



**OREGON
DEPARTMENT OF
AGRICULTURE**

Invasive Noxious Weed Control Program

ANNUAL REPORT

2022

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Photo above: Metolius River headwaters



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Cover photo: Wapato Cove on the Willamette River

Invasive Noxious Weed Control Program

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Publication date: October 2023

NOXIOUS WEED CONTROL PROGRAM ANNUAL REPORT 2022

Introduction

From the Noxious Weed Control Program Manager

In 2020 and 2021, most of the Noxious Weed Program staff were moved into positions in the Hemp Program due to budget shortfalls and staffing needs and many of the usual activities of the Weed Program were not completed. During that time, the primary focus was completion of federal projects, maintaining biocontrol projects and directing limited resources to our top priority A-list noxious weed projects. The 2022 season continued to be a period of change for the Noxious Weed Control Program with retirements and new hires while also transitioning from post-Covid and hemp reassignments to normal program activities.

In 2022, staff moved back into their noxious weed positions and the program reestablished its footing to get back on track for the field season. Open positions were filled, and the goal was to make up for lost time and reestablish connections with our noxious weed partners and reinvest effort into noxious weed grants, projects, and partnerships. The program was successful in that endeavor with treatments resuming across national forests and BLM lands, establishment of new biocontrol sites and renewal of numerous federal agreements. Within those agreements, the program was able to secure new and additional funding for aquatic weeds work and expanded biocontrol projects. The program also made progress in the development of an agreement that will facilitate the hiring of new staff dedicated to the development and implementation of projects to address invasive annual grasses across the state.

I am proud of what this program is able to accomplish with the resources we have and our federal, state and local partners continue to help us leverage those resources into outcomes that protect and benefit our state's cultural, natural and agricultural resources. There is still much work to be done, which also means there is no shortage of opportunities to make progress. With the help of our partners, cooperators and the public, I am confident that we will take advantage of those opportunities to achieve meaningful results.

Oregon has over 1.5 million acres of surface water and our most critical need continues to be for an aquatic weeds specialist dedicated to protecting

those waterways. For the 2023-2025 biennium, we will maintain our focus on filling that need. We will continue refining our work plans with federal partners to ensure that state priorities are addressed while still meeting their needs. The program will also focus on strengthening our partnership with county road departments and the Oregon Department of Transportation to address roadside noxious weeds along state highways and county roads that traverse high-value resources across Oregon. With a fully staffed program, we will also be improving and expanding resources for education and outreach that will include printed and online materials.

In closing, I want to thank all of our partners and cooperators for the great work you do. As noxious weed managers, it is sometimes difficult to quantify the impacts of your work and thus, your job is sometimes thankless. When you are successful in prevention efforts, there is nothing to report and many of your most successful control and restoration projects may never be seen by more than a handful of the general public. Meanwhile, a single plant that goes untreated is noticed by all and still, you fight the good fight.

What you do is noble, it is important and it is appreciated. Thank you so much for your dedication and hard work.



Troy Abercrombie, ODA's New Noxious Weeds & Native Plant Program Manager

Staffing Changes and Retirements



Dan Son, New Central Oregon Integrated Weed Management Specialist

While the services provided by program staff remain unchanged, the faces of those who provide them include some new ones. Dan Son filled the Central Oregon IWM Specialist position left vacant by Mike Crumrine and has quickly woven himself into the fabric of the region as he's maintained existing partnerships, fostered new relationships and engaged partners across his service area.

Glenn Miller, IWM Specialist for West-Central Oregon retired in early 2022 after over 30 years with the program. Glenn filled many important roles for the program along the way, with a special knack for aquatic weeds. He performed many of the risk assessments for candidate species that were subsequently added to Oregon's noxious weed list. Glenn also played a relatively short but important role as a mentor to his eventual replacement, Troy Abercrombie, who came on board in June of 2022.



Glenn Miller, retires after 30 years with the Noxious Weed Control Program

After over 44 years of service to the Department and nearly three decades of service to the program, Tim Butler retired in 2022. His contributions are many and his commitment to the program, the agency, our partners and to protecting Oregon's resources from noxious weeds cannot be understated. We thank Tim and wish him nothing but the best in his retirement!



Tim Butler, 44 years year of service -Lauren Henderson recognizes Tim's many years of service with ODA

As of January, 2023, Troy Abercrombie has taken over as Program Manager and looks to carry on the great work of the program while bringing new energy and ideas. Troy also manages ODA's Native Plant Conservation Program and has made cross-program collaboration a top priority.

Glenn and Troy's former position was filled in June of 2023 by Grant Jackson, after serving for nearly 10 years in ODA's Pesticides Program. One month later, the program hired Mitch Lex as a seasonal staff member based out of Bend. Mitch and Rob Banks (Klamath Falls) provide support to permanent staff across all six regions of the state and for the first time since early 2020, ODA's Noxious Weed Program is fully staffed.



Grant Jackson, steps in as new Lower Northwest Integrated Weed Management Specialist



Mitch Lex, Seasonal Noxious Weed Specialist -ODA's newest hire

Program Overview

The Invasive Noxious Weed Control Program has over 45 years of successful leadership working with cooperators to implement invasive noxious weed prevention and control projects. The investment in invasive weed control has tremendous value to Oregonians. For example, a recent study, “Economic Impact from Selected Noxious Weeds in Oregon,” looked at 25 of 128 state listed noxious weeds and estimated their impact at \$83.5 million a year to Oregon’s economy. If uncontrolled, the impact potential of these weeds could rise to \$1.8 billion. For every dollar invested in Early Detection and Rapid Response (EDRR) projects, there is a \$34 benefit to Oregon’s economy.

The Noxious Weed Control Program’s role is to provide leadership, communication, and capacity for technical support to cooperators. Projects are directly tied to natural resource management strategies at federal, state, county, and local levels. Controlling invasive noxious weeds is a critical component for achieving success in conservation and natural resource protection and directly impact water quality, fish and wildlife habitat, preserving recreational opportunities, and ensuring a robust agricultural economy.

Our mission is to protect Oregon’s natural resources and agricultural economy from the invasion and proliferation of invasive noxious weeds by:

- Providing leadership and coordinating noxious weed management
- Serving as a technical resource for noxious weed issues
- Providing public outreach, education, and awareness
- Conducting weed risk assessments and listing State listed Noxious Weeds
- Implementing Early Detection and Rapid Response (EDRR) projects for new invading weeds
- Coordinating and implementing biological control of weeds
- Administering the State Weed Board Grant Program

The program has technical staff located in Salem, Grants Pass, Burns, Enterprise, and Prineville. Integrated Weed Management (IWM) Specialists serve six regions for the purpose of coordinating projects, working with local partners and implementing a statewide approach to invasive weed management. The program also employs a program manager, project coordinator, biological control entomologist, grant coordinator, program assistant, and seasonal staff to help implement projects.



Spring Staff Meeting at Oregon Gardens, Left to right, Front: Troy Abercrombie, Beth Meyers-Shenai, Carri Pirosko, Dan Son, Tristen Berg, Emily Schmidt, Joel Price Back: Tom Forney, Bonnie Rasmussen, Mark Porter, Rob Banks

Noxious Weed Control Program Staff



Staff map

Noxious Weed Control staff collaborate with private landowners, county weed programs, state and federal land managers, and other cooperators to implement integrated weed management projects throughout their regions. The program is focused on Early Detection and Rapid Response for new invading noxious weeds, implementation of biological control, completion of statewide weed inventory and surveys, technology transfer and noxious weed education, noxious weed data maintenance, weed risk assessments, and maintenance of the Noxious Weed Policy and Classification System.

Program staff work jointly with the Oregon State Weed Board (OSWB) to host meetings, give updates, provide technical support, and administer OSWB grants. The OSWB is a seven-member board appointed by the ODA Director. The primary mission of the OSWB is to provide oversight for the listing of noxious weeds,

guide statewide noxious weed control priorities, and award noxious weed control grants.

A statewide approach that engages partners has proven successful for managing noxious weeds. Weeds do not respect jurisdictional boundaries and by their nature spread from one land ownership to another. To implement an effective weed program, the Noxious Weed Control Program must foster relationships and work with private, federal, state, county, and local interests. Developing and maintaining partnerships is critical to accomplishing our program mission.

The program collaborates with federal partners to develop Memoranda of Understanding (MOU), cooperative agreements, and contracts to facilitate control projects and financially assist the program. About 40 percent of the program’s budget comes from federal sources and the balance is State Lottery Funds. Primary federal support comes from the US Forest Service Region 6 (USFS) and Oregon Bureau of Land Management (BLM).



Land ownership in Oregon, roughly 50% of the state is in federal ownership, 45% in private and the remainder in state, county, tribal, and other ownerships.

2022 WEED PROGRAM ACCOMPLISHMENTS

- Program staff implemented 72 noxious weed projects, conducted 342 treatments, completed 31 pre- and post-treatment monitoring activities, and conducted 26 weed surveys. Staff treated 469 net acres over 266,596.25 gross acres.
- Ninety-four biological control releases were made treating 470 acres, and 13 species of biocontrol agents were monitored at 195 sites in 28 Oregon counties to determine establishment and effectiveness.
- Staff gave 38 presentations and attended 149 meetings for consultation, planning, and outreach.

Oregon State Weed Board Update

The Oregon State Weed Board (OSWB) is a seven-member board, appointed by the Director of Agriculture, they serve five-year terms. Two seats are reserved for county commissioners, one representing eastern Oregon and the other representing western. The other, at large seats, represent a broad range of interests including the livestock and agriculture, nursery, timber, and other natural resource industries impacted by invasive weeds as well as interests to protect fish and wildlife, water resources and the native environment.

Program staff work jointly with the OSWB to host meetings, provide technical support, and administer OSWB grant programs. The primary mission of the OSWB is to provide oversight for the listing of noxious weeds, guide statewide noxious weed control priorities, and award noxious weed control grants. The OSWB resumed regularly scheduled meetings in 2022, three meetings were held. February, April meetings were held virtually, and a September meeting was in person in Klamath Falls. All were well attended.

Oregon State Weed Board Members

- Craig Pope, Polk County commissioner, OSWB Chair and West side representative for the Oregon Association of Counties
- Dan Joyce, Malheur County Judge, East side representative for the Oregon Association of Counties
- Margaret Magruder, Columbia County Commissioner, West side at large position board member
- Pat Holiday, Owner of Holliday Land & Livestock, Grant County, East side at large position board member
- Todd Nash, Wallowa County Commissioner, East side at large board member
- Mark Krautman, Nursery Industry representative, West side at large board member
- Chris Benemann, Director of ODA Plant Protection and Conservation Programs



OSWB Klamath Falls, September Board Meeting and Tour - Dan Joyce, Craig Pope, Pat Holliday, Margaret Magruder

2021-22 OREGON STATE WEED BOARD APPOINTMENTS

A number of changes took place with the Board between 2021 and 2022 including appointment of on new members and reappointing others. Lauren Henderson, Acting ODA Director, appointed three new members and reappointed two. Craig Pope was reappointed as the Chair, and Margaret Magruder was reappointed to her West side at large position. Shane Otley and Carson Lord left the OSWB at the end of 2022; and Todd Nash and Mark Krautman were appointed as east and west side at large members to replace Shane and Carson.



*Todd Nash,
New OSWB Member*



*Mark Krautman,
New OSWB Member*

OREGON STATE WEED BOARD GRANTS

The OSWB Grant Program is a partnership with the Oregon Watershed Enhancement Board (OWEB) and the ODA Noxious Weed Control Program. Funds reside within the OWEB and the Noxious Weed Program oversees and administers the grants. There are two grant cycles per biennium and grants are awarded annually. Under the OSWB Grant Program, staff and the OSWB work to fund as many high-priority projects as possible with the available funds. OSWB grants meet specific criteria and are used to implement projects for the protection and enhancement of watershed health and wildlife habitats. Success of the OSWB Grant Program is due to the outstanding work that is being accomplished on the ground by grantees through regional partnerships.

The OWEB board approved \$3.25 million for OSWB grants for the 2021-2023 biennium. This enabled ODA to restart the regular ODA Noxious Weed grants and ODA County Noxious Weed grants for the biennium.

- ODA reinstated the OSWB grants with a special emergency grant cycle in the spring of 2021. Noxious Weed staff worked with OWEB and OSWB to develop and open a special grant cycle and awarded 21 grants totaling \$400,800.00 in July of 2021.
- For the 2022 cycle 59 grants were received in total (12 County, and 47 Regular OSWB Grants). Noxious Weed Staff recommended funding 50 grants for a total award of \$1,555,771.00.

ONE-TIME GENERAL FUND ALLOCATION FOR NOXIOUS WEED CONTROL GRANTS

A one-time allotment of \$450,000 was allocated during the 2021-23 legislative session for noxious weed control. The funds were awarded during 2021-2023 biennium for a new General Fund Priority Noxious Weed Grant Program. The \$450,000 was awarded in April of 2022 to fund priority noxious weed grants. The goal was to fund new innovative noxious weed projects, build on existing projects, or develop programs to build CWMA's or other partnerships. This funding allowed up to \$20,000 for equipment purchase connected to the purposed project. This was a particular welcome addition because most grant programs such as OWEB do not allow the purchase of equipment.

There was a strong interest in this new grant. 27 grant applications were received with a total request of over \$711,017 and of that request \$287,714 was for equipment. The Board awarded 18 grants for a total award of \$450,000 that included \$191,192 in equipment requests. As a part of this effort, staff worked with the Director's office to offer the General Fund Grant forms on the ODA website in both English and Spanish to expand our outreach to a broader group of grantees.



Todd Pfeiffer, Klamath County Weed Supervisor with newly purchased RTV -Recipient of OSWB General Fund Grant

Risk Assessments and Noxious Weed List Update

The Noxious Weed Control Program develops risk assessments and gathers information to assist the OSWB in the decision-making to maintain and update the state noxious weed list. ODA's weed risk assessment process is used to help identify high risk species and determine which candidates should be listed.

At the February board meeting, ODA staff presented risk assessments for four species to the OSWB for consider for listing in 2022, tower of jewels, common blueweed, sweetbriar rose, and dog rose. Prior to the meeting Board members received and reviewed copies of the full assessments for each species and their scores. All four were recommended for listing with no objections and by unanimous vote by the Board.

Weed List Changes for 2022:

- Added: Tower of jewels or Pine Echium (*Echium pininana*) to the "B" List
- Added: Common Blueweed or Vipers Bugloss (*Echium vulgare*) to the "B" List
- Added: Sweetbriar (*Rosa rubiginosa*) to the "B" List
- Added: Dog Roses (*Rosa canina*) to the "B" List

Tower of jewels or Pine Echium (*Echium pininana*) – a tall unique looking costal escaped ornamental species is only known to occur in Coos and Curry Counties. The plant is in the Borage Family and is native to the Canary Islands where it is considered endangered. It grows very quickly and it's a very large plant. It produces thousands of seeds per plant. In 2013 the plant was added to the ODA internal watch list with concerns that it could spread further along the costal highways into natural areas. It can spread via garden sharing, contaminated gravel, fill, and numerous other methods.



Tall, Jurassic looking, Tower of Jewels in Coos County

Common Blueweed or Vipers Bugloss (*Echium vulgare*) – native to Eurasia, this species was recommended and listed as B-rated noxious weed. The plant was already listed in Canada and in several counties in Idaho, Washington, and Montana. A major concern is that the native climate of this plant is very similar to our climate here in Oregon. Common blueweed was found in the early 2000's along the banks of Meacham Creek and was put on the watch list in 2005. After the floods in 2020, the seeds were dispersed by the increase of water and have resulted in the plant being discovered in pastures, fields, and along roadsides in Umatilla and Union Counties.

Sweetbriar and Dog Roses (*Rosa rubiginosa*, and *Rosa canina*) - both species have been around the PNW for some time and were recommended for "B" listing. Identification can be challenge, and they can be miss identified as the native look alike roses. Sweet Briar is native to Europe, and Dog Rose is native to Europe and the Mediterranean. Their distribution and herbarium record are most common from the west side of the state, but they are much more invasive in eastern Oregon where there is likely much more to be discovered. A major concern is they are much more aggressive than native roses and they invade more open areas and create dense thickets changing the landscape.

Education and Outreach Activities

Noxious Weed Control staff participated in many statewide and regional education and outreach events, regional planning meeting, and other cooperative activities. Staff made 38 presentations and attended over 149 meetings for planning, consultation, and outreach with cooperators and private landowners.

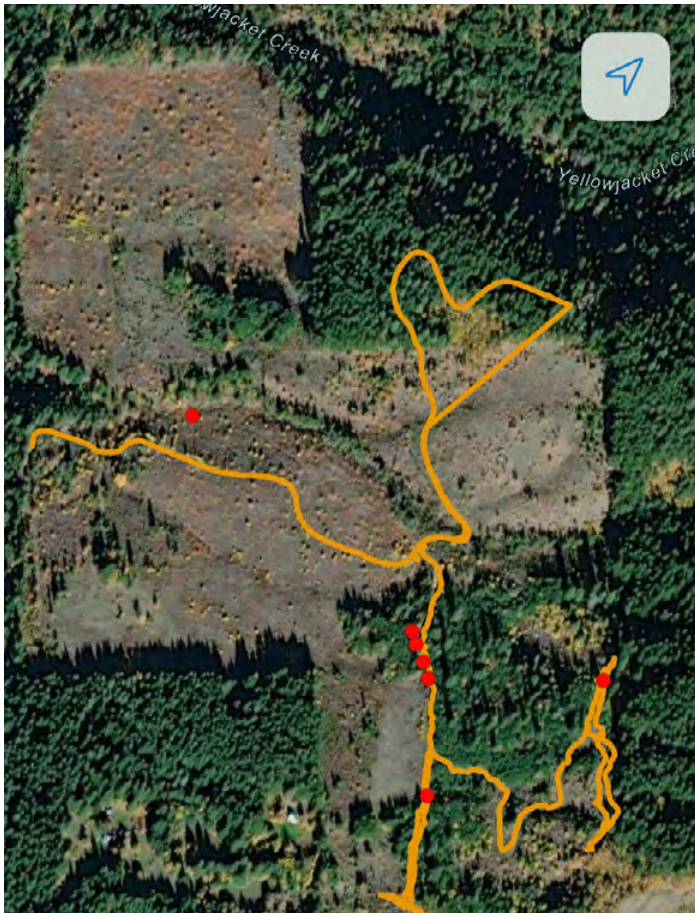
Events and Meeting Attended:

- Alyssum Working Group
- Clackamas River Invasive Species Partnership
- Columbia River Basin Flowering Rush CWMA
- Deschutes County Noxious Weed Advisory Board Meeting
- Gorse Action Group (GAG)
- Klamath County Weed Board Meeting
- Klamath CWMA Meeting
- Lake County, OR and Modoc County, CA Joint Meeting
- Linn County Livestock Association
- Linn County Weed Control Board
- Lolo Pass Hawkweed Project Planning Meeting
- Lower Columbia River Flowering Rush Work Group
- Marion SWCD Lunch and Learn
- Mt. Hood Partners Meeting
- Northeast Partners Meeting

Oregon County Weed Control Association
 Oregon Invasive Species Council
 Oregon SageCon Invasives (annual grass) Initiative Work Group
 Oregon State Weed Board Meetings (February and June)
 Oregon Vegetation Management Association
 OSU Extension Pesticide Core Training
 Pull Together (4-county CWMA)
 South Coast CWMA Meeting
 State Weed Coordinators Meeting
 Upper Deschutes Yellow Flag Iris Working Group
 Wallowa County IAG meeting
 Western Invasives Network
 Western Weed Coordinating Committee

the public on how to prevent and control the spread of invasive weeds to protect our ecosystems and, ultimately, our economy.

Oregon Invasive Weed Awareness Week was an opportunity to highlight and showcase the importance of what we do. Weed Program staff and others showcased weed control projects around the state with videos and photos posted on the program’s Facebook page and subsequently shared to others. In addition to the usual Facebook updates, videos from the National PlayCleanGo campaign was also featured which emphasized prevention measures that citizens can take while enjoying Oregon’s outdoors. This week also helped to highlight the importance and value of having active prevention and control programs at the federal, state, county and local levels for protection on our economy and natural resources.



Survey Track-Log

OREGON INTERAGENCY NOXIOUS WEED SYMPOSIUM

After being on hold for several years the Oregon Interagency Noxious Weed Symposium (OINWS) was up and running in December highlighting a fresh perspective on invasive weed management. The agenda ranged from cooperator update to the latest in technology and covered a wide number of topics over the three-day event.

OINWS was held in Corvallis at the LaSells Stewart Center on December 6-8. This event provides an opportunity for land managers and weed control professionals to share the latest ideas and information on invasive plant management and focuses on current and timely topics. OINWS is a biennial meeting that is well attended by weed management practitioners from throughout Oregon and surrounding states, over 200 people attended the symposium representing state, federal, county, and local programs.

