

# WETLAND PLANT FACT SHEET

INTERAGENCY  
RIPARIAN/WETLAND PROJECT  
USDA-NRCS  
Plant Materials Center  
Aberdeen, Idaho 83210

## Alkali Bulrush (*Scirpus maritimus*)

Alkali Bulrush is a perennial, heavily rhizomatous wetland plant that 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. Alkali bulrush can grow in soils with a pH of up to 9.0, and soil textures from fine clays to silt loams to sands. 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. Alkali bulrush can occur on freshwater sites, but is usually a pioneering species that will be replaced over time with more permanent species. It is spread by seed and rhizome growth. This species is fairly resistant to fire which will increase its production and protein content. Currently accepted name is *Bolboschoenus maritimus* (L.) Palla.

### DESCRIPTION:

**Habit** -- Perennial, rhizomatous wetland obligate. Forms dense stands.

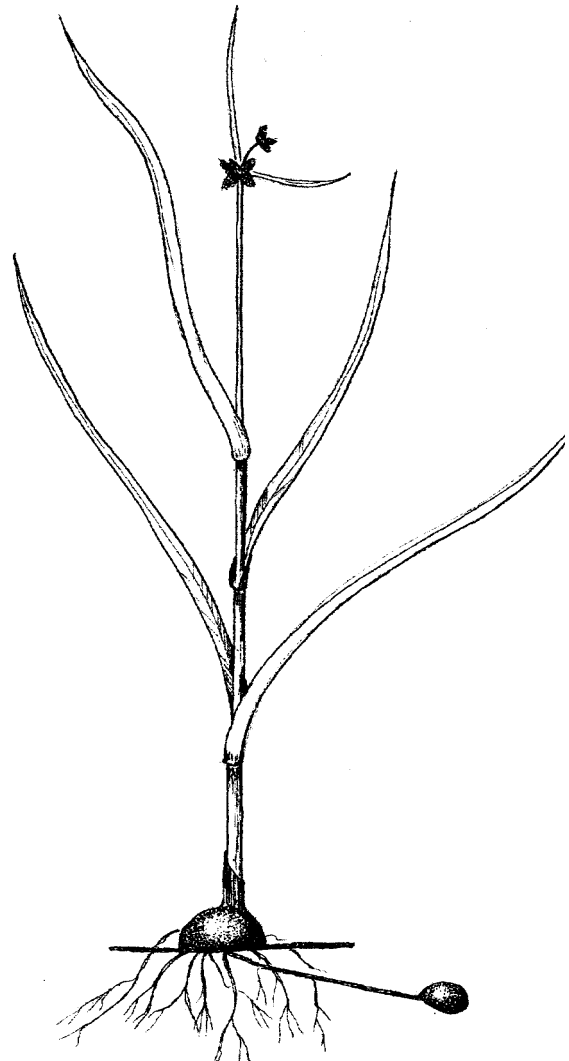
**Stems** -- Upright, triangular, up to 15 dm tall.

**Leaves** -- Several along the lower two thirds of the plant, well developed, elongate, up to 1 cm wide.

**Spikelets** -- three to 20 terminal spikelets, densely clustered at the tip of the stem and nestled in 3 or more leafy bracts. Spikelets are 1.2-2 cm long by 6- 10mm wide.

**Fruits** -- Brown lenticular achenes, 2-4 mm long.

**Distribution** -- From the West Coast of the US east to Minnesota and south to Louisiana. Also found in the northeastern US.



(Drawing by G. Bentrup)

## SEED COLLECTION:

Seeds ripen 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 the seedhead using a pair of hand shears. A power seed harvester may also be used. The bracts which are found in the seedheads are very irritating to the skin. Gloves and protective eye wear should be worn, especially when using a power seed harvester.

## CLEANING:

A hammermill is used to break up the large debris and knock the seeds 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 seeds are removed. Air velocity should be adjusted so chaff is blown away. Air flow and screen size may require adjustment to optimize the cleaning process for given situation.

## PROPAGATION:

*Special procedures* -- The germination rate may be enhanced by wet prechilling the seed in a mixture of water and sphagnum moss at 2°C for 30 days. Seed viability is quite high if stored properly for up to 20 years.

*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. Greenhouse should be kept hot (32°-38°C).

Germination should begin within about 1 week. Maintain moisture until plants are to be transplanted.

*Wild transplants* -- Wild plants can be collected and transplanted directly into the desired site. As long as no more than 4 dm<sup>2</sup>, 13-15 cm deep, is removed from any 1 m<sup>2</sup> 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. In addition, the hole left at the collection site may fill with undesirable species.

## ESTABLISHMENT AND MAINTENANCE OF STANDS:

*Establishment* -- Planting plugs (either from the greenhouse or wild transplants) is the surest way to establish a new stand of this species. Plug spacing of 30-45 cm will fill in within one growing season. Soil should be kept saturated. This species 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 decline 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 either enhance or reduce spread as well as control terrestrial weeds.

## **INSECT AND DISEASE PROBLEMS:**

Generally not a problem. If an insect or disease problem is encountered in the greenhouse, treat as you would for any other plant species.

## **WILDLIFE AND LIVESTOCK USES:**

Livestock and big game will rarely use this species. 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.

## **ANTICIPATED CONSERVATION USES:**

Erosion control, Constructed Wetland System applications, wildlife food and cover, wetland creation and restoration, and for improvement of plant diversity in wetland and riparian communities. As a pioneering species, it will provide protection from wind and wave erosion especially for newly exposed soil. The rhizomes also form a matrix for many beneficial bacteria, making this plant an excellent choice for wastewater treatment.

## **RELEASED SELECTIONS:**

The Interagency Riparian/Wetland Plant Development Project released four performance tested ecotypes for areas within its service area in 1997. The following is a list of those Selected releases:

### **Bear Lake Selection of Alkali**

**Bulrush** (*Scirpus maritimus*),  
Accession Number 9067380, for  
Land Resource Region (LRR) B East  
from Bear Lake National Wildlife  
Refuge (NWR), just south of the  
town of Montpelier, Bear Lake  
County, Idaho.

### **Fort Boise Selection of Alkali**

**Bulrush** (*Scirpus maritimus*),  
Accession Number 9057579, for  
Land Resource Region (LRR) B  
West from Fort Boise Wildlife  
Management Area, west of the town  
of Apple Valley, Canyon County,  
Idaho.

### **Stillwater Selection of Alkali**

**Bulrush** (*Scirpus maritimus*),  
Accession Number 9067428, for  
Land Resource Region (LRR) D  
North from Stillwater National  
Wildlife Refuge, northwest of the  
town of Fallon, Churchill County,  
Nevada.

### **Bear River Selection of Alkali**

**Bulrush** (*Scirpus maritimus*),  
Accession Number 9067374, for  
Land Resource Region (LRR) D  
South from Bear River Migratory  
Bird Refuge, west of Brigham City,  
Box Elder County, Utah.

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