



2008 Progress Report of Activities



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Appalachian Plant Materials Center

P. O. Box 390, Alderson, WV 24910 Web site: Plant-Materials.nrcs.usda.gov

What We Do



Typical Field Scene at the Appalachian Plant Materials Center

The Plant Materials Center serves Appalachia by evaluating plants for their ability to solve specific conservation problems related to climate, the rugged topography, soil limitations, various land uses, fish and wildlife needs and desires of the landowners. The center provides a place for conducting systematic observations and evaluations of plants needed to protect our natural resources. New techniques are developed for the propagation, establishment, management and use for new or improved species of grasses, legumes, shrubs and trees.

The Center's program emphasizes improving forage production on hillside pastures, address problems associated with concentrated livestock, reclamation of mined lands, streambank stabilization, agro-forestry, wildlife habitat improvement, and utilization of economic and culturally valuable plants. The center assembles plants from the entire service area with similar soils and climate, evaluates the plants, develops management techniques, and provides seed and plants for planting to test performance throughout the area. Most of the plant materials produced at the center are used in West Virginia, Kentucky, Tennessee, Pennsylvania, Ohio, Virginia, and North Carolina.

A brief summary of year 2008 accomplishments follows. For a complete account of all activities, request the 2008 Technical Report at the above address.

Who We Are

The Appalachian Plant Materials Center, located in Alderson, West Virginia, serves 11 states in the Appalachian Region from Pennsylvania to Georgia and Alabama. The Center is operated by the USDA-NRCS in cooperation with the USDA-Agriculture Research Service, U.S. Forest Service and the Agriculture Experiment Stations of West Virginia University, Virginia Polytechnic Institute and State University and the University of Kentucky. Alderson is located in the heart of Appalachia, and the Center is situated on County Route 3/29, also known as Old Prison Farm Road, approximately 20 miles Southeast of Lewisburg, West Virginia. This center is new with regard to land resource and physical plant, but is the product of the transfer of programs and equipment from Quicksand, Kentucky to Alderson, West Virginia. The transfer of center functions began in 1996 and was completed in 2000.

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2008 Summary of Projects

Many of these projects involve one or more species of native plants and have diversified our partnerships with Native Americans, federal agencies and private conservation groups. A brief description of each project follows.

'Augusta' Orchardgrass

'Augusta' orchardgrass was released for commercial production in 2008 as a cultivar that is well adapted to the Eastern United States and particularly the Appalachian Region. Orchardgrass is a perennial cool season grass that exhibits a bunch or clump growth habit that produces an open sod. It is native to Europe, but is widely distributed and has become naturalized across the United States and is an important cultivated grass for pasture and hay production. Orchardgrass is typically more drought tolerant than other cool season forage grasses of similar quality; e.g. timothy and Kentucky bluegrass.

The anticipated uses of 'Augusta' orchardgrass are: cool season forage for pasture and hay, cool season grass component in cool season grass and legume mixtures for wildlife habitat, and critical area stabilization on areas where seed mixtures are used to encourage natural succession to woody species. Its extensive fibrous root system is an excellent adaptation for drought tolerance. Its open growth habit allows establishment with legumes and forbs and allows succession to occur.



'Augusta' Orchardgrass Seed Field in Early Spring

'Augusta' orchardgrass is an excellent replacement for tall fescue in Eastern pastures since it is endophyte free and develops an open stand

compatible with legumes and forbs. 'Augusta' was originally collected from a naturalized stand growing on a well-drained, shallow, low fertility, acid soil with medium to low water holding capacity in Augusta County, Virginia. The cultivar derives its name from its county of origin. Seed of 'Augusta' may be available commercially circa 2010.

U. S. Department of the Interior-National Park Service Stones River National Battlefield Native Plant Restoration

Stones River National Battlefield, located in Middle Tennessee on the northwestern edge of Murfreesboro is the site of one of the significant battles of the War Between the States. The Battle of Stones River, fought between December 31, 1862 and January 2, 1863 marked the beginning of the Union Army's "March to the Sea" which resulted in Union control of agricultural land and supply networks and prevented further attempts by the Confederate Army to push northward. Stones River National Battlefield was established in 1927 to preserve this significant historic site. The original property consisted of 344 of the 4,000 acres over which the battle was fought. The park currently encompasses approximately 700 acres.

Today, introduced and exotic plant species have encroached onto many areas of the battlefield. Park managers have identified restoration of native plant communities as a high priority for maintenance of the parks circa 1862 authenticity. National Park Service personnel have completed a thorough assessment of the vascular flora inhabiting the battlefield property and have targeted more than twenty native plant species having high priority for use in restoration of plant communities.

