



Jimmy Carter Plant Materials Center Americus, Georgia Mid-Year Progress Report April 2002

Products and Accomplishments



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PLANT MATERIALS STAFF



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Jimmy Carter PMC
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Progress in Completing Projects and Studies at the Jimmy Carter PMC and technology transfer activities conducted by the Plant Materials Specialist.

- **Indiangrass Release**

The 'Americus' Indiangrass is complete and should be reviewed and signed by the State Conservationists at the PMC Advisory Meeting. Alabama Crop Improvement Association will handle the seed for commercial increase.

- **Eastern Gamagrass Release**

A joint release between the Jimmy Carter and Jamie L. Whitten PMC's is tentatively planned for 2005.

- **Eastern Gamagrass Grazing Demonstration**

Steers will be provided by the Lower Chattahoochee District or Ft. Valley State University for the eastern gamagrass grazing demonstration. We are obtaining some important and valuable information on managing eastern gamagrass under grazing conditions in the Southeast.

- **Silvo-Pasture Project Demonstration**

In past years, silvopasture studies were conducted by various research institutions in the southeast. They found that tree production and cattle production could be accomplished in one management regime. However, there is a lack of silvopasture demonstration at the present time. This study was established to demonstrate the establishment, management and maintenance of a system designed to produce several valuable products (cattle, pasture, and trees) over a long-term period. In January 2001, longleaf pine trees were planted to two 4 Ac blocks at the PMC. In 2001 dry matter production and % species composition of the pasture grass was determined to represent base line data for future evaluations. Later in the study the PMC plans to conduct more pasture evaluations as well as cattle and tree measurements.



- **Alternative Crops**

A joint alternative crops project with USDA-ARS and 1890 Land-Grant Universities was planted last year. The seed was provided by the ARS Plant Introduction Station in Griffin, GA and Tuskegee University for seed increase plantings. Humans have utilized plants for thousands of years. For example, therapeutic agents for treating many ailments are derived from various herbs. The USDA-ARS is looking at many legumes for pharmaceutical purposes, such as, Velvetbean (contains L-DOPA, which is used to treat Parkinson's disease). Dr. Morris with ARS states many obscure legumes can provide valuable multiple resources in addition to medicines, such as, human food, animal feed, cover crops, green manure and erosion control. This study will attempt to assemble, grow and demonstrate new and different crops for small farmers. These farmers will subsequently produce valuable plant material for many uses including medicine, food, and conservation. Along with Dr. Brad Morris, USDA-ARS and Errol Rhoden, Tuskegee University the PMC established mung bean, velvetbean, and cowpeas in 2001. In 2002 the PMC is expanding the demonstration to include sub clovers, guar, jackbean and lab lab.

- **Carbon Sequestration Study**

The 1st year evaluation of the carbon sequestration study will begin this year. The survival rate was 100% for seed planted last year. Dr. Mark Latimore, Fort Valley State University and Dr. Lee Norfleet, USDA-ARS in Auburn has agreed to collaborate as advisors. Concerns over global warming have increased interest in carbon and carbon sequestration. Scientists estimate agriculture is responsible for about 7 % of the total U. S. contribution of greenhouse gases. Plants remove carbon dioxide from the atmosphere and store it in plant parts as carbon. When plants die and decompose some carbon is released back in the atmosphere while some is sequestered as soil carbon, especially under conservation tillage systems. This amounts to a natural giant carbon storage sink. This study will compare annual and perennial crops ability to sequester carbon. This will be determined by soil carbon testing of several entries in a long-term study.



A randomized complete block design with four replications was planted to 'Earl' big bluestem, 'Tropic' Sun Hemp, 'Tuka' eastern gamagrass and 'Alamo' switchgrass in May 2001. Rye was overseeded in each plot in November 2001. Soil carbon content over time will be the main measured variable. In 2001, a base line mean soil carbon content was determined for future reference.

