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Natural Resources Conservation Service

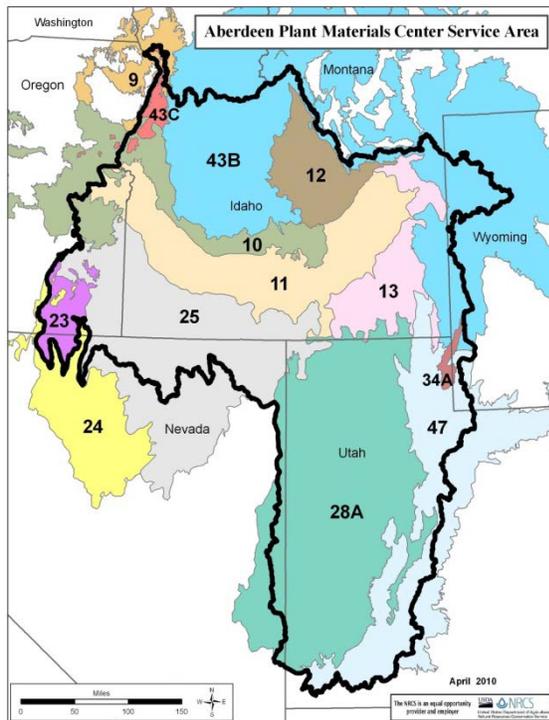
ABERDEEN PLANT MATERIALS CENTER



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. 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 with overlay of Major Land Resource Areas (MLRAs).

In March, the NRCS National Plant Materials Program announced a new Plant Materials Center Improvement Effort. It was determined that in order to address budget challenges, PMC operations would be stratified into different tiers for contributing to agency priorities. Nine PMCs, including Aberdeen, will be designated Tier A

centers with a staff of 4-5 Full Time Employees (FTEs). The remaining PMCs will be Tier B PMCs with 2-3 FTEs.

PMCs have also been assigned areas of focus to insure that the limited staff and resources are utilized to their fullest efficacy. Aberdeen's primary focus will be improving habitat for at-risk wildlife species such as sage-grouse. The second study area will be grazing land health to improve range and pasture productivity and increase plant species diversity.

We look forward to implementing the new Improvement Effort and continuing our efforts to conserve the natural resources in the Intermountain West.

Foundation/Early Generation Certified Seed Production

A major responsibility of the PMC is the production of Foundation and early generation Certified Seed of the plant releases made by the Center. The releases currently in production are: Anatone and 'Goldar' bluebunch wheatgrass, 'Regar' meadow brome, 'Appar' blue flax, Maple Grove Lewis flax, 'Vavilov II' Siberian wheatgrass, Richfield select firecracker penstemon, 'Delar' small burnet and 'Bannock' thickspike wheatgrass. Seed growers may contact the University of Idaho Foundation Seed Program or the Utah Crop Improvement Association to request Foundation or early generation Certified seed.

Display Plantings

Pollinator Display

In May of 2011, the PMC planted 5 acres of pollinator habitat at the PMC Fish and Game Farm. The planting contains a mixture of forbs chosen to provide a variety of flower shapes and colors throughout the growing season. The whole planting is irrigated to simulate a 14 to 16 inch

precipitation area. The display is being evaluated to develop management strategies for use in pollinator and wildlife friendly plantings. It is also a good visual tool for NRCS field office staff and other land managers.

Curlew National Grassland

In the fall of 2010, PMC staff planted a multi-species off-center evaluation on the USDA-Forest Service, Curlew National Grassland located 30 miles south of American Falls, Idaho in cooperation with the Caribou/Targhee National Forest. The trial includes over 60 accessions of primarily native grasses, forbs and shrubs adapted for use in MLRA 13 Eastern Idaho Plateaus (13 to 18 inch plus precipitation areas). The PMC is evaluating the plots for establishment and performance. For more information or to arrange a site visit, contact the PMC.

Plant Selection and Development

The PMC is in the early stages of seed production prior to the official release of Douglas' dustymaiden, hoary tansyaster and whorled buckwheat. The initial evaluations for these species were completed in 2010 and the best rated accessions were identified for seed increase and release. These native forbs are important food sources for pollinators and will benefit sage-grouse habitat restoration. These accessions will be officially released to growers when the PMC has bulked up enough seed to satisfy expected demands.

Soil Health

Soil Health and Cover Crop Tour

On June 12, we will be hosting a soil health and cover crop tour. Marlon Winger, NRCS Idaho State Agronomist will be speaking and showing demonstrations on how to improve soil health in conjunction with Idaho agriculture. In the afternoon we will be touring the new cover crop display planting to get a look at the many available species that can be used in our area. Presentations start at 9:00 am at the PMC office. Call Derek Tilley at 397-4133 for more information.

Cover Crop Display

In late April the PMC planted a cover crop display at the Home Farm that includes 40 species. The new display is arranged into blocks of cool season

grasses, cool season broadleaf plants, legumes, warm season broadleaf plants and warm season grasses. When developing a cover crop seeding mixture, it is important to include as many functional groups as possible to increase diversity and fill above and below ground niches to support the greatest species richness of microorganisms. Contact the PMC for a map or to arrange a visit. We also plan to install an additional display of the same species this summer to observe how they overwinter.