The Appalachian Plant Materials Center agreed to work with the National Park Service at Stones River National Battlefield to collect seed, develop propagation techniques, and produce seedling plants and/or seed of the targeted species for plant community restoration within the park.

Seed collection and conditioning and transplant production continued in 2008. The PMC produced a

total of about 30,000 transplants representing 10 plus native species. The majority of the transplants were shipped to Stones River National Battlefield for establishment of seed production fields. Transplants retained by the PMC are to be used to establish small seed production blocks at the PMC in the event of field failures at Murfreesboro.

US Army Corps. of Engineers – Marmet Native Plant Mitigation

The Appalachian Plant Materials Center continued to assist the US Army Corps. of Engineers - Huntington District with restoration of native plants at the Marmet Locks and Dam Project. This project is located on the Kanawha River in West Virginia upstream of Charleston. The project includes building a new lock chamber and approach channels at River Mile 67.7. All vegetation and habitats within the approximately 150 acre site will be destroyed during the course of construction.

Six native woody species were harvested from the site prior to the start of construction. These species are: *Acer saccharinum*, silver maple; *Lindera benzoin*, spicebush; *Sambucus canadensis*, elderberry; *Asimina triloba*, pawpaw; *Sassafras albidum*, sassafras; and *Aesculus octandra*, yellow buckeye.



Lindera benzoin, spicebush, in full blossom

These plants are being maintained as container grown stock at the Plant Materials Center until completion of construction, when they will be re-introduced to the Marmet site to assist with re-establishment of genetic diversity at the lock and

dam location. In the autumn of 2005, 128 pawpaws, 104 elderberries, 10 sassafras, 100 spice bushes and 38 silver maples were returned to the construction site for transplanting into areas where earth moving activities have been completed. Plants remaining at the PMC continue to be maintained as container stock pending construction completion circa 2009.

Annual Land Judging Competition Held at the Plant Materials Center

The Plant Materials Center was the host location for the Southern and Greenbrier Soil Conservation District sponsored Regional Land Judging competition again in 2008. This marks the ninth year that the PMC has hosted this annual competition.



Regional Land Judging Competition Scene

Competitors are normally Future Farmer of America and Canon Envirothon students from middle and high schools from the seven counties comprising the two soil conservation districts. Students and coaches are given a brief tour of the center after they have completed their judging. The Plant Materials Center looks forward to hosting this competition in future years.

West Virginia National Guard Camp Dawson Native Grasses Project

During 2004, the Natural Resources Staff at Camp Dawson, the Army National Guard Training Camp near Kingwood, West Virginia, entered into an agreement with the Appalachian PMC. The purpose of this agreement is for the PMC to produce local

ecotype warm season grass seed for the Camp Dawson Natural Resources Staff to use in revegetating areas disturbed by annual training activities. Much of the training conducted at the camp involves earthmoving equipment, which inevitably leaves a lot of bare ground to be revegetated! Previous revegetation efforts have focused almost exclusively on use of introduced grasses and/or legumes which have often proven to be less than satisfactory aesthetic, wildlife and erosion control values. It is the desire of the Camp's Natural Resource Staff to increase use of locally adapted warm season grasses to improve the aesthetic, wildlife, and erosion control values of their revegetation efforts.

Four warm season species are indigenous to the Camp. These species are: *Sorghastrum nutans*, Indiangrass; *Andropogon gerardii*, big bluestem; *Schizachyrium scoparium*, little bluestem; and *Panicum virgatum*, switchgrass. Seed from each of these species was collected at Camp Dawson in 2004 and 2005. These seeds were conditioned at the PMC and planted to establish seed production blocks at the PMC in 2006. Seed harvested from the PMC production fields will be returned to Camp Dawson to be used in revegetating areas disturbed by troop training exercises. All four species will also be evaluated at the PMC as potential Central Appalachian ecotype releases for use as forage and wildlife values.

Native Plants for Kentucky Food Security Act Programs

The Kentucky Plant Materials Committee is going native! FSA contracts benefiting wildlife are abundant in Kentucky, while locally adapted native plants to use in these contracts are not. The Kentucky Plant Materials Committee approached the PMC for assistance with this dilemma in 2004. As a result, the PMC will be doing initial seed increase for five native species in 2005. These species are: *Liatris spicata*, spiked blazing star; *Rudbeckia hirta*, Black-eyed Susan; *Desmanthus illinoensis*; Illinois bundleflower; *Lespedeza capitata*, Roundhead lespedeza; and *Lespedeza virginicus*, Virginia lespedeza. Seed produced by the PMC will be provided to Kentucky seed

producers who will establish production fields and market seed of these species in Kentucky. All of these species are potential Kentucky ecotype releases.



