

2008 Aberdeen Plant Materials Center Progress Report of Activities

Issued January, 2009

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Aberdeen Plant Materials Center Office and Greenhouse

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 2008. For more detailed information, contact the PMC or the Plant Materials Specialist in Boise.

Release of 'Vavilov II' Siberian Wheatgrass



Seed Production Field of 'Vavilov II' Siberian Wheatgrass

Aberdeen PMC is pleased to announce the release of 'Vavilov II' Siberian wheatgrass. Vavilov II is a joint release with the ARS Forage and Range Laboratory, the US Army and Utah State University. Vavilov II expands the genetic base of 'Vavilov' and has better seedling establishment, vigor and forage yields. Its drought tolerance, fibrous root system, and excellent seedling vigor make Vavilov II ideal for reclamation in areas receiving 8 inches or more annual precipitation. It is intended for use on arid and semi-arid 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.

Plant Materials Training

In June the PMC hosted a multiple-state three day training course. Students were from NRCS field offices and other agencies in Idaho, Utah and Oregon. Topics 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 three PMC farms and off-center planting locations.



Loren St. John, PMC Team Leader, shares wisdom with field office personnel

Native Plant Testing

In 2008 the PMC planted two new 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 this fall, and plants are expected to emerge next spring. The PMC also has plans to establish a trial to evaluate collections of Nevada bluegrass (*Poa secunda* var. *nevadensis*) in the spring of 2009.

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. Seed production fields of blue wildrye, Sandberg bluegrass, mountain brome and slender wheatgrass were harvested in 2007 and 2008. New seed fields of Idaho fescue and bluebunch wheatgrass were planted in 2008 and will be harvested in 2009 and 2010.

In cooperation with the Great Basin Native Plant Selection and Increase Project, the PMC is increasing seed of native forbs that have been identified as high priority species. They include: sulphurflower buckwheat, fernleaf biscuitroot, Gray's biscuitroot, nineleaf biscuitroot, sand penstemon, hotrock penstemon and royal penstemon.

The native forbs were seeded into weed barrier fabric in the fall of 2005 and observations are being made on plant establishment and growth. Seed was harvested from the penstemon and buckwheat plots in 2007 and 2008. The first harvest of nine-leaf biscuitroot occurred in 2008.



Royal Penstemon Grown for Seed Increase

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 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.

In 2008 the PMC assisted with three off-center seedings in Idaho, Utah and Nevada. The PMC worked with the ARS Sheep Experiment Station and the Rocky Mountain Research Station (RMRS) to install a seeding study near Grandview, ID. The PMC also assisted the RMRS and the University of Nevada Extension to plant a study near Elko, NV for the Crested Wheatgrass Diversification Project. The third planting involved the RMRS, BLM, USGS and Utah Division of Wildlife (Joint Fire Sciences) and was planted at Snowville, UT.

Breeder and Foundation Seed Production

The PMC is responsible for the Breeder and Foundation seed production of 19 plant releases. In 2008, Foundation seed fields of 'Goldar' bluebunch wheatgrass, Anatone

Selection bluebunch wheatgrass, 'Bannock' thickspike wheatgrass, Richfield Selection firecracker penstemon, Clearwater Selection Venus penstemon, 'Delar' small burnet, 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.

Proposed Release of 'Recovery' Western Wheatgrass

The PMC is cooperating with the Department of Defense and ARS in Logan, UT in the proposed release of a western wheatgrass accession, tentatively named 'Recovery'. The new cultivar has exceptional establishment and growth characteristics, and is targeted for use on disturbed range sites in the Intermountain West and Northern Great Plains.

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.



Students install a brush spur on the Scott River near Etna, CA as part of a Streambank Soil Bioengineering workshop

In 2008, the Riparian/wetland project conducted 7 Streambank Soil Bioengineering courses in 6 states to over

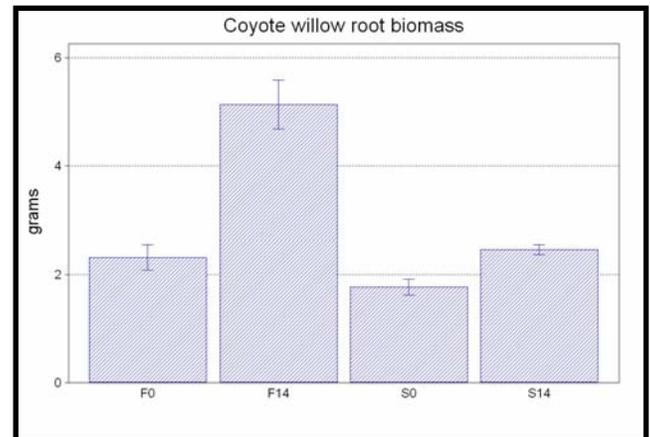
250 professional conservationists. In addition, training was given on wetland plant identification in 2 states to over 100 people. A Willow Ecology workshop in conjunction with the MT NRCS, Al Winward, retired FS plant ecologist, and Wayne Elmore, retired BLM riparian ecologist was given to 48 professional conservationists.



