NORTHERN HARDWOOD NOTES

Prescribed Burning For The Birches And Hemlock

To regenerate light-seeded species such as yellow and paper birch and hemlock, you need three essentials-the right amount of overstory, an adequate seed supply, and a proper seedbed.

A proper seedbed consists of a mixture of humus and mineral soil that: (1) can hold moisture for a long period; (2) warms on the surface early in the spring; (3) is free of litter that keeps weak fibrous roots from penetrating; and (4) is free of competition from ashes, maples, woody shrubs and herbs.

You can get a good seedbed by either scarifying or burning. Historically, fire has been given major credit for our existing stands of birch and hemlock, although some have resulted from other catastrophies Without fire, sugar maple and white ash, with their low germination temperatures and taproots, regenerate at the expense of the birches and hemlock. The result is that yellow birch growing stock has declined a third in only 10 years and hemlock growing stock has declined more than two-thirds in 20 years.

A prescribed burn at the Argonne Experimental Forest showed that fire can indeed create a highly favorable seedbed for birch and hemlock. A stand of small sawtimber with a moderate stocking of yellow birch was given a shelterwood cut in the fall. The stand was burned the next May 31 under the following conditions: buildup index of 48, fire spread index of 25, fine fuels index of 32, adjusted fuel moisture of 12 percent, humidity of 24 percent, and 10 days since the last rain.

The burn resulted in an ideal seedbed on 80 percent of the area. It eliminated all existing regeneration and removed the moderate amount of litter. A bumper crop of yellow birch seed came along the next fall. The result 1 year after the burn was 1,800,000 germinants per acre on the severely burned areas and 972,000 per acre on the lightly burned areas. This was 30 times greater than the germinants of sugar maple that comprised a high percentage of the overstory trees.

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