

Golden Meadow Plant Materials Center Progress Report of Activities 2011



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Golden Meadow Plant Materials Center

Who We Are

The Golden Meadow Plant Materials Center (PMC) selects conservation plants and develops innovative planting technology to solve the nation's most important resource concerns. Our mission is to develop, test, and transfer effective state-of-the art plant science technology to meet customer and resource needs.

The USDA, Natural Resource Conservation Service Golden Meadow PMC was founded in the early 90's on 90 acres of land, which was established to provide a solution to aid in the incessant battle of coastal restoration. The PMC conducts numerous technical research strategies to better understand how different plant species are able to

thrive and reproduce in the coastal marshes. The PMC also provides pertinent information on coastal marsh plants to the community in the promotion of taking a stand towards coastal restoration.

Program Emphasis

The activities of the Golden Meadow PMC are guided by a long-range plan. The priority work areas are:

- Plant Materials for Marsh Revegetation
- Plant Establishment Techniques
- Seed Technology for Selected Wetland Species
- Technology Development and Transfer
- Special Projects
 1. Submerged Aquatic Vegetation
 2. Germination/Seed Viability Study (*Spartina spartinae*)
 3. Bioengineering

This report highlights the major activities at the PMC during calendar year 2011. For more detailed information, contact the Golden Meadow PMC or the Louisiana Plant Materials Specialist.

CURRENT STUDIES

Submersed Aquatic Vegetation Propagation and Planting Techniques for Restoration in Coastal Louisiana

In cooperation with Barataria Terrebonne National Estuary Program, the Golden Meadow PMC is conducting a study to develop technology to grow and plant submersed aquatic plants. The focus of the study is to collect *Vallisneria americana* and *Ruppia maritima* from local native sources and propagate for commercial production. The PMC will develop techniques to grow these plants in a manner suitable to commercial growers and test several techniques of planting in the wild. Parameters to be tested will be plants grown under various shading regimes to determine vigor and algae control, chemical shading and weed control. Substrates will be tested to determine suitability for nursery growth and transplant efficacy. These include various biodegradable bags. If successful we hope to be able to provide information to producers and contractors on means of successfully providing further protection for the shallow open waters of our coast line.



Louisiana Native Plant Initiative

The Louisiana Native Plant Initiative was established as a partnership effort to collect, preserve, increase, and study native plants in the state. Seeds and plants of native species developed by the partnership will be released to commercial growers for production, and eventual sale to the public. Currently, LNPI is comprised of 22 federal, state, and non-governmental organization partners. Over the past six years five evaluation and production locations including the USDA-NRCS Plant Materials Centers at Galliano, LA (GMPMC) and Nacogdoches, TX (ETPMC), Nicholls State University Farm at Thibodaux, LA, McNeese State University Farm at Lake Charles, LA, and University of Louisiana at Lafayette - Center for Ecology and Environmental Technology (CEET) have been established and are working together to select and increase seeds and plants of Louisiana ecotypes. Since its inception, the LNPI partnership has collected over 60 individual species and over 400 individual collections of native plants from critical habitats within Louisiana.

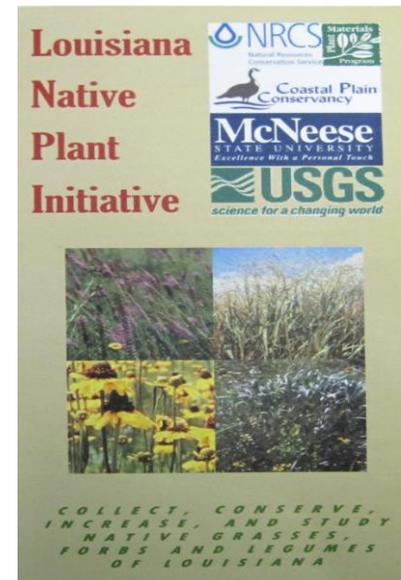
The collection, assembly, evaluation and release of new plant varieties are integral parts of the Louisiana Native Plant Initiative (LNPI). The Golden Meadow Plant Materials Center has taken the lead in developing the protocols and procedures necessary for the collection, evaluation and seed increase of native species targeted through LNPI. Currently, initial seed increase procedures of Ashy Sunflower (*Helianthus mollis*) and several other native species are currently being developed that will guide cooperators at the production locations.

