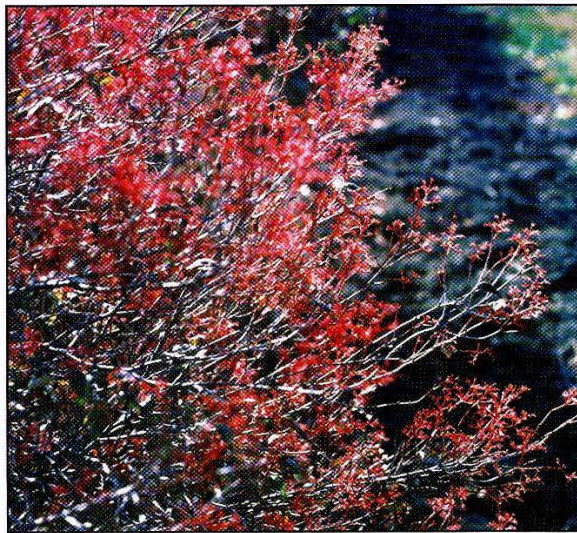
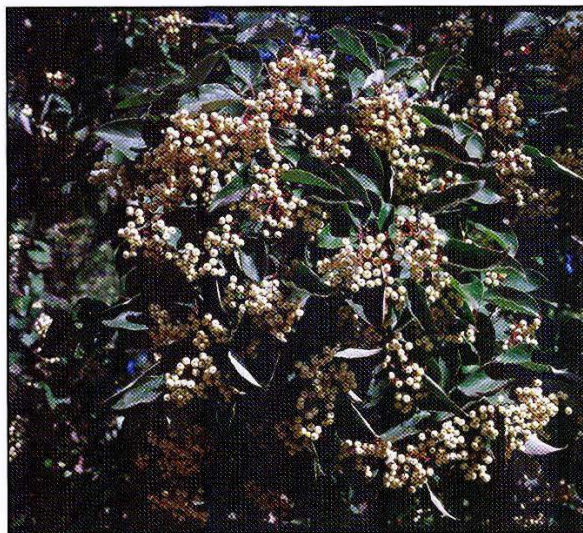


Gray Dogwood



Gray Dogwood (*Cornus racemosa*)

General Description

A dense-branched shrub (or small tree form) native to North America as far west as eastern North and South Dakota. Very attractive shrub in flower for public and private landscapes. Tree form has potential as small tree in sites where restricted height is needed. Plant taxonomists are in the process of changing the species name to *C. foemina*.

Leaves and Buds

Bud Arrangement - Opposite.

Bud Color - Grayish-brown, lateral buds, small and somewhat hidden by the leaf scar.

Bud Size - Less than ¼ inch.

Leaf Type and Shape - Simple, narrow-ovate.

Leaf Margins - Entire.

Leaf Surface - Pubescent to smooth.

Leaf Length - 2 to 4 inches.

Leaf Width - 1 to 2 inches.

Leaf Color - Dark green above, whitish-gray beneath. Purple fall color.

Flowers and Fruits

Flower Type - Cymes 2 to 3 inches diameter, showy; borne on the ends of each stem.

Flower Color - White.

Fruit Type - Drupe, ¼-inch diameter.

Fruit Color - White, ornamental, often abundant.

Form

Growth Habit - Multistem shrub to a small accent tree.

Texture - Medium, summer; medium, winter.

Crown Height - 8 to 15 feet.

Crown Width - 10 to 15 feet.

Bark Color - Young stems are tan to reddish-brown, mature stems and trunks silvery-gray.

Root System - Fibrous, some suckering.

Environmental Requirements

Soils

Soil Texture - Sandy loam to clay.

Soil pH - 5.0 to 7.8.

Cold Hardiness

USDA Zone 3.

Water

Prefers moist, well-drained sites, but is tolerant of dry conditions.

Light

Full sun to shaded sites.

Uses

Conservation/Windbreaks

Multirow windbreaks in moist to semimoist locations in large shrub row.

Wildlife

Cover, shelter and food (fruit, foliage, twigs) source for birds and mammals, including browsers.

Agroforestry Products

Medicinal - Extracts from various species of *Cornus* have been used for fevers and as a tooth powder.

Urban/Recreational

Excellent for home landscapes and parks as a large shrub for massing or screening or as a small tree for aesthetic values.

Cultivated Varieties

NDSU has introduced two cultivars:

Snow Lace® Gray Dogwood (*Cornus racemosa* 'Emerald') - Dense, tall shrub, glossy dark leaves, excellent flower and fruit quality, pink pedicels.

Snow Mantle® Gray Dogwood (*C. racemosa* 'Jade') - Taller growing, more treelike, leaves less glossy. Best grown multi-trunked since this species suckers somewhat. Attractive white flowers and fruits.

Related Species

Redosier Dogwood (*Cornus stolonifera*) - See Redosier Dogwood.

Pagoda Dogwood (*C. alternifolia*) - Form is treelike, layered branches, creamy-white flowers, dark blue fruits, not drought tolerant.

Siberian Dogwood (*C. alba* 'Sibirica') - Vigorous, superior bright red stems, recommended.

Variiegated Dogwood (*C. alba* 'Argenteo-marginata') - Foliage variegated.

Pests

No major pests to date.

GRAY DOGWOOD

Cornus racemosa Lam.

Plant Symbol = CORA6

Contributed by: USDA NRCS Plant Materials Program



Chris Miller
USDA NRCS Plant Materials Program

Uses

Gray dogwood is useful as a low-growing wild hedge which provides summer food and some cover for small animals and birds.

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

Cornus racemosa Lam, gray dogwood, is a thickly branched, slow growing dogwood seldom more than 6 feet high at maturity. Its flowers, which bloom in June or July, are white and loosely clustered, and its white fruit, which appears in September and October, is set off by bright red fruit-stalks. Its leaves are opposite, taper-pointed and oval.

Adaptation

Gray dogwood has a range of adaptability equaled by few other shrubs, and it tolerates many climatic conditions. Tolerance to shade is considered

intermediate. It is not well adapted to coastal plain conditions.

