
Seeds of Success for the Bureau of Land Management, Eugene District

2011 Annual Report



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Institute for Applied Ecology

Funded by:

**U.S.D.I. Bureau of Land Management, Eugene District
and
Institute for Applied Ecology, Corvallis, Oregon**

PREFACE

This report is the result of a cooperative Challenge Cost Share project between the Institute for Applied Ecology (IAE) and a federal agency. IAE is a non-profit organization whose mission is conservation of native ecosystems through restoration, research and education. Our aim is to provide a service to public and private agencies and individuals by developing and communicating information on ecosystems, species, and effective management strategies and by conducting research, monitoring, and experiments. IAE offers educational opportunities through 3-4 month internships.

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Cover Photo: 2011 photo of Sarah Stevens collecting *Festuca roemerii* at Mount Salem.

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Introduction

During 2011 the Institute for Applied Ecology (IAE) worked in collaboration with the Bureau of Land Management (BLM), Eugene District to collect seed under the Seeds of Success program. Seeds of Success (SOS) is a national native seed collection program coordinated by the BLM. The goal of SOS is to provide wild collected seed for native plant materials development and research. In 2011 the Habitat Restoration Program for IAE made 37 SOS collections on eight prairies managed by the Eugene BLM. Twenty unique species were collected in 2011. The Seeds of Success website provides the most up-to-date protocols and a wealth of other information (accessed at <http://www.nps.gov/plants/sos/>). We used the USDA PLANTS Database as our taxonomic standard (accessed at <http://www.plants.usda.gov>).



Figure 1. Photo of *Calochortus tolmiei* at Dorena Prairie.

Collection Sites

IAE collected seed at seven locations in 2011 (Table 1), while BLM collected at an eighth site, Round Creek. Driving directions and access notes are described in detail below.

Table 1. Collection sites, their corresponding GPS location and Township, Range and Section. We used the WGS84 GPS datum. All sites are on public land managed by the Eugene District BLM.

Site	Latitude	Longitude	T.R.S.
Camp Creek	44° 05' 06.84"	122° 53' 19.18"	T17S R2W Sec 13, 23
Dorena	43° 47' 10.75"	122° 57' 57.53"	T20S R2W Sec 32
Eagle's Rest	43° 51' 47.97"	122° 48' 02.53"	T20S R1W Sec 3
McGowan	44° 10' 35.46"	122° 59' 46.64"	T16S R3W Sec 13
Mt Salem	43° 55' 47.27"	122° 38' 47.82"	T19S R1E Sec 11
Papenfus	43° 54' 46.57"	122° 55' 31.44"	T19S R2W Sec 5
Twin Prairie Butte	43° 41' 29.75"	123° 02' 11.96"	T22S R3W Sec3

Camp Creek Ridge / Gilkey Creek

This site is slightly challenging since the main access requires you to cross private property. Dan Call lives on the property south of the BLM parcel, his phone # is 541-747-4261. In the past I have called Dan and parked in his driveway and walked ¼ mile to the BLM property. There is another property between Dan's and the BLM that is currently being developed, but there was no house there as of September 2011. I met the landowner one day and he was friendly, but since the access to the BLM property goes through his property access may change once he builds his house. I don't have contact

information for the landowner. In 2009 Ed Alverson of the Nature Conservancy wrote a site description for the BLM Eugene District in a report on the prairie, savanna, oak and pine potential ACECs. This report contains aerial photos and management suggestions. An invaluable comprehensive species list is included as a separate excel file.

To get to the site, take Highway 126 east to 42nd St. / Marcola exit. Turn left at the end of the off ramp and drive about a quarter mile to a stop sign. Turn right and drive for about half a mile and turn right onto Camp Creek Road and follow for 4.3 miles. Turn Left onto a gravel Road with a set-back red barn and three mailboxes # 37399, 37379, 37369. Drive up this gravel road for about a half mile and turn left into Dan Call's steep driveway # 37379. Drive up the long driveway and either park there after asking permission, or turn left on another steep gravel spur road just before the house and travel another 200 yards before the road deteriorates to packed dirt and rock. This site contains a number of disjunct prairies and the property boundaries are not marked. You will need aerial photos to find your way between the different prairies.

Dorena Prairie

This site is adjacent to Schwarz Park, Cottage Grove, OR.

