NORMAN A. BERG NATIONAL PLANT MATERIALS CENTER
2010 PROGRESS REPORT

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USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

WHO WE ARE

The Norman A. Berg National Plant Materials Center (PMC), located in Beltsville, Maryland, is one of 27 PMCs in the USDA Natural Resources Conservation Service's (NRCS) Plant Materials Program. First established in 1939 as a conservation plant nursery to support Dust Bowl recovery efforts, the PMC now plays a vital role in finding innovative vegetative solutions for a broad range of conservation challenges throughout the Mid-Atlantic region and providing assistance to the National Plant Materials Program.

In May 2009 the National PMC was renamed the Norman A. Berg National PMC to celebrate the life and career of the late Norman A. Berg, early Soil Conservation Service/NRCS administrator and life-long conservationist. Mr. Berg's legacy has inspired generations of conservationists and had a positive and lasting impact on NRCS.

PROGRAM EMPHASIS

Current high priority conservation activities at the PMC include developing plant attribute data for the refinement of managed grazing systems, developing methods for increasing diversity in NRCS conservation plantings to improve wildlife and pollinator habitat, designing optimal vegetated environmental buffers to control poultry house emissions, developing Mid-Atlantic ecotype plant releases for use in NRCS conservation plantings, providing technical training to NRCS field staff and partners, assisting field offices with conservation plantings and the development and distribution of the most up to date conservation technical information.

In FY 2011, staff from the Norman A. Berg National PMC and the Cape May New Jersey PMC will be coming together to develop a comprehensive assessment of resource concerns for the Mid-Atlantic region. This collaborative effort will result in a new Long Range Plan for both PMCs and guarantee the wise and informed investment of our limited resources as we work to make the Mid-Atlantic region a cleaner, healthier place.

NATIONAL PMC WELCOMES JULIE DEPUE

Julie DePue joined the Norman A. Berg National PMC staff in December, relocating from her previous secretarial position at the Big Flats New York PMC, where she had worked for two and a half years. In addition to providing administrative support to the PMC, DePue will also be playing an important national role supporting the National Plant Materials Program, assisting with facilitating the preparation and posting of technical documents (including Plant Fact Sheets and Plant Guides) and providing POMS related technical assistance.

DePue previously worked as a software consultant, installing enterprise resource management packages with an emphasis in supply chain management. She majored in English and screenwriting at the University of Arizona and Cal State and through her college years and professional career has lived across the country in eight states.

RELEASE OF FLORIDA PASPALUM (*Paspalum floridanum*) FOR THE MID-ATLANTIC

The Norman A. Berg National PMC released Florida Paspalum (*Paspalum floridanum*) at the end of 2009 and it is anticipated that seed will be available from commercial seed growers in the very near

future. This new release is a Mid-Atlantic ecotype, the only "local" ecotype Florida paspalum currently available in the region, and as such it has great potential for general conservation use throughout the PMC's Service Area.

Florida paspalum is a highly versatile conservation plant with uses including soil stabilization and wildlife food/cover. Well adapted to most eastern US soils and spreading from short thick rhizomes and seed, Florida paspalum grows readily on disturbed areas such as road ditches as well as on sandy or poorly drained sites. Florida paspalum produces large seeds eaten by wildlife, especially birds, and the seeds have a long production period from late summer to frost.

Florida paspalum is a native, warm-season perennial bunch grass growing typically three to five feet tall, but up to eight feet with good fertility (see Figure 1), and is commonly found growing in low, moist grassy areas and wood openings. A vigorous and adaptable grass, Florida paspalum has the excellent establishment characteristics of smooth seed, excellent germination and seedling vigor.

Figure 1 Harvesting Florida paspalum seed at the PMC. The Florida paspalum growing at the PMC's increase field averages approximately 8 feet in height.

WINDBREAKS AND HEDGROWS FOR POULTRY HOUSES

The Mid-Atlantic States have been losing farmland to development at a startling rate. Sussex County Delaware and the Eastern Shore of Maryland are producing more poultry than any other area of the country, all while situated near large and growing metropolitan areas. This increased development pressure has meant lots of new suburban developments adjacent to our existing poultry producers. NRCS is promoting the use of poultry windbreaks and hedgerows to foster good neighbor relations by reducing particulates, odors and noise and improving the visual perception of the poultry houses. The Chesapeake Bay will also benefit as reduced particulate matter will mean improved water and air quality.

