

CORVALLIS PLANT MATERIALS CENTER
NATURAL RESOURCES CONSERVATION SERVICE
CORVALLIS, OREGON
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THE 2007 US FISH AND WILDLIFE ANNUAL REPORT:
Willamette Valley Seed Increase Project

I. Brief Background of Project

The Corvallis Plant Materials Center (PMC) entered into a new agreement with US Fish and Wildlife (USFW) in 2007 to increase seed of Willamette Valley forbs to be used in Wetland Reserve Program (WRP) restoration sites. The Native Seed Network (NSN) collected seed from remnant wet prairies across the Willamette Valley in 2005, 2006, and 2007 to create composite collections to be released to growers for seed increase.



Figure 1. *Sidalcea virgata* seedlings growing in the Corvallis Plant Materials Center greenhouse, November 13, 2007.

Traditional agronomic seed increase techniques were not successful for some species; these species were brought to the PMC for research and development. Wild collected seed was very limited for a few species; these species were also brought to the PMC. Small common gardens were established at the PMC for many species that were

selected for the Willamette Valley Seed Increase Project. Information from these studies will be used to establish seed transfer guidelines. Activities in 2007 included establishing seed increase fields of two forbs, and container production of four forbs and one rush.

II. Accessions Involved

The following table lists the accessions involved in the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Table 1. Accessions in the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Species	Common name	Code	Accession #	Activity in 2007 ¹
	rose			
<i>Sidalcea virgata</i>	checkermallow	SIVI	9079536	pxn
<i>Eriophyllum lanatum</i>	Oregon sunshine	ERLA	9079538	sfp
<i>Ranunculus occidentalis</i>	western buttercup	RAOC	9079564	sfp, pxn
<i>Juncus tenuis</i>	poverty rush	JUTE	9079535	pxn
<i>Saxifraga oregana</i>	Oregon saxifrage	SAOR	9079537	pxn
<i>Achillea milnefolium</i>	western yarrow	ACMI	9079539	
<i>Symphyotricum hallii</i>	Hall's aster	SYHA	9079540	

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

III. Seed Increase



In October, early fall rains caused a lot of fall germination in the existing weed seed bank. Fields were sprayed with glyphosate prior to planting to remove existing weeds.

Fields were sown using the PMC's new precision cone-seeder. This type of seeder is calibrated to drill a programmed amount of seed over a programmed area. The PMC staff set the seeder for intervals of 24ft. Pre-weighed packets were fed into the seed drill at 24ft intervals. It is very precise and is a good choice for drilling limited amounts of wild-collected seed. This new seeder is a huge improvement over the old Plantet Jr seeder.

Figure 2. *Ranunculus occidentalis* seedlings germinating at the Corvallis Plant Materials Center, December 3, 2007.

Wild collected seed had already been bulked into composite accessions (populations were bulked by north Willamette Valley populations and south Willamette Valley populations) and separate North and South blocks were sown for each species, but are adjacent to each other. See Appendix for populations included in accessions. The buttercup seedlings emerged one month after sowing. Rows of seedlings were nicely dense. Seedlings did not

grow much throughout the winter. A few Oregon sunshine seedlings emerged in the South block in December; the majority of seedlings are expected to emerge in the early spring.

Table 2. Establishment of seed increase fields for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Species	Date sown	Field size	Bulk seeding rate	Germination
<i>Eriophyllum lanatum</i>	13-Oct	0.3	3 lbs/ac	North- 63%, South -40%
<i>Ranunculus occidentalis</i>	13-Oct	0.1	6 lbs/ac	80%

Achillea milnefolium will be spring sown using the same methods as the buttercup and Oregon sunshine.

IV. Container Plant Production

In October, *Sidalcea virgata* seeds were sown into Ray Leach “stubby” cone-tainers (7-cubic inch cones) filled with moistened media and placed in an unheated greenhouse. Wild collected seed had not been bulked into composite accessions. For each population, one or two racks of cone-tainers was sown (98 cone-tainers/ rack).