Take I-5 South to Exit 174 Cottage Grove/Dorena Lake. Turn a left at the end of the ramp onto E Cottage Grove Con. This turns into Row River Rd. Follow for 4.0 miles and this road turns into Government Rd. / Shoreline Dr. Continue for an additional 0.5 miles and turn left into Schwarz Park (A US Army Corps of Engineers Camp ground and picnic site). The BLM parcel is the open meadow on the south side of the park, there are no signs marking the boundary. You may need to tell the camp ground host who you are and what you are doing. There is an additional prairie about 0.5 miles south of Dorena Prairie located at the intersection of Garoutte Rd. and Government Rd. No seed was collected at Garoutte Rd. in 2011, but a number of high value prairie species grow there. Row Point is another site managed by USACE with a significant stand of Roemer's fescue. In 2011 this site was used by USACE for seed collecting so IAE did not collect seed there.

Eagle's Rest Sisyrrinchium Site

There are two BLM prairie sites named Eagle's Rest. This site is known as the Eagle's Rest Sisyrrinchium Site. Take Hwy 58 east and pass partway through the town of Dexter (just past milepost 11). Near the eastern edge of town turn right onto Lost Creek Rd (library sign). Follow this road for 3.8 miles and turn left on a sharp bend in the road onto Eagle's Rest Rd (19-1-33.1). Follow this paved road for 0.7 miles to a small parking area on the left (spur 19-1-3.1). From there use aerial photos or GPS coordinates to locate the small meadow which is about 300 meters south of the parking area. There is a flagged trail through the forest about 75 feet uphill of the parking area. The western edge of the meadow abuts private property which is marked by a decrepit fence. No locked gates or dirt roads were encountered in 2011.

McGowan Meadow

This site is located in the southwest section of the Coburg Hills. From I-5 head east on OR-126 towards Springfield and take the 42nd St / Marcola exit. At the end of the off-ramp turn left and drive to the first stop sign. Turn right onto Marcola Rd. and continue for 7.8 miles. Turn left onto Donna Rd. and set your odometer to zero (all mileage is referenced from this intersection). After 1 mile turn right onto

McGowan Rd. At mile 3.5 bear right onto paved BLM Rd # 16-2-27. At mile 5.1 stay left on Rd. # 16-2-27. The meadow appears mostly on the right-hand side at mile 6.4. The road is paved the entire way and no locked gates are present. An alternative turn-off from Marcola Rd. is Hill Rd and turn right at the general store.

Mount Salem

You will need an aerial photo and a compass to find this remote prairie.

Take Highway 58 East towards the town of Lowell. Turn Left on Pioneer Rd and cross Dexter Reservoir. Travel for about half a mile and turn left onto N Shore Dr. Continue for about 0.1 mile and turn Right onto S Moss St. Follow for about 0.8 miles and this road turns into Jasper Lowell Rd.

Continue going straight for another 1.0 mile and turn right on Big Fall Creek Rd.

Follow for 0.4 miles and turn right on Winberry Creek Rd. Follow this road for 4.4 miles and turn right to stay on Winberry Creek Rd. After 0.1 miles turn left on Horn Butte Rd (BLM Rd. # 19-1E-16). Make sure you don't take the road that goes back around the reservoir. Follow Horn Butte Rd (an obscure paved forest road) for 2.7 miles and look for a suitable parking spot. In order to reach the prairies from the road you will need to bush-whack uphill for about 45 minutes. If you climb too far to the left (north) you will get stuck in dense brush and dog-hair timber. Stay to the south and climb through the mature timber with dense salal and sword fern. It is possible to approach the prairie from the top if you get a private forest gate key from the BLM and travel on rough forest roads. In 2009 Ed Alverson of the Nature Conservancy wrote a site description for the BLM Eugene District in a report on the prairie, savanna, oak and pine potential ACECs. This report contains aerial photos and management suggestions. A comprehensive species list is included as a separate excel file.

