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Invasive Noxious Weed Control Program Annual Report 2018

Tim Butler  
Invasive Noxious Weed Control Program Manager

During 2018, the Invasive Noxious Weed Control Program continued to collaborate with cooperators statewide in the implementation of invasive noxious weed control projects in five regions of Oregon. Prioritized projects protect our agricultural economy and natural resources through early detection and rapid response (EDRR), containment, and integrated control of invasive weed populations on both public and private lands. I am extremely proud of the many accomplishments realized through collaborative efforts coordinated by our program staff, as well as partnerships with a wide variety of cooperators from across the state. Examples of efficiencies for the Invasive Noxious Weed Control Program reveals a 1:34 cost-benefit for EDRR efforts and 1:15 cost-benefit for biological control projects; these are dollars well spent.

Moving forward, the program will continue to evolve as is outlined in our five-year Programmatic Strategic Plan. To successfully implement the plan, there needs to be good communication and support between policy makers, both internally and externally, for securing essential base funding.

The Invasive Noxious Weed Control Program will continue to provide leadership, communication, and capacity for technical support to cooperators. Our staff and equipment infrastructure are in place regionally to both coordinate and implement invasive weed management projects. Projects are directly tied to natural resource management strategies at federal, state, county, and local levels.

Controlling invasive noxious weeds is a critical component in achieving success in areas of water quality/quantity and fish/wildlife habitat preservation, especially for salmonids and the greater sage grouse. This includes preserving recreational opportunities, ensuring a robust agricultural economy, and achieving overall functioning watersheds free of invasive weeds. The program needs support of policy makers through stable, flexible funding to achieve these goals. I am confident that together with our cooperators we can continue to make progress in protecting Oregon’s valued natural resources and agricultural economy.

Program Overview

The Invasive Noxious Weed Control Program has over 40 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.

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 nine technical staff located in Salem, Eugene, Grants Pass, Burns, Enterprise, and Prineville. The state is divided into five 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 grant coordinator, program assistant, and seasonal staff to help implement projects.
Invasive 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.

The staff works closely with the Oregon State Weed Board (OSWB) to host meetings, provide updates and 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 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 mission.

The program works closely with federal partners to develop Memoranda of Understanding (MOU), cooperative agreements, and contracts to facilitate control projects and financially assist the program. About 50 percent of the program's budget comes from federal sources and the balance is State Lottery and General Funds. Primary federal support comes from the US Forest Service Region 6 (USFS), Oregon Bureau of Land Management (BLM), US Army Corps of Engineers (USACE), and the US Bureau of Reclamation (BOR).

2018 Weed Program Accomplishments

- Program staff implemented 139 noxious weed projects, conducted 389 treatments, completed 45 pre- and post-treatment monitoring activities, and conducted 18 weed surveys.
- Fifty-four biological control releases were made at 46 sites, and 41 biocontrol sites for 23 weed species across 16 Oregon counties were monitored to determine establishment and effectiveness.
- Staff gave 28 presentations and attended 175 meetings for consultation, planning, and outreach.
- The OSWB received $3 million for the 2017-2019 biennium from the Oregon Watershed Enhancement Board (OWEB). In 2018, the Noxious Weed Control Program received 78 grant proposals and was awarded 59 grants totaling $1,438,927.54.
**OREGON STATE WEED BOARD (OSWB) UPDATE**

Shane Otley is the newest member of the OSWB and was appointed to the Board in October 2018 by ODA Director Alexis Taylor. Shane lives in Harney County where he owns and operates a cattle and hay ranch. He is also very active with the Farm Bureau and is the regional director for Grant and Harney counties.

One of the highlights of the year, Oregon State Weed Board in collaboration with Oregon Invasive Species Council planned and held a meeting in Bandon the week of June 18, 2018. The joint meeting was held near the epicenter of gorse to draw attention to the control efforts in the area. During the meeting, Jim Proehl, with the Bandon Historical Society Museum, gave a general overview of the history of gorse in Bandon. Gorse seeds were thought to be brought by Lord Bennett and planted in Bandon. Historically, Bandon burned in 1914 and 1936 and one of the biggest questions was whether gorse caused the fire or if it spread it more quickly. By the 1950s gorse fires were becoming more prevalent.

**OREGON STATE WEED BOARD GRANT PROGRAM**

The OSWB Grant Program is a partnership with the Oregon Watershed Enhancement Board (OWEB), funds reside within the OWEB and ODA oversees and administers the program. There are two grant cycles per biennium and grants are awarded annually. Under the OSWB Grant Program, Noxious Weed Control Program staff and the board 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 OSWB grant program averages a 52% match.

This biennium, the OSWB received an additional $500,000 in OWEB funding to implement a new county grant program. This was in addition to the usual $2.5 million for the regular OSWB grants. With the new county grant funds, the OSWB received a total of $3 million to fund noxious weed control grants for the biennium. The new county grant funds are intended to foster the development of projects that build stronger county weed control programs while meeting the criteria of protection and enhancement of watershed health and wildlife habitats. Grant applications were reviewed and awarded at the February 2018 OSWB meeting. This year, 58 regular OSWB grants proposals and 17 county grant proposals were received. The board awarded 14 county grants for $401,196.83 and 45 regular OSWB grants for $1,438,927.54 totaling $1,840,124.37.

**OREGON STATE WEED BOARD GRANT MONITORING**

Grants are selected for monitoring and review from each granting cycle. During the 2018 field season, 14 grants were monitored.

