

## 2009 Aberdeen Plant Materials Center Progress Report of Activities January 2010

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Aberdeen Plant Materials Center Home Farm

### Who We Are

The mission of the USDA NRCS Plant Materials Program is to develop and transfer effective state-of-the-art plant science technology to meet customer and resource needs. The Aberdeen Plant Materials Center (PMC) was established in 1939 to evaluate and select plant materials and techniques for establishment and management of plants for use in resource conservation activities in the Western United States.

There are 27 PMCs nationwide, each serving a specific geographic and ecological area. The Aberdeen PMC serves portions of the Intermountain West including southern Idaho, western Utah, northern Nevada, western Wyoming and eastern Oregon.

### Program Emphasis

The activities of the Aberdeen PMC are guided by a long-range plan. The priority work areas are:

- Plant releases, seed and plant production
- Range and forest lands in poor ecological condition
- Riparian and wetland degradation
- Windbreak and shelterbelt demonstration
- Technology transfer and education

This report highlights the major activities at the PMC during 2009. For more detailed information, contact the PMC or the Plant Materials Specialist in Boise.

### Release of 'Recovery' Western Wheatgrass

Aberdeen PMC is pleased to announce the release of 'Recovery' western wheatgrass. Recovery is a cooperative release with the ARS Forage and Range Laboratory, the US Army and Utah State University. Recovery traces its parentage to three maternal sources. The parentage consists of 'Rosana', D2945 (a different seed lot of the same population which gave rise to 'Rodan'), and a collection from the Fort Carson Army base in central Colorado. It was selected for superior vegetative vigor, seed yield and seedling vigor. Recovery is intended for use on areas where annual precipitation averages 12 to 20 inches on rangelands in the Intermountain West, Great Basin and Northern Great Plains. Foundation seed is available through the University of Idaho Foundation Seed Program and Utah Crop Improvement Association. Recovery is well adapted for stabilization of disturbed soils because of its strong, spreading rhizomes.



Harvesting Foundation seed of Recovery western wheatgrass

## Plant Materials Training

In June the PMC presented a three day training session to field office personnel. The theme of the training is “using plants to help solve resource problems”. Topics covered included planning a seeding and planting, windbreak design, plant identification, seed quality, drill calibration, riparian and wetland plantings and wildlife considerations. The training included tours and demonstrations at the PMC farms. Heavy rains unfortunately prevented visits to off-center planting locations.



Brent Cornforth, PMC Farm Manager reviewing seed mixture calculations prior to drill calibration demonstration

## Native Plant Testing

In 2008 the PMC planted two Initial Evaluation Plantings (IEPs) to evaluate collections of Douglas’ dusty maiden (*Chaenactis douglasii*) and hoary tansy aster (*Machaeranthera canescens*). The trials were planted into weed-barrier fabric late in the fall, and first year evaluations during the 2009 growing season indicate that both species are fairly easy to establish. The PMC is also cooperating with the ARS Forage and Range Laboratory to increase and release Searls’ prairie clover (*Dalea searlsiae*), a native legume from collections made in Utah and Nevada.

In 2006 the PMC began a cooperative effort with Grand Teton National Park to increase seed of source collections from the Park to be used for restoration projects. The PMC is currently growing bluebunch wheatgrass and Idaho fescue for Grand Teton National Park. In 2009, the PMC began cooperating with Yellowstone National Park. We are producing seed of Sandberg bluegrass, bluebunch wheatgrass and needleandthread as well as a number of wetland plants (*Carex*, *Juncus* and *Deschampsia*) for restoration projects in the Park.

The PMC is continuing cooperation with the Great Basin Native Plant Selection and Increase Project to increase seed of native forbs that have been identified as high priority

species. They include: sulphurflower buckwheat, fernleaf biscuitroot, Gray’s biscuitroot and nineleaf biscuitroot.



Wetland plant propagation for Yellowstone National Park

## Off-Center Testing

The PMC currently has off-center evaluations at the Coffee Point test site, 20 miles northwest of Aberdeen, ID and in Skull Valley 25 miles west of Tooele, UT. These replicated plantings include forbs, shrubs, and native and introduced grasses. Evaluations will take place at each site for 10 years to determine long-term performance of the test species. The PMC is working on establishing a new off-center testing site on the Curlew National Grassland in Southeastern Idaho in cooperation with the USDA Forest Service.

The PMC is continuing its cooperation with the Great Basin Native Plant Selection and Increase Project to evaluate methods to effectively control cheatgrass using introduced species such as crested wheatgrass and then controlling the introduced grass to establish native species while minimizing weed invasion. Treatments being evaluated include disking and herbicide treatments to control crested wheatgrass. Plots located northwest of Aberdeen were seeded in early November.

## Breeder and Foundation Seed Production

The PMC is responsible for the Breeder and Foundation seed production of 20 plant releases. In 2009, Foundation seed fields of ‘Goldar’ bluebunch wheatgrass, Anatone Selection bluebunch wheatgrass, ‘Bannock’ thickspike wheatgrass, ‘Recovery’ western wheatgrass, ‘Rush’ intermediate wheatgrass, ‘Sodar’ streambank wheatgrass, Clearwater Selection Venus penstemon, Northern Cold Desert Selection winterfat, Snake River Plains Selection fourwing saltbush, ‘Appar’ blue flax, Maple Grove Germplasm Lewis flax and ‘Magnar’ basin wildrye were in production.

