

United States Department of Agriculture



NRCS Natural
Resources
Conservation
Service

Plant Materials Program

Golden Meadow Plant Materials Center



Making an Impact on Coastal Louisiana

**Golden Meadow Plant Materials Center
438 Airport Road
Galliano, Louisiana 70354
Phone: 985-475-5280**

USDA-NRCS
Golden Meadow Plant Materials Center
438 Airport Rd.
Galliano, LA 70354
Telephone: 985-475-5280
Fax: 985- 475- 6545
<http://plant-materials.nrcs.usda.gov/lapmc>

Established: 1989
Size: 93 acres
PMC Operation: NRCS
Land Ownership: The Greater Lafourche Port Commission
Lease Duration and expiration date: 25 years Expires 31 March 2015
Lease Duration: 25 Years
Expiration Date: March 31, 2015

Contacts: Garret Thomassie - Assistant PMC Manager, 985-475-5280, garret.thomassie@la.usda.gov
Morris Houck - State Plant Materials Specialist, Acting PMC Manager 318-473-7761,
morris.houck@la.usda.gov

OVERVIEW

The Golden Meadow Plant Materials Center (GMPMC) in Galliano, Louisiana has been a leader in coastal wetland ecosystem restoration and technology development. The PMC is located within the Barataria-Terrebonne Estuary, one of the largest and most productive estuarine systems in the United States.

Currently, Louisiana accounts for 90% of the nation's annual coastal wetland loss. Land loss occurs as marginal erosion and interior marsh deterioration. Causes are attributed to; loss of sediment delivery to marshes caused by navigation and flood controls on the Mississippi River; salt-water intrusion into previously fresh and brackish coastal marshes; dredge and fill activities; and natural geological subsidence.

Coastal wetland remediation, restoration, and enhancement with plants released by the PMC have proven effective in converting open water to new marsh. This reduces soil erosion, and promotes re-establishment of emergent and submerged aquatic vegetation. The Center develops plants and procedures to reverse this loss of coastal wetlands in Louisiana, Texas, and Mississippi. The GMPMC has released eight (8) improved conservation plants for ecosystem restoration across the northern gulf coast.

SERVICE AREA

The Golden Meadow PMC service area of responsibility includes the coastal area of Mississippi, Louisiana, and Texas to Galveston Bay. The area's depth inland varies as to the extended reach of the coastal marshlands from as little as one mile to as much as 40 miles. The Major Land Resources Areas are as follows:

Texas	150 B, Gulf Coast Sabine Prairie
Louisiana.....	151, Gulf Coast Marsh
Mississippi.....	151, Gulf Coast Marsh & 152 A, Eastern Gulf Coast Flatlands

RESOURCE CHALLENGES

Resource Challenge 1: Identify and evaluate species for coastal erosion control, marsh restoration and dune stabilization (2009-2015)

- Identify and collect emergent and submersed aquatic plants species from fresh, brackish, and saline marsh ecosystems for the revegetation of coastal zones damaged by intense wave and wind energy caused by storm events
- Identify and collect species to enhance diversity of coastal dunes and barrier islands
- Identify and collect fresh water species that have heightened salt tolerance for areas where subsidence and saltwater intrusion is a problem
- Develop and evaluate plant propagation and establishment technology to support revegetation efforts along the northern gulf coast

Resource Challenge 2: Provide plants and technology to assist commercial growers in addressing coastal resource concerns (2009-2015)

- Maintain foundation quality planting stock of releases for distribution to growers
- Provide training to growers on efficient propagation techniques
- Publish and distribute technical notes and bulletins on propagation and establishment of plant releases
- Cooperating with state, federal, and local governments to develop studies for future plant releases for coastal restoration
- Investigate advanced technology for maintaining and monitoring genetic integrity of vegetative propagated materials (e.g. DNA fingerprinting)

Resource Challenge 3: Provide educational opportunities and access to all segments of the community to the Golden Meadow Plant Materials Center Program (2009-2015)

- Cooperate and provide access to community action groups such as New Orleans City Park and Bayou Rebirth in support of local rebuilding initiatives
- Provide on site instruction and technical literature on the establishment and management of plant materials for various ecosystems in the PMC service area
- Support youth groups and teachers discussing and demonstrating the importance of the coastal barrier islands, saline and fresh water marshes, and Chenier habitats for sustainable coastal ecosystems
- Cooperate with other federal, state, and local governments on projects that involve problems of ecosystem restoration

FACILITIES

The Center has continued to expand and improve in its capabilities to conduct plant materials studies. The center has acquired other facilities and equipment to propagate and grow wetland and upland plant materials for a variety of conservation uses. Facilities acquired to date include:

Structures	Completed and Operational	Available Space
Office/Conference Facility	April 1991	2,016 SF
Machinery Storage Facility	November 1991	3,000 SF
Pesticide Storage Facility	March 1992	135 SF
Greenhouse No. 1	December 1992	1,800 SF
Greenhouse No. 2	April 1995	1,800 SF
Headhouse	May 1995	1,800 SF
Greenhouse No. 3	August 1999	2,040 SF

In addition to the above facilities, a seed storage cooler, propagation area, shade house structures, and a tree nursery area are available.