Gray dogwood is distributed throughout the northeastern United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment

Only seedlings of gray dogwood are practical. All should be planted as early in the spring as possible. When using dogwood for streambank planting, eroded or steep banks should be graded before planting. Plant in the early spring with dormant planting stock. Planting after May will severely reduce chances for success. One-year rooted cuttings or seedlings can be planted vertically into the bank with one or two inches of cutting wood protruding. They should be stuck in a hole large enough to accommodate the root system when well spread. The soil must be tamped well around the roots. Fresh, unrooted hardwood cuttings, easier to handle but less reliable, should be stuck vertically into the bank, leaving one to two inches above ground. A dibble can be used to make a hole. Tamp adequately to provide complete contact between the cutting and the soil. Cuttings may also be buried horizontally two inches deep in damp soil, if the ground is stony. Fresh hardwood cuttings, 3/8 to 1/2 inch at the thick end, 9 inches long, and made while dormant, are ideal. Without cold storage, planting should be done as soon as possible after cutting. Plant both rooted cuttings and unrooted hardwood cuttings on 2 feet spacing in a diamond pattern.

When using for wildlife or screening purposes, the planting site should be cultivated to destroy existing vegetation. If not, the sod should be removed from an area two feet across for each plant. The holes should be deep enough to allow for the full extension of the roots. Spacing for hedges and screens should be staggered and 2 x 2 feet, and 4 to 5 feet for windbreaks. A small handful of fertilizer can be placed around each plant.

Management

Dogwoods used on streambanks are subject to mechanical damage. The site should be inspected annually for needed repairs in the spring after heavy runoff or ice floes. Fill in gaps by replanting or by laying down and covering branches of nearby plants. Any mechanical measures used to control the bank,

such as riprap, must be kept in repair to maintain effective protection.

Competing vegetation should be controlled around all dogwood plants used for hedges, screens, etc. This is particularly important during the first few years after planting.

Pests and Potential Problems

There are currently no serious pests of gray dogwood.

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

No cultivars are available at this time, however common seedlings are available at most commercial hardwood nurseries.

Prepared By & Species Coordinator:

USDA NRCS Plant Materials Program

Edited: 01Feb2002 JLK; 25may06jisp

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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SILKY DOGWOOD

Cornus amomum Mill.

Plant Symbol = COAM2

Contributed by: USDA NRCS Plant Materials Program



Robert H. Mohlenbrock
USDA NRCS 1991.
Southern Wetland Flora
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Alternate Names

Swida amomum (P. Mill.) Small

Uses

The primary use of this species is for field and farmstead windbreaks and wildlife borders. It is also being used with willows for streambank protection. Other beneficial uses are for fish and wildlife habitat improvement, slope stabilization, borders, and as an ornamental.

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

Silky dogwood is a large shrub, often 6-10 feet in height. The growth habit is upright rounded, but where stems are in contact with the ground, roots are formed. This behavior creates thickets. Young dogwoods have bright red stems in the fall, winter and early spring, which turn reddish-brown in the summer. As the shrub matures, the stems turn reddish-brown year-round and later gray. Silky and redosier dogwood, though very similar, can be distinguished by their pith and fruit color. Silky dogwood has a brown pith in 1-2 year old stems, dark green ovate leaves, yellowish-white flowers which bloom in mid-June, and bluish colored fruit which matures in September. Redosier dogwood has a white pith, dark green ovate leaves, white flowers, and whitish colored fruit. There are approximately 12,000 seeds per pound.

Adaptation and Distribution

Silky dogwood is adapted from Michigan and Wisconsin to Maine and south to Georgia, Florida, and Tennessee. It has done exceptionally well in the Lake states, but poorly outside its natural range. It performs best in soils that are moist, somewhat poorly drained, moderately acidic to neutral, and in areas that have medium to coarse soils. It is highly tolerant of shade but not of droughty conditions.

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

Establishment

Windbreaks: The site must be prepared by reducing weed competition. If equipment can be used, plow or disc the site first. If equipment cannot be used, clear sod from a one foot square area and plant as soon as frost is gone in the Spring. For bare root plants, holes should be dug deep enough to accommodate the entire root system. Space plants 5-6 feet apart in a row. If planting in a cluster, 8x10 or 10x10 foot spacing is advisable.

Streambank stabilization: Steep slopes must first be graded. The slope should be 1:1 or flatter. Any trees considered unstable should be removed. One year old rooted cuttings should be used for planting. Plant in early spring, preferably before May. Do not plant after June 1. Plant the cuttings two feet apart for streambank erosion control, four to six feet apart for wildlife habitat. Establishment with other species,

such as willow and other riparian species, is a good practice. On sites with banks that may become dry over the summer, utilize silky dogwood next to the water, with willows above. Immediately after planting, grasses and legumes may be planted to provide initial stabilization. After 2 or 3 years the dogwoods will become effective. Silky dogwood is vulnerable to livestock browsing. In order to ensure survival, fencing must be incorporated into the plan. Rooted hardwood cuttings are taken in January, allowed to develop callus in refrigerated storage, and planted in mid-May in well drained soil 2 inches apart. The cuttings should be 1/4-1/2 inch in diameter and 9 to 12 inches long. They should be planted with approximately 2 inches exposed above ground level.

Management

The planted areas should be examined each spring after the major runoff period has ended. Areas where vegetation has been destroyed must be immediately replaced with new plants. If any mechanical measures are being used to prevent erosion, they must also be maintained to prevent any more damage.

Pests and Potential Problems

'Indigo' silky dogwood has few problems with disease or insect pests. Webworm and scurfy scale have been observed. There has been some problem with cicadas stinging the stems. Lesions and cankers may also occur. However, these are not pathogenic and are thought to just be the tree's reaction to injury.

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

'Indigo' (MI) silky dogwood was released in 1982 from the Rose Lake, Michigan Plant Materials Center in cooperation with the MI Department of Natural Resources.