<table>
<thead>
<tr>
<th>2018 Grantee</th>
<th>Project Name</th>
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<tbody>
<tr>
<td>Crooked River Weed Management Area</td>
<td>Restoring Sage Grouse Habitat</td>
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<tr>
<td>Gilliam SWCD</td>
<td>Ferry Canyon Conservation Implementation Strategy Weed Support</td>
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<tr>
<td>Gilliam SWCD</td>
<td>Scott Canyon/ Hay Creek Fire Restoration</td>
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<tr>
<td>Grant SWCD</td>
<td>Grant County Top 5 Priority Weeds</td>
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<tr>
<td>Hood River SWCD</td>
<td>Hood River Garlic Mustard Abatement</td>
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<td>Lake County CWMA</td>
<td>Lake County EDRR Natural Resource Protection</td>
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<td>Lake County CWMA</td>
<td>Warner Valley Noxious Weed Control</td>
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<td>Malhuer Watershed Council</td>
<td>Malhuer Rush Skeletonweed Containment</td>
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<td>Malhuer Watershed Council</td>
<td>Upper Willow Creek Leafy Spurge</td>
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<tr>
<td>Monument SWCD</td>
<td>North Fork John Day Leafy Spurge</td>
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<tr>
<td>Union County</td>
<td>Medical Springs Whitetop Spray Days</td>
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<tr>
<td>Upper Burnt/ Tri County CWMA</td>
<td>Upper Burnt River Weed Control 2018</td>
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<tr>
<td>Wallowa County</td>
<td>Wallowa Valley EDRR &amp; Vector Control</td>
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<tr>
<td>Wheeler SWCD</td>
<td>Wheeler, Jefferson, Crook County Noxious Weeds</td>
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Two grants highlighted from this year monitoring are the Wheeler SWCD County grant and the Hood River SWCD Garlic Mustard grant.

The Wheeler SWCD County Grant is a good example of a collaborative effort involving Wheeler, Jefferson and Crook counties. Noxious weed management in central Oregon consists of a mix of county, city, federal and nonprofit entities that have a history of coming together to solve noxious weed issues across watersheds and county lines. This grant focused on increasing coordination across county boundaries, strengthening county programs, and building outreach and education efforts. The project treated 487 net acres. The Barnes Butte Complex near Prineville was one of the monitoring sites reviewed for this grant. The Crook County Weed Master and Crooked River Weed Management Area are working jointly to treat knapweeds and yellow starthistle in the Barnes Butte area. A component of the grant funded the uses of Play Clean Go “Stop Invasive Species in their Tracks” signs and a boot cleaning station to help reduce the spread of weeds. The grant received high marks for their efforts.

The Hood River SWCD grant focused on the control of garlic mustard at the only two known areas in Hood River County. This project is restricted in its use of herbicides because much of the project area is in organic certified orchards. The grant allowed the project to expand the survey area to 250 acres, hand pull 54 acres, and spread 20 yards of hemlock mulch for garlic mustard suppression. Plant numbers are down and less dense than previous years. Landowners are now more engaged in hand pulling, monitoring sites and are using row cultivator and mulch machines to suppress the garlic mustard in the orchard rows. The project presents challenges working with organic orchards, but is showing success with decreased plant numbers and density.

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 process 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. Five species were reviewed for listing or addition to the Noxious Weed Control Program watch list.

Delta arrowleaf, *Sagittaria platyphylla*, was added to the A-list during the February 2018 OSWB meeting. Delta arrowleaf was first added to the watch list in 2016. Submitted by Alex Staunch based on an infestation in Blue Heron Ponds near Portland where he serves as a consultant. It invades wetlands, drainage canals, shallow water ponds and waterways. A significant problem in southeastern Australia, it disperses by seeds and tubers and is very aggressive while still in the aquarium trade.

Four other species were reviewed and risk assessments were prepared or updated for the February meeting. They include pokeweed, European hawkweed, tall mannagrass, and roundleaf water hyssop, *Bacopa rotundifolia*. Pokeweed was already on the Noxious Weed Control Program watch list and the other three species were added for further observation and review.

Pokeweed was first added to the watch list in 2008, and was re-evaluated in 2018 for possible listing. The plant continues to spread primarily in urbanized areas and urban interface in the Portland area. Sites outside of Portland still are uncommon. The plant primarily
occupies disturbed habitats, at this point evidence of invasion into natural areas is lacking. Impacts appear to be minimal at this time and the decision was to have it remain on the watch list.

European hawkweed is a new hawkweed, found by the Clackamas SWCD, and was submitted for listing in 2017. They found this noxious weed on the western side of Mt. Hood National Forest. It is a perennial and doesn’t spread quickly, similar to common hawkweed, primarily inhabiting roadsides and skid roads. Further observations and review are warranted and it was placed on the watch list.

Roundleaf water hyssop, Bacopa rotundifolia, is known from one confirmed location on the Columbia River downstream of McNary Dam. It was previously unknown in Oregon or Washington, with a few known populations in Idaho. The impacts are unknown, but a small population in Oregon may be easy to control if permits could be obtained.

Tall mannagrass, Glyceria maxima, is a tall aquatic grass species with growth similar to Phragmites. It is an A-listed species in Washington State and invades wetlands, marshes, slow moving streams, drainage and irrigation canals. Only known from one potential Oregon site in Umatilla County. The site needs positive verification and further survey to determine its status in Oregon. Add to watch list to provide time for further survey and analysis.

Education and Outreach Activities

Staff participated in numerous education and outreach events promoting invasive weed awareness. Staff made 43 presentations to stakeholder groups and attended over 175 meetings for consultation, planning, and outreach with cooperators and private landowners.

