

2004 Aberdeen Plant Materials Center Progress Report of Activities

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Aberdeen Plant Materials Center office and greenhouse

Who We Are

The mission of the 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 develop plant materials and techniques for establishment and management of plants for use in resource conservation activities in the Western United States.

There are 26 PMCs nationwide, each serving a particular geographic area. The Aberdeen PMC serves portions of the Intermountain West including southern Idaho, western Utah, Nevada, northeastern California, and southeastern Oregon.

Program Emphasis

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

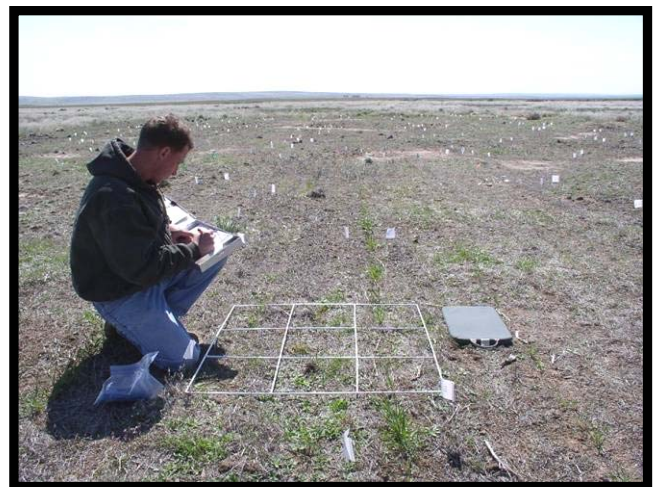
- Plant releases, seed and plant production
- Rangeland in poor ecological condition
- Riparian and wetland degradation
- Windbreak demonstration

- Technology transfer and education

This document highlights some of the major activities at the PMC during 2004. For detailed information, contact the staff at the PMC or the Idaho-Utah Plant Materials Specialist.

Integrated Restoration Strategies for Weed Control on Western Rangelands

The PMC is continuing its cooperation with the University of Nevada Reno, Oregon State University, Utah State University, Rocky Mountain Research Station, USGS, ARS and BLM to plant and evaluate common studies across the Great Basin to test management strategies for controlling cheatgrass and other annual weeds. A major goal of the project is to increase the ecological understanding of why restoration techniques succeed or fail.



Plot evaluations in southwestern Idaho

Last year the PMC was responsible for gathering and packaging seed for test plots, the modification of a Truax Roughrider Rangeland Drill for planting the plots, and staff expertise in planting the plots.

In 2004 PMC staff members assisted in the evaluation of plots planted in the fall of 2003. The PMC farm crew also made further modifications and improvements to the Truax Roughrider Rangeland Drill. In October and November the farm crew planted 1200 more plots in Idaho, Nevada, Oregon and Utah for the second season of experiments.

Native Plant Testing

During the summer of 2003, the PMC began a cooperative project with the USDA Forest Service, Region 1 to evaluate six native species for potential use in restoration on Forest Service land in Idaho and Montana. The PMC provided technical assistance to the Forest Service in seed collection procedures. Forest Service personnel collected a total of 52 accessions of bluebunch wheatgrass, Idaho fescue, blue wildrye, tufted hairgrass, Sandberg bluegrass and western yarrow. During 2004 these seed collections were cleaned and prepared for planting. Plants were tested in the greenhouse for germination and seedling vigor, and in May replicated field trials were created at the PMC farm to evaluate the collections and compare them with known industry releases. Evaluations were conducted in early summer and late fall and the data was presented to cooperators in the Forest Service.

A similar project was initiated in 2004 with Region 4 of the USDA Forest Service to evaluate mountain brome and slender wheatgrass for use in eastern Idaho and Western Wyoming. With the assistance and guidance of the PMC, Forest Service personnel collected ten accessions of each species. These will be cleaned at the PMC small seed lot cleaning facilities at Aberdeen and will begin evaluations next spring.

The PMC is also working with Craters of the Moon National Monument to produce locally collected native grasses, forbs, shrubs and trees for use in revegetation projects. PMC staff aided CNM with technical support and guidance in the collection of 26 plant taxa from the monument. These accessions will be cleaned at the PMC this winter and grown in the greenhouse for future use in CNM revegetation ventures.

New Plant Releases

Through cooperation with the Forest Service, Shrub Sciences Laboratory and the Bureau of Land Management the PMC has released Anatone bluebunch wheatgrass and Maple Grove Lewis flax. Anatone was originally collected by the Shrub Sciences Laboratory and appears to have better seedling vigor than 'Goldar' which was released by the PMC in 1989. Anatone appears to be better suited to drier conditions than Goldar which typically needs at least 12 inches of annual precipitation to establish.



Anatone bluebunch wheatgrass seed production field

'Appar' blue flax was released in 1980 and has been widely recommended as a component of seed mixtures to provide diversity and beauty. It was originally identified as a native species to North America but was later determined to be introduced from Europe. Maple Grove, originally collected in central Utah shows great promise as a native replacement for Appar.



Maple Grove Selection Lewis flax

Seed production fields of Anatone and Maple Grove have been established at the PMC and seed was harvested in 2003 and 2004.