CURRENT PROJECTS

Submersed Aquatic Vegetation and Planting Techniques for Restoration in Coastal Louisiana

The importance of SAV to Louisiana coastal ecosystems includes the minimization of storm damage by reducing wave action, stabilization of sediments, improvement of water quality by absorbing nutrients and contaminants, and provide critical habitat for wintering waterfowl and many commercially important fish species. Very little is known on the status of SAV throughout the coastal region of Louisiana. Unlike seagrasses, which include few species and inhabit very limited areas of the gulf coast in typically clear marine waters, the estuarine species that are spread out throughout the multitude of ponds and bayous of coastal Louisiana are more numerous. These areas are often in locations difficult to access, difficult to view in the murky waters, and occur in the entire range of different habitat types. Because of the lack of understanding of these species, the common recognition of the need to sustain and restore SAV communities in coastal Louisiana, and the lack of restoration techniques available, it is necessary to begin to develop the necessary means by which to carry out successful SAV restoration projects.



Evaluation of Selected Plant Materials and Installation Techniques to Stabilize and Control Erosion along the South Lafourche Hurricane Protection Levee.



Hurricanes represent a formidable threat to the Louisiana coastal zone. Statistically, the state will experience a hurricane once every four years and about once every eight years for a major hurricane (Category 3, 4, or 5). When hurricanes strike land, the storm surge accelerates erosion of barrier islands, floods fresh marsh and swamps with salt water, and rips holes in wetlands.

The continued degradation of Louisiana's coastline has resulted in an increase in the effort to strengthen and heighten hurricane protection levees across Louisiana.

The dredge-fill materials used to build many of the hurricane protection levees in the state consist of heavy clay soils from nearby borrow canals along these levee systems. In recent years due to salt-water intrusion, salt concentrations in dredged soils from these canals have caused problems with establishing vegetative cover to these levees. Without the protection of desirable vegetation, the levee system becomes vulnerable to soil erosion due to rain, wind and storm surges. The establishment of desirable vegetation to these levees is essential in the effort to protect personal property and lives.

This evaluation will address the Hurricane Protection Levee designed to protect the area from Larose to south of Golden Meadow, LA from category three hurricanes. This evaluation will help find cost effective solutions in establishing and restoring vegetative cover to existing and newly constructed levees. Factors that will be considered are:

1. Species useful for the re-vegetation of levees
2. Planting techniques and bioengineering practices helpful in restoring vegetative cover
3. Soil enhancement techniques to reduce compaction and improve soil health
4. Development of publications and guidelines

Chitimacha Indian Tribe of Louisiana - Re-establishment of River Cane on Tribal Lands

Conservation of an ancient cultural tradition motivated the Chitimacha Tribe of Louisiana in their request for PMC assistance. They are the oldest recognized and indigenous tribe in Louisiana and have used rivercane (*Arundinaria sp.*) for woven baskets and mats since the era of the Mississippi mound-building culture, a tradition dating back to the Middle Ages. *Arundinaria* is also known as giant cane, switchcane and bamboo.

The Chitimachas dedicated most of their efforts to cultivating the soil, fishing, and developing the domestic arts. They display the greatest skill through the art of weaving basket and their basketry reached such a degree of development that it might be placed among the higher arts. The Chitimacha's craft threatened by a shortage of native rivercane populations. In addition, prior to this research, there were no rivercane populations growing on the Chitimacha Reservation itself, which has shrunk to one-fourth of its established area in the mid-1800s.

The objective of this project is to evaluate the re-introduction and establishment of rivercane (*Arundinaria sp.*) native to Chitimacha tribal lands to help sustain ancient cultural tradition.



RELEASES

Since the release of 'Vermilion' smooth cordgrass in 1989, the Golden Meadow Plant Materials Center has produced seven additional releases used for coastal restoration.