Cover Crops for Wind Erosion Protection

Wind erosion is a major problem throughout the Aberdeen PMC service area. Wind erosion removes the most fertile part of the soil (organic matter, clay, and silt) and lowers soil productivity. Cover crops and crop residues reduce wind erosion by reducing the wind velocity at the soil surface and by increasing the size of soil aggregates. Last August, we installed a trial to evaluate the cover value of several cover crop species. Nine individual species were planted along with a cocktail mix composed of the same nine species.

Each of the functional groups examined filled a specific niche in providing soil protection. Mustards provided early dense cover in the fall and developed a protective coating of leaf tissue in the spring. Small grains like wheat and oat, with their vertical stature, added moderate amounts of cover but also added height in the fall and spring to reduce surface wind speed. Legumes, while limited in their fall cover value, added soil nitrogen for growth. Over wintering legumes such as hairy vetch also provided spring cover and a living root system which feeds the soil micro-fauna. The cocktail mix did not provide the best ranking of any of the three evaluated characters, but did offer a combination of traits not available from a single species.



Cocktail mix 30 days after planting.

Legume Winter Kill Evaluation

Cover crops have been shown to mediate soil erosion, increase water infiltration, improve soil biodiversity, and increase organic matter. Additionally, legumes in a symbiotic relationship with Rhizobium bacteria have the further benefit of fixing soil nitrogen into a form useable by other plants. To better ascertain which legume cover crops naturally winter kill and which overwinter and require termination in our region, the Aberdeen PMC installed a multi-species trial of several legumes suggested for use in Idaho. Nine commonly used legume cover crop species were planted last August including chickling vetch, sun hemp, chickpea, berseem clover, spring pea, cowpea, lentil crimson clover and hairy vetch.

All species with the exception of chickpea and berseem clover established good stands. At 70 days after planting (October 16) the sun hemp had already died from early frosts. On March 24, the following spring, only hairy vetch and crimson clover were still alive. Hairy vetch produced 3300 lbs/ac of above ground biomass and crimson clover produced 1500 lbs/ac of biomass.



Crimson clover plants showing frost damage in early March. By the end of the month, these plants had mostly recovered and were actively producing nitrogen.

Radish Bolting

One of the workhorse species for cover crop plantings is radish. Radishes provide excellent cover and produce a large taproot capable of penetrating hard soil pans. Typical plantings in August produce good above ground growth and root development before going dormant in the fall; however if planted too early in the season, the radish will simply bolt and put out flowers instead of developing a robust plant. This year we are evaluating five radish varieties to determine which may be amenable to earlier planting dates for use in full-season cover crop seedings. Small plots of

each variety are being seeded each month and evaluated for root growth, above ground biomass and date of flowering.



This radish was planted late in the season and did not flower before the first frost.

Technology Development

Seeding rate studies

There is some old wisdom that says in lower precipitation areas you should plant fewer seeds than the standard rate. The reason being that there is less moisture to go around and every rain drop or snowflake should be allocated to fewer competitors. The other side to this debate says higher seeding rates means more chances for establishment and if a plant doesn't establish then competition really doesn't matter. To test these ideas we installed a seeding rate study at Skull Valley, Utah in a 6 to 8 inch precipitation area. The site was planted last year to 12 species at 1X and 2X the standard drill rates. A twin trial will be planted at Coffee Point northwest of Aberdeen this fall. We will be monitoring these plantings for the next few years to evaluate establishment and persistence and hopefully come to some conclusion regarding seeding rates for low precipitation areas.

Cooperative Seed and Plant Production Projects

IDARNG Globemallow

In 2011 the PMC installed a planting of

globemallow to produce seed for the Idaho Army National Guard for revegetating their rangeland training areas. Seed was harvested in 2012 and 2013 and will be harvested one last time this year.



Globemallow grown in weed barrier fabric.

Yellowstone and Grand Teton National Parks

The PMC is producing seed for the conversion of historical agricultural lands in Yellowstone National Park back to native rangeland. Seed production fields of Sandberg bluegrass, bluebunch wheatgrass and needle-and-thread were planted in 2009 and harvested for seed in 2010 -2012. New fields for bluebunch wheatgrass and Sandberg bluegrass were planted in 2013 and will be harvested this year. The PMC is also currently producing Idaho fescue seed for use in restoration projects in Grand Teton National Park. The PMC has worked with Grand Teton NP since 2006 to produce slender wheatgrass, Sandberg bluegrass, blue wildrye and mountain brome seed.

Public Information Activities

New, Revised or Updated PM Technical Notes

- TN-62 Challis, Idaho Demonstration Plantings Summary
- TN-63 Evaluation of Perennial Grasses Used in Cross Wind Trap Strips in Eastern Idaho
- TN-57 cutting Storage (update)

- Planning and Implementing a Seeding in Sage-Grouse Country (in review)
- What to do with Pivot Corners (in review)

Plant Guides

- Rydberg's Penstemon
- Thicketleaf Penstemon
- Palmer's Penstemon
- Rocky Mountain Penstemon
- Plains Pricklypear Cactus
- Purple Three-awn
- Leafy Spurge
- Shadscale Saltbush
- Meadow Deathcamas
- Dahurian Wildrye

Presentations

- Fundamentals of Rangeland Seeding: Emphasis on Sage-Grouse Habitat & Sagebrush Ecosystems
- Developing Seed Mixes for Sage-Grouse Habitat Restoration
- Great Basin Native Plant Project
- Idaho Rare Plant Conference

Plant Materials Team and Contact Information

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