

Year 2001 Aberdeen Plant Materials Center Progress Report of Activities

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Aberdeen Plant Materials Center Home Farm

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 the 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
- Agroforestry
- Technology transfer and education

This document highlights some of the major activities at the PMC during 2001. For detailed information, contact the staff at the PMC or the Idaho-Utah Plant Materials Specialist.

Fourwing Saltbush Released

The Aberdeen PMC in cooperation with the Pullman, WA PMC and the Idaho Agricultural Experiment Station released Snake River Plains Germplasm fourwing saltbush (Selected Class) for use in the Intermountain West. The Snake River Plains Germplasm was selected from an assembly of 83 collections evaluated at the PMC from 1977 to 1986. Four of the collections had very good tolerance to cold temperatures and were isolated into a seed increase block. Seed from the increase block was tested from 1995 to 2000 at off-center test sites in Idaho, Utah and Washington.



The release shows potential for use in the northern areas of the Intermountain West. Small quantities of Certified seed will be made available to seed

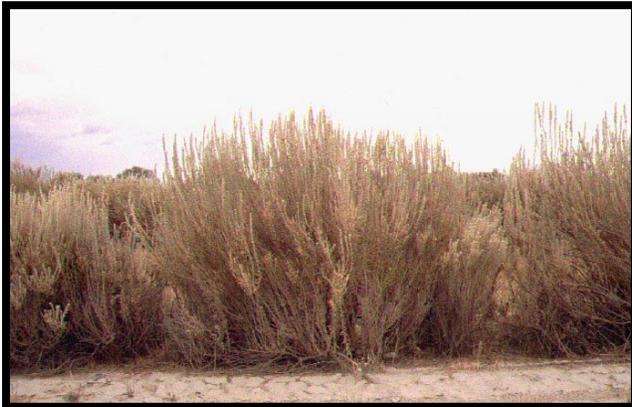
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growers in 2002 through the University of Idaho Foundation Seed Program and Utah Crop Improvement Association.

Fourwing saltbush provides erosion control and browse for livestock and big game and is common on dry, moderately saline or alkaline areas.

Winterfat Released



The PMC in cooperation with the Idaho Agricultural Experiment Station also released Northern Cold Desert Germplasm winterfat (Selected Class) in 2001. Winterfat is a shrub that provides erosion control and browse for livestock and big game in arid to semi-arid and moderately saline or alkaline areas. The germplasm release was selected from an assembly of 45 collections evaluated at the PMC from 1978 to 1986. Five of the collections had very good tolerance to cold temperatures and were isolated into a seed increase block. Seed from the increase block was tested from 1995 to 2000 at off-center test sites in Idaho and Utah. The release shows potential for use in the northern areas of the Intermountain West. Small quantities of Certified seed will be made available to seed growers in 2002 through the University of Idaho Foundation Seed Stocks Program and the Utah Crop Improvement Association.

Plant Materials Training Session Held

The PMC held a 3-day training session, July 10-12, 2001. Thirty-two students from Idaho, Montana, Nevada and Utah attended. The training session introduces students to the use of plant materials as an alternative to solve resource management problems. Training in seed terminology, seed production, seed mixtures; drill calibration, planting, and evaluation were provided. The PMC farm, seed

cleaning facilities, ongoing projects and studies, field equipment, and off center testing locations were used to provide a practical training opportunity for the students.



Breeder and Foundation Seed Production

The PMC is responsible for Breeder and Foundation seed production of 17 plant releases. During 2001, the PMC had Foundation seed fields of 'Magnar' basin wildrye, 'Goldar' bluebunch wheatgrass, 'Rush' intermediate wheatgrass, 'Bannock' thickspike wheatgrass, 'Ephraim' crested wheatgrass, 'Appar' perennial flax, Richfield Selection firecracker penstemon, Clearwater Selection alpine pentsemon, Northern Cold Desert Selection winterfat and Snake River Plains Selection fourwing saltbush.

Certified Foundation seed of the releases from the PMC are provided to seed growers through the University of Idaho Foundation Seed Stocks Program and the Utah Crop Improvement Association.



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 that they needed more information on how to propagate and plant riparian and wetland plants, how to establish and maintain wetland and riparian vegetation in an artificial situation, and other uses related to water quality improvement.