Prepared By & Species Coordinator:

USDA NRCS Northeast Plant Materials Program

Edited: 01Feb2002 JLK; 25may06jsp

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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United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Indigo'

Silky Dogwood

Cornus amomum Mill

A Conservation Plant Release by USDA NRCS Rose Lake Plant Materials Center, East Lansing, MI



'Indigo' Silky Dogwood in bloom

The USDA-Natural Resource Conservation Service, Rose Lake Plant Materials Center and the Michigan Department of Natural Resources released the cultivar 'Indigo' Silky Dogwood in 1982.

Description

'Indigo' is a spreading shrub that can grow up to 10 feet tall. The stems are red when young but turn reddish brown and gray as they mature. 'Indigo' has yellowish-white flowers that bloom in mid June. It produces an abundant crop of fruit, which ripens in September. The fruit is pale to dark blue and about ¼ inch in diameter. 'Indigo' can be distinguished from other blue fruited species of dogwood by the dark brown pith in one and two year old stems. In other blue fruited dogwoods, the pith is white.



'Indigo' Silky Dogwood berries

Source

'Indigo' silky dogwood seed was first collected in 1961 from plants at the Rose Lake Wildlife Research Station in Clinton County, Michigan. 'Indigo' has been evaluated in 20 states, particularly in the Great Lakes States, where it has performed well.

Conservation Uses

'Indigo' silky dogwood is a dense, multi-stemmed woody plant. It is especially useful for single row windbreaks in fields with center pivot irrigation systems because it grows low enough that the spray bar can pass over it. 'Indigo' can also be used in multi-row field windbreaks and farmstead windbreaks.

Stems and leaves of 'Indigo' are desirable deer browse, and the fruit is eaten by upland game birds and many songbirds. 'Indigo' is also useful for beautification and landscaping.

Area of Adaptation and Use

'Indigo' is adapted to a wide range of soils and soil textures, but it grows best in moist soil. It is adapted to soils that are somewhat poorly drained to well drained and have a pH of 5.0 to 7.0. It is moderately shade tolerant but is not drought tolerant.

Establishment and Management for Conservation

Plantings

Establish plantings of 'Indigo' from seedlings. Two year old seedlings are suitable for mechanical planting. One year old seedlings can be planted by hand, although survival may be low because of their small root system.

Follow the planting date and spacing recommendation for shrubs in your area. Space the plants no more than six feet apart. If planted much later than the recommended planting date, their establishment may be poor unless a moist site is chosen or supplemental water is applied.

To ensure establishment, control weeds mechanically for the first few years. Once 'Indigo' is established, you can use approved herbicides for effective weed control. Be sure to follow manufactures directions carefully. Consult Extension personnel for help in selecting herbicides.

Ecological Considerations

No serious diseases have been observed on 'Indigo' Silky Dogwood plantings. Occasionally there has been an occurrence of webworm attacks.

An infestation of scurfy scale has been observed on some of the plants. The insect can be controlled with a dormant spray or with contact spray when the crawlers emerge in the spring.

In some cases, deer browse damage may temporarily retard the growth of this plant, especially when the browsing of succulent new growth appears. Where plantings are made in grass and cover, rodent damage may occur in the winter.

Seed and Plant Production

Harvest berries in September after they have turned dark blue and soft to the touch. Seeds can be separated from berry with a blender or similar equipment. Seed should be allowed to dry and further cleaned with a fanning mill.

'Indigo' seed benefits from a 12 week stratification treatment to speed germination. Germination of non-stratified seed takes several months longer to complete than stratified seed. 'Indigo' can also be propagated vegetatively. Dormant cuttings ¼"-1/2" thick and 12-24" long can be placed vertically in the soil with 2/3 of the cutting underground and the remainder above ground. Root and shoot formation will occur within a few weeks as weather conditions permit.



'Indigo' Silky Dogwood in bloom

Citation

Release Brochure for 'Indigo' Silky Dogwood, *Cornus amomum*, USDA-Natural Resources Conservation Service, Rose Lake Plant Materials Center, East Lansing, MI 48823, October 1982. Revised January, 2012.

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



Row of 'Indigo' Silky dogwood

For more information, contact:
Rose Lake Plant Materials Center
7472 Stoll Rd., East Lansing, MI 48823
Phone: 517-641-6300
Fax: 517-641-4421

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Redosier Dogwood



Redosier Dogwood (*Cornus sericea*)

General Description

An open, spreading, multi-stemmed, medium to large shrub with horizontal branches at the base. Freely stoloniferous as it spreads by natural layering of lower, relatively prostrate stems. Dark, blood-red bark provides winter color.

Leaves and Buds

Bud Arrangement - Opposite.

Bud Color - Deep red-brown to purplish-black in color, valvate.

Bud Size - 1/8 inch.

Leaf Type and Shape - Simple, ovate to oblong-lanceolate.

Leaf Margins - Entire margins.

Leaf Surface - Nearly smooth with arcuate venation.

Leaf Length - 2 to 5 inches.

Leaf Width - 1 to 2½ inches.

Leaf Color - Medium to dark green above, glaucous beneath; purple fall color.

Flowers and Fruits

Flower Type - Flat-topped creamy cymes 1½ to 2½ inches in diameter borne in late May through June.

Flower Color - Dull white.

Fruit Type - Drupe, 1/5 inch in diameter.

Fruit Color - White.

Form

Growth Habit - Loose and rounded in form with many stems.

Texture - Medium, summer; medium-coarse, winter.

Crown Height - 7 to 10 feet.

Crown Width - 10 to 15 feet.

Bark Color - Dark, blood-red.

Root System - Shallow, fibrous, spreads by stoloniferous branches.

Environmental Requirements

Soils

Soil Texture - Adaptable to a variety of soils.

Soil pH - 5.0 to 7.5.

Windbreak Suitability Group - 1, 2, 3, 4, 4C.

Cold Hardiness

USDA Zone 2.

Water

Grows best in moist to somewhat wet loams.

Light

Full sun to partial shade.

Uses

Conservation/Windbreaks

Medium to tall shrub for farmstead and field windbreaks, riparian plantings, and highway beautification.

Wildlife

Fruit and twigs are used by several species of wildlife, such as robins, cedar waxwings, rabbits, and deer. Provides dense cover for a large number of wildlife species.

Agroforestry Products

Medicinal - Used in cancer therapy, to treat fevers and sore mouths, and as an astringent and teeth cleaning stick.

