Landscape Scale Restoration Project Report

Project Name: San Juan Islands Garry Oak Ecosystem Restoration

Funding Year: 2021

Stakeholders

Forest Service Region: USDA Forest Service - R6

Sponsoring Organization: Washington Forestry

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Participating Organizations:

Grantee: Washington Forestry

Project Funding

Agreement(s): 21-DG-11062765-725

Project Design

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Project Purpose

The high-priority watershed of the San Juan Islands is among the most at-risk for wildfire, drought, and associated climate change effects in western WA. This eco-cultural restoration project works across four islands and 13 remnant Garry Oak ecosystems, a Priority 1 plant community (2018 State of Washington Natural Heritage Plan) of which an estimate 3% remains. Activities on cross-boundary sites include reducing invasive tree and understory species, increasing native plant and habitat diversity, and increasing herbivory resilience. Woody biomass produced through the project will be turned into locally-used biochar. This project improves habitat for several endangered and threatened species and reduces the risk of uncharacteristic wildfire. The project will leverage Garry Oak Ecosystem projects throughout the San Juan Islands watershed, and will re-introduce Indigenous management techniques to these eco-cultural environments.

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
- Reduce the risk of uncharacteristic wildfires

Strategic Issues

1. : Improve the structure, diversity, and resiliency of 13 San Juan archipelago Garry Oak Ecosystems. 2. Use project woody biomass to produce locally-used biochar. 3: Increase number of interdisciplinary local natural resource professionals through employment-based experiential learning and applied training.

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Collaboration & Partners

San Juan Co. Land Bank: LB; WA State Parks: WSP; San Juan Preserv. Trust: PT; Rainshadow Consulting: RC; Samish Indian Nation: SIN; San Juan Cons. Dist.: SJCD; Island Cons. Corps: ICC; Western WA Univ.: WWU; WA Dept. Nat. Res.: DNR; Garry Oak Ecosystem: GOE ---The San Juan Islands Terrestrial Land Managers group, led by the LB, has provided a platform for San Juan Archipelago land managers to meet, exchange ideas, and offer or ask for assistance. This project builds off of those partnerships (and adds additional partners) that have been developed between county, state, federal, tribal, and non-profit entities, and provides a mechanism to further the extent and acreage of the groups cross-boundary collaborations on GOEs. This project utilizes a variety of different forms and types of natural resources expertise, and requires a high level of collaboration among all partners. Partners will meet on both a quarterly and monthly basis, depending on time and level of collaboration required at project stages. Given the project goals, including resurrecting traditional ecosystem management, improving habitat, and removing woody biomass, partners will have to collaboratively pool and coordinate their expertise in order for projects to thrive. Project partners will work together to plan, implement, and monitor site work. SIN elder/tribal expertise will inform site management techniques on these (previously) culturally-managed sites. RC has conducted GOE restoration and post-monitoring work for 15+ years. Land managers LB, WSP, and PT all come with a different land management lens which help to inform GOE best practices within and across various organization missions and visions. ICC and SJCD provide local community expertise and a history of landowner relationships, which will help to expand and sustain project goals to neighboring landownerships. WWU faculty provide additional support on landowner/public engagement and also bring two courses to learn and assist with project goals. RC and ICC provide biochar creation/application experience. Finally, DNR provides both the expertise and equipment to support biochar burning and fuel reduction work, as well as the staff to support overall grant and project management. All partners provided input and agreed to project roles and budget. DNR will collaborate with all partners in meetings to monitor project progress, exchange ideas, and coordinate activities across project sites.

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Integrated Delivery

WFAP: Washington State Forest Action Plan; Garry Oak Ecosystem: GOE
An estimated 3 percent of the GOEs remains in its native range, which stretches from southern British Columbia to northernCalifornia. This ecosystem is listed as a Priority 1 plant community in the 2018 State of Washington Natural Heritage Plan. In addition to being a priority landscape for western WA (WFAP p. 63), the San Juan Archipelago is home to many remaining fragments of these GOEs, which are definitively ecologically important areas (WFAP p.74), and provide habitat for dozens of endangered and threatened species. The San Juan Islands also experience some of the driest, hottest conditions in western Washington, so restoration activities such as thinning and fuel removal in these GOEs (which historically burned every 7 to 15 years) help reduce risk of uncharacteristic wildfire to these ecosystems and their neighboring communities (WFAP, p. 69) while increasing wildfire-resilient species cover and density (WFAP 82). This project seeks to implement forest restoration and management strategies (WFAP p.80) already developed through past projects on island-based oak research, and creates a pathway for more wide-scale biomass utilization on a local scale (WFAP p. 82) through biochar (WFAP p.54) production. Tasks associated with this work provide experiential learning and applied training opportunities for local/young natural resource professionals (ICC) in a particularly unique format that is based around implementation of traditional ecological knowledge, local knowledge, ethnoecology, wildfire resiliency, geospatial data development, and applied ecology.

