

Fish & Wildlife Service PPR



Project Title: Implementing the National Seed Strategy for Rehabilitation and Restoration of Oak and Pollinator Habitat in the Umpqua Basin, Oregon

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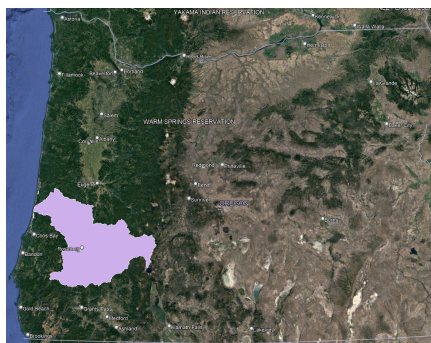
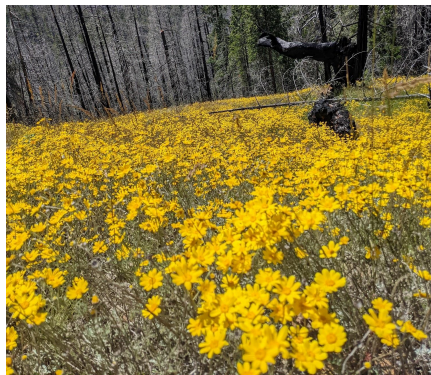
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Project Overview

A comprehensive and coordinated strategy is needed in the Umpqua Basin to reduce barriers to access to native plants, and to develop local markets for local nursery plant and seed crop growers. A diverse group of local stakeholders and regional experts agree that the development of a Native Plant Partnership is the logical first step towards meeting these needs. The goals of the newly developing Umpqua Native Plant Partnership (UNPP) align with those in the National Seed Strategy, as well as the Partners for Fish and Wildlife priorities of species conservation, habitat connectivity, and resilient ecosystems. This work will also benefit private landowners by allowing the development of a native understory seed mix for oak savannas, meadows, and pollinator habitat restoration in the Umpqua Basin.

The needs addressed in this proposal were identified through a process involving multiple federal entities, local jurisdictions, and non-governmental organizations, and represent best practices for improving the availability of native plant materials for public and private restoration projects. In a survey conducted in 2021 of UNPP stakeholder members, 70% of respondents stated that “inadequate supply” was the main barrier to accessing native plants and seeds (see Appendix 1). However, the Umpqua Basin is a rich agricultural zone with many nurseries and farms; grower recruitment efforts could result in a strengthening of local production of native plants and seeds. In addition, many sites are available for wild collecting native seeds, and the existence of groups such as the Native Plant Society of Oregon Umpqua Chapter indicates strong public support for native seed collection and plant production.

Project Goals and Objectives

Over the next three years, the Umpqua Native Plant Partnership will develop and expand its capacity as an organization by strengthening local leadership, setting concrete goals, and facilitating collaboration between members. These actions will result in a more robust local economy for native plant materials, diverse genetics for native plant materials placed out on the landscape, and a rich source of educational materials and learning opportunities for growers and users of native plant materials.

UNPP Goals 2022 - 2024

1. Address the supply gap by increasing the availability of native seeds and container stock to meet restoration needs across the three ecoregions of the Umpqua Basin.
2. Develop UNPP leadership and a Five-Year Strategic Plan.
3. Provide an avenue for public-private collaboration and communication for native plant materials development through regular UNPP meetings.
4. Develop a priority plant materials needs assessment, focused on pollinators and threatened habitats such as oak savannas and grasslands.
5. Perform community outreach to educate the public about the value of native plants in landscaping and restoration projects.
6. Build local capacity and partnerships to collect, grow out (increase) and distribute native seeds.

7. Develop habitat restoration projects that engage the public and enhance native ecosystems.
8. Prioritize and develop a native understory grass/forb mix to put into production.
9. Regular planting events to support oak/pollinator habitat restoration projects in the Umpqua Basin.