Release Name	Common Name	Scientific Name	Release Year
'Vermilion'	Smooth Cordgrass	<i>Spartina alterniflora</i>	1989
Pelican Germplasm	Black Mangrove	<i>Avicennia germinans</i>	1994
Fourchon Germplasm	Bitter Panicum	<i>Panicum amarum var. amarum</i>	1998
Brazoria Germplasm	Seashore Paspalum	<i>Paspalum vaginatum</i>	1999
Caminada Germplasm	Seoats	<i>Uniola paniculata</i>	2001
'Gulf Coast'	Marshhay Cordgrass	<i>Spartina patens</i>	2003
Timbalier Germplasm	Gulf Bluestem	<i>Schizachyrium maritimum</i>	2006
Bayou Lafourche Germplasm	California Bulrush	<i>Schoenoplectus californicus</i>	2007



Bayou Lafourche Germplasm California bulrush -

recommended for erosion control along shorelines, canal banks, levee banks, and other areas of soil-water interface. When planted as vegetative barriers across open water, California bulrush has significantly reduced ponds fetch and wave energy permitting other aquatic plants to grow in an otherwise unfavorable environment (NRCS, LSU 2000). California bulrush maybe used in the creation and restoration of wetlands, to improve water quality, and reduce suspended sediments. It is not known to cause navigation problems (Tarver, 1988) along watercourses. Plantings provide habitat for mammals, birds and fish that visit the sites and promote establishment zones for many submerged aquatic plants

'Gulf Coast' marshhay cordgrass - recommended for conservation planting in coastal areas of the north central Gulf of Mexico basin. 'Gulf Coast' is a facultative halophyte that can be successfully planted in brackish and salt marshes, marsh ridges, coastal beaches, barrier islands, and restored marsh where dedicated sediments are used. 'Gulf Coast' has proven effective for marsh restoration, shoreline and levee stabilization, and coastal beach and barrier island sand dune enhancement and stabilization.



Brazoria Germplasm seashore paspalum - an effective pioneering species used on shorelines, dunes, canal banks, mudflats, dredge materials, and other bare and ephemeral soil deposits. Brazoria spreads rapidly and can form dense stands within two growing seasons from planting. It is used successfully on fresh to brackish soils in areas up to approximately 10 ppt of salts. Brazoria is adapted to low-elevations at or slightly above normal water levels. Preferred sites are bare, saturated-to-moist soils, with little-or-no other vegetative competition. Brazoria will grow out into water. Culms and stolons will float or persist slightly submerged.

Fourchon Germplasm bitter panicum - intended for use on coastal beaches and barrier islands of the north central Gulf coast, primarily Louisiana, Mississippi, and Texas. Fourchon bitter panicum is an early colonizing species that grows best on the crest and windward slope of the fore dune where few other species compete with it. The windward side of the fore dune is the harshest habitat of the dune system, subject to salt spray, occasional inundation, high temperatures, low soil moisture, low fertility, sand abrasion and smothering by drifting sands. Bitter panicum shows greatest plant vigor where blowing sand accumulates around the plant. Bitter panicum is an ideal dune species. The above ground portion of the plant reduces wind velocity causing sand to drop out of the wind stream and accumulate.



Pelican Germplasm black mangroves - important to coastal ecosystems by stabilizing soils with their extensive root systems, contributing biomass to the detrital cycle, providing valuable habitat for brown pelicans and other shorebirds. Black mangroves are the most cold hardy of the North American mangroves and they are the only mangrove species found growing in Louisiana. Black mangroves can be found growing in the intertidal zone of Louisiana's salt marshes, protected shallow bays, and barrier islands east of Atchafalaya Bay. Black mangroves are distinguished by aerial roots known as pnuemataphores. Black mangroves are facultative halophytes, which can persist in strongly saline habitats.

'Vermillion' smooth cordgrass - used primarily for erosion control along shorelines, canal banks, levees, and other areas of soil-water interface. In addition, smooth cordgrass is an effective soil stabilizer used on interior tidal mudflats, dredge-fill sites, and other areas of loose and unconsolidated soils associated with marsh restoration. When established in conjunction with shorelines, smooth cordgrass provides an effective buffer that dissipates energy, reduces shoreline scouring, and traps suspended sediments and other solids. Dense stands of smooth cordgrass are efficient users of available nutrients, producing significant amounts of organic matter. The cumulative effects of organic matter production, sediment trapping, and erosion control not only provide shoreline protection but also accelerate sediment accumulation and near-shore building. Consequently, smooth cordgrass is a sustainable and renewable restoration resource, and when properly established and in the appropriate habitat, will persist and potentially remain effective indefinitely.



Timbalier gulf bluestem - intended for use on coastal beaches and barrier islands of the north central Gulf of Mexico basin. Timbalier performs best when planted on the leeward side of the primary dune and the more protected areas behind the primary dune. Timbalier is an

excellent planting component to increase species diversity and back dune stabilization when planted in association with *Panicum amarum*, *Uniola paniclata*, *Spartina patens* and other herbaceous species. Timbalier can be successfully planted with proven persistence and performance on beaches and barrier islands of the Mississippi and Louisiana coast.

