

DWARF WILLOW

Salix x cotteti Jos. Kern.

plant symbol = SACO28

Contributed by: USDA NRCS Plant Materials Program



USDA NRCS National Plant Materials Center
Beltsville, MD

Uses

Dwarf willow is recommended for erosion control plantings along small stream channels and shorelines exposed to low to moderate energy. It can be incorporated into soil bioengineering systems to control erosion along streambanks and shorelines resulting from flood and ice damage. Fast growth, resilient stems, and ability to recover from mechanical damage make it an ideal plant for this use. When used in this manner, it provides cover for small animals and browse for deer, beaver, and rabbits and exceptional nesting sites for birds.

This willow is also suitable for use as a living snow fence and/or a farmstead windbreak where moisture is adequate.

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

Dwarf willow is a small to medium sized shrub growing only 6 to 8 feet high, with smooth, slender, tough, resilient branches that are lime green at first but later change to a darker green. The cultivar, 'Bankers' was introduced from the alpine region of West Germany in the mid-1960s. This selection is a natural hybrid between *Salix retusa* L. and *Salix myrsinifolia* Salisb. It is a sterile hybrid, therefore it produces no seed.

'Bankers' is a semiprostrate shrub, sending up many branches from the roots to form a dense surface cover. The roots themselves form an interlocking network to tie the soil together. It rarely spreads by layering of branches. Growth is rapid from cuttings, with plants reaching full height in 3 to 5 years. Plantings made on 2-foot centers can produce solid stands in 2 to 3 years.

Adaptation and Distribution

Dwarf willow grows best on moist sites that are subject to periodic flooding and overflow. It can be used on soils of any texture. Dwarf willow competes well with herbaceous plants that are less than 2 feet tall. The cultivar 'Bankers' is climatically adapted throughout the Appalachian region from New York to Alabama, and has also been used successfully in Oregon and Washington west of the Cascade Range.

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

Establishment

Dwarf willow is susceptible to severe browsing by livestock and cannot be established on streambanks and shorelines adjacent to pastures without protection. Banks that are eroded and undercut to a steep slope require grading prior to planting.

Cuttings: Plant as one year old rooted cuttings, or dormant hardwood cuttings. If dormant cuttings are used, they should be 3/8 to 3/4 inch at the narrow end, 12 to 15 inches long, and made before the leaves emerge (one month before the last frost locally). Dormant cuttings should be planted vertically at a 12-inch spacing between plants and rows with only an inch or two protruding; a minimum of five rows should be planted. If they cannot be pushed in the soil by hand, use a rod to make a hole but be sure the

cutting is tamped in well with the heel to avoid leaving any air spaces. If the soil is too stony to for this technique, the cutting may be buried horizontally about two inches deep in damp soil. Rooted cuttings should be planted at a 18 to 24-inch spacing between plants and rows in a hole dug big enough to accommodate the root system when well-spread. A minimum of three rows should be planted. Plant rooted or unrooted cuttings from just above normal high water (the elevation at which persistent vegetation begins on adjacent sites) up the bank to the point where soil moisture prohibits willow survival. *Soil Bioengineering Uses:* Dormant whips are very useful when bundled into wattles (live fascines) or for brush layering and brush matting systems. 'Bankers' willow can be produced in the nursery to specification to meet all the above uses. Planting methods for soil bioengineering are regionally varied. Consult with the Plant Materials Specialist for planting recommendations. Plant dormant whips from just above normal high water (the elevation at which persistent vegetation begins on adjacent sites) up the bank to the point where soil moisture prohibits willow survival.

Seedings (Permanent or Temporary Nurse Crops). On highly erodible sites and sites where wildlife habitat is a concern, seeding grass with the willow may be desirable. It is critical that the seedings be made with species and at seeding rates that will not impact the survival of the willow. Perennial species should be native grasses such as deertongue, river oats, or switchgrass, or low-growing, low maintenance exotic grasses such as reedtop, red fescue, or creeping bentgrass. Annual species should be small grains such as wheat, rye, or oats, or millets. The following species are too competitive and not compatible with willow plantings: tall fescue, reed canarygrass, orchardgrass, bermudagrass, and annual and perennial ryegrass.

Steep Slopes, High Velocity Streams, and High Energy Shorelines. On difficult sites, it is sometimes necessary to stabilize the toe of the slope with riprap or gabions and mulch the planting. Consult an engineer and plant materials specialist about the need for stabilization of the toe of the slope. Mulching may be accomplished with erosion control blankets that may be installed before the planting is established and the rooted or unrooted cuttings may be planted through the blankets. Erosion control blankets must be anchored on all four edges of the planting according to manufacturer's recommendations to prevent the blanket being washed away. The blankets

must also be staked according to the manufacturer's recommendations. Mulching may also be with straw or coarse plant material, even anchoring it with stakes and wires in some cases.

Management

Dwarf willow used on streambanks is subject to considerable mechanical damage. The site should be inspected annually in spring, after heavy run-off has subsided, for needed repairs. Residue such as branches and tree trunks washed onto the planting should be removed. Gaps should be filled in by replanting, or using branches of nearby plants as unrooted cuttings or wattles (live fascines). Any mechanical measures used to control the bank, such as stone rip-rap, must be maintained as well.

Pests and Potential Problems

There are no serious pests or diseases of dwarf willow. Browsing livestock, deer, rabbits, and beavers may have an impact on survival and growth. Plantings adjacent to livestock pastures must be fenced to prevent damage.

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

A variety of dwarf willow from the alpine region of Western Germany, 'Bankers', was released by the Quicksand, Kentucky Plant Materials Center in 1983. The Quicksand, Kentucky Plant Materials Center has relocated to Alderson, West Virginia and is now known as the Appalachian Plant Materials Center. Foundation plant materials to establish commercial nurseries of 'Bankers' dwarf willow are available from the Appalachian Plant Materials Center. Rooted and unrooted cuttings, whips, and wattles can be purchased from a variety of commercial nurseries in the Northeast.

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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 <<http://plants.usda.gov>> and Plant Materials Program Web sites <<http://Plant-Materials.nrcs.usda.gov>>.

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