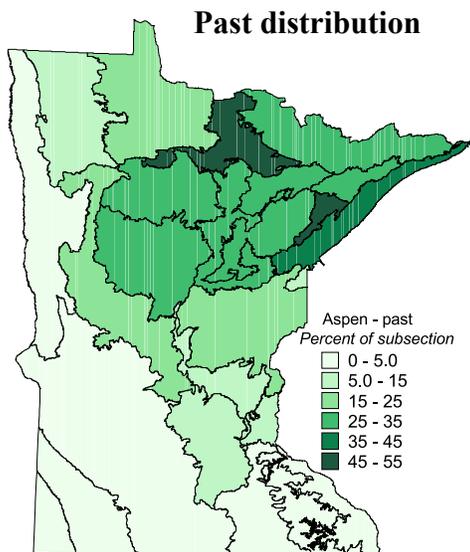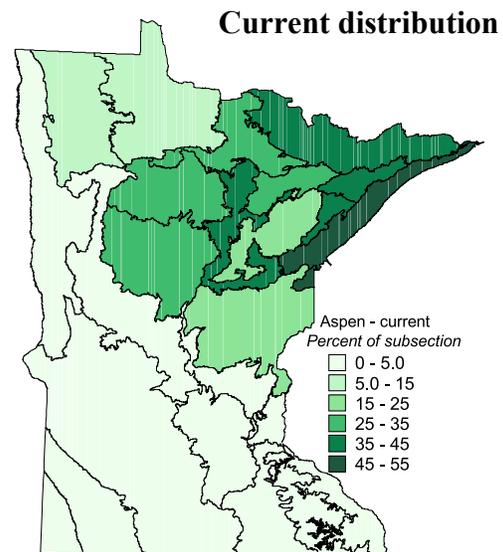
Source: MN GAP 1993

General Description

Upland hardwood forest (aspen) is characterized by a canopy dominated by quaking aspen (*Populus tremuloides*), big-toothed aspen (*P. grandidentata*), paper birch (*Betula papyrifera*), or a mixture of these species. These shade-intolerant tree species are the dominant trees in the early stages of a wide variety of native plant communities in fire-dependent and mesic hardwood forest systems. Thus, aspen forest is a cover type that may eventually develop into many other native plant communities.

Aspen forests typically have a nearly complete canopy of aspen or birch, but the canopy is not as dense as that of sugar maple. As a result of higher light levels penetrating the canopy, these forests usually have a well-developed shrub layer dominated by hazelnuts (*Corylus* spp.) or dogwoods (*Cornus* spp.). The coverage and diversity of the herbaceous plant layer are highly variable depending on site conditions and stand history.

As aspen forests age, they typically increase in structural diversity. Historically, most aspen stands in northern Minnesota had a conifer component, which increased as the stand aged. Today, most aspen stands have little or no conifer understory, due to past management and slash fires. Still, many older aspen stands are relatively structurally diverse, with large trees, snags, down logs, and an understory containing more shade-tolerant hardwoods or conifers that will become the canopy dominants if the forest does not experience a stand-replacing disturbance. Over the next two decades, most of these older aspen stands will be harvested or will succeed to upland conifer or upland hardwood forest habitats, resulting in a significant decline of old, structurally diverse aspen forest habitat.

Today, aspen forest habitat is the most abundant forest habitat in Minnesota and is several times more widespread than it was prior to settlement by people of European descent. An analysis of General Land Office bearing tree records from the late 1800s and Forest Inventory and Analysis plots from the 1990s shows that in the Laurentian Mixed Forest Province, aspen forest communities have increased nearly tenfold (Friedman and Reich 2005). At the same time, aspen forests are structurally less diverse than they were historically, and within two decades the average age of aspen forest habitat will be much younger than that of pre-European settlement aspen forests.

Examples of Features Important for Species in Greatest Conservation Need

Aspen forests support a variety of mammal, bird, and amphibian SGCN. Habitat features required by these species, with a few exceptions, are the same as those in other upland forest habitats. All of the SGCN listed under upland forests are found in this habitat and respond to the same habitat features as in upland forests.

Species that require particular elements of aspen forest habitat include **woodcocks,** which favor young aspen and paper birch stands with openings, especially on moist soils with alder (*Alnus* spp.) cover. **Boreal owls** require much older aspens; they also require cavities that they do not construct themselves and therefore may be limited by availability of nest sites in large old aspens, either in mixed conifer-hardwood forests or conifer forests adjacent to old aspen.
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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.
- Mimic landscape disturbance patterns with timber harvest (for example, more large patches).
- Manage stands to retain biological legacies (at site level).