- **Mixed Native Grass Study**
The mixed native grass study consisting of indiagrass, big bluestem and switchgrass was planted last year at the PMC.
- **Big Bluestem**
Big bluestem (*Andropogon gerardi*) is a native perennial, warm season grass. It is cross-pollinated and has several ploidy levels $X = 20, 40, 60$. Big bluestem is photoperiod sensitive. It is widely distributed in the United States. It occurs in tall grass prairies of the Midwest as well as in forested areas of the southeast. It has been utilized for forage and hay production. This study attempts to evaluate big bluestem ecotypes for cultivar development. In 1989-1990, the PMC assembled 750 vegetative ecotypes of southeastern big bluestems. These ecotypes were placed into an initial evaluation block.



**Jimmy Carter Plant Materials Center
Strategic Plan 2000-2005
FINAL**

The Jimmy Carter Plant Materials Center Strategic Plan – 2000-2005 was revised to meet the NRCS objectives, format and the new guidelines in the National Plant Materials Manual. It was approved by the Jimmy Carter PMC Advisory Committee in January 2002. The plan has been distributed to all states served by the center, regional office, institutes, and Rick White.

2001 Jimmy Carter PMC Activity Report




- Emailed to Rick White and to all NRCS offices in the states that the PMC serves.
- Report also posted on the homepage

Presentations

- Seminar, Ag Grad Students, at Tuskegee University on plant materials for water quality and native grasses (Surrency)
- Teacher Workshop on Plant Materials in Early County sponsored by Flint River S&WCD (Owsley)
- Conducted native grass workshop for Sumter County Middle & High School (Owsley)

USDA NRCS United States Department of Agriculture Natural Resources Conservation Service

**Jimmy Carter Plant Materials Center
Strategic Plan
2000
Americus, Georgia**



- Georgia Botanical Society – Presented seminars on native plant species at Reed Bingham State Park.

Outreach Activities and Report

- **Native American Tribes**

Worked with Larry Coburn to obtain Indian corn seed for propagation and increase in the greenhouse and field at the PMC. A fence was purchased to prevent the deer from grazing the plants. Indian corn has cultural significance and dates back to the trail of tears.

- **Kennedy Farm Expo –Small Farm Demo**

The Kennedy Farm Expo was a great success. Approximately 300 people attended the 2-day event. Assistance will continue to be provided in the area of cover crops, wildlife habitat improvement and native grasses.



Donald Surrency, Plant Materials Specialist, provides information on the field tours and exhibits.



Leonard Jordan, State Conservationist, provides opening comments.



Tents in the background contained exhibits from many agencies and private concerns.



The 2 day event consisted of discussion points on the farm , such as silvopasture exhibit and demonstration area on the farm.



Sugar cane was once a cash crop that was grown to produce cane and syrup for sale by small farmers.



Old fashion cane grinding generated a lot of interest from the young and old.

Kennedy Small Farm Expo – 2001



Syrup making is an old dying art.



Very few farmers produce syrup or even have the knowledge to prepare it.



Trams provided transportation to the field demonstration plots.



Beef cattle production on small farms was a good discussion point. The use of native grasses for grazing programs on small farms created a lot of interest.

US Coast Guard

A wetland vegetation landscape plan for a constructed wetland that is designed (NRCS Alabama) to treat stormwater runoff from parking lots and a motor vehicle garage in Mobile, Alabama was completed for NRCS field office in Mobile, Alabama.

School Systems in Tennessee

A wetland vegetative plan for a residential constructed wetland to treat a septic system for Ramar Elementary School in Selmer (McNairy County) Tennessee was completed.

Georgia's Shrimp Pilot Project

The Georgia Department of Industry, Trade and Tourism has embarked on a program to develop a pilot project to raise marine shrimp in fresh water shallow ponds. The ponds are designed to circulate through a wetland marsh pond that contain wetland plants to remove any nutrients or waste from the water.

The Fort Valley State University is involved because of the potential this new industry will have for small farmers. I have been requested to provide technical assistance for the selection of wetland vegetation to use. A wetland plan is being developed for the wetland system. Information on managing the hydrology during the initial establishment period was discussed. In addition, sources for wetland plant materials was provided.