OREGON INVASIVE WEED AWARENESS WEEK

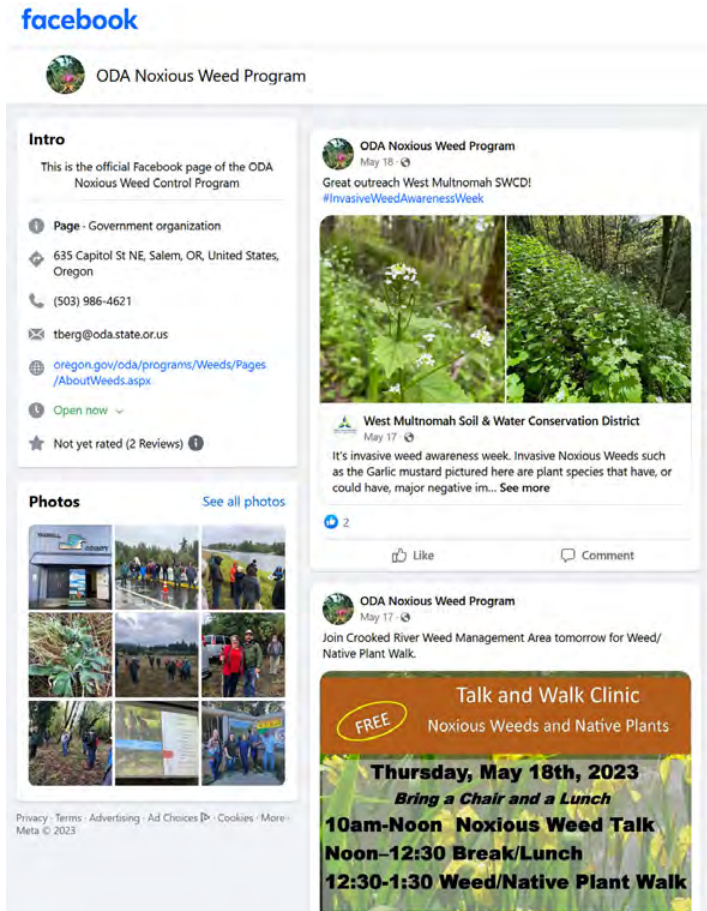
Oregon Invasive Weed Awareness Week was May 15-20, 2022. During this time, Oregonians were asked to learn more about the devastating effects of these aggressive and harmful invaders, what is being done at the local, state, and national level to fight back, and finally, what they can do to help to protect the Oregon we all love. ODA’s Noxious Weed Control staff and various partners work hard year-round to educate



OINWS 2022, Reset post-pandemic!

SOCIAL MEDIA

The Noxious Weed Control Program uses a Facebook page to post announcements, promote upcoming events, provide updates on control projects, share progress updates on grant projects, and share timely news articles to promote other weed related issues to the greater public. The program also uses Flickr, a photo-based social media site, to compile photographs of individual noxious weeds and feature outreach activities.



ODA's Facebook page

OREGON STATE FAIR WEED BOOTH

The Invasive Species Education Station trailer was loaded and delivered to the Oregon State Fair. The Oregon Department of Agriculture Noxious Weed staff and cooperators were at the Oregon State Fair Monday, August 29, and Tuesday, August 30.

Staff answered questions from the public on invasive weeds and biocontrol agents, distributed brochures, and small promotional items with a “PlayCleanGo” theme reminding them to keep their recreational gear clean to prevent the spread of noxious weeds. Hundreds of fair goers visited the booth, resulting in several invasive plant reports and connections to increase outreach opportunities. On display were the Deschutes County “Invasive Species Education Station” trailer, which featured a rotating selection of

educational videos, “Weedy” the robotic weed dog, outreach materials, and posters. The focus was on preventing the spread of invasive plants and many children tried their hand at a “PlayCleanGo” pinball game.



Over 3,000 people were engaged at ODA's Oregon State Fair exhibit

NOXIOUS WEED LIVE PLANT DISPLAY

The Noxious Weed Program has set aside space in its greenhouse and dedicated time to curate live specimens of noxious weeds and other invasive plants to assist training survey crews and citizen scientists on correctly identifying them. The plants have been brought to a number of outreach events including being prominently displayed at the program's booth at the Oregon State Fair and being used for the Oregon Vegetation Management Association's (OVMA) weed quiz at their annual conference. The specimens are also available to cooperators to check out and use at their outreach events.



Beth Myers-Shenai, ODA, Curating the Live Plant Display

Special Projects and Prevention

TREE-OF-HEAVEN SURVEY

In an effort to gather additional information and document the occurrence of tree-of-heaven (TOH) the USFS provided funding to the ODA Noxious Weed Program to undertake a statewide inventory of TOH. The Noxious Weed Control Program partnered with ODA's Insect Pest Prevention and Management Program (IPPM) to conduct the survey and IPPM survey technicians noted and documented observations while making their rounds of placing and monitoring traps for invasive insects. This effort was combined with engaging citizen scientists using the iNaturalist website to efficiently gather a robust data set of observations that begins to paint a picture of distribution of the invasive tree in Oregon. Over 3,554 total observations of TOH were documented including 2,140 research grade observations made during the May-Oct iNaturalist project period.

Some of the Achievements:

- Designed and built a tree-of-heaven data collection tool in Survey 123 that recorded location, abundance, age classes present, seed pods present, and detailed identification photos.
- Created and curated a citizen science "Oregon Tree of Heaven Tally" project in iNaturalist that launched May 15, 2022 and ran through October 15, 2022.
- Conducted trainings in June 2022 for ODA IPPM Program survey technicians on the identification of TOH and how to use the Survey123 tool; they began collecting data immediately after.
- Compiled GIS datasets of the TOH Tally and IPPM survey in a geodatabase for delivery to USFS and for use by ODA IPPM program.
- Currently analyzing photos from TOH Tally data to provide annotation on the presence of female trees where seed pods are present in photos.



Tree of Heaven growing along I-84 east of the Gorge

WEED FREE FORAGE CERTIFICATION

The Oregon Department of Agriculture completed 40 inspections for 18 growers and certified 2,570 acres as weed-free in 2022. The program has been very successful in providing certified weed-free hay and straw to meet the needs for trail users and reducing the spread of invasive weeds. The program is administered through the ODA Commodity Inspection Program and follows the North American Invasive Species Management Association (NAISMA) weed free forage standards. The USFS supports this effort through State & Private Forest Health funding to ensure weed free products are available for use on National Forest lands.

WEED FREE GRAVEL CERTIFICATION

In 2022, ODA completed the third year of the new Weed Free Gravel program that provides voluntary annual inspection and certification to quarries to provide consumers assurance their operating areas are free of problem noxious weeds. There were 6 quarries certified and 1,635,000 tons of gravel and aggregate produced. The standards for this program mirror those of the North American Invasive Species Management Association (NAISMA) with the addition of any Oregon-listed noxious weeds that are not already included. Inspections are performed by ODA's Commodity Inspection Program, which also inspect fields for Weed Free Forage certification.

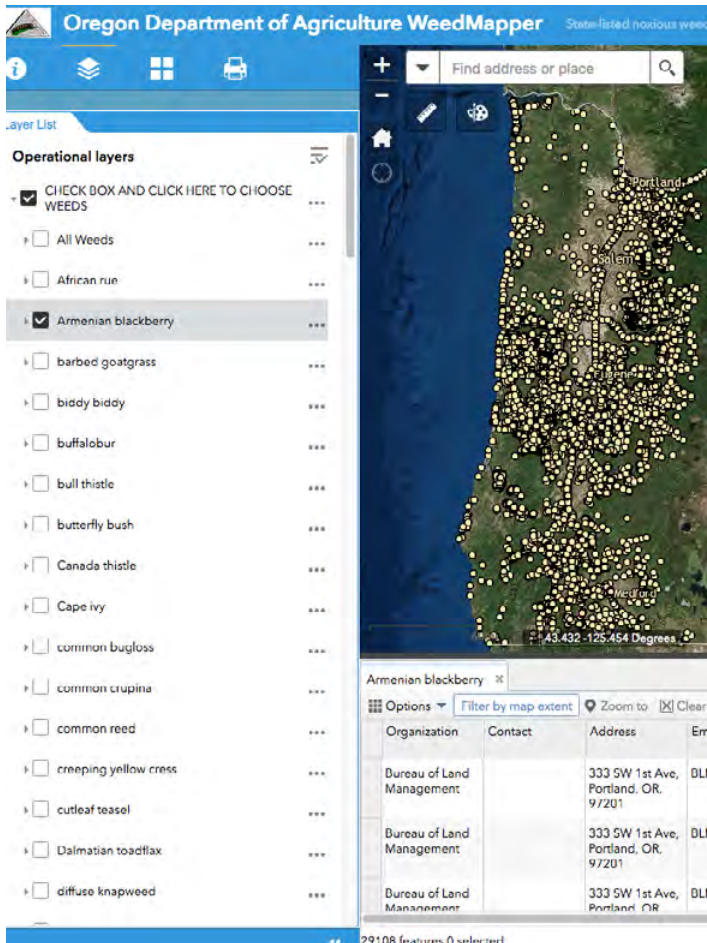


Controlling spread by bagging and proper disposal of noxious weeds

WEEDMAPPER

WeedMapper is an extensive database of Oregon noxious weed sightings displayed in an interactive website map. Each year, the Noxious Weed Program collects new reports of weed locations from multiple organizations to add to the display, much of which originates from projects funded by Oregon State Weed Board grants. The Noxious Weed Control Program has data sharing agreements with imapinvasives.org (which includes confirmed reports from the Oregon Invasive Species Hotline) and EDDMapS, both of which collect data from multiple sources.

WeedMapper is used by noxious weed managers throughout Oregon and beyond for planning, reports, and evaluating changes in weed populations over time. ODA maintains the database and completes annual updates of new weed locations from cooperators in addition to the data collected by Noxious Weed Program staff. WeedMapper updates were put on hold during 2019-2021. However, the program has now hired a temporary technician to process the backlog and recently updated the site to include all data from the 2019 through 2022. <https://oda.direct/WeedMapper>.



Weedmapper user interface

Early Detection and Rapid Response

Early Detection and Rapid Response (EDRR) is an essential focus of the program, with the goal of preventing the introduction and spread of new weed species through early detection efforts and quick implementation of control measures. The Noxious Weed Control Program accomplishes EDRR through listing and prioritizing state listed noxious weeds, developing statewide management plans, and implementing EDRR projects. Priority listed species, A-listed and T-designated noxious weeds, are of limited distribution in the state and are primary EDRR targets. Priority species are incorporated into presentations and outreach activities to increase public awareness. Pest alerts and educational materials are distributed in an effort to help locate and report new infestations. Surveys for target weeds are conducted and if found, rapid response projects are planned and implemented for eradication or containment.

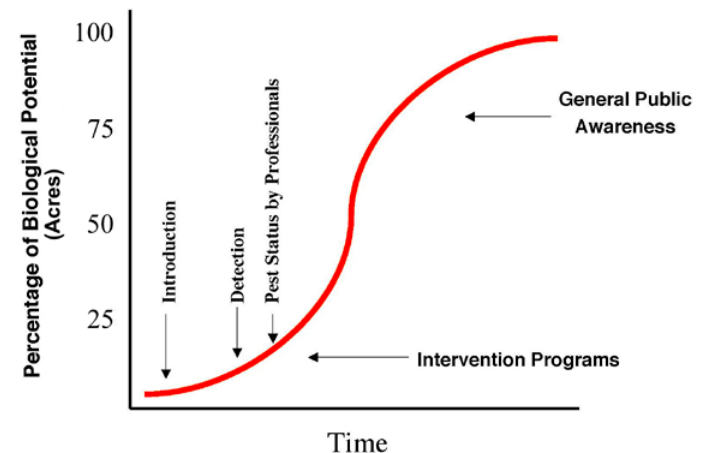
Noxious Weed Control Program staff work with state and federal cooperators, county weed programs, Cooperative Weed Management Areas (CWMAs), and private landowners to implement EDRR projects. Many EDRR projects are funded in part by OSWB grants and/or with help from federal partners. The program implements 63 EDRR projects targeting 29 A-listed and T-listed species.

EDRR HIGHLIGHTS:

ALYSSUM (YELLOWTUFT), ALYSSUM MURALE AND A. CORSICUM - A(T)

Alyssum murale and A. corsicum species are unique plants in that they can hyper-accumulate metals extracted from the soil. In the 1990s, Viridian LLC promoted the use of Alyssum for phyto-mining in the Illinois Valley. The process of using plants to

Early Detection and Rapid Response



accumulate metal from naturally high mineral rich (serpentine) soils. Viridian planted Alyssum on nine serpentine-rich sites in the Illinois Valley in southwest Oregon. The Viridian venture failed, and the project was abandoned. Alyssum spread from the planted fields and became invasive in the surrounding area. The Illinois Valley has a large concentration of serpentine soils that supports a diverse and unique flora including state and federally listed “Threatened” and “Endangered” plants, many of the planted Alyssum fields were directly adjacent to these highly valued botanically rich treasures.

Containment efforts continue in 2022 with survey and control, the Noxious Weed Control Program and partners collaborated in pushing Alyssum closer to our eradication goals. This season, a helicopter survey resulted in the detection of several new populations of Alyssum on the edges of known infested areas, all areas were manually treated following detection.



Carri Pirosko and Crew on the tarmac during 2022 helicopter survey of the Illinois Valley for Alyssum

AFRICAN RUE, PEGANUM HARMALA - A(T)

African rue is difficult to control, and containment is considered a success. Two locations have been detected in Oregon that require annual treatment. The first report was from an OSU herbarium record from the mid-1960s in Crook County and that was relocated in 1991. A second site was reported in 2008, on a tribal allotment located in the Harney Basin southeast of



African rue seedling at the Harney County site

Burns and subsequent survey revealed a project area of 2,700 gross acres and 19 landowners, including the Department of State Lands, private landowners, and tribal lands.

African rue is treated annually by the Noxious Weed Program in Harney and Crook County since the rediscovery. These efforts are largely funded by an OSWB grant in Harney County and by BLM in Crook County. Overall, both populations have been contained.

BARBED GOATGRASS, AEGILOPS TRIUNCIALIS - A(T)

Barbed goatgrass, an A-listed weed, is only known from three Oregon locations. While barbed goatgrass infests thousands of acres in California, only three populations are known to occur in Oregon. Two populations are found off of Highway 199 in Josephine County and a new population was found in 2021 near Galice (all plants were hand removed by BLM partners). The infestation extends across private, state, and federal boundaries. Support from both the Rogue River-Siskiyou National Forest and the Medford-Grants Pass BLM Office contribute to the ongoing success of this eradication project. Sites were sprayed or hand pulled in 2022 by ODA and federal crews.



Hand Pulling Barbed Goatgrass on the Rogue

CORDGRASS, SPARTINA SPP. SURVEY AND TREATMENT - A(T)

The state has maintained an excellent track record of finding and treating new infestations of cordgrass. Portland State University’s Center for Lakes and Reservoirs (PSU) and Noxious Weed Program staff have developed a comprehensive plan to implement regular surveys of 13 Oregon estuaries that are at high risk of infestation. Three species of *Spartina* have been documented in Oregon. Prior to 2013, only two species, *S. alterniflora* and *S. patens*, were known to occur. The third species of cordgrass, *Spartina densiflora*, was detected in Coos Bay during a 2013 survey.

The majority of the 2022 *Spartina* EDRR work was conducted in southwest Oregon estuaries. Both smooth cordgrass (*Spartina alterniflora*) and dense flowered cordgrass (*Spartina densiflora*) have previously been detected in Coos Bay. In 2021, Noxious Weed Program staff, in collaboration with Portland State University and Roseburg Forest Products, conducted early detection *Spartina* surveys in portions of Coos Bay. Several plants were found, and this engaged a multiagency response. Partners from the South Slough Reserve, BLM, and Coos Watershed Association assisted additional survey and eighty-six small *S. densiflora* clones were found and removed that year along the shoreline near Jordan Cove. Smooth cordgrass was found in 1995 and treated over several years east of Charleston Marina. The site was also included in the 2021 survey and no plants were observed in the area. This season staff revisited the sites and conducted a broad-scale survey of the greater Coos Bay waters. No additional *spartina* populations were detected.



ODA & PSU joint effort to dig and remove *Spartina densiflora* from Jordan Cove, Coos Bay

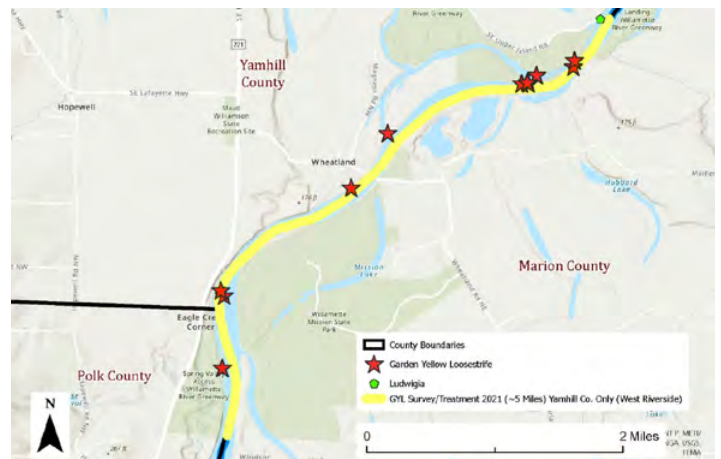
FLOWERING RUSH, BUTOMUS UMBELLATUS - A(T)

Flowering rush is a high priority for detection and control efforts in Oregon. This species is a perennial freshwater aquatic weed that grows in lakes, rivers, and wetlands. It spreads quickly by bulblets and rhizome fragments. It can invade shallow open water habitats and convert them to monocultures. Flowering rush is established in the upper Columbia River watershed, lower Yakima River, Spokane River and also occurs on the Pend Oreille, Snake, and Flathead rivers. Prior to 2014, the furthest known downstream population on the Columbia was at Two Rivers Park in the Tri-Cities, Washington. That year, several small populations of flowering rush were found in Lake Wallula on the Columbia River in Umatilla County, Oregon. Flowering rush threatens the entire downstream Columbia River system due to its ability to spread easily. A second population was detected in a private pond in Klamath County in 2017.

Surveys are conducted annually by ODA and Portland State University’s (PSU) Center for Lakes and Reservoirs and ODA staff regularly assisted the Army Corps of Engineers (ACE) and multiple partners to accomplish Early Detection and Rapid Response (EDRR) treatments for flowering rush. The Klamath County site been treated several times since 2018, but treatment was delayed in 2022 due to a change in ownership.

GARDEN YELLOW LOOSESTRIFE, LYSIMACHIA VULGARIS - A(T)

Garden yellow loosestrife, an A-rated weed, was found in 2016 on Wheatland Bar on the Willamette River along the Yamhill-Marion County line. Garden loosestrife is a riparian weed that outcompetes native vegetation and even the invasive, purple loosestrife in wetlands and shoreline settings. This new invader was quickly treated by the Noxious Weed Program and follow-up monitoring and treatment has been completed through 2022. ODA coordinated



Willamette River distribution of A-listed Garden yellow loosestrife

with Yamhill SWCD to take the lead on survey and management of the site. Survey and treatment were conducted by Yamhill SWCD funded in part with an OSWB grant. Eight new sites were detected over a two-mile stretch and treated by Yamhill SWCD during 2021 and 2022.

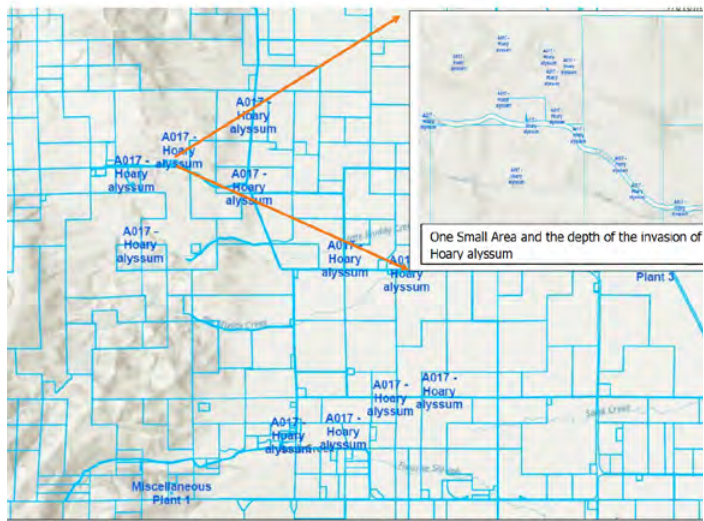
GIANT HOGWEED, HERACLEUM MANTEGAZZIANUM - A(T)

Noxious Weed Program staff collaborate with the City of Portland and Clackamas, Columbia, Clatsop, Tualatin, Tillamook, and Hood River SWCDs to monitor and treat all known locations of giant hogweed in Oregon. The majority of the sites occur in northwest Oregon in the Portland Metro area. Of the 193 known sites, 173 are considered eradicated. Overall, the number of active giant hogweed sites and plant numbers have dropped significantly since its discovery in 2001. This season ODA staff were not available, East Multnomah SWCD, Tualatin SWCD, Clackamas SWCD and City of Portland Bureau of Environmental Services (BES) managed sites in their areas.