Timetable and Milestones

Actions Needed	Start date	Complete date	Status
Develop MOU and signatory members	June 2022	September 2023	Complete
Develop Steering Committee	June 2022	September 2022	Complete
Hold regular Partnership and Steering Committee meetings	June 2022	ongoing	Complete
Develop priority species lists for seed collection and update them annually	June 2022	July 2022, 2023 and 2024	Complete
Hold 2-4 seed collection events with volunteers per year	June 2022	June - August 2022, 2023 and 2024	Complete
Establish a seed library at a local facility	August 2022	June 2024	Complete
Develop a Strategic Planning document	October 2022	February 2023	Complete
Create UNPP website	October 2022	February 2023	Complete
Create outreach materials	January 2023	ongoing	Complete
Recruit native seed and containerized plant growers	October 2022	ongoing	Complete

Progress Towards Objectives & Goals

Overview

From October 2023 to September 2024, the Umpqua Native Plant Partnership (UNPP) continued making significant strides in laying the groundwork for increasing the availability of native seeds, plugs, and container stock across the Umpqua Basin. These efforts have been crucial in addressing gaps in the supply chain of native plant materials. Which are essential for ecological restoration in fire-impacted landscapes and threatened habitats such as oak savannas and grasslands. Over the past twelve months, Morgan Fay (UNPP Coordinator), has focused on several key initiatives: securing **15** MOU signatures, facilitating a species priority working group, and developing a comprehensive Native Plant Material program. Additionally, the Coordinator has provided technical assistance to **5** plug and seed producers, established an open-market system to ensure the availability of **1000+** native plant container stock for in-demand pollinator and restoration species, and engaged in extensive outreach and education efforts through **5** in-person events and multimedia channels, including **4** blogs, **3** seasonal newsletters, **7** email campaigns, and digital materials. The Coordinator also managed day-to-day partnership operations, including seed management and volunteer coordination, ensuring the smooth functioning of the UNPP and advancing its mission of supporting ecological restoration in the Umpqua Basin.

Partnership Coordination & Communication

The UNPP Coordinator plays a central role in prioritizing species, overseeing seed collection, and collaborating with funders and growers to advance wild collections through the cleaning and production stages. The Coordinator also engages with the public to build support for the Partnership and promote basin-wide ecological restoration efforts through direct outreach and volunteer engagement.

UNPP members convene bi-annually, in May and November, to facilitate communication, and collaboration, and to provide an inclusive space for understanding shared needs and goals. Additionally, the UNPP Steering Committee meets quarterly to discuss various aspects of the partnership and provide internal updates aligned with the UNPP's strategic plan and mission.

The Steering Committee is composed of **7** botanists, ecologists and natural resource professionals with U.S. Forest Service botanists, the Bureau of Land Management, U.S. Fish & Wildlife Service, and local plant experts from Native Plant Society Oregon Chapter, Douglas County SWCD, and Phoenix Charter School of Roseburg. Ongoing conversations with local tribal leaders aim to develop stronger relationships that will enhance future partnerships.

The draft Memorandum of Understanding (MOU) and the Five-Year Strategic Plan have been finalized and are available on the [UNPP website](#). Currently, signatures are being collected for the final MOU document, which will be shared with the UNPP network electronically, concluding in 2024. These

ongoing activities have established a sustainable framework that supports the growth and success of the Partnership, fully aligning with its core mission to improve access to and development of native plant materials for the Umpqua Basin.

Seed Collection

The Umpqua Native Plant Partnership has executed a comprehensive seed collection strategy designed to enhance genetic diversity and support ecological restoration efforts within the Umpqua Basin. This strategy includes meticulous seasonal scouting, adherence to established protocols, and collaboration with local volunteers and landowners.

- **Scouting and Timing:** Targeted native plant populations are scouted seasonally to monitor phenology and determine optimal collection times. This approach ensures that seeds are gathered at peak maturity, which maximizes their viability and genetic representation.
- **Diversity and Protocols:** Collections are conducted across various elevations, ecoregions, sub-watersheds, and plant communities within the basin to promote genetic diversity. Following the Seeds of Success protocols, the process is designed to minimize negative impacts on native populations while enhancing the genetic integrity of the collected seeds.
- **Processing and Storage:** Post-collection, seeds are cleaned of chaff and debris, accurately labeled, and stored under controlled conditions at the Yoncalla Seed Room in Yoncalla, OR. The UNPP maintains a comprehensive seed inventory, accessible via the [UNPP website](#).
- **Volunteer Contributions:** During the 2024 field season, **22** UNPP volunteers participated in **6** collection events of **12** species, successfully gathering a diverse range of seeds from forbs, grasses, and shrubs across the valley foothills and western Cascade Range.
- **Landowner Collaboration:** Special recognition is given to **3** landowners of Callhollow, The Elkton Reserve, and Yew Creek Land Alliance for granting access to their lands. Private lands offer valuable opportunities for collecting wild seeds and woody species, which are crucial for increasing genetic diversity and variability in restoration projects.
- **Species Collected:** Notable species collected include in 2024:

Species	Rough Clean (oz)
<i>Anaphalis margaritacea</i> (Pearly Everlasting)	0.75
<i>Camassia leichtlinii</i> (Great Camas)	8.26
<i>Camassia quamash</i> (Common Camas)	4.2
<i>Calochortus tolmiei</i> (Tolmie's Star Tulip)	0.17

<i>Clarkia purpurea</i> (Winecup Clarkia)	0.35
<i>Dodecatheon hendersonii</i> (Henderson's Shooting Star)	2
<i>Festuca californica</i> (California Fescue)	5.9
<i>Iris tenax</i> (Toughleaf Iris)	11.8
<i>Lomatium utriculatum</i> (Common Lomatium)	3
<i>Madia gracilis</i> (Slender Tarweed)	0.29
<i>Sambucus nigra ssp. cerulea</i> (Blue Elderberry)	8.12
<i>Sisyrinchium bellum</i> (Western Blue-Eyed Grass)	0.13
	44.97
	2.75 lbs

The UNPP's strategic seed collection efforts are crucial for enhancing the genetic diversity and ecological resilience of native plant communities in the Umpqua Basin. The success of the 2024 field season, bolstered by the dedication of volunteers and supportive landowners, underscores the importance of collaborative efforts in advancing restoration goals and improving plant material availability for future projects.



(Oak Flats ~ *Clarkia purpurea* in bloom, Volunteer Seed Collection Event.)

Native Plant Materials Development

Species Priority Working Group

The Species Priority Working Group, facilitated by Ian Silvernail and Ed Alverson, is at the forefront of developing native seed mixes tailored to the Umpqua Basin. This initiative is key to creating high-functioning, low-diversity seed mixes designed to meet specific ecological needs.

Key Activities and Outcomes:

- **Expert Facilitation:** During the recent bi-annual meeting, Ed Alverson and Ian Silvernail provided expert guidance, leading to two key achievements: (1) establishing a list of valued qualities for the new seed mixes, and (2) forming a sub-group to finalize species selection for two distinct seed mixes: low-mid elevation wet/dry and mid-high elevation hot/dry.
- **Species Review Process:** Since its inception in Winter 2024, the working group has reviewed over 200 species, narrowing the list to fewer than 50. The selection criteria have been comprehensive, encompassing a range of traits and characteristics:
 1. **Easy to Produce Seed:** Fast performer and efficient in agricultural settings.
 2. **Establishes Well from Seed:** Effective in restoration by seed.
 3. **Historical Communities:** Presence of reference sites for wild collection.
 4. **Early Seral/Post-Disturbance:** Contributes to soil health and stability, suitable for higher elevations and fire-followers.
 5. **Maintenance Needs:** Self-sufficient or minimal human management required.
 6. **Wildlife/Big Game:** Supports foraging and lifecycle needs.
 7. **Competitive:** Ability to out-compete non-native and invasive species.
 8. **Range of Bloom Period:** Provides support for pollinators from early spring through late fall.
 9. **Common/Habitat Overlap:** Grows in a variety of geologic conditions, not limited to specific habitats.
 10. **Native:** Specific to level 3 Ecoregion in the Umpqua Basin, with considerations for endemic species.
 11. **Diversifying Plant Families & Function:** Includes various plant families and functional capacities such as pollination, nitrogen fixation, decomposition, and cultural importance.
 12. **Culturally Significant:** Species important to tribal communities.
 13. **Resilient:** Recover well from disturbances such as fire.
- **Next Steps:**
 - a. **Understanding Plant Communities:** Further analyze plant community associations and assess seed mix performance in ecological restoration.

