



Region One Native Plant Program 2015



Development of Seed Transfer Zones for USFS Region One priority revegetation species

2015 Accomplishments

To develop supplies of locally adapted seed for forest and grassland restoration projects, the Region's Native Plant Program Five-Year Plan identified the need to develop seed transfer zones for priority native plant species. In 2008 Region One's Seed Transfer Zone (STZ) Study was initiated and in 2015 the study entered its eighth year of implementation.

Each year, the Native Plant Program manager, in conjunction with Region One forests and grasslands, selects species for study through common garden methodology. Forests and grasslands collect seed samples of target species then provide the seed to the USFS Coeur d'Alene (CDA) Nursery for development of common garden study plots. Data collected from these plots is analyzed and spatially displayed into seed transfer guidelines.

Since 2008, the following species have undergone (or are currently in) common garden study:

Idaho fescue (*Festuca idahoensis*)
Bluebunch wheatgrass (*Pseudoroegneria spicata*)
Red osier dogwood (*Cornus sericea*)
White spirea (*Spiraea betulifolia*)
Rough bentgrass (*Agrostis scabra*)
Pearly everlasting (*Anaphalis margaritaceae*)
Tufted hairgrass (*Deschampsia cespitosa*)
Alberta penstemon (*Penstemon albertinus*)
Black chokecherry (*Prunus virginiana*)
Mountain brome (*Bromus marginatus*)
Sandberg's bluegrass (*Poa secunda*)

Full circle The STZ study has gone full circle with commercial production of bluebunch wheatgrass seed using results of common garden study and seed transfer zone development. The seed is stored at the Regional Seed Cache at the CDA Nursery and is available for forest and grassland use.



Figure 1. Pearly everlasting is a forb that commonly appears in many forest seed mixes. When used for revegetation, it provides cover for bare soils, adds diversity to revegetated sites, and provides nectar for pollinators.

Project benefits:

- By coordinating efforts across forest and grassland boundaries, the region is able to maximize the use of limited resources to develop a reliable supply of **cost-effective** native plant materials.
- The process ensures that Region One forests and grasslands have quantities of locally adapted seed in sufficient quantities for restoration, resource protection, and large-scale disturbances.
- Once seed zones are developed, seed can be increased through commercial production which strengthens the local economy and builds public/private partnerships.

The Seed Transfer Zone Study is a cooperative venture between the R1 Native Plant Program, USFS Coeur d'Alene Nursery, R1 Regional Geneticist, and R1 forests and grasslands.



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USFS Region 1 Native Seed Cache-- Developing and storing native plant materials to meet forest and grassland needs

2015 Accomplishments

In 2015, Region One continued to build its regional seed cache through the addition of locally adapted native grass seed developed through commercial production of priority revegetation species. Although the cache currently targets acquisition of native grass seed needed by Region One forests and grasslands, future goals of the seed cache project include development and storage of a wide variety of native plant material including grasses, forbs, and shrubs to meet a wide diversity of restoration and fire contingency needs.

The cache benefits from the Region's Seed Transfer Zone study. This year the cache reaped benefit from the development of a seed transfer zone for bluebunch wheatgrass (*Pseudoroegneria spicata*), a priority revegetation species found in most Region One forest and grassland seed mixes. Utilizing results of the seed transfer zone, the region initiated commercial production of the species in 2014 with seed from production fields to be stored at the cache for forest use.

In the future, Region One's Seed Cache will benefit from seed transfer zones being developed for other species such as rough bentgrass (*Agrostis scabra*), tufted hairgrass (*Deschampsia caespitosa*), Alberta penstemon (*Penstemon albertinus*), pearly everlasting (*Anaphalis margaritacea*), and other species, thereby contributing to the acquisition of cost-effective supplies of native plant materials.

To identify seed cache needs, Region One's Native Plant Program conducts an annual region-wide seed needs assessment to identify species, quantities, and time when seed is needed. The Native Plant Program provides funding to the USFS Coeur d'Alene Nursery to develop contracts with commercial producers to grow out and increase supplies of locally adapted seed. The funding is also used to purchase seed from local and regional growers.



Figure 1: Jasmine Drapeau of the USFS Coeur d'Alene Nursery displays native grass seed collected by Region One forests and grasslands in preparation for commercial seed production.



Figure 2: Native grass seed stored at the Coeur d'Alene Nursery until ready for use by Region One forests and grasslands.

FY15 partners/collaborators:

Region 1 Forests and Grasslands
Region 1 Native Plant Program
USFS Coeur d'Alene Nursery

Contact person & phone number:

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Region One Native Plant Program: Partnering with Western Federal Highways

2015 Accomplishments

In 2015, Region One continued its partnership with Western Federal Lands Highway Division (WFLHD) to provide mutual benefit to both federal agencies through cooperative sharing of services for revegetation and development of native plant materials during road reconstruction projects. The partnership, initiated in 2008, has resulted in agreements between the agencies with funding provided to the Region's Native Plant Program to design, coordinate, and implement revegetation plans for WFLHD projects in both Region One and Region Four. Region One has received in excess of \$1.3 million dollars under reimbursable agreement through this partnership.