Here are a few of the highlights (alphabetized):

- Baker, Union and Wallowa County Commissioner Meetings regarding Noxious Weed Control Program’s role, priorities, and program accomplishments
- Baker, Union and Wallowa County Commissioner Meetings regarding weed awareness and regional accomplishments
- Baskett Slough and Ankeny National Wildlife Refuge weed prioritization workshop
- Cascades East Vegetation Management Conference
- Central Oregon Let’s Pull Together Annual Weed Pull
- City of Portland BES Invasive 2.0 Summit
- Columbia River Basin Flowering Rush Summit
- CWMA Regional Meetings- 27 in total
- Douglas and Coos County Weed Days
- Eastern Cascade Vegetation Management Conference
- Facebook livestream video presentation on water primrose
- Friends and Neighbors of the Deschutes Canyon Area Annual Weed Pull
- Garlic Mustard Working Group
- Gorse Blossom Festival
- Lane County Master Woodland Meeting
- Lower Columbia River Flowering Rush Work Group
- Monument Soil and Water Conservation District and the Malheur County Pest Management Short Course (OSU Extension)
- Northeast Oregon Weed Managers Gathering
- ODOT Statewide Vegetation Management Conference
- OPB “Think Out Loud” Biocontrol and the Rush Skeletonweed moth
- Oregon Concrete and Aggregate Producers Association
- Oregon County Weed Control Association
- Oregon Department of Transportation Integrated Pest Management Workshop
- Oregon Interagency Noxious Weed Symposium
- Oregon Invasive Species Council
- Oregon Invasive Weed Awareness Week
- Oregon SageCon Summit
- Oregon Society of Weed Science
- Oregon Vegetation Management Association Conference
- OSU applicator training short courses
- OSU Master Forestry Program
- Pacific Northwest Invasive Plant Council Weed Watcher Training
- The Oregon State Fair weed booth (over 3,000 people engaged)
- USFS Region 6 Ventenata/annual invasive grass listening session
- USFS Rush Skeletonweed Biocontrol Workshop held in Banks, ID
- W-4185 Biocontrol Symposium held in Whitefish, MT
- Water Primrose and Yellow Floating Heart Forum
- Western Invasives Network
- Western Oregon University Science Career Fair
- Willamette Aquatics Invasives Network
- XV International Symposium on Biological Control of Weeds in Engelberg, Switzerland
INVASIVE WEED AWARENESS WEEK
The Governor declared the week of May 13-19, 2018 as “Oregon Invasive Weed Awareness Week.” The written proclamation was highlighted as the story of the week on ODA’s news blog. Weed Program staff showcased weed control projects around the state with videos and photos posted on the program’s Facebook page and subsequently shared by cooperators. In addition to the usual Facebook updates, two noxious weeds that are ornamental in nature were featured each day. Videos from the National PlayCleanGo campaign were also featured daily on the Facebook page and emphasized prevention measures that citizens can take while enjoying Oregon’s outdoors.

WATER PRIMROSE AND YELLOW FLOATING HEART FORUM
The Noxious Weed Control Program organized and held a forum at Oregon Department of Fish and Wildlife to discuss the latest development in management of two very serious aquatic noxious weeds, water primrose, *Ludwigia* spp., and yellow floating heart, *Nymphoides peltata*. Both aquatic noxious weeds are threatening Oregon’s water resources and habitat; they impact waterways and irrigation systems and have the potential to be major ecological game changers by impacting water quality and salmon restoration efforts.

The forum was held March 7 at the ODFW building in Salem. Over 75 stakeholders attended including weed specialists, researchers from universities and federal research agencies, state and federal land management agencies, SWCDs, and county weed programs.

OREGON INTERAGENCY NOXIOUS WEED SYMPOSIUM
The Oregon Interagency Noxious Weed Symposium (OINWS) was held in Corvallis, Oregon at the LaSells Stewart Center on December 4-6. OINWS 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. In addition, pesticide recertification credits were available. This year, there were 15 available for Oregon, and 16 for Washington. OINWS is a biennial meeting that is well attended by weed management practitioners from throughout Oregon and surrounding states. One hundred and eighty-two people attended the symposium representing state, federal, county, and local programs.

OREGON STATE FAIR WEED BOOTH
The Invasive Noxious Weed Control Program set up a booth in the Natural Resources area at the Oregon State Fair. Program staff and cooperators helped staff the booth during the week of the fair. Staff answered questions from the public on invasive weeds and biocontrol agents, distributed alerts, brochures, and small promotional items. Hundreds of fairgoers visited the booth, resulting in several invasive plant reports and connections to increase outreach opportunities.

The focus was on preventing the spread of invasive plants and many children tried their hand at a PlayCleanGo pinball game. Players learned ways in which recreational activities can move noxious weeds. There was an emphasis on cleaning hiking boots, tires and boats before and after an outing. Also, on display were the Deschutes County “Invasive Species Education Station” trailer, a robotic weed dog, a selection of ornamental noxious weed live specimens, and a poster detailing the history and current status of tansy ragwort biocontrol efforts.
COLUMBIA RIVER BASIN FLOWERING RUSH SUMMIT

Columbia River Basin Flowering Rush Summit gathered Canadian and American aquatic resource managers from around the region to assess the issue of flowering rush invasion into the Columbia River Watershed and to begin creating a coordinated response plan. This was the seminal meeting of what is to become the “The Columbia River Basin Cooperative Weed Management Area”. The Noxious Weed Control Program is represented on the steering committee of the CWMA. ODA Noxious Weed Control Program staff presented on the status of flowering rush in Oregon and regarding manual control methods for flowering rush.