The Norman A. Berg National PMC is presently working with Big Flats New York PMC, researchers at Pennsylvania State University and USDA's Agricultural Research Service (ARS) to develop vegetative environmental buffers (Figure 2) that can absorb gaseous ammonia, trap particulate matter up to 10 microns (PM10) and mitigate odors expelled by poultry houses.

Figure 2 A poultry air quality windbreak adjacent to fans at a poultry house in Pennsylvania. The windbreak is approximately 30 feet from the exhaust fans and is composed of short grasses that give way to shrubs and small trees.

Producers have been wonderful partners, working with the researchers to establish, maintain and assist with monitoring farm test sites throughout Pennsylvania, Delaware and Maryland. In 2010, seven farm test sites (five in Maryland and two in Pennsylvania) were established.

Windbreaks planted with 'Manhattan' Euonymus, 'Austree Willow and 'Green Giant' Arborbitae have proven to be effective at precipitating out dust by slowing the air speed from exhaust fans. Test farms have been planted in Maryland, Delaware and Pennsylvania with 'Kanlow', 'Northwind' and 'Thundercloud', switchgrasses, 'Atlantic' coastal

panicgrass, red maple, hackberry, alders, black locust, red oak and bayberry to evaluate survival and growth.

Future testing work with ARS will quantify the amounts of dust and ammonia mitigated by the test plants, allowing the PMC to optimize the configuration of plants necessary to provide the greatest conservation benefit to our producers, their neighbors and the Chesapeake Bay.

WARM-SEASON GRASS MANAGEMENT TRAILS

Conservation plantings often become dominated by warm-season grasses over time, providing little diversity of plants, structure or wildlife habitat. The Norman A. Berg National PMC is working in cooperation with Maryland NRCS State Biologist Steve Strano to increase wildflower diversity in conservation plantings, thereby increasing the ability of these plantings to support greater wildlife diversity throughout the seasons.

Wildflowers are food for insect larvae and are used by pollinators as a pollen and nectar source. A diverse mix of wildflowers providing blooms throughout the growing season is especially valuable to pollinators and helps support populations of beneficial insects such as those that that prey on crop pests. Wildflowers in grass plantings provide a varied food source and structural complexity to support a diverse community of birds, mammals and insects.

Studies at the PMC and at offsite farms are being conducted to determine the optimal methods for renovating warm-season grass stands to increase diversity and provide improved wildlife habitat. Preliminary data indicate that fall disking is more effective at reducing warm-season grass densities than spring disking, but spring seeding results in greater establishment of wildflowers than fall seeding.

FORAGE VARIETY TRIALS AND TRAINING

In a continuing effort to help farmers more efficiently utilize managed pastures in Maryland, the Norman A. Berg National PMC is developing forage productivity data. Forage variety trials conducted at the PMC include a warm-season grass, a cool-season grass and a Bermudagrass trial. The Bermudagrass is being tested for survivability in high animal use and sacrifice areas of farms, particularly with horses. These trials are being conducted jointly by NRCS and Maryland Cooperative Extension, with considerable assistance from forage expert and University of Maryland professor emeritus Dr. Les Vough (see Figure 3) and generous funding support from the Maryland Grazing Lands Conservation Initiative Coalition.

Data from the warm-season trial showed that all gamagrass varieties had the highest yields with 'Highlander' topping the list. In the cool-season trials tall fescue varieties had superior yield and persistence and orchardgrass varieties exhibited very poor stand persistence. In the Bermudagrass trial, the sprigged varieties of Bermudagrass have established and persisted better than the seeded varieties with 'Ozark' having the highest yield.

Forage production information will help farmers to optimize production in a sustainable manner that will conserve natural resources, improve the Chesapeake Bay's water quality and benefit the farmers' bottom line. Total yield and harvest date growth curve data will be used to refine the grazing models in the C-Graz software used in planning and optimizing managed grazing systems.

Figure 3 Dr. Les Vough operating a forage harvester on loan from the University of Maryland. Dr. Vough is seen here in the warm-season grass plots.