Urban/Recreational

Used for screen, massing, bank cover, border, and specimen plantings.

Cultivated Varieties

Bergeson Compact Dogwood (*Cornus sericea* 'Bergeson Compact') - Superior red twigs; fall color and density.

Cardinal Dogwood (*C. sericea* 'Cardinal') - Coral-red twigs; fall color and density of mediocre quality.

Isanti Dogwood (*C. sericea* 'Isanti') - Very dense, less rank growing.

Silver and Gold Dogwood (*C. sericea* 'Silver and Gold') - Variegated leaves and yellow twigs.

Yellowtwig Dogwood (*C. sericea* 'Flaviramea') - Yellow stems, often sunscald in winter.

Related Species

Coral Beauty Dogwood (*Cornus alba* 'Coral Beauty')

Gray Dogwood (*C. racemosa*)

Indigo Dogwood (*C. amomum* 'Indigo')

Ivory Halo Dogwood (*C. alba* 'Bailhalo')

Pagoda Dogwood (*C. alternifolia*)

Siberian Dogwood (*C. alba* 'Sibirica')

Silky Dogwood (*C. amomum*)

Variegated Dogwood (*C. alba* 'Argenteo-marginata')

Pests

Twig blight (canker) may be a disease problem.

Cornus stolonifera (Red osier dogwood)



Hardiness Zones:

1	2	3	4	5	6	7	8	9	10	11
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Botanical Name: *Cornus stolonifera* KOR-nus sto-lon-IF-er-ah **Common Name:** Red osier dogwood

Synonyms: *C. sericea* **Genus:** *Cornus*

Red osier dogwood is a deciduous shrub with a rounded, spreading form. Opposite leaves with rounded bases are ovate to lance-shaped and dark green, turning a dull red, purple-red, or orange in autumn. Clusters of white flowers appear in late May to early June, followed by white to pale blue fruit. Green stems turn reddish or purple-red from late summer into early fall, becoming brighter in winter.

Noteworthy characteristics: Native from Newfoundland to Manitoba, south to the central U.S. May be hardy to Zone 2. Use as a screen, in a shrub border, or in mass plantings.

Care: Easy to grow, it prefers moist soil but adapts to a range of soils and locations. Tolerates wet soils. Removing older stems produces vigorous new shoots with vivid coloration.

Propagation: Spreads by suckering.

Problems: Dogwood blight, powdery mildew, Discula blight, canker, bacterial leaf spot, and mushroom root rot. Common: twig borers, weevils, sawfly, scale insects, aphids, leafhoppers, root knot nematodes, and thrips.

Height	3 ft. to 6 ft.
Spread	10 ft. to 15 ft.
Growth Habit	Runs
Growth Pace	Fast Grower
Light	Full Sun to Part Shade
Moisture	Adaptable
Maintenance	Moderate
Characteristics	Interesting Bark; Native
Bloom Time	Early Summer; Summer
Flower Color	White Flower
Uses	Beds and Borders, Screening, Waterside
Seasonal Interest	Winter Interest, Spring Interest, Summer Interest, Fall Interest
Type	Shrubs

Taken from: www.finegardening.com

REDOSIER DOGWOOD

Cornus sericea L.

Plant Symbol = COSE16

Contributed By: USDA NRCS National Plant Data
Center & Carlinville (IL) Field Office



Robert H. Mohlenbrook
USDA, NRCS, Wetland Science Institute
@ PLANTS

Alternative Names

American dogwood, red willow, redstem dogwood, *Cornus sericea* ssp. *sericea*; *Cornus stolonifera* var. *nevadensis* Jepson and *Cornus stolonifera* Michaux (Hickman 1993). A subspecies, *Cornus sericea* ssp. *occidentalis* (Torr. & Gray) Fosberg is known as western dogwood.

Uses

Ethnobotanic: Native Americans smoke the inner bark of redosier dogwood in tobacco mixtures used in the sacred pipe ceremony. Dreamcatchers, originating with the Potawatomi, are made with the stems of the sacred redosier dogwood. Some tribes ate the white, sour berries, while others used the branches for arrow-making, stakes, or other tools. In California, peeled twigs were used as toothbrushes for their whitening effect on teeth (Strike 1994). Bows and arrows were made from *Cornus* shoots. The inner bark is used for tanning or drying animal hides.

The Apache, Cheyenne, Dakota, Montana Indians, Ojibwa, Potawatomi, Omaha, Ponca, and Thompson Indians all use the inner bark in a tobacco mixture for

smoking the sacred pipe (Moerman 1986). The leaves and/or inner bark of redosier dogwood are also used as a smoking mixture by the Okanagan-Colville,

the Flathead, the Kootenay, and the Blackfeet peoples in the western United States and Canada (Helson 1974, Hart 1976, Turner 1978, Turner et al. 1980, Johnston 1987). The Navaho-Kayentaf and Navaho-Ramah used the plant ceremonially as a Mountain-top-way emetic (Moerman 1986). An infusion of redosier dogwood bark was used as an anti-diarrheal by the Chippewa and the Potawatomi, an antidote for weak kidneys by the Shuswap, and a pediatric aid for children who wet the bed by the Shuswap. The Chippewa used an infusion of the bark for eruptions caused by poison ivy. The Chippewa and the Micmac used a decoction of redosier dogwood root for sore eyes and catarrh. The Okanagan and the Thompson Indians took a decoction of the leaves. Other remedies treated by redosier dogwood included headaches, sore throats, a wash for ulcers, a substitute for "larb", and a decoction of bark was taken as an antidote for weakness.

The Maidu of Northern California used redosier dogwood as a tonic, a laxative, emetic, and cathartic (Strike 1994). Maidu women took a dogwood decoction after childbirth.

