

## SILVER MAPLE

*Acer saccharinum* L.

Plant Symbol = ACSA2

Contributed By: USDA NRCS National Plant Data Center & the Biota of North America Program



© William S. Justice  
Dept. of Botany, Smithsonian Institution  
@ PLANTS

### Alternate Names

Soft maple, silverleaf maple, white maple, river maple, swamp maple, water maple

### Uses

Silver maple has been heavily planted as an ornamental in many urban areas because of its ease of transplanting and establishment, adaptability to a wide range of sites, rapid growth, and good form. The species also has been used for vegetative rehabilitation of surface mined lands as well as for bottomland reforestation.

Silver maple sap can be used to make a good, light syrup, although the sugar content of the sap is the lowest of the maple species used for syrup

production. The sap has been used for kidney and liver ailments and also as a cough syrup.

The wood of silver maple is fairly hard, even texture, rather brittle, and easily worked; it is used for furniture, cabinetry, paneling, flooring, woodturning, veneer, musical instruments, boxes and crates, tool handles, wagons, carts, and rails. Old heartwood develops a swirled pattern that is sold as “bird’s eye maple.” Silver maple on good sites can be managed for timber – it is often cut and sold with red maple as “soft maple” lumber.

The abundant seeds of silver maples are eaten by many birds, including evening grosbeaks, finches, wild turkeys, ducks and other game birds, and small mammals, especially squirrels and chipmunks. The buds are an important food for squirrels when stored food is depleted, particularly in late winter and early spring. The bark is a food source for beavers and deer and rabbits browse the foliage. Silver maple tends to develop cavities that are used by cavity-nesting birds and mammals and provide shelter and breeding habitat for many other species, including raccoons, opossums, squirrels, owls, woodpeckers, and many other birds.

Because of its abundance and wide distribution of silver maple, its early-produced pollen may be important to the biology of bees and other pollen-dependent insects. Most references describe red maple as wind pollinated, but insect pollination may be important, as many insects, especially bees, visit the flowers.

### Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant’s current status, such as, state noxious status and wetland indicator values.

### Description

*General:* Maple Family (Aceraceae): A native tree reaching to mature heights of 27-36 m, usually with a short, thick trunk and spreading, open, irregular crown of long, curving branches with pendulous branchlets turning up at the ends; twigs with slightly unpleasant odour when crushed; bark gray and thin,

becoming furrowed into long, shaggy, scaly ridges on older trunks and branches. The leaves are deciduous, opposite, 8-15 cm long and nearly as wide, long-petioled, deeply 5-lobed and long-pointed (middle lobe often 3-lobed) with V-shaped sinuses, doubly toothed, with three main veins from the base, dull green above, silvery-white beneath, usually turning pale yellow or soft gold in the autumn, occasionally scarlet and crimson (perhaps reflecting hybridization with red maple). The flowers are usually greenish or yellow from reddish buds, about 6 mm long, the male (staminate) flowers fascicled, the female (pistillate) flowers in drooping racemes, the flowers functionally male or female. Individual trees commonly have all male or all female flowers (the species essentially dioecious) or some trees may have more of one type than the other, and scattered flowers may be functionally bisexual (the species technically polygamo-dioecious). The fruits are winged nutlets (samaras) 4-6 cm long, light brown with pink veins, in a long-stalked, wide-spreading pair. The common name refers to the silvery appearance of the underside of the leaves.

*Variation within the species:* Red maple forms natural hybrids with silver maple (*A. saccharinum*): *Acer X freemanii* E. Murray. The hybrids, however, are nearly sterile.

*Distribution:* Silver maple grows over most of the eastern half of the United States and immediately adjacent Canada, except along major portions of the Gulf and Atlantic coastal plains. The natural range extends from Maine, New Brunswick, and southern Quebec, west to Minnesota and southeastern South Dakota, eastern Nebraska, Kansas, and Oklahoma, and south to Louisiana, Mississippi, Alabama, northwestern Florida, and central Georgia. It is relatively uncommon in the southern part of its range and absent at higher elevations in the Appalachians. Its abundance in natural habitats has decreased due to conversion of bottomland forests for agriculture but increased in urban areas due to planting. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Silver maple has been introduced to the western United States as an ornamental and to areas of the Black Sea coast of the Soviet Union and various parts of Europe.