Table 3. Planting Block Design for the *Sidalcea virgata* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting block	Population	County	Number of Racks	Amt of seed used (g)
Block Inc-SIVI-East-PMC-07				
	SIVI-HoneyBear-07	Linn	1	3
	SIVI-Hwy22-OldMehama-07	Marion	2	5
	SIVI-ThomasCreekxHwy226-07	Linn	1	2
	SIVI-ThomasCreekxHwy226-07	Linn	1	2
	SIVI-Wise-07	Linn	1	2
Block Inc-SIVI-NW-PMC-07				
	SIVI-BeazellPark-07	Benton	2	7
	SIVI-Collins-07	Polk	1	2
	SIVI-DeckerRdxBeaverCreekRd-07	Benton	1	3
	SIVI-Dunn-07	Benton	1	3
	SIVI-ElkinsRd-07	Polk	1	2
	SIVI-FishbackRd-07	Polk	1	2
	SIVI-Highway223xMahoganyLane-07	Benton	1	3
	SIVI-McCalebCooperHollow-07	Polk	1	2
	SIVI-McCalebRoad-07	Polk	2	4

Table 3 (Con't). Planting Block Design for the *Sidalcea virgata* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting block	Population	County	Number of Racks	Amt of seed used (g)
Block Inc-SIVI-Sw-PMC-07				
	SIVI-Ferguson	Lane	1	1
	SIVI-Finley-07	Benton	1	3
	SIVI-TerritoryHwy-KirkRd-07	Lane	1	2
	SIVI-WeissRd-07	Lane	1	2
	SIVI-Oxbow east-05	Lane	1	3
	SIVI-Oxbow west-05	Lane	1	1

Wild collected *Juncus tenuis* seed had been bulked into accessions. Seeds from the accessions was sown into plastic trays with 3.5 cubic-inch round cells. After sowing the tray were placed in watering troughs in a warm greenhouse. This species have extremely tiny seed, overhead watering can damage seedlings. Seedlings emerged within three weeks and grew vigorously. Cells were thinned to one or two plants per cell. On December 20, 2007 plants were moved to an unheated greenhouse to get them acclimated to outdoor temperatures. They will be transplanted into seed increase fields according to the NSN block design (Table 4.) in early spring.



Figure 3. *Juncus tenuis* seedlings growing in the Corvallis Plant Materials Center greenhouse, November 13, 2007.

Table 4. Planting Block Design for the *Juncus tenuis* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting Block	Year collected	Population	County	Racks sown
Block Inc- JUTE Midvalley-PMC-07				
	Accession: Jute- Benton-wp-05			5
	2005	Finley	Benton	
	2005	Lakepark Skate Rink	Benton	
	2005	Bike Path	Benton	
	2005	E.E. Wilson	Benton	
	Accession: Jute- Linn-wp-05			3
	2005	Lebanon airport	Linn	
	2005	Oak Creek	Linn	
	2005	ODOT mitigation site	Linn	
	Accession: Jute- Marion-wp-05			3
	2005	Kingston Prairie	Marion	
	2005	Sublimity Prairie	Marion	
	Accession: Jute-Midvalley-06			7
	2006	Lakepark Skate Rink	Benton	
	2006	E.E. Wilson	Benton	
	2006	Lupine Meadows	Benton	
	2006	Lebanon airport	Linn	
	2006	Oak Creek	Linn	
	2006	ODOT mitigation site	Linn	
		Jackson Frazier		
	2006	wetland	Benton	
	2006	Sublimity Prairie	Marion	
	2006	Allan & Allen farm	Benton	
	2006	Hwy 99 railroad	Polk	
	2006	Baskett Slough	Polk	
	2006	Jebousek farm	Polk	
Block- Inc- JUTE-North-PMC-07				
	Accession: Jute- North-06			12
	2006	Clear creek	Clackamas	
	2006	Cooper Mt	Washington	
	2006	Berthelsdorf farm	Yamhill	
	2006	Mt Richmond	Yamhill	
	Accession: Jute-Yamhill-wp-05			5
	2005	Mt Richmond	Yamhill	

