

# 2009 Progress Report of Activities



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Appalachian Plant Materials Center

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## 2009 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 several projects follows.

### 'Ruffner' Tall Oatgrass

'Ruffner' tall oatgrass was released for commercial production in 2009 as a cultivar that is well adapted to the Eastern United States and particularly the Appalachian Region. *Arrhenatherum elatius* ssp. *elatius*, tall oatgrass, is a perennial bunch-type cool-season grass that grows in clumps, producing an open sod. Culms occur in large clumps three to five feet tall. Tall oatgrass has long narrow leaf blades three-eighths to three-quarters of an inch wide and a fibrous root system. Due to its extensive root system, it is more drought tolerant than the other cool season grasses. It will persist on shallow, moderately infertile soils and be moderately productive.

Tall oatgrass is native to Europe where it once was a component of the grasslands. It is thought to have been introduced to the North American continent in the early 1800s. In North America, it has become widely naturalized in meadows, fields, open ground, waste places, and

roadsides from Newfoundland to British Columbia, south to Georgia, Louisiana, New Mexico and west to California. However, 'Ruffner' was developed for use only within the Appalachian Region.



'Ruffner' Tall Oatgrass

The primary use of tall oatgrass is as a cool season forage for all classes of livestock. Because of its pronounced cool season growth habit and absence of endophytic toxins, tall oatgrass may be used to replace tall fescue in extended season grazing systems.

Tall oatgrass is a useful conservation grass for soil stabilization on drastically disturbed lands, such as surface mined areas. It is especially useful as a nurse crop in mixes with other, more perennial grasses.

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Whitetail deer find tall oatgrass to be highly palatable and will utilize it throughout the late fall and early winter. Tall oatgrass may be used in grass-legume blends for nesting, brood rearing, escape, and winter cover in upland wildlife and conservation plantings.

### **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 included building a new lock chamber and approach channels at River Mile 67.7. All vegetation and habitat within the approximately 150 acre site was destroyed during the course of construction.

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

Those plants were maintained as container grown stock at the Plant Materials Center until completion of construction, when they were 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 had been completed. Plants remaining at the PMC were reintroduced to the construction site upon completion of all construction in 2009. Plant survival and growth will be monitored for several years.

### **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 2009. This marks the tenth 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.

Seed increase activities continued in 2009, and limited amounts of switchgrass and little bluestem will be made available to the Army National Guard in 2010.

### **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.

The Kentucky Plant Materials Committee is planning to release several of these local ecotypes to a commercial seed producer in 2010.

### **Canaan Valley Wildlife Refuge Ecotype Speckled Alder Project**

Canaan Valley National Wildlife Refuge, the nation's 500<sup>th</sup>, 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 secured funding for habitat enhancement projects within the refuge, with a primary focus on woodcock habitat. Personnel 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 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. A small quantity of seedlings was returned to the Refuge in 2009. This project will continue through 2010.

### **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 2009, 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. A total of 160 plots, representing 4 replicates of ten cover crop seed mixes with 4 separate planting dates were established in the fall of 2009. These plots will be evaluated for ground cover efficacy and biomass production in the spring of 2010. A separate part of this study will evaluate the efficacy of the cover crop roller developed by the Rodale Institute as a method of managing cover crops without herbicides or tillage. 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 2010.

#### **Who We Are**

The Appalachian Plant Materials Center, located in Alderson, West Virginia,

serves 10 states in the Appalachian Region from Pennsylvania to Georgia. 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.

#### **What We Do**

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.