Seeds of Success for the Bureau of Land Management, Northwest Oregon District: 2016 Annual Report WEB VERSION

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Report to the Bureau of Land Management
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Report prepared by Jenny Getty

Institute for Applied Ecology

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PREFACE

The Institute for Applied Ecology (IAE) is a non-profit organization whose mission is conservation of native ecosystems through restoration, research and education. IAE provides services to public and private agencies and individuals through development and communication of information on ecosystems, species, and effective management strategies. Restoration of habitats, with a concentration on rare and invasive species, is a primary focus. IAE conducts its work through partnerships with a diverse group of agencies, organizations and the private sector. IAE aims to link its community with native habitats through education and outreach.

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Cover photographs: View across Blue Mountain collection area, southeast of Cottage Grove, Oregon. Photo by Lindsay Willrick.

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EXECUTIVE SUMMARY

FIGURE 1. INSTITUTE FOR APPLIED ECOLOGY'S SEED CREW AT UPPER OAK BASIN

During 2016, the Institute for Applied Ecology (IAE) worked in collaboration with the Bureau of Land Management (BLM), Northwest Oregon District, to collect 12 species in 21 accessions of native seed for the BLM Seeds of Success program (SOS). Seed was collected at four sites: Blue Mountain, Twin Prairie, Mt. Salem, and Upper Oak Basin (Figure 1, Table 1).

TABLE 1. SEEDS OF SUCCESS COLLECTION SITES IN 2016.

Site	Owner
Blue Mountain	BLM
Mt. Salem	BLM
Twin Prairie	BLM
Upper Oak Basin	BLM/Private

2016 ACTIVITIES

Seed scouting

Starting in June of 2016, The Institute for Applied Ecology (IAE) conducted early season surveys to establish a working seed collection list of native plant species present at each of four Northwest Oregon Bureau of Land Management (BLM) collection sites: Blue Mountain, Twin Prairie, Mt. Salem, and Upper Oak Basin. This project was conducted following the Bureau of Land Management (BLM) 2016 seed collection protocols (BLM 2016) and the USDA PLANTS Database was used as the taxonomic standard (USDA 2016). Surveyors conducted meandering transects throughout the open areas of the various prairies utilizing cameras, trowels, maps, GPS units, taxonomic keys, and plant presses to collect all necessary information during the surveys. All plant identification was confirmed by an IAE botanist, either during the initial field visit or from collected and pressed material.

Seed collection, storage and distribution

Seed was hand collected and placed into paper bags during collection efforts. No more than 20% of the ripe seed of any population was collected on any given collection day, and no more than 20% of viable seed was collected from any population within a single season. Each site was visited at least three

times and seed of each accession was collected over multiple visits when possible to collect temporal diversity. Table 2 lists the species collected, the collection sites and dates, and the distribution of the seed.

Seeds were allowed to dry in shallow cardboard trays for a minimum of two weeks at an IAE facility. Collected seed was stored in paper bags in a rubber tote at IAE (Figure 2) before either being submitted to the Bend Seed Extractory (BSE) or being cleaned in-house by IAE staff. Five species in six accessions were submitted to BSE (Table 2) for cleaning and storage. Seeds not submitted to BSE were cleaned by IAE staff and stored in a temperature and humidity-controlled seed cooler at either the Corvallis Plant Materials Center or William L. Finley National Wildlife Refuge until they can be used to establish mid-elevation seed production fields or for another BLM project.

FIGURE 2. LEFT TO RIGHT: *ERIGERON SPECIOSA*, *MADIA ELEGANS*, *TRIFOLIUM WILDENOVII*, AND *CLARKIA AMOENA* IN BLOOM AT VARIOUS SITES. FAR RIGHT: COLLECTED PLANT MATERIAL STORED IN SEPARATE PAPER BAGS DURING COLLECTION.

TABLE 2. SEEDS OF SUCCESS SPECIES COLLECTED IN 2016.

Accession #	Species	Site	Date(s) of collection	Distribution
OR090B - 198	*Achillea millefolium*	Blue Mountain	08/04/16, 08/05/16, 08/25/16	Future mid-elevation production
OR090B - 199	*Clarkia amoena*	Blue Mountain	8/5/2016	Future mid-elevation production
OR090B - 200	*Gilia capitata*	Blue Mountain	08/04/16, 08/05/16	Future mid-elevation production
OR090B - 201	*Clarkia amoena*	Mt. Salem	9/12/2016	Future mid-elevation production
OR090B - 202	*Clarkia purpurea*	Mt. Salem	07/28/16, 08/26/16	Future mid-elevation production
OR090B - 203	*Gilia capitata*	Mt. Salem	7/28/2016	Future mid-elevation production
OR090B - 204	*Lomatium utriculatum*	Mt. Salem	7/12/2016	Bend Seed Extractory
OR090B - 205	*Madia gracilis*	Mt. Salem	07/12/16, 07/28/16	Future mid-elevation production

