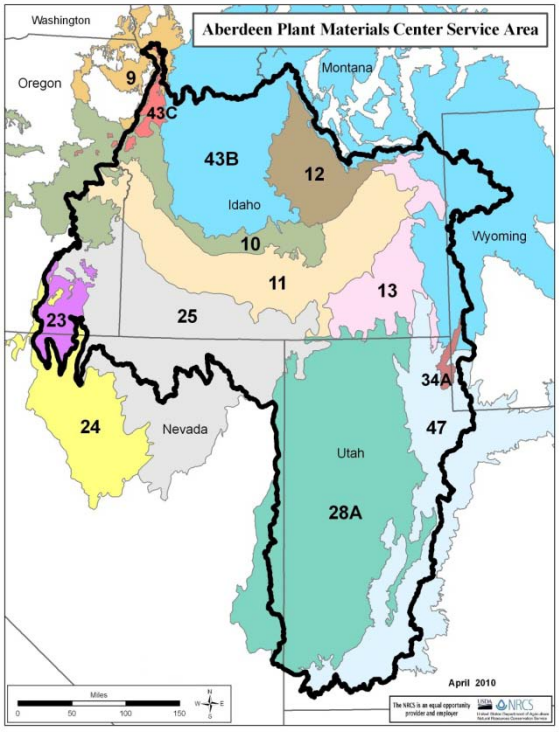
United States Department of Agriculture
Natural Resources Conservation Service

ABERDEEN PLANT MATERIALS CENTER

INTERMOUNTAIN PLANT NOTES

A newsletter to inform you about activities at the Aberdeen Plant Materials Center

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. Currently, there are 27 Plant Materials Centers nationwide, each serving specific geographic and ecological areas. The Aberdeen PMC service area covers 83 million acres of the Intermountain West encompassing southern Idaho, western Utah and parts of northern Nevada, western Wyoming and eastern Oregon.



PMC service area map.

Plant Evaluations

This year, the PMC is continuing evaluation of the native forbs Douglas' dustymaiden (*Chaenactis douglasii*), hoary tansyaster (*Machaeranthera canescens*) and whorled buckwheat (*Eriogonum heracleoides*). We are also investigating agronomic practices relating to seed production of each of these species. After the species have been evaluated for conservation values and production potential, decisions will be made regarding releases and availability to the public.

Douglas' dustymaiden (above) and whorled buckwheat (below).

We are also cooperating with plant scientists from the USDA ARS Forage and Range Research Laboratory in Logan, Utah to develop a release of Searls' prairie clover (*Dalea searlsiae*). ARS geneticists have determined genetically similar populations, and the PMC is establishing breeders seed production fields.

New this year is the installation of a common garden- initial evaluation study of Nevada type Sandberg bluegrass. Thirty-four Nevada bluegrass accessions were collected in 2008 and an initial evaluation field was planted this spring. These plots will be evaluated for traits such as establishment, forage production and seed yield. The plants are also being evaluated in the PMC greenhouse studies for emergence and root development attributes.

Cooperative Seed and Plant Production Projects

Yellowstone National Park

Water sedge (Carex aquatilis) growing in the PMC greenhouse for Yellowstone National Park.

In 2010 the PMC will continue plant production for Yellowstone National Park by producing four wetland plant species for restoration activities in the Gibbon River Canyon. The PMC is producing 10 cubic inch conetainers of about 6000 water sedge (*Carex aquatilis)*, 3500 tufted hairgrass (*Deschampsia cespitosa)*, 2700 beaked sedge (*Carex rostrata)* and 2100 bluejoint (*Calamagrostis canadensis) plug*s for delivery late this summer. In addition to the Gibbon River restoration project, the PMC is producing seed of Sandberg bluegrass, bluebunch wheatgrass and needle-and-thread intended for the conversion of historical agricultural lands back to native grasslands in the Gardiner Basin.

Grand Teton National Park

The PMC is also producing seed of native grasses for use in restoration projects in Grand Teton National Park. Species under production include collections of mountain brome, bluebunch wheatgrass and Idaho fescue.

Technology Development

Quick Methods to Estimate Seed Quality

In order to expedite seed processing, the PMC uses two relatively quick and accurate low tech procedures to estimate seed quality prior to sending seeds lots to a lab for testing; the pop test and historic bushel weights. The pop test involves heating seed on a propane heater to induce popping of good quality seed. We recently completed an advanced study evaluating the accuracy of the pop test by comparing viability results obtained from a certified lab with our in-house tests. Our results indicate that the pop test is a good predictor of seed fill in newer lots of seed of many species tested. The PMC also uses records of seed bushel weights to estimate seed quality by comparing bushel weights of high quality lots of seed to lots being processed. For more information on these techniques, check out Plant Materials Tech. Note. 35 on the NRCS Idaho-Utah web site and at the PMC website.

