



Native Plant Restoration & Genetic Resource Management

Program Accomplishments



Collecting blister rust resistant western white pine cones from the Pebble Seed Orchard (WIL NF). Seed will be sent to Bend Extractory for processing and sown at J. Herbert Stone Nursery for use on the Milli Fire (DES NF).

Planting chokecherry seedlings on the Malheur NF with Burns Paiute Tribal members.



Harvesting California fescue native grass seed at the J. Herbert Stone Nursery.



Washington Conservation Corp (WCC) crew members preparing to sow seed for Taylors checkerspot butterfly habitat restoration on the OLY NF.



Fiscal Year 2018

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Pacific Northwest Region, US Forest Service



2018 Native Plant & Genetics Program Accomplishments

Program Overview:

The R6 Native Plant and Genetic Resources Management Programs ensure the availability and effective use of high quality and genetically appropriate plant material for restoring terrestrial and aquatic ecosystems. The plant material (grass, forb, tree and shrub seed and seedlings) are used to accomplish a wide array of objectives, including post-fire recovery, species recovery and diversification, erosion prevention, invasive plant control, wildlife habitat and pollinator habitat enhancement, and maintenance of aesthetic qualities and recreational experiences on national forests, among others. This work is foundational to achieving regional and agency goals and priorities relating to wildfire recovery, watershed restoration, ecological biodiversity and resiliency, climate change adaptation, and delivery of ecosystem services and benefits to the public.

Forest Service nursery facilities provide critical support to the Genetics and Native Plant Programs, including the Bend Seed Extractory (Bend, OR), J. Herbert Stone Nursery (Medford, OR), Clarno Propagation Center (Clarno, OR), and Dorena Genetic Resource Center (Cottage Grove, OR). Private sector nurseries and native seed producers in Oregon and Washington are also vital partners in this work. In addition, R6 Geneticists and the Restoration Services Team (RST) provide consultations/ training/tech transfer to Forest personnel and assistance in novel and complex projects. RST continues to expand revegetation services and products to a wide array of federal, state, and county partners throughout the PNW.

Highlights of FY18 Accomplishments include:

Plant Material Development

- JH Stone Nursery produced over 3600 pounds of cleaned native grass and forb seed for R5/R6 and multiple state and federal agencies.

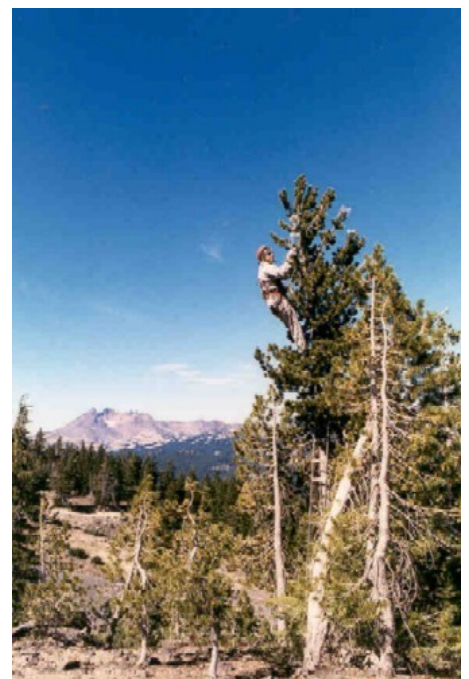
- Bend Seed Extractory (BSE) processed, tested, and packaged the JHSN nursery grown seed, along with over 400 pounds of wildland collected seed yielding 1130 pounds of cleaned seed (1420 unique collections) from throughout the western U.S. BSE also cleaned 43 bushels (29 pounds) of conifer seed (including a bumper crop of whitebark pine) for the FS and state, federal, and tribal partners. Thousands of acres of reforestation and revegetation treatments will be accomplished with these materials.

Consultation Services/Training/Tech. Transfer

- R6 Geneticists established a working group with Brad St. Clair (PNWRS Research Geneticist) to incorporate unique USFS PNW breeding zone information into the Seedlot Selection Tool (SST, <https://seedlotselectiontool.org/sst/>) to enhance and simplify the model's use in USFS climate-based seed planning, collection, and deployment decisions. These efforts will allow geneticists to characterize the adaptive capacity of a given seedlot (wild stand or seed orchard) based on the climate of the native source location(s). The genetics group identified eight key climate variables that will be determined for each R6 seedlot and loaded into the revamped corporate USFS seed inventory system (NMIS, Nursery Management Information System). SST analyses can then be conducted to assess where the seed will be best adapted in the future, and to determine if there are gaps (e.g., no future climate analogue) or projected shortfalls in seed sources for particular species or geographic areas. This information will be useful in prioritizing out-year seed collections, and in coordinating with other national forests or landowners for seed needs for the near future and beyond. The team's efforts will also streamline the use of SST in identifying and prioritizing suitable seedlots for a particular planting site based on the site's current and projected future climate (e.g., 2011-2040 time period).

Highlights of FY18 Accomplishments, continued:

- 2018 was an excellent cone year for whitebark pine in multiple areas throughout the Region. A major regional effort was organized to revisit and collect additional seed from individual parent trees shown to have some level of resistance to white pine blister rust during testing at the Dorena Genetic Resources Center (UMP NF). After processing at the Bend Seed Extractory, the seed be stored and used in reforestation activities across the region as part of whitebark pine recovery efforts to preclude ESA listing. New collections were also made from candidate trees that will undergo rust resistance testing in the future. Cones were collected from a total of 83 rust resistant individual trees from 21 different location, along with 172 new selections for additional rust testing.
- During cone collection from known resistant trees, scion was also collected from nearly 60 of these trees for grafting into a preservation/breeding orchard. This will protect the unique genetics of these trees by replicating them away from their home site. In the future, the arboreta will also be a source of rust resistant seed for reforestation.
- A partnership was entered into with the BC Ministry of Forests for collaboration on whitebark pine seed collection. The partnership allows the Ministry to collect seed from known resistant trees that the USFS is not able to access, with the resulting seed split between the two parties. In 2018 the BC Ministry of Forests collected cones from ~20 trees on the Colville and Mt/. Hood National Forests.
- RST provided on-site consultation at two floodplain enhancement projects on the Willamette NF, three restoration projects (upland and riparian) on the CRGNSA and provided small quantity of plants for one, and made site visits to the Tollgate and the Two Eagle restoration projects on the UMA and WAW. RST also provided consultations to private firms (2) regarding appropriate plant species suites, to Mt. Hood specialists and provided them with 150 locally sourced native plants, and advised ODOT in an ongoing manner regarding seed mixes, application rates, appropriate nursery stock types, etc.
- RST made presentations to FHWA-WFLHD engineers/environmental specialists/program managers, BLM WA and OR Engineers, participants of the IP FLR Seminar, and the R6 Botany/Native Plants/Invasives Program Manager's annual meeting.



Caging whitebark pine cones to prevent seed predation by Clark's nutcracker.



RST revegetation project on Hwy. 26 near Mt. Hood (before and after seeding/planting).

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Program Website:

<http://fsweb.r6.fs.fed.us/natural-resources/native-plants/>



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