The Indians of the Missouri region (Densmore 1974) ate the fruits. The berries are known to be tart and bitter, but were nonetheless eaten by all of the southern Interior peoples of British Columbia, including the Nlaka'pamux, Lillooet, Okanagan-Colville, Shuswap, Kootenay, Blackfeet, and the Flathead of Alberta and Montana (Kuhnlein and Turner 1991). The fruits were gathered from August to October and eaten fresh, a few at a time, or, more commonly, were pounded and mixed with other fruits, such as chokecherries (*Prunus virginiana*) or Saskatoons (*Amelanchier alnifolia*). Some people mashed the berries and dried them in cakes; others dried and stored them. Eating a few raw fruits was considered to be a good tonic among the Nlaka'pamux and the Okanagan-Colville, who ate them raw as a kind of "relish" (Turner 1978; Turner et al. 1990).

Redosier dogwood is used for basketweaving. Sometimes called red willow, both *Salix* species and *Cornus sericea* are used interchangeably. Differences in stem color create a multi-hued design

element. Indian people from the mid-Columbia River used redosier dogwood to make “ribbons” for basket decorations (Schlick 1994). If gathered in the early spring, the bark will retain its deep red color when dried and could be mistaken for cherry. The Hidatsa, Arikara, and Mandan made twill plaited burden baskets with two-toned dark and light designs; these baskets were made of willow (*Salix nigra*), redosier dogwood, and boxelder (*Acer negundo*) splints (Turnbaugh et al. 1986, Hart 1976). Willow and redosier dogwood were used by the Cheyenne, Arapaho, Kiowa, Pawnee, and Teton Sioux to make a coarsely coiled gambling basket for dice.

The Ojibwa and the Chippewa used redosier dogwood bark as a dye. The inner bark was mixed with other plants or minerals and used to make a red dye, a light red dye, a black dye, and an ecru or “khaki” colored dye (Densmore 1974).

Wildlife: The fleshy fruits of dogwoods are very valuable to wildlife, particularly in the Northeast (Martin et al. 1951). The fruit ripens in late summer, and besides being available through the fall, some of the berries may persist on the plants into the winter months. Wildlife browse the twigs, foliage, and fruits. Birds known to eat the fruit include: wood ducks, eastern bluebirds, cardinals, catbirds, long-tailed chats, crows, purple finches, yellow-shafted flickers, crested flycatchers, grosbeaks, kingbirds, American magpies, mockingbirds, crested mynah birds, orioles, robins, yellow-bellied sapsuckers, European starlings, tree swallows, scarlet tanagers, brown thrashers, thrushes, vireos, pine warblers, cedar waxwings, and woodpeckers. Game birds who eat both the fruits and buds include grouse, ring-necked pheasants, band-tailed pigeons, greater prairie chickens, bobwhite quail, and wild turkeys. The shrubs provide excellent nesting habitat for songbirds. Mammals that eat the fruit and foliage include black bear, beaver, mountain beaver, cottontail rabbits, raccoons, eastern skunks, squirrels, chipmunks, mice, and rats. Deer, elk, Mountain goat, and moose browse the twigs and foliage.

Landscaping & ornamental: Redosier dogwood is often planted as an ornamental, both to beautify the landscape and to attract birds. Dogwood is often used for landscaping and as a secondary plant in windbreaks.

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: Dogwood Family (Cornaceae). Redosier dogwood is a woody deciduous shrub generally 1.4-6 m (4.6-20 ft) tall. The bark and twigs are reddish to purple and fairly smooth from autumn to late spring; after the leaves have fallen, the deep burgundy branches add color to the winter landscape. The bark, twigs, and leaves are bright green in spring through summer. The simple, opposite leaves are 5-10 cm (2-4 in) long, dark green above and hairy and lighter-colored below, with smooth margins, rounded bases, pointed tips, and falsely parallel veins. Flowering occurs from June to August. The inflorescence is a cyme, with 2-3 mm (0.08-0.12 in) white to cream-colored flowers. The white berries are smooth on the faces, furrowed on the sides.

Distribution

For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site. Redosier dogwood has a wide distribution from California north to Alaska and throughout the country to the eastern United States south to Mexico. It generally grows at elevations below 2500 m.

Establishment

Adaptation: Redosier dogwood grows in soils that are saturated for at least a portion of the growing season. Redosier dogwood is common on the edges of lakes, ponds, within wetlands, and along streams. Not as tolerant of long-term root saturation as are some other shrubs, dogwood seems to prefer wetland margins where soils are nitrogen-rich, saturated, and shallowly inundated in the spring, and may be completely dry by late summer. It is tolerant of fluctuating water tables. The “osier” in redosier dogwood is derived from French, meaning “willow-like”; it is often called red willow because of its red stems.

Propagation from cuttings: Redosier dogwood can be started easily by division, french layering, and hardwood cuttings. To propagate suckers by division:

- Lift a root with suckers on it without disturbing the parent plant. Check that there are fibrous roots at the base of the suckers.
- Remove the suckering roots by cutting it off close to the parent plant. Firm the soil around the parent plant.
- Cut the main root back to the fibrous roots, then divide the suckers so that each has its own roots. Cut back the top-growth by about half.

- Treat each sucker or hardwood cutting at the base with IBA at 20,000 ppm liquid formulation to promote rooting. Alternatively, treatment with 2 percent IBA talc; this will promote rooting on both suckers and stem cuttings.
- Replant the suckers in open ground in prepared holes with good potting soil. Firm the soil around the suckers and water.
- Before growth starts in the spring, lift the plant. Break the clump into sections, retaining those with vigorous shoots and well-developed roots.
- Prune any damaged roots, and cut back the top-growth by one-third to a half to reduce water loss. Replant the divisions in the open and water in dry weather.
- Ultimately, simply lift a suckering root, sever it from the parent plant, and then replant it in the open.

To ensure survival of cuttings or suckers through the following winter in cold climates, the potted cuttings should be kept in heated cold frames or poly-houses to hold the temperature between 0-7°C (32-45°F). Rooted cuttings that had shoot growth in the fall, but were not given nitrogen, had the best over-winter survival in a cold frame with microfoam.

French layering: Layering is a method where a stem is encouraged to develop roots before being removed from the parent plant.