GOATSRUE, GALEGA OFFICINALIS - A(T)

Goatsrue is a state and federally listed noxious weed. It is historically known from sites in Lane, Josephine and Klamath counties. Currently is found at one location in Clackamas County, four locations in Portland, and one site near Tualatin. Historically ODA has assisted with treatment, but in recent years has relied on partner’s for survey and treatment. Tualatin SWCD took the lead on intensive survey and treatment of the population in Tualatin. Other sites were managed by East Multnomah SWCD, Clackamas SWCD, City of Portland BES, and Metro Regional Government.

HOARY ALYSSUM, BERTEROA INCANA - A(T)



OSWB Grant, Phase I survey for Hoary alyssum by Baker County

Hoary false alyssum was listed as an A-rated weed in 2015. Prior to 2020, it occurred in two regions, one from northeast Oregon near the town of Wallowa and at sites in Deschutes County. A third population was found in Baker County near the end of the 2020 field season. Since that time hoary false alyssum has been on the increase. Pushing the limits of an A-listing.

ODA is assisting Baker County with an OSWB grant for survey and treatment. Additional sites were found during a 2021-22 survey bringing the Baker County sites to over 15,000 acres and making this the most infested area in the state. With a lapse in treatment, the Deschutes County populations are also rebounding and expanding. Survey by ODA will be conducted in 2023 to determine the extent of the populations and update our treatment strategy.

MATGRASS, NARDUS STRICTA - A(T)

Matgrass is a small perennial bunchgrass native to eastern Europe. It is unpalatable to grazing animals and can quickly render infested pasturelands unusable and outcompetes desirable or native species. Matgrass was first detected about 40 years ago in a peat pasture near Fort Klamath. The Klamath site was the only Oregon infestation until 2015 when new coastal sites were detected in Coos and Curry Counties where it threatens native flora. A fourth site was found in Clatsop on the north coast in 2016.

The Klamath County matgrass was not treated in 2020-2022 due to limited funding and staffing. Treatments are planned to resume in 2023. Staff continued treatment efforts for the south coastal prairie habitats, most of the sites are treated using federal funds. Treatments are proving successful at the coastal sites effectively reducing populations and new detections are on the decline.



New Matgrass site found at Bandon State Airport

MEADOW HAWKWEED, *PILOSELLA CAESPITOSUM* - B(T)

Meadow hawkweed has a limited distribution in northwest and is more widespread in northeast Oregon. Hawkweeds are highly invasive members of the aster family. Once established, they spread quickly forming solid mats of rosettes that displace desirable and native plants and pose a particularly serious threat to native plant communities.

The majority of the State’s northwest population occurs on the Mt. Hood National Forest on Lolo Pass in Clackamas County. The population has been successfully managed thanks to planning and coordination by the Mt. Hood Partners group. All 365 acres in the core areas, under BPA powerlines, were treated by a contract backpack crew hired by Clackamas SWCD as well as Clackamas SWCD, USFS and Noxious Weed Program staff. The City of Portland Water Bureau also covered areas within the Bull Run watershed adjacent to the corridor. In addition, ODA surveyed and treated all roads and spurs within the greater 5,000-acre project area to protect vulnerable wilderness meadow habitat. Total plant numbers are a fraction of initial populations and continue to be suppressed.

In northeast Oregon, meadow hawkweed is spread over several counties including Union, Wallowa, Morrow, and Umatilla. Meadow hawkweed control is one of the largest projects in northeast Oregon and thus involves many private, state, and federal partners. In 2020 and 2021, OSWB grant funds were significantly reduced or not available to fund these projects. The majority of hawkweed in the region occurs in Wallowa and Union counties. This season, hawkweed treatments resumed with the availability of OSWB funding, but sites have become numerous and northeast managers are not able to reach them all. Most of the historic sites have very few plants and managers cycle through treatment locations annually.



Meadow hawkweed, Lolo Pass project area, Mt. Hood National Forest

MOUSE-EAR HAWKWEED, *PILOSELLA PILOSELLA* - A(T)

Mouse-ear hawkweed is a yellow-flowered species of the aster family native to Europe and northern Asia. Similar to most other hawkweeds, it is highly invasive in pasture and meadows and is highly variable and adaptive to a wide range of habitats. One site is known to occur in Yamhill County. It was reported in 2010 by The Nature Conservancy (TNC) at a location in Gopher Valley and has spread over 20 acres in an oak woodland habitat. The site is managed for the protection of Kincaid’s lupine. The Noxious Weed Control Program treated the infestation since it was discovered until 2018 when ODA started working with the Yamhill SWCD to manage the site. In 2020-2022, with the shortage of ODA staff, the project was completed by Yamhill SWCD with the help of an OSWB grant.

OBLONG SPURGE, *EUPHORBIA OBLONGATA* - A(T)

Oregon’s largest site is located in Salem and is believed to have been introduced as a contaminant in flax seed that was grown and processed in the area in the mid-1900s. The core infestation is at the Oregon Office of Emergency Management along the south shore of a pond adjacent to Mill Creek. Several small sites continue to be monitored and treated annually. Other sites occur in Benton, Washington and Clackamas counties, as well as sites in the Portland Metro area that the City of Portland manages. Overall, the Noxious Weed Program has observed a 99% decrease in populations. In 2022, a new site was found and detected in Josephine County, a far outlier from the other NW Oregon populations.



New-found Oblong spurge population in Josephine County

ORANGE HAWKWEED, *PILOSELLA AURANTIACUM* - A(T)

Orange hawkweed is one of the most widespread of the invasive hawkweeds in terms of the number of counties where it occurs, 13 in all, but as far as acres infested it still has a limited presence. The exception is Deschutes County, where it has become abundant in areas around Bend and on the Deschutes National Forest. With the exception of some of the larger sites, orange hawkweed is treated annually. Small outlying populations were treated in the Portland Metro area, Clackamas, Clatsop, Klamath, Wallowa, and Harney Counties and at outlying sites in Deschutes County.

PATERSON'S CURSE, *ECHIUM PLANTAGINEUM* - A(T)

Paterson's curse is an A-listed weed that threatens Oregon's native habitats with the potential to invade oak woodlands, native prairies, and dry upland slopes. Despite a beautiful appearance, this invasive weed truly is a curse in that it is extremely toxic to livestock. It infests thousands of acres across Australia. Two Oregon counties have infestations, Douglas and Linn, and both sites are under intensive eradication. Both sites continue to see an overall decline in plant numbers and acres treated. The Linn County site saw a significant decline in plant numbers since 2019. Less than 4 net acres in total were treated in the state this year.



Contract crew treating Paterson's curse near Dillard (Douglas County)



Plumeless thistle, newly discovered field in High Valley, Union County

PLUMELESS THISTLE, *CARDUUS ACANTHOIDES* - A(T)

Plumeless thistle is known from four counties: Klamath, Grant, Morrow and Wallowa. Originally, plumeless thistle sites were discovered nearly 20 years ago in Grant County. A second location was found in Klamath County in 2007 and most recently, several sites were discovered in Wallowa and Morrow Counties. In a usual year the Noxious Weed Control Program monitors the sites and works with the respective counties to treat the infestations aggressively. ODA relied heavily on the Counties in 2020 and 2021, staff did not participate in plumeless thistle work due to budget shortfalls and COVID-19 during those times. ODA was able to re-engage during the 2022 season and worked with partners to help manage the four historic populations.



RAVENNAGRASS, *SACCHARUM RAVENNAE* - A(T)

Ravengrass, an ornamental grass, was listed in 2015. At the time, only a few sites were known near McNary Dam in a wildlife area managed by the US Army Corps of Engineers. Since 2015 additional locations have been found in the northeastern counties, most notably Malheur County, where many new sites are moving out of landscaped areas to roadsides and into natural areas and irrigation ditches.

Mature ravengrass in Wasco County

In 2021, ODA staff observed a new population along I-84 in Wasco County near the city of The Dalles. An initial survey was conducted, and additional plants were found at the Lewis and Clark Festival Park as well as additional sites off the I-84 corridor. ODA worked with Wasco SWCD and the city of The Dalles to develop a management plan. An OSWB grant was funded to start treatments in the area in 2022.

SQUARROSE KNAPWEED, *CENTAUREA VIRGATA* - A(T)

A historic site in Grant County has been under intensive treatment since its discovery in the early 1980s. Grant County manages the project through an OSWB grant, while the Noxious Weed Control Program continues to monitor treatment efficacy. The original project area was spread across 3,200 gross acres. Over the past 30 years, the infestation has been reduced by 99% down to a handful of plants. Grant County continues treatment of the site, only 22 plants were found, and 0.45 acres were broadcast sprayed to treat the seed bank.

TAURIAN THISTLE, *ONOPORDUM TAURICUM* - A(T)

Taurian thistle is a close relative to Scotch thistle, *Onopordum acanthium*, and has the same potential to be invasive. In Europe, it is more aggressive than Scotch thistle. Taurian thistle is lime green with large baseball-sized terminal flower heads that resemble an artichoke. The first Oregon infestation was detected and treated in Klamath County in 2007 and two additional sites were found in 2012, both sites totaled less than 200 plants and covered one net acre. ODA has not been able to consistently assist with the survey and control work and Klamath County continues to monitor and treat the sites.

WATER PRIMROSE, *LUDWIGIA SPP.* - B(T)

The Noxious Weed Control Program staff and cooperators have made efforts to increase detection and control for water primrose in the Willamette Valley over the last decade. This species, along with flowering rush and yellow floating heart, has the potential to cause significant impacts to riparian health and water resources by altering water quality, increasing sedimentation, and contributing to the loss of important habitat.

Control efforts are now being coordinated to reduce or eliminate *Ludwigia* from water bodies in outlier sites in the Willamette system. OSWB grants and Program staff are assisting with treatments and surveys in the Willamette system. Partners include the Benton SWCD, US Army Corps of Engineers Willamette Valley Projects, ODFW, City of Eugene Parks, City of Portland, Long Tom Watershed Council, OPRD,

and Willamette Riverkeeper. The majority of ODA's activities were deferred for 2022.

WELTED THISTLE, *CARDUUS CRISPUS* - A(T)

Walted thistle, first thought to be musk or plumeless thistle, was discovered in 2016 in Wallowa County. Walted thistle is only known from one other site west of the Rockies, in British Columbia, Canada. The project is seeing good success. In 2019, sites were monitored on a weekly basis through the growing season and only six plants were found. In 2022, ODA staff worked with Wallowa County's Weed manager and private landowners to monitor and treat the area. This year 240 acres were surveyed and a handful of plants were found and treated.



Wallowa County Walted thistle site prior to treatment

WOOLLY DISTAFF THISTLE, *CARTHAMUS LANATUS* - A(T)

Woolly distaff thistle was discovered in Oregon in 1987. This non-native is known to infest vast acreages in California and Australia. Elimination of seed production and seeds banked in the soil is key when battling an annual thistle. The project involves the control, survey, and monitoring of all known infestations of distaff thistle on more than 4,500 gross acres. At a minimum, each site is worked three times each year. Since the inception of this project, woolly distaff thistle has been reduced by 99% from historic levels.

YELLOW FLOATING HEART, *NYMPHOIDES PELTATA* - A(T)

Yellow floating heart is an escaped ornamental aquatic that is highly invasive in ponds and waterways. Infestations are proving to be difficult to eradicate and are requiring annual treatments. First detected in 2004 in Washington County, it is now known from Lane, Linn, Jackson, Douglas, and Deschutes counties. As of this field season, over 25 sites have been documented. The number of new sites continues to increase in western and central Oregon and in recent

years a number of new sites have been found in the Willamette River system increasing the threat and rate of spread. The Program is working with a number of partners and private landowners to manage this species including Willamette Riverkeeper, local SWCDs, local watershed councils, and the Umpqua National Forest.



Central Oregon Yellow floating heart treatment by Dan Son

In 2020-21 treatments were limited and most of the Willamette Valley and Deschutes County sites were not monitored or treated. With the hiring and refilling of the Central Oregon and Lower Northwest positions, ODA has been able to restart treatment efforts. ODA working with the county weed program monitored the Deschutes county sites and developed plans for treatment in 2022. Monitoring and treatment was conducted at on the Willamette in Dodson slough. Outlier populations in Douglas and Jackson Counties were monitored and treated and Willow Sump and Beaver Pond on the Umpqua National Forest were treated after missing a season due to fire closures. Two of the eight southern Oregon sites have been eradicated and the others are showing good progress.

Biological Control of Weeds

Classical weed biological control is the purposeful introduction of host-specific natural enemies from an exotic invasive plant's native range to an invaded range to establish a more controlled ecological equilibrium between the herbivore agent and the host, below an economic impact threshold. Since 1947, there have been 80 species of classical biological control agents introduced against 28 species of invasive plants in Oregon (34% widespread and effective, 45% actively redistributed, 21% no-longer used). These results are in line with results globally of 75% of all agents having at least minor impact, and of those 35% are considered as having major impact. The Noxious Weed Program houses the State's biocontrol database containing more than 10k biocontrol release records from federal, state, county, and district cooperators.

Forward thinking states like Colorado and California have teams of 5-10 experts working on biocontrol of invasive plants on a state level. Other states struggle, year after year, to restart programs lost during a budget crisis. With a single fulltime employee, ODA's biocontrol of noxious weeds position is a critical part of 150 researchers and practitioners working to forward biocontrol in the western U.S. and a respected part of the larger community of 300 researchers and practitioners around the world. Oregon's program provides significant insight to future direction of federal research, status of invasion control on the West Coast, and a tangible "boots-on-the-ground" application of new biocontrol agents. This position provides oversight of environmental safety and proper use statewide in alignment with USDA-APHIS policy by conducting an average of 66 site inspections across 18 counties every year.



Arizona Department of Agriculture employees pass around a container of gorse thrips as Joel Price (ODA) leads the biocontrol field tour at Smith Rock State Park for Western Plant Board.

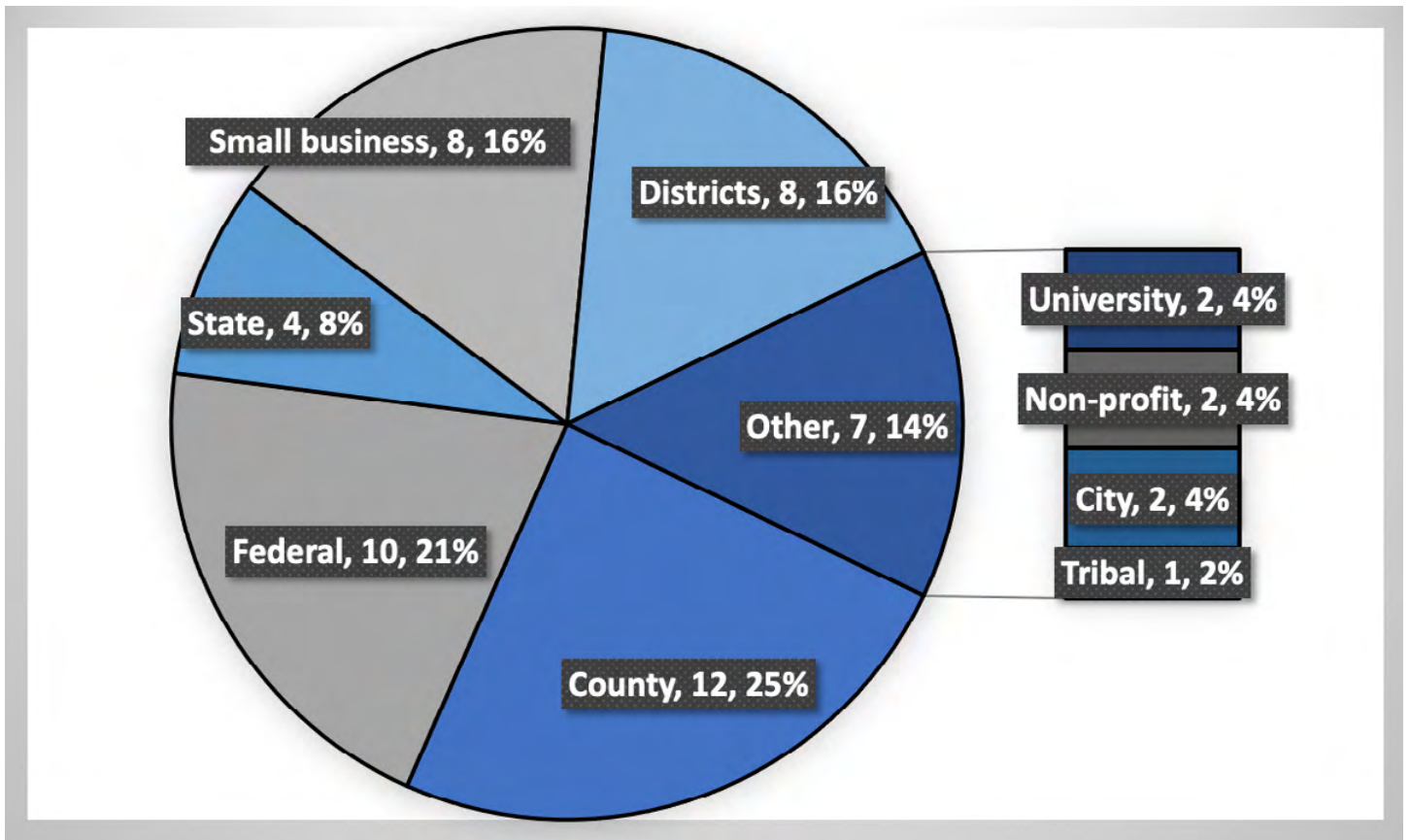
Oregon's biocontrol program originated with tansy ragwort decades ago. Despite agents being both widespread and effective, in recent years, ragwort resurges locally due to less intensive spraying, mowing, and digging in areas where biocontrol is not enough to compensate for intense grazing pressure. Much of recent years boom/bust cycles have been driven by extreme weather events. Significant time in 2020-22 was spent answering dozens of phone calls and emails requesting the state reinvigorate its biocontrol program and focus on ragwort. By August of 2022 the noxious weed reporting hotline was receiving 3-5 calls per day. In natural areas, ragwort cycles, but overall remains in significant control over historic levels. Overall, 26 tansy sites have been monitored over the last three years to track eventual patch decline as agents cycle back in. Oregon's largest problem areas in 2022 were recently abandoned ag-fields in process of new land-owner acquisition.

Accomplishments in 2022

- Restart of new yellow toadflax gall weevil (*R. pilosa*) at OR introductory site
- Created digital tansy ragwort outreach flyer
- Secured program with increased funding from USDA-APHIS-PPQ
- Installed professional grade grow lighting in Plant Health/Protection greenhouses
- Installed backup generator for greenhouses and Hawthorne facility gate access
- Upgraded greenhouse to water-conservation irrigation, reducing floor hazard
- Provided field tour of biocontrol at Smith Rock State Park for Western Plant Board
- Provided 600 gorse thrips to San Juan Co., Washington
- Provided 600 knotweed psyllids to California Department of Food and Agriculture
- Established 4 field cage colonies of knotweed psyllids at sites in western OR
- Provided Russian knapweed wasps to Confederated Tribes of Warm Springs
- Conducted Willamette Valley survey of poison hemlock biocontrol
- Recruited and trained new APHIS-PPQ technician for western OR
- Rediscovered statewide missing puncturevine agents in Irrigon, OR
- Early detection of unpermitted houndstongue agent migration into OR
- Detection of 3rd generation knotweed psyllid field population in Union Co., OR
- Conducted first significant collection of Canada thistle rust w/ USFS (30+ releases)
- Received hands-on Colorado lab training for new yellowstar and whitetop agents
- Provided Canada thistle rust samples for strain analysis at Colorado Mesa University
- Provided 8 presentations and received 6 biocontrol related trainings



Tansy ragwort decline due to biological control in Portland from 2018 (top-center) to 2022.



Collaboration with external partners in 2022 (State = OR and neighboring state agencies, Districts = Soil and Water Conservation Districts).

Table 1 - Total biocontrol activities statewide, including all collaborators.

Year	Collections	Releases	Monitoring
2019	21	25	82
2020	20	135	122
2021	24	103	66
2022	14	88	195

In collaboration with the Idaho Biocontrol Task Force, and using the Survey123 app, we expanded our permanent Standardized Impact Monitoring Protocol (SIMP) transects from 3 in 2017, 10 in 2018, 21 in 2019, to 27 in 2020. In 2022, 3 transects were read. Permanent monitoring focused on Russian knapweed (1), and whitetop (2) prerelease sites.

We continued extensive collaboration with USDA-APHIS-PPQ partners in Portland, OR and Sutherlin, OR to cover the state. By so doing we were able to continue to grow our program activities through state centered coordination. Field work began March 29th and continued till October 21st, lasting 33 days shorter than the historically long 2021 field season.

Table 2 - Field work summary for ODA biocontrol entomologist specific activities.

Year	Sites	Counties (of 36)	Field days
2018	41	16	36
2019	58	19	32
2020	54	17	35
2021	62	13	28
2022	119	28	51

Table 3 - Oregon biocontrol releases conducted in 2022 solely or collaboratively through the Noxious Weed Control Program biocontrol entomologist.