Influence on Positive Change

The project provides training in thinning/tree release work, re-seeding and planting, herbivory management, invasive species removal, Indigenous land management, habitat creation and retention, woody biomass use, controlled burning, and community engagement that will extend far beyond the life of the grant. All project partners will be presented with project components beyond their scope of expertise. Opportunities for applied learning expand all project partners understanding of GOE restoration and conservation. Given that GOEs would likely not exist today without the active management of these ecosystems by Native people, this project also supports eco-cultural restoration and traditional ecological management that had been conducted, up until 150 years ago, since time immemorial. Biochar applied in GOEs and other local nutrient-deficient soils will improve soil porosity and water holding capacity for several years/decades following this project. With two project sites being particularly close to concentrated island population areas, these project sites can be used as demonstration sites for community engagement and learning opportunities, both for GOE restoration practices, as well as biochar production and application. These tangible examples will hopefully prompt local landowners to apply these practices to their own properties (as appropriate), as well as provide a gateway for widening our circle of collaborative partners for future GOE work. Relationships strengthened and formed during this three-year grant cycle will set the foundation for future partnerships and collaborative work. Lessons learned through these interdisciplinary applied ecological projects provide examples of how to better invest future resources toward additional GOE restoration projects across additional islands and potentially beyond the San Juan Archipelago.

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Accomplishments

Deliverables

Site layouts and prescriptions with associated cost estimates, maps, etc.

Remove encroaching non-oak trees, invasive species (WFAP p.50); plant native species across 4 islands and~100 acres of remnant ecosystems.

Create 3,000 cubic feet of biochar. Apply biochar across 30 acres of GOEs and potentially other local soils.

Quarterly accomplishment reports are completed by DNR/partners. Success is measured by the no. of acres treated/restored (inc. biomass removal, establishment of more diverse native understory, invasive species removal); amount and variety of woody biomass use; hours of experiential learning/knowledge sharing associated with site work/project.

Site maintenance summaries included in quarterly project reports. ArcMap layer to track and easily share site work. At least one outreach event/year for public near easily-accessible project sites. Develop interpretive sign to highlight collaborative project partners and activities.

Accomplishments to Date

Activity 1:
oDeliverables: complete! All 13 site plans have been developed.
oSite plans have adjusted as new priorities arose. On Jones Island, burning plans were adjusted as maintenance costs have been more fully realized. These will not change grant deliverables. Additional land was acquired neighboring the Mt Grant site, and will undergo a similar site planning process, which will include lessons learned from this project.

Activity 2:
oDeliverables:
Jones Island
•Deer enclosures – completed.
•316 trees have been thinned
•160 nurse logs created
•453 piles of woody debris created, both for burning and habitat
•0.25 lbs of native seed have been dispersed
•357 encroaching trees cut out of GOEs
•Additional 44 encroaching trees girdled
•52 lbs of woody debris removed from site (not used for burning or habitat)
•
Turtleback:
•33 acres of tree thinning
•63 nurse logs created
•1300 piles created
•100 native plants planted, native seed dispersed across 2 acres (.5 lbs)

•287 encroaching trees cut
•40 lbs of invasive vegetation removed across more than 12 acres
•Removed wood made into chips broadcast across 3.25 acres
Kimball:
•Two deer enclosures have been constructed to help support growth of Garry oak and native understory species on project site.
•A total of 1,040 invasive plants (including blackberry, thistle, and scotchbroom) have been removed from the GOE
•2.5 lbs of native seeds and bulbs have been planted.
Mt. Grant:
•254 trees thinned
•175 nurse logs created
•1116 piles created, both for habitat and burning purposes
•10.5 lbs of native seeds, bulbs, and plugs planted
•518 trees cut down
•3 acres of wood augmentation

4,730 native plants purchased and planted across Turtleback and Mt. Grant sites

Activity 3:
Jones: 87 piles burned
Mt. Grant: 114 mini pile burns completed
Turtleback: 287 mini pile burns completed
All piles created for wildlife habitat were included in Activity 2 totals above.