Hoag discussing willow vigor and how to select a willow clump for transplanting

Cuttings - Fall versus Spring Planting with Pre-soaking

In 2008 the PMC conducted evaluations to determine if pre-soaking willow cuttings that were collected and planted in the fall provided any establishment benefits over traditional planting methods. Cuttings planted in the fall following a 14 day pre-soaking treatment (F14), to fall planted with no pre-soaking (F0), spring planted following 14 day pre-soak (S14), and a non-soaked spring planted control (S0) were compared.

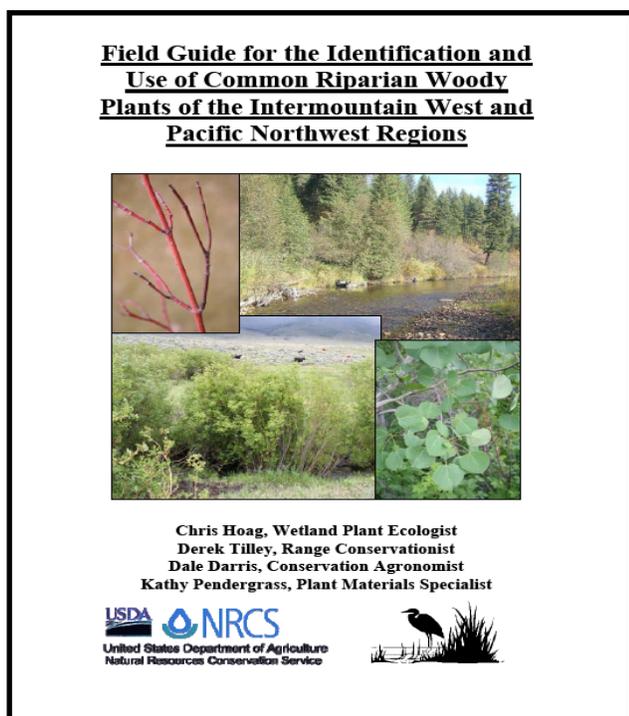


The study determined the greatest root production occurred in cuttings harvested in the fall and soaked for 14 days prior to planting in the fall. The least root production came from spring harvested cuttings that had not been soaked prior to planting.

Pre-soaking willow cuttings in the fall, prior to transplanting into cold, dormant conditions appears to give the cutting an added boost to help it maintain moisture levels through the winter and into the spring. The results from our study suggest that this increase in moisture in the fall may be even more beneficial than leaving the cuttings on the tree until spring and then soaking prior to planting.

New Field Guide for Woody Riparian Species Identification

Aberdeen and Corvallis PMC staff collaborated with the creation of the *Field Guide for the Identification and Use of Common Riparian Woody Plants of the Intermountain West and Pacific Northwest Regions*. This new 196 page Field Guide provides information on the identification and collection of native riparian trees and shrubs for practitioners of riparian restoration and streambank bioengineering. Included in the guide are hundreds of color photographs, distribution maps, summer and winter plant descriptions and propagation information.



Technology Transfer - New Publications

A number of new or revised publications were completed during the year:

Plant Materials Technical Notes

- Technical Note 2. Plants for Pollinators in the Intermountain West.
- Technical Note No. 6. The Stinger, a tool to plant unrooted hardwood cuttings of willow and

cottonwood species for riparian or shoreline erosion control or rehabilitation. (Revision)

- Technical Note 10. Pasture and Range Seedings
- Technical Note 20. Calibrating the Truax Rough Rider Drill for Restoration Plantings.
- Technical Note 21. Planting Willow and Cottonwood Poles under Rock Riprap
- Technical Note No. 22. Wetland Sodmats
- Technical Note No. 23. How to Plant Willows and Cottonwoods for Riparian Rehabilitation.
- Technical Note 24. Grass, grass-like, forb, legume and woody species for the Intermountain West.
- Technical Note 28. Glossary of Terms for use in plant materials.
- Technical Note 30. Perennial ryegrass for irrigated pasture in the Intermountain West.
- Technical Note 43. Tree and shrub planting, care and management.
- Technical Note 50. Conservation shrubs and trees for the Intermountain West.

Plant Guides

- Plant Guides for: cicer milkvetch, halogeton, sainfoin, yellow and white sweetclover, royal penstemon, desert needlegrass, perennial ryegrass and Siberian wheatgrass were completed.

Wetland/Riparian Information Series

- Information Series No. 21. Wetland Plants: Their Function, Adaptation and Relationship to Water Levels.
- Information Series No. 22. How to Manipulate Water in a New, Restored, or Enhanced Wetland to Encourage Wetland Plant Establishment
- Information Series No. 23. Streambank Soil Bioengineering: A Proposed Refinement of the Definition
- Information Series No. 24. Pre-soaking hardwood willow cuttings for fall versus spring dormant planting

Website

These publications can be downloaded from the following web-sites:

www.plant-materials.nrcs.usda.gov/idpmc/

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