

Landscape Scale Restoration Project Report



Project Name: ID/CB Seed Orchard

Funding Year: 2020

Stakeholders

Forest Service Region: USDA Forest Service - R1

Sponsoring Organization: Idaho Dept. of Lands

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Participating Organizations:

Grantee: Idaho Dept. of Lands

Project Funding

Agreement(s): 20-DG-11010000-021

Project Design

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Project Purpose

The Clearwater Basin Critical Need Seed Orchard Project (SOP) is located within the Clearwater Watershed on state of Idaho endowment lands. Forest losses during the 2015 wildfire season made seed availability for restoration initiatives unavailable. LSR & private forest projects were cancelled due to lack of seed resources. SOP will create an 80 acre irrigated conifer tree orchard and produce roughly 600 pounds of seed annually resulting in more than 10 million seedlings per year for reforestation efforts. A cooperative of 19 private, state, and federal partners have come together to build, maintain, and support a long term seed orchard that will directly address Idaho Forest Action Plan (FAP) priorities. Total project value of 800k illustrates applicants and IETIC's buy-in and exceeds grant ask of 300k

Resource Objective

Primary Objective

- Improve important forest ecosystems

Secondary Objective(s)

- Improve fish and wildlife habitats, including for threatened and endangered species
- Maintain or improve water quality and watershed function
- Measure ecological and economic benefits including air quality and soil quality and productivity
- Mitigate invasive species, insect infestation, and disease

Strategic Issues

The SOP is located within the St. Joe Clearwater and Montana Bitterroot PLA. The FAP identifies forest health threats, uncharacteristic wildfire, and canopy loss as significant threats for this area, and where area forests are listed as benefits to water quality/quantity, wildlife/ecosystems, and sustainable forest-based markets. This project directly addresses the following goals/implementation strategies in the FAP for the St. Joe Clearwater and Montana Bitterroot PLA:

Goal 1: Treatments Support restoration project to protect forests from wildfire, insect, and invasive species and re-establish

landscape resiliency, diversity of species, and other health functions.

Goal 2: Inventory & Analysis and Treatments- restore species to historic locations.

This project directly aligns with FAP priorities to:

- *Restore
- *Improve
- *Develop

Since seed availability is the first hurdle to cross in any restoration or reforestation project, this seed orchard addresses a critical need, and creates opportunity for more work to be completed on the ground.

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Collaboration & Partners

Founded in 1968, IETIC is a diverse group of 19 organizations in eastern Washington, northern Idaho, and western Montana who have joined together to apply classical plant breeding techniques to important native conifer species for the purpose of producing genetically improved tree seed for reforestation and ecosystem restoration. Members include industry, states, tribal councils, federal agencies, universities, small landowners, nurseries, and contractors. For 46 years members annually meet to discuss silviculture, land management and ecosystem restoration. Past projects include the establishment of both ponderosa pine and western larch seed orchards. IDL is well positioned to develop a large tree orchard complex that would serve both IDL and the IETIC members with seed from 4 conifer species particularly suited to low elevations where seedlings typically have to withstand high temperatures and low moisture. Same species seedlings from seed collected outside the region or elevation have poor survivability and therefore this location is critical to success. Partners have come together to support this project from planning to implementation and beyond with both time and funds. The IDL will contribute \$165,000 and the use of the land in perpetuity (cost of lease income lost is \$300 annually). All members contribute annual dues to facilitate breeding programs and genetic improvement studies. This project aligns with existing inter agency and regional efforts, priorities, and management plans, including state and federal fish and wildlife plans, state FAP, Good Neighbor Authority, and the Shared Stewardship initiative. This proposal is similar to successful seed orchard sites managed by IETIC in Pullman Washington and at IETIC's Western Larch seed orchard Total Leverage funds to date total \$165,000

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Integrated Delivery

Uncharacteristic wildfire, disease and insect outbreaks compromise forest resilience, water quality, habitats for fish/wildlife throughout the high priority St. Joe Clearwater priority landscape area (PLA) as identified in the FAP. Impacts from recent large scale wildfires threaten one of the most ecologically significant systems for cutthroat trout in north central Idaho. Reforestation and restoration on a landscape scale is therefore critically important, and forest landowners in the region are relying on planting to achieve these goals. To ensure that planted sites are successful, seed sources that are adapted to the site and resistant to disease are preferred. The first step to any potential reforestation work is available suitable tree species seed. However, the amount of improved seed produced has been limited by a lack of sites suitable for tree seed production. Additionally, access to the limited seed has halted further LSR phases planned for the Clearwater Complex Restoration.

