

## SMOOTH ALDER *Alnus serrulata* (Ait.) Willd.

Plant Symbol = ALSE2

Contributed by: USDA NRCS Plant Materials  
Program



Robert H. Mohlenbrock  
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### Alternate Names

hazel alder

### Uses

Smooth alder is used predominantly for streambank stabilization and wetland restoration. It is also a critical cover component of woodcock habitat.

### Status

Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

### Description

Smooth alder is a nitrogen-fixing, thicket-forming shrub or small tree with dark, green foliage. It is a U.S. native. It is suitable for streambank stabilization because of its flexible stems and fibrous root system. A mature height of 8-12 feet may be reached in 10 years. Seed is produced in small cones with pollen contributed by birch-like catkins which bloom in mid-to late March. Compared to other alder species,

smooth alder is more densely branched and produces more seed. Alders produce nitrogen for themselves by the activity of nitrogen-fixing bacteria located in root nodules. For this reason, it is not recommended for planting in areas where additional nitrogen might add to water quality problems. Smooth alder has about 400,000 seeds per pound.

### Adaptation and Distribution

Smooth alder is native to the northeast. It occurs from southern Maine to northern Florida, west to southeastern Oklahoma, Missouri, and Illinois. It grows best in wet bottomlands and stream margins, however it will also grow in well-drained upland areas. It is moderately shade and acid tolerant, but is weak-wooded and susceptible to wind and ice damage.

For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

### Establishment

For streambank stabilization, smooth alder is best established as a bare-root or containerized seedling planted two feet apart within rows with rows two feet apart. It may be incorporated into a soil bioengineering system by planting at the toe of the bank just above any toe stabilization measures such as rip-rap, coir (coconut) logs, or fascines. On non-erosive streambanks it may be planted in two rows to provide toe protection. If this alder is planted for wildlife habitat improvement or wetland mitigation, planting should be done at a 5-10 foot spacing to allow for crown development and to optimize seed production.

### Management

Very little maintenance is needed except replacing dead plants and keeping debris from inhibiting growth.

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

At present only common smooth alder is available from commercial and state nurseries.

### Prepared By & Species Coordinator:

USDA NRCS Northeast Plant Materials Program

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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>>

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