- In spring, plant a rooted layer or young plant, label it, and grow it for a season. Then, in the dormant season, cut back the stem to within 3 inches (8 cm) of the ground.
- In the following spring, apply a balanced fertilizer at the rate of 2-4-oz/sq yd (60-110 g/sq m). Space the stems evenly again; dropping each into a 2-inch (5-cm) deep trench. Peg down each stem and cover with soil, leaving the shoot tips exposed. Hill up all but 2-3 inches (5-8 cm) of the new shoots as they develop, until the mound is 6 inches (15 cm) high. Water as needed.
- After leaf fall, carefully fork away the soil from around the new shoots until the stems that were laid horizontally are exposed. Cut these flush with the basal area of the stems. Then cut the stems to separate the rooted sections. Pot these or plant them out in the open garden, and label them. The same redosier dogwood basal area may be used to propagate further layers.

Propagation by seed: Redosier dogwood is established easily from seed. The best germination is obtained if the seeds are gathered as soon as the fruit starts to color or ripen, from August to October. If

the seeds are allowed to dry out, it is best to remove seeds from the fruit and soak in water.

The best results are obtained from fall sowing of freshly harvested seeds. Fruits collected too late to sow in the fall should be stored, pre-chilled until the next season, and sown outdoors the following fall. To effectively condition the seed for germination, store for two months in moist sand at 5°C for 90 days. After pre-chilling, expose the seeds to fluctuating temperatures from 12/72°C for 10 days (Young and Young 1992). With some species, the warm stratification period may be replaced by mechanical scarification or soaking in sulfuric acid. Seeds sown in nursery beds should be covered with 0.25-0.5 in (0.6-1.25 cm) of soil. Fall-sown beds should be mulched during the winter.

Management

Redosier dogwood is often coppiced in late fall after the leaves turn brown and fall off the stem. Cut all stems to approximately 2-3 in (5-8 cm) from the base before growth begins in spring. Apply fertilizer around the shrub to promote new growth, then apply mulch around the base. Coppicing stimulates the growth of new, vigorous stems whose deep burgundy color is especially vivid.

Traditional resource management: Redosier dogwood was traditionally tended by pruning or burning to produce long straight stems.

- Often basket weavers will prune many redosier dogwood stems, sometimes replanting the stems, so there will be nice straight basketry material the following year.
- Before gathering, offerings of thanks and prayers for permission to gather are given. Often tobacco or sage or other offerings are given before beginning to gather.
- Basket weavers process materials with their hands and mouths. Herbicides sprayed along streams have a much higher health risk for humans when they are processed and used for traditional materials.

Overgrazing, especially by livestock and big game, frequently changes plant species composition and growth form, density of stands, vigor, seed production of plants, and insect production. Livestock grazing can cause the replacement of bird and mammal species requiring the vertical vegetation structure of riparian habitat to species, which are ubiquitous in their habitat preferences. Previous heavy cattle grazing changed the bird and small mammal community composition in riparian areas through reduction of shrub and herbaceous cover.

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

Cultivars: ‘Alman’s Compacta’, ‘Allamans’, ‘Bailey’, ‘Cardinal’, ‘Coloradensis’, ‘Flaviromea’, ‘Isanti’, ‘Kelsey’, ‘Lutea’, ‘Ruby’, ‘Silver’ and ‘Gold’, and ‘White Gold’ have been planted in the growing range of redosier dogwood.

Consult your local nurseries to choose the right cultivar for your specific landscape.

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Red-osier dogwood

Cornus sericea

Growth Form: irregular

Crown Density: open

Size: to 8 feet high
to 6 foot spread

Drought Resistance: fair

Cold Hardiness: excellent

Growth Rate: rapid

Life Span: moderate

Elevational Range: to 11,000 feet

Soil Conditions: not suited for dense clays

Possible Insect Problems: dogwood sawfly, polyphemus
moth, oystershell scale

Possible Disease Problems: cytospora canker

Wildlife Value: excellent: grouse, pheasant, turkey, grosbeak,
robin, cedar waxwing

Seasonal Color: vivid red fall foliage and stems. Showy white
flowers and berries

Miscellany: for moist sites such as streamside riparian areas

Dogwood close-up courtesy Natural Resources Conservation Service



AMERICAN ELDER

Sambucus nigra L. ssp. *canadensis*
(L.) R. Bolli

Plant Symbol = SANIC4

Contributed by: USDA NRCS Plant Materials Program



Robert H. Mohlenbrock
USDA, NRCS 1989
Midwest Wetland Flora
@USDA NRCS PLANTS

Warning: New growth of American elder contains a glucoside than can be fatal to livestock.

Alternate Names

Sambucus canadensis L., common elderberry

Uses

At least 50 species of songbirds, upland game birds, and small mammals relish the fruit of American elder during summer and early fall. White-tailed deer browse the twigs, foliage and fruit during the summer. American elder is outstanding as nesting cover for small birds. During summer, the partial shade under American elder promotes a dense ground cover of grasses and forbs that offers good loafing or feeding areas for broods of young pheasants and quail.

American elder can be used for erosion control on moist sites. It pioneers on some strip-mine spoils and may occasionally be useful for reclamation planting.

It is very decorative when in bloom; elder flowers later than most shrubs. Elderberries are also attractive to makers of pies, jellies and wine.

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 and Adaptation

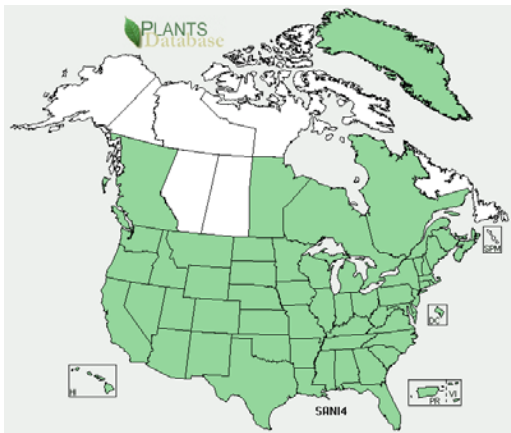
The American elder is an erect, thicket-forming, somewhat woody shrub, 4-12 feet tall, with smooth yellowish-gray branchlets and white pith. Compound leaves are set oppositely in pairs in a feather-like arrangement. The leaf surface is bright green. The oval to lance-shaped leaflets are up to 6" long and 2 1/2" wide, with finely serrated margins. They are abruptly narrowed at the tip and lopsidedly narrowed or rounded at the base. Leaflets are usually held on short stalks; the terminal leaflet is on a longer stalk.

