

Plant Materials Program in Coastal Ecosystem Restoration

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Volunteers and PMC staff have developed and experimented with different ideas to decrease sand erosion to stabilize dunes and barrier islands. Sand fencing prior to planting vegetative materials from the PMC has proven effective in many cases, but the fencing must be protected from vandalism.

The picture below is an example of cooperative efforts with the USDA-SRRC, Sugarcane Research Unit in Houma, Louisiana. Cane residue was harvested from research plots and baled. The bales were subsequently used effectively as barriers to collect blown sand. Plantings were made to form effective barriers and begin the process of new sand dune development.

Once a barrier is established, plants such as bitter panicum and sea oats will have a habitat to be protected and thrive in the newly created environment.



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PMC Responsibilities in Louisiana



Plant Materials center with greenhouses pre-Katrina, office, conference center, and dormitory



Ponds for plant research and increase.

Helping people help the land

The USDA-NRCS Golden Meadow Plant Materials Center (PMC) in Galliano, Louisiana is one of 26 regional Plant Materials Centers in the United States.

The Plant Materials Centers operate in the Plant Materials Program in the Natural Resource Conservation Service (NRCS). The program's mission is to identify the plants most important to soil conservation in the ecosystems in which they are located. Superior germplasm or ecotypes are identified and increased for further testing throughout the region of the PMC and at other PMC's in the range of the species. If superior germplasm is identified, the plants are increased and maintained. Vegetatively propagated plants and seed are named and results of research are published by the NRCS and in the appropriate scientific journals. Seed or vegetative propagules are then distributed to certified growers throughout the nation for distribution to parties interested in soil conservation.

The Golden Meadow PMC is dedicated to identifying, testing, increasing, and distributing plants for conservation purposes in coastal Louisiana, Mississippi and East Texas. We now have plant releases suited to soil conservation and ecosystem restoration for barrier islands, coastal dunes, saline marsh, brackish marsh and fresh water marsh.

We are located on 90 acres leased from the Greater Lafourche Port Commission, dedicated to plant research and plant increase. In cooperation with Nicholls State University, we test and increase plants at their farm in Thibodaux. The diversity of soil types allows the Golden Meadow PMC to work with marsh vegetation as well as projects involving native plants for the Louisiana Native Plant Initiative and have incorporated ecotypes from much of south Louisiana.

Ongoing and Future Objectives

Guided by the PMC Technical Advisory Committee, the following five general objectives have been identified.

1. Plant Materials for Revegetation
Plant species for shallow open water, plant species for shorelines, plants for barrier islands, plants for dredge and spoil materials, and species for freshwater swamps
2. Plant Establishment Techniques
Technology development for containerized plants, herbivory studies, vegetative establishment in highly organic soils and mechanized systems of planting.
3. Special Projects
Submersed aquatic vegetation, water quality studies, bioengineering and special technology transfer meetings and symposia.
4. Seed Technology
Seed propagation, seed harvesting, seed processing (LNPI cooperative for example), and seed storage (studies on black mangrove)
5. Technology Transfer and Development
In collaboration with the Plant Materials Specialist, LSU AgCenter and commercial growers, develop species standards and specifications, salinity tolerances and ranges, and various means of reducing sand loss from existing dune and island ecosystems.

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Fiber matting for planting, in waters subject to wave energy. The mats are planted with vegetation developed at the PMC.



Dune planting in Mississippi



Volunteers planting City Park in New Orleans following hurricane Katrina. Many of the plants were donated by the Golden Meadow PMC



Submersed Aquatic Vegetation

In cooperation with the Barataria-Terrebonne National Estuary Program, the Golden Meadow Plant Materials Center is studying ways to grow and out plant species of submersed aquatic vegetation. Two genera, *Ruppia* and *Vallisneria* were selected as representative of fresh to brackish water.

The concept is to develop growing techniques followed by technology to out-plant these species. Both species naturally inhabit the shoreline of our bayous and bays and are important in reducing wave energy which causes shoreline erosion.

The picture above is *Ruppia* being harvested from a local stand. Below is *Vallisneria* being planted in our tanks for adaptation before further research and development.