Targets	Species	Adults	Releases	Beneficiaries
Canada thistle	<i>Puccinia punctiformis</i>	50	1	Harney BLM
Field bindweed	<i>Aceria malherbae</i>	1000	1	Private
Giant knotweed	<i>Aphalara itadori</i>	12,320	6	OSU, Tillamook Co.
Gorse	<i>Sericothrips staphylinus</i>	1,920	6	Coos, ODOT, WA state
Japanese knotweed	<i>Aphalara itadori</i>	23,950	9	CDFA, Douglas Co., OSU, Gold Beach BLM, Private
Purple loosestrife	<i>Galerucella spp.</i>	57	2	Marion Co.
Russian knapweed	<i>Aulacidea acroptilonica</i>	20,282	56	Baker, Crook, Gilliam, Harney, Jefferson, Klamath, Malheur, Morrow, Sherman, TNC, Umatilla, Wasco, Wheeler Co.
Russian knapweed	<i>Jaapiella ivannikovi</i>	50	1	Colorado Dept. of Ag, Crook Co.
Spotted knapweed	<i>Cyphocleonus achates</i>	709	9	Baker, Crescent Fire District, Crook, Deschutes, Jefferson, WA state
Tansy ragwort	<i>Longitarsus jacobaeae</i>	200	2	Private
Yellow toadflax	<i>Rhinusa pilosa</i>	200	1	Union Co.
Targets	Species	Adults	Releases	Beneficiaries
2018 Total				
9	10	26,600	54	28
2019 Total				
9	11	900,472	63	29
2020 Totals				
12	13	528,705	131	33
2021 Totals				
12	13	75,710	113	41
2022 Totals				
10	11	60,738	94	31

WEED SPECIES UPDATES

The largest amount of work centered on Russian knapweed in 2022. We continued another year of sampling our midge populations and shipping to Colorado Department of Agriculture for their western states parasitoid survey. Results indicate that our midge galls produce less adults than neighboring states (seven per gall) and have higher levels of parasitism (i.e., 4%). Outside of this study we have focused efforts over the last four years on the wasp releasing over 30k across 84 sites in 12 counties. We've discovered an approximate 1% parasitism of the wasp by Eupelmids. We've also discovered a single plant can have 1,268 wasp emergence holes. Washington and Colorado monitoring is beginning to show patch declines 10+ years after release. We are observing the same at Priest Hole and Lower Succor Creek sites.

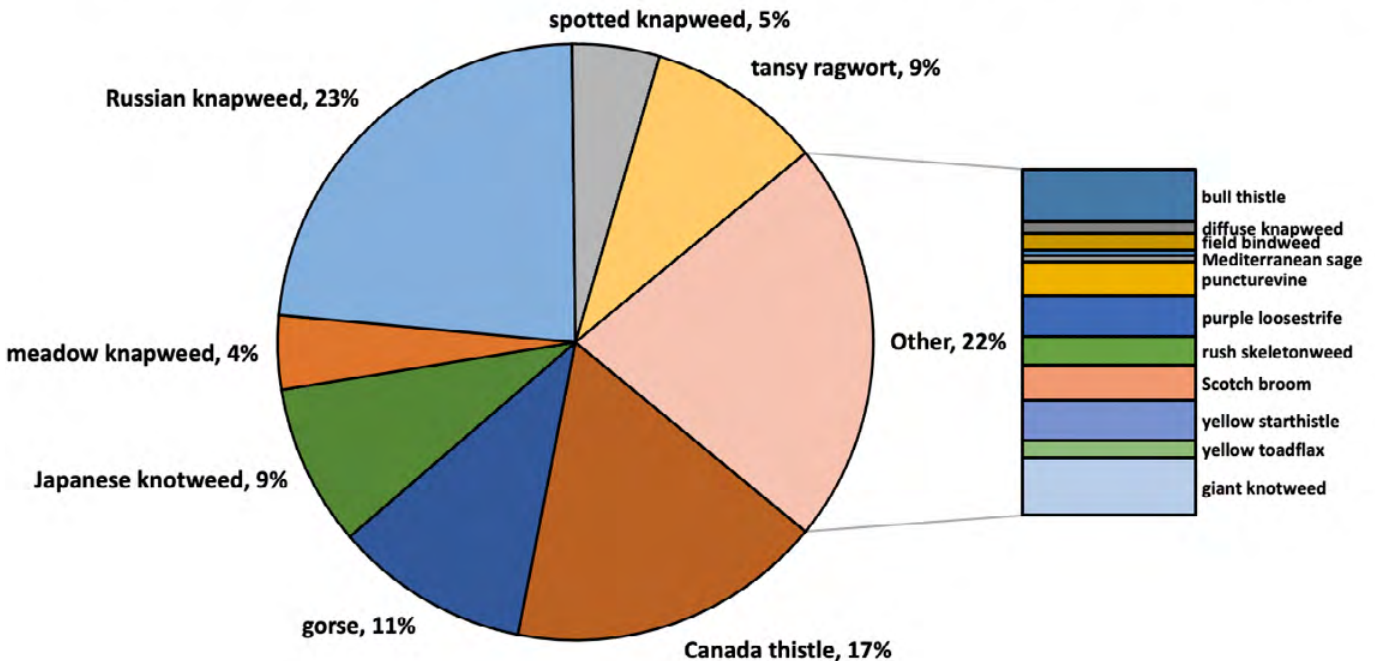
CANADA THISTLE, *CIRSIUM ARVENSE*

Our second largest area of focus in 2022 (i.e., 17% time) was *Puccinia punctiformis*. It is a naturalized rust fungus specific to Canada thistle. It was approved for redistribution by USDA-APHIS in 2017 and a USFS BCIP grant aided Colorado in supplying inoculum to many western states, including Oregon in 2018-2022, with 400 grams of inoculum this year. Jessica Brunson (USFS), Mark Porter and Joel Price (ODA) collected from the Prairie City site (1,800 grams, 2022). This



New APHIS-PPQ Technician, Stuart Hainey, uses “bug-vac” to aspirate Russian knapweed wasps from emergence cage at ODA Hawthorne labs for Eastern Oregon release shipments.

2022 OREGON BIOCONTROL OF WEEDS FIELDWORK BY TARGET



was the largest collection conducted in Oregon to date and is likely to be our best source population since the second-place site (Dean Creek Elk Viewing Area) is restricted access and subject to mowing/burning. Due to new interpretations of Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the EPA is considering all noxious weed pathogens as pesticide and has asked APHIS to pause PPQ-526 permit interstate shipments of spores and to limit treatments to experimental use permit levels. Conversations on how to proceed are ongoing. For now, we are only working with close partners and nearby study sites and not distributing to the public.



Mark Porter (ODA) collecting symptomatic Canada thistle samples from Trout Creek, Grant County (USFS).

GORSE, ULEX EUROPAEUS

Our third largest target in 2022 was gorse. The gorse thrips, *Sericothrips staphylinus*, project was founded by Dr. Fritz Grevstad, OSU, and was primarily funded by the US Forest Service. The first releases were conducted in 2020 around Bandon, OR. Thrips recovery was recorded for every major study site and noted during 22 of the 32 (69%) release location checks in 2021. Also in 2021, we established six new sites in Curry County, expanding our range further south, expanded the project beyond our borders providing thrips to Orca's Island of Washington state, and supplemented ARS-California labs. In 2022, we continued to supply Washington with two additional releases, conducted three new releases in Coos County at yet untreated outstanding infestations, and monitored 14 sites from previous years. Of the release points checked 15 had establishment (79%). At 4 sites, thrips were undetected, and 3 sites were



Jenny Price (ODA) aids in the release of gorse thrips from lab colony rearing cage at oceanfront site in Coos County.

destroyed by cutting treatment. At established sites (Coos, Curry, and Lincoln Co.) we observed 2-3 thrips per minute with a maximum of 23 thrips noted in total at a site. Assumedly, there are much more thrips deep in the shrub and further back inside the patch, which is largely inaccessible due to the large thorny nature of the plant and steep embankments on which they grow. That said, numbers should only be taken as evidence of presence and not actual abundance. 2023 efforts will focus on reestablishing Lane County site, tracking spread of established populations, and continued supplementing of WA and CA.

JAPANESE KNOTWEED, FALLOPIA JAPONICA

Aphalara itadori, at the OSU lab kept by Dr. Fritz Grevstad were permitted for release in 2020. To date we've released 56k psyllids at 27 sites in 7 counties. Predation of psyllids by ants and mites continue to slow down establishment. 2022 strategy was to increase release sizes (1,400 per release) and set out entire open cages containing 6 potted plants covered with psyllids of all life stages. This tactic was utilized in hopes of shielding the colony from the elements, making the colony more difficult for birds and wasps



Joel Price (ODA) anchoring down a caged colony of giant knotweed psyllids to survive coastal storms in Tillamook County.

to locate, and introducing vastly more insects than is possible with a single cohort, for predator satiation. We discovered the psyllids persisted the strongest at a small, isolated patch in Union County. Psyllids were introduced (1k) in May 2021. Nymphs were observed that same year in August when psyllids at other sites had long since disappeared. Curled leaves and nymphal exoskeletons were observed as evidence of persistence in August of 2022 suggesting 3-4 generations have survived in the field and successfully overwintered. It remains to be seen if field populations will continue to slowly dwindle or are adapting to life outside the lab. Future efforts will focus on introducing more robust populations from outdoor overwintered cages, obtaining wild populations from Japan, and permitting a hybrid psyllid strain shown to do well on hybrid knotweed.

SMALLER PROJECTS OF NOTE

COMMON CRUPINA, *CRUPINA VULGARIS*

Crupina fungus, *Ramularia crupinae*, was approved for release in March 2021. Mark Porter (ODA) worked with Cheryl Shippentower (Confederated Tribes of the Umatilla) to establish study plots in 2022 and will be working with Mark Schwarzlaender (U. of Idaho) to release the new agent before spring 2023.

HOUNDSTONGUE, *CYNOGLOSSUM OFFICINALE*

A seed weevil has been petitioned in 2021, is in tribal consultation, and barring any setbacks, could be permitted as soon as 2023. Meanwhile, we have been scouting northern Oregon border populations for the rapidly migrating root crown mining weevil, *Mogulones crucifer*. In collaboration with Umatilla County Weed Department, Mark Porter (ODA) aided in the discovery of Oregon's first population. Although not currently permitted for interstate shipment, this agent is known to be significantly impactful, and we look forward to monitoring houndstongue decline and native plant populations for any unanticipated non-target feeding.

POISON HEMLOCK, *CONIUM MACULATUM*

Much like ragwort, hemlock had a big year in 2022, resulting in countless public complaints to our program. Much of the observed infestations were in the Willamette Valley along Highway 22 west of Salem along ODOT rights-of-way. These areas were being left untreated. We monitored 5 sites from the coastal mountain range into Salem and found the leaf rolling moth agent, *Agonopterix alstroemeriana*, present at all sites. Defoliation was not at high levels occasionally seen in eastern Oregon, but it aided public concern to know a control agent was widespread.

TANSY RAGWORT, *JACOBAEA VULGARIS*

A historic project has recently expanded with ragwort occupying 9% of the activities in 2022. During peak

bloom, we receive 3-5 calls per day on the noxious weed reporting hotline. In 2022 we monitored 10 sites throughout the Willamette Valley. Despite the common wisdom of the wet spring being bad for agents, flea beetles and caterpillars were both present and in viable numbers at nearly all sites. We created a new digital flyer to help landowners understand the cycles, resolve concerns, and reduce time burden on outreach for staff.

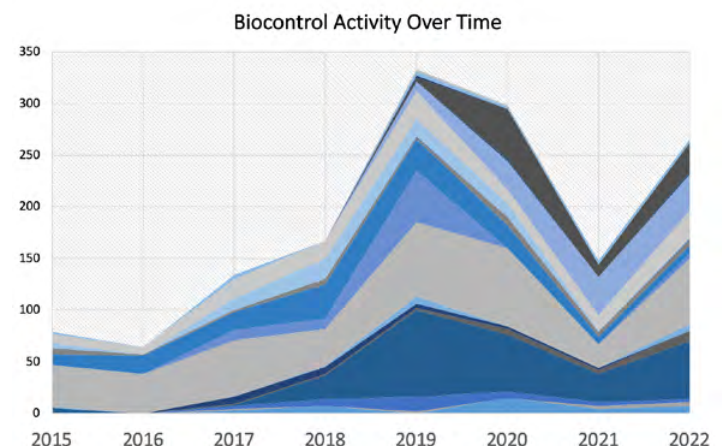
YELLOW STARHISTLE, *CENTAUREA SOLSTITIALIS*

The root crown weevil *Ceratopion basicorne*, after 13 years of waiting, was permitted in 2019. Weevils were provided to the Nez Perce Biocontrol Center, University of Idaho, CA Dept. of Food and Agriculture, and Colorado Dept. of Agriculture. The latter of which has had success rearing with intent to supply other states. Joel Price (ODA) received hands-on training on identifying the weevil and learning it's life cycle from Colorado researchers. A recently awarded Department of Defense grant with OSU should allow us to establish study sites in 2023 with insects released in the same or following year.

YELLOW TOADFLAX, *LINARIA VULGARIS*

The second release of the new gall weevil (*Rhinusa pilosa*) was shipped to Mark Porter (ODA) in Union County from USFS-MT. In 2021, 145 adults were released on a private property outside La Grande, OR. No galls were observed in 2022 so an additional 200 were released slightly uphill from first location (less flood prone).

Overall, the biological control of noxious weeds program in Oregon survived the position going into cost-savings for two years, ramped up to exceed expectations for three years, suffered from lack of support staffing/COVID activity restriction, but is now "back on track" in 2022.



Oregon Noxious Weed Biological Control Program activities from 2015-2022 including collections, releases, and monitoring. Each shade represents a different target weed, showing the change in targets over time.

Upper Northwest Region

By Beth Myers-Shenai

Weed control projects in 2022 continued to be a challenge as the program was down a seasonal technician and was not able to fill the second NW weed specialist until June. With the new specialist on board, however, the region was divided into “Upper” and “Lower” sections and the work in the region overall began to ramp back up. Fortunately, there is still strong cooperator support to help manage high priority projects in the area when ODA staff time fell short, so many projects were still able to move forward.

EDRR PROJECTS:

GARDEN YELLOW LOOSESTRIFE (*LYSIMACHIA VULGARIS*) WILLAMETTE RIVER - WHEATLAND BAR

Cost center: lottery. No staff available

Survey and treatment were conducted by Yamhill Soil and Water Conservation District (SWCD) in cooperation with Willamette Riverkeeper, with Oregon State Weed Board grant funding.

GARLIC MUSTARD (*ALLIARIA PETIOLATA*) WEST SALEM, POLK COUNTY

Cost center: lottery. A small patch was discovered on a roadside by Marion SWCD staffer Sarah Hamilton and ODA responded quickly to hand pull the plants before they set seed.



Garlic mustard in Polk County

GIANT HOGWEED, (*HERACLEUM MANTEGAZZIANUM*) GREATER PORTLAND METRO REGION, LANE COUNTY

Cost Center: Lottery. No ODA staff were available for monitoring or treatments. East Multnomah SWCD, Tualatin SWCD, Clackamas SWCD and City of Portland

Bureau of Environmental Services (BES) managed sites in the their regions.

GOATSRUE (*GALEGA OFFICINALIS*), GREATER PORTLAND METRO REGION

Cost center: Lottery, no ODA staff available to assist. Tualatin SWCD took the lead on intensive survey and treatment of a resurgence of goatsrue in the Tigard/Tualatin area after ODA helped with an initial evaluation of the area in 2021. They hired a contract crew and conducted follow-up monitoring and treatment as needed in the 20-acre site. Other sites in the region were managed by East Multnomah SWCD, Clackamas SWCD, City of Portland BES, and Metro Regional Government.

MATGRASS, (*NARDUS STRICTA*) CLATSOP COUNTY

Cost center: Lottery. ODA monitored the one known one-acre location in Gearhart that has been managed by Clatsop SWCD and North Coast Land Conservancy. All plants appeared to be treated and no regrowth was observed.



Matgrass dead roots

MOUSE-EAR HAWKWEED (*PILOSELLA PILOSELLA*) YAMHILL COUNTY

Cost center: Lottery. No staff available to assist. Yamhill SWCD is currently managing a site in Gopher Valley.

OBLONG SPURGE (*EUPHORBIA OBLONGATA*) GREATER WILLAMETTE VALLEY

Cost Center: Lottery. ODA treated populations in Salem on state and private lands and conducted outreach and treatment at one site in Washington County in cooperation with Tualatin SWCD. Other sites were managed directly by Tualatin SWCD, Clackamas SWCD W. Multnomah SWCD and by City of Portland BES.

ORANGE HAWKWEED (*HIERACIUM AURANTIACUM*) CLATSOP CO., CLACKAMAS CO., HOOD RIVER CO. & PORTLAND

Cost Center: Lottery and Mt. Hood National Forest. ODA treated populations in the Lolo Pass area of Mt. Hood (Clackamas and Hood River Counties) in cooperation with USFS, Clackamas SWCD and City of Portland Water Bureau. ODA monitored locations in Clatsop county previously treated by Clatsop SWCD and found no sign of new growth. Clackamas SWCD also managed multiple sites elsewhere in that county, including one in the Mt. Hood Wilderness. Sites were managed by Portland BES in their region.



Orange hawkweed on the Zig Zag Ranger District

YELLOW FLOATING HEART (*NYMPHOIDES PELTATA*) WILLAMETTE RIVER

Cost Center: Lottery, no ODA staff available to assist. Intensive survey and treatments were funded by Oregon State Weed board grants and managed by Benton SWCD, Yamhill SWCD and Willamette Riverkeeper. Covered area stretched from Eugene upstream to St. Paul downstream.

US FOREST SERVICE PROJECTS

MT. HOOD NATIONAL FOREST (MHNH) COST CENTER: USFS-MHNF

DIFFUSE KNAPWEED (*CENTAUREA DIFFUSA*): B-RATED

FALSE BROME (*BRACHYPODIUM SYLVATICUM*): B-RATED

GARLIC MUSTARD (*ALLIARIA PETIOLATA*): B (T)-RATED (PRIVATE)

JAPANESE KNOTWEED (*FALLOPIA JAPONICA*): B-RATED

MEADOW HAWKWEED (*PILOSELLA CAESPITOSUM*): B(T)-RATED

ORANGE HAWKWEED (*PILOSELLA AURANTIACUM*): A(T)-RATED

RIBBONGRASS (*PHALARIS ARUNDINACEA* VAR. 'PICTA') B-RATED (BPA)

SPOTTED KNAPWEED (*CENTAUREA STOEBE*): B(T)-RATED

SULFUR CINQUEFOIL (*POTENTILLA RECTA*): B-RATED

YELLOW TOADFLAX: B-RATED

Mt. Hood National Forest encompasses a varied landscape that includes wet, densely vegetated western slopes, dry open forest eastern slopes, lush river valleys, wilderness meadows and part of the Columbia River Gorge. Invasive plant populations on Mt. Hood National Forest are generally small, localized infestations with the exception of meadow and orange hawkweeds in the Lolo Pass area and spotted knapweed on the Hood River and Barlow Ranger Districts. Much work is done each year to prevent the spread of small, dispersed sites and to keep vector areas like roadsides and trailheads clear of noxious weeds.

CLACKAMAS RANGER DISTRICT

False brome and spotted knapweed was treated at all known sites along main fork and Hot Springs fork of the Collawash River (Rds 63 and 70 and spurs), and a large area of sulfur cinquefoil discovered last year was treated at the Buckeye Creek crossing of Rd 63.

Only one small Bohemian knotweed plant was discovered on the Timberlake Job Corp compound, a huge reduction in the patchy population that was 30 gross acres at its peak.

A new site of yellow toadflax at the Olallie Lake guard station cabin that was found by previous surveys was treated.

ODA surveys of the Bull Complex Fire burned area was focused on the Marion County portion of the Clackamas RD; Clackamas SWCD crews took the lead in the Clackamas County portion as well as also covering Marion County portions. ODA was tasked with treating high priority weed finds from the surveys which included a quarry infested with diffuse knapweed off Rd 6370, and spotted knapweed on heavily-infested Rd 6350-160 where treatments began and will be completed next year.

Gross Acres: 354

Net Acres: 0.43

Survey Miles: 20



Clackamas RD Yellow TF



Surveying burned areas of the Bull Complex Fire



Beth Meyers-Shenai at Pansy Lake trailhead

HOOD RIVER RANGER DISTRICT

Because of staff shortages, not all areas on the district were treated as planned. ODA focused efforts on covering the highly traveled areas and ongoing priority treatment sites. Staff also worked with the district botanist to identify some new priorities for treatment in 2022.

The new areas were the 2820 and 2821 Rd systems, where a number of dense patches of spotted knapweed that were found in 2021 by the botanist were treated for the first time, and the entire Lost Lake Rd. 13 system except for spur 1340-620 with a locked gate that couldn't be accessed. A high-priority patch of spotted knapweed was found at the boat launch & camp store parking area but couldn't be treated at the time due to heavy public use. Other focused areas of knapweed treatment were Laurance Lake Rd. 2840 and Whatum Lake Rd. 1310.

On the Hood River side of the Lolo Pass hawkweed project, USFS and ODA teamed up to cover new ground in the Ecotrust Forest Management ownership and one new patch of meadow hawkweed was found. ODA staff also focused extensively on retreatments of meadow and orange hawkweed in the remaining Ecotrust areas and cleaned up a spoils area/former log deck infested with spotted knapweed that was half USFS, half privately owned.