Table 4 (Con't). Planting Block Design for the *Juncus tenuis* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting Block	Year collected	Population	County	Racks sown
Block Inc-JUTE-South-PMC-07				
	Accession: Jute-Lane-wp-05			8
	2005	Willow creek	Lane	
	2005	Spores farm	Lane	
	2005	Helt farm	Lane	
	2005	Briggs Farm	Lane	
	2005	Coyote	Lane	
	Accession: Jute-South-06			9
	2006	Spores farm	Lane	
	2006	Applegate farm	Lane	
	2006	Coyote	Lane	
	2006	Helt farm	Lane	
	2006	Long Tom ACEC	Lane	
	2006	North Taylor	Lane	

Saxifraga oregana seeds had been bulked into composite accessions and sown according to NSN's block design. Seeds were sown into plastic trays with 3.5 cubic-inch round cells. After sowing the tray were placed in watering troughs in an unheated greenhouse. These species have extremely tiny seed, overhead watering can damage seedlings.



Figure 4. *Saxifraga oregana* seedlings growing at the Corvallis Plant Materials Center, November 10, 2007.

Seedlings emerged within four weeks and grew very slowly. Cells were thinned to one or two plants per cell. On December 20, 2007 plants were moved to a heated greenhouse to simulate spring temperatures and accelerate growth. These plants will be transplanted into seed increase fields according to the NSN

block design (Table 5.) in early spring.

Table 5. Planting Block Design for the *Saxifraga oregana* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting				
Block	Year collected	Population	County	Racks sown
Block Inc-SAOR-Midvalley-H-07				17
		Hwy 22 X Smithfield		
	2006	Rd	Polk	
	2006	Kingston Prairie	Linn	
	2006	Sublimity Prairie	Marion	
	2006	Lebanon Airport	Linn	
	2006	Finely	Benton	
	2006	Oak Creek	Linn	
	2005	Kingston Prairie	Linn	
	2005	Sublimity Prairie	Marion	
	2005	Cole School Rd	Linn	
	2005	Baskett Slough	Polk	
	2005	Finely	Benton	
	2005	Oak Creek	Linn	
	2005	Lebanon Airport	Linn	
Block Inc-SAOR-South-H-07				17
	2006	Green Hill	Lane	
	2006	Helt farm	Lane	
	2006	Oxbow West	Lane	
	2006	Willow Creek	Lane	
	2005	Tampico Rd.	Benton	

Hall's aster seedlings will be sown in early January. Details will be provided in the 2008 report.

V. Delivery of Materials

No deliveries were made in 2007.

Appendix 1. Planting Block Design for the *Eriophyllum lanatum* and *Ranunculus occidentalis* seed increase field for the Willamette Valley Seed Increase Project at the Corvallis Plant Materials Center in 2007.

Planting Block	Year collected	Population	County
Block INC-ERLA-N-PMC-07			
	2007	Cooper Mt	Washington
	2007	Morrows farm	Polk
	2007	Bald Hill	Benton
		Willamette	
	2007	Narrows	Clackamas
	2007	Shady Lane	Polk
	2007	Balston Rd	Yamhill
	2007	Hacker Rd	Yamhill
	2007	Mt Richmond	Yamhill
	2007	Finely	Benton
	2007	Fitton Green	Benton
	2007	Philomath Prairie	Benton
Block INC-ERLA-Lane/Linn-PMC-07			
	2007	Rankin tree farm	Linn
	2007	Erickson farm	Lane

Planting Block	Year collected	Population	County
Block Inc-RAOC-NW-PMC-07			
	2007	Hague	Polk
	2007	Bald Hill	Benton
	2007	Jackson Frazier Wetland	Benton
	2007	Peavy Arboretum	Benton
	2007	Allan & Allan farm	Benton
	2007	Camassia Preserve	Multnomah
	2007	Mt Richmond	Yamhill
Block Inc-RAOC-SE-PMC-07			
	2007	Ebbs farm	Linn
	2007	Lebanon radio station	Linn
	2007	Erickson farm	Lane
	2007	Rankin tree farm	Lane
	2007	Amazon park	Lane
	2007	Coyote	Lane
	2007	Westmoreland	Lane