NORTHERN HARDWOOD NOTES

Selecting A Silvicultural System

Sometimes a name creates a problem. The name of a silvicultural system usually refers to the way a stand is cut to get regeneration-"single tree selection"-for example. Trouble is, the name suggests that the regeneration cut will be the *first* treatment applied to the stand. Not so. We are now mostly making "intermediate" cuts in our Lake States stands and bringing them to maturity; then we can make the "regeneration" (or "harvest") cuts to reproduce them.

The regeneration period (i.e., applying a silviculture system) usually lasts less than a tenth of the whole rotation. In the Lake States the regeneration must be established before the overstory can be totally removed for all of the hardwood types. How do we select the right silvicultural system? In general, the kind and size of the present regeneration plus the conditions required to regenerate the desired species determine the silvicultural system. Use the chart on the back page to help in that choice.

Selecting the right silvicultural system to regenerate a species is only part of the battle. The regeneration must be established *before* the overstory can be completely removed. By "established" we mean that the seedlings should be 2 to 4 feet (belt) high. This usually occurs within 3 to 8 years after the initial cut. The root systems of seedlings this high have penetrated mineral soil. The seedlings cannot easily be pulled out and they can withstand an open environment. Regeneration like this was established under large trees in the early 1900's when loggers did the cutting that resulted in today's second-growth stands.

A stand under all-age management using the single tree selection silvicultural system.

Thirty years of research shows that if the overstory is removed in today's second-growth stands *before* regeneration is established, the desired stand *nearly always* fails. Many forms of "one-shot" silvicuitural clearcuts-seed tree, patch, block, group selection, and strip cutting- done in stands without established regeneration, fail consistently. Besides, they entail too much record-keeping for extensive management.

To Regenerate, Select Goal and Use Suggested Silviculture System

- Goal: High quality trees, predominantly sugar maple.
  Use: Single tree selection.
  Required: Apply recommended stocking and structure guides but recognize the pole and 3 sawtimber classes.

FOR:
SAF Type 25-Sugar Maple-Beech-Yellow Birch
SAF Type 26-Sugar Maple-Basswood
SAF Type 27-Sugar Maple
SAF Type 60-Beech-Sugar Maple
SAF Type 108-Red Maple

- Goal: Predominantly sugar maple.
  Use: Two-cut shelterwood.
  Required: Leave 60 percent crown cover (not basal area). Regeneration (any size) of acceptable species must be present. Winter logging in initial cut.

Or:

  Use: Clearcutting.
  Required: Must have 2 to 3 thinnings before harvest cut to promote advanced regeneration.

- Goal: Mixed species; yellow birch.
  Use: Two-cut shelterwood.
  Required: Site preparation. More than 70 percent crown cover. Eliminate all reproduction present before cutting.

FOR:
SAF Type 23-Hemlock
SAF Type 24-Hemlock-Yellow birch

- Goal: Regenerate yellow birch, hemlock, or other light-seeded species.
  Use: Two-cut shelterwood.
  Required: Site preparation. More than 70 percent crown cover.

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