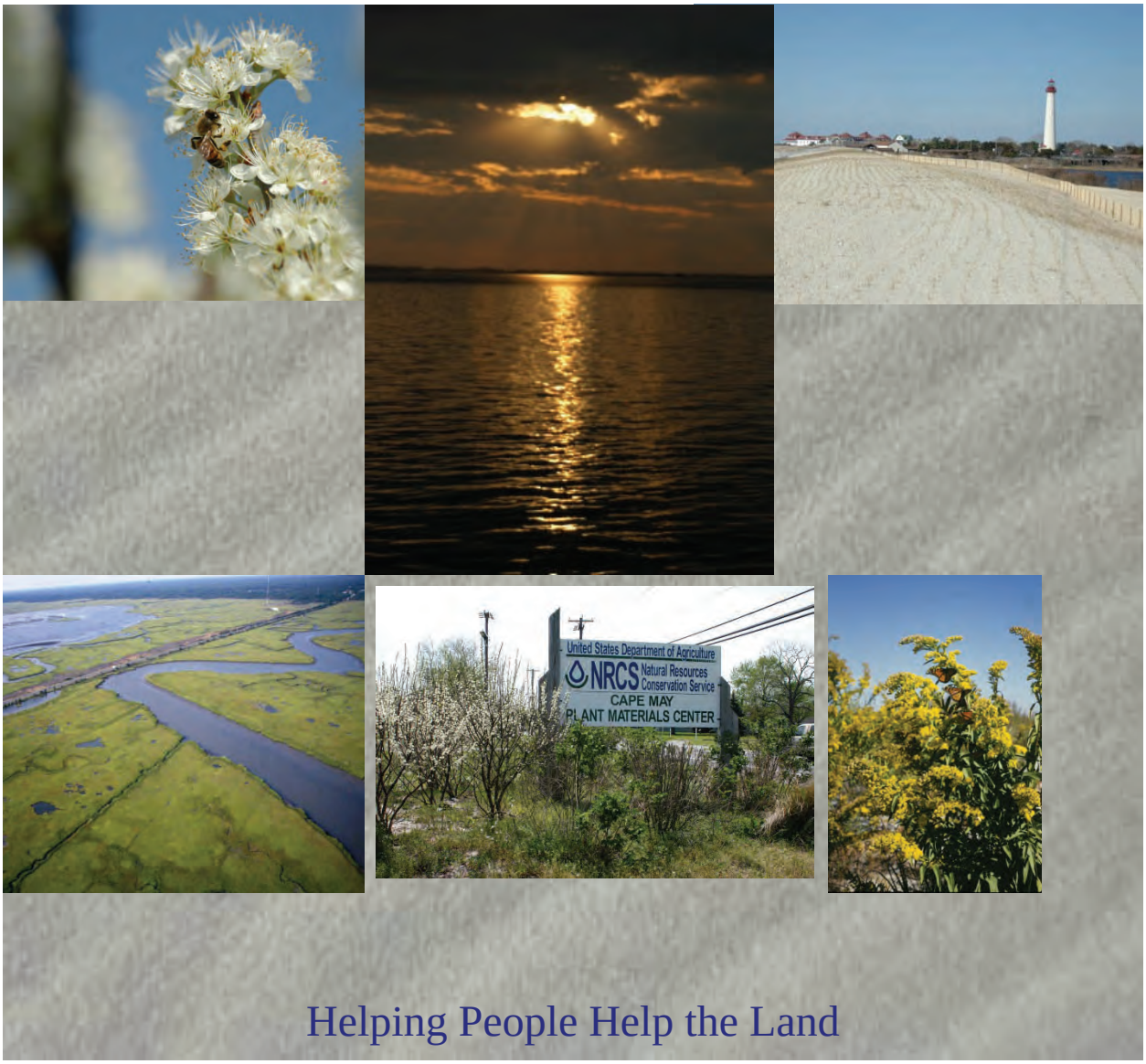
United States Department of Agriculture
NRCS Natural Resources Conservation Service

Plant Materials Program

Cape May Plant Materials Center

2010
Progress Report of Activities



Helping People Help the Land

Plant Materials Program

Mission and Objectives

Aerial View of the Cape May Plant Materials Center The Cape May Plant Materials Center (PMC) is located five miles due east of the Avalon beaches and adjacent to New Jersey's most expansive tidal marsh estuaries.

The **mission** of the Plant Materials Program is to provide timely and effective vegetative solutions for identified resource needs. Plants that show promise for meeting identified conservation needs are tested and proven before they are released to the private sector for commercial production.

The Cape May Plant Material Center serves a nine-state area extending from Massachusetts to the North Carolina and has been a leader in developing new native plants and technologies for coastal, marine and estuarine habitat.

The major **objectives** of the Cape May Plant Materials Center (PMC) are:

- Provide plant resources Farm Bill Conservation Programs
- Develop plant technology for coastal ecosystems
- Establish sustainable native plant communities
- Educate NRCS employees and partners on plant establishment and uses

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New Plant Release

Monarch Germplasm Seaside Goldenrod (*Solidago sempervirens)*

Monarch Germplasm is a source identified ecotype release developed from native mid-Atlantic populations. Seaside goldenrod is a perennial forb that is a member of the Aster family. The plant may grow up to six feet tall at maturity. Seaside goldenrod is native and well adapted to coastal habitats including the backside of primary dunes, low secondary dunes and edges of salt marshes. It has good drought and salt spray tolerance. With showy bright yellow flowers blooming late August to late October, seaside goldenrod is an excellent addition to pollinator gardens, butterfly gardens and ornamental flower beds. It also provides an energy source for the fall migrating Monarch butterflies along the Atlantic flyway.