- b. **Seed Collection:** Focus on collecting foundation materials for amplification with small and medium-sized growers over the next 2-3 years.
- c. **Research:** Conduct small-scale research to evaluate mix effectiveness for specific habitats.

These efforts are in direct alignment with Goal 2 of our 5-year strategic plan, which aims to develop basin-wide habitat-specific priorities for plant and seed production. The Species Priority Working Group's work is instrumental in shaping these priorities by integrating factors such as locally diverse genetics, climate science, ease of production, tribal ecological knowledge, ecological function, and the needs of workhorse and pollinator species, while also considering ESA and wildlife preservation.

Phyto-sanitization Pilot Project & BMPs

The Umpqua Native Plant Partnership (UNPP) is committed to advancing the quality of native plant materials through comprehensive phytosanitation training and development. Our efforts are focused on ensuring that plug stock provided for restoration projects is free from pests and diseases, which is crucial for the success of ecological restoration.

Training Modules and Phases:

Phase 1: In-Person Training We initiated the program with hands-on training sessions emphasizing nursery practices, infrastructure, and sanitization protocols at the USFS Dorena Genetic Resource Center. A detailed follow-up questions document was compiled and sent to Dorena for addressing various inquiries. Streamlined responses were prepared in a spreadsheet format to address all questions efficiently. Additionally, research on *Phytophthora* was conducted to highlight the importance of effective sanitization.

Phase 2: Workshop Hosting UNPP producers are hosting workshops to further discuss sanitization issues and share best practices. A Doodle poll was used to schedule these workshops, and producers are reviewing Best Management Practices (BMPs) developed by OSU and WSU, provided by the Forest Service.

Phase 3: In-Person Learning This phase provides an opportunity for collaborative learning through on-site reviews of the Ben Moore Mountain Nursery (BMMN) Pilot Phyto-sanitization project and draft BMP's developed from the pilot. The first scheduled review of the draft BMP's and peer-to-peer learning sessions took place on September 20, 2024 at the BMMN in Oakland, OR., the location where the pilot project was conducted in the spring of 2024. There are 3 to 4 more peer learning sessions scheduled through November at participating producer facilities.

Phase 4: BMP Development We have developed a Best Management Practices (BMP) draft document based on the pilot project. This draft will be refined by the producers in the peer-to-peer learning sessions and standardized following all training sessions and producer feedback.

Phase 5: Standardization Our goal is to establish standardized practices for plug production to facilitate future contracts and grant applications. This phase is targeted for completion by November 31, 2024.

The training and development efforts are already showing improvements in our sanitization processes. By investing in these modules, we are enhancing the quality of native plants and seeds, supporting effective restoration efforts, and ensuring the long-term success of our ecological initiatives.

Native Plant Material Program

The Umpqua Native Plant Partnership has made notable advancements in plant material procurement and accessibility, driven by the establishment of a **Native Plant Material Reservation System** on the Square e-commerce platform. This innovation streamlines the ordering process for fall projects and ensures the availability of essential native plant materials, bolstering restoration efforts across the Umpqua Basin.

In the fall of 2023, UNPP, in partnership with the Rogue Native Plant Partnership (RNPP), secured funding from the **Fish and Wildlife Service (FWS)** through the **Bipartisan Infrastructure Law (BIL)**. This funding was pivotal in initiating **plug production** and **seed amplification** for high-demand, high-performance native species critical to restoration projects in the region. These resources were strategically allocated to enhance coordination and collaboration with local nurseries, farmers, educational institutions, and grassroots initiatives. This multi-stakeholder approach is integral to the UNPP's mission to achieve its 5-year strategic goals.

A comprehensive **Native Plant Material Program (NPM)** was established to support each phase of production, from collection to restoration. This program tracks internal processes, production progress, and protocols to guide future collaborations. The program is aimed at scaling up native plant production over the next three years, with the goal of developing two pollinator seed mixes (annual and perennial) for seasonally wet/dry low-to-mid-elevation sites and hot/dry fire-prone mid-to-high-elevation sites by 2027.