SOCIAL MEDIA

The Invasive 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 greater public. The program also uses Flickr, a photo-based social media site, to compile photographs of individual noxious weeds and feature outreach activities.

Oxbow Slough Field Day and Facebook Live Stream

Staff highlighted the impacts of Ludwigia at Oxbow Slough with a field tour and live video feed from Minto Brown Park. Helmut Rogg, Director of the Plant Protection & Conservation Program, invited ODA Director Alexis Taylor and Natural Resource Program Director Stephanie Page to visit Oxbow Slough located at Minto-Brown Park near Salem to see firsthand the impacts of water primrose. The tour provided the opportunity to talk about how Ludwigia impacts ecosystem processes, water quality, and has the potential to degrade watershed health as well as impact irrigation, infrastructure, and recreation. Over the last six years, Ludwigia has taken over Oxbow Slough. The visit was prompted by a recent report of a fish die-off by ODFW at the slough, which is suspected to be linked to Ludwigia.

The program also collaborated with ODA’s information office to host a Facebook live streaming video from the site a few weeks later. The idea was to highlight the concerns and impacts around the invasion of Ludwigia into the Willamette River system with the greater public. Staff used the live stream video to demonstrate the impacts and answer questions regarding management, reporting, and how the public can help. The tagline, “Have you seen the spreading of Ludwigia in a river or waterways near you? Take a live stream tour and learn why this is an ecosystem game changer with invasive weed experts” was used to attract viewers.

The Western Governors’ Association Meeting

Joel Price represented ODA’s Plant Protection & Conservation Programs at the Western Governors’ Association (WGA) 2018 annual winter meeting held in Hawaii. The main focus of the meeting was the challenge of invasive species and the threats they pose to biosecurity. Ten western governors including Kate Brown of Oregon joined Hawaii’s governor David Ige at the meeting. The first day’s sessions included a mid-year update of the Western Governors’ Biosecurity and Invasive Species Initiative followed by a roundtable discussion on the topic moderated by governor Ige, the current WGA Chair.

Joel Price on panel in Hawaii during WGA.

Joel participated as a presenter and panelist on the second day in a session titled “The Use of Biocontrol: Management Strategies and Policy Considerations”. His presentation provided a mainland perspective and discussed the science and safety behind introducing biocontrol agents. He touched on the role of the Technical Advisory Group, testing and permitting, and other safety and regulatory measures that are in place for introducing new biocontrol agent to North America. The session included a roundtable discussion on the use of biological control.

2018 Biocontrol Pipeline “White Paper” Update

Since the Noxious Weed Control Program’s influential white-paper was originally drafted in 2015, significant progress has been made by the regulatory agencies involved in the biocontrol approval pipeline. Most of the progress in petitioned agents moving through the permitting pipeline has been made in timing and transparent communication. For example, the
USFWS issued petitioner guidelines in 2015 to better inform research needs. Also, the agencies involved in the, often slow, “section seven consultation” now participate in monthly calls while drafting concurrence letters.

The Technical Advisory Group (TAG) regularly provides an updated website spreadsheet detailing the actions taken towards issuing release authorization. This transparency has changed the ability of biocontrol practitioners to give concrete answers to requests for information on current agent status. Additionally, APHIS has created self-imposed time constraints for action on petitions. Agent petition decisions can no longer be put off indefinitely into the future for later consideration, but are now processed in a timely manner. APHIS has also hired Robert Pfannenstiel as the APHIS PPQ permitting authority. He has been communicative on specific agent inquiries and is drafting guidelines for consideration of potential benefits of biocontrol candidates to threatened and endangered species. APHIS is also drafting a new rule deregulating established agents that would remove barriers to interstate cooperation.

USFWS Branch of Environmental Review has hired a three-quarter time position for evaluation of agent petitions. The new hire, Jeffery Herod, has been secured for the next five years to begin moving petitions that have stalled and resided in the agency files for years. He has worked rapidly to draft letters of concurrence for USFWS signature. The USFWS plans to process as many petitions as possible during his allotted tenure to move the backlogged pipeline.

Due to requests by the Oregon Department of Agriculture and others, the above changes have led to five new agents permitted for release:

### 2016
- *Parafreutreta regalis* fly on Cape Ivy
- *Lasioptera donacis* midge on Giant reed

### 2017
- *Hypena opulenta* moth on Swallow-wort

### 2018
- *Aceria drabae* on White-top
- *Rhinusa pilosa* on Yellow toadflax

New agents likely to be permitted in coming months:
- *Aphalara itadori* on Giant and Japanese Knotweeds
- *Pseudophilothrips ichini* and *Calophya latiforceps* on Brazilian peppertree
- *Cheilosia urbana* on Hawkweed spp.
- *Ceratapion basicorne* on Yellow starthistle
- *Sericothrips staphylinus* on Gorse

### Special Projects

#### WEED FREE FORAGE CERTIFICATION

ODA completed inspections for 34 growers and certified 2,934 acres as weed-free in 2018. 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 2018, the Noxious Weed Control Program started a pilot Weed Free Gravel program that provides voluntary annual certification to quarries ensuring their operating areas are free of problem noxious weeds. 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, who also inspect fields for Weed Free Forage certification.

The pilot program was developed in consultation with Noxious Weed program staff, and staff will continue to play a key role in providing presentations, promoting the new certification, and aiding in noxious weed identification as needed.

The new program was presented to the Oregon Concrete and Aggregate Producers Association in June for their input, and was well supported. There have been four operations and 450,000 tons certified to date. The Noxious Weed Control Program continues to promote the program at meetings attended by noxious weed managers and Commodity Inspection is currently drafting an Administrative Rule to make the program permanent.