Breeder and Foundation Seed Production

The PMC is responsible for Breeder and Foundation seed production of 17 plant releases. During 2004, Foundation seed fields of 'Magnar' basin wildrye, 'Goldar' bluebunch wheatgrass, Anatone bluebunch wheatgrass, 'Nezpar' Indian ricegrass, 'Paiute' orchardgrass, 'Bannock' thickspike wheatgrass, Richfield Selection firecracker penstemon, Clearwater Selection Venus penstemon, Maple Grove

Selection Lewis flax, Northern Cold Desert Selection winterfat and Snake River Plains Selection fourwing saltbush were in production. New fields of 'Regar' meadow brome and 'Ephraim' crested wheatgrass were also established.

Interagency 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



Turtle River Demo Project, Grand Forks, ND

As part of our technology transfer program, a three-day Streambank Soil Bioengineering Technical Training Workshop was developed. This workshop was formally a two day workshop, but based on popular demand, has been expanded to a three day course. The first day and a half of the workshop is devoted to the classroom where basic riparian dynamics, riparian zone vegetation, plant acquisition, bioengineering techniques, woody plant propagation, case studies, and project planning are discussed. The afternoon of the second day is held in the field discussing a proposed restoration site. The participants utilize the knowledge gained in the classroom to develop restoration plan alternatives. The plan alternatives are then discussed and the selected plan for the project site is discussed with the group. The third day is spent at the project site where participants install a series of bioengineering treatments on an eroding section of streambank based on the selected project plan.

This year, Streambank Soil Bioengineering Technical Training workshops were held in Springerville, AZ and Grand Forks, ND.



Testing a new organic soil-filled sack for a fascine on the Little Colorado River, AZ



Post Vane (barb using posts instead of rock) tested on the Little Colorado River, AZ

Conferences and Symposia

The project presented a number of technical papers at the following conferences and symposia:

- River Restoration NW, *Considerations for Riparian Project Planning in Drier Areas of the West*, 350 people, Stevenson, WA
- PMC New Employee Tour and Training, *Wetland and Riparian issues in planning*, 43 people, Aberdeen, ID
- Federal and State Agency tour of PMC, *Wetland and riparian restoration techniques*, 40 people, Aberdeen, ID
- Blackfoot WAG Riparian Plant Identification and Inventory Training, *How to identify riparian plants and how to use SVAP for riparian assessment*, 34 people, Blackfoot River, ID

- NEDC Wetland Restoration and Enhancement Course – Floodplains, 30 people, Davis, CA
- Riparian Assessment and Inventory Training, *Assessment and inventory tools for riparian systems*, 30 people, McCall, ID
- Blackfoot WAG Riparian assessment Training on Wolverine Creek, *Low budget techniques for assessing a stream*, 34 people, Blackfoot, ID
- Wetland Educator Technical Training at Utah Botanical Garden, *Wetland functions, plant identification, and constructed wetland systems*, 35 people, Kaysville, UT
- Fox Creek Riparian Bioengineering Treatment Installation, *Installation of new bioengineering treatments for long term evaluation*, 15 people, Driggs, ID
- Wetland Plant ID Training, *How to identify common wetland plants and how to use a wetland plant key*, 28 people, Moscow, ID
- American Society of Agricultural Engineers Streambank Soil Bioengineering Meeting, *Self sustaining solutions for streams, wetlands, and watersheds*, 48 people, St. Paul, MN
- NEDC Wetland Restoration and Enhancement Course – Northeast Freshwater Wetlands, 28 people, Syracuse, NY

Technical Assistance to NRCS Field Offices and other agencies

- Hopi Indian Reservation Riparian Assessment and Design, Yuba City, AZ
- Riparian Technical Assistance provided to Oregon Engineering Staff in both Western and Eastern OR
- Riparian Technical Assistance provided to Woodland and Livermore, CA on Arroyo de la Laguna
- Fox Creek Riparian Demonstration, Driggs, ID
- Gibbon River Riparian relocation and restoration, Yellowstone National Park, WY
- Garden Creek Restoration Project with Trout Unlimited, Conant Valley, ID

Wetland/Riparian Research

Research is underway at the PMC to evaluate the effectiveness of pre-soaking willow and cottonwood cuttings prior to planting. Greenhouse tests conducted in 2004 evaluated various soaking depths and temperatures and their affects on root formation. Future tests are scheduled for 2005 to evaluate establishment success using different pre-soaking treatments.



Peachleaf Willow after 13 days of soaking.



Outdoor Natural Stratification Trial

Greenhouse and field trials are scheduled for 2005 to evaluate the possibilities of using direct seeding methods to establish wetland plant species. New seeding technologies have been developed in the private sector which may be applicable to our western wetland planting needs. These trials will compare planting methods (drilling, broadcasting, tackifiers and pelleted seeds) as well as time of seeding.

Aberdeen Plant Materials Center Website

For information specifically about the Aberdeen Plant Materials Center, go to <http://www.plant-materials.nrcs.usda.gov/idpmc/>.

The Interagency Riparian/Wetland Plant Development Project has produced a large number of publications on wetland plant species, transplanting techniques, propagation protocols, and management techniques. It has also produced a number of publications on riparian plants, harvesting techniques, planting techniques, and how to use riparian plants in Soil Bioengineering treatments. These publications can be downloaded from <http://www.plant-materials.nrcs.usda.gov/idpmc/riparian.html>