

MANAGEMENT OF BIRCH FOR AESTHETICS AND RECREATION

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WHEN PAPER BIRCH and yellow birch are managed for aesthetic and recreation purposes, timber values become secondary, although in some instances compatibility exists among the several objectives. At times, timber and wood-products production is excluded entirely in the interests of aesthetics and recreation.

In keying forest-management practices to the appearance characteristics of trees, it is appropriate to examine in some detail the tree qualities that relate to appearance.

All tree species have recognizable characteristics that set them apart from each other. For some species, these various characteristics are readily apparent, easy to identify—some from a considerable distance, others only from a much closer vantage point. Visually, it is possible to identify and classify trees as to (1) color—foliage, flowers, bark; (2) shape—outline of crown and branching habit; (3) texture—size and shape of leaves and density of foliage in the crown, and by smooth, ridged, or plated bark; (4) size—height and diameter; and (5) growth habit—single or multiple stems, clumps.

Trees are viewed singly or in mass—as individual trees, groups of trees of the same species, or groups of trees consisting of a variety of species, shapes, and sizes. They may be in pure stands or mixed stands, even or uneven aged. They can be manipulated in arrangement through silvicultural treatments to fit certain design criteria.

Aesthetically, both yellow and paper birch are easy to identify. Both of these species have many attractive qualities that add contrast and variety to the landscape—so important in relieving monotony and stimulating viewer interest.

One of Our Most Beautiful Trees

The outstanding characteristic of paper birch that has established it as one of the

most beautiful trees of North America is its gleaming white bark. On very young trees, the bark is of brown or bronze color; on older trees it develops its whiteness, peeling in thin horizontal strips that tend to curl at their outer extremities.

Paper birch has a distinctive form with its fine, feathery twigs tending to droop at their tips, hanging in graceful fashion. In Britain, the counterpart of this tree (European white birch) has earned the title "Lady of the Woods" (*Edlin 1966*). Foliage colors are attractive in spring, summer, and fall. In growth habit, paper birch frequently has multiple stems, a characteristic that adds to its popularity for ornamental uses.

Yellow birch has many of the fine qualities of paper birch that make it a desirable tree of high aesthetic interest. Its bark is of yellowish to bronze color, peeling horizontally in very thin, narrow curling strips. On older trees, the bark develops into fairly thick yellowish-brown plates. Its foliage is attractive throughout the growing season. Yellow birch is more likely to grow as a single-stemmed tree than paper birch.

Associated species of paper and yellow birch play an important role in the aesthetics of these two trees. The species composition of natural stands in which these two birches occur includes such trees as balsam fir, white and red spruce, hemlock, white pine, white ash, red oak, basswood, red and sugar maple. All of these associated species are attractive and may combine with or add desirable contrast to stands containing birch.

Both birch species have many characteristics that fit them for uses other than for commercial timber. The range of uses is broad. It includes a combination of aesthetic and functional values: single trees for specimens; groups of trees for utility purposes in parks or in greenbelts or along roadsides to satisfy

needs for shade, screening, air purification, ameliorating air temperatures, and beautification. Both species are fine subjects for nature study.

The wood of paper birch, aside from its traditional value for timber, is used for wood carving and turning. Its bark is collected by youngsters (and some adults) for a variety of uses—not in the best interests of aesthetics, for a discolored scar is left as permanent evidence that bark has been removed. Bark was used extensively by Indians and early settlers for canoes. The oily bark of yellow birch has often been a boon to campers and hunters in the north woods: even when wet, it can be used to start cooking or warming fires.

Managing for Aesthetics

The birches are moderately resistant to damage in high-use recreation areas. In a study of recreation use, Ripley (1962) rated native trees and shrubs for their ability to withstand the impacts of recreation use as gaged by disease infection, insect infestation, and decline. Differences in the ability of species to withstand the impacts of recreation use were consistently large. Of the twenty-two hardwoods reported, yellow birch ranked eleventh. Trees able to withstand a higher degree of use according to the measurement factors employed included hickories, white ash, beech, dogwood, and black gum.