**WEEDMAPPER**

WeedMapper is an extensive database of noxious weed sightings displayed in an interactive website map. Each year, the Noxious Weed Program collects new reports of weed locations from multiple agencies and organizations around the state to add to the display, much of which originates from projects funded by Oregon State Weed Board grants. The Invasive Noxious Weed Control Program also has a data sharing agreement with imapinvasives.org, which collects data from multiple sources and includes confirmed reports from the Oregon Invasive Species Hotline. https://oda.direct/WeedMapper. The data and map displays are used by noxious weed managers throughout Oregon and beyond for planning, reports, and evaluating changes in weed populations over time.

The 2018 update brought in a large amount of new weed locations current through the 2017 field season, and many duplicate and unverified sites were cleaned from the data set. Thirty-three cooperators shared new data with WeedMapper this year in addition to the display of data from imapinvasives.org.

**Early Detection and Rapid Response (EDRR)**

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-listed 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 implemented 63 control projects targeting 29 A-listed and T-listed species during the 2018 field season.
The following are highlights of these projects:

**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. The first report was from an OSU herbarium record from the mid-1960’s in Crook County, but it did not mention a specific location. A member of the Native Plant Society located the site in 1991. African rue has been treated as an A-listed weed by the Noxious Weed Program and Crook County since the rediscovery. In September 2008, a second infestation was reported to the Invasive Noxious Weed Control Program. A contractor working for the Bureau of Indian Affairs noted a possible infestation on tribal allotments located in the Harney Basin southeast of Burns. The Noxious Weed Program verified the site and a 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.

The Crook County infestation is along Highway 27 and occurs on both public and private lands. The main portion of the infestation is on BLM land, with BLM providing most of the funding for control. Crook County and the Invasive Noxious Weed Control Program are working together to treat the site. The population has remained static since 2013 and requires annual treatments to maintain control. An African Rue Cooperative Weed Management Plan was completed in 2009 for the Harney County site. This project is now largely funded by an OSWB grant to Harney County and is monitored by Noxious Weed Program staff. Overall, both populations of African rue have been reduced; both sites require annual treatment.

**BARBED GOATGRASS, AEGILOPS TRIUNCIALIS – A(T)**

Barbed goatgrass, an A-listed weed, was detected in 2003 along Hwy 199 near Rough and Ready Creek, south of Cave Junction in Josephine County. While infested acres of barbed goatgrass are increasing in California, this location in southwestern Oregon is the only known population in the state. Plants were manually removed and bagged. 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.

**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.

Cordgrass prevention and control efforts have been very successful at preventing widespread establishment in Oregon’s coastal estuaries. Fewer than a dozen small sites have been found and eradicated since 1999. The Siuslaw bay and Cox island was surveyed 2018 and no additional sites were found.

**FLOWERING RUSH, BUTOMUS UMBELLATUS – A(T)**

A new population of flowering rush was detected in a pond in Klamath County toward the end of the 2017 field season and was treated in 2018. Since 2014, flowering rush has been a high priority for detection and control efforts in Oregon. Several small populations of flowering rush were found in Lake Wallula on the Columbia River in Umatilla County, Oregon in early August 2014. Surveys conducted by Portland State University’s (PSU) Center for Lakes and Reservoirs detected the infestations. These were the first known occurrences in Oregon of this A-listed weed. Populations of flowering rush were already known from the Spokane, Yakima, 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.

Flowering rush continues to be a focus of survey and control efforts on the Columbia River. The Columbia River Flowering Rush Working Group and cooperators from Oregon and Washington are teaming up to work on the issue. Most of the Columbia River was surveyed by the end of 2016, from McNary Pool west to south of Portland. So far it has only been found above the John Day Dam. In 2017, flowering rush was detected in two sections on the Oregon side of the river; the initial finds were in Lake Wallula and below McNary Dam in the John Day pool.

The Klamath infestation was confirmed in July at a site near Bonanza. The infestation is in a Koi pond that is less than a quarter acre in size. Treatment of the site occurred in August. It was determined that lowering the water level of the pound to expose the flowering rush would be most effective. A deeper portion of the pond is free of flowering rush and was used as a non-treatment zone sanctuary for the population of Koi. The flowering rush was successfully treated but there was some Koi mortality from the water draw down and stress to the fish.
GARDEN YELLOW LOOSESTRIFE, *LYSIMACHIA VULGARIS* – A(T)
A new A-rated weed, garden yellow loosestrife, was found in 2016 on Wheatland Bar Island 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 in 2016 and follow-up monitoring and treatment was completed in 2017. The site will be checked in 2019 for regrowth.

GIANT HOGWEED, *HERACLEUM MANTEGAZZIANUM* – A(T)
Noxious Weed Program staff worked 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. A large percentage of the sites are in residential landscapes or escaped populations from ornamental plantings. Fanno Creek and Vermont Creek, both in the Metro area, are the two known riparian sites. Of the 193 known sites, 173 are considered eradicated. Overall, active giant hogweed sites and plant numbers have dropped significantly since first discovered in Oregon in 2001.

GOATSRUE, *GALEGA OFFICINALIS* – A(T)
Goatsrue is a state and federally listed noxious weed. A new population was identified in 2017 at an organic farm in Junction City where it was being grown and sold as a medicinal herb. The Noxious Weed Control Program contacted the grower and issued a notification letter informing the grower that he is prohibited from growing and selling goatsrue. During the 2018 growing season, the Noxious Weed Control Program worked with the grower to develop a control and monitoring plan to treat the site. Goatsrue is also known from historic sites in Josephine and Klamath counties, four locations in Portland, and one site near Tualatin.

HOARY ALYSSUM, *BERTEROA INCANA* – A(T)
Hoary false alyssum was listed as an A-listed weed in 2015. It occurs in two regions of the state; one site in northeast Oregon near the town of Wallowa and the second site in central Oregon in Deschutes County. The Noxious Weed Program surveyed 32 acres and treated 3 acres at the Wallow County site in 2017. Deschutes County is treating the central Oregon locations.

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 outcompete desirable or native species. Matgrass was first noticed about 36 years ago in a peat pasture near Fort Klamath. The Klamath site was the only Oregon infestation until 2015, when three new coastal sites were detected. The new finds prompted the Noxious Weed Program to act in 2016, expanding efforts for detection and control in coastal counties. In 2015, infestations were confirmed at Cape Blanco airport in Curry County and Devil's Kitchen State Park in Bandon, Coos County. A third site was also confirmed in Clatsop County on the North Coast Land Conservancy. Impacts to coastal habitats are lesser known, but early surveys reveal an aggressive invader that pushes out native flora. The south coast sites are in an area of botanical importance. The Coos site is noted for a unique pygmy forest and is one of the few remaining habitats for the federally endangered western bog lily. In 2018, the Invasive Noxious Weed Control Program continued treatment efforts and completed additional surveys and outreach activities for coastal prairie habitats.

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 by TNC for the protection of Kincaid’s lupine. The Invasive Noxious Weed Control Program has worked with TNC to manage the infestation since it was discovered. In 2017, a satellite population was found on an adjacent private property during a survey of the area. The Invasive Noxious Weed Control Program worked with TNC and the Yamhill SWCD to conduct additional surveys and treatment of the infestation. This season, the Noxious Weed Control Program used an OSWB grant to fund treatment of the site with Yamhill SWCD’s assistance.

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 at the location in the mid 1900s. The core infestation is at the Oregon Office of Emergency Management along the south shore of a pond. It has also moved off site to a drainage ditch that is adjacent to an Oregon State Penitentiary property along Mill Creek. One new infestation was identified at a residence in Salem this field season. Noxious Weed Program staff treated all known locations and observed a 99% decrease overall. There are also scattered locations in the Portland Metro area that the City of Portland and Clackamas SWCD staff are monitoring and treating. It is not
entirely clear how these urban locations originated, but some of them may have been planted as ornamentals.

**ORANGE HAWKWEED, PILOSELLA AURANTIACUM – A(T) AND MEADOW, P. CAESPITOSUM – B(T)**

Hawkweeds are highly invasive members of the aster family. Once established, hawkweeds can quickly develop patches that spread until they cover an area forming solid mats of rosettes. Hawkweeds displace native plants, posing a serious threat to native plant communities. They can also dominate pastures, lawns, and roadsides, crowding out desirable species.

Two new populations of orange hawkweed were found in Clatsop County in 2017. The sites were reported by the Oregon Department of Forestry. The closest infestations are in Washington and Clackamas counties. Additional populations occur in Wallowa, Union, Deschutes, Klamath, and Harney counties. Overall, orange and meadow hawkweeds continue to be found at new locations in central and eastern Oregon. So far, most of the new finds on national forests and private timberlands are manageable. One concern is the increasing number of new orange hawkweed sites occurring in urban areas in Deschutes County where management in lawns and landscapes is difficult. It is an attractive plant and has been traded and used as an ornamental. Awareness and outreach activities help to increase the reporting of new sites. The number of new locations continues to increase.

**PLUMELESS THISTLE, CARDUUS ACANThOides – A(T)**

Plumeless thistle is known from three counties: Klamath, Grant 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 County. The Invasive Noxious Weed Control Program monitors the sites annually and works with the respective counties to treat the infestations aggressively to reduce plant densities and contain the populations.

**RAVENNAGRASS, SACCHARUM RAVENNAE – A(T)**

Ravennagrass was listed as an A-listed weed in 2015. At the time of listing, the only known site was near McNary Dam in a wildlife area managed by the Army Corps of Engineers. Additional locations were found in Malheur County during surveys conducted in 2016. All of the sites were monitored and treated in 2017. Observations from 2018 indicate that Malheur County has multiple new sites and some are moving out of yards and into waste areas, irrigation ditches, and along roadsides. The Noxious Weed Control Program is working with the county to come up with a management plan for 2019.

**SQUARROSE Knapweed, CENTAUREA VIRGATE – A(T)**

Squarrose knapweed is an A-listed weed in Oregon. A historic site in Malheur County continues to be monitored and no plants have been found since 2003. A Grant County site has been under intensive treatment since its discovery in the early 1980s. Grant County manages the project through an OSWB grant, while the Invasive Noxious Weed Control Program continues to monitor treatment efficacy. The original project area was spread across 3,200 gross acres. Over the past 20 years, the infestation has been reduced by 99% to less than 1.25 net acres over 140 gross acres. A site in Jefferson County was detected in 2003 and has been treated and monitored. No plants have been found for several years, but the Invasive Noxious Weed Control Program will continue to monitor the site until it is declared eradicated.

