

CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON

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THE 2006 US FISH AND WILDLIFE ANNUAL REPORT:

Viola adunca Seed Increase Project

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with US Fish and Wildlife in 2005 to increase seed of early blue violet (*Viola adunca*) for use in recovery efforts for the 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 silverspot caterpillars and has also



Figure 1. *Viola adunca* flowering at the Corvallis Plant Materials Center.

been negatively impacted in its coastal meadow ranges by the encroachment of tall, spreading exotic plants. Seed increase on the violets will provide a source for future seedling grow-outs which can then be transplanted back into areas of Oregon silverspot butterfly habitat enhancement and restoration.

Activities in 2006 included transplanting plants into a seed increase field, production of 4000 violets, harvesting violet seed from seed increase plots, wild seed collection of nectar sources, and cleaning seed.

II. Accessions Involved

The table below lists the accessions involved in this project. Some of these same accessions are also being used in the Rock Creek Bridge Replacement project with Oregon Department of Transportation/Federal Highways Administration.

Table 1. Accessions in the USFW Oregon Silverspot seed increase project.

Species	Common name	Symbol	Accession	Activity in 2006 ¹
<i>Achillea millefolium</i>	common yarrow	ACMI2	9079448	sfp
<i>Anaphalis margaritacea</i>	pearly everlasting	ANMA	9079451	col
<i>Aster chiliensis</i>	pacific aster	ASCH2	9079449	col
<i>Solidago canadensis</i>	goldenrod	SOCA6	9079497	col
<i>Festuca rubra</i>	red fescue	FERU	9079450	col, sfp
<i>Viola adunca</i>	early blue violet	VIAD	9079406	sfp, pxn

¹- sfp= seed increase, col= wild seed collection, pxn=plant production

III. Seed Increase

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 into 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 collected also, 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 in 2006.

On May 4, 2006, *Achillea millefolium* was sown using a six-row Planet-Jr planter. Seedlings emerged within two weeks and the field looked great. Some plants flowered but no seed was harvested.



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

IV. Container Plant Production.

On February 15, 2006 *V. adunca* seeds were sown into 4410 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 violets were placed in polyethylene bags and moved into a walk-in cooler (36-38° F) for four months. They were then moved outside to a lathhouse. A double layer of shadecloth was laid over the cone-tainers to help

the seedlings adjust to the summer temperatures. It was removed after three weeks. In late August, all plants were moved to a shadehouse to harden them off and prepare them for fall delivery.

On July 25, 2006, seeds of *Festuca rubra* and *Aster chilensis* were sown into stubby cone-tainers. Seeded flats of *F. rubra* were placed in polyethylene bags and moved into a walk-in cooler (36-38° F) for two weeks. They were then moved outside to a shadehouse. Plants were(?) 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 collected in 2005 and 2006 for the USFW Oregon Silverspot seed increase project.

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

VI. Delivery of Materials

The violets were picked up in two increments. The first pick up contained approximately 2000 plants. Anne Walker of USFW picked them up on October 13, 2006. The remaining 2100 plants were picked up by Anne on October 25, 2006.

Approximately 25 g of violet seed were provided to the Oregon Zoo, on December 20, 2006, at the request Anne Walker. This seed will be used to grow violets for the captive breeding program for the butterflies.