The Golden Meadow Plant Materials Center has taken the lead in developing the protocol and procedures necessary for the initial seed increase of Ashy Sunflower (*Helianthus mollis*) in addition to several other native species associated with LNPI. Procedures are currently being developed and are dependent upon the inventory that our cooperators possess. The Center will soon have the standards needed for initial seed increase of the respective species to keep all of our partners in cognition about the procedures needed to carry out this task.

Evaluation of Gulf Cordgrass (*Spartina spartinae*)

Gulf cordgrass (*Spartina spartinae*) is being evaluated for the potential release of a named cultivar. Seeds harvested from thirty accessions will be germinated and tested for plant performance relative to its range of adaptation, soils and other environmental factors. Seed has been collected and stored at room temperature for approximately 30 days.

One hundred twenty seed samples of 200 seeds each were subdivided into four replications of fifty seeds each and sown on moistened blotter paper inside standard sized petri dishes. Germinator will be set at 27°C and germination counts will be made every 7, 14, 21 and 28 days. After 28 days in growth chambers, seed will be moistened and placed in refrigerator temperature 38-41°C for 2 week stratification and then removed and placed back in germinator for 14 days. This germination test will be done again at 3, 6, 9, and 12 months.



CURRENT ACTIVITIES

Golden Meadow Plant Materials Center Provides Vegetative Species to Local Universities



Garret Thomassie and Curt J. Riche' at the Golden Meadow Plant Materials Center assisted Yi Wang, graduate student at Louisiana State University, Baton Rouge, LA by collecting *Spartina alterniflora* (Smooth Cordgrass) and *Spartina spartina* (Gulf Cordgrass) for graduate research germination studies. Assistance for the coastal research studies needed by these graduate students and professors will continuously increase and be provided by the Golden Meadow Plant Materials Center.

Additionally, the PMC provided 'Vermilion' Smooth Cordgrass (*Spartina alterniflora*) stems to Dr. Pete Melby's, Professor at Mississippi State University, research project. The project is primarily aimed at developing methodology to establish emergent salt marsh grasses along Harrison County, MS beach fronts to aid in coastal preservation.

PMC Celebrates Arbor Day 2011 at Local Elementary Schools

The Golden Meadow Plant Materials Center became actively involved with local students and teachers by providing native tree species to nearby schools. Curt J. Riche' and Alexis Luke visited schools and gave donated native trees to members of the classes in observance of Arbor Day 2011. The students were provided essential information in order to successfully plant their trees. Presentations were administered and consisted of ample information with regards to plants including the history of Arbor Day, why plants are important to our planet, fun plant facts, plant identification and finally, careers with plants. Curt J. Riche' of the Golden Meadow Plant



Materials Center was invited as a spokesperson for career day at nearby schools. We were able to share much information about NRCS with hundreds of students and teachers and informed them on how NRCS "Helps People Help The Land", by combating issues inevitably constraining our precious and numerous natural resources. This effort served not only as an educational tool to adolescents about plants, but also as an astounding outreach effort to aware the public what the NRCS Plant Materials Program is about.



PMC Lends Assistance to Chitimacha Tribe of Louisiana

Just recently, in March of 2011, the Louisiana Plant Materials Staff traveled to the Chitimacha reservation for a two day River Cane Project, which consisted of harvesting and further re-establishing River Cane populations. The entire PMC staff, several volunteers and members of the Chitimacha tribe worked diligently together to harvest the *Arundinaria* variety from a site located in St. Mary parish. The site was located on a slope of a levee so no heavy duty mechanical equipment was able to be used in the harvest. The PMC staff dedicated an entire day to manually harvest River Cane shoots for planting the following day. Once the harvest was complete, the River Cane shoots were loaded into a pickup truck and transported to the Chitimacha reservation for planting. The PMC staff dedicated the next day to planting. This planting was conducted in areas near wooded edges adjacent to the previous year's planting to insure easy monitoring. PMC's



labor and plant expertise resulted in successful populations of nearly 100 clumps of both River Cane varieties. The stands and colonies of River Cane will be both conducive to and will insure that the historical basket weaving traditions of the tribe be readily available and will live on to the tribe's next generations to come.



