CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
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THE 2006 FEDERAL HIGHWAY ADMINISTRATION ANNUAL REPORT:
Rock Creek Bridge Replacement

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with the Federal Highway Administration in 2006 to provide native plant materials for ecological restoration after the Rock Creek Bridge is reconstructed. This area lies within the critical habitat of the endangered Oregon silverspot butterfly (*Speyeria zerene hippolyta*). The butterfly has become threatened due to the degradation and loss of its coastal meadow habitat. The early blue violet is the obligate host to the silverspots' caterpillars and has also been negatively impacted in its coastal meadow ranges by the encroachment of tall, spreading exotic plants. The butterfly also needs access to nectar sources such as Pacific aster (*Aster chilensis*), goldenrod (*Solidago canadensis*), yarrow (*Achillea millefolium*), *and* pearly everlasting (*Anaphalis margaritacea*). It was agreed that the PMC would establish and maintain seed increase fields of one grass and two forbs, as well as produce a total of 9500 plugs of four forbs and one grass. Prior to planting, the restoration site will have six inches of soils removed to reduce the presence of exotic vegetation and seed. Soils on the site are classified as fertile fluvial deposits and range between 4 and 6 feet deep. In 2007, plugs grown by the PMC will be transplanted into the site. Red fescue and early blue violet will be planted in patches surrounded by nectar plants.

Figure1. Oregon silverspot butterfly (*Speyeria zerene hippolyta*) nectaring on goldenrod.

II. Accessions Involved

Accessions included in the Rock Creek Bridge Replacement project are listed below. These accessions are also being used for the USFW Oregon Silverspot Butterfly Seed Increase Project.

Table 1. Accessions involved for the Rock Creek Bridge Replacement Project at the Corvallis Plant Materials Center in 2006.

Species	Common name	Symbol	Accession	Activity in 2006
Achillea millefolium	common yarrow	ACMI2	9079448	sfp
Anaphalis margaritacea	pearly everlasting	ANMA	9079451	col
Aster chiliensis	pacific aster	ASCH2	9079449	col
Soildago canadensis	goldenrod	SOCA6	9079497	col
Festuca rubra	red fescue	FERU	9079450	col, sfp
Viola adunca	early blue violet	VIAD	9079406	sfp

1- sfp= seed increase, col = collection of seed from wild

III. Field Seed Increase Activities

Informal germination tests were performed on some of the lots prior to sowing. The germination tests helped determine seeding rates for species that were being sown directly into fields. Only ACMI was chosen for direct seeding. On May 4, 2006, ACMI was sown using a six-row Planet-Jr planter. Seedlings emerged within two weeks and the field looked great.

Figure 2. *Achillea millefolium* beginning to flower at the Corvallis Plant Materials Center, September 10, 2006.

A small seed increase plot of *Viola adunca* was established using plants that were collected from the Rock Creek area in 2004. A sheet of weed fabric was stapled down over the field, then holes were cut in the fabric and plants were transplanted in the ground through the holes. As the violet plants grew, they spread out onto the weed fabric. When they flowered and seed pods matured, the pods released the seed onto the weed fabric. The seeds were then vacuumed up using battery-powered, handheld vacuums. Pods were also collected by hand when feasible. Violet pods turn upright when they are mature, which makes determining seed ripeness much easier. This plot will be expanded in 2007 using plants grown from the seed that was harvested from the plants in 2006. A total of 55g of clean seed was harvested this year.

Figure 3. Violet seed pod ready to be harvested (left) and unripe seed pod

Figure 4. *Viola adunca*, host plant for Oregon silverspot butterfly larvae

IV. Container Plant Production.

On July 25, 2006, seeds *Festuca rubra* and *Aster chiliensis* were sown into Ray Leach stubby cone-tainers filled with moistened media (Sunshine #1 a special peat-based soil-less mix) and lightly covered with fine vermiculite. Seeded flats of *F. rubra* were placed in polyethylene bags and moved into a walk-in cooler (36-38^{o} F) for two weeks. They were then moved outside to a shadehouse. Plants will be transplanted out into fields in late fall of 2006 to establish seed increase fields.

V. Native Seed Collection.

Staff members from the PMC, USFW and ODOT were able to collect more seed in late September, 2006. Collections were made from the Rock Creek Bridge north to Cape Perpetua. This seed will be used to grow plugs for transplanting on the restoration site in 2007. Any remaining seed will be used to establish seed increase fields for future restoration projects by NRCS, USFW, or ODOT in the Critical Habitat area.

Table 2. Seed collections in 2006 for the Rock Creek Bridge replacement.

				cleaned seed	
Species	**Common name**	**Symbol**	**Accession**	**2005**	**2006**
Achillea millefolium	common yarrow	ACMI2	9079448	104 g	0
Anaphalis margaritacea	pearly everlasting	ANMA	9079451	10 g	1 g
Aster chilensis	pacific aster	ASCH2	9079449	9 g	7 g
Solidago canadensis	goldenrod	SOCA6	9079497	0	2 g
Festuca rubra	red fescue	FERU	9079450	7 g	29 g
Viola adunca	early blue violet	VIAD	9079406	0	0

VI. Delivery of Plant Materials.

No materials were delivered in 2006.