Caminada Germplasm seaoats - intended for use on coastal beaches and barrier islands of the north central Gulf Coast. Caminada performs best when planted on the crest and Gulf side of the primary dune. Sea oats is exceptionally tolerant of harsh conditions associated with coastal beach environments such salt spray, short inundation of saltwater from storm surges, strong winds, xeric soil conditions, and rapid sand accretion. It is considered an excellent pioneering species because its ability to rapidly establish and colonize on fore dunes and dune crests, and a climax species because of its ability to persist in these extreme coastal beach conditions. The attributes found in sea oats makes this species and excellent dune builder and sand stabilizer.



INFORMATION AND TECHNOLOGY TRANSFER - GOLDEN MEADOW PMC

- Steve Carmichael 2009. Coastal Restoration and Conservation in Louisiana. Louisiana NRCS, Alexandria, LA.
- October 2008. 1p.
- Richard Neill and Garret Thomassie 2008. The Plant Materials Program in Coastal Ecosystems Restoration.
- Morris Houck 2009. Bahiagrass Plant Fact Sheet. Louisiana NRCS, Alexandria, LA. September 2009. 3p.
- Morris Houck 2009. Black Mangrove Plant Fact Sheet. Louisiana NRCS, Alexandria, LA. September 2009. 2p.
- Morris Houck 2009. Calculating Seed Mixtures - Steps to Guide You In Developing Conservation Seed Mixtures. Alexandria, LA. July 2009. 8p.
- Morris Houck 2009. Coastal Wetland Plant Vendors for Louisiana. Alexandria, LA. September 2009. 3p.
- Morris Houck 2009. Conservation Cover Job Sheet. Louisiana NRCS, Alexandria, LA. July 2009. 5p.
- Morris Houck 2009. Conservation Planting Methods for Native and Introduced Species. Alexandria, LA. August 2009. 6p.
- Morris Houck 2009. Contour Buffer Strip Job Sheet. Louisiana NRCS, Alexandria, LA. August 2009. 6p.
- Morris Houck 2009. Critical Area Planting Job Sheet. Louisiana NRCS, Alexandria, LA. August 2009. 6p.
- Morris Houck 2009. Field Border Job Sheet. Louisiana NRCS, Alexandria, LA. July 2009. 5p.
- Morris Houck 2009. Filter Strip Job Sheet. Louisiana NRCS, Alexandria, LA. July 2009. 7p.

- Morris Houck 2009. Louisiana Seeding Rate Tables. Louisiana NRCS, Alexandria, LA. September 2009. 14p.
- Morris Houck 2009. PLANNING SITE AND SEEDBED PREPARATION FOR CROPLAND CONVERSION TO NATIVE SPECIES. Alexandria, LA. August 2009. 5p.
- Morris Houck 2009. Sugarberry Plant Fact Sheet. Louisiana NRCS, Alexandria, LA. September 2009. 2p.
- Morris Houck 2009. Understanding Seed Certification and Seed Labels. Alexandria, LA. July 2009. 6p.
- Morris Houck 2009. Understanding Seeding Rate, Recommended Planting Rates, and Pure Live Seed. Alexandria, LA. July 2009. 4p
- Morris Houck 2009. Vegetative Barrier Job Sheet. Louisiana NRCS, Alexandria, LA. July 2009. 5p.
- Gary Fine 2009. LNPI Nicholls Farm 2008 Progress Report. Nicholls State Farm, Thibodaux, LA. January 2009. 20p.
- Gary Fine 2009. Nicholls Farm 2009 Advancing Coastal Restoration Project Status Report. Nicholls State Farm, Thibodaux, LA. June 2009. 5p.
- Garret Thomassie and Richard Neill 2009. BTNEP SAV Quarters 3 & 4 Status Report. Golden Meadow PMC, Galliano, LA. September 2009. 47p.
- Garret Thomassie and Richard Neill 2009. Caminada Seaoats Brochure - Revised. Golden Meadow PMC, Galliano, LA. December 2008. 2p.
- Garret Thomassie 2009. PMC Annual Technical Report. Golden Meadow PMC, Galliano, LA. September 2009. 57p. Page
- Golden Meadow Plant Materials Center, Rayne, LA. 11/08/2008. 1p.
- International Visitors come to South Bayou. Golden Meadow Plant Material Center, Larose, Louisiana Lafourche Gazette. Wednesday, June 27, 2009.
- Bayou Side Restoration. LA PMC, Kevin O'Leary 2008. Discovery Channel Project Earth. Discovery Channel TV program, Project Earth.
- Interview with WWLTV. Interview for Channel 4 WWLTV (120 minutes); Bill Capo, Galliano, LA. 6/18/2008.
- Montegut and LCO Middle Schools. Golden Meadow Plant Materials Center, Larose, Louisiana. Volume 43 No 8.
- Plant Material Program Mission. WWL TV New Orleans, New Orleans LA. 6/18/08.
- Purpose of the Plant Materials Program. WWL TV New Orleans LA, New Orleans.
- Red Hat Society Visits Golden Meadow Plant Materials Center. Lafourche Gazette, LaRose, LA. Oct 12, 2008.
- World's Longest Main Street Goes International. Lafourche Gazette, Lafourche Parish, LA. 12-28-2008.
- Best Kept Secret on the Bayou. Lafourche Gazette, LaRose LA. Jan 17, 2007.
- How We're Helping To Protect Those Coastal Sand Dunes. USDA news, Washington, DC.
- Devastated N.O. will receive thousands of local trees. Daily Comet, Thibodaux, LA. 8-3-2006
- Grass Anchors for an Imperiled Coast. Market Bulletin, Baton Rouge, LA. Vol. 88, No. 14.
- Innovative Dune and Beach Restoration. NRCS This Week, September 20, 2006
- Oceanic ecosystem in the wake of hurricanes. PhysOrg .
- Plants show promise for re-establishing Coastal wetlands. Louisiana Research, 8/22/2006.
- Research center gives trees for projects. The Advocate, Baton Rouge, LA. Aug 2, 2006
- Students to Help with Coastal Restoration. The Watchman, East Feliciana, LA. November 23, 2006
- Sugar-cane byproduct could aid beach. The Houma Courier, Houma, LA. June 14, 2006
- Tidal Surge Survivors. NRCS This Week, 11/2005