Papenfus Prairie (Cloverdale)

A Weyerhaeuser key is required to access this site. Take Hwy 58 east for 5.2 miles and pass through the town of Pleasant Hill. As you leave the town of Pleasant Hill look for Enterprise Rd which is right before the High School on Hwy 58. Turn right onto Enterprise Rd and continue for about 1.7 miles and bear left onto Papenfus Rd. Follow this road for 1.1 miles until the pavement ends. Drive 0.1 mile up a steep gravel road, stay left at the fork and pass a small house. Pass through a locked yellow gate (Weyerhaeuser key) and drive along a brushy road for 0.6 miles. Take the right fork and drive for another 0.8 miles, stay to the right and follow for another 0.3 miles. The meadow is to the south (left) and is visible from the road. In 2009 Ed Alverson of the Nature Conservancy wrote a site description for the BLM Eugene District in a report on the prairie, savanna, oak and pine potential ACECs. This report contains aerial photos and management suggestions for Papenfus Prairie. A comprehensive species list is included as a separate excel file.

Twin Prairie Butte

You will need a BLM key, aerial photo, and compass to find this site. Take I-5 to Cottage Grove and EXIT 172, "Cottage Grove Lake". Turn Left at the off-ramp traffic light and go approximately 6.5 miles to the south end of Cottage Grove Reservoir. Take a left onto Cottage Grove Reservoir Rd and go approximately 1.5 miles. Turn right on Wilson Creek road (county road 2719, the small # on the sign). Drive about a mile to the locked gate at the end of the pavement, use your BLM key to go through the gate. Just past the gate, stay on the main gravel road (do not take the right hand fork/turn).

Go past the quarry, and make the first left onto BLM Road #22-3-3.2 on the map but it is signed 22-3-3.1 on the road. Go up this road approximately .75 miles and make a left onto 22-3-2. Drive to the end of the road and park. Walk south through the woods, down the hill into the meadows. In 2009 Ed Alverson of the Nature Conservancy wrote a site description for the BLM Eugene District in a report on the prairie, savanna, oak and pine potential ACECs. This report contains aerial photos and management suggestions for Twin Prairie Butte. A comprehensive species list is included as a separate excel file.

Sampling Strategy and Seed Collection Techniques

We used the Seeds of Success Protocol (BLM 2010) to guide our seed collection efforts. Our goal was to capture as much genetic diversity from a population as possible. Seed was only collected from a species if there were a minimum of fifty plants in the population. Typically we visited a site at least three times in the growing season. The first visit was used to map and mark plants for future collection, as well as gauge plant phenology. For species with a long seed maturation period, we visited the site multiple times to collect seed from individuals that were early, normal, or late to mature seed. Collection dates in Table 2 represent peak periods of seed production, but these dates will fluctuate year-to-year based on annual variations in temperature and precipitation.

Seed Storage and Cleaning

Seed was collected in paper sacks and allowed to dry in screened wooden boxes ensure adequate air circulation. Extremely small seed such as *Mimulus guttatus* was dried in cardboard boxes without screens. Most seed was cleaned by hand by IAE employees using mesh screens. The NRCS Plant Materials Center cleaned two challenging species; *Solidago Canadensis* and *Symphyotrichum chilense*. After the seed was cleaned it was either distributed (see below) or it was stored in paper sacks which were placed inside a rubber tote and kept in an IAE fridge. We are waiting for guidance from BLM to decide what to do with the seed being stored at IAE.



Figure 2. Photo of Geoff Gardner cleaning seed of *Wyethia angustifolia*.

Seed Distribution

Seed that was collected in 2011 had four destinations: the Bend Seed Extractory, grow-out fields, plug production, and cold storage.

Bend Seed Extractory

Seed from three species was mailed to the Bend Seed Extractory in 2011. The seed we submitted was as follows: *Castilleja tenuis* and *Eriophyllum lanatum* from Mt Salem and *Wyethia angustifolia* from McGowan Meadow. These collections contained more than 10,000 seeds per species.

Grow-out Fields

Under direction of the BLM, IAE collected seed from three grass species at four different sites. IAE subcontracted Pacific Northwest Natives in Albany, Oregon to plant increase fields for these three species starting in 2012. The species included in this growout were: *Danthonia californica*, *Festuca californica*, and *Festuca roemerii*. Seed originated from Papenfus Prairie, McGowan Meadow, Camp Creek, and Twin Prairie Butte. The first year of growout typically does not produce seed, so the first harvest is expected to occur in 2013. Seed from this production field will be available for BLM to use on restoration sites at mid-elevations (1,000 to 4,000 feet). Seed for these species is already commercially available for sites at low elevations on the Willamette Valley floor.