The first phase, launched in October 2023, saw the engagement of seven new producers of native seed and plug stock. By spring 2024, an open-market reservation system was introduced, allowing partners to seamlessly order plant materials online. Key Activities and Implementations:

1. **Native Plant Material Reservation System:** The system has facilitated the seamless procurement of native plants, producing **47** species across **1,000** plants, grown by three local

producers. This initiative promotes green infrastructure, strengthens the native plant economy, and builds a resilient supply network. (Below: 2024 NPM available online).

2. **Hybrid Contracting Model:** Borrowing from the RNPP, this model mitigates risks inherent in native seed production by sharing production costs between stakeholders. This approach has led to stable partnerships and consistent plant availability.



3. **Partner Engagement and Market Research:** Regular surveys have been conducted to anticipate and address the plant material needs of our partners. A market analysis conducted in collaboration with Logan Bennett, OSU Small Farms Manager, examined competitive rates for transitioning local farms to native seed

production. The study found that native seed yields must meet a \$100 per pound threshold to match the \$10,000 per acre return seen in traditional agricultural crops. This analysis supports our two current species in production: *Bromus carinatus* and *Elymus glaucus*.

4. **Phytosanitation and Nursery Certification:** UNPP producers have implemented **phytosanitary BMPs** (Best Management Practices) to meet Oregon Department of Agriculture (ODA) certification requirements and U.S. Forest Service health standards. A fully equipped greenhouse now supports future plant requests, ensuring the production of high-quality native materials.



(Above: ODA Certified Ben Moore Mountain Nursery Facility, Oakland, OR)

5. **Nursery Producer Support:** Four of the seven nursery producers onboarded in 2023 have completed their first production cycles, with an additional producer joining in 2024. These efforts yielded 1,500 grass plugs of *Elymus glaucus* and *Bromus carinatus*, which are now ready for transplant into seed rows. Through training and collaboration, we've successfully created a learning environment that reduces bottlenecks in production, allowing local producers to take on government contracts for native plant materials. (Right: Training at USFS Dorena Genetic Research Center).



(Above: *Elymus glaucus* and *Bromus carinatus*, Wildwood Nursery, Winston, OR.)

The UNPP Native Plant Material Program is a structured, multi-step initiative designed to scale up native seed and plant production in the Umpqua Basin. By coupling funding with strategic collaboration among producers, the program addresses critical bottlenecks in restoration efforts while supporting the local economy. Moving forward, UNPP remains committed to achieving its 5-year strategic goals and continuing to refine its production processes to meet the growing demand for native plant materials.

Outreach & Partnership Development

Partnership Projects

Over the past year, the Umpqua Native Plant Partnership has made significant strides in various partnership projects. These efforts are crucial in advancing our strategic goals and fostering a well-informed and engaged community around native plant restoration. Notable efforts include:

- **Oak Flats Project:** This initiative focuses on restoring native plant communities and enhancing habitat quality at Oak Flats through community engagement, seed collection and facilitating the production of 2000 plugs with Umpqua producers.
- **Drain Community Riparian Restoration:** Restoration planning and design activities are underway to improve riparian areas in the Drain community, fostering better ecological health and resilience through partnership and leveraging native plant material for community led projects.
- **Tri-City Elementary and Cow Creek Tribe of Umpqua Band of Indians:** We have engaged with local schools affiliated with the Cow Creek Tribe of Umpqua Band of Indians to develop a pollinator garden, integrating cultural and ecological education that will demonstrate the importance of pollinator and first foods for school aged students and their families.
- **Technical Assistance (TA):** We continue to support partners with technical assistance for planting plans and facilitation of Native Plant Materials (NPM), ensuring successful project outcomes and improved plantings.