#### **Adaptation**

Silver maple is found on stream banks, flood plains, and lake edges where it grows best on better-drained, moist alluvial soils, at elevations of 30-600 meters. Silver maple can grow on sites where soils are

usually saturated most of the growing season. Seedlings have survived 60 days of continuously saturated soils. In the upper Mississippi River valley, silver maple trees survived 1 year of constant inundation (due to reservoir formation) but died after the second. It ranges from moderately shade-tolerant (good sites) to intolerant (poor sites). Silver maple dominance is usually in forest types that are pioneer to intermediate in succession and maintained only with management or disturbance, particularly flooding. It will quickly invade abandoned agricultural clearings and other cutover areas. Although it does not compete well with other species in upland sites, silver maple grows vigorously under a wide variety of conditions when planted as an ornamental.

Silver maple flowers in (February)March-April(May), before the leaves, usually before red maple. All flowers on one tree are nearly synchronous. Fruiting occurs in April-June, maturing about 3 weeks after pollination and all released over a short period, usually less than 2 weeks.

#### **Establishment**

Silver maple may begin producing seed as early as 11 years old. Viable seed may be produced through self-pollination and large seed crops are produced annually. The seeds are primarily wind dispersed but are sometimes carried by water. Germination usually occurs in the spring shortly after dispersal – the seeds require no pretreatment or stratification (although seedlings require a considerable length of chilling to break dormancy). Natural regeneration by seed is most successful on moist mineral soil or moist litter. Seedling establishment requires full sun, but subsequent growth is best with partial shade.

Silver maple can be propagated from cuttings and bud grafts and by layering. Seeds are abundant but seedlings are highly variable. Sprouts from the stump or root crown are prolific. The best sprouting occurs from younger trees with stumps less than 30 cm in diameter. Flood energy breaks off aboveground portions of silver maple – the remaining stems sprout vigorously and may vary in number after such damage.

Silver maples can live to 130 years or longer.

#### **Management**

Despite its usefulness in urban plantings, especially on poor sites, silver maple has significant limitations and is now not so commonly planted. It has been over-planted. It often grows to a larger size than anticipated and the brittle branches are easily broken

in winter storms and wind storms. Pruning is often required to develop good form and to remove broken branches and old, multi-trunk trees often require cabling. Relatively soft wood renders silver maple susceptible to a number of wood rotting fungi and it is susceptible to various leaf molds and wilts (e.g., anthracnose, verticillium wilt, leaf spot, tar spot). Its large, vigorous, shallow-rooted root system can damage sidewalks and driveways, clog drain pipes, and penetrate septic systems and sewer pipes.

Silver maple is susceptible to fire damage because of its thin bark, soft wood, and shallow/surface roots; surface fires kill seedlings and saplings and wound larger trees, exacerbating the tendency to rot. Prescribed fire is not recommended where silver maple is a desirable species. Silver maple can be managed on good sites for saw timber and on poor or wet sites for pulp or cordwood.

#### **Cultivars, Improved and Selected Materials (and area of origin)**

At least 58 cultivars have been named, encompassing variation in leaf form and color, branching pattern, and crown shape. At least one fruitless (male) strain has been selected.

#### **References**

- Koelling, M.R. & R.B. Heiligmann (eds.) 1996. *North American maple syrup producers manual*. Ohio State Univ. Extension Bull. 856. AUG00. <<http://www.ag.ohio-state.edu/~ohioline/b856/index.html>>
- Li, H.-L. 1960. *The cultivated maples*. Morris Arbor. Bull. 11:41-47.
- Sullivan, J. 1994. *Acer saccharinum*. IN: W.C. Fischer (compiler). *The fire effects information system* [data base]. USDA, Forest Service, Intermountain Research Station, Intermountain Fire Sciences Laboratory, Missoula, Montana.
- Gabriel, W.J. 1990. *Acer saccharinum* L. Silver maple. Pp. 70-77, IN: R.M. Burns and B.H. Honkala (tech. coords.). *Silvics of North America. Volume 2. Hardwoods*. USDA, Forest Service Agric. Handbook 654, Washington, D.C.

#### **Prepared By**

*Guy Nesom*, BONAP, North Carolina Botanical Garden, University of North Carolina, Chapel Hill, North Carolina

#### **Species Coordinator**

*Lincoln Moore*, USDA NRCS National Plant Data Center, Baton Rouge, Louisiana

Edited: 13nov00 jsp; 07feb03ahv; 24may06jsp

For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

*The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).*

*To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.*

*Read about [Civil Rights at the Natural Resources Conservation Service](#).*