

# White Pine Silviculture Decision Matrix

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

Landowner Objective			
	Wildlife	Recreation or aesthetics	Timber
<b>Immediate harvest</b>	White pine rarely grows in pure stands. Consider retaining clusters of shade-tolerant conifers and/or releasing mast-producing hardwoods for wildlife forage. Also consider leaving large standing dead trees (snags) on site. Permanent openings can provide wildlife habitat.	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. Consider leaving a few residuals with colorful foliage and (or) unique characteristics.	White pine commonly lives over 200 years if undisturbed. For partial harvests, consider leaving some quality timber on site for future growth and harvest. Leave trees should be healthy with good form. Where blister rust is not a major risk, white pine can be managed by clearcutting.
<b>Harvest unit size</b>	Variable, depending on landowner preference and stand density. Partial harvest can extend across a large area. 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 the residual stand and advance regeneration a challenge. However, partial harvests are attractive to many woodland owners.		
<b>Regeneration considerations</b>	White pine can regenerate and grow well under a partial canopy, particularly under red pine. Using natural regeneration can greatly reduce costs (and blister rust risk) compared with planting. However, the residual canopy will need to be removed 10-20 years after seedling establishment in order for saplings to thrive. Check white pine blister rust risk maps available from the MN DNR. In high-risk areas, avoid regenerating white pine in frost pockets or low areas and always regenerate white pine under a partial canopy. Deer browse is inevitable in newly regenerated white pine stands. When planting or seeding, consider doing so at high densities in small patches scattered through the stand rather than systematically throughout.		
<b>Future management</b>	Landowners should frequently monitor white pine regeneration for blister rust infestations and also deer browse damage. For blister rust infestations, immediate pruning can save infected trees and reduce further spread of the disease. To reduce deer browsing damage, budcap seedlings, apply deer repellent, or in extreme cases fence in areas to promote white pine seedling growth.		
<b>Other considerations</b>	For detail and additional guidelines, consult Minnesota's <i>Voluntary Site-Level Forest Management Guidelines</i> binder.		