Activity 4:
oDeliverables:
All sites: a sub-coordinating group was developed for the implementation of the grants' seeding, seedling, and sapling planting. The final native seed/plant/bulb mix planting recommendations for all sites are provided by the Samish Indian Nation.
•This work continues, and is working out very smoothly.
Jones Island: Washington State Parks (WSP), San Juan Island Conservation District (CD), Island Conservation Corps (ICC), and Washington DNR (DNR) worked together to complete work.
Turtleback: San Juan County Land Bank (LB), Samish Indian Nation (SIN), Rainshadow Consulting (RC), ICC and CD worked together to accomplish deliverables to date for Turtleback. The project could expand for many years into additional acres
Kimball: San Juan Preservation Trust (PT), SIN, ICC, DNR, and CD have all worked together on Kimball. Additionally, due to coordinating work, different partners were able to coordinate and schedule a saw training (cost and time outside of grant, taken on by different partners) together to improve skills for use in LSR-related tasks.
Mt. Grant: Both RC and LB developed the project site plan. LB, SIN, ICC, CD, and RC all worked together to accomplish deliverables to date for Mt. Grant.

Activity 5:

oDeliverables:
Two project sites (Turtleback and Mt. Grant) were shared with partners on two separate occasions in Fall 2022: One was with a Garry Oak Symposium in September, the other was with the Washington Fire Adapted Communities Learning Network for their annual conference.
Western WA has continued to develop supporting materials for communication and education of the restoration efforts.
Maintenance and monitoring on Turtleback has included removing new invasives that have recently established/become visible.

Quantities to Date

- Hazardous Fuels Management - 34 Acres treated to reduce hazardous fuels
- Invasive Plant / Weed Management - 48 Infested acres treated for invasive plants
- Wildlife Habitat Enhancement - 60 Acres of habitat treated to enhance wildlife

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Deliverables in Progress

oActivity 1:

All complete; but management and planning will continue to evolve. A working group of tribal members/staff from project partners is meeting monthly to discuss more pathways for modern Indigenous management on these cultural remnant systems. Additional land was acquired neighboring the Mt Grant site, and will undergo a similar site planning process, which will include lessons learned from this project.

oActivity 2:

Restoration work will continue through the next few years, although is slowing down.

Activity 2 work on Jones Island and Kimball is largely in the maintenance stage, with plans for the rest of the grant period to maintain the work that has been implemented/completed.

Mt. Grant and Turtleback sites will continue, with both land managers and project implementers looking at different methods to cover more acreage across both large sites. Additionally, a site neighboring Mt. Grant, called Cady Mountain, recently came under San Juan County Land Bank management. While restoration efforts on this GOE have only just begun, future hopes is that this property can expand current restoration work on Mt. Grant and both can support GOE as one larger, continuous ecosystem.

oActivity 3:

Jones: Pile burning will likely continue with additional maintenance work.

Mt. Grant and Turtleback: Additional piles will be burned on Mt. Grant and Turtleback. Partners from the Conservation District and Samish Indian Nation recently took the WA State Certified Burner course. This certification, when complete, will allow partners more options for burning in these landscapes. Initial results from microburns have been successful, with native understory responding positively.

oActivity 4:

All project partners are working together to coordinate and organize their work on a master project calendar. All partners have co-developed a grant-wide RACI (responsible, accountable, consulted, informed) matrix to keep track of who is doing each associated task and activity on each site, and to what degree each party is responsible for the execution of said task. We meet every 3 to six months to discuss timelines and schedule, with Samish Indian Nation being by far the busiest of the parties involved in the project.

oActivity 5:

Maintenance and monitoring will continue into 2025 for Jones, Kimball, and Turtleback.

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Challenges

oAll project parties are busy, so finding work implementation dates that work for all parties can be challenging. Luckily, most work for this grant can easily take place in the spring and fall months, when most other field work is less frequent.