Riparian Ecology and Restoration Workshops

As part of our technology transfer program, a two-day Riparian Ecology and Restoration Management Workshop was developed. The first day of the workshop is devoted to the classroom where basic riparian dynamics, riparian zone vegetation, plant acquisition, and bioengineering techniques are discussed. The second day is spent at a field location where participants classify the riparian site and install a series of bioengineering treatments on an eroding section of streambank.

Each year the Project conducts several workshops in different parts of our service area. This year workshops were held in Springerville, AZ for NRCS employees, state and local agency personnel, and private consultants; Salt Lake City, UT for the National NRCS Biologists; Preston, ID; and Reno, NV for the Shoshone-Paiute Indian Tribes.



Stream Assessment Training for Field Office Personnel

The Interagency Riparian/Wetland Project assisted the Idaho State NRCS technical services staff in putting on Stream Assessment training to field offices in eastern Idaho. A one week course was developed on understanding stream dynamics, stream hydraulics and hydrology, sediment transport, riparian vegetation concepts, and the NRCS Stream Visual Assessment Protocol. Idaho and Utah are using this protocol exclusively to assess stream systems prior to working on them. It gives the field office personnel a much better understanding of the scope of the problem, what some of the potential treatment alternatives are that they can present to the landowner, and the background information that they need to collect before calling for outside assistance.



Field Office Assistance

The Interagency Riparian/Wetland Project provides technical assistance to field offices throughout the PMC service area. This year the Project assisted in stream assessments on the Cub River in southeast Idaho and into northern Utah and East Canyon Creek in northeastern Utah.

The Cub River is a major stream that starts in Idaho and flows into the Bear River in Utah. When a stream crosses statelines, the issues start to become political in nature. The stream assessment helps to provide facts and figures that help with the scientific analysis of the problems. About 24 miles of stream were assessed in two weeks.



East Canyon Creek is a major stream in northern Utah that starts near Park City, the ski resort, and flows into the Weber River. It covers about 40 miles. Tremendous urban growth at Park City and housing developments along the river have caused significant water quality problems in East Canyon Creek and the Weber River. The stream assessment will provide planners and regulators scientific data to base zoning decisions on.

New Technology

One of the goals of the Aberdeen PMC and the Interagency Riparian/Wetland Project is to provide new technology to the field. This year we developed the Waterjet Stinger, a tool for planting dormant unrooted cuttings of willow, cottonwood, and dogwood species.

Dormant unrooted cuttings are used because they are easy to harvest, easy to plant, inexpensive, and effective. In the arid and semi-arid West, it is extremely important that any cutting that is installed in a riparian zone have its base in the lowest watertable of the year. This is often difficult when using bareroot or containerized plants especially when the riparian zone has been dewatered to the point that the water table may be several feet below the soil surface. Unrooted cuttings have been planted as deep as 12 ft (average depth is about 5-6 ft) by the Riparian/Wetland Plant Development Project at the Aberdeen PMC using a long bar attached to a backhoe (Hoag and Ogle 1994). Most riparian and stream protection projects require planting depths of 3-6 ft. The biggest problem we faced was finding a method and developing equipment that could dig a hole more than 3-4 ft deep quickly and efficiently. The Waterjet Stinger is the result of this equipment development effort.

The advantages of using the waterjet stinger to drill a hole for planting unrooted willow and cottonwood cuttings are:

- 1) simple to operate and transport
- 2) little training necessary to operate
- 3) hydrodrilling the planting hole is fast
- 4) digs a large number of cutting holes in a short period of time
- 5) allows cutting to be planted directly into a wet environment
- 6) allows for saturated soil conditions that surround the cutting for a longer period of time
- 7) liquefied soil will settle around the cutting eliminating air pockets in the rooting zone



The Waterjet Stinger takes water right from the stream and uses it to hydrodrill planting holes for unrooted cuttings. The waterjet stinger is small enough to be moved on an ATV and it can hydrodrill holes about 6-8 feet deep with very little effort by the operator. Plant Materials Technical Note No. 39 and Information Series 17 detail how to build and use the waterjet stinger. The publication provides pictures, a list of materials, and the associated costs to build a waterjet stinger yourself. Field testing indicates this is one of the best tools for planting dormant cuttings that we have ever used.

Check out the Riparian/Wetland Project web page at:
<http://plant-materials.nrcs.usda.gov/idpmc/>
for further information and more papers on wetland and riparian plants and management.