Accession #	Species	Site	Date(s) of collection	Distribution
OR090B - 206	*Trifolium willdenovii*	Mt. Salem	07/12/16, 07/28/16	Bend Seed Extractory
OR090B - 207	*Achillea millefolium*	Twin Prairie	8/3/2016	Future mid-elevation production
OR090B - 208	*Allium amplectens*	Twin Prairie	7/7/2016	Bend Seed Extractory
OR090B - 209	*Clarkia purpurea*	Twin Prairie	08/03/16, 08/23/16	Future mid-elevation production
OR090B - 210	*Madia elegans*	Twin Prairie	06/23/16, 07/07/16	Future mid-elevation production
OR090B - 211	*Madia gracilis*	Twin Prairie	06/15/16, 06/23/16, 07/07/16, 08/03/16	Future mid-elevation production
OR090B - 212	*Prunella vulgaris var. lanceolata*	Twin Prairie	8/3/2016	Future mid-elevation production
OR090B - 213	*Trifolium willdenovii*	Twin Prairie	06/08/16, 06/15/16, 06/23/16, 07/07/16	Bend Seed Extractory
OR090B - 214	*Achillea millefolium*	Upper Oak Basin	8/17/2016	Future mid-elevation production
OR090B - 215	*Clarkia amoena*	Upper Oak Basin	08/03/16, 08/10/16, 08/17/16	Future mid-elevation production
OR090B - 216	*Clarkia purpurea*	Upper Oak Basin	08/03/16, 08/10/16, 08/17/16	Future mid-elevation production
OR090B - 217	*Erigeron speciosus*	Upper Oak Basin	07/25/16, 08/03/16, 08/10/16	Bend Seed Extractory?
OR090B - 218	*Ligusticum apiifolium*	Upper Oak Basin	07/25/16, 08/03/16	Bend Seed Extractory

Data entry

All data from field collection sheets were entered into the SOS online data entry portal in fall 2016, which can be accessed at the following url: http://seeds.ha.winwinsol.com/sos/oecgi3.exe/O4W_SOS_FIELD_DATA_FORM.

BUDGET

Table 3 provides a breakdown of expenses associated with the 2016 SOS seed collection season.

TABLE 3. SEEDS OF SUCCESS 2016 BUDGET BREAKDOWN.

Activity	Contract	In-house (IAE)	Total
Program management and coordination		$1,870	$1,870
SOS Project Activities			
Scouting		$1,418	$1,418
Seed collection	$800	$4,831	$5,631
Seed cleaning & submission		$1,182	$1,182
Report writing		$536	$536
Supplies		$404	$404
Travel		$1,305	$1,305
Admin	$168	$2,425	$2,593
Total	***$968***	***$13,971***	***$14,939***

DISCUSSION

FIGURE 3. RUBBER BOA SIGHTING AT UPPER OAK BASIN (HEAD NOT SHOWN).

In 2016, the team continued to utilize maps, GPS units, and the previous year's flagging to follow foot paths to locate these remote prairies from designated parking locations. All of the organizational work in previous years regarding access have contributed to make the 2016 collection season more streamlined in the field.

Early each year we establish a working seed collection list to include more native species for collection than we will end up collecting. We utilize this tool as a way to circumvent issues that may arise with a particular plant species during the season. These issues could include the species not setting as much seed as originally anticipated, a collection window was missed, or the team encountered an issue that may prevent collection of a particular species. The working seed collection list also ensures the team organizes, collects, and collects the appropriate data for each plant species early in the season, making the reporting process at the end of the season simplified. Establishment of this tool ensures the team correctly identifies each species, collects herbarium specimens when necessary, and take the relevant photos for each species and corresponding habitat.

While the above strategy has been a successful one in terms of data collection, IAE has occasionally collected more species than intended, particularly in "good" seed collection seasons when the working seed collection list isn't narrowed down by circumstance. In past years, seed collection crews are directed to focus their efforts on the correct number of species and avoid over collection. In 2016, IAE collected more species than required by the project in order to have seed available to start mid-elevation production fields for native species needed for the BLM's mid-elevation prairie projects.

NEXT STEPS

In 2017, 15 native seed collections will be made at 3-4 of the following sites: Black Canyon, Blue Mountain, Camp Creek, Grassy Mountain North, Grassy Mountain South, Horse Rock Ridge, Lower Oak Basin, Mt Salem, Twin Buttes Prairie, Upper Elk Meadows, and Upper Oak Basin. Collections in 2017 will be focused on annual forbs and other plants that are needed for mid-elevation restoration projects at Upper Oak Basin and Twin Prairie.

FIGURE 4. SEED COLLECTION CREW AT UPPER OAK BASIN AS A STORM APPROACHES FROM THE WEST VALLEY.