Education Outreach & Events

The UNPP has actively engaged in a range of educational outreach and events to enhance knowledge and collaboration within the community:

- **U.S. Forest Service (USFS) Training:** In January, we conducted training focused on developing interdisciplinary processes to procure local native plant materials, enhancing our collective ability to manage and utilize native plants effectively.
- **Earth Day, Glide Wildflower Show, and Blooms and Butterflies:** We participated in these key events, promoting native plant awareness and engaging with the community on restoration topics.
- **Upcoming Events:** In September, we will host Tree School and a seed cleaning event, offering additional learning opportunities and hands-on experience.
- **NPM Reservation System and Phytosanitation Development:** We have developed and implemented a native plant material reservation system through Square to streamline ordering processes and improve accessibility. Additionally, we have focused on phytosanitation training for UNPP producers to ensure the highest quality of plant materials, which is crucial for successful restoration efforts.

Conclusion

In 2023-2024, the Umpqua Native Plant Partnership (UNPP) effectively strengthened local leadership, facilitated collaboration among its members, and enhanced access to locally sourced native plant materials. These actions directly aligned with and supported Goals 1, 3, and 4 of the National Seed Strategy. By employing an iterative approach, the UNPP was able to adapt its strategies to meet the specific needs of partners within the Umpqua Basin.

The partnership made significant progress in addressing the supply gap for native plant materials by increasing the availability of native seeds and container stock, crucial for meeting restoration needs across the diverse ecoregions of the Umpqua Basin. Leadership within UNPP was further developed through the creation of a Memorandum of Understanding (MOU) and a Five-Year Strategic Plan, which provide a clear direction for future efforts. Regular UNPP meetings continued to serve as a platform for public-private collaboration, facilitating effective communication and coordination in the development of native plant materials.

To further strengthen these efforts, the partnership developed and implemented phyto-sanitation practices to ensure the health and viability of plant materials. This initiative was supported by training sessions and peer learning opportunities, which were integral in building the knowledge and capacity of all members involved in plant material production and restoration activities.

A series of species priority working group sessions was conducted, focusing on species that support pollinators and the restoration of threatened habitats, particularly oak savannas, grasslands, and fire-prone ecosystems. Additionally, the UNPP engaged in community outreach to educate the public on the ecological benefits of incorporating native plants into projects and material development planning for partners' restoration efforts. The partnership also built local capacity by developing collaborations aimed at collecting, growing out, and developing native plant materials for ecological restoration projects. These efforts have laid the groundwork for future habitat restoration projects that will engage the public and enhance native ecosystems.

Collectively, these initiatives have established a sustainable pathway for regular planting events aimed at supporting oak and pollinator habitat restoration projects throughout the Umpqua Basin, thereby enhancing the ecological resilience and biodiversity of the region.

Problems Challenges & Next Steps

Two primary challenges currently facing the Umpqua Native Plant Partnership (UNPP) are: (1) the full utilization of the native plant material program by partners, which is hindered by higher local costs and a lack of pre-planning for the true costs associated with native plant material development; and (2) the need for long-term storage of native plant materials locally. Addressing these challenges is crucial for ensuring the sustainability of regular planting events that support oak and pollinator habitat restoration projects in the Umpqua Basin.

In the past year, the UNPP successfully secured short-term seed storage space in Yoncalla, equipped with seed cleaning equipment and refrigeration. However, this facility is currently unsuitable for long-term storage due to its limited infrastructure. The most viable long-term solution presently available is the storage facility of the Rogue Native Plant Partnership at the Selberg Institute, located over 120 miles from Roseburg. Unfortunately, a more suitable and conveniently located long-term storage facility for native plant materials in the Umpqua Basin has not yet been identified.

Moving forward, the UNPP will focus on collaborating with local partners to leverage resources, secure in-kind contributions, and support grant writing efforts aimed at establishing a sustainable location for long-term storage to support multi-scale ecological restoration and ecosystem management. This approach includes exploring options for allocating space for a dedicated local facility within the Umpqua Basin, which could serve as a central hub for native plant material storage and processing. Additionally, outfitting a shipping container to meet these storage needs is being considered as a flexible and scalable solution. Together, these efforts will significantly enhance the partnership's ability to grow a native plant materials economy, ultimately supporting the broader mission of ecological restoration and ecosystem management within the Umpqua Basin.

Certification: I certify to the best of my knowledge and belief that this report is correct and complete for the performance of activities for the purposes set forth in the award documents.

Morgan Fay, M.Sc

Printed Name & Title of Person Completing Report


Signature

September 28th, 2024

Date Submitted