Figure 3. Photo of a Roemer's fescue grow-out field from 2007.

Plug Production

IAE subcontracted with Sevenoaks Native Nursery to grow plugs of the following species: *Potentilla gracilis* (1,000 plugs) and *Rudbeckia occidentalis* (500 plugs) from McGowan Meadow, *Sidalcea virgata* (1,000 plugs) from Mt Salem, and *Danthonia californica* (500 plugs) from a mixed valley floor collection to be used at Dorena Prairie. Plugs will be ready for outplanting in November 2012. We plan to grow plugs for at least seven other species in 2013 with Sevenoaks Native Nursery.

Cold Storage

All of the remaining seed that was not used for grow-out or long term storage at Bend, is kept at IAE in cold storage for later use in production or direct seeding.

Direct Seeding

None of the seed that was collected in 2011 was direct seeded on restoration sites. In order for direct seeding to be effective, ground preparation must occur. BLM has allocated money to IAE in FY2012 to actively restore a number of sites. Seed collected in 2011 will therefore be used on those restoration sites in 2012.

Collection Reports

The 37 collection reports are appended to this document. Note that Accession OR090B-62 does not exist, that number was mistakenly skipped.

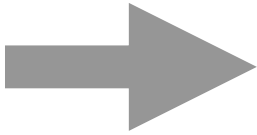
Table 2. List of seed collected and attributes.

Accession #	Species	Site	Elevation	Date	Distribution
OR090B - 26	<i>Camasia quamash</i>	Eagle's Rest	944	7/11/2011	IAE fridge
OR090B - 27	<i>Calochortus tolmiei</i>	Dorena	757	7/15/2011	IAE fridge
OR090B - 28	<i>Geranium oreganum</i>	Dorena	757	7/15/2011	IAE fridge
OR090B - 29	<i>Festuca californica</i>	Camp Creek	990	7/20/2011	Field growout
OR090B - 30	<i>Festuca roemerii</i>	Camp Creek	990	7/20/2011	Field growout
OR090B - 31	<i>Calochortus tolmiei</i>	Papenfus	1314	7/22/2011	IAE fridge
OR090B - 32	<i>Danthonia californica</i>	Papenfus	1314	7/22/2011	Field growout
OR090B - 33	<i>Festuca californica</i>	Papenfus	1314	7/22/2011	Field growout
OR090B - 34	<i>Danthonia californica</i>	Twin Pr. Butte	1767	8/1/2011	Field growout
OR090B - 35	<i>Festuca californica</i>	Twin Pr. Butte	1767	8/1/2011	Field growout
OR090B - 36	<i>Festuca roemerii</i>	Twin Pr. Butte	1767	8/1/2011	Field growout
OR090B - 37	<i>Danthonia californica</i>	McGowan	1966	8/2/2011	Field growout
OR090B - 38	<i>Bromus carinatus</i>	Mt Salem	2600	8/3/2011	IAE fridge
OR090B - 39	<i>Danthonia californica</i>	Mt Salem	2600	8/3/2011	Field growout
OR090B - 40	<i>Eriophyllum lanatum</i>	Mt Salem	2600	8/3/2011	Bend Seed Extractory
OR090B - 41	<i>Festuca roemerii</i>	Mt Salem	2600	8/3/2011	Field growout
OR090B - 42	<i>Camasia quamash</i>	Dorena	757	8/5/2011	IAE fridge
OR090B - 43	<i>Potentilla gracilis</i>	Dorena	757	8/5/2011	IAE fridge
OR090B - 44	<i>Sidalcea virgata</i>	Dorena	757	8/5/2011	Plug growout w/ #54
OR090B - 45	<i>Camasia quamash</i>	McGowan	1966	8/8/2011	IAE fridge
OR090B - 46	<i>Festuca californica</i>	McGowan	1966	8/8/2011	Field growout
OR090B - 47	<i>Festuca roemerii</i>	McGowan	1966	8/8/2011	Field growout
OR090B - 48	<i>Iris tenax</i>	McGowan	1966	8/8/2011	IAE fridge
OR090B - 49	<i>Danthonia californica</i>	Camp Creek	990	8/12/2011	Field growout
OR090B - 50	<i>Mimulus guttatus</i>	Camp Creek	990	8/12/2011	IAE fridge
OR090B - 51	<i>Aquilegia formosa</i>	Dorena	757	8/15/2011	IAE fridge
OR090B - 52	<i>Castilleja tenuis</i>	Mt Salem	2600	8/18/2011	Bend Seed Extractory
OR090B - 53	<i>Festuca californica</i>	Mt Salem	2600	8/18/2011	Field growout
OR090B - 54	<i>Sidalcea virgata</i>	Mt Salem	2600	8/18/2011	Plug growout
OR090B - 55	<i>Grindelia integrifolia</i>	Eagles Rest	944	9/6/2011	IAE fridge
OR090B - 56	<i>Wyethia angustifolia</i>	Eagles Rest	944	9/6/2011	IAE fridge
OR090B - 57	<i>Fritillaria affinis</i>	Round Creek	N/A	9/7/2011	IAE fridge
OR090B - 58	<i>Potentilla gracilis</i>	McGowan	1966	9/20/2011	Plug growout
OR090B - 59	<i>Rudbeckia occidentalis</i>	McGowan	1966	9/20/2011	Plug growout
OR090B - 60	<i>Solidago canadensis</i> <i>Symphotrichum</i>	McGowan	1966	10/27/2011	IAE fridge
OR090B - 61	<i>chilense</i>	McGowan	1966	10/27/2011	IAE fridge
OR090B - 63	<i>Wyethia angustifolia</i>	McGowan	1966	9/20/2011	Bend Seed Extractory

