

Northern Hardwoods Silviculture Decision Matrix

This document provides a simple overview of some common silvicultural strategies for management of northern hardwoods communities in Minnesota. Additional details are available in the northern hardwoods covertype fact sheet and in Minnesota's *Voluntary Site-Level Forest Management Guidelines* binder.

Landowner Objective			
	Wildlife	Recreation or aesthetics	Timber
Immediate harvest	Consider single-tree or small group selection to perpetuate the northern hardwoods type and maintain tree species and structural diversity. If oak or other mast-producing trees are a component of the stand, release existing crowns to promote mast (fruit) production for forage.	Consider leaving unharvested buffer strips along trails and roads. Occasional openings, large standing dead trees (snags), and large healthy trees visible from trails improve aesthetics and wildlife viewing opportunities. Also consider leaving trees with unique or unusual characteristics.	In the selection process, leave high-value commercial species with healthy, vigorous crowns, good form, and no excessive (epicormic) branching. Although financially attractive in the short term, high-grading may seriously degrade the health and future value of the stand.
Harvest unit size	Variable, depending on landowner preference and stand density. Partial harvest can extend across a large area. In general, larger harvest units can reduce harvest costs. Partial harvests allow more frequent stand entries, but can be costly and difficult to implement. This approach makes protection of residual stand and advance regeneration a challenge. However, partial harvests are attractive to many woodland owners.		
Regeneration considerations	If perpetuating tolerant northern hardwoods, small gaps are best. Many northern hardwood species (such as sugar maple, basswood, and balsam fir) will regenerate well under shady conditions. To promote regeneration and recruitment of mid-tolerant northern hardwood species, (such as yellow birch, black cherry, or white ash) large, multiple tree gaps are best. Remove poor quality trees first and maintain vigorous trees in the stand for future seed sources and additional growth for future harvest.		
Future management	Monitor growth and vigor of desired species. Small-scale TSI work by the landowner between harvests can improve growth of desired species.	Monitor stand for hazard trees near trails or roads, and remove them as needed. Landowner can underplant and tend desired species in openings or throughout harvest area.	Plan re-entry every 10-30 years depending on site productivity, landowner preference, and other factors.
Other considerations	For detail and additional guidelines, consult Minnesota's Voluntary Site-Level Forest Management Guidelines binder.		