ODA was able to again assist with garlic mustard and false brome survey and treatment on private land adjacent to USFS near the Parkdale Ranger Station. No new patches were found and the survey was able to continue to expand to more tracts of land owned by the county in the region.

With staff shortages ODA was unable to cover the Rd. 16 area, spurs in the greater 1300 road system, and Highway 35.

Gross Acres: 2,746

Net Acres: 3.1

ZIG ZAG RANGER DISTRICT

Hawkweeds on the Lolo Pass Bonneville Power Administration corridor and surrounding forest roads continued to be targeted with ODA staff, USFS staff, Clackamas SWCD staff and contractors, BPA staff and contractors, Portland Water Bureau and other groups. Total plant numbers are a fraction of initial populations and will continue to be suppressed with annual treatments.

ODA broadcast treated a significant find of 2 acres of ribbongrass growing under the powerlines in this area.

Due to staff shortages ODA was not able to participate in Mt. Hood Wilderness orange hawkweed treatments in the meadows along the Burnt Lake trail, but Clackamas SWCD contractors were still able to get those done and plant counts continue to decline. Native forbs and shrubs continue to repopulate the sites, contributing significant competition to the hawkweed and largely preventing seed escape from under the canopy.

Treatment began on another newly-discovered patch of orange hawkweed along remote decommissioned Road 1825-380. The dense 1/10th acre patch was too large for the amount of herbicide ODA hiked in, so more complete coverage will be planned for next year.

Gross Acres USFS: 113

Net Acres USFS: 0.45



Lolo Pass Ribbongrass

WILLAMETTE NATIONAL FOREST COST CENTER: USFS-WNF

FALSE BROME (*BRACHYPODIUM SYLVATICUM*): B-RATED

SPOTTED KNAPWEED (*CENTAUREA STOEBE*): B(T)-RATED

SHINING GERANIUM (*GERANIUM LUCIDUM*) B-RATED

YELLOW ARCHANGEL (*LAMIASTRUM GALEOBDOLON*) B-RATED

DAMATIAN TOADFLAX (*LINARIA DALMATICA*) B(T)-RATED

JAPANESE KNOTWEED (*FALLOPIA JAPONICA*) B-RATED

HERB ROBERT (*GERANIUM ROBERTIANUM*) B-RATED

Primary targeted species continue to be roadside and forest spotted knapweed and false brome.

Treatments utilized truck mounted sprayers, RTV mounted sprayers, and backpacks. In most treatment areas, weed populations are stable or reduced. Key management goals on this forest are to protect vulnerable areas like logging sites from new invasions, keep invaders out of pristine and sensitive habitats, and prevent further spread off-forest from well-traveled roads and trailheads.

There are still many road closures from 2020 wildfires affecting the area.

DETROIT RANGER DISTRICT

The focus for work on this district this year was in the priority areas of lower and upper Blowout Rd. 10 and locations along and near Highway 22.

False brome, spotted knapweed, shiny geranium, herb Robert, were all treated, but active sites of yellow archangel and Japanese knotweed on the district were unable to be checked this year because of staff shortages. (Figure 5).

95 gallons herbicide mixture was applied over 1,069 gross acres.

BLM NW DISTRICT PROJECTS COST CENTERS: BLM BPA NW OR EDRR, BLM BPA NW OR KNOTWEED

JAPANESE/BOHEMIAN KNOTWEED (*FALLOPIA JAPONICA & F. BOHEMICA*) B-RATED

BLM NW OREGON KNOTWEED - LITTLE NORTH FORK WILSON RIVER COST CENTER: BLM BPA NW OR KNOTWEED

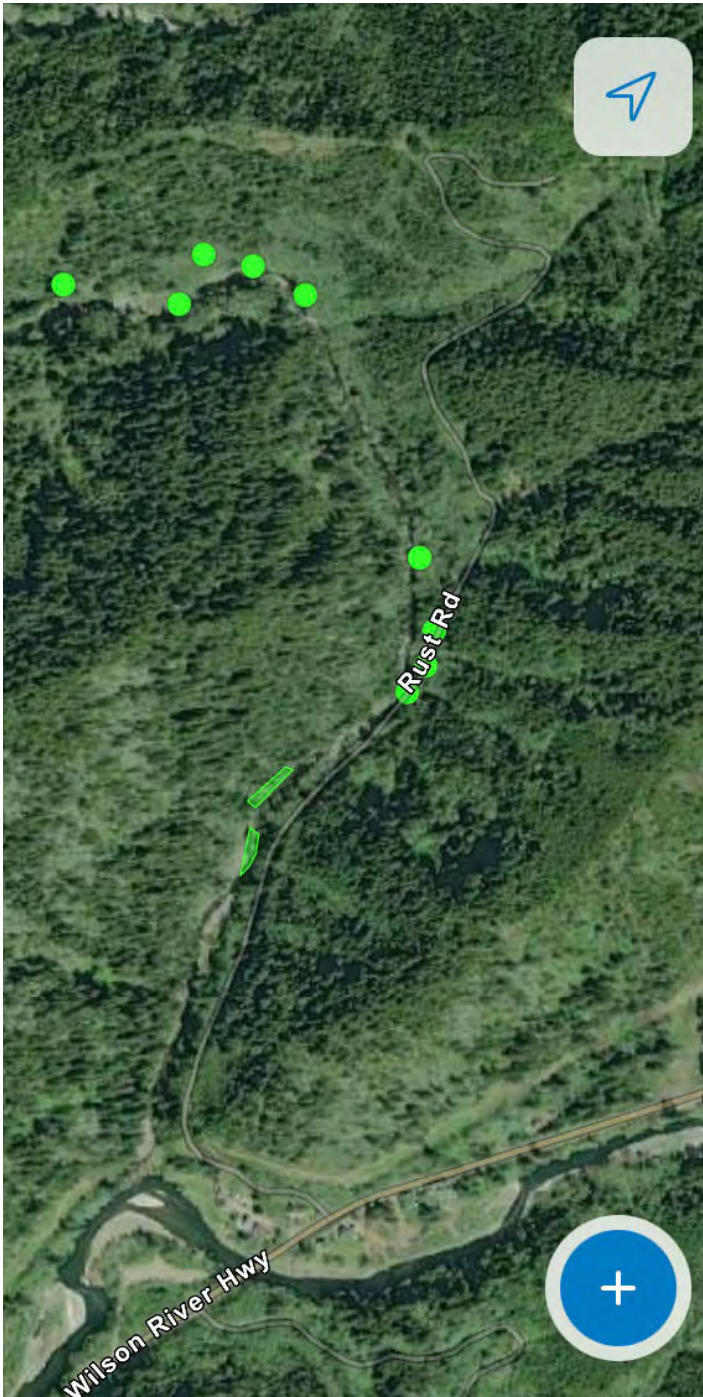
BLM funded ODA staff to survey and treat what was thought to be a patchy, limited infestation of knotweed in the Little North Fork Wilson River watershed that is spread across multiple ownerships including BLM, Oregon Dept. of Forestry, Tillamook County and private property. During an initial scouting survey in August it was discovered that it was a solid, extensive

infestation throughout the lower 1.75 miles of the watershed and beyond the capacity of ODA to manage alone in one season. After securing permission from ODF and Tillamook County managed properties, ODA initiated partial treatment within the lower ½ mile of the canyon with handgun treatments where accessible and backpack treatments in more remote sections.

Gross acres treated: 1.75

Net acres treated: 0.86

Survey Miles: 1.75



Lower North Fork Wilson River Watershed Survey



Troy Abercrombie treating knotweeds on the Little North Fork Wilson River.

Midwest Region

By Troy Abercrombie

SPECIAL PROJECTS: CONTROL OF “A” RATED SPECIES

GIANT HOGWEED, (*HERACLEUM MANTEGAZZIANUM*)

Cost Center: Lottery and S&P.

ODA was notified of a giant hogweed infestation by BLM staff at the Siuslaw field office. Plants were manually removed on BLM land and ODA is coordinating with partners to arrange treatments in 2023 across multiple land ownerships.

OBLONG SPURGE (*EUPHORBIA OBLONGATA*) CORVALLIS

Cost Center: Lottery and S&P.

ODA conducted treatments in the greater Corvallis area in coordination with Benton SWCD.



Benton SWCD, Successful Treatment of Oblong spurge -showing significant reduction in plants

YELLOW FLOATING HEART (NYMPHOIDES PELTATA) WILLAMETTE RIVER

Cost Center: Lottery.

Dodson Slough treatments resumed in 2022. Drought prevented treatments in 2021 but also mitigated spread. Current coverage is less than 10% and native vegetation is thriving in past treatment areas. The heaviest infestations occur on the lower 1/3 of the downstream end of the slough. Landowners along the slough continue to be very helpful on this project.



Continued efforts by project partners have transformed “Wapato Cove” from a dense ludwigia infestation into a thriving waterscape full of two different Wapato species.

WILLAMETTE NATIONAL FOREST

Cost Center: USFS- WNF

MCKENZIE RANGER DISTRICT

Treatments were performed at numerous sites across the district including McKenzie Bridge State Airport, Foley Ridge Road (USFS-2643) and the Aufderheide Scenic Byway (USFS 19). Additional treatments, monitoring and survey were performed on NF-1993, NF-405, NF-410 and NF-455. Target species included false brome, various knapweeds and Scotch broom in the Terwilliger Fire burn area near Cougar Creek Reservoir.



Troy Abercrombie treats false brome on the McKenzie River Ranger District with USFS botanist, Krista Farris.

False brome continues to persist along many of the roadsides and has expanded into the forest in some areas, especially where trees have been cleared. Knapweeds were sporadic where encountered, however, source populations nearby still present a threat to interior forest habitats. Scotch broom has exploded along the roadsides and adjacent forest in the Terwilliger Fire area around Cougar Reservoir as the overstory forest was heavily burned and forest floor is now exposed to greater sunlight.

315 gallons herbicide mixture applied across 503 gross acres.

MIDDLE FORK RANGER DISTRICT

Regional staff coverage and availability was limited until early July. Additionally, road and area closures related to wildfire prevented access and presented safety concerns for much of the field season. No treatments were performed on the district in 2022 but planning efforts are already underway for the 2023 season.

SWEET HOME RANGER DISTRICT

Moose Mountain (NF-2025) and Canyon Creek (FS-2022) roads were treated for false brome. Previous treatments along NF-2025 have been successful and false brome is becoming patchy but is still prevalent. Some spur roads in the system have not been treated recently and infestations were significant. More attention will be given to these areas in 2023. FS-2022 continues to be heavily infested with false brome on both sides and has moved into the adjacent forest in many areas. The FS-2022 false brome infestations are well beyond the capacity of a single regional staff member, when balanced against demand from other projects across the region.

114 gallons herbicide mixture applied over 184 gross acres.



Investments in equipment have been critical to addressing sites with difficult access like the summit road to Mt. Defiance where ODA staff surveyed and treated various knapweeds.

UMPQUA NATIONAL FOREST

Cost Center: USFS-UNF

COTTAGE GROVE RANGER DISTRICT

A small portion of Umpqua National Forest land lies inside of the NW territory. These treatment sites are along the Row River corridor and the June Mountain Road system. False brome was the target species in these areas and previous treatment efforts have been successful in containing these infestations. Large source populations do exist just outside the forest boundary and due diligence will be required to keep these populations from spreading into this part of the forest.

23 gallons of herbicide mix was applied across 305 gross acres.

Other Activities:

- Provided technical assistance to numerous members of the public via the ODA Weeds Hotline and via email.
- Consulted with local cooperators regarding treatment strategy/timing, etc.
- Provided guidance on proposals for OSWB grant funding.
- Presented to Linn County Livestock Association regarding local weed concerns and strategic planning for revival of Linn County Weed Control Board.
- Assisted on “out-of-area” USFS and BLM projects with other ODA regional staff
 - (Deschutes NF, Mt. Hood NF, Umpqua NF, Tillamook BLM, Coos Bay BLM)



A noxious weed contractor uses a chainsaw to cut dense stems of a clump of Arundo on Bear Creek in Jackson County, allowing ODA staff to more effectively spray cut stumps. This is the only known patch of Arundo along the waterway. Left unchecked, Arundo destabilizes creek banks and pushes out native trees and shrubs vital to a healthy fish-bearing waterway.



Now you see it, now you don't! Before and after treatment of an escaped population of tower-of-jewels just outside of Brookings (Curry County).

Southwest Region

By Carri Pirosko

EDRR AND SPECIAL PROJECTS:

PARTNER ASSISTANCE IN SW OREGON

Cost Center: Lottery

B-listed species include: Arundo (*Arundo donax*), Italian thistle (*Carduus pycnocephalus*), perennial pepperweed (*Lepidium latifolium*), Scotch thistle, (*Onopordum acanthium*) and tower-of-jewels (*Echium pininana*).

ODA staff assists partners across the SW region with priority B-rated noxious weeds. Time is allocated towards species that are limited in distribution, close to valued habitats, and/or clearly warrant an Early Detection and Rapid Response (EDRR).

EUPHORBIA OBLONGATA, JOSEPHINE COUNTY

Cost Center: Lottery and BLM

A-listed oblong spurge

Oblong spurge is a weedy escaped ornamental species of *Euphorbia* found in limited distribution in Oregon. Prior to a detection this season in Josephine County, oblong spurge was only known to occur in the NW part of the state. In California, oblong spurge is primarily a weed of waste areas and rangeland. Impacts can include reductions in native plant diversity, invasion of riparian areas, reductions of desirable wildlife forage and overall degradation of the land base. Significant impacts to the livestock industry could result from the toxic content of the sap, which irritates soft tissues of the mouth, throat and internal organs of cattle and horses. Affected animals have difficulty eating and may not gain weight at the desired rate. Hay products may also be rendered less valuable if contaminated with oblong spurge in addition to seed crops, which may be devalued when contaminated by spurge seeds. This species is capable of forming dense stands in more arid climates and could be expected to be a troublesome weed to control should it spread and establish in eastern Oregon.

A local contractor from southern Oregon found a population of oblong spurge at a wildlife education and rehabilitation park in Merlin, outside of Grants Pass. Plant specimens were collected and sent to the OSU Herbarium for positive identification. Plants were found in several locations at the facility, but largely located inside one of the animal enclosures. Interestingly, this part of the property is owned by the BLM and thus control measures must fit within their guidelines. Volunteers, ODA staff and the BLM hand removed the oblong spurge population in the spring and ODA staff was permitted to put out an herbicide application in the fall.



The BLM and ODA are partnering to eradicate the only known patch of oblong spurge in southern Oregon. Oblong spurge has an extensive underground root system that is tough to contend with once established across a landscape.

SPARTINA DENSIFLORA, COOS COUNTY

Cost Center: Lottery and BLM

A-listed cordgrasses are a threat to saltwater marshes and estuaries in Oregon. They can alter hydrology, biogeochemistry, and food webs of invaded areas, which can be detrimental to recreation, wildlife, and commercial resources. Estuarine native plant habitats and shell fisheries in both Washington and California have been dramatically impacted by the invasion of cordgrasses.

Both smooth cordgrass (*Spartina alterniflora*) and dense flowered cordgrass (*Spartina densiflora*) have been previously detected in Coos Bay. Smooth cordgrass found east of Charleston Marina in 1995 was manually removed over the course of several years. No regrowth has been observed since 2007. Six dense-flowered cordgrass clones were detected and manually removed in Jordan Cove in 2013. Surveys in Coos Bay resumed in 2019. Due to an increasing number of dense-flowered cordgrass clones found along the Jordan Cove shoreline, from 2019 to 2021, surveys were expanded this season. Portland State University detected two new patches of *S. densiflora* in the Port of Coos Bay. This triggered a multi-partner, broad-scale survey of greater Coos Bay waters. No further spartina populations were detected. Partners from the South Slough Reserve, the BLM, and Coos Watershed Association assisted in both a spring and fall campaign to remove all *Spartina densiflora* clones. Many new partners were trained in spartina species identification and its preferred habitats, which will greatly inform future surveys.



ODA staff and partners are working to eradicate *Spartina densiflora* from Coos Bay. This invasive cordgrass is very limited in distribution in Oregon.



Whether large or small, detection of *Spartina* is a difficult task and requires many keenly trained eyes equipped in scanning miles of valued coastal habitats.

WOOLLY DISTAFF THISTLE, DOUGLAS, JOSEPHINE, CURRY COUNTIES

Woolly distaff thistle, *Carthamus lanatus*, was discovered in Oregon in 1987. While this A-rated noxious weed is known to infest vast acreages in California, it is only found in three Oregon counties. It is important to continue to protect Oregon's range, pasture, and overall watershed health from further invasion by this non-native thistle. Elimination of seed production and seeds in the soil are both key in efforts to eradicate populations of this annual thistle. This

long-standing project involves the control, survey, and monitoring of all known infestations of distaff thistle. The Invasive Noxious Weed Control Program continues to provide supervision and coordination for this project. The late spring rains resulted in a challenging season for this project. Germination rates of woolly distaff thistle far exceeded previous seasons; areas where only a few dozen thistles would be expected grew to hundreds and in some cases, thousands.

Just over eight net acres were treated over 4,550 gross acres surveyed in 2022.

The project still realizes a 93% decrease in net acres since the program began in 1987.



Due to a long-standing eradication program, woolly distaff thistle is limited to only three counties in Oregon.



A new patch of woolly distaff thistle was found and reported by a rancher familiar with this priority noxious weed species at other leased properties in Douglas County. Late spring rains led to larger than usual patches of this noxious thistle.

PATERSON'S CURSE, DOUGLAS COUNTY

Paterson's curse is an A-listed weed species that threatens oak woodlands, native prairies, and dry upland slopes. Despite a beautiful appearance, this invasive weed is truly a curse in that it is toxic to livestock and has the potential to infest thousands of acres, as demonstrated in Australia. An infestation of Paterson's curse was found in two ownerships southeast of Dillard in Douglas County in 2004. This project is a collaboration between ODA, Elk Creek Watershed Council, Roseburg Forest Products, Cow Creek Band of the Umpqua Tribe, and private landowners.

Only 3.8 net acres of Paterson's curse plants were detected and treated this season.

This project has achieved a 96% decrease in plants since first detected in 2004.



An unusually "large" patch of Paterson's curse; late spring rains stimulated larger than usual seed germination.

YELLOW FLOATING HEART PRIVATE PONDS

Yellow floating heart, *Nymphoides peltata*, was introduced into the United States as an ornamental pond plant. Prior to being declared a noxious weed in Oregon, yellow floating heart was sold in the aquatic plant trade. Although it is an attractive plant for water gardens, if introduced into the wild, yellow floating heart can rapidly colonize lakes, ponds, and slow-moving streams, engulfing them in dense mats of vegetation.

A small, pocket of yellow floating heart plants was found up on the privately owned mud flats at Little Squaw Lake in Jackson County. This was an unfortunate detection, as cooperators thought that no yellow floating heart was remaining in this waterbody. ODA staff responded quickly and made sure that all yellow floating heart plants were treated. This area will be prioritized for survey and treatment moving forward.



Yellow floating heart treatments on the Umpqua National Forest have been very successful. Remaining yellow floating heart plants are barely visible amongst a desirable native pondweed that has emerged since treatments began. Unfortunately, some setbacks were realized this season after fire closures prevented treatment in 2021. Invasive weeds spread quickly, impacting: recreational access, water quality, native plants and associated insects and fish.

This season staff was able to access and treat both ponds located on the Umpqua National Forest in Douglas County. Skipping one year of treatments, due to fires in 2021, resulted in ground lost at Beaver Pond.

No new infested ponds were detected in 2022.

See table below for location and status of yellow floating heart treatments in southwest Oregon, ponds listed from top to bottom in order detected, 2009–2020.



Just when partners were hoping to declare an infestation of yellow floating heart at a lake in Jackson County eradicated, a small patch was detected (and treated) up in the mud flats on private ground.

Table 4 - Yellowing floating heart Status in SW Oregon

County	Location, Land use	Years Treated	Population Status/ Treatment Method
Jackson (Rogue River-Siskiyou NF)	Little Squaw Lake, USFS	8	99.9% reduction/ manual (USFS) & herbicide (private)
Douglas	Roseburg golf course, private	2	Eradicated (2020)
Douglas	Kellogg, private	9	99% reduction/ herbicide
Douglas	Elkton, private	7	99% reduction/ herbicide
Douglas (Umpqua NF)	Willow Sump, USFS	7	99% reduction/ herbicide
Douglas	Melrose, private	6	Only handful of plants/ herbicide first year, then switched to manual
Douglas (Umpqua NF)	Beaver Pond, USFS	4	60% reduction/ herbicide
Jackson	Rogue River, private	2	50% reduction/herbicide

BIOLOGICAL CONTROL MONITORING AND RELEASES

Invasive Noxious Weed Control Program staff was able to assist with releases of dalmatian toadflax, knotweed and gorse agents.

REGIONAL EDUCATION AND OUTREACH ACTIVITIES

Cost Center: BLM, USFS and Lottery

Noxious Weed Program staff gave 3 presentations, engaged in 1 workshop, and participated in 2 Statewide Committees this season.