**Taurian thistle, ONOPORDUM TAURICUM – A(T)**

Taurian thistle is a sister plant species 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. Two new sites were found in 2012, located west of Klamath Falls on Hwy 140. Both sites totaled 200 plants and covered one net acre. The Invasive Noxious Weed Control Program and Klamath County continue to monitor and treat sites.
WATER PRIMROSE, *Ludwigia* spp. – B(T)
The Noxious Weed Control Program staff and cooperators have made efforts to escalate detection and control efforts for water primrose in the Willamette Valley. This species, along with flowering rush and yellow floating heart, has the potential to cause significant impacts to riparian health and water resources. These species alter water quality, increase sedimentation, and contribute toward the loss of important habitat. Control efforts in Lane County are now being coordinated to reduce or eliminate *Ludwigia* from water bodies that flow into the upper Willamette system. OSWB grants and Invasive Noxious Weed Control Program staff are assisting with treatments and surveys in the Long Tom River system and the main stem of the Willamette River. Ludwigia infestations are being identified and recorded in a central database managed by the non-profit group, Willamette Riverkeeper. With an OSWB grant, the Willamette Riverkeeper is developing a management plan that will help guide future treatment efforts. 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, OSP, and Willamette Riverkeeper.

WELTED THISTLE, *Carduus crispus* – A(T)
Welted thistle, first thought to be musk or plumeless thistle, was discovered in 2016 in Wallowa County. Welted thistle is only known in North America from one other site west of the Rockies, in British Columbia. The Invasive Noxious Weed Control Program worked with Wallowa County and the site was surveyed and treated in 2018.

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 24 sites have been documented. The number of new sites continues to increase in western and central Oregon. In 2017, new sites were found in Douglas, Lane, and Deschutes counties. Sites are now starting to be identified and treated on the Willamette system. The Invasive Noxious Weed Control Program is working with a number of partners and private landowners to manage this species including Willamette Riverkeeper, local SWCDs, and the Umpqua National Forest.

A significant accomplishment was the treatment of a site found in 2017 in the Umpqua National Forest, the Beaver Pond. The Noxious Weed Control Program worked with the US Forest Service to gain permission to treat the location through a Categorical Exclusion Permit. The Beaver Pond was finally treated in August of 2018.

**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 into their leaves and shoots. In the 1990s, Viridian LLC promoted the use of *Alyssum* species for phyto-mining, the process of using plants to accumulate metal and then harvest it from naturally high mineral (serpentine) soils. Viridian planted *Alyssum* on nine serpentine-rich sites in the Illinois Valley in southwest Oregon.

The venture failed and Viridian abandoned the projects around 2005. *Alyssum* spread from the planted fields and became invasive in the surrounding area. The Illinois Valley contains the largest concentration of serpentine soils in Oregon and supports a diverse and unique flora. There are more state and federally listed "Threatened" and "Endangered" plants on serpentine soils in Oregon than on any other soil class. Many of the planted *Alyssum* fields were directly adjacent to these highly valued botanically rich treasures. The Noxious Weed Program completed a weed risk assessment that resulted in both species being listed as A-listed weeds by the Oregon State Weed Board in 2009. Containment efforts continue with annual survey and control.

**WOOLY DISTAFF THISTLE, *Carthamus lanatus***
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. At a minimum, each site is worked three times each year. Since the inception of this project, woolly distaff thistle has been reduced by 98% from historic levels.
Highlights in Biological Control of Weeds

Classical weed biological control is the planned introduction of natural enemies from a plant’s native range to an invaded range in order to establish an ecological equilibrium between the herbivore and host below an economic impact threshold. Since 1947, there have been 78 species of classical biological control agents introduced against 27 species of noxious weeds in Oregon (34% widespread and effective, 41% actively redistributed, 25% no-longer used). The Noxious Weed Program manages over 120 biocontrol projects (weed/agent combinations). The Noxious Weed Program houses the State’s biocontrol database that contains more than 15,800 biocontrol release records.

Our program strives to adhere to the “International Code of Best Practices for Classical Biological Control of Weeds” in order to implement a safe and effective biocontrol program. Our goal is to protect natural resources through import of approved biocontrol agents, redistribution to major infestations of noxious weeds, and monitoring impacts on target species. Several biocontrol projects in Oregon have been successful in controlling invasive weeds; including, tansy ragwort, St. Johnswort, musk thistle, Mediterranean sage, purple loosestrife, yellow starthistle, Dalmatian toadflax, and diffuse knapweed.

It is difficult for private enterprise to recuperate development costs of a biocontrol project in a timely manner. Funding for a project is expended during foreign exploration, host specificity testing, and introduction phases, leaving few funds for long-term efficacy and economic benefit studies. Classical biocontrol is a significant public good with efficacy and safety standards higher than ever, however, classical biocontrol has historically lacked documentation of economic benefits.

Today, human health benefits are increasingly considered in the analysis of biological control programs. For example, reduction of aerial ragweed pollen by the Ophraella beetle in Europe is expected to reduce allergy suffering by 19%, thus saving €1.7 billion euros annually (Schaffner et al. 2018). The benefits of a single successful biocontrol agent can easily compensate for several previous unsuccessful agents. Reported cost-benefit ratios (dollars spent vs dollars saved) around the world vary from 1:112 to 1:2. For example, biocontrol of tansy ragwort in Oregon yielded a 1:15 cost-benefit ratio with a steady stream of returns, i.e., $10.2 million/ year (2018, USD). Annual agency expenditures on tansy ragwort is now less than $20,000 per year. By actively redistributing ragwort biocontrol agents instead of waiting for natural spread, the Noxious Weed Program accomplished a successful regional project 5-10 years sooner, thus avertng $51 to $102 million (2018, USD) in losses to our agriculture industry.