- Wetlands can be created at schools. Daily Comet, Thibodaux, LA. 2006. 1p.
- NRCS Plant Materials Center, a Proving Ground in Struggle for Coast. Water Marks, Louisiana Coastal Wetland Planning, Protection and Restoration News, Department of the Army, New Orleans, Louisiana. April 2005 Number 28
- Discovery Channel 2004. Louisiana Coastal Land Loss Video Shoot. Discovery Channel film crew, Celeste Regal 2004.
- Plants for Coastal Wetlands. Tri-Parish Times, Houma, Louisiana., Daily Comet New Orleans 03/29/2004
- Center tries to find natural defense to Louisiana coastal erosion. News paper article The Morning Advocate, Baton Rouge, LA. The Advocate, Nov. 2001
- Researchers link coastal survival to cordgrass. Newspaper Article The Morning Advocate, Baton Rouge, LA. The Advocate, Oct. 2001
- River canes return vital to Chitimachas. Newspaper Article The Morning Advocate, Baton Rouge, LA. The Advocate, Sept. 2001
- Cogongrass, Invading Louisiana Pastures. Louisiana Cattleman, Baton Rouge, LA. February 2003.
- Newsletter Fall 08. Golden Meadow PMC, Galliano, LA.
- Global Climate Change in USA" Prevent the damage from Hurricane. Nippon Hoso Kyokai, General Bureau for America, "Today's World" Japanese public TV, February 14, 2008.
- LAPMC Newsletter Spring 2008. Galliano, LA. 4/03/08.
- Plant Press Newsletter. Golden Meadow Plant Materials Center, Galliano, LA. Vol. 3, Issue 1, Fall 2005
- Plant Press Newsletter. Golden Meadow Plant Materials Center, Galliano, LA. Vol. 4, Issue 1, Winter 2006.
- Louisiana Plant Materials Program Update - First Quarter 2007. Golden Meadow PMC, Galliano, La. Volume 5, Issue 1.
- Louisiana Plant Materials Program Update - Spring 2007. Golden Meadow PMC, Galliano, LA. Volume 5, Issue 2.
- The NRCS Plant Materials Center. Golden Meadow PMC, Galliano, LA. 9-12-2007
- Louisiana Plant Initiative. Golden Meadow Plant Materials Center, Galliano, LA. 9/2006
- Coastal Crisis. Wall Street Journal
- Year 2001 Progress Report of Activities. USDA-NRCS Golden Meadows Plant Materials Center, Galliano, LA. Apr. 2002
- Golden Meadows Plant Materials Center 2001. 2000 Annual Activities Report. USDA-NRCS Golden Meadows Plant Materials Center, Galliano, LA. Apr. 2001
- 2004 Annual Report of Activities. Golden Meadow Plant Materials Center, Galliano, LA. Dec. 2004..
- March Notes II. Alexandria, LA. Volume 1, Issue 2, Summer 2003.
- Marsh Notes. Alexandria, LA. Volume 1, Issue 1, Spring 2003.
- Louisiana Takes Vegetative Planting Program to the People. Coastal Services, Linking People and Technology, Vol. 2(6).
- 2007 Annual Technical Report. GMPMC staff, Galliano, LA. 6/25/2008.
- Progress Report Riparian Project. Barataria-Terrebonne National Estuary Program, Galliano LA. 27 Feb 2009.
- Progress Report Submersed Aquatic Vegetation. Submersed Aquatic Vegetation to Barataria Terrebonne National Estuary Program, Galliano, LA. 2009
- Louisiana Native Plant Initiative 2007 Status Report. LNPI Site - Nicholls State University, Thibodaux, LA. January 2008.
- NSU native plants Semi-Annual Progress Report. Nicholls State Farm, Thibodaux, LA. June 2008.
- Phase Two Chenier Proposal. LA PMC, Galliano, Louisiana
- Progress Report Bayou Side Riparian Project. BTNEP Report on progress with Riparian Bayou Side Project, Galliano, Louisiana. Spring 2009.
- Native Warm Season Grasses for Wildlife and Working Farms - Progress Report, Louisiana Pm program, Alexandria, LA. September 2008.