Gorse Action Group Training (Bandon, Coos County)

Oregon State Weed Board (Virtual platform and Klamath County)

South Coast CWMA Workshop (Coos County)

Oregon Aquatic Nuisance Species Management Plan Steering Committee (Virtual platform)

State Integrated Pest Management Committee (Virtual platform)

COLLABORATIVE WORKING GROUP

Cost Center: BLM and USFS

Noxious Weed Staff organized a meeting of the Alyssum collaborative working group in southern Oregon. Funds from the USFS and BLM helped promote collaborations across southwest Oregon. The purpose of the yellowtuft *Alyssum* Working Group is to increase the effectiveness of land management agencies and the public responding to the A-rated noxious weed, *Alyssum*, in the Illinois Valley. The primary goal is to eradicate yellowtuft *Alyssum* in Oregon. Full eradication will be reached when surveys confirm that no new *Alyssum* seed is produced from known sites and no new populations are detected for at least five years.

The Yellowtuft *Alyssum* Working Group will work together to:

- Promote awareness
- Coordinate survey and treatment with all affected landowners
- Guide prevention measures
- Foster volunteer opportunities

ROGUE RIVER-SISKIYOU NATIONAL FOREST (NF)

Cost Center: USFS, BLM and Lottery

ALYSSUM: ILLINOIS VALLEY, JOSEPHINE COUNTY

Funds from both the USFS Rogue River-Siskiyou NF and the Grants Pass/Medford/Cave Junction BLM Offices are instrumental in A-rated eradication efforts for *Alyssum*. *Alyssum murale* and *Alyssum corsicum* are perennial plants native to Eastern Europe. *Alyssum* species are unique in that they can hyper-accumulate metals extracted from the soil in leaf and shoot material.

In the 1990s, a private company leased land from a handful of private and county landowners and planted *Alyssum* with prospects of phyto-mining nickel from high mineral Serpentine soils. The Illinois Valley contains the largest concentration of Serpentine soils in Oregon and supports a diverse and unique flora that is threatened by the spread of *Alyssum* species.

In less than ten years, *Alyssum* escaped planted areas to such an extent that, in 2009, the Oregon State Weed Board listed both species as A-rated noxious weeds.

The Invasive Noxious Weed Control Program, BLM, USFS, The Nature Conservancy, Cultural Ecological & Enhancement Network (CEEN), private landowners, and citizen volunteers have collaborated in pushing *Alyssum* closer to our eradication goals. In 2022, a helicopter survey resulted in the detection of *Alyssum*

on the edges of several known infested areas. In addition to aerial surveys, staff and the CEEN, visit all originally planted and escaped populations a minimum of three times each season. Alyssum populations are at such low levels that very limited herbicide is needed; plants are manually removed. At this stage of the project, particular attention is given to surveys and cooperation with landowners along infested waterways, namely the Illinois River.



Once again, helicopter was an important tool in surveying for escaped alyssum plants across known sites and along the Illinois River (Josephine County). One large Alyssum plant can be seen tucked up behind some shrubs, easily visible with a birds-eye view.



Working alyssum towards eradication takes many partners and is definitely a team effort to cover the gross acres infested; dramatic reductions have been realized across infested properties scattered across the Illinois Valley (Josephine County).

KNAPWEEDS: ROGUE RIVER-SISKIYOU NATIONAL FOREST

A limited number of spotted knapweed acres is known to occur in the Rogue River Watershed. Continual soil disturbance from wildfire, logging, road construction, and maintenance have resulted in expanded populations along Highways 140 and 230, and to a lesser extent, along Old Highway 99 and roads leading up to the Mt. Ashland Ski Resort. Noxious Weed Program staff and partners treated spotted knapweed infestations on the east side of the Rogue River-Siskiyou National Forest and USFS crews control and monitor west side infestations.

This season, Noxious Weed Program staff put out 10 gallons of mix at spotted knapweed sites along Highway 140 and at a few sites off of adjacent side roads, on federal and private timber lands.

Noxious Weed Program staff put out 2 gallons of mix at spotted knapweed sites along Highway 230.

USFS STATE AND PRIVATE FORESTRY PROGRAM & BLM COOS BAY

Cost Center: USFS S&P, BLM and Lottery

Matgrass and biddy-biddy projects are a collaborative effort funded from both the State and Private Forestry Program and the BLM Coos Bay Office who are instrumental in these A-rated weed eradication efforts.

MATGRASS: COOS AND CURRY COUNTIES

Matgrass, *Nardus stricta*, was discovered at several locations along the south coast in 2015. Matgrass, an invasive grass native to Eastern Europe, has no natural predators in Oregon, allowing it to form dense carpets or “mats” that limit the ability of native plants to establish and associated native fauna to thrive. Botanically, Blacklock Point in the State Parks Floras Lake Management Unit is noted for a unique pygmy forest and is one of the few remaining habitats for the federally endangered western bog lily.

On the south coast, matgrass seeds have spread via muddy boot treads of hikers recreating along the popular coastal trails leading out to Blacklock Point, as well as through contaminated mowing equipment used to maintain State Park lawns at two State Natural Areas: Devil’s Kitchen and Bandon Wayside. A 99% reduction in matgrass cover has been realized at Devil’s Kitchen and Bandon Wayside just south of Bandon in Coos County. Seven years of treatment have been completed along trails at Blacklock Point in Curry County; Imazapyr herbicide is proving to be an effective tool. Treatments have been a collaborative effort between Oregon State Parks and Recreation Department, Oregon Department of Aviation, and ODA Noxious Weed Program staff. A population of matgrass that was detected in 2021 at the Bandon State Airport was treated by staff, assisted by volunteers.



A treated clump of matgrass stands out amongst the maintained landscaping at a popular State Park Natural Area in Coos County where only half a dozen matgrass clumps remain. Matgrass is only known to occur in four counties in Oregon.

BIDDY-BIDDY: COOS COUNTY

Biddy-biddy, *Acaena novae-zelandiae*, a native to New Zealand, likely spread to the United States in the wool of imported sheep. Plants thrive in well drained soils and compete with native plants on coastal bluffs and in lawns where they form dense mats. High traffic locations in coastal habitats where some summer moisture occurs and frosts are infrequent are subject to invasion.

To date on the south coast, biddy-biddy is known to occur in pockets along the coastline in Coos and Curry counties. Biddy-biddy targeted for treatment included populations at the Cape Blanco State Park (lighthouse) and USFS Ranger Station in Gold Beach.

Populations at the Cape Blanco lighthouse have been reduced to a level that State Park staff can now oversee the treatment without the assistance of partners. Treatment of infested lawns at the USFS Ranger Station in Gold Beach are ongoing.

UMPQUA NATIONAL FOREST

Cost Center: USFS

YELLOW FLOATING HEART

Two yellow floating heart infested water bodies occur on the Umpqua National Forest. Willow sump was detected in 2011 and has been treated by Noxious Weed Program staff for 7 years. Yellow floating heart was estimated to blanket 1.2 acres of this 2-acre pond when it was first detected. Percent cover has been reduced by 99% over the course of the project; very little ground was lost due to skipped treatment last season due to wildfire closures preventing access to the pond. Beaver pond was detected in 2017 and was treated for the first time in 2018. Yellow floating heart was estimated to blanket 0.75 acres of this 3-acre pond before treatments this season. Wildfire closures in 2021 prevented access and thus no treatments occurred last season. Ground was lost after missing a single year of treatment; acres controlled decreased an estimated 15% from 75% control in 2020 to 60% control in 2022.

SPOTTED KNAPWEED

Knapweed control is a high priority on the Umpqua NF in eastern Douglas County. The USFS intensively surveys and monitors both knapweed species across the forest. Noxious Weed Program staff typically assists with herbicide treatments at larger sites, while the USFS manually removes smaller patches. This federal-state partnership has resulted in a steady decline of spotted knapweed on the Umpqua NF. This season knapweed sites across the forest were treated by Diamond Lake Ranger District seasonal crews.

BLM GRANTS PASS/MEDFORD DISTRICT

Cost Center: BLM

Noxious Weed Control Program staff collaborates regularly with the Grants Pass/Medford BLM District staff and seasonal crew. The Medford BLM District is also instrumental in funding Jackson and Josephine CWMA groups, resulting in valued B-rated weed control across the region. This season, a new Botanist joined the Grants Pass BLM District Office and was able to fully engage with her seasonal crew and visit all priority A-Rated Noxious Weed sites across the District.

BARBED GOATGRASS: JOSEPHINE COUNTY

Barbed goatgrass, *Aegilops triuncialis*, is an annual that invades rangeland, grasslands, and oak woodlands. When mature, it is unpalatable to livestock and can cause injury to grazing animals. Goatgrass infestations can reduce forage quality and quantity. Because livestock tend to avoid this weedy grass, dense stands form that push out natives and desirable forage.

While barbed goatgrass infests thousands of acres in California, only three populations are known to occur in Oregon; all populations occur in Josephine County.

The most recently detected population of barbed goatgrass is just beyond Galice, off of a popular hiking trail just across from Rainie Falls. All plants at this site were hand removed via a combined effort of ODA staff and the BLM. The other two populations are found off of Highway 199. One site is just south of Selma in Gold Canyon and was sprayed once again this season. The Rough and Ready Creek area, south of Cave Junction was manually removed during two collaborative partner events; 1 bag of plants was removed this season. Several sites downstream from the Rough and Ready infestation on the Illinois River were hand-pulled and bagged this season as well (less than 100 plants).

Support from both the Rogue River-Siskiyou National Forest, the Medford-Grants Pass BLM Office, and the locally based Cultural & Ecological Enhancement Network lend to the ongoing success of this eradication project.



BLM and ODA staff quickly knocked out a patch of barbed goatgrass detected last season off of a popular hiking trail along the Rogue River.



While difficult to find, barbed goatgrass is easily pulled once detected.

BLM COOS BAY

Cost Center: BLM and State and Private Forestry

BLM COOS AND STATE AND PRIVATE FORESTRY

Funds from both the State and Private Forestry Program and the Coos BLM Office were instrumental in coastal work conducted on behalf of the Gorse Action Group and A-rated eradication efforts for matgrass and Cape ivy.

GORSE ACTION GROUP (GAG)

Dense populations of gorse create a fire hazard in populated coastal regions, destroy native coastal habitats, decrease land values, and degrade valued forage ground. The GAG is working to control and reduce the spread of gorse, minimize the impact of gorse to the coastal economy and natural resources, and provide a successful process to share with others facing gorse infestations. Gorse Action Group participants include: federal and state agencies, local and county governments, non-profit organizations, private industry, and private landowners. In 2017, GAG partners signed a Declaration of Cooperation at the end of a Regional Solutions process. Noxious Weed Control Program staff was able to reengage in 2022 and attend all partner meetings, both virtual and in-person.

MATGRASS

Matgrass is an invasive grass native to western Asia and southern Europe and has no natural predators in Oregon, allowing it to form dense carpets or “mats” that limit the ability of native plants to establish and associated native fauna to thrive. Four populations of matgrass are currently under control on the south coast: a site at the Bandon State Airport was treated for a second season, continued reductions were realized at Cape Blanco Airport/Blacklock Point/Floras Lake Unit, and dramatic reductions maintained

at two State Park locations in Bandon. Fall treatments were conducted in addition to early summer treatments this season.



Treatments at the Bandon State Airport have been very successful as seen by the many dead matgrass clumps in a depression where water collects amongst the young pine trees.

CAPE-IVY

Cape-ivy, *Delairea odorata*, listed as an A-rated noxious weed in 2015, is considered to be invasive in California, Hawaii, and Australia. An extensive rhizome system makes it challenging to control and its vines form dense mats of vegetation that extend over trees and shrubs, killing understory plants and eventually trees vital to a functioning riparian system. Populations are known to occur between Ophir and Brookings in Curry County. No new sites were detected in 2022; the total number of Cape-ivy sites in the state remains steady at 20. ODA Noxious Weed Program staff collaborate with the Curry SWCD in survey, control, and monitoring of Cape-ivy populations in Curry County.



Only 20 patches of Cape ivy have been detected in Oregon. ODA staff partners with the Curry SWCD as we work to eradicate this climbing invader.

North and South Central Region

By Dan Son

NORTH AND SOUTH CENTRAL EDRR AND SPECIAL PROJECTS

BIOCONTROL DISTRIBUTION

Cost center: Lottery and S&P

During the 2022 season ODA personnel in cooperation with the U.S. Forest Service and Colorado Department of Agriculture participated in a study which assesses the likelihood of parasitism in *Jaapiella ivannikovi*, the Russian knapweed gall midge. Gall samples were collected 3 times from 3 different sites throughout the growing season in North Central Oregon and shipped to Colorado Department of Agriculture where the research is being performed. Testing the midge adult's survival rate after distribution and shipping is also a goal of the study.

Jaapiella ivannikovi, and *Cyphocleonus achates*, the Knapweed root weevil, were collected and released across the region. One release of *Jaapiella ivannikovi* was made in the Bear Creek drainage in Crook County, while *Cyphocleonus achates* were released in North Klamath County, and the Deschutes National Forest. The release in North Klamath County is at a higher elevation which may be more sustainable for *Cyphocleonus* populations compared with releases made at lower elevations where extreme climatic fluctuations tend to exist.



Cyphocleonus achates on Spotted knapweed.



Kaito Lopez, USFS, making a release of *Cyphocleonus achates* on the Deschutes National Forest Sisters Ranger District.

PRIVATE LAND NOXIOUS WEED TREATMENTS

Cost Center: Lottery and S&P

Throughout the Central Region, and the state, ODA conducts herbicide treatments, and surveying and inventory, on isolated patches of state listed “B” rated noxious weeds, and to “A” rated noxious weeds. In 2022, ODA staff in Central Oregon took the lead and treated “A” rated noxious weeds: Matgrass (*Nardus stricta*), Orange Hawkweed (*Hieracium aurantiacum*), and Yellow Floating Heart (*Nymphoides peltata*). Local cooperators took the lead as ODA assisted on “A” rated noxious weeds: African Rue (*Peganum harmala*), Ravennagrass (*Saccharum ravennae*), Plumeless Thistle (*Carduus acanthoides*), and Taurian Thistle (*Onopordum tauricum*).

In the latter part of the 2022 season, an historic site of Hoary Alyssum (*Berteroa incana*) in Deschutes County was confirmed to still be active. Plans to re-establish a treatment plan for this site and the area are already underway and will be fully implemented in 2023.



The only known Hoary Alyssum site found to date in Central Oregon.

The only known site in Central Oregon of Flowering Rush (*Butomus umbellatus*) is in Klamath County. This property has changed ownership and treatment has paused. Plans to establish communications with the new landowners is underway and cooperation is anticipated. Treatments are expected to resume in 2023.

2022 was the first time since 2019 that ODA was involved with the treatments on Matgrass in Klamath County, a project that has been ongoing since 1962. Together with the landowner 5.7 net acres were treated while covering 208 gross acres. In 2019, 4.8 net acres were treated while covering 318 gross acres. Plans are underway for multiple coordinated treatments involving ODA and local cooperators in 2023.



Before and after treatment photos of a Yellow floating heart pond in Deschutes County.

After extensive surveys and inventorying in 2021 of Yellow floating heart, treatments were performed on (3) private ponds in Deschutes County. A 0.25 acre and 0.5 acre pond were more than 95% infested with Yellow floating heart, while the 1.25 acre pond was about 30% occupied. The 0.5 acre and 1.25 acre ponds required repeat treatments, while the 0.25 acre pond remained free of Yellow floating heart following its initial treatment. Monitoring and treatment is expected to continue on these ponds, while on-going outreach and education ensures rogue populations do not gain a foothold.

Treatments of “A” rated Orange Hawkweed continued along the Deschutes River and in the Deschutes National Forest. Within the Deschutes National Forest Orange Hawkweed exists in the Pringle Falls, and

Tetherow Log Jam areas. Due to its dangerous and seemingly inaccessible location, the Tetherow Log Jam continues to be a seed source of Orange Hawkweed for areas along the Deschutes River. New sites of Orange Hawkweed were confirmed downriver from the log jam, at LaPine State Park. In coordination with Oregon Parks and Recreation Department, ODA treated the site within LaPine State Park. Coordinated efforts among regional partners are underway to treat additional sites of Orange Hawkweed during the 2023 season. Aside from the sites within the Deschutes National Forest, Orange Hawkweed sites in Crook, Klamath, and Deschutes Counties continue to exist mainly in urban and landscaped areas. Nonetheless, it is of high priority that these sites remain a target whereas to protect our wild and scenic areas and the ecological importance they possess.

In 2022, ODA treatments of Orange Hawkweed on the Deschutes NF totaled 0.02 net acres compared to 0.05 in 2019 and 0.01 net acres in 2020. No treatments were conducted by ODA on Orange Hawkweed in the Deschutes NF in 2021.

Klamath County Weed Control, in cooperation with ODA, provided treatment on state listed “A” species in Klamath County including: Plumeless Thistle (*Carduus acanthoides*) and Taurian Thistle (*Onopordum tauricum*). Crook County Weed Control, in cooperation with ODA spot treated 1 plant of African Rue (*Peganum harmala*) in Crook County. Thanks to the dedication and commitment of local partners to the preservation of our natural resources these class “A” noxious weeds are being well monitored.



Klamath County Weed Control Supervisor, Todd Pfeiffer, treating Taurian Thistle.



Crook County Weed Control Supervisor, Kev Alexanian, motoring for noxious weed control.

The site of Ravennagrass (*Saccharum ravennae*), that was discovered in Wasco County late in the 2021 treatment season was treated by Wasco SWCD and The City of The Dalles. ODA staff coordinated these efforts and maintains great communication with the partners involved in the treatment of Ravennagrass along the Columbia River.

NORTH AND SOUTH CENTRAL BUREAU OF LAND MANAGEMENT FUND PROJECTS

KLAMATH FALLS RESOURCE AREA BLM NOXIOUS WEED TREATMENT PROJECTS

Cost Center: BLM

In 2022, three regions within the Klamath Falls Resource Area (KFRA) were the focus of treatment and survey; Bryant mountain, Gerber reservoir, and Grizzly mountain. Noxious weed species in these areas include: Canada thistle, Dalmatian toadflax, Diffuse knapweed, Dyer’s woad, Leafy spurge, Mediterranean sage, Musk thistle, Scotch thistle, Spotted knapweed, and Yellow starthistle. In the boundaries of KFRA ODA staff treated 14.4 net acres of noxious weeds over 36,006 gross acres in 2022 compared to 20 net acres over 47,371 gross acres in 2021.



Dyer’s woad along a forest road in the Grizzly Mountain project area within the BLM Klamath Falls Resource Area.

In May of 2022 ODA coordinated an in-person and virtual meeting among the Cross Border Dyer’s woad Working Group. The working group is a collaborative project with representation from county, state, and federal agencies in Klamath, Lake, Modoc, and Siskiyou counties. ODA, BLM, USFS, Lake County CWMA, Siskiyou County, Modoc County, USFWS, and Klamath County were the partners involved in this meeting. The result of this meeting led ODA to focus

its treatment efforts of Dyer's woad to the Grizzly Mountain area in Klamath County. The first phase of this treatment was focused on heavily used roads, road shoulders, and pullouts. Continued collaboration and cooperation among the working group is anticipated in 2023 and beyond.

- In the boundaries of KFRA ODA staff treated 14.4 net acres of noxious weeds over 36,006 gross acres in 2022 compared to 20 net acres over 47,371 gross acres in 2021.

NORTH AND SOUTH CENTRAL FOREST SERVICE FUND PROJECTS

Cost Center: USFS

DESCHUTES AND OCHOCO NATIONAL FOREST

DESCHUTES NATIONAL FOREST

The Oregon Department of Agriculture has a long-standing partnership with the Deschutes National Forest to complete noxious weed control activities, including biological, mechanical, and chemical treatments. During the 2022 season noxious weed control activities accounted for 112.3 net acres across 19,983 gross acres on the Deschutes and Ochoco National Forests, and the Crooked River National Grasslands. Herbicide treatments were performed in gravel pits, roadsides, campgrounds, recreation areas, open forest, rangeland, and riparian areas. The noxious weed species found within these habitats include: Diffuse knapweed, False brome, Medusahead rye, Perennial peavine, Ribbongrass, Spotted knapweed, St. Johnswort, and Yellow Flag Iris.

Treatments on the Deschutes National Forest occurred within the Bend-Fort Rock and Sisters Ranger Districts. The majority of these treatment efforts were focused on Spotted knapweed control which accounted for 30.7 net acres.

The most notable and highest profile project within the Deschutes National Forest continues to be the treatment of Ribbongrass and Yellow Flag Iris on the Metolius River. This cooperative project among ODA, USFS, and Friends of the Metolius has been on-going since 2013. Treatments in 2022 were conducted on all known Ribbongrass and Yellow Flag Iris locations along the eleven mile stretch of the Metolius River. Over two days, four ODA employees alongside three Forest Service personnel and one representative from Friends of the Metolius covered 11 miles of private and federal lands along the Metolius River. In areas where Ribbongrass once dominated the landscape establishment of more desirable flora has been observed, making this project a long-term success. 0.26 net acres were treated over approximately 338 gross acres within the Metolius River treatment area.



ODA Noxious Weed Program staff, Dan Son, Troy Abercrombie, Beth Myers-Shenai, and Rob Banks geared up and ready to tackle the Metolius River Ribbongrass project.