PMC staff will continue to persevere with this project each year until the Chitimacha can once again harvest River Cane on ten year rotational schedules and pass on their great tradition of creating unique and alluring baskets incessantly.

Elmer's Island Beach Planting

The Golden Meadow PMC assisted Bayou Land RC&D in re-vegetating the beaches of south eastern Louisiana. The planting took place on Elmer's Island, LA which is approximately located 70 miles south of New Orleans. The PMC provided approximately 500 Gulf Bluestem (*Schizachyrium maritimum*) plants that were able to plant about 12,500 square feet of beach. Additionally, nearly 5,000 stems of Bitter Panicum (*Panicum amarum*) were planted on the beach dunes covering an area greater than 0.5 acres.



INFORMATION AND REPORTS

Technology Transfer – New Publications

A number of new or revised publications were completed during the past year – a few are mentioned below:

Technical Notes

- Tech Note 18 Management of Native Plantings After Establishment
- Tech Note 19 When to Plant Conservation Species in Louisiana
- Tech Note 20 ‘Tropic Sun’ sunn hemp for cover crop use during the sugarcane fallow period

Other Publications

- LAPMC Information Booklet
- 2010 Annual Technical Report
- 2010 Progress Report of Activities
- Submersed Aquatic Vegetation Propagation and Planting Techniques for Restoration in Coastal Louisiana
- Appendix 1 – Planting Rates for Louisiana by MLRA’s
- Marsh Notes Spring Issue 2011
- Marsh Notes Summer Issue 2011
- Marsh Notes Fall Issue 2011
- Marsh Notes Winter Issue 2011
- Developing native plants for Louisiana ecosystems – The Louisiana Native Plant Initiative
- Groups across the nation assist NRCS’s Golden Meadow Plant Materials Center
- USDA/NRCS distributes plants to nursery growers

Tours and Presentations

- Voice of the Wetlands Festival
- Grand Isle Workshop
- Reestablishment of Native Vegetation on Coastal Marshes and Barrier Islands Presentation
- Chitimacha River Cane Project and the Benefits of River Cane to the Local Ecosystem Presentation
- Plant Materials for Kisatchie National Forest on development of LNPI production site at Kisatchie NF
- Bayou Group Tour and Presentation
- Leadership of Lafourche Tour and Presentation
- Conservation Planning Training, conservation planning for new employees, using plant materials in the planning progress Presentation
- Seattle Academy Tour and Presentation
- LaFete D’Ecologie Festival
- Plant Materials Training for LA Dept Ag & Forestry Seed Inspectors
- Manhattan College Tour
- NRCS Intern Presentation and Tour
- Arbor Day Galliano Elementary Presentation
- Arbor Day Larose Lower Elementary Presentation

2011 Plant Distribution

- ‘Vermilion’ Smooth cordgrass – 12,300 plants
- Brazoria Seashore paspalum – 800 plants
- ‘Gulf Coast’ Marshhay cordgrass – 5,000 plants
- Pelican black mangrove – 110 lbs seed
- Fourchon Bitter Panicum – 4,600 plants
- Bayou Lafourche California bulrush – 90 plants
- Caminada Seaoats – 120 plants
- Timbalier Gulf Bluestem – 900 plants
- Various native plants – 1500 plants

Electronic Documentation and Information

All Golden Meadow PMC publications can be downloaded from the following web-sites:

- <http://plant-materials.nrcs.usda.gov/lapmc/publications.html>
- <http://www.la.nrcs.usda.gov/technical/PM/index.html>
- <http://plant-materials.nrcs.usda.gov/lapmc/>

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HAPPY NEW YEAR FROM THE STAFF AT THE GOLDEN MEADOW PLANT MATERIALS CENTER

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