Literature Cited

All IAE reports can be downloaded from the IAE website <http://appliedeco.org/reports>

Bureau of Land Management. 2010. Technical protocol for the collection, study, and conservation of seeds from native plant species for Seeds of Success.



Use BLOCK CAPITALS

Complete all fields.

Circle relevant descriptions shown in *italics*.

External Collection Number:

NRCS PLANTS Code:

Cleaning Facility:

Date(s) Collected (DD/MM/YY):

SOS Seed Collection Ref. Number:

Collector(s):

Country: Ecoregion (T,O,B): State: County:

Location Details:

Lat. (dg/min/sec) (ex: 40° 34' 19.5" N): GPS Used?: If no, please see other side.

Long. (dg/min/sec) (ex: 107° 36' 51.54" W): GPS Datum:

Elevation (feet): Landowner Details (Permission?):

HABITAT DATA

Habitat, Associated Species & Ecological Site Descriptor:

Modifying Factors:

Land Form: Slope°:

Land Use: Aspect:

Geology:

Soil Texture: Soil Color:

COLLECTION DATA - If plant has been identified by a specialist, please see other side.

Family:

No. of Plants Sampled (min. 50):

Genus:

No. of Plants Found (approx.):

Species:

Area Sampled (acres):

Subspecies/Variety:

Seeds Collected From:

Plant Habit:

Plant Height (feet):

Native plant materials development and research this accession will be used for:

Notes to assist identification of pressed specimen (e.g. flower color, odor, presence of closely related species):

Common Name(s) of Plants:

Photograph Taken: Reference Where Image will be Filed:

Use BLOCK CAPITALS
Complete all fields.
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Complete all fields.
Circle relevant descriptions shown in *italics*.

External Collection Number:
NRCS PLANTS Code:
Cleaning Facility:

Date(s) Collected (DD/MM/YY): SOS Seed Collection Ref. Number:

Collector(s):

Country: Ecoregion (T,O,B): State: County:

Location Details:

Lat. (dg/min/sec) (ex: 40° 34' 19.5" N): GPS Used?: If no, please see other side.

Long. (dg/min/sec) (ex: 107° 36' 51.54" W): GPS Datum:

Elevation (feet): Landowner Details (Permission?):

HABITAT DATA

Habitat, Associated Species & Ecological Site Descriptor:

Modifying Factors:

Land Form: Slope°:

Land Use: Aspect:

Geology:

Soil Texture: Soil Color:

COLLECTION DATA - If plant has been identified by a specialist, please see other side.

Family: No. of Plants Sampled (min. 50):

Genus: No. of Plants Found (approx.):

Species: Area Sampled (acres):

Subspecies/Variety:

Seeds Collected From:

Plant Habit: Plant Height (feet):

Native plant materials development and research this accession will be used for:

Notes to assist identification of pressed specimen (e.g. flower color, odor, presence of closely related species):

Common Name(s) of Plants: