



Klamath Watershed Partnership

2023 Annual Report

205 Riverside Drive, Suite C, Klamath Falls, Oregon 97601



Though riparian and wetland ecosystems often receive the most focus when it comes to watershed health our forests, grasslands, and high desert locations found upland of streams greatly influence the overall health of our watershed and the quality of water found in its streams. KWP is involved in projects ranging from riparian plantings and wetland development to noxious weed control and fire recovery efforts, just to name a few. We also work closely with local agricultural producers to find projects that can benefit both their land productivity and business operations. Many of our projects strive to improve water quality and water availability in the Klamath Basin. Every downstream user is affected by upstream activities. Individual projects are identified based on what will benefit the landowner and overall health and function of the watershed.

Mission Statement: To conserve, enhance and restore the natural resources of the Klamath Basin, while ensuring the long-term sustainability of the regional economy and local communities.

To accomplish this mission, we breakdown our activities into four programs:

- 1.) Riparian/Wetland Restoration and Fisheries Conservation
- 2.) Upland Watershed and Forest Health
- 3.) Outreach and Technical Assistance
- 4.) Irrigation Efficiency and Modernization

This report highlights many of the 2023 accomplishments of the staff and board at Klamath Watershed Partnership. Many projects don't fit neatly into just one category since properties often have multiple types of habitats and needs to address. Often, well designed projects will address multiple needs and have multiple benefits across the landscape and this holistic minded approach is a goal for KWP when planning and implementing projects. Water, wildlife, and fire don't recognize land boundaries and the more different stakeholders that can work together on a larger scale, the greater the impact of these individual efforts will be.

Partners

KWP works with a wide range of partners, including but not limited to:

Oregon Watershed Enhancement Board (OWEB), US Fish and Wildlife Service (USFWS), Natural Resources Conservation Service (NRCS), Klamath Soil and Water Conservation District (KSWCD), Oregon Department of Agriculture (ODA), The Klamath Tribes (TKT), US Forest Service (USFS), Trout Unlimited (TU), Sustainable Northwest, Oregon Department of Environmental Quality (ODEQ), The Nature Conservancy (TNC), Oregon Institute of Technology (OIT), OSU Extension, Bureau of Land Management (BLM), Oregon Department of Forestry (ODF), Oregon Department of Fish and Wildlife (ODFW), Bureau of Reclamation (BOR), Green Diamond Resource Company (GDRC), Klamath County Public Works Weed Control, and many private farms and ranches throughout the county that make this work possible.

Local Business Support KWP strives to patronize local businesses and contractors to complete projects when possible. KWP projects not only benefit the functioning of the watershed and landowners, but bring in money to be spent in the local economy. In 2023 projects we administered resulted in approximately \$2,403,001.04 spent at businesses and contractors located in Klamath County, \$1,131,700.22 spent outside of the county but regionally in Northern California and Southern/Central Oregon, and \$306,830.92 outside of the region. 2023 projects also led to approximately \$102,238.89 spent on government agencies located in Klamath County helping support more local jobs. Approximately \$17,281.30 was spent on local non-government organizations and at The Klamath Tribes Sprague River Water Quality Lab. The funding support varies from year to year, but we are proud of the multiple benefits these projects provide.

Riparian Restoration/Fisheries Conservation

KWP staff completed several riparian and wetland restoration projects in 2023. We coordinated wetlands development, water quality improvements, and developed in-stream habitat. Improvements to cattle management and farming operations that benefit riparian zones, improve productivity, and reduce grazing pressure while keeping ranch operations viable in the process were also implemented. Funding from various sources is focusing on improving water quality in the Upper Basin, while other funding is focused on improving river and tributary habitat in anticipation of the return of anadromous native fish following dam removal and recovery.

There is a trend in river restoration where projects are moving away from heavily engineered, form-based designs that view a river as an unchanging feature stuck in time to process-based restoration designs that not only plan for change, but restore the natural processes of change that will allow the the river to restore itself. This newer approach uses low-tech techniques and generally costs less to treat more miles of stream. One major technique is to use beaver dam analogues (BDAs) or post assisted log structures (PALS) to mimic the ecological services provided by beaver dams which include restoring the connection of the river channel to the floodplain. This can recharge groundwater, increase forage amount and season duration, decrease flood and drought risk, and reduce sediment transport further downriver. These structures aren't meant to last forever and depending on the goal can function on their own or eventually improve habitat conditions to allow beavers to re-colonize these areas.

KWP installed BDAs on a few properties in 2023. One property on the North Fork Sprague was part of a large coordinated effort including both upland and riparian restoration. A portion of the property was burned in the 2021 Bootleg. In addition to the BDAs, bitterbrush and mountain mahogany will be planted in the upland which are a very beneficial forage species for mule deer. The project also involves planting riparian vegetation along the river to stabilize the bank and eventually provide shade and woody debris to the river. Ponderosa Pine will also be planted to replace mortality from the fire. This is a prime example of one project encompassing

work from in-stream, to riparian, to upland habitats. Pictured below, on the left, is a complex of recently constructed BDAs. Multiple are usually built within a reach to work together to achieve the desired effect. On the right is a photo depicting sediment that was captured after a large rain event after the river had risen and later receded, trapping sediment in the process.



BDAs can also be used to aggrade, or raise streambeds that have become incised and disconnected from floodplains. By capturing sediment during and after high flows, this process will build up the river bottom. For streams that aren't too incised, this can result in improvements to groundwater storage in the floodplain and side channels that stay wet later in the summer as happened historically. Pictured below is a tributary of the Sprague River, Whisky Creek. On the left is pre-project conditions showing channel incision and eroding banks. On the right is water backing up and filling side channels after BDA installation.



Using a combination of Oregon Watershed Enhancement Board and USFWS drought relief funding, KWP installed 11 livestock wells with solar pumps on 5 properties located along various streams and rivers. Fencing along riparian areas where the wells will be installed will ensure livestock have access to water without entering the stream which erodes banks and adds pollution to the water. A limited number of well drillers in the region made this a challenge in the short run, but led to more opportunity for landowner financial security and healthy waterways in Klamath County.



In winter 2021/22 waterfowl populations on the Klamath Basin National Wildlife Refuge Complex were < 1 % of what they were historically. For the most part Tule Lake and Lower Klamath NWRs were completely dry and the little available habitat was on private lands. Lowland Farms was one of the few locations in the Klamath Basin that was able to provide waterfowl habitat in winter 2021/22 and has become a stable location for large numbers of waterfowl over the last several years. These successes can be attributed to past USFWS Partners for Fish and Wildlife projects. This project continued to expand on the waterfowl habitat at this location. Flood irrigation is strongly linked to waterfowl populations in the Basin and this 107-acre wet meadow is an important area that is retaining its flood irrigation tradition. However, dilapidated infrastructure and an incomplete levee was reducing the availability of waterfowl habitat and impaired wet meadow hay production. This project helped to rebuild several dilapidated levees and water control structures and will provide flooded wet meadow habitat during September/October, a time where foraging resources for waterbirds are extremely limited. Old fencing will be removed and new fencing installed to prevent access by cows. The adjacent ditch to the project was cleaned out and the existing levee adjacent to the ditch was refurbished with a new fence installed on top. Three water control structures were placed in each cell to allow individual flooding of each cell within the larger wet meadow. Pictured below is a new water control structure.



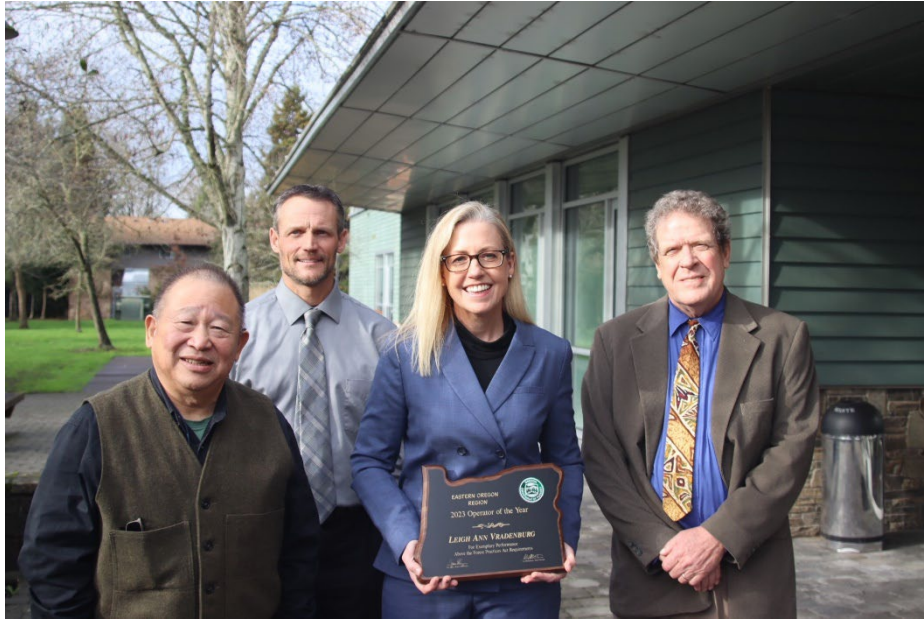
KWP continued the noxious weed spraying program funded by the USFS Secure Rural Schools Act. This program focuses on treating properties along rivers or ditches leading to rivers where weed seeds are likely to be transported to downstream neighbors. Klamath County performs the weed treatments and landowners only have to pay for the cost of herbicide with the

remainder being paid with the grant funding. In the Sprague and Keno regions 957 gross acres (38.25 net acres) were treated on ten different landowners' properties. In the Lost River region 1,667 gross acres (75.35 net acres) were treated on fifteen different landowners' properties. Pictured below is a very dense stand of Scotch thistle post-treatment.



Upland Watershed and Forest Health

KWP project manager Leigh Ann Vradenburg has been a leader and driver for the Klamath-Lake Forest Health Partnership whose mission is to facilitate restoration projects on public and private forestland in Klamath and Lake Counties through education, outreach, and diverse partnerships. The partnership connects landowners with resource managers to help them navigate partnering with government agencies for projects that work for them. This happens in conjunction with simultaneous forest management efforts by government agencies. For example, both private landowners and the government may conduct understory thinning that will prepare the land for a prescribed burn that can then occur across land boundaries to achieve greater resistance and resiliency to wildfire at a landscape scale. As a result of this work, local jobs are supported and project's woody byproducts support regional mills and manufacturing. In recognition of her years of work building these partnerships and implementing cross-boundary projects, Leigh Ann was named Eastern Oregon Operator of the Year by ODF with a picture of her accepting the award below.



For years the budgetary and capacity focus of the USFS regarding wildfires was spent on fighting existing fires. In January of 2022 they developed a new Wildfire Crisis Strategy for the next ten years that will focus on treating 20 million acres of national forests and grassland and 30 million acres on other federal, state, tribal, and private land to reduce wildfire risk to communities, infrastructure and natural resources. This strategy will also include planning for maintenance beyond 10 years. This exciting announcement will shift significant resources to preventing forest fires or mitigating their potential size and severity. The Bipartisan Infrastructure Law included funding for Community Wildfire Defense Grants which are designed to assist at-risk communities, including tribal communities, non-profit organizations, and state forestry agencies tasked with planning for and mitigating wildfire risks. Leigh Ann secured \$616,404 in the first round of applications for this funding to be focused on the Chiloquin area. This will pay for a mitigation specialist to run a brush dump program where landowners can use dump trailers to remove brush cleared from their property and will fund treating 165 acres of defensible space within 100 feet of homes for landowners that need assistance. It also will fund an education trailer focused on wildfire prevention that will also serve as a mobile information distribution point as needed during active fires. The program will begin implementation in 2024.



Work continued in 2023 on fire recovery as well in both the 242 and Bootleg fire footprints. KWP receives funding from both OWEB and the USFWS in both footprints. By having matching funders, we are able to have a larger impact on recovery. The recovery work is varied and in the Bootleg footprint it includes work to protect bull trout critical habitat. Trees were felled into streams to capture sediment during flood events and to provide cover and habitat complexity. Riparian fencing has been installed, including on Fivemile Creek, to exclude cattle and protect the diverse vegetation that provides shade and woody debris to streams and armors banks and prevents erosion. Site prep for future planting was conducted with some large standing and downed trees left behind for wildlife benefits and to promote forest recovery. A lot of this work is occurring on Green Diamond Resource Company property and they have contributed significantly to the work as in-kind match for the grants. They have performed hazard tree removal along roads and continue to as trees that were green and left behind continue to die and fall. Meadow restoration is also occurring where conifers were encroaching. This contributes to more plant diversity and allows aspen and willows to thrive. Pictured below is a flood event in August of 2023 which shows the water and energy being spread out across the floodplain due to the addition of large wood. Without this treatment more channel incision and erosion would likely have occurred which disconnects the stream from the floodplains and prevents the benefits from the natural flooding process.



The recovery work in the 242 fire was focused on smaller landowners and included removal of dead trees and site prep for replanting efforts. In 2023, 177,600 seedlings were planted on 592 acres belonging to six landowners. Bare root seedlings have had greater survival than plug seedlings as of July 2023. Outreach was conducted in 2023 to identify more landowners to continue efforts in 2024. Green Diamond Resource Company and the Oregon Department of Forestry were important partners on this project with ODF providing planting labor, technical assistance, and seedlings while GDRC provided technical and logistical support, trucking, and storage facilities for seedlings. Pictured below is a planting crew with Upper Klamath Lake in the background.



In another example of how matching funds can lead to greater results, funding from the USFS and USFWS was used on the Harmony Preserve where a ridgetop-to-ridgetop restoration was completed. 2023 field work included 226 acres of forest health and fuels reduction work, and 130 acres of sagebrush rangeland improvement through juniper removal. We were able to use a combination of techniques to provide the greatest protection to the resource, including hand cutting and piling in sensitive riparian areas along the North Fork Sprague. Pictured below on the left is a stand of thinned Ponderosa Pine with a log deck in the background. Ponderosa stands historically were much more open than today due to more frequent and less severe fires. Pictured below on the right are mostly Junipers cut to restore a historic sagebrush meadow.



As you can see KWP strives to be proactive in addressing forest health to increase resistance and resiliency to wildfires for both small landowners and on a regional, landscape scale. In addition to this preventative work, we are proud to be available to provide technical assistance or facilitate restoration projects for small landowners and large ones like GDRC.

Outreach and Technical Assistance

Some of KWP's outreach work consists of consulting with individual landowners to identify restoration opportunities that can also benefit the operations of the landowner. By developing an understanding of the goals of the landowner and working with partners, we can find common ground that achieves positive results for both. Throughout the year, KWP also participated in several outreach events facilitated by Sustainable Northwest which informed the community about our programs that could support their on-farm improvements. Shown below is an advertisement for an outreach event.

MONDAY, MARCH 20, 2023

10AM - 12PM

SPRAGUE RIVER COMMUNITY CENTER

23536 Sprague River Rd. Sprague River, OR 97639

AGENDA

10:00-10:30 - Producer Feedback

Provide your input on available program opportunities

10:30-11:30 - Listening Session

Share your operational needs and goals with natural resource representatives who can listen, provide information and support

11:30-12:00 - Breakout Session

Connect individually with program representatives to discuss your specific needs

Light refreshments will be provided

Please RSVP to Kelley Delpit: kdelpit@sustainablenorthwest.org; 661-747-8562

KWP planned facilitated meetings with multiple partners to prepare a master plan to restore fringe wetlands along the Klamath River from Lake Euwana to the Keno dam. This reach was chosen based on historical wetland losses in the geographical area and potential for future restoration. With impending dam removal lower on the Klamath River, salmonids will soon have access to this stretch that is in need of a dedicated restoration focus. The plans are intended to begin with specific restoration goals outlined for the Tule Smoke Hunt Club, adjacent to the Klamath River and a large property at the center of this reach. Outreach to identify other private landowners willing to participate in wetland restoration is also a part of this project. This area requires the need to incorporate considerations for fisheries, waterfowl, tribal, and irrigator concerns. Wetland restoration in this stretch has the potential to greatly enhance waterfowl habitat, water quality, fish passage, and irrigation water management. Below is a photo from one of the facilitated meetings.



KWP hosted a table at two educational events aimed at local youth. The Sky Lakes Health Fair added an environmental health component in 2023. Participants could “toss out pollution” or learn about fish adaptations before creating their own fish from art supplies. The weather cooperated in 2023 for a well-attended world migratory bird day in Veteran’s Park in May. Attendees learned about bird adaptations before creating their own with art supplies. Pictured below is the setup at each event.



Irrigation Efficiency and Modernization Program

Due to persistent drought, in recent years Klamath Drainage District (KDD) has consistently provided more habitat for waterbirds than the nearby refuges. By default, this area arguably has become one of the most important remaining migratory waterbird areas in the Klamath Basin. In response to the drought many agencies have promoted the idea of irrigation efficiency, which generally translates to wheel lines and center pivot sprinkler systems being installed instead of flood irrigation. Several studies have shown that irrigation efficiency often amplifies the effects of drought by reducing ground water recharge, resulting in ground water declines. Laser leveling is an alternative water efficiency technique which reduces the amount of water needed for flood irrigation while maintaining waterbird and groundwater recharge benefits. Laser leveling uses precise survey technology to move soil from high areas of a field to low areas, creating a gentle even slope across a field. Laser leveling can often reduce the water needed to flood a field by 33%. Laser leveling techniques were performed in Spring 2023 on a 196-acre field in KDD for the purposes of water efficiency. The landowner will leave a ¼ of his grain field unharvested for 4 years as an in-kind match. Incorporating unharvested grain leave would increase the carrying capacity of this field by nearly 10-fold. The ability of a field to support waterfowl is commonly estimated by calculating Duck Energy Days, which is a product of the energy needs of birds during a specific time period and the energetic carrying capacity of specific habitats. If you were to assume that fields were completely “fed out” over the period of

a month (which is consistent with field observations) then the field could support an average of 106,589 dabbling ducks versus only 11,067 ducks if no un-harvested grain were left during that month. In short, less water is needed to support 10 times the number of waterfowl. Below is a photo looking south at a laser leveled field.



Summary Balance Sheet as of December 31, 2023

Klamath Watershed Partnership currently administers approximately \$4.5 million in grant funding.

ASSETS

Current Assets	
Checking/Savings	\$ 438,624.77
Accounts Receivable	\$ 244,799.70
Other Current Assets	\$ 4,543.02
 Total Current Assets	 <u>\$ 687,967.49</u>
Fixed Assets	\$ 28,849.87
TOTAL ASSETS	<u>\$ 697,272.45</u>

LIABILITIES & EQUITY

Liabilities	
Current Liabilities	
Accounts Payable	\$ 26,349.36
Grant Advance	\$105,229.82
Payroll Liabilities	\$ 55,921.01
Total Current Liabilities	<u>\$187,500.19</u>
 Total Liabilities	 <u>\$187,500.19</u>
Equity	<u>\$509,772.26</u>
TOTAL LIABILITIES & EQUITY	<u>\$697,272.45</u>