- Native Warm Season Grasses for Wildlife and Working Farms - 1 Year Progress Report. Louisiana PM Program, Alexandria, LA. October 2007.
- Progress Report SAV. 3rd-4th Quarter Progress Report - GMPMC, Galliano LA. 09/10/08
- Progress Report SAV. 1st-2nd Quarter Status Report -GMPMC, Galliano, LA. 4/28/08.
- NRCS Golden Meadow Plant Materials 2006 Progress Report of Activities. Golden Meadow PMC, Galliano, La. 2007.
- Phase I "Submersed Aquatic Vegetation Propagation and Planting Techniques for Restoration in Coastal Louisiana" Status Report. Galliano, LA. 7-2-2007.
- 2005 Annual Technical Report for the GMPMC. GMPMC Staff and study files, Galliano, LA. 3/1/06.
- Maritime Forest Habitat Restoration and Enhancement Status Report. Golden Meadow Plant Materials Center, Galliano, LA. 7/6/2006.
- Phase I "Submersed Aquatic Vegetation Propagation and Planting Techniques for Restoration in Coastal Louisiana" Status Report. Golden Meadow Plant Materials Center, Galliano, LA. 9/13/06
- Status report for the performance and adaptation of selected woody species for conservation, restoration, and enhancement of neotropical habitat. Galliano, Louisiana
- The Golden Meadow Plant Materials Center and Coastal Ecological Restoration. Symposium on Coastal Restoration, Crowley, LA
- The Plant Materials Program in Coastal Ecosystems Restoration. Golden Plant Materials Center, Rayne, LA. 11/08/2008..
- Aerial seeding and seed based propagation of *Spartina alterniflora* for large scale coastal erosion control and habitat restoration. The 2007 SWS International Conference: Water Wetlands, and Wildlife--Resolving Conflicts and Restoring Habitat, Sacramento CA. CD Rom.
- Aerial seeding and seed based propagation of *Spartina alterniflora* for large scale coastal erosion control and habitat restoration. Golden Meadow PMC, 4/2007
- Chenier Building: Cooperation in South Louisiana Marsh Habitat Restoration. Golden Meadow PMC, Kansas City, MO. 23 April, 2007.
- Cultivar or Local Ecotype? Are we meeting customer needs. 5th Eastern Native Grass Symposium, Harrisburg, PA. Oct 2006.
- Development of Conservation Species for Kisatchie National Forest. IA Kisatchie NF, Alexandria, LA. September 2007
- DNA Fingerprinting to Assure Purity of Restoration Plants and Test Crossing with Native Vegetation. Golden Meadow Plant Material Center, 4/2007.
- DNA Fingerprinting to Assure Purity of Restoration Plants and test for Crossing with Native Vegetation. Golden Meadow PMC, Kansas City, MO. 24 April 2007.
- Evaluating Eastern Gamagrass Stands When Planted in 28-40" Rows. Louisiana PM Program, Alexandria, LA. May 2007
- Woody Species for Adaptation in Louisiana's Marshes Status Report. Golden Meadow PMC, Galliano, LA. 7-10-2007
- An Accelerated Program of Woody Plant Species Selection for Conservation, Restoration, and Neotropical Habitat Enhancement. Golden Meadow Plant Materials Center, Galliano, LA. 1/26/2006
- Assessment and Potential for Vegetative Remediation of Selected Brown Marsh and Disturbed Sites in the Barataria and Terrebonne Basins. Golden Meadow Plant Materials Center, Galliano, LA. 12/13/2005. 60p.
- Stem borers associated with smooth cordgrass, *Spartina alterniflora* (poaceae), in a nursery habitat. Florida Entomologist, December 2005
- Cultivar or Local Ecotype? Are we meeting customer needs. 5th Eastern Native Grass Symposium, Harrisburg, PA. Oct 2006.
- Evaluating Eastern Gamagrass Stands When Planted in 28-40" Rows. Louisiana PM Program, Alexandria, LA. May 2007.
- Coastal Prairie Restoration in Louisiana. SWCS Proceedings, Ankeney, Iowa.
- Eastern gamagrass as a potential biofuel for the southeast. Eastern Native Grass Symposium Proceedings,
- Establishment methods for Alamo switchgrass. Eastern Native Grass Symposium, Chapel Hill,

