USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Plant Guide

ALKALI BULRUSH
Schoenoplectus maritimus (L.) Lye
Plant Symbol = SCMA8

Contributed by: Idaho Plant Materials Center & the Interagency Riparian/Wetland Project

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Alternative Names
Cosmopolitan bulrush, *Scirpus maritimus*, *Bolboschoenus maritimus*

Uses
Erosion Control, Restoration, & Constructed Wetlands: As a pioneering species, it will provide protection from wind and wave erosion especially for newly exposed soil. The rhizomes form a matrix for many beneficial bacteria making this plant an excellent choice for wastewater treatment constructed wetlands.

Wildlife & Livestock: Livestock and big game will rarely use this species for food. Palatability is low.

Waterfowl will utilize the seed and use the stems for nesting cover. Muskrats and beaver will eat the rootstocks and young shoots. They will also use the shoots for building material.

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: Sedge Family (Cyperaceae). Alkali bulrush is a native perennial, heavily rhizomatous, obligate, wetland plant that may reach 15 dm in height and form dense stands. The stems are upright and angular with several leaves, up to 1 cm wide, along the lower two thirds of the plant. The flowers are borne in sessile spikelets, densely clustered at the tip of the stem, and nestled in 3 or more leafy bracts. Spikelets are 1.2-2 cm long. The seeds are brown lenticular achenes, 2.5 to 4 mm long.

Distribution
In the U.S., it ranges from the West Coast, east to Minnesota, and south to Louisiana. It is also found in the northeastern United States. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site.

Establishment
Adaptation: Alkali bulrush is found at low to mid elevations in marshes, transient wet spots, pond margins, and backwater areas. It forms large dense stands in alkaline or saline sites. It can handle a pH of up to 9.0. It will grow on soils from fine clay to silt loam to sand. It can survive periods of total inundation of up to 1 m deep. It tends to spread and reproduce when the water table is within 10 cm of the surface. It can occur in freshwater sites, but is usually a pioneering species that will be replaced over time with more permanent species. Seed and rhizome growth spread it. It is fairly resistant to fire, which will increase its production and protein content.

Seed Collection: Seed ripens in late August to October. Seeds are held tightly in the seedhead, which means the collection time can be extended.

Seeds may be collected by hand stripping the seed from the plant or clipping it using a pair of hand shears. A power seed harvester may also be used. The bracts, which are found in the seed heads, are very irritating to the skin. Gloves and protective eye ware should be worn, especially when using a power seed harvester.
Seed Cleaning: The hammermill is used to break up the large debris and knock the seed loose from the stem. Cleaning can be accomplished using a seed cleaner with a No. 8 round top screen and a 1/8-inch bottom screen. Screens should be sized so desired seed will fall through and debris and weed seed are removed. Air velocity should be adjusted so chaff is blown away. Air flow and screen size may require adjustment to optimize cleaning process for given situation.

Propagation: Stratifying the seed in a mixture of water and sphagnum moss at 2°C for 30 days may enhance the germination rate. Seed viability is quite high if stored properly for up to 20 years.

Within the greenhouse, seeds need light, moisture, and heat for germination. Place seeds on surface of soil and press in lightly to assure good soil contact. Do not cover seed. Soil should be kept moist. The greenhouse should be kept hot (32°C to 38°C). Germination should begin with in about one week. Maintain moisture until plants are to be transplanted.

Wild plants for transplant can be collected and transplanted directly into the desired site. As long as no more than 4 dm2 is removed from any 1-m2 area, the hole will fill in within one growing season. Care should be taken not to collect plants from weedy areas, as these weeds can be relocated to the transplant site, and the hole left at the collection site may fill with undesirable species.

Planting: Planting plugs (either from the greenhouse or wild transplants) is the surest way to establish a new stand of this species. Plug spacing of 30 to 45 cm will fill in within one growing season. Soil should be kept saturated. It can handle from 5-8 cm of standing water during the establishment year. Fluctuating the water level during the establishment period is essential. Water levels can be managed to enhance spread and control weeds.

Maintenance: Plants can tolerate up to 1 m of standing water for short periods of time. Typically, the water will be high in the spring and decrease throughout the growing season to within 1 m of the surface in the fall. This species can tolerate periods of drought and total inundation. Water levels can be managed to enhance or reduce spread as well as control terrestrial weeds.

Environmental Concerns: Generally, insects and disease are not a problem. If an insect or disease problem is encountered in the greenhouse, treat as you would for any other type plant.

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Cultivars, Improved and Selected Materials (and area of origin)
The Intermountain Interagency Riparian/Wetland Plant Development Project released four performance-tested ecotypes for areas within its service area in 1997. These are listed below.

Bear Lake Selection: Accession Number 9067380, for Land Resource Region (LRR) B East from Bear Lake National Wildlife Refuge (NWR), just south of Montpelier, Bear Lake County, Idaho.

Fort Boise Selection: Accession Number 9057579, for LRR B West from Fort Boise Wildlife Management Area, west of Apple Valley, Canyon County, Idaho.

Stillwater Selection: Accession Number 9067428, for LRR D North from Stillwater NWR, northwest of Fallon, Churchill County, Nevada.

Bear River Selection: Accession Number 9067374, for LRR D South from Bear River Migratory Bird Refuge, west of Brigham City, Box Elder County, Utah.

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under ”United States Government.” The Natural Resources Conservation Service will be listed under the subheading “Department of Agriculture.”

References

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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>