

# 2010

# Progress Report of Activities

Issued December 2010 **Manhattan, Kansas, Plant Materials Center**

3800 South 20<sup>th</sup> Street, Manhattan, Kansas 66502 Phone: (785) 539-8761 Fax: (785) 539-2034  
Web site: <http://www.plant-materials.nrcs.usda.gov>

## Pollinator Workshops

The Manhattan Plant Materials Center (PMC) hosted three pollinator workshops in 2010. At the first workshop on June 2, Dr. Orley “Chip” Taylor, founder and Director of Monarch Watch and Professor, Department of Ecology and Evolutionary Biology, the University of Kansas, was guest speaker and led a discussion on pollinator species.

With about 35 in attendance, Chip talked about diversity of pollinator species including a few mammals and birds. He also discussed the differing characteristics of plants and their ability to attract pollinators. The program ended outside with Chip showing workshop participants how to catch Monarch butterflies and how to properly and safely tag them.



Dr. Chip Taylor discusses pollinators

On July 8, Dr. Valerie Wright, Environmental Educator and Naturalist at the Konza Prairie and Betsy Betros, author of *A Photographic Field Guide to the Butterflies in the Kansas City Region*, presented a Butterfly Identification Workshop.

This workshop assisted participants in identifying butterflies and also provided training to volunteers who participated in the North American Butterfly Association Butterfly Count on July 14. The butterfly count is a nationwide one-day census of all butterflies observed within a count circle of 15 miles. The count is intended to promote interest and provide results useful for scientific monitoring of butterflies.

Lastly, Jennifer Hopwood, Midwest Pollinator Outreach Coordinator with the Xerces Society conducted a pollinator workshop on September 2, with assistance from Natural Resources Conservation Service (NRCS) employees Allen Casey, Career Intern, PMC; Mark Janzen, Plant Materials Specialist, NRCS State Office; and Dr. David Gordon, Professor of Entomology, Pittsburg (Kansas) State University. This workshop concentrated on pollinator differences, nests, plants, establishing pollinator-friendly habitat, and available programs that assist with promoting pollinators.



Jennifer Hopwood presents at Pollinator Workshop

## Boomer Lake

A plant materials study developed to test new plant materials and techniques was implemented last spring at Boomer Lake located in Stillwater, Oklahoma. The need for this study was identified in the Oklahoma Plant Materials Long-Range Plan (LRP) by the Oklahoma State Plant Materials Committee.

The study took place along a 700-foot section of Boomer Lake shoreline that was experiencing moderate-to-severe shoreline erosion caused by wave action and fluctuating water levels. The area around the lake provided a seed supply for buttonbush and false indigo along with vegetative cutting material of buttonbush, false indigo, and willow. Over 200 cuttings were prepared for planting at the site. The PMC provided native grass and forb seed along with 'Kanlow' switchgrass plants to complete the planting. The study encompassed 13 treatment areas including 3 controls that contained existing site vegetation.

This study was coordinated with Stillwater Parks Department staff who assisted with the planting and will provide maintenance for the planting.



NRCS and Boomer Lake staff complete planting



'Kanlow' switchgrass shoreline planting

## Sandy-Site Planting

After the second growing season, there are beginning to be a few successes in the Kearney County, Kansas, sandy-site study planting. The study contains 15 species that were replicated in the planting. A wheat-straw mat was placed over the seeding to serve as cover and to protect the seeding from soil erosion. Species showing some success include sand bluestem, black and bluegrama, prairie sandreed, and sand lovegrass. The following requirements for species included in the study were: adapted to sandy soils, receiving 14 inches or less rainfall, and a tolerance of cold temperatures.



Black blue grama

This study originated from seeding failures under the Conservation Reserve Enhancement Program (CREP) in Kansas. Under this program, priority is given to acreage where the retirement of the land and attendant water rights would have the greatest conservation benefit on the groundwater and river systems and protect wind erosion-prone soils. Several plant materials centers contributed seed to this study.

## Sand Creek Mitigation Project

Plant materials technical assistance was provided to the Sand Creek Mitigation project. This project was a cooperative effort between The U.S. Army Corps of Engineers (USACE), the Kansas Department of Wildlife and Parks (KDWP), and the NRCS. Plant materials involvement included recommendations for native grass seeding and tree and shrub planting assistance. Sand Creek is located below Kanopolis Reservoir in central Kansas and is stocked with trout from fall to late spring. The goal was to implement practices that would extend the period of time that trout can inhabit the creek by providing cooler stream temperatures. Placement of rock, ripples, lunkers, and vegetative plantings were used. It will be interesting once the vegetative plantings are established to see if the trout season can be extended.



Riparian work and vegetation planting

## Modoc Cypress

Modoc cypress (*Cupressus bakeri*), continues to be evaluated for use as a conifer in windbreaks. Currently there are two plantings; one at Tribune in western Kansas and the other at the PMC. Results indicate that Modoc cypress probably does not have application statewide as a windbreak conifer. At Tribune there has been very good survival along with a very healthy looking tree. At the PMC there was good initial growth, but the health of the tree began to diminish a few years after planting. There appears to be some moisture and insect-related stresses that affects this conifer.