NC.

- Avicennia germinans Black Mangrove Plant Guide. Golden Meadow Plant Materials Center, Galliano, LA. August 2008.
- Marshhay Cordgrass Plant Fact Sheet - 2008 Revision. GMPMC, Galliano, LA. 09-12-08.
- Red Mulberry Plant Guide. GMPMC, Galliano, LA. June 2008.
- Salt Matrimony Vine Plant Guide. GMPMC, Galliano, LA. June 2008.
- Smooth Cordgrass Plant Fact Sheet -2008 Revision. GMPMC, Galliano, LA. 09-12-08.
- Sugarberry Plant Guide. GMPMC, Galliano, LA. June 2008
- Chitimacha Tribe River Cane Plant Guide. GMPMC, Alexandria, LA. October 2006
- Gulf Bluestem Plant Fact Sheet. Golden Meadow PMC, Galliano, LA. January 2007.
- Inland Sea Oats Plant Fact Sheet. Golden Meadow PMC, Galliano, LA. February 2007.
- Notice of Release - Bayou Lafourche Germplasm California Bulrush. GMPMC, Galliano, LA. Aug 2007
- Plant Collection Information Sheet - Big Bluestem. Louisiana PM Program, Alexandria, LA. May 2007.
- Plant Collection Information Sheet - Eastern Gamagrass. Louisiana PM Program, Alexandria, LA. May 2007.
- Plant Collection Information Sheet - Indiangrass. Louisiana PM Program, Alexandria, LA. May 2007
- Plant Collection Information Sheet - Little Bluestem. LA PM Program, Alexandria, LA. May 2007.
- Plant Collection Information Sheet - Partridge Pea. LA PM Program, Alexandria, LA. May 2007
- Plant Collection Information Sheet - Seashore Dropseed. LA PM Program, Alexandria, LA.
- Plant Collection Information Sheet - Switchgrass. Louisiana PM Program, Alexandria, LA.
- Plant Fact Sheet - California bulrush. GMPMC, Galliano, LA. August 2007
- Plant Guide - Sea Oats. Golden Meadow Plant Materials Center, Galliano, LA. January 11, 2007
- Press Release - Bayou Lafourche Germplasm California bulrush. GMPMC, Galliano, LA. August 2007
- Release Brochure - Bayou Lafourche Germplasm California Bulrush. GMPMC, Galliano, LA. August 2007
- Release Brochure - Timbalier Gulf Bluestem. GMPMC, Galliano, LA. February 2007.
- LAPM-Tech Note 9-Retail Seed Dealers-2008. Louisiana PM Program, Alexandria, LA. May 2008.
- Retail Conservation Seed Dealers-2007. Louisiana PM Program, Alexandria, LA. May 2007
- Gulf Bluestem (Schizachyrium maritimum) Flyer. Golden Meadow Plant Materials Center, Galliano, LA. 8/2006
- Notice of Release of Schizachyrium maritimum. Golden Meadow Plant Materials Center, Galliano, LA. Aug. 9, 2006.
- Plant Fact Sheet for Gulf Bluestem (Schizachyrium maritimum). Golden Meadow Plant Materials Center, Galliano, LA. 8/2006
- Plant Guide for Panicum amarum, Golden Meadow Plant Materials Center, Baton Rouge, LA. 1/2006.
- Woody Species for Adaptation in Louisiana's Marshes. Golden Meadow Plant Materials Center, Galliano, LA. 9/13/2006
- Brochure Caminada seaoats, Uniola paniculata. Golden Meadow Plant Materials Center, Galliano, La. Aug. 2002.
- Brochure Gulf Coast Marshhay Cordgrass (Spartina patens). Golden Meadow Plant Materials Center, Galliano, LA. Feb 2005.
- Evaluation of Spartina alterniflora accessions for the remediation and stabilization of sudden salt marsh dieback. Galliano, Louisiana.
- Maritime Forest Habitat Restoration and Enhancement. Galliano, Louisiana.
- Plant Guide Black Mangrove (Avicennia germinans). Galliano, LA. Feb 2005
- Notice of Release 'Gulf Coast' Marshhay Cordgrass. Golden Meadow Plant Materials Center, Galliano, LA. 9/30/03
- Bamboo (Arundinaria gigantea). Golden Meadow Plant Materials Center, Baton Rouge, LA. Sept. 2001