Silvical requirements for paper birch and yellow birch are an important consideration in managing them for aesthetics and recreation purposes. Paper birch often grows on drier sites than yellow birch. Yellow birch generally grows better on northern and eastern slopes; paper birch grows well on all site aspects, which may influence its use over a wider range of recreation site locations (*USDA Forest Service 1965*)

Both paper birch and yellow birch grow on glacial soils in many locations where stone and sand content is relatively high. Such soils are not readily compacted. This fact may be important in planning location of recreation areas where heavy use and accompanying compaction would otherwise result in poor tree survival.

Some modification or adjustment in cultural practices are usually needed to assure perpetuation of paper birch and yellow birch in

areas especially devoted to aesthetics or recreation.

More frequent weedings, thinnings and improvement cuttings may be required to maintain desirable levels of birch stocking. Scarification of seedbed may be necessary to assure adequate regeneration of both species. The use of small burned patches may also be effective for paper birch regeneration. Direct seeding or planting may be necessary as a supplement to natural seeding in some places. Advantage should be taken of the ability of paper birch to develop from stump sprouts and produce multiple stems, so desirable aesthetically.

In the interests of aesthetics, systems of harvesting that involve large clearcut areas should be avoided. To obtain maximum reproduction of paper birch, clearcut strips or patches $\frac{2}{3}$ to 1 acre in size are suggested. The shelterwood system, resulting in approximately 50 percent full sunlight below overhead canopy, may also be used to advantage (*Horsley 1968*).^{*} Yellow birch is somewhat more tolerant than paper birch and can be reproduced after harvesting by the group-selection system.

Unforgettable Vistas

Paper birch and yellow birch look good anywhere—singly, in clumps, in pure stands, or in mixture. It is difficult to improve on their appearance—but it may be necessary to employ special measures to keep them growing in a healthy condition. Since they are intolerant or intermediate in character, judicious thinning or release—especially at young age—is a necessary practice to assure survival. Very cautious cutting—just enough to permit and maintain dominance—is important. Otherwise, decline, dieback, and other maladies may develop when a stand is opened up too much.

An important feature of managing trees for aesthetics and recreation relates to the development of vistas. With trees as striking and beautiful as paper and yellow birch they, in themselves, can be made focal points for vistas with avenues or lines of sight cut to

^{*} Horsley, S. B. DIRECT SEEDING OF PAPER BIRCH IN STRIP CLEARCUTTINGS. Unpublished Master's thesis, Department of Forestry and Wildlife Management, University of Massachusetts, 116 pp., 1968.

them from vantage points along a path or highway. Also, these trees can frame the view for a vista when other trees and shrubs of lesser aesthetic interest are thinned out (Noyes 1969), such as the famous view of Mt. Chocorua from Route 16 in New Hampshire.

Cutting operations in the interest of aesthetics and recreation (Noyes 1968) should be concerned particularly with:

- Utilizing all material possible from harvesting operations.
- Performing light harvest cutting operations whenever possible so as to leave the forest intact.
- Enhancing aesthetic qualities of the landscape by developing vistas and emphasizing desirable topographic features of the area by either creating or utilizing existing openings in the forest.
- Protecting woodlands from uncontrolled fires.
- Protecting uncut trees, seedlings, and shrubs by careful felling, skidding, and hauling practices.
- Replacing cut trees, if needed, by providing for adequate regeneration, planting seedlings, utilizing natural seedings, or releasing desirable understory stems already established.
- Protecting the site against erosion by proper cutting operations, including well-planned skid and haul road layout and adequate water-drainage facilities.
- Cleaning up afterwards of such unsightly things as refuse and discarded equipment and parts.
- Cutting up logging slash and severely damaged trees, so they lie close to the ground, after a harvesting operation.

Many of the activities relating to aesthetic and recreation management practices for birch could be applied also to other species. The inherent appearance qualities of these two species, however, should stimulate management in their behalf wherever they exist and should encourage their introduction elsewhere on sites suited to them.

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