Modoc Cypress at Tribune, Kansas (L) and the PMC (R)

## Cheney Reservoir

On a recent review of a plant materials project completed in 2000, it is encouraging to see the success that a project has had in reducing shoreline erosion. The purpose of the project was to evaluate various shoreline stabilization treatments and develop recommendations that could be applied in other similar environmental settings. Project treatments included vegetative fascines, live stakes, coir rolls, crib walls, log revetments, and offshore rock barriers. Several of these treatments continue to function and provide shoreline stabilization.



Cribwall with willow planting

## Shale-Site Study

During the evaluation of the shale-site study last year, the presence of native grass species caught the eye; among the common reed (*Phragmites australis*), clumps of switchgrass, big bluestem, and little bluestem were beginning to emerge. Seed collections were made and grown in containers at the PMC. Initial plans were to determine if the seed collected had tolerance to the low Ph shale sites. Last spring, these native plants were taken to the shale site and planted in a replicated block along with known varieties of the same species. After completing the planting, survival of the plants was doubtful due to the tough conditions.



Shale site study planting

As evaluations were completed this fall, to everyone's amazement, only three of the original 263 plants had not survived. Among the living plants, there were quite a few seed heads that had been produced. Little bluestem appeared to be in the best plant health and have the most seed head production. Future plans include collecting seed from the study area and establishing a similar study with seed. Shale sites are always difficult to manage and establish with native grass.

## Saline Study

Monitoring continues of the saline study planting near Eureka, Kansas. The most recent planting site was planted in 2008 and included a replicated study that included different types of surface residues. Prior to planting, livestock manure was applied and incorporated into the entire area. Although the incorporation of organic matter does not guarantee planting success, it does improve the potential of establishing vegetation on these types of soils.



Saline site planting

## PMC Open House/Field Day

In celebration of 75 years of service, the PMC is planning a field day June 7—8, 2011. The target audience on June 7 will be the general public and on June 8 will be the NRCS and its partners. Both days will feature a tour of the PMC that will include native grass and forb production fields, greenhouse, and seed processing facilities. Breakout sessions will be held each day with topics of interest for the audience.



Jerry Longren PMC Biological Science Technician explains new seed cleaning system.

## Who We Are

The PMC is one of 27 centers nationwide that uses plants to solve natural resource problems and is owned and operated by the NRCS. The PMC offers services to a diverse region of the Heartland including Kansas, Nebraska, northern Oklahoma, and north-eastern Colorado (see map at right). It is located on 169 acres of sandy loam soil in the Kansas River Valley, south of Manhattan, Kansas.



## What We Do

The mission of the Plant Materials Program (PMP) is to develop and deliver plant science technology to meet the nation's natural resources conservation needs. The PMP vision is "Productive Lands–Healthy Environment." The PMP is recognized as the nation's leading technical source of plant solutions and plant technology to meet natural resource conservation needs. This includes the production of improved varieties of plants for commercial use and the development of plant science technology for incorporation into the Field Office Technical Guide (FOTG).

Plant and technology development objectives of the PMC include:

- Water quality improvement
- Erosion control
- Range and pasture improvement
- Native American outreach
- Plant variety selection and production

## Seeking Vegetative Solutions to Conservation Problems

### Contact Information

Manhattan Plant Materials Center  
3800 South 20<sup>th</sup> Street  
Manhattan, Kansas 66502  
Phone: (785) 539-8761

Manager: Richard L. Wynia, [rich.wynia@ks.usda.gov](mailto:rich.wynia@ks.usda.gov)

Assistant Manager: John M. Row

Career Intern: Patrick (Allen) Casey

Biological Science Technician: Donald R. Garwood

Biological Science Technician: Jerry D. Longren

Office Automation Clerk: Erma J. Leuthold

Plant Materials Specialist: Mark A. Janzen (Kansas, Nebraska, and Oklahoma), Salina NRCS State Office, [mark.janzen@ks.usda.gov](mailto:mark.janzen@ks.usda.gov)



Career Intern, Allen Casey discusses pollinator habitat.

### PMP Web site:

<http://www.plant-materials.nrcs.usda.gov>

## Foundation Seed Production

The PMC maintains a variety of native grass and forb fields for foundation seed production. Native grass varieties include:

- Kaw big bluestem
- Pete eastern gamagrass
- Osage Indiangrass
- Cheyenne Indiangrass
- Aldous little bluestem
- Cimarron little bluestem
- Garden sand bluestem
- Bend sand lovegrass
- El Reno sideoats grama
- Blackwell switchgrass
- Kanlow switchgrass
- Barton western wheatgrass
- Pronghorn prairie sandreed



Little bluestem, summer crew plot maintenance



Maximilian Sunflower

Native forb varieties include:

- Midas false sunflower
- Sunglow grayhead prairie coneflower
- Prairie Gold maximilian sunflower
- Nekan pitcher sage
- Kaneb purple prairie clover
- Kanoka round-head lespedeza
- Eureka thickspike gayfeather
- Reno Germplasm Illinois bundleflower
- Riley showy partridge pea

## PMC Tours

Tours of the PMC are available Monday through Friday during regular business hours. Advance reservations are recommended for group tours.

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