NATIVE PLANTS AND SEED FOR GREAT SMOKY MOUNTAINS NATIONAL PARK

In 2010 an Interagency Agreement between Great Smoky Mountains National Park (GRSM) and the Norman A. Berg National PMC was signed for 2011 – 2013. GRSM, and its Foothills Parkway, has a need to preserve their native plant resources while revegetating parklands. The National Park Service (NPS) requires that restoration of native plants be accomplished using germplasm from populations as closely related genetically and ecologically as possible to park populations. GRSM has harvested seed from indigenous populations, but does not have the personnel, expertise, facilities or equipment needed to clean process, test and store the seed. The PMC does have the personnel and is equipped to clean, process and store quantities of seed sufficient to meet the NPS needs within the required time frame. Technical expertise as necessary to achieve this goal will be provided by the PMC under this agreement.

High rainfall in the Cades Cove increase fields resulted in a bumper crop of over 1,400 lbs (bulk) of grass, legume and wildflower seed harvested. The seed was cleaned (de-bearded and then run through a clipper) by PMC staff to yield 630 lbs of cleaned seed.

ACTIVITIES AT THE NORMAN A. BERG NATIONAL PMC

During 2010 the staff at the Norman A. Berg National PMC gave numerous presentations and tours, provided training for NRCS staff and partners and supported a great variety of regional conservation initiatives. In all, it is estimated that over 2,700 individuals directly participated in PMC supported activities.

PMC presentations included such topics as gardening for pollinators, career opportunities with NRCS (see Figure 4), and vegetative buffers for poultry and livestock farms. Trainings included warm-season grass and weed identification, plant propagation techniques, rotational grazing in high-use areas, and seed drill calibration. Support for conservation initiatives included providing technical assistance and native plant materials to Virginia NRCS for the agency's native pollinator garden at the 2010 National Scout Jamboree (see Figure 5), providing technical assistance and native plant materials to NRCS National Headquarters to support a conservation project celebrating the agency's 75th Anniversary (see Figure 6), providing technical assistance to the White House in establishing the First Family's vegetable garden and building low tunnels (see Figure 7) and converting one of our greenhouses to certified organic container production to support USDA's People's Garden initiative.

Figure 4 PMC Manager Jeremy West at Yale University to speak at the 2010 Yale Federal Career Fair. West presented information about his time at NRCS and the Plant Materials Program to graduate students and faculty. Here West is providing encouragement over lunch to graduate students from the School of Forestry interested in applying for jobs at NRCS. This is the first time NRCS has been represented at Yale's Federal Career Fair.

Figure 5 The PMC provided technical assistance and propagated native pollinator plants for the NRCS's pollinator garden at USDA's conservation trail at the 2010 National Scout Jamboree. Here, volunteers from Virginia NRCS and the PMC can be seen plan planting some of the over 700 plants donated by the PMC for the project.

Figure 7 Resource Conservationist R. Jay Ugiansky (center), PMC Manager Jeremy West (second from left) and others spent the day with White House and National Park Service staff, planting a variety of vegetables at the First Family's vegetable garden and providing assistance with building low tunnels. This event was the official rollout for the Agency's high tunnel initiative. A video presentation of this day can be found at the White House blog.

Figure 6 NRCS National Headquarters staff, including Chief White, at a conservation project celebrating the agency's 75th anniversary. The project, at the former McLean, Virginia home of NRCS founder Dr. Hugh Hammond Bennett, was designed by National Landscape Architect Bob Snieckus, Management Analyst Denise Decker, Special Assistant to the Chief Andree DuVarney and PMC Manager Jeremy West.

NORMAN A. BERG NATIONAL PMC PERSONNEL

Jeremy West, *Manager*
Julie DePue, *Secretary*
Dan Dusty, *Farm Manager*
Shawn Belt, *Horticulturist*
R. Jay Ugiansky, *Resource Conservationist*
Nate Richards, *Biological Science Technician*
Randy Pheobus, *Earth Team volunteer*
Catherine Callaghan, *Earth Team volunteer*

For more information about the Norman A. Berg National PMC, or any PMC in the National Plant Materials Program, please visit us on the web at:

http://plant-materials.nrcs.usda.gov/

75 Years of Finding Innovative Vegetative Solutions to Emerging Conservation Challenges!

The pollinator/plant interaction shown in the header of this Progress Report is a hairy legged fly (*Trichopoda pennipes*) on a flat-top goldentop (*Euthamia graminifolia*). The image was provided courtesy of Randy Pheobus.