US Forest Service – Native Grasses

The Jimmy Carter Plant Materials Center entered into an agreement with the US Forest Service to provide technical assistance to develop native plant technology. The US Forest Service has placed a high priority on this work because it is needed to develop planting guides for critical area treatment, land reclamation, wildlife habitat improvement, and other critical needs.



SUMTER NATIONAL FOREST

Collecting, testing and growing native grasses to test germination viability and to provide plugs for planting. The native grass seed for this test and plantings in the seed orchards was cleaned and processed by the Jimmy Carter Plant Materials Center and returned to USFS.

SUMTER NATIONAL FOREST



Restored gully with trial seeding of native grasses in South Carolina.



Steve Dix assures quality control of native grass seed increase plantings on the National Forest in South Carolina.

SUMTER NATIONAL FOREST



John Vann, Regional Coordinator (L) and Dennis Law (R) had the initial vision to promote the use of native plants and the need to include the NRCS Plant Materials Program in the process.



Check on results in transplanting pots to field conditions indicates that purpletop does well in early response. Dennis Law, USFS, coordinates plant material activities with Forest Service in South Carolina.

SUMTER NATIONAL FOREST



Dennis Law checks native plant plugs planted in the furrows to improve water holding. During drought of summer 2000, they were watered a few times to insure survival.

Mobile, Alabama

Constructed wetlands are being used in the Mobile, Alabama area for stormwater treatment in urban areas, small systems for residential wastewater treatment, the treatment of herbicides, pesticides and nutrients associated with runoff from Golf Courses and Stormwater treatment at the U.S. Coast Guard Station in Mobile.



Constructed wetland reduced contaminants by 98% prior to being discharged into Mobile Bay. Monitoring performed by Dr. Kevin White, PhD, at the University of South Alabama located in Mobile.

RESIDENTIAL CONSTRUCTED WETLAND



Ben Malone, DC , Mobile in foreground. A very successful constructed wetland near Weeks Bay treats the wastewater generated from this residence. It is probably the best landscaped and managed constructed wetland in the Mobile Area.

Golf Course – Mobile, Alabama



Mobile Bay in background receives about 95% of the runoff from the Golf course.

ABOVE PAR



Runoff from this Golf Course near Mobile Bay in Mobile, Alabama contains contaminants that causes serious water quality problems. A five (5) acres watershed area was selected to evaluate the effectiveness of a constructed wetland to treat the runoff before it entered Mobile Bay.

ANIMAL WASTE



* Vegetation will be planted in May or June 2002

Cullman County:

Cooperators: Bill Hagemore Farm, Tennessee Valley RC&D Council & the Cullman County SWCD

Operation type: A composting operation to develop alternative uses for poultry house litter. The farmer has 19 chicken houses. Litter is collected from Mr. Hagemore's and surrounding farms and composted. The compost is used as topsoil replacement and peat moss replacement in the horticultural mixes.

Wetland purpose: To collect and treat the runoff from the loading pad and the tires of farm vehicles and equipment used to move the litter / compost.

Wetland size: Approximately 40 x 50 feet.

ANIMAL WASTE



* Vegetation will be planted in May or June 2002

Marshall County:

Cooperators: John Penny (Covey Rise Nursery), Tennessee Valley RC&D Council & the Marshall County SWCD Cullman County:

Wetland purpose: To collect and treat the runoff from the loading pad and the tires of farm vehicles and equipment used to move the litter / compost.

Wetland size: Approximately 60 x 60 feet.

Operation type: A composting operation to develop alternative uses for poultry house litter. Litter is collected from surrounding farms and composted. The compost is used as a peat moss replacement in the horticultural mixes.

Events in the Planning Stages

Native Warm Season Grass/Wildlife Field Day

- Native Warm Season Grass/Wildlife Field Day will be held at the Jimmy Carter PMC, Americus, GA. Details are incomplete.

Native American Tour- September 2002

- Working with Larry Coburn to plan a tour of the Jimmy Carter PMC for Native Americans.