- 112.3 net acres treated across 19,983 gross acres on the Deschutes and Ochoco National Forests.
- 0.26 net acres treated in 2022 compared to 1.04 net acres in 2021 on the Metolius River.

OCHOCO NATIONAL FOREST

During the 2022 season, ODA staff treated Diffuse knapweed, Houndstongue, Medusahead rye, Scotch Thistle, and Spotted knapweed in the Ochoco National Forest and Crooked River National Grasslands.



ODA and USFS staff treating isolated patches of Houndstongue in the Ochoco National Forest.

The treatments conducted within the Ochoco National Forest will minimize the spread of invasive species into critical elk and mule deer habitats.

- 85 net acres treated over approximately 2,040 gross acres within the Ochoco National Forest and Crooked River National Grasslands.

REGIONAL EDUCATION AND OUTREACH ACTIVITIES

During the 2022 season, noxious weed program staff participated in various meetings with cooperators in Crook, Deschutes, Jefferson, Klamath, Sherman, Wasco, and Wheeler Counties. Noxious weed program staff met with various public and private land managers to develop plans for future projects as well as the discussion of current noxious weed issues. In cooperation with local partners, the Noxious Weed Program organized and coordinated meetings of the newly formed Klamath County Cooperative Weed Management Area, the Upper Deschutes Yellow Flag Iris Working Group, and the Cross Border Dyer's woad Working Group. Other meetings regularly attended include: Crooked River Weed Management Area Board, Deschutes County Noxious Weed Advisory Board, Klamath County Weed Advisory Board, Oregon State Weed Board, and Wheeler County SWCD Board.

Northeast Region

By Mark Porter

EDRR AND SPECIAL PROJECTS

FLOWERING RUSH, BUTOMUS UMBELLATUS, MORROW AND UMATILLA COUNTY

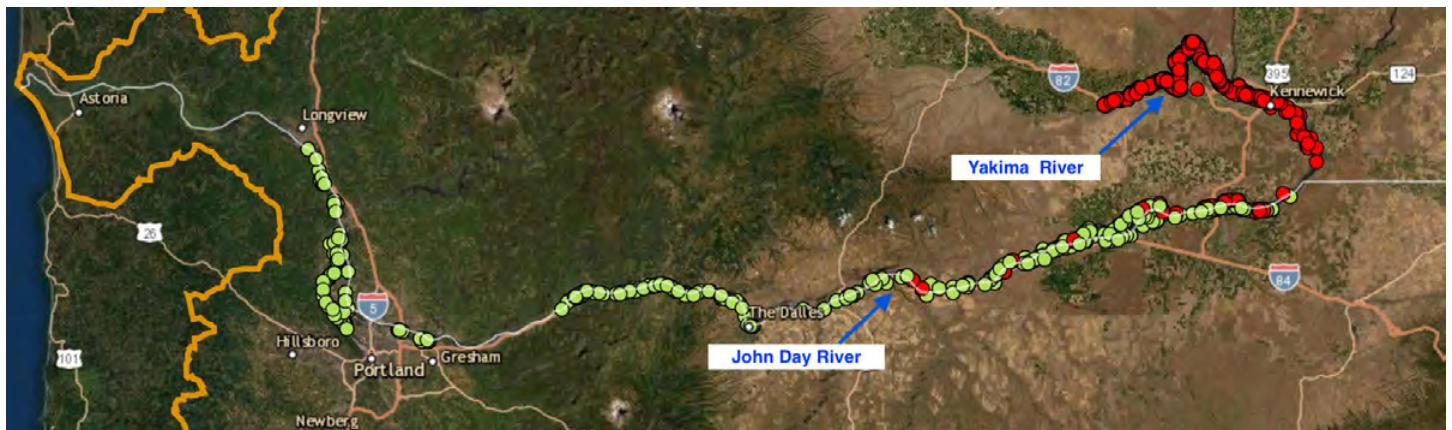
Cost Center: Lottery funded

Flowering rush is an A-rated aquatic plant that can invade shallow open water habitats and fill them with monocultures of itself. The plant is found in the Lower

Columbia River below the mouth of the Yakima River, but it is far from reaching its potential especially below the mouth of the Snake River (NE2). If it is allowed to spread its impacts could have dire consequences on water quality and threatened salmonid habitat. This threat is increased by the looming introduction of Northern Pike – a major predator on salmonids - into the lower Columbia. Flowering rush provides excellent breeding habitat for Northern Pike. Since 2014, ODA Noxious Weed Program staff regularly assisted the Army Corps of Engineers (ACE) and multiple partners to accomplish Early Detection and Rapid Response (EDRR) treatments for flowering rush in the Lower Columbia River between the state line and Arlington. However, due to Covid related budget shortfalls, ODA did not participate in any flowering rush activities in 2020 or 2021.

In 2022 ODA staff was able to begin helping reinvigorate the EDRR efforts for flowering rush. ODA staff and the Washington State Department of Ecology co-lead the Lower Columbia River Flowering Rush Work Group between 2013 and 2020. The Work Group is a collaborative forum for planning and facilitation of flowering rush management in the Lower Columbia River but has not met since 2020. The group met virtually in March and in person in November of this year. While some agencies in the group have continued to work independently during this break, the lack of communication, coordination and consistent implementation has compromised aspects of this EDRR effort. Six out of nine members of the core group at the November meeting were new to their jobs within the last year which adds another layer of challenge.

ODA field work in 2022 was minimal as we worked through the inertia caused by the Covid hiatus and subsequent staffing changes in all the stakeholder groups. One day was spent on the McNary pool surveying historic sites with the ACE and Portland State University Center for Lakes and Reservoir staff. More activity happened in the John Day pool where



Map of flowering rush distribution and survey efforts as of 2019 along the Yakima and Columbia Rivers. Green dots are areas surveyed where no flowering rush was found, red dots are where flowering rush has been found. The source of the infestation is the Yakima River in Washington to the north and east. No sites have been found west of the two outliers just upstream of the mouth of the John Day River.



Rob Banks (ODA) sprays meadow hawkweed along the Lostine River.

the Portland ACE conducted a Diver Assisted Suction Harvest (DASH) project in the John Day pool removing 250 plants from Alder Creek, one of their largest sites. They also removed many bags of plants by hand. The US Fish and Wildlife Service (USFWS) visited all their known sites in the McNary and John Day Pools and pulled plants when they found them – in total they removed some 800 lbs. of flowering rush from 81 river miles of shore within the McNary and Umatilla refuge boundaries (NE3). Portland State University’s Center for Lakes and Reservoirs (PSU) used Oregon State Weed Board (OSWB) grant funds to help orient new staff to the plant and the river. PSU has contracted with the Portland ACE to complete survey and removal of flowering rush in 2023 in the John Day Pool.

Upstream in Washington between the confluences of The Yakima and Snake Rivers, the Walla Walla ACE researchers continue to test impacts of various herbicides on flowering rush and herbicide



US Fish and Wildlife staffer holds up an eagle eye trophy flowering plant during EDRR survey and pulling along the shores of the Umatilla Wildlife Refuge. Flat bottomed air boats are uniquely suited for shoreline surveys, this one is adorned with flowering rush plants pulled from the muck.

containment methods to improve herbicide efficacy, but have not able to treat enough to slow the spread of the plant.

Importantly, a consortium of noxious weed scientists is working on the testing and importation of biocontrol agents for flowering rush. Three agents are being studied: a weevil, a smut fungus, and a fly.

ODA: 15 river miles surveyed and monitored; 10 sites (0.01 ac) hand pulled.

Partners: Not quantified

HOARY ALYSSUM, BERTEROA INCANA, WALLOWA AND BAKER COUNTY

Cost Center: Lottery and USFS State & Private

Two sites of hoary alyssum (NE4) are known in NE Oregon. The plant is unpalatable to livestock and rarely grazed in pastures but can be lethal to horses if it is in hay. The oldest site in NE is near the town of Wallowa in Wallowa County. ODA treatments are timed with early flowering to provide high visibility and to prevent viable seed production. In 2022 ODA staff gridded the area twice, finding and treating twenty small patches (NE5) before viable seed was produced.

Hoary alyssum was discovered in Baker County in the fall of 2020. This year Baker County used OSWB Grant funds to delineate the population, treat roadside patches and treated in one private pasture. No treatments were implemented in 2020 or 2021. The net infestation covers several hundred acres across nearly 15,000 acres west of Haines. During 2022 ODA staff spent most of a week working with Baker County and private landowners to inventory for and treat many acres of the infestation. This is by far the largest known site of hoary alyssum in the state. The plant shows a wide ecological amplitude infesting roadsides, hay ground, irrigated pastures, and dry sagebrush rangelands (NE6).

ODA: 79 acres treated, and 30 acres inventoried

Baker County: 20,000 acres inventoried; roadside infestations treated



A close up image of a hoary alyssum flower shows the unique central notch in white petals of this mustard flower.



Photo illustrates an average residual patch of alyssum in the Wallowa County Site.



Photos of Hoary alyssum growing in irrigated pasture (top left), dry sage steppe rangeland (at right) and a roadside patch near a hayfield.

ORANGE HAWKWEED, PILOSELLA AURANTIACUM WALLOWA COUNTY

Cost Center: Lottery, Wallowa Whitman National Forest and USFS State & Private

Orange hawkweed (Oregon A list) is rare in NE Oregon with only four known sites. Three sites are on the Wallowa Whitman National Forest (WWNF), one is in the town of Wallowa. Very few plants have been found at the WWNF sites since 2018 and no plants have gone to seed since then either. The Wallowa site is in a yard and this year no plants for the first time since its discovery. Sustained intensive control efforts is moving these sites towards eradication.

ODA: < 0.01 net acres treated over approximately 160 gross acres

PLUMELESS THISTLE, CARDUUS ACANTHOIDES WALLOWA, MORROW AND GRANT COUNTIES

Cost Center: WWNF, USFS State & Private, OSWB grant dollars

Plumeless thistle is an Oregon A-rated weed with a small total population but widely scattered distribution in NE Oregon. Grant County has the most sites, Morrow County has one, and Wallowa County has 16 sites. The Grant County infestation is near the town of Fox and encompasses around 40,000 acres. Eight acres of plumeless thistle were treated there this year. In Morrow County, three years of intensive treatments, including one aerial application in 2018, have reduced Morrow County’s only site to zero plants in 2019, 2021 and 2022 (but with ~ 100 plants in 2020). All 15 historic sites in Wallowa County were visited in 2022 by one of the weed control partners, only one site had plants. Also, a targeted inventory found one small new site about a mile away from the active site. At both those sites the seed heads were removed and destroyed, and the areas were treated with a residual broadleaf herbicide.

ODA: 0 net acres over 31 gross acres

Wallowa County, partners < 1acre over 260,000 gross acres

Grant Weed Control: 8 net acres over 40,000 gross acres

Morrow County: 0 net acre over 360 gross acres

RAVENNA GRASS, SACCHARUM RAVENNAE UMATILLA, MORROW, AND MALHEUR COUNTIES

Cost Center: Lottery

Ravenna grass is a large bunch grass with showy plumes on the Oregon A-list that is escaping ornamental plantings in Eastern Oregon. Ravenna grass is cold tolerant, spreads rapidly by seed and invades a broad range of natural environments (NE7).

Ornamental plants have been documented in Milton-Freewater, Pendleton, and Boardman. It appears that the plants are being purchased at nurseries in Washington and Idaho. These sites are small enough to be controlled by the respective county or municipality, but treatments have been inconsistent. Malheur County has many sites and made a concerted effort this year to treat them. The effort included mapping of ornamental (NE8) and escaped sites, outreach mailings to landowners, treatment of plants and in many cases the replacement of ornamental plants with noninvasive plants. Sites near waterways were prioritized.

ODA Noxious Weed Control Program staff has treated an infestation in the McNary Wildlife Area for the US Army Corps of Engineers since 2015. Treatment includes removal of seed heads and spraying leaves with a 5% glyphosate solution. The site was not visited in 2020 or 2021 due to budget shortfalls of Lottery dollars to the noxious weed program caused by COVID-19 shutdowns and resulting reassignment of staff to hemp inspections. It was monitored (but not treated) in 2022 and appears to be back to a similar infestation level as in 2015. Treatments will resume in 2023.

ODA: 2.0 acres inventoried.

Malheur County: 2.5 acres net, gross acres not calculated



The tall seed heads act as flags making it easy to spot Ravenna Grass infesting a marsh along the Columbia River.



Ravenna Grass in a Malheur County landscaping arrangement.

GIANT REED GRASS, ARUNDO DONAX MORROW AND UMATILLA COUNTIES

Cost Center: Lottery and USFS State & Private

Portland General Electric (PGE) experimentally grew giant reed grass from 2011 to 2017 in the Columbia Basin as a potential source of biofuel for their coal fired power plant in Boardman. In response to public

concern and because the plant is known to be a serious invader of wetlands in the southern US and California, ODA established a Control Area with associated regulations that required monitoring for off-site movement and for post-harvest eradication. The project was terminated in 2017 which shifted PGE’s management from propagation to eradication. ODA Noxious Weed Control staff has since worked with Morrow County Weed Control to monitor PGE’s eradication effort (NE9).

Giant reed was initially established in four locations: three sites on private lands used to test production methods and a fourth site at the Hermiston Agricultural Research Center (HAREC) which was used by OSU Extension to test control methods. One site was declared eradicated in 2021 after three years of no plants being found (as was specified in the terms of the control area). The other two sites that had plants were declared eradicated in late summer of this year and PGE was relieved of further responsibility for the plant.

At HAREC (not the responsibility of PGE) ongoing control studies ended in 2017. The field was plowed in 2018 and put into production of wheat and then onions with few Giant Reed Cane plants rogued in 2019 and 2020. There were no plants found at HAREC in 2021 or 2022. The site will be monitored for one more year to assure eradication.

Giant Reed was added to Oregon’s Noxious Weed list as a B Weed in 2020.

ODA staff: 120 acres surveyed and monitored



Morrow County Weed Inspector Dave Pranger and Leah Hough from PGE documenting the eradication of giant reed grass from a fallow site that had been previously used by PGE for giant reed production.

WELTED THISTLE, CARDUUS CRISPUS WALLOWA COUNTY

Cost Center: Lottery, OSWB Grant funds through Wallowa County

Welted thistle (Oregon A list) was discovered in Wallowa County in 2016. It is the only known site of this plant west of the Rockies besides a location in British Columbia. Treatments and intensive inventories began immediately, and less than 5 net acres were sprayed within 240 gross acres. Wallowa County uses county weed levy funds and funding from OSWB grants each year to fund inventory and treatment of all known sites. No new sites have been found anywhere in the surrounding area.

Each year Invasive Weed Program staff works with Wallowa County’s Weed Manager and private landowners to monitor and treat the known sites between June and October (NE10). A total of 15 plants were found in 2018. Only 6 plants were found in 2019. However, as residual herbicides from initial treatments wear out and since cooler moist spring weather has prevailed recently more plants are germinating in the last 3 years. This is especially true in field margins that are disturbed and receive irrigation but not managed actively for crops (NE11). This makes the vigilance by the landowner and the Wallowa County Vegetation Department throughout the year critical to successful eradication.

ODA (0.4) and partners 0.5 net acres treated over 240 gross acres inventoried

SQUARROSE KNAPWEED, CENTAUREA VIRGATA GRANT COUNTY

Cost Center: Lottery, and USFS State & Private, OSWB Grant and Grant County match funds

The Grant Weed Control manages the only known squarrose knapweed site in northeast Oregon. ODA’s Invasive Noxious Weed Control Program first treated an estimated 200 net acres spread across 800 gross



A bolting welted thistle plant in Wallowa County farm ground.

acres in 1988. The number of acres has declined over the life of the project to 15 acres in 2004, just over 3.4 acres in 2019, 1.6 acres in 2020 and 1.25 acres in 2021. This year, only 22 plants were found, and 0.45 acres were broadcast sprayed to treat those areas.

Grant County: 0.45 net acres over 3,200 gross acres.

ODA: 0 acres inventoried or treated



A Welted thistle rosette (inside the blue circle) hides amidst the shadows of the margin of a “Roundup Ready” alfalfa field.

RUSH SKELETONWEED (CHONDRILLA JUNCEA) EDRR, UNION AND GRANT COUNTIES

Cost Center: Lottery, OSWB grant funds and Umatilla National Forests

Rush skeletonweed management is a top priority in NE Oregon (OR B & T lists). Grant and Union County have very little skeletonweed. Grant County has two small sites. The first is 1/4-acre site near Ritter that was discovered in 2016. Surveys in the immediate vicinity have not found any other sites nearby. The site is visited annually and has had a few plants each year. A second site in Grant County was found late in 2018 by Umatilla National Forest staff near the North Fork of the John Day River just 15 miles away. No plants have been found there since the initial treatment.

The history of skeletonweed in Union County dates to 2005, but most known populations are still very small. Sites on the Umatilla National Forest were not visited this year due to summer fire danger, hunting season road closures and early winter. Most sites were treated by local partners and net acres are less than 3 acres countywide.

ODA: 0.01 acres over 200 acres gross.

Partners: Not quantified

US FOREST SERVICE PROJECTS

MEADOW HAWKWEED, PILOSELLA CAESPITOSUM UNION, WALLOWA, MORROW & UMATILLA COUNTIES

Cost Center: Wallowa Whitman and Umatilla National Forests, USFS State & Private, and OSWB grant funds for grantees and lottery funds

Meadow hawkweed is one of the most versatile and aggressive invaders in this part of the state (OR B & T lists). Left unchecked, the plant takes over a wide variety of habitats and forage production systems, often crowding out desirable vegetation (NE12). Meadow hawkweed control is one of the largest projects in northeast Oregon and thus involves many private, state, and federal partners from Union, Wallowa, Umatilla, and Morrow counties. In 2020 and 2021, OSWB grant funds were significantly reduced and delayed and were not available to fund these projects as they have normally done. The majority of hawkweed in the region occurs in Wallowa and Union counties. This year, hawkweed treatments resumed with OSWB funds as usual after a year of no grant funding due to Covid, but sites have become numerous enough that managers were not able to reach all known sites. Most of the historic sites have very few or any plants at them anymore. In 2023 weed managers will start an intentional process of limiting cost share in historic project areas and thereby shifting the primary responsibility for treatment to landowners. Managers will visit small historic sites every second year to ensure containment. Contract survey and treatment areas will be focused on at risk or outlying areas.

Morrow and Umatilla counties only have one and two sites respectively. The Morrow County site is just west of Ukiah. Umatilla NF Range Program staff visited the site twice this year and only a very few plants were found and treated. No seed production has happened there for years. The Umatilla County sites were detected and treated while conducting tansy ragwort inventory in the Saddle Mountain area in 2017. Three patches, totaling around two acres were treated in 2018. Only a few plants have been found at the original sites since, but several new sites were found and treated in the surrounding areas this year. Umatilla County uses funding for EDRR inventory and treatment from OSWB grants.

ODA: 0.6 net over 200 gross acres

Partners: Yet to be reported



A newly discovered meadow hawkweed site in Union County show how aggressive the plant is without treatment.

“TURKISH” THISTLE, *CARDUUS CINEREUS*

Cost Center: WWNF Contract and USFS State & Private funds; OSWB Funds for grantees

The only known population of Turkish thistle in North America is found in the Hells Canyon National Recreation Area (HCNRA) on the border between Central Idaho and NE Oregon. It had been misidentified for many years as Italian thistle (*carduus pycnocephalus*). The plant is on Oregon and Wallowa County’s A-Lists. Inventory and treatments for this plant are complicated due to the very remote and steep terrain that this plant has invaded (NE13). The safest and most cost-effective herbicide treatment means would be to use a helicopter. The HCNRA does not have funding, nor the clearance to use this method to date. Working with the Wallowa Canyonlands Partnership CWMA (WCP) and HCNRA staff, all but one of the non-wilderness outlying sites were treated by backpack crews. That site is over thirty gross acres and extremely hard to access. The WWNF is planning to treat that in 2023 using contracted horse spraying crews. Additional sites located in the Hells Canyon Wilderness, even more remote and just as rugged, are not being treated for lack of capacity and/or aerial treatment capacity.

ODA and partners: ~1.2 Net acres over 240 Gross Acres



Tri-County CWMA staffer Gavin Carman prepares to drop into Thorn Creek to treat Turkish thistle in the Hells Canyon NRA in Wallowa County OR.

TANSY RAGWORT, *SENECIO JACOBAEA* UMATILLA AND UNION COUNTIES

Cost Center: Lottery and USFS State & Private

Tansy ragwort is kept largely in check by biological control agents on the west side of the state. However, tansy ragwort is a persistent invader on the east side of Oregon where the agents do not survive the colder winters. Tansy ragwort is toxic to livestock and has been found primarily in forested rangelands and riparian areas of eastern Oregon. It is a B & T listed plant for the state.



Workers from Union County Weed Control, Tri-County CWMA and private contractors line out along a road preparing to grid a tansy ragwort site in Union County. Tracklogs from that work are shown on the map to the right.

ODA's Invasive Noxious Weed Program managed a tansy ragwort monitoring and treatment program in NE Oregon for more than 30 years. Due to budget cuts to the noxious weed program in 2016, tansy monitoring and treatment are now conducted by counties and CWMA groups in the region. Over 1,000 small tansy infestations were detected over the years; the number of active locations was reduced to less than ten by 2016.