### Riparian/Wetland Plant Development Project

The Interagency Riparian/Wetland Plant Development Project was established in 1991. NRCS and several federal, state, local, and private organizations decided more information was needed on how to propagate and plant riparian and wetland plants, how to establish and maintain wetland and riparian vegetation in artificial situations, and other uses related to water quality improvement.

### Streambank Soil Bioengineering Technical Training

As part of our technology transfer efforts, we teach a 3 day workshop on streambank soil bioengineering treatments. This includes classroom training and actual field training where the students install a number of bioengineering treatments on an actively eroding bank.



In 2009, the Riparian/Wetland Project conducted 7 Streambank Soil Bioengineering courses in 6 states to over 480 professional conservationists. In addition, training was provided on wetland restoration and enhancement in Iowa to over 50 people and a workshop in Oregon on how to establish native plants on disturbed areas: an integrated approach was provided to 48 professional conservationists.



### Willow Clump Plantings

In Technical Note 42, *Willow Clump Plantings*, harvesting willow or other riparian woody species as a living clump which includes roots and above ground biomass was detailed. This technique is one of the most successful bioengineering treatments in use today for stabilizing streambanks and reducing streambank erosion. After the clump has been transplanted to a new location, growth and establishment will be very slow.



Once the plants have been harvested and transplanted, the first year the clump appears to sleep as it recovers from transplant shock. Very few leaves and roots will be produced and the clump in many cases will look sickly and almost dead. The second year is when the clump sends out extensive root systems that creep out from the original roots. The top will again look almost dead with only a few leaves and branches. The third year is when the clump leaps out of the recovery phase and sends up many leaves and stems.

So, patience is the key when you are working with willow clumps. The wait will be well worth it and the above ground biomass that provide much needed protection for the riparian zone as the plants recovers.

### Long Pot Technology



Long pot technology has been around for a while. It was developed in Joshua Tree National Monument in the 1990's. Los Lunas, NM PMC has also worked with long pot or deep pot technology.



The newest entry into the science is a long pot from Stuewe and Sons, Inc. which eliminates the Vexar tubing that has demonstrated some problems in the past by not breaking down as fast as it should. This technology is a way to establish plants in areas that are typically disturbed and very dry. The root system is planted down to the capillary fringe with the stem reaching up out of the ground surface. This technique has been used very successfully with a variety of difficult to establish species.

### **Chris Hoag Retires**

After 35 years, Chris Hoag, Aberdeen PMC Project Leader of the Interagency Riparian and Wetland Project is retiring. Chris worked at the PMC for over 22 years. During this time a number of milestones were accomplished including:

- development of germination protocols for a variety of wetland plants
- development and refinement of streambank soil bioengineering treatments used to reduce streambank erosion in riparian areas
- development and refinement of a number of planting methods to install woody and herbaceous plant species
- Chris taught numerous courses on streambank soil bioengineering, riparian ecology, wetland restoration and enhancement, and wetland ecology.
- Chris also completed over 100 technical papers and presented technical information at conferences and symposia throughout the US and Canada.

Chris will be missed - with his retirement; the PMC will have a large void in our future ability to complete riparian and wetland research.

### **Technology Transfer - New Publications**

A number of new or revised publications were completed during the past year – a few are mentioned below:

#### **Major Publications**

- *Field Guide for the Identification and Use of Common Riparian Woody Plants of the Intermountain West and Pacific NW Regions.*
- *Streambank Soil Bioengineering Field Guide for Low Precipitation Areas.*
- *The Practical Streambank Bioengineering Guide.*

#### **Technical Notes**

- Tech Note 1 Plant Materials Collection Guide
- Tech Note 2 Plants for Pollinators
- Tech Note 3 Estimating Initial Stocking Rates
- Tech Note 6 The Stinger
- Tech Note 9A Plants for Saline to Sodic Soils
- Tech Note 9B. Plant Materials Salinity Trials
- Tech Note 11 Pasture Species and Grazing Management Guidelines
- Tech Note 16 Green Strips or Vegetative Fuel Breaks
- Tech Note 17 Field and Demo Plantings
- Tech Note 21 Planting Willow and Cottonwood Poles Under Rock Riprap
- Technical Note 22 Wetland Sodmats
- Tech Note 23 How to Plant Willows and Cottonwoods for Riparian Rehabilitation
- Tech Note 29A & 29B Revegetation Effectiveness in Idaho, Oregon and Montana
- Tech Note 50 Cons. Shrubs and Trees
- Tech Note 51 T and E Species of Idaho
- Tech Note 53 Vertical Bundles

#### **Wetland/Riparian Information Series**

- Information Series 23 Streambank Soil Bioengineering: A Proposed Refinement of the Definition
- Information Series 24 Effects of pre-plant soaking treatments on hardwood cuttings of peachleaf willow
- Information Series 25 Evaluation of fall versus spring planting of dormant hardwood willow cuttings with and without soaking treatment
- Information Series 26 Cluster Plantings

#### **Website**

All Aberdeen PMC publications can be downloaded from the following web-sites:

<http://www.id.nrcs.usda.gov/programs/plant.html>

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

[www.plant-materials.nrcs.usda.gov/idpmc/riparian.html](http://www.plant-materials.nrcs.usda.gov/idpmc/riparian.html)