A partially successful biocontrol project—one that reduces weed infestations by variable percentages over large areas—can provide a positive cost-benefit ratio, even though the degree of weed control may be less than desired. Even a modest 10% reduction of Scotch broom by biocontrol agents would yield $1.5 million in annual benefits to private and public landowners. In 2018, an estimate of the net economic benefit of biocontrol agents in Oregon is valued at $14.6 million/year USD (Coombs et al. 1996). This estimate could be quite low. According to Noxious Weed Control Program’s 2014 “Economic Impact from Selected Noxious Weeds in Oregon”, our top targets impacted by biological control (i.e., purple loosestrife, yellow starthistle, Dalmatian toadflax, and tansy ragwort) are infesting far fewer acres than our models predict as suitable habitat. The control of these populations saves the State, on average, over $24 million per year per species, for a total potential savings of $96 million. A statewide spray program also aids in keeping these species controlled, but even discounting biological control agents on these four weeds as responsible for 10-15% of said control (90% reduction in ragwort populations six years following releases [McEvoy et al. 1991]), the program likely saves much more than $14.6 million annually.

SIGNIFICANT ACCOMPLISHMENTS FOR 2018

The Noxious Weed Control Program’s longstanding biocontrol entomologist position was not filled for most of the 2016-17 field seasons as a cost saving measure. Biocontrol work in 2017 was reduced by about half. The noxious weed biocontrol program survived by entrusting work to regional staff and Colin Park (APHIS-PPQ Portland). In December 2017, the position was filled by Joel Price, relieving staff and cooperators statewide of their significant interim efforts to keep the program moving.

In an effort to increase our educational abilities, we updated 68 biological control agent profiles on the ODA Noxious Weeds website, our greenhouse received years’ worth of delayed maintenance, and representative weed species were grown for outreach events. We also began creating biocontrol maps and databases on mobile device applications allowing us to contribute to a larger body of data with collaborators across the western US (ex., Survey123, Collector, iBiocontrol).

In 2018, we monitored 41 biocontrol sites for 23 species across 16 Oregon counties. This required 11 overnight trips comprising 36 full field days. Overall, biological control agents for many historic systems remain widespread. A great example is Phrydiuchus tau weevils on Mediterranean Sage. In May 2018, four sites were monitored in Klamath and Lake counties; weevil larval damage was observed on the majority of rosettes. Another example is Spotted and Diffuse
knapweed; agents were found active at 13 of 14 sites, monitored in 2018.

Oregon biocontrol collection and releases conducted in 2018 through the Noxious Weed Control Program are listed in the following table.

<table>
<thead>
<tr>
<th>Targets</th>
<th>Species</th>
<th>Adults</th>
<th>Releases</th>
<th>Beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada thistle</td>
<td><em>Puccinia punctiformis</em></td>
<td>300 grams</td>
<td>20</td>
<td>Portland Parks, USFWS, ODFW, BLM-Burns/Florene, TNC, OPRD, Buford Park</td>
</tr>
<tr>
<td>Dalmatian toadflax</td>
<td><em>Mecinus janthiniformis</em></td>
<td>3,000</td>
<td>6</td>
<td>Grant, Crook, Lake counties</td>
</tr>
<tr>
<td>Leafy spurge</td>
<td><em>Aphthona spp./Oberea erythrocephala</em></td>
<td>20,000</td>
<td>5</td>
<td>BLM-Baker, Wallowa, Crook counties</td>
</tr>
<tr>
<td>Puncturevine</td>
<td><em>Microlarinus lareynii</em></td>
<td>500</td>
<td>5</td>
<td>Owyhee Irrigation District, Malheur (Private), Monument SWCD, OSU Ext.-Umatilla</td>
</tr>
<tr>
<td>Purple loosestrife</td>
<td><em>Hylobius transverso-vittatus</em></td>
<td>1,800</td>
<td>6</td>
<td>Jackson, Wasco (Private), Harney counties, Coos Watershed Assoc., Tillamook SWCD</td>
</tr>
<tr>
<td>Rush skeletonweed</td>
<td><em>Bradyrrhoa gilveolella</em></td>
<td>100</td>
<td>1</td>
<td>Morrow SWCD</td>
</tr>
<tr>
<td>Russian knapweed</td>
<td><em>Aulacidea acroptilonica</em></td>
<td>400 galls</td>
<td>6</td>
<td>Harney County Weeds, Umatilla, Lower Deschutes CWMA, Morrow County</td>
</tr>
<tr>
<td>Scotch broom</td>
<td><em>Bruchidius villosus</em></td>
<td>400</td>
<td>4</td>
<td>Oregon State University</td>
</tr>
<tr>
<td>Yellow toadflax</td>
<td><em>Mecinus janthinus</em></td>
<td>100</td>
<td>1</td>
<td>Lake County</td>
</tr>
</tbody>
</table>

9  10     26,600  54  28

Much of the work reestablishing our program was done in cooperation with the Animal Plant Health Inspection Service, Plant Protection and Quarantine (USDA-APHIS-PPQ). Together we collected over 66,000 biocontrol agents for redistribution to county weed programs, other agencies, and states (ID, NV, WA, NY, RI).

We monitored 68 sites across 16 counties, for 20 biocontrol agents on 11 noxious weed species. We released 48,000 agents of 15 species at 46 sites in 14 counties on 9 noxious weed species.

In order to reestablish planning and outreach between our program and cooperators, noxious weed control meetings were attended in several Oregon locations, as well as Idaho and Montana. Ten presentations were provided (i.e., Salem, La Grande, Redmond, Eugene, Bandon, Portland, Hillsboro, Albany, Hood River, Seaside). Our work on rush skeletonweed moths was featured in the Mail Tribune (6/11/18) and OPB “Think Out Loud” radio (6/22/18). We also reestablished outreach meetings with Dr. Peter McEvoy, Oregon State University (