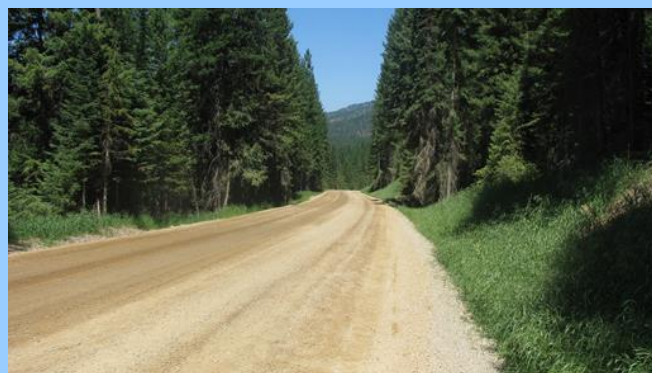


Figure 1: Region One's Native Plant program provided revegetation services to the Petty Creek project utilizing native plant materials to cover bare soils on cut and fill slopes while contributing to WFLHD's need to meet permit requirements.

Current projects:

- Rimini Road project, Helena National Forest. The project involves revegetating newly reconstructed streambank channels and bridges in addition to cut and fill slopes associated with road reconstruction. Native plant materials developed for the project include riparian shrubs, upland shrubs, and native forbs and grasses.
- Petty Creek project, Lolo National Forest. The project involves revegetation of both riparian areas and roadside corridors.
- Salmon River project, Nez Perce National Forest: The project involves establishing willows and riparian vegetation to improve habitat for endangered salmon following road reconstruction.
- Ketchum Challis project, Sawtooth National Forest and Sawtooth National Recreation Area. This project occurs in a wild and scenic corridor where restoration of native plant communities following road reconstruction is considered critical.

Year project initiated: 2008

Project completion: On-going

Beneficiaries:

Region 1 and 4 Forests
Region 1 Native Plant Program
USFS Coeur d'Alene Nursery
WFLHD road projects

Contact person & phone number:

Susan Rinehart, R1 Native Plant Program
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Figure 2: Shrubs under development at the USFS Coeur d'Alene Nursery for Western Federal Highway projects.



Figure 3. A variety of native plant materials is used which provides numerous benefits to National Forest System lands including nectar and pollen for pollinators.



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Region One Native Plant Program: 2015 Partnerships

The USFS Region One Native Plant program and the University of Montana (UM), Department of Forestry and Conservation, continued their long-standing partnership to acquire information needed by the agency for development of native plant materials for restoration. As a result of this partnership, the following studies were developed or are in progress for 2015:

Science Journal manuscripts completed or accepted:

--Gibson A, and Nelson C. Comparing provisional seed transfer zones for *Pseudoroegneria spicata*. 2015. *Natural Areas Journal* [Accepted pending minor revisions. Revisions underway; anticipated resubmission date mid-January 2016].

--Gibson A, Espeland E, Wagner V, and Nelson C. Local adaptation in plants: how informative has it been for restoration? *Evolutionary Applications* [Accepted pending minor revisions. Revisions submitted Oct 2015].

--Gibson, A., Fishman L., and Nelson C. Polyploidy: a missing link in the conversation about restoration of a commonly seeded native grass in western North America. *Restoration Ecology*. [In review].

--Gibson A, Nelson C, and Atwater D.. Competitive ability of invader experienced and invader naïve populations. [Manuscript in preparation. Anticipated submission date -- mid-January 2016].

--Gibson, A., Nelson C., and Rinehart S., Invited submission for special issue. *In preparation*. Anticipated submission date – 2016. *Restoration Ecology*.

--Gibson, A. 2015. The science behind the selection of native plant materials: local adaptation, response to invasion, cytotypic variation, and seed transfer zones. Dissertation available through the University of Montana website.



Figure 1. Aram Eramian of the USFS Coeur d'Alene Nursery meets with Dr. Cara Nelson and others during the USFS/UM partnership study on bluebunch wheatgrass.

PRESENTATIONS by Dr. Alexis Gibson in conjunction with USFS Native Plant Materials program

--Gibson A. 2015. The science behind the selection of native plant materials. *Public dissertation defense*. University of Montana, Missoula, MT (5/5/2015).

--Gibson, A. 2011. Local adaptation and its effects on native plant materials choice. *USFS Region 1 Botany Meeting*, Missoula, MT.

Year project initiated: 2011

Project completion: On-going

Project partners:

Dr. Cara Nelson and Dr. Alexis Gibson (University of Montana)
Susan Rinehart (R1 Native Plant Program Manager, 406-329-3669)



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Native Plant Pollinator Garden BIRCH CREEK

2015 Accomplishments

The Birch Creek native plant pollinator garden was established in 2011 at the Birch Creek Outdoor Education Center, located on the Dillon District of the Beaverhead-Deerlodge National Forest.

The entire Birch Creek garden received a make-over in 2015, with weeds dug up, weed barrier installed, and wood chips added on top of weed barrier. Interpretive panels purchased in 2013 were finally installed on log sign mounts.

The make-over really helped the garden look more like an intentional garden as opposed to a natural field, and wrapped up several tasks that needed to be completed.



Tiny Creatures... Big Jobs Panel



Before



What's the Buzz Panel



After

Year awarded: FY15
Project completion: 2015
Report number: 4 of 4
Expenditures: \$500 (FY15)

Partners: University of Montana-Western, Boy Scouts of America, Montana Native Plant Society-Calypso Chapter.

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