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NRCS Natural Resources Conservation Service

2011
Pullman Plant Materials Center
Progress Report of Activities

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Pullman Plant Materials Center

Our Mission:

Develop Revegetation Plants and Revegetation Technology for the Inland Pacific Northwest.

Who We Are

The Pullman Plant Material Center (PMC) is one of 27 Plant Materials Centers (PMC) that are scattered across the Nation and are charged with developing cost effective vegetative solutions for land stewardship problems.

The Pullman PMC lies in the Palouse Hills and serves northern Idaho, and Washington & Oregon east of the Cascades.

This report highlights the major activities at the PMC during 2011. For more detailed information, contact the PMC or the Plant Materials Specialist in Spokane.

Tours & Trainings

2011 was the year of tours and trainings at the Pullman PMC. In May through October we provided tours for University of Idaho environmental technology students from Latin America and the Caribbean, the Palouse Prairie Foundation, the Intermountain Container Seedling Growers' Association, and the University of Idaho Range Club. We also conducted trainings at the PMC or off-station locations for NRCS and Conservation District staff on the topics of Management of Invasive Weeds, Farm Equipment, Cover Crops, Seed Tags, Riparian Vegetation, Threatened and Endangered Species, Tree and Shrubs, Range Plants, Pasture and Hay Identification, Weed Identification, Seed Bed Preparation and Pollinators (see below).

Summer Pollinator Workshops

Two of the groups who came to the Pullman PMC to learn about pollinators were the Washington 4-H Teen Conference and the Pullman Parks and Recreation Garden Camp. Workshops for these groups included presentations by Pamela Pavek, PMC Agronomist, and members of the WSU entomology department, followed by an exhibit of foods produced by pollination, a walking tour of the Pollinator Habitat Demonstration Planting, and opening of honey bee hives to observe bee activity and sample fresh honey.

Pullman Parks and Rec Garden Camp participants sampling honey directly from the hive.

The Pullman PMC also hosted Eric Mader from the Xerces Society, who led two Pollinator Conservation Short Courses, one at the PMC and one at Wenatchee Valley College. Eric covered several aspects of pollinator conservation, including the current status of pollinators, basic bee biology, bee-friendly farming and habitat restoration. At the Pullman course, additional presentations were given by Pamela Pavek, PMC Agronomist, and Dr. Tim Hatten, local bee expert and CEO of Invertebrate Ecology, Inc. At the Wenatchee course, additional presentations were given Dr. Don Rolfs, self-trained entomologist, Dr. Bob Gillespie, entomologist and faculty member at Wenatchee Valley College, and Pamela Pavek. Over 100 people attended the two trainings.

Eric Mader explaining the Xerces' new Pollinator Habitat Assessment Tool.

Pollinator Habitat Research

Determining best methods for establishing pollinator habitat has remained a research priority for the Pullman PMC, primarily due to the popularity of the Pollinator Habitat option in recent CRP sign-ups and interest among orchardists. The 2.0 acre Pollinator Habitat Demonstration Planting at the PMC and the Species Evaluation Trial at the Othello Experiment Station continue to be monitored and managed. Research is also being conducted to determine the ideal forb establishment methods at five off-station locations.

The study established in Latah County, ID, in 2010 was designed to evaluate two no-till drills: a cross-slot and a double disk, and two ground preparation methods: mowed and unmowed, to seed 16 native forb species on three CRP sites with various ages, stand compositions, and environmental conditions. The interest in establishing forbs with no-till techniques is based on concerns about the erodibility of steep Palouse fields and weed competition following disturbance. Analysis of first-year data shows seeding forbs with no-till techniques can be a successful strategy. The site with the highest number of forb seedlings was the site with a stand of 20-year-old stand of intermediate wheatgrass suppressed with two applications of glyphosate. The other two sites, each 3-year-old stands of native bunch grasses, had fewer forb seedlings per linear foot and more weed pressure, likely a result of less dense initial ground cover. In most cases, seeding with a double disk drill and mowing prior to seeding resulted in higher numbers of seedlings. These sites will continue to be monitored in years to come.

Evaluating emergence of no-till seeded forbs in 20-year old stand of intermediate wheatgrass, May 10.

Four studies additional studies were established in Washington this fall, in Douglas County, Adams County and Grant County. The studies include comparisons of different drills and seeding methods on sites with diverse conditions.

Caragana Study

Caragana, also known as Siberian Pea Shrub, is a very hardy windbreak shrub. Much of the caragana growing in northern Great Plains windbreaks originate from seed collected in Siberia and Mongolia over 80 years ago. Caragana tolerates droughty conditions, saline soils, and cold-dry winters very well. It is actually a genus and is comprised of comprised of several species. *C. arborescens* is the species that is commonly planted in shelterbelts throughout the West.

The Pullman PMC initiated a project several years ago in an effort to identify trees and shrubs that could be used for dryland windbreaks. The initial planting was established south of Prosser, Washington in an area that receives less than 7" MAP. Big sage, rabbitbrush, and saltbush did not acquire much height and were removed from further consideration. 'Bridger Select' Rocky Mountain juniper and caragana (purchased from the Montana State Forest Nursery) exhibited the most promise.

A second planting was made south of Prosser to compare the "old" caragana seed stock to "new" seed stock recently collected in the former Soviet Union. Caragana 0-2 bare-root plants were purchased from the Montana State Forestry Nursery and are being used for comparison.
The second planting has been in stand for 3 growing seasons. Some of the plants are now over 1 meter tall.

There are no clear "winners" at this point in time. There are some clear "losers" though. *Caragana frutex* and *C. manschurica* are not performing well. Both species are struggling with the extremely droughty conditions and black grass bug damage.

Caragana plants in the Horse Heaven Hills Test Planting.

Plant Guides

Oregon sunshine	*Eriophyllum lanatum*
Smoothstem blazingstar	*Mentzelia laevicaulis*
Purple sage	*Salvia dorrii*
Munro's globemallow	*Sphaeralcea munroana*
Missouri goldenrod	*Solidago missouriensis*
Canada goldenrod	*Solidago canadensis*

Technical Notes

WA Plant Materials Tech Note 24/ID Plant Materials Tech Note 2B: Plants for Pollinators in the Inland Northwest