Small Farmers Tour

- A tour for small farmers is being planned for June or July 2002. The tour will include small farms with emphasis on the African American Farmers Association located in Greensboro, Georgia. In addition, 1890 Land Grant Universities will be involved and several elected officials that represent the Sumter County area.

Invited:

Congressman Sanford Bishop

Congresswoman Cynthia McKinney

State Representative Lynmore James

State Senator George Hooks

Tybee Island Revisited

- In 1991 a coastal dune stabilization project was completed on Tybee Island. It is recognized as one of the best beach stabilization projects along the Atlantic Coast and the Gulf of Mexico. The Jimmy Carter Plant Materials Center played a key role in providing the plant technology and 30,000 plant materials for the project. A video was produced by the Georgia Farm Bureau. After 10 years the project is still a great system with dunes as high as 12' high and vigorous coastal vegetation exists on the dunes to control erosion. Other states have visited the site and have complete projects with the major components, that have made this project successful.

Georgia Farm Bureau has agreed to develop a new video of the Tybee project in July 2002. Mayor Parker, a key player in 1990 to get the project going is back in office and looking forward to the visit in July, 2002.

Pete Waller is working to get a date cleared with Congressman Jack Kingston. Pete indicated that we should emphasize to Congressman Kingston the conservation benefits, cost savings to taxpayers, as a result of not having to renourish the beach area for more than 10 years. Renourishment is usually planned for 4-5 years intervals because of erosion caused by storm tides, hurricanes, etc.

Constructed Wetland Conference– June 6, 2002 Columbia, SC

- I participated as a speaker at the wetland conference on June 6, in Columbia, South Carolina. It was sponsored by NRCS, DEHEC, RC&D Councils, Soil and Water Conservation Society of America. It was well attended.

Ag Field Day - August 8, 2002

- Details are incomplete. A Ag Field Day is planned at the new college farm on the campus of the Ft. Valley State University. I am serving on the planning committee.

Irrigation Well and Feasibility Study

The new irrigation well and pump is operational. It appears to be operating as planned and designed.

Business Plan

- **Action items in business plan are on schedule. Some items have been completed and others are 50% or more complete**

Water Quality

(Wetland plant information)

Provided wetland planting guides and specification to NRCS field and RC&D offices in four states, Georgia, Alabama, South Carolina and Tennessee. The information was requested for environmental education projects at middle schools, and to treat runoff from composting operations. A composting operation to develop alternative uses for poultry house litter. The farmer has 19 chicken houses. Litter is collected and composted. The compost is used as topsoil replacement and peat moss replacement in the horticultural mixes. The wetland purpose is to collect and treat runoff from the loading pad.

Farm Bill

- Providing recommendations to technical support staff to incorporate plant materials into (FOTG) field offices technical guides.
- Identified role of plant materials centers in the implementation of the farm bill.

Environmental Education Projects

The environmental education project involved the selection and recommendation of plant materials that would enhance the creation of a marsh in wetland education areas for the students and community.

The sites are located at the following locations:

- Oakwood College
Tennessee Valley RC&D Council
Madison County SWCD
- Wetland's Edge Environmental Education Center
City of Decatur Board of Education
BP Corporation
Tennessee Valley RC&D Council
- Allentown Elementary School
Mobile, Alabama

ENVIRONMENTAL EDUCATION



Allentown Elementary – Discussing plant materials with (L-R) April Griffin (NRCS secretary), Don Surrency (NRCS Plant Materials Specialist) Angela Beech (teacher), at Allentown Elementary in Mobile, Alabama

Dates of Plant Materials Events

June 6, 2002 Constructed Wetlands Conference, Columbia, South Carolina
June 18, 2002 - PMC Technical Committee Meeting, Jimmy Carter PMC
June 19, 2002 - PMC Advisory Committee Meeting, Jimmy Carter PMC

About the Author

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www.ga.nrcs.usda.gov/ga/pmc
<http://Plant-Materials.nrcs.usda.gov>

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