Numerous 1/4" fragrant white flowers emerge from late June into August. The terminal clusters of flowers, measuring 4"-10" across, are broad, flat or slightly rounded and long-stalked. Flowers usually develop in the second-year on older canes, and are arranged in branched clusters of 5.

Fruits ripen from late July into September. They are round, slightly bitter, edible purple-black berries with crimson juice. Each is less than 1/4" across, borne in large clusters. Each berry contains 3-5 small seeds. Seed dispersal occurs from July to October, usually through vigorous ingestion by birds and mammals. There are about 230,000 seeds per pound.

American elder occupies well-drained, slightly acid soil bordering streams, and in the adjacent bottomlands, but also grows on gray forest soils and muck. This shrub is widespread and abundant. American elder grows best in full sunlight. Once established, elders soon outdistance herbaceous competition. Thickets of elder are replaced by more shade-tolerant species during the later stages of forest succession, but individual plants and small runners will persist under a forest canopy.

American elder is distributed primarily throughout the eastern and Midwestern United States.



Common Elderberry distribution from USDA-NRCS PLANTS Database.

For updated distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment

American elder naturally reproduces from seeds, sprouts, layers, and root suckers. Variable degrees of hard-seediness and embryo dormancy are exhibited. Prior to spring or fall planting, the seed should be scarified with sulfuric acid, also stratification at 36-40 degrees F for two months is required for spring planting. Seedling growth is rather slow during the first year.

Elders can also be propagated from 10” to 18” hardwood cuttings taken from vigorous one-year-old canes, each must include three sets of buds. Cuttings may be taken while dormant, placed in moist peat or sphagnum moss, and held in cold storage at approximately 40 degrees F for spring planting. One-year-old seedlings or rooted cuttings are usually large enough for field planting.

Management

Mulching around each plant will improve seedling survival. Annual pruning will considerably improve fruit yield. Removal of terminal shoots and dead canes will reduce winter-kill and help control elder borers.

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

Seedlings or rooted cuttings are available commercially. Horticultural selections or local and regional ecotypes are marketed by nurseries. Vintage Germplasm was released through the USDA-NRCS Plant Materials Program in 2010. Vintage Germplasm is a selected class release that was evaluated for characteristics important to conservation uses, including stem production, plant height, fruit production and ability to regrow after cutting.

Prepared By

USDA NRCS Northeast Plant Materials Program

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Sambucus canadensis (American elder, Elderberry)



Hardiness Zones:

1	2	3	4	5	6	7	8	9	10	11
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Botanical Name: *Sambucus canadensis* sam-BOO-kus kan-ah-DEN-sis **Common Name:** American elder, Elderberry **Genus:** *Sambucus*

A familiar native shrub, American elderberry is commonly seen along streambanks and roadsides and in moist woodlands and thickets throughout eastern North America. It has pinnate leaves with toothed leaflets and small white flowers borne in large flattened clusters in summer. Purple-black, round fruit comes next, attracting wildlife to the garden. Elderberries typically grow to about 12 feet high, but they tolerate pruning to a smaller size. Fruit is edible when cooked.

Noteworthy characteristics: Elderberry is native to eastern North America. It's a good wildlife plant, with its numerous white flowers in summer and purple-black berries in late summer and fall. All parts of the plant can cause severe discomfort if eaten, but fruit is safe when cooked.

Care: Grow in average, medium to wet, humusy soil in full sun to part shade. Prune out dead or weakened stems in early spring. Can be hard pruned if needed to restrict size.

Propagation: Sow seed in containers in autumn in an open frame. Take hardwood cuttings in winter or greenwood cuttings in early summer. Colonizes by root suckers.

Problems: Powdery mildew, canker and dieback, rust, virus diseases, fungal leaf spots, borers.

Height	10 ft. to 15 ft.
Spread	10 ft. to 15 ft.
Growth Pace	Moderate Grower
Light	Full Sun to Part Shade
Moisture	Medium to Wet
Maintenance	Moderate
Characteristics	Attracts Birds; Attracts Butterflies; Native; Showy Flowers; Showy Foliage; Showy Fruit
Bloom Time	Summer
Flower Color	White Flower
Uses	Beds and Borders, Roadside, Screening, Waterside
Seasonal Interest	Summer Interest, Fall Interest
Type	Shrubs

Taken from:
www.finegardening.com

Siberian Elm



Siberian Elm (*Ulmus pumila*)

General Description

A very hardy, fast growing tree with brittle wood which is subject to breakage. Extremely susceptible to insect, disease, and herbicide damage, which makes it an undesirable tree. Often confused with Chinese elm (*Ulmus parvifolia*) which is not hardy in North Dakota. The largest tree in North Dakota is 60 feet tall with a canopy spread of 55 feet.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Blackish-brown with ciliate hairs along the edge of bud scales.

Bud Size - 1/8 to 1/4 inch.

Leaf Type and Shape - Simple, unequal at base, elliptic to elliptic-lanceolate.

Leaf Margins - Nearly simply-serrate.

Leaf Surface - Smooth above, glabrous beneath or slightly pubescent when young.

Leaf Length - 3/4 to 3 inches.

Leaf Width - 1/3 to 1 inch.

Leaf Color - Dark green.

Flowers and Fruits

Flower Type - Polygamo-monoecious.

Flower Color - Greenish-red to brown.

Fruit Type - Round winged samara, with the seed in the center of the samara.

Fruit Color - Brownish-tan.

Form

Growth Habit - The habit is rather open, with several large ascending branches with flexible, brittle, pendulous branchlets.

Texture - Medium-fine, summer; medium, winter.

Crown Height - 25 to 50 feet.

Crown Width - 20 to 40 feet.

Bark Color - Light gray to gray-brown.

Root System - Spreading.

Environmental Requirements

Soils

Soil Texture - Adapted to almost any soil texture.

