



Pacific Northwest Plant Notes

A Quarterly Newsletter of the Corvallis Plant Materials Center **Fall 2013**

Restoring native upland prairie plant communities: How many seeds are enough?

By Amy Bartow, Kathy Pendergrass & Sue Reams

The Corvallis Plant Materials Center (PMC) recently assisted with seeding experimental plots for a Wildlife Habitat Incentives Program (WHIP) project in Polk Co., Oregon. The overarching goal of work at the site has been to restore an abandoned orchard, pasture, and

unmanaged woodland to oak savanna and upland prairie. The goal of the most recent demonstration seeding is to determine the best seeding rate for establishing a native upland prairie plant community. An additional benefit of this project will be to provide nectar and pollen food sources for insects. Insects provide high protein food for adult birds while rearing young in nearby nests in oak savannas and oak woodlands. Insects also provide food necessary to improve body condition for birds preparing to migrate in the fall.

In the fall of 2012, the site was treated with glyphosate to kill existing weedy vegetation. It was mowed in the spring to break up the thatch and encourage germination of weeds in the seed bank. Three more applications of glyphosate occurred in the summer of 2013. The site was lightly disked (with a cover crop disk) in late summer of 2013 to prepare the site (i.e., to help decompose the dead plant litter) for seeding. Heavy rain in September



Figure 1. Sprayed out plots being direct seeded with upland prairie mix using PMC cone seeder, fall 2013.

caused a lot of germination of weeds which were treated with glyphosate prior to seeding the trial plots in late October.

Plots were seeded on October 20, 2013 using the PMC's precision cone-seeder (Figure 2). This seed drill was chosen for its accuracy and consistency.

Three 1-acre plots were seeded using rates of 30, 50, or 70 seeds per square

foot. The same mix was used for all plots. The mix used contains 35% grasses and 65% forbs based on number of seeds in the mix (Table 1). Rows were drilled less than ¼" deep on 12" spacing.

Plots will be evaluated next year as well as in successive years to determine which seeding density results in good native plant cover with low non-native plant composition. Strategically planned mowing might be needed, particularly in spring 2014, to reduce weeds going to seed while the slow native perennials establish. Spot-spraying of invasive plants will also be needed to assist in native prairie establishment. These demonstration plots will help us determine best seeding rates as well as site preparation and post-seeding techniques for establishing upland prairie plant communities.

Table 1. Upland prairie seed mix used in trial plots on Polk County WHIP planting.

Common Name	Species	Percent of mix
Roemer's fescue	<i>Festuca roemeri</i>	15.0%
California oatgrass	<i>Danthonia californica</i>	10.0%
Western rush	<i>Juncus occidentalis</i>	6.0%
Blue wildrye	<i>Elymus glaucus</i>	2.0%
Slender wheatgrass	<i>Elymus trachycaulus</i>	2.0%
Western yarrow	<i>Achillea millefolium</i> var. <i>occidentalis</i>	10.0%
Slender cinquefoil	<i>Potentilla gracilis</i>	10.0%
Lance selfheal	<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	10.0%
Hall's aster	<i>Symphotrichum hallii</i>	9.0%
Oregon sunshine	<i>Eriophyllum lanatum</i>	8.0%
Shortspur seablush	<i>Plectritis congesta</i>	5.0%
Western buttercup	<i>Ranunculus occidentalis</i>	4.0%
Meadow checkermallow	<i>Sidalcea campestris</i>	3.0%
River lupine	<i>Lupinus rivularis</i>	2.0%
Puget Sound gumweed	<i>Grindelia integrifolia</i>	2.0%
Farewell to spring	<i>Clarkia amoena</i>	1.0%
Common cammas	<i>Camassia lechtlinii</i>	0.5%
Rose checkermallow	<i>Sidalcea virgata</i>	0.25%
California compassplant	<i>Wyethia angustifolia</i>	0.25%
Showy milkweed	<i>Asclepias speciosa</i>	0.15%

Plant Spotlight

Sand fescue: A potential low maintenance turf grass and cover crop for vineyards and orchards

By Dale Darris



Sand fescue (*Festuca ammobia*) is a small, fine leafed grass native to coastal meadows of Washington, Oregon, and California. It has potential use for low-input sustainable turf and perennial cover in vineyards, fruit orchards, and berry crops. This grass has the advantage of being a slow creeper (that is, it spreads slowly via short underground stems called rhizomes) with low soil fertility needs, not unlike certain red fescues already used in turf. However, the PMC is further differentiating from existing red fescue by selecting this species for shorter stems and blue foliage color, while avoiding plants with more disease signs and symptoms. Shorter seed stalks (see photo) can improve its utility for “no-mow” lawns or grassy cover and the blue color adds ornamental landscape value. Research on other plants suggests the blue color (from the buildup of a white-waxy coating on the leaves in summer) may also increase drought tolerance.

Last year the PMC began a field trial of our own selection of sand fescue as a perennial cover crop on a berry farm in Columbia County. More seed



Figure 2. PMC precision cone seeder in action.

will be available in the fall of 2014 for field offices interested in conservation field trials of this grass. It should be compared to turf-type creeping red fescue, hard fescue, the PMC's own Roemer's fescue, or 'Molate Blue', a sand fescue cultivar derived from a natural stand near San Francisco. Suggested seeding rates for general erosion control and perennial cover are 8 to 10 lb/acre when drilled alone at a depth of ¼ inch. If broadcast sown, the rate should be doubled. For actual turf, 1 lb/1000 sq. ft. (44 lb/acre) is often suggested for fine fescues, but consider bracketing this rate at 22 and 66 lb/acre in separate plots for experimental purposes. Sand fescue is slow to establish, so for initial weed suppression adding ½ to 1 lb/acre of annual hairgrass (*Deschampsia danthonioides*) along with it could be more successful. Annual hairgrass is fine textured, will provide temporary quick cover, and is commercially available.

Recent Publications

We recently updated many of our Conservation Plant Release Brochures, available on our website:

- 'Arlington' blue wildrye
- 'Elkton' blue wildrye
- Tillamook Germplasm tufted hairgrass
- Willamette Germplasm tufted hairgrass
- Baskett Slough Germplasm California oatgrass
- Jackson-Frazier Germplasm meadow barley
- Skamania Germplasm Sitka alder
- 'Mason' western redosier dogwood
- 'Clatsop' Hooker willow
- 'Multnomah' Columbia River willow
- 'Placer' erect willow
- 'Plumas' Sitka willow
- 'Rogue' arroyo willow



Corvallis Plant Materials Center

Since 1957, the USDA-NRCS Corvallis Plant Materials Center (PMC) has selected conservation plants and developed innovative planting technology to solve natural resource concerns. The Corvallis PMC service area includes the northern Pacific Coast Range, Willamette Valley, and Puget Sound, as well as the Olympic, Cascade, and Siskiyou Mountains.

Please contact us with your plant materials questions:

3415 NE Granger Ave.
Corvallis, OR 97330
Phone: 541-757-4812

Kathy Pendergrass, *Plant Materials Specialist & Acting PMC Manager*

Amy Bartow, *Seed & Plant Production Manager*

Dale Darris, *Conservation Agronomist*

Annie Young-Mathews, *Conservation Agronomist*

Vanessa East, *Technician*

John Knox, *Technician*

Tyler Ross, *Technician*



USDA is an Equal Opportunity Provider and Employer