Samish is by far the busiest partner, so planning for field days far in advance is a must.

oLogistics

Ferry travel can be lengthy, and makes it difficult for Samish to work long field days, or multiple days in a row.

oBurning restrictions – related to weather, the number of days when prescribed fires were allowed were very limited again this year. That made it harder to burn. Recent legislation tied to biochar creation open up pathways for this grant work.

 Microburns have offered a new alternative not originally proposed in the grant, but are so far offering great opportunities for these native seeds/bulbs/plants to establish successfully.

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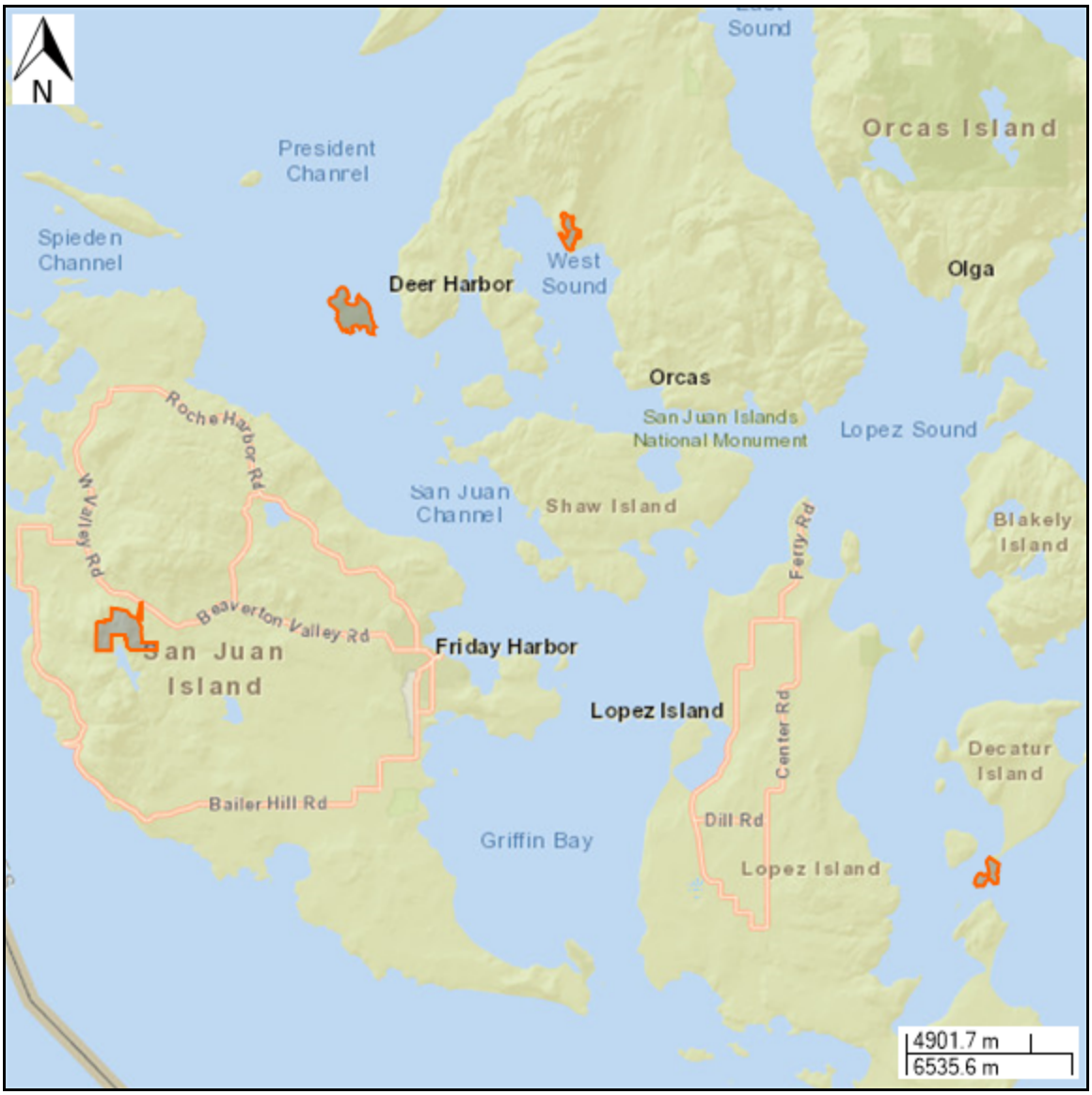
Impact Area



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11/21/2024