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A Conservation Plant Released by the Natural Resources Conservation Service
Golden Meadow Plant Materials Center, Galliano, Louisiana

Pelican Germplasm

Black mangrove

Avicennia germinans (L.) L.

Pelican Germplasm black mangrove

Pelican Germplasm black mangrove [*Avicennia germinans* (L.) L.] is a source-identified release from the USDA, Natural Resources Conservation Service (NRCS) in 1994.

Description
Pelican Germplasm black mangrove is a subtropical evergreen shrub growing in a range of heights from 4 to 9 feet tall. Its leaves are opposite, simple, leathery, dark green and glabrous (smooth) above, and grayish with a tight felt-like pubescence beneath. Clusters of small sessile flowers with white petals are borne on the leaf axils or terminally on the twigs. The fruit is flat, asymmetric, velvety 1-seeded pod, dark green and glabrous beneath the velvety pericarp. Specialized roots known as pneumatophores are important for the gaseous exchange of oxygen, improve anchorage in unstable soils and aiding in the trapping of debris and sediment which is important for the detritus cycle.

Source
Pelican Germplasm black mangrove originates from a native stand of black mangroves located near Bayou Tartellon and state highway 3090 in Lafourche Parish, Louisiana. Soil type is a Scatlake muck, silty clay loam in the upper five inches, and clay below five inches. The Scatlake series is a saline, semifluid, mineral soil with an electrical conductivity (EC) of 8-16 mmhos/cm and a pH of 7.4 to 8.4. The site is on a narrow intertidal flat that is nearly level to concave at or just above sea level. This site is dominated by black mangrove. Plants found in association include smooth cordgrass (*Spartina alternaflora* Loisel), inland saltgrass [*Distichlis spicata* (L.) Greene] and saltwort (*Batis maritima* L.)

Conservation Uses
Erosion control:
Pelican black mangrove is valuable in restoring brackish and salt water marshes due to its ability to filter and trap sediments. Mangrove forests, which include black mangrove, have a high capacity as a sink for excess nutrients and pollutants. This species adds to the diversity of other native species by reducing on-going wave energy to increase coastal resiliency for the Gulf of Mexico.

Wildlife use:
Pelican black mangrove serves as a nursery habitat for crustaceans and fish. Mangrove detritus (dead leaves and twigs) in water feeds microorganisms that provide food for young marine life. It is estimated that as much as 80% of the organic budget of bays in Florida came from the surrounding mangrove forests. Black mangrove serves as a nesting habitat for many coastal birds including brown pelicans.

Area of Adaptation and Use
Pelican Germplasm black mangrove is adapted to the intertidal zones of the Gulf of Mexico. Black mangrove is the most cold hardy of the North America mangroves and are the only mangrove species occurring in Louisiana. Black mangrove grows in the intertidal zone of Louisiana's salt marshes, protected shallow bays and barrier islands east of Atchafalaya Bay. It is a facultative halophyte, which can persist in intensely saline habitats. This species is susceptible to freezing and the native range can be changed drastically by hard winters. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

Establishment and Management for Conservation Plantings
Pelican Germplasm black mangrove establishes naturally from seed produced in the fall. Seed float in water and can travel some distance with the tides to the shoreline. Seed germinate quickly and establish young seedlings in good habitat. Mangrove communities will often reestablish naturally from volunteer propagule recruitment if normal hydrologic patterns are restored.

Successful transplanting of 1 to 2-year-old seedlings, about 18 inches in height, provides coastal stabilization and establishes wildlife and marine habitats. The greater the root mass (not root bound pots) the greater the chance of successful out planting. Excellent survival and growth is achievable by transplanting 19 to 59 inch tall seedlings with a root ball diameter equal to one-half the tree height. It is important that the plant maintains a sufficient root system prior to planting in the field for survival success. Pruning seedlings just before or after transplanting enhances recovery and increases growth rate. Transplant the seedlings where the tidal flow will cover and uncover the root collar. Soil types can vary from organic mucks (Scatlake series) to sandy, tidal sediments (Felicity series). Alternating water depths promote extensive root systems, but seedlings do not become established until water depth is reduced to 2 inches or less. Transplanting seedlings in areas of high wave energy may require protection until the root system is large enough to support the plant.

Ecological Considerations
There are no known serious environmental concerns. Temperatures at or below freezing control this species in nature.

Seed and Plant Production
Pelican Germplasm black mangrove is propagated from seed. Because the seed is recalcitrant, it cannot resist the effects of drying or freezing temperatures, therefore seed cannot be stored for long periods. Seed viability will be reduced if stored more than three to four weeks.

Experience at the USDA – NRCS Golden Meadow Plant Materials Center has shown that seed collected in the fall (October to early December in southern Louisiana) remains viable for approximately one month. Freshly collected seed should be soaked in water, the pericarp removed, and the seed planted shortly thereafter into commercial potting soil for germination. Various sizes of plastic tubes and pots have been used with success. These include, but are not limited to, containers approximately 2 inch diameter by 5 inch depths. As the plant gets larger, it can be transplanted to larger containers such as 4 inch pots, having a 4 inch diameter and a 5 inch depth or 1 gallon pots having a 6 ½ inch diameter and a 6 ½ inch depth. Germination and rooting normally occurs within two weeks of planting under temperature-controlled environment. Plants can be maintained in fresh water tanks that hold moisture at the bottom of the pots. Two-year-old or older seedlings have the best chance of survival for out plantings. It is important that the plant maintains a sufficient root system prior to planting in the field for survival success.

Availability
For conservation use:
Two-year-old seedling and older Pelican black mangrove and containerized material are available through commercial wetland plant growers.

For seed or plant increase: Seed is available for commercial nursery production from the USDA, Natural Resources Conservation Service, Golden Meadow Plant Materials Center.

For more information, contact:
Golden Meadow Plant Materials Center
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Fax: 1.844.325.6941
https://www.nrcs.usda.gov/wps/portal/nrcs/main/plantmaterials/pmc/southeast/lapmc/

Citation
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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>

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