Liatris spicata, spiked blazing star at the PMC

Seedlings of each Kentucky ecotype were started in 2.25 inch diameter plug cells in 2005. These plugs were transplanted into field production blocks in 2006. The first seed harvest from these production blocks was in the fall of 2007. Seed of all species except *Lespedeza capitata* is available for field plantings.

Canaan Valley Wildlife Refuge Ecotype Speckled Alder Project

Canaan Valley National Wildlife Refuge, the nation's 500th, is located near Davis, WV at an altitude of approximately 3500 feet. The combination of altitude, wet soils, forests, shrub lands, and open expanses create a sub alpine landscape and provide a diversity of wildlife habitats. While not as readily visible as other birds, woodcock contribute to the diversity of avian species that inhabit the refuge.

USF&WS personnel at Canaan Valley Wildlife Refuge have secured funding for habitat enhancement projects within the refuge, with a primary focus on woodcock habitat. Personnel have also harvested seed from locally available *Alnus incana ssp. rugosa*, speckled alder, plants for use in producing seedlings for habitat restoration and enhancement within the refuge. However, USF&WS lack the personnel, facilities and

expertise to produce seedlings for their woodcock habitat restoration and enhancement project.

Thus, US F & WS personnel opted to solicit PMC assistance with production of the speckled alder seedlings. The PMC agreed to produce approximately 1000 seedlings for the Canaan Valley Wildlife Refuge woodcock habitat enhancement program and proceeded to plant the speckled alder seeds provided by the US F&WS in the autumn of 2005. Additional seed was harvested within the Refuge in 2008 and planted in the PMC's woody plant nursery. This project will continue through 2009.

American Chestnut Blight Resistance Evaluations

American chestnut was once a dominant tree in Appalachian forests until the species was decimated by *Endothia parasitica* (chestnut blight). The American Chestnut Cooperators Foundation (ACCF) is dedicated to conducting chestnut selection and breeding research to improve resistance to chestnut blight. A large part of the ACCF research is conducted through field plantings throughout the natural range of the species to evaluate selected strains. The ACCF approached the NRCS in 2006 for assistance with establishment of a chestnut nursery and evaluation plantings of their improved strains for long term evaluation purposes.

Native plants for high quality wildlife habitat is identified as a high priority need in the PMC Long Range Plan. The PMC recognizes that the American chestnut was once an environmentally and culturally dominant part of the Appalachian landscape, the geographic area which the PMC serves. Also, the PMC has some limited experience with chestnut blight resistance research using seedlings produced from irradiated seed. Cooperating with the ACCF enables the PMC to resume American chestnut blight resistance research and address a high priority need identified in the PMC'S Long Range Plan.

The PMC received chestnuts of approximately 20 accessions from the ACCF in 2006. These seeds were planted in the PMC's woody plant nursery

where seed germination was monitored. All seedlings produced were lifted in the spring of 2007 and distributed to cooperators to establish long term field evaluation plantings. Additional seeds were planted in the PMC's woody plant nursery in 2008.

Cover Crop Evaluation Project

The NRCS in West Virginia assists farmers to reduce erosion, improve nutrient management, protect soil quality, and encourages the use of integrated pest management on cropland. NRCS has committed technical and financial assistance for vegetable producers to meet these goals through development of voluntary conservation plans and accelerated application using Farm Bill programs. A critical element of these plans is to insure correct timing and accepted methods of cover crops to achieve the land nutrient balance, minimize the loss of nutrients to ground or surface water, improve irrigation water management, and to improve soil quality. As a research and teaching institute, the West Virginia University Cooperative Extension Service (WVU CES) has a long term commitment with NRCS, Conservation Districts and farmers to bring research and technology to the agriculture community.

During 2007, the Appalachian PMC, in conjunction with the West Virginia NRCS and Cooperative Extension Service, continued an evaluation project for various winter cover crops on cropland. The final products of this project will be seasonal field trials of NRCS released cultivars and commercially available cover crops, publication of technical reports and recommendations for cover crops used in vegetable production, and seasonal in-field training of NRCS and WVU CES staff based on results of the demonstrations. This project is expected to continue through at least 2009.