

## *Betula paperifera* Paper birch

(Also known as *B. alba* var. *paperifera* (Marsh) Spach, and *B. papyracea* Ait.[3])



<b>Description</b>	Small to mid-sized deciduous tree described by Pojar and MacKinnon (1) and as a medium to tall tree by Rook (6) reaching a height of about 30 meters or about 90-100 feet.(1) The habit is loose leggy with a slightly vase shape and usually has more than one main trunk, this is due to browsing by moose and snowshoe hares.(6) The bark is peeling in papery strips white to copper brown when mature and when young it is smooth and marked with brown horizontal lines of raised pores.(1) It is also known as white birch, the canoe birch and silver birch.(1)(6)
<b>Range</b>	<i>B. paperifera</i> natural range occurs in the cooler parts of the northern hemisphere from Labrador to British Columbia and South and North Carolina, Indiana, Iowa, Nebraska, Montana and Oregon.(3)
<b>Climate/ Elevation</b>	Occuring in Northern part of hemisphere (5) Open dense woods usually moist from lowlands to lower mountain slopes typically on well drained sites but also on or around bogs and other wetlands.(1) the paper birch is a dominating species in Northern Hardwood-Fir forests ( Acer- Betula- Abies- Tsuga).(2)
<b>Local occurrence</b>	<b>Shade-intolerant</b> ; abundant on burned or cut lands, often in pure stands. Restricted to openings in older forests.(5)
<b>Habitat preferences</b>	two of my sources confirm that <i>B. paperifera</i> thrives on burned over and cut over areas(3)(1) where it often forms pure stands though later it is restricted to openings as the forest matures.(1) Woodland, Canopy, Secondary, Sunny Edge.(6) Paper birch is a transcontinental species with a continuous natural range from the Atlantic to the Pacific shore.(7) <b>Shade-intolerant</b> ; abundant on burned or cut lands, often in pure stands. Restricted to openings in older forests.(5)
<b>Plant strategy type/successional stage</b>	Paper birch is a pioneer species , and as such, is a very shade intolerant tree. In most situations, birch colonizes a site that recently has been burned. (7) Rare in late successional or climax forests and generally restricted to openings.(5)
<b>Associated species</b>	Balsam Fir ( <a href="#">Abies balsamea</a> ), Red Maple ( <a href="#">Acer rubrum</a> ), Sugar Maple ( <a href="#">Acer saccharum</a> ), Yellow Birch ( <a href="#">Betula alleghaniensis</a> ), White Spruce, ( <a href="#">Picea glauca</a> ), Black Spruce, ( <a href="#">Picea mariana</a> ), Jack Pine ( <a href="#">Pinus banksiana</a> ), Bigtooth Aspen ( <a href="#">Populus grandidentata</a> ), Quaking Aspen ( <a href="#">Populus tremuloides</a> ) (5)
<b>Collected as</b>	Seed, still in green catkins (3)

<b>Collection restrictions or guidelines</b>	The flowers are monocots and born in catkins formed in late Summer or Autumn, stay on through the winter and open in the spring. The catkins become brown and woody when ripe. Ripening usually occurs in Autumn. Seed dispersal usually occurs by wind and sometimes water. seed ripening occurs in early August to mid-September. (3)(5) Dispersal of the seeds occurs between September 1 and April 1. The seeds should be collected by picking or stripping catkins while still green enough to hold together. These should be put into collecting bags instead of falling on canvas to prevent break up.(3)(5) Since when green they are subject to heating catkins should be spread out to dry for several weeks. Purity of the seed lot can be greatly increased if the fruits are broken up by a light flailing or shaking and the seeds separated from most of the scales and debris by screens with holes 8/64" for B. paperifera and then fanning used to further separate any debris.(3)
<b>Seed germination</b>	All Fall-ripened species show delayed germination due to embryo dormancy, this can be overcome by stratification in moist sand/peat mix at 41 degrees for 60-75 days. (3)A constant temperature of 59, 68 and 77 degrees also good in a cold frame during the winter.(3) Stratification not necessary if germinated with light. Can overcome dormancy with a cool moist stratification. (5)
<b>Seed life</b>	Seeds will keep at least 18 months (3)
<b>Recommended seed storage conditions</b>	The seeds keep well at least 18 months at room temperature with a 1% moisture, but will keep at 45 degrees with a 12% moisture level. (3)
<b>Propagation recommendations</b>	Germination in sand flats, peat mats or Jacobsen germinators. Night temps 59 degrees, day 90 30-40 days low 0% high 92% germination capacity. seeds sown broadcast and covered with 1/16 or 3/16 inch of light nursery soil or if surface is kept moist with out covering. Germination complete 4-6 weeks after spring sowing, seedling delicate and require light shade for 2-3 months during first summer, tree percent from seed in the wild is rather low.(3)
<b>Soil or medium requirements (inoculum necessary?)</b>	Seed may be sown in fall or stratified from 4-6 weeks in moist peat of sand prior to spring. Sowing on top of snow in winter practiced.(3)
<b>Installation form</b>	Best results are obtained by planting 2-year-old or older bare-root or containerized stock. Occasionally transplanted from the wild. Also by grafting, air layering, rooting of cuttings, or tissue-culture. (5)
<b>Recommended planting density</b>	Seed may be sown by broad dispersal.(3)
<b>Care requirements after installed (water weekly, water once, never water, etc.)</b>	If planted properly no care needed. Bronze Birch Borer the most serious insect pest. It attacks and can kill injured, overmature, or decadent trees. There are numerous defoliators of Paper Birch, but they rarely kill healthy trees. Bacteria or decay fungi enter through wounds and branch stubs, and roots which come in contact with the roots of other trees infected with root-rotting fungi. (5) Fertilization and irrigation should be done to maintain white birch vigorous condition and to help prevent borer infestation. Don't prune this birch or other birches until summer because they are "bleeders" and should not be cut when the sap is flowing. (9)
<b>Normal rate of growth or spread; lifespan</b>	Birch shade is unfavorable for germination of birch seed, but spruce seedlings are common. By 120-150 years after fire, black or white spruce dominate. In boreal mixed woods, paper birch begin dying by 75 years after fire. By 125 years most paper birch are dead. Height growth ceases at about 60-70 years of age; few live more than 140 years. (5)

**References:**

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