Soil pH - 5.5 to 8.0. Exhibits alkaline and saline tolerance.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5, 6D, 6G, 8, 9C, 9L.

Cold Hardiness

USDA Zone 3.

Water

Drought tolerant. Does not withstand ponding.

Light

Full sun to partial shade.

Uses

Conservation/Windbreaks

Medium to tall tree for farmstead and field windbreaks.

Wildlife

Mostly used for nesting sites in windbreaks.

Agroforestry Products

Wood - Firewood, but difficult to harvest.

Medicinal - Some *Ulmus* species were used for inflammations, burns, cold sores, and wound treatments.

Urban/Recreational

A less desirable tree species due to dieback and short life, especially when exposed to phenoxy herbicides.

Cultivated Varieties

Ulmus pumila 'Dropmore' - A cultivar named in Manitoba of Harbin, Manchuria seed source.

Related Species

Chinese Elm (*Ulmus parvifolia*) and numerous cultivars - Not hardy in North Dakota.

Promising Dutch elm disease resistant hybrid elms from crosses of Siberian Elm (*U. pumila*) and Japanese Elm (*U. davidiana* var. *japonica*) e.g. Sapporo Autumn Gold Elm (*U. x* 'Sapporo Autumn Gold'), Cathedral Elm (*U. x* 'Cathedral'), New Horizon Elm (*U. x* 'New Horizon') and Vanguard Elm (*U. x* 'Vanguard').

Hybrid elms from crosses of Siberian Elm (*U. pumila*) and Slippery Elm (*U. rubra*), e.g. Green King Hybrid Elm (*U. x* 'Green King') also have good to excellent Dutch Elm disease resistance.

Pests

Common diseases include Tubercularia canker, Botryodiplodia canker and wetwood. Common insect pests include cankerworm. Very sensitive to phenoxy herbicides.

SIBERIAN ELM

Ulmus pumila L.

Plant Symbol = ULPU

Contributed by: USDA NRCS National Plant Data Center



Herman, D.E. et al. 1996
North Dakota Tree Handbook

Caution: This plant may become invasive.

Alternate names

Chinese elm, dwarf elm, Asiatic elm

Uses

Ethnobotanic: The inner bark of Siberian elm was dried and ground into a powder for thickening soups or adding to cereal flours in bread making. Immature fruit was used to produce sauce and wine (Facciola, 1990) and the wood was used for agricultural implements and boat making (Vines, 1987).

Agroforestry: Siberian elm is planted and managed in tree strips as windbreaks to protect livestock, enhance crop production, and control soil erosion. Windbreaks also function to shelter home buildings against harsh weather conditions and help reduce home heating and cooling costs.

Landscape: Siberian elm has limited ornamental value (Dirr, 1990), although it has been used in the Midwest for shade along boulevards and in parks.

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.

Weediness

This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Please consult with your local NRCS Field Office, Cooperative Extension Service office, or state natural resource or agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at plants.usda.gov.

Description

General: Elm Family (Ulmaceae). Siberian elm is an introduced, fast-growing tree, from 50 to 70 feet in height. Its leaves are alternate, oblong in shape, 1 to 3 inches long, and usually have serrate (saw-toothed) margins. The flowers are greenish and clustered with short pedicels, and appear with or before the leaves from March through April (Vines, 1960). The bark is a light gray-brown with irregular furrows and is often streaked with stains caused by bacterial wetwood. The fruit, a samara, ripens from April to May, and consists of a dry, compressed nutlet surrounded by a thin, membranous wing (Ibid.).

Adaptation and Distribution

Siberian elm, an extremely hardy tree, is native to northern China, eastern Siberia, Manchuria, and Korea. It was introduced to the United States in the 1860s and can be found on dry sites as well as along moist stream banks, in pastures and on grasslands. This species prefers well-drained, fertile soil and full sun, however, it is highly adaptable and easily tolerates, even thrives in, a variety of conditions such as poor, dry soils, cold winters and long periods of summer drought. Siberian elm has invaded mesic, dry, and sand prairies.

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

Establishment

Propagation by seed: Siberian elm seeds do not need pretreatment and should be sown as soon as ripe in the spring. Excessive drying and dewinging will reduce viability, though the seeds may be stored at 36-40° F for up to 8 years if moisture content is kept at 3-8% (Dirr and Heuser, 1987). Seeds are sown in a cold frame, 12 to 20 per linear foot, in rows ten inches apart, and covered with ¼ inch of firmed soil. The seedbeds should be kept moist and not overly shaded. When the seedlings are large enough to handle, they are transplanted to individual pots and grown in a greenhouse for the first winter. Siberian elm seedlings are outplanted into their permanent positions in late spring or early summer the following year. Seedlings should not be held in a nursery bed for more than two years because they will develop a taproot that makes lifting difficult and reduces outplanting survival rates.

Management

Rosendahl, 1955, noted that some Siberian elm plantings in the Upper Midwest were unsuccessful because seed was collected in climatically different geographical areas of the species range and had varying levels of winter hardiness. Siberian elm may become weedy and require removal.

Pests and Potential Problems

Siberian elm is resistant to Dutch elm disease and phloem necrosis and has been used to breed resistance into elm hybrids (Dirr, 1990). Leaf damage from elm leaf beetle has been noted in the south. (Ibid.)

Environmental Concerns

This species has been declared invasive in New Mexico.

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

Siberian elm plant materials are readily available through commercial sources.

Control

Please contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read the label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA, NRCS does not guarantee or warrant the products and control methods named, and other products may be equally effective.

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Siberian elm

Ulmus pumila



Growth Form: irregular
Crown Density: moderate
Size: to 40 feet high
30-40 foot spread
Drought Resistance: excellent
Cold Hardiness: excellent
Growth Rate: rapid
Life Span: moderate
Elevational Range: to 8,000 feet
Soil Conditions: tolerates alkaline well
Possible Insect Problems: elm leaf beetle
Possible Disease Problems: bacterial wetwood
Wildlife Value: moderate: song and game birds (seeds and buds)
Seasonal Color: not conspicuous
Miscellany: hardest of all elms; can be weedy



Taken from: Trees for Conservation, a buyer's guide, Colorado State Forest Service