Propane heater used to conduct "pop tests" at the PMC seed cleaning facilities.

The Jet Harvester

In 2009 PMC engineering technicians Dan Thomsen and Charlie Bair began conceptualizing a new type of seed harvester for use on plant species which cannot be easily combined. The resulting invention uses a PTO driven fan and

vortex dust collector to suck seeds directly off of the plant. With this design, the seed drops into the collection unit without having to travel through the potentially damaging fan impellers. So far, the Jet Harvester has been used successfully to harvest seed of fourwing saltbush (*Atriplex canescens*), and we have high hopes for this machine helping with the harvest of other light, fluffy seeded species, such as many of the forbs currently under evaluation

The Jet Harvester (above) mounted to a tractor, and Dan Thomsen harvesting seed from Snake River Plains fourwing saltbush (below).

Agricultural Land Management Alternative with Numerical Assessment Criteria (ALMANAC) Project

PMCs located in Arizona, New Mexico, Nevada, Washington, Idaho, California, Colorado, and Montana are participating in a cooperative study with USDA ARS scientists in Temple, Texas. The intent of the ALMANAC study is to develop science supported methods that will allow NRCS to better estimate environmental benefits and effects attributable to NRCS conservation practices. PMC personnel will be gathering plant growth data such as leaf area, light interception and biomass production which will be analyzed by ARS staff for inclusion in the ALMANAC model.

Direct Seeding Wetland Species

This year the PMC will continue research into the development of methods to direct seed wetland species such as *Carex* and *Juncus*. This year's trials include investigations of the use of floating row cover following broadcast seeding and the application of pre-germinated seed via hydroseeding. These techniques have worked in small scale trials and will now be evaluated on a larger scale using the PMC wetland ponds.

PMC Improvements

In the fall of 2009 the South Bingham Soil Conservation District completed the construction of an equipment storage barn for the home farm. The barn is designed with four bays, one of which is equipped with high powered ventilation fans to provide the PMC farm crew an ideal place to clean seed harvesting equipment.

The new PMC equipment barn.

Foundation/Early Generation Certified Seed Production

A major responsibility of the PMC is the production of Foundation/early generation Certified Seed of the plant releases made by the Center. The releases currently in production are 'Vavilov II' Siberian wheatgrass, 'Sodar' streambank wheatgrass, 'Recovery' western wheatgrass, 'Rush' intermediate wheatgrass, Maple Grove Lewis flax, 'Nezpar Indian ricegrass, 'Goldar' and Anatone bluebunch wheatgrass, Clearwater Venus penstemon, Snake River Plains fourwing saltbush and Northern Cold Desert winterfat. Contact the University of Idaho Foundation Seed program or

the Utah Crop Improvement Association to request Foundation/early generation Certified seed.

Have a good planting project? Seed may be available for small field plantings. Contact Dan Ogle, Plant Materials Specialist, Idaho State Office.

Public Information Activities

Journal Article

- **Evaluation of fall versus spring dormant planting of hardwood willow cuttings with and without soaking treatment**

Information Sheets

- **Pollinator Plants at the PMC**
- **Improving Sage-grouse Habitat Through Revegetation and Rangeland Management**
- **Cluster Plantings: Riparian/Wetland Project Information Series No. 26**
- **Plants for Solving Resource Problems, 'Recovery' Western Wheatgrass**

Extension Publication – PNW 614

- **Chapter 2: Species Selection; Pasture and Grazing Management in the Northwest**

PM Technical Notes

- **TN 11: Pasture, Species Selection and Grazing Management Guidelines**
- **TN 35: Aids to Estimate Seed Quality**
- **TN 51: Threatened, Endangered, Candidate & Proposed Plant Species of Idaho**
- **TN 53: Vertical Bundles: a streambank bioengineering treatment to establish willows and dogwoods on streambanks**

Plant Guides

- **Christ's paintbrush**
- **Douglas' dustymaiden**
- **MacFarlane's 4-o'clock**
- **Redtop**
- **Sand dropseed**
- **Sheep fescue**
- **Slickspot peppergrass**
- **Spalding's catchfly**
- **Strawberry clover**
- **Timothy**
- **Ute ladies tresses**
- **Water howellia**
- **Western wheatgrass**
- **Medusahead**
- **Rubber rabbitbrush**

Presentations

- **Great Basin Native Plant Selection and Increase Project. SLC, UT**
- **Native Forb and Grass Seed Production. Ontario, OR**
- **National Native Seed Conference. Snowbird, UT**

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