- Notice of Release *Uniola paniculata* Caminada seaoats. Golden Meadow Plant Materials Center, Galliano, LA. 9/2001
- Brochure Brazoria Seashore Paspalum (*Paspalum vaginatum*). Golden Meadow Plant Materials Center, Galliano, LA. Feb. 2000
- Brochure Fourchon Bitter Panicum (*Panicum amarum*). Golden Meadow Plant Materials Center, Galliano, LA. Feb. 2000
- Brochure Pelican Black Mangrove (*Avicennia germinans*). Golden Meadow Plant Materials Center, Galliano, LA. Feb. 2000
- Brochure Vermilion Smooth Cordgrass (*Spartina alterniflora*). Golden Meadow Plant Materials Center, Galliano, LA. Feb. 2000.
- Plant Guide California bulrush (*Schoenopletus californicus*). Golden Meadow Plant Materials Center, Galliano LA. Sept. 2000
- Plant Guide Smooth Cordgrass (*Spartina alterniflora*). Golden Meadow Plant Materials Center, Galliano LA. Oct. 1999
- Notice of Release *Panicum amarum* Fourchon Germplasm. Golden Meadow Plant Materials Center, Galliano, LA
- Notice of Release *Paspalum vaginatum* Brazoria Germplasm. Golden Meadow Plant Materials Center, Galliano, LA.
- Notice of Release of Source Identified Germplasm Pelican Black Mangrove. Golden Meadow Plant Materials Center, Galliano, LA. Feb. 1994.
- Proposed Varietal Release *Spartina alterniflora* var. 'Vermilion' (T54025) Smooth Cordgrass, Golden Meadow Plant Materials Center, Galliano, LA. 1989
- 327 Conservation Cover State Specification. LA FOTG, Alexandria, LA. October 2007.
- 342 Critical Area Planting State Specification. LA FOTG, Alexandria, LA. October 2007.
- 386 Field Border State Standard. LA FOTG, Alexandria, LA. October 2007.
- 393 Filter Strip State Standard. LA FOTG, Alexandria, LA. October 2007.
- 601 Vegetative Barrier State Specification. LA FOTG, Alexandria, LA. October 2007.
- Plant Materials for Contour Buffer Strips. Louisiana PM program, Alexandria, LA. January 2007. .
- Plant Materials for Field Borders. Louisiana PM Program, Alexandria, LA. January 2007.
- Plant Materials for Filter Strips. Louisiana PM Program, Alexandria, LA. April 2007.
- Retail Conservation Seed Dealers. Louisiana PM Program, Alexandria, LA. May 2007.
- Cogongrass (*Imperata cylindrica*). Alexandria, LA. Plant Note 1, March 2003.
- Bamboo (*Arundinaria gigantea*). Golden Meadow Plant Materials Center, LA. Sept. 2001.
- Caminada Sea Oats Release Brochure. Golden Meadow Plant Materials Center
- Red Mulberry (*Morus rubra*). Golden Meadow Plant Materials Center, LA. Sept. 2001.
- Sugarberry (*Celtis laevigata*). Golden Meadow Plant Materials Center, LA. Sept. 2001.
- *Anagallis arvensis* subsp. *Foemina* (Primulaceae) new to Louisiana. Sida, 19(4) Dec. 28, 2001.
- Plant Guide Beaked Panicgrass *Panicum anceps*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Broomsedge Bluestem *Andropogon virginicus*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Bushy Beardgrass *Andropogon glomeratus*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide California bulrush (*Schoenopletus californicus*). Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Fall Panicgrass *Panicum dichotomiflorum*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Indian Woodoats *Chasmanthium latifolium*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Knotgrass *Paspalum distichum*. Golden Meadow Plant Materials Center, LA. Sept. 2000.
- Plant Guide Maidencane *Panicum hemitomon*. Golden Meadow Plant Materials Center, LA. Sept. 2000..
- Plant Guide Splitbeard Bluestem *Andropogon ternarius*. Golden Meadow Plant Materials Center,

LA. Sept. 2000.

- Plant Guide Torpedo Grass *Panicum repens*. Golden Meadow Plant Materials Center, LA. Sept. 2000.