New Technology

The interagency project between the Cape May PMC and the New York District- Corps of Engineers resulted in studies pertaining to direct seeding of smooth cordgrass (*Spartina alterniflora*) in Jamaica Bay, New York.

Smooth cordgrass (*Spartina alterniflora*) is a highly rhizomatous, native warm-season wetland grass that grows in the intertidal zone of saline and brackish marshes throughout the Northeast, Mid-Atlantic, Southeast, and Gulf Coasts. It is typically planted as vegetative plugs for shoreline and tidal marsh restoration. However, this can be very costly for large projects at approximately $0.70-$1.00/plug planted on 1 to 1.5 foot centers depending on the wave energies of the site. If reliable seeding techniques could be developed for certain types of sites, establishing smooth cordgrass by direct seeding would be more cost effective by reducing the amount of plugs and labor required to plant. Smooth cordgrass has been successfully seeded on large, level mudflats in the Gulf Coast region where tidal elevations are low. However, in the Mid-Atlantic and Northeast states where tidal fluctuations are moderate to high, little is known about what soil and environmental site conditions are conducive to direct seeding smooth cordgrass for stabilization and restoration of shorelines and marshes.

To learn more about this project, visit the project fact sheet on the Cape May Plant Materials Center website at:

http://www.plant-materials.nrcs.usda.gov/pubs/njpmcabt9107.pdf

Native Pollinator Study

The PMC is hosting a 2 year pollinator study with the Rutgers University Entomology Department. The first phase of this study involves evaluating the types and frequency of insect species that visit 20 target plant species. Some of the plant species in the project include various asters and goldenrod species, black - eyed susan, green-headed cone flower, blue lobelia, butterfly and swamp milkweed, giant yellow hyssop, Virginia mountain mint, and hairy penstemon. In the first season of monitoring, the following data were collected:

- Observations of insects visiting each plot were made on 3 separate days per plot during the peak bloom of the plant. A total of 543 Diptera (flies), 877 Lepidoptera (butterflies), and 3145 Hymenoptera (bees and wasps) were recorded.
- Pollinator insects were collected by net from each plot on 3 separate days per plot during the peak bloom of the plant. All specimens have been pinned, fully labeled and bar coded, and identified. Bees have been identified to the species level, butterflies to the genus level, and other taxa to the family or genus level.
- A total of 187 Diptera, 275 Lepidoptera, and 1816 Hymenoptera were collected.

Some of the top species for attracting native pollinators are: narrow leaf mountain mint, swamp milkweed, Great blue lobelia, New England aster, and Black-eyed susan.

Sunn Hemp Evaluation Study

Sunn Hemp, *Crotalaria juncea*, is a cover crop that can produce high organic matter yields in a single growing season as it fixes nitrogen in the soil. In cooperation with 15 other PMCs across the country, Sunn Hemp will be evaluated here for its potential use as a green manure and cover crop in the Mid-Atlantic. Being a tropical or sub-tropical plant, this study will help find a range where Sunn Hemp can be utilized.

Sunn Hemp in flower

Biomass Yield Samples

Conservation Field Day at the Cape May Plant Materials Center Wednesday, September 29, 2010

Approximately 35 NRCS field office and Soil Conservation District employees from 5 surrounding states attended our field day last fall. Some of the highlights of the day included:

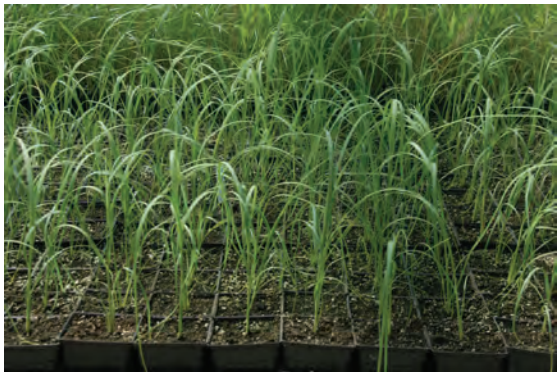
- Carbon sequestration benefits of native grasses
- Pollinator research being done by Rutger's Entomology Department
- Sunn hemp as a new cover crop
- Soil quality changes with different field management practices
- Various native grasses and their potential for biofuel production
- Demonstation and uses of a roller crimper
- Demonstration of small scale harvest and seeding equipment
- How to make grass pellets

We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.

—AldoLeopold

Cold Tolerant Sea Oats Project Resurrected

A project to develop a selection of sea oats that would tolerate the northern Mid-Atlantic climate was started in the early 1990's by Don Hamer, PMC Manager. Many of the plantings were destroyed by storms and the project was put on hold. This year, however, we identified some remnant plants from a previous planting producing seedheads on the dunes in Avalon, New Jersey. Don Hamer, now retired, came back as a Earth team volunteer to carry on the project. We started about 250 seedlings and outplanted on the back dunes in Avalon near the location of the original planting. Approximately 50 percent of the seedlings survived the first growing season. Additional plantings will be done in future years.



Sea Oats seedlings

Don Hamer evaluating plots

Opportunities for Field Offices, District Employees, Partners and Volunteers

The work of the Cape May PMC relies heavily on the cooperation of conservation partners to locate native plant stands; collect materials and ship them to Cape May; locate suitable plant testing sites; record plant performance data; and publish new scientific findings. If you or anyone you know would like to become a partner and volunteer your talents contact us. We can provide training in plant identification, seed collection processes, how to handle and ship plants and more!

Phone (609) 465-5901

More information about Cape May PMC accomplishments is available at:
http://plant-materials.nrcs.usda.gov/njpmc.
Through this link you can also access our national network of 27 PMCs strategically located throughout the United States.

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