

BLACK MANGROVE

Avicennia germinans (L.) L.

Plant Symbol = AVGE

Contributed by: USDA NRCS Plant Materials Center
Golden Meadow, Louisiana



Garret Thomassie, USDA NRCS Golden Meadow PMC

Alternate Names

None in common usage

Uses

Black mangrove is valuable in soil conservation in brackish and salt water marshes. It serves as nursery habitat for crustaceans and fish, and filters sediment for building new marsh. Black mangrove also mixes well with other native plants to reduce wave energy

Status

This species is native to the Gulf of Mexico and has not been identified as invasive or detrimental to the environment. Black mangrove is a native and valuable component of the marsh ecosystem.

Please consult the PLANTS website 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

General: Black mangrove is a subtropical native woody shrub that grows in salt marshes. Mangroves are very hardy, having become adapted to harsh environments where water and salinity levels fluctuate. Pneumatophores, or breather roots, form a network, collecting silt and debris and controlling erosion.

The pneumatophores are also excellent nursery areas for crustaceans in the marsh plant community. Height will vary from 4 to 9 feet. Leaves are 1 to 5 inches long, elliptical, opposite, thick, leathery, dark green, glabrous (smooth) above, and grayish with a tight felt-like pubescence beneath. Glands on the underside secrete salt. Clusters of small sessile flowers with white petals, approximately ½ inch in diameter, are borne in the leaf axils or growing tips on the twigs. The fruit are flat, approximately 1 inch long, dark green and glabrous beneath a velvety pericarp. The bark on the black mangrove is thick, dark brown or blackish, with rough irregular flattened scales. Twigs are grayish in color and smooth, with enlargements at the joints. Mangrove detritus (dead leaves and twigs) in water feeds microorganisms that provide food for young marine life.

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

Habitat: Black mangrove grows in the intertidal zone throughout the Gulf of Mexico. Black mangrove is a truly unique plant species that, when established properly, and under applicable conditions, has provided land stabilization due to the easy transport of seedlings, quick aerial root production. Best practice has been to plant two to three year old seedlings because underground root systems increase sediment holding capabilities. This plant also provides for wildlife and marine habitats. (USDA/NRCS Plant Guide: Small, J.K 1933.)

Adaptation

Black Mangrove adaptation is in the sub-tropical to tropical Gulf of Mexico in intertidal zones.

This plant is susceptible to freezing and the native range can be changed drastically by hard winters. The contributions of genetic diversity and habitat are presently under study to determine cold hardiness.

Establishment

Black mangrove establishes in nature from seed that floats and can travel some distance on the tides. Seed will germinate quickly to anchor young seedlings in good habitat.

In the nursery, seed collected in the wild will not survive more than three to four weeks. Seed should be soaked in water, the pericarp removed and the seed planted in any commercial potting soil

Germination normally occurs within a couple of weeks and seedlings take root.



Recalcitrant seed on left, pericarp removed on right
Garret Thomassie, USDA NRCS Golden Meadow PMC

Our experience indicates that a normal variety of commercially available pots will suffice for germination and early growth. Plants can be maintained in fresh water tanks that hold moisture at the bottom of the pots.

Management

There are no data on managing native black mangrove stands. In the Gulf of Mexico the range of black mangrove is “managed” by the winter weather.

Pests and Potential Problems

There are no known pests that could threaten black mangrove stands in the wild.

Environmental Concerns

Black mangrove has persisted in the intertidal marsh and is a valuable component of the ecosystem. Loss of black mangrove is a concern as it is a woody species that persists and assists in habitat development and in breaking wave energy and adds nesting habitat for birds including the pelican.

Care must be taken to planting as black mangrove is very susceptible to freezing. More work needs to be done in collecting ecotypes that might be more frost resistant, or attention to habitat differences.

Seeds and Plant Production

Experience at the NRCS-Golden Meadow Plant Materials Center has shown that seed collected in the Fall (October to early December in South Louisiana) can be maintained for about a month, but should be planted as soon as possible after soaking removing the pericarp. There is work presently being conducted on maintaining seed for delayed

germination, but at present, seed should have the pericarp removed and planted as soon as possible. Seed may be held longer with aeration (Personal communication Mat Benoit).

Two year old seedlings or older (18 inches tall) seem to be best for successful out planting. Various sizes of tubes and pots have been used with success. The greater the root mass (not pot bound) the greater the chance of successful out planting.

Planting where the tidal flow will cover and uncover the root collar is best. Soil types can vary from muck soils to areas that have some sand.



Interior marsh planting
Garret Thomassie, USDA NRCS Golden Meadow PMC

New plantings in areas of high wave energy may have to be protected by baffles or anchoring the seedlings in place until the root system is capable of supporting the plant.

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

The USDA NRCS Plant Materials Centers have released one variety: Pelican Germplasm black mangrove is a pre-varietal release from the Golden Meadow Plant Materials Center, Galliano, Louisiana, selected to provide a plant for soil conservation in brackish and salt water marshes.

Contact your local Natural Resources 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

Benoit, M. (Feb) 2007. *Personal communication*. Nicholls State University, Lake Charles, Louisiana

Small, J.K. 1933. *Manual of the Southeastern Flora*,
University of North Carolina Press, Chapel Hill.

USDA/NRCS Plant Guide *Avicennia germinans*
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PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials
Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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