VISION

Using Idaho Department of Lands (IDL) endowment lands (currently under lease and used for agricultural purposes) and building upon the cooperative partnership of the Inland Empire Tree Improvement Cooperative (IETIC), project work will support the establishment of a seed tree orchard to provide genetically improved tree seed for reforestation and ecosystem restoration.

GOALS

IDL will work w/partners to produce operational quantities of tree seed and breeding orchards designed to promote continued genetic improvement of native tree species for use for IDL and partner restoration projects throughout IETIC's project areas in eastern Washington, northern Idaho and western Montana. This seed stock will be used for restoration projects and reforestation of the PLA and support the national themes of protecting and enhancing forested lands.

OBJECTIVES

- *Convert 80 acres of dryland farm into an irrigated conifer tree orchard
- *Establish ~6500 grafts of 4 important conifer species: western white pine, western larch, Douglas-fir, and ponderosa pine
- *Produce roughly 600 pounds of seed annually resulting in more than 10 million seedlings per year for reforestation efforts

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Influence on Positive Change

IETIC has a well developed partnership with over 19 different partners including 3 states, all federal land management agencies, industrial, and private timber producers. Established in 1968, this group has completed numerous projects including 2 successful seed orchards. This project will add to that relationship and bring in additional partners making this investment live on years if not decades past project implementation. Seed orchards have life spans into the 100 year time frame, & this project is no different. Increasing the seed supply resulting in ~10 million new seedlings each year will alleviate the pinch point to low elevation forest restoration activities in the area and within the Inland Northwest, adding to the long term positive effects of this investment. Additionally, as site specific conifers are planted from seed produced in this project, landscapes will become more resilient to change resulting in protected watersheds, wildlife habitat, local markets and built infrastructure. Through the use of elevation specific seedlings will result in improved forest health in the surrounding landscapes and Inland Northwest decreasing the cost of forest management, improving ecosystem services (clear water) and reducing fire suppression/recovery costs. To maintain the seed orchard IDL has committed, through the use of State Budgeting staff who will manage, maintain, and administrate into the foreseeable future the various aspects of the orchard.

The project is scaled appropriately to address the PLA issues and regional need for seed to produce seedlings to address the restoration and reforestation needs within the St. Joe PLA and regional needs in Eastern Washington and Western Montana. When operational, the orchard will produce on average of:

420#s of white pine seed or roughly 4.2 million seedlings

65#s of larch seed or roughly 3.2 million seedlings

185#s of Douglas-fir or roughly 3.4 million seedlings

125#s of ponderosa pine or roughly 500,000 seedlings

Accomplishments

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Deliverables

G= Grant Funds L= Leveraged Funds

Year 1:

G \$10K improve access to site, reduce erosion and sedimentation to protect water quality & threatened fish habitat; G \$139,036

Irrigation well drilled and pump installed; \$12K Fence orchard to exclude deer to prevent damage; \$200 G have grown for grafting 360 orchard seedling and root stock.

Year 2:

G \$59,937 Orchard irrigation equipment purchased and installed; G \$7K plant barrier vegetation (i.e. popular trees); G \$8K vegetative ground cover planted to reduce erosion, due to irrigation watering, for the protection of stream water quality; G \$2,400 grafting of orchard stock, newly grafted trees will remain in greenhouse for an additional growing season; IETIC will provide staff time for continued maintenance of seed orchard, develop and establish additional orchard stock, provide irrigation for site L:\$35,000

Year 3: G \$1,427 orchard stock is planted.

The Above work will be done on 80 acres of ID Endowment lands to enhance 2 existing seed orchards in the region that produce seed for the IETIC. However, neither orchards are able to provide a viable site specific seed source to meet the restoration/reforestation requirements associated with low elevation landscapes. By growing the seed in a controlled area, low elevation forest will be enhanced and protected thru a consistent long term sustainable source of seed from genetic superior stock. The seed produce from the orchard will provide ~10 million newly available seedlings each year during the ~100 years of production for reforestation activities, in Idaho and throughout the Inland Northwest.

Accomplishments to Date

2020 federal grant awarded to state.

2021: No accomplishments due to high market demand for non-grant funded activities (water well drilling) which is delaying implementation of grant activities.

2022: No Accomplishments due to exorbitant cost of well drilling.

2023: No Accomplishments as contract for well drilling had no bidders.

2024: Project was abandoned due to inability to secure water for orchard.

Deliverables in Progress

2021: procurement of initial project items through state procurement system.