Four areas of active infestation can still be found. The largest sites are in Umatilla County at Bear Creek and Saddle Mountain (585 gross acres total). While inventory areas expand each year, only a few small new sites have been found and treated. This year there were 20 acres treated in total between the two sites. The other large historic site is near Looking Glass Creek in Union County and is monitored and treated by Union County, ODA, and private landowners. A fourth site was found in 2020 near Elgin and is being treated annually by partners using OSWB funding (NE14). These Union County sites total about 6 net acres. ODA Invasive Noxious Weed Control Program staff spent 3 person days helping to treat tansy ragwort Umatilla County.

ODA: 2 net acres over 585 gross acres

Union and Umatilla Counties: 26 net acres over 655 gross ac

COMMON BUGLOSS, ANCHUSA OFFICINALIS

Cost Center: USFS State & Private, Umatilla and Wallowa Whitman National Forests

Common bugloss has two primary population centers in Oregon. One is in Wallowa County and the

other is in the Walla Walla River drainage in Umatilla County. Consistent treatment efforts by the Wallowa Canyonlands Partnership for over a decade (funded by OSWB) have largely kept the largest infestation in the Upper Imnaha Canyon contained. Wallowa County also uses OSWB dollars to address two sites in the Wallowa Valley – these are especially important because they are high in the Grande Ronde Watershed where there is almost no bugloss at all. Invasive Noxious Weed Program staff are involved in the implementation, survey, and monitoring of these projects.

The main population of common bugloss in Umatilla County is found along the North Fork of the Walla Walla River. Work there was funded by OSWB grant dollars for several years before 2017 but was not maintained due to lack of capacity at the county level. An outlying site in Meacham Creek, high in the Umatilla River Watershed, is treated cooperatively by staff from the Umatilla NF, the Confederated Tribes of the Umatilla Indian Reservation, Umatilla County, and ODA's Invasive Noxious Weed Program. As a part of this EDRR effort Invasive Noxious Weed Program Staff worked with Umatilla NF staff to locate, verify, and treat the only known population of shiny geranium on the east side of the state (NE15).

Union and Baker each have one small site of common bugloss that county staff treat and monitor using OSWB and/or County Levy funds.

ODA: 2 acres treated

Partners: Not quantified



A shiny Geranium plant pulled from that plant's only site known in Eastern OR.

BUREAU OF LAND MANAGEMENT PROJECTS (BLM)

RUSH SKELETONWEED CONTAINMENT BAKER, MALHEUR AND WALLOWA COUNTIES

Cost Center: Lottery, BLM, USFS State & Private Wallowa, Baker, Umatilla, Morrow, and Northern Malheur counties all have significant populations of rush skeletonweed on their north or eastern flanks

and containment is the primary goal for these areas. Populations drop drastically as you move west or south in the region triggering cooperators to switch from containment to an EDRR mode.



A rush skeletonweed plant in Hells Canyon shows the impacts of two biocontrol agents; a midge and a mite. The midge lays eggs under the surface of the stem giving it a pimpled look and mites infest the blossoms forming rusty looking brown clumps.

In Northern Malheur County, ODA staff has worked closely with Vale BLM and Malheur County staff for many years to prioritize, coordinate and implement a treatment effort designed to protect sensitive endemic plants and croplands from the impacts of rush skeletonweed. The cumulative impact of years of effort have kept the level of infestation low in the project area. The project area is ~40,000 acres in size and was slated for late fall herbicide treatments in 2022 but early freezing weather conditions stopped the project. Work will begin in early spring of 2023.

In Baker County, Tri-County CWMA uses OSWB grant dollars and works with ODA and private landowners to contain skeletonweed on its eastern flank and treat isolated populations of common crupina. This serves to protect rangelands and crops to the west but specifically protects sage-grouse habitat. Sage-grouse conservation is an extremely high priority across the west.

Three skeletonweed specific biocontrol agents (midges, mites and a rust) are present in northeastern Oregon. In arid areas like the Columbia Basin and Northern Malheur County the mite and midge seem to have an important impact reducing plant stature and seed production (NE16). The skeletonweed rust fungus is rare and seems to be having little impact on populations despite its striking impact on plants. A root crown moth (*Braddyrhoa gilveolella*) for skeletonweed was introduced multiple times and in multiple places in NE Oregon on and around BLM lands but establishment has not been documented. Supplemental releases are planned for 2023.

ODA staff: 0 acres inventoried or treated

BIOCONTROL PROJECTS AND OTHER ACCOMPLISHMENTS

In addition to working on and monitoring skeletonweed biocontrol agents mentioned above, Invasive Noxious Weed Program staff also works with many agents around the region. This year we worked with Malheur County to monitor two prerelease Standard Indicator Monitoring Protocol (SIMP) in anticipation of the future release of whitetop flower mites. SIMP plots are established at a site prior to release of biocontrol agents and are paired with similar sites where no agents are released. Managers across the Pacific Northwest use this method so that data from across the region can be pooled and the impacts of the agents and effects of site variables can be elucidated.

For many years USDA APHIS has had a biocontrol technician in Eastern Oregon. This year that position was moved to SE Oregon, leaving ODA to fill the gap as best we could. And while some exciting work was done, much, including the reading of ~ 15 established SIMP Sites, was left unfinished. We plan to read all our SIMPS sites in 2023.

Invasive Noxious Weed Program staff collected plant material for regional biocontrol research projects for yellow flag iris and puncturevine weevil ecology studies (NE17) and parasitology studies on Russian knapweed agents. We are also working with the Confederated Tribes of the Umatilla Indian Reservation (NE18), University of Idaho and USDA ARS to help identify and establish monitoring plots for the 2023 release of the common crupina rust fungus (*Ramularia crupinae*) and monitored for natural migration of houndstongue agents.

NE Oregon Invasive Noxious Weed Program staff also worked with two recently released biocontrol agents to the state. The first is a psyllid (*Aphalara itadori*) that attacks Japanese knotweed. Five releases were made in eastern Oregon in 2021, four in the lower Imnaha and one in Cove. These two sites contrast each other because they are at different elevations, and they are also very different than the release sites on the West side of the state. Studying new agents in a variety of sites can help managers understand how different site parameters impact agent performance. Staff were only able to detect survival at the site in Cove (NE19). Continued monitoring and more intensive release methods are planned for 2023.

The second agent is *Rhinusa pilosa*, a weevil that attacks common toadflax. It was first released in 2021, however two monitoring visits in 2022 were unable to confirm establishment, so a supplemental release was made this year at the same site near La Grande OR (NE20). The agents were released in a drier end of the site than in 2021 in hopes of helping establishment.

Monitoring past releases of Canada thistle rust (*Puccinia punctiformis*) with APHIS PPQ staff at three sites revealed that we have establishment at one site in Wallowa County and one in Grant County. Collections of the rust at both sites in 2023 will provide for many releases around the state next year (NE21).

Invasive Annual Grasses (IAG's) wreak havoc on rangelands across the west by outcompeting native bunchgrasses creating a continuous fine fuel source. This causes a self-enhancing fire cycle that promotes their own dominance. The Western Governors Association and the Western Invasive Species Council, The Western Weed Coordinating Committee, SageCon and The Nature Conservancy are all working to manage IAG's at a meaningful scale. New tools, technologies, and research are empowering control efforts across the west. Satellite imagery can portray core areas of good condition perennial grasslands at large scales and is also becoming more useful at smaller scales. Rejuvra is a new herbicide formulation to the Range and Pasture market that is showing great success at controlling IAG's for longer than their seed viability while also releasing the mature perennials from competition with impressive results (NE22).

To help promote effective use of funds and successful IPM management, one full session and several presentations at the Oregon Interagency Noxious Weed Symposium were devoted to IAG's. Examples at the symposium from the field were highlighted as well. In Grant County near Prairie City, Grant Weed Control and partners treated 27,000 acres of rangeland for IAG's to reduce wildfire risk and to promote forage health (NE23). Another large-scale project from Harney County (SE Oregon) was highlighted to show how satellite imagery of IAG's and local knowledge are being united to build fire and IAG treatment and prevention plans that protect Core Areas of good habitat. ODA's Invasive Noxious Weed Program staff co-authored an article entitled "Defend the Core: Maintaining intact rangelands by reducing vulnerability to invasive annual grasses" in a special publication of Rangelands magazine that was published in 2022 and entirely focused on IAG's.

Monitoring areas with new non-native plant species is important to evaluate the level of invasiveness of nonnative plants. It is the first step in deciding if ODA Invasive Noxious Weed staff should perform a risk assessment and potentially list the plant as a noxious weed. Blueweed (*Echium vulgare*) and two species of rose (*Rosa canina* and *eglantaria*) (NE24) were listed as B weeds during 2022 because of their observed impacts in NE Oregon. The roses are causing widespread woody encroachment into grasslands and blueweed is spreading fast in riparian and roadsides. ODA Weed Management Staff are conducting a Risk Assessment for rose campion (*Lychnis coronaria*) this winter. Rose campion is a traditional ornamental

that was planted at homesteads and is a common ornamental flower in seed mixes. In several areas of the Snake River and the Lostine drainage in Wallowa County, this plant has invaded excellent condition rangelands in high density patches. It is undergoing a formal risk assessment this winter.

Additionally, bristly dogs tail grass (*Cynosurus echinatus*) and Common Tansy (*Tanacetum vulgare*) were added to Oregon's watch list this winter. Bristly Dogs Tail is a non-native annual grass that has been found in Wallowa and Umatilla Counties. In several areas it has created thick mats of itself (NE25), in a way that mimics what Medusahead does, in native bunch grass plant communities that are otherwise in very good condition. Common tansy is invading riparian areas and road edges around NE Oregon. Common Tansy is very invasive in NE Washington which indicates we may be at risk of a similar invasion here. Managers and ODA Invasive Weed Program staff will actively monitor these plants throughout the state.



One large puncture vine plant was pulled in Umatilla County to sample for puncture vine weevils, a biocontrol agent.



Cheryl Shippentower of the Confederated Tribes of the Umatilla Indian Reservation stands at a prerelease monitoring site on Cabbage Hill (Umatilla County OR) for the impacts biological control rust fungus on common crupina.



Joel Price, ODA's Biocontrol Entomologist looks for signs of the previously released knotweed psyllid biocontrol agent in Cove Oregon.



Common toadflax stem galling weevils about to be released in Union County near La Grande. This is a new biocontrol agent for the state of Oregon



An aerial view of a large Invasive Annual Grass aerial treatment project (using Rejuvra) in Grant County shows the lines between treated and untreated ground. The untreated ground is to the back and right and shows the bright tan color caused by dried out IAGs. The treated area is in the foreground and to the rear left of the picture.



NE21: Canada thistle plants infected with rust fungus were collected in Wallowa County. They will be ground to a powder and distributed next year to be sprinkled (thereby infecting the plants) on other infestations.



Dog and sweet briar rose growing side by side in a pasture in Umatilla County. Both roses have similar round bushy growth forms, but Dog rose usually has white flowers and Sweet Briar rose usually has pink flowers.



This site on Zumwalt prairie has been treated for IAG's for several years, and most recently with Rejuvra, shows the impact of no competition from IAG's (and a cool moist spring). Bare ground areas were previously covered in Medusahead and can be reseeded in several years.



Bristly dogs tail grass shows up as dried grass with small roundish seed heads on top outside a campground on the Umatilla National Forest near Palmer Junction in Union County.

Southeast Region

By Bonnie Rasmussen and Rob Banks

BLM-BURNS DISTRICT

Cost Center: BLM

STEENS WILDERNESS

ODA/BLM Steen's Wilderness project was completed in the 2022 season. ODA did not participate in the helicopter treatment portion of the project in 2022. Utilizing a UTV, ODA staff treated plants at Ankle Creek Historical Site, along the road to Ankle Creek and at the historical site before the Big Indian Creek Crossing. All locations had mature plants and rosette growth.

.32 net acres treated

6600 gross acres surveyed



Spotted knapweed plant found on the Ankle Creek Meadow Road.



Spotted knapweed located along Big Indian Creek in Steen's project area.



EDRR on the Steen's Mountain locating Saint Johnswort.

BIOLOGICAL CONTROL

ODA staff actively monitored during regular duties *Hylobius transversovittatus* and *Galerucella pusilla* in Stinkingwater Creek. *Puccinia punctiformis* above Page Springs Campground. *Urophora cardui* near Eusobio Ridge. *Mecinus janthiniformis* sites in Devine Canyon and the Burns Front Range. ODA Entomologist Joel Price met with Burns District staff and partners and reviewed bio priorities and releases.

P HILL PROJECT

The P-Hill project is located southwest of the town of Frenchglen along both sides of Highway 205 up to the intersection with the Rock Creek Road and breaking over to the downward side of P-Hill, stretching almost to Frenchglen. The project area also includes an often-disturbed refuse area, a gravel pit area, rangeland and the Highway 205 Corridor that passes through. The project targets are primarily Mediterranean sage and Scotch thistle. Over the past 21 years plant numbers have fluctuated due to weather and fire events. This season ODA staff completed the project using UTV units.

3.55 net acres treated

320 gross acres surveyed



ODA staff completing broadcast treatment in P Hill project area.



Mediterranean sage rosettes in P Hill project area.

STINKINGWATER CREEK PROJECT

ODA completed the BLM portion of this project. There is a significant increase of plants noted on the adjacent private land. Harney County CWMA will be submitting an OSWB grant application to address those plants.

1.2 net acres treated

400 gross acres surveyed



Mature purple loosestrife plants that have not been treated for a few years in the Stinkingwater project area.

BLM-LAKEVIEW DISTRICT

Coat Center: BLM

DISTRICT EDRR AND EDUCATION

ODA staff assisted with the coordination of the Cross Borders Dyer’s woad project. Staff also assisted in planning and implementation of work on various EDRR species with the Lakeview CWMA on Dyer’s woad and Spotted knapweed. Contact was made with landowners in the northern Lake County area educating them about weeds of concern and treatment methods on their property.

EDRR WORK

Early in the season ODA staff teamed up with CWMA crews to survey and treat all known dyer’s woad infestations in Lake County. ODA staff worked on the Brittain Fire cat lines through all jurisdictions in the Paisley area to assist with EDRR activities. Locations of spotted knapweed, yellow starthistle, musk thistle and Mediterranean sage work documented for CWMA staff and some treated. Drought conditions and extreme fire danger delayed work until it was safe to travel off road. Treatment also occurred in the Christmas Valley area. Staff synced with CWMA and treatment with education and awareness took place.

3.1 net acres treated

1300 gross acres surveyed



Musk thistle along the cat lines on BLM near Summer Lake.



Yellow starthistle located during survey in the Paisley project area.



A new yellow starthistle patch south of Paisley ODA staff found during survey.



Spotted knapweed plants in the Christmas Valley project area treatment.



Fall treatment of perennial pepperweed in Warner Wetland ACEC.



ODA staff treating dyer's woad patch with CWMA crew.



ODA staff treating in sensitive plant areas of the ACEC.

WARNER WETLANDS

ODA staff worked in the Warner Wetlands project area in early spring and late Fall. This project was directly impacted by drought conditions, extreme fire danger and fire season restrictions. Treatments took place in the main Wetlands area north to Flagstaff, Hogback slough area and across from Apple Orchard Area to the East.

64 net acres treated

6500 gross survey acres



Fall treatment of Canada thistle ringing the dry slough area off Hogback road.

BLM-VALE DISTRICT

Cost Center: BLM

THREE FORKS PROJECT AREA

The ODA staff completed spring and summer treatments for this area before the extreme fire danger shut things down at Three Forks. The Three Forks Campground project area still has Scotch thistle, Leafy spurge, perennial pepperweed and whitetop. The yellow starthistle site treated in 2013 near Grassy Reservoir was extensively surveyed and again no plants were found this season.

8 net acres treated

4000 gross acres surveyed



Spring treatment of white top on the hog back road.



Desert in full bloom along the Three Forks Road spring 2022.

PASCAL RESERVOIR PROJECT AREA

Do to fire danger and staffing shortage this project wasn't completed in 2022.

EDRR, ROADSIDE SURVEY AND MONITORING

Drought conditions and high fire danger restrictions had a significant impact on project work. In response some effort was switched to road monitoring and treatment in Indian Creek, Whitehorse Ranch Road, Bogus, Riverside, Birch Creek and Jordan Craters areas. A spotted knapweed site located on BLM managed lands just past Dimwitty road near Jordan Valley was also treated. The historical leafy spurge site at Cow creek is also included in this section. The net acreage continues to decline at cow creek.

8.2 net acres treated

125.000+ gross acres surveyed

LESLIE GULCH, DAGO CANYON AND SUCCOR CREEK AREA

ODA crew monitored and completed treatments of various target weeds including rush skeletonweed, spotted knapweed and yellow starthistle in the Leslie Gulch, Dago Canyon, Succor Creek, Sage Creek and Spring Mountain areas. The area is hard hit by drought and the access was limited because of high fire danger.

24 net acres treated

6,500 gross acres surveyed



Summer treatment of rush skeletonweed in Leslie Gulch Area.



Spring treatment of white top in Dago Canyon.

BASQUE STATION

ODA crew spent several days monitoring and treating the diffuse knapweed site across from Basque station. Staff worked in the project area for two days, and the aerial application was still holding with very low plant numbers found. Treatment was performed with a UTV.

1.22 net acres treated

200 gross acres surveyed

LOTTERY FUND PROJECTS

AFRICAN RUE, PEGANUM HARMALA

In early September 2008, a contractor for the Bureau of Indian Affairs noted a possible infestation of African rue on tribal allotments located in the Harney Basin southeast of Burns. ODA verified the plant as African rue. The initial response plan was to treat outlier sites, roadsides, barnyards, and pivots for containment and to prevent further spread. In 2008, ODA spent several weeks doing the initial site delimitation, which revealed a project area of 2,700 gross acres and 19 landowners including Department of State Lands, private, and tribal lands. An African Rue Cooperative Weed Management Plan was completed in 2009. This project is now largely funded by an Oregon State Weed Board Grant to Harney County and is monitored by ODA staff.

ODA partnered with Harney County to treat the Harney site in 2022. ODA provided funding through an Oregon State Weed Board grant for Harney County to complete the project. This season 2,750 acres were surveyed and mapped, and 4.05 net acres were treated. This is pretty much on par with recent past years.

EDRR SOUTHEASTERN OREGON

ODA staff participated in survey in treatment of EDRR species around SE Oregon. Projects in Poison Creek drainage for spotted knapweed, Stinkingwater drainage for Purple loosestrife, HL Creek in the Catlow Valley for Mediterranean sage as well as monitoring of historic tansy sites in the area took place. Coordination of pheasant's eye work, orange hawkweed and some locations of work on the Malheur National Forest took place.



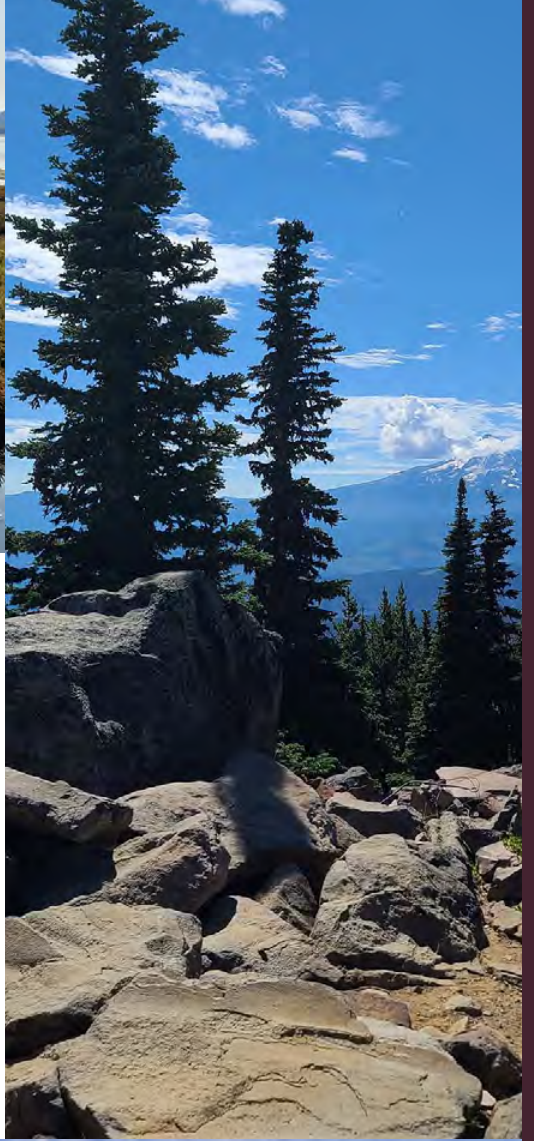
EDRR work with diffuse knapweed north of Burns Oregon.



Spotted knapweed found east of Burns.

REGIONAL EDUCATION AND OUTREACH ACTIVITIES

Numerous presentations are given at meetings and trainings throughout the year as well as consultations to ranchers, land managers and public entities. Weed Board, SWCD and CWMA meetings are attended in Lake County, Malheur County, and Harney County.





**OREGON
DEPARTMENT OF
AGRICULTURE**