2022: No deliverables in progress

2023: No deliverables in progress

2024: project is closed - The \$300,000 originally awarded to this project were by agreement reallocated to the Wood River Valley Collaborative Forest Enhancements project in Idaho.

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Challenges

2020: non grant funded but impactful on project progression: working on figuring out how to get electrical services from road to well site location.

2021 & 2022: non grant funded but impactful on project is: cannot procure a well driller because of high market demanded for services caused by increased urban/rural development.

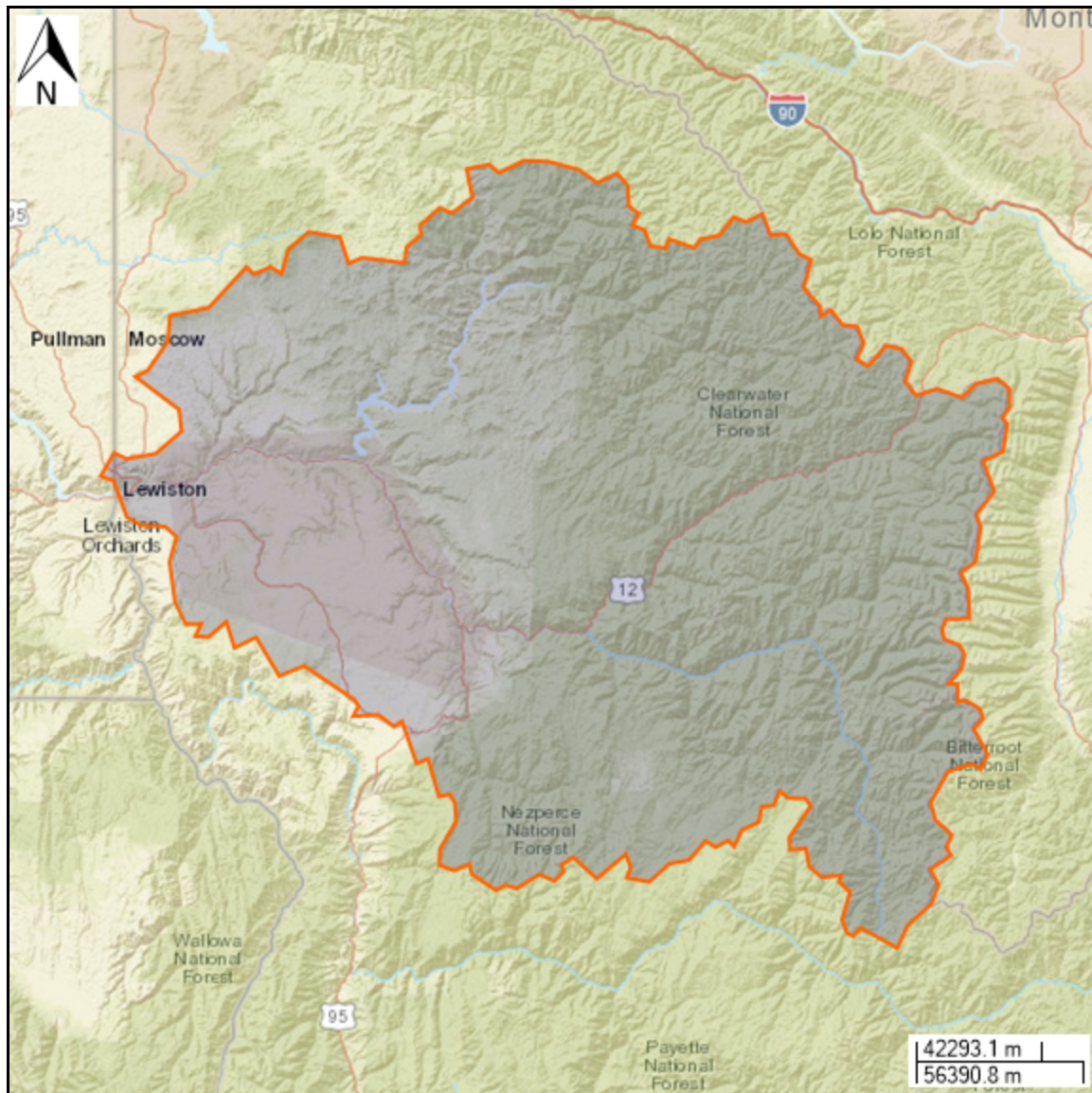
2023: Contract for well drilling was not bid on. Attempting a land swap to gain access to irrigation water.

2024: no contractor was willing to bid on drilling well for project. With no water the project could not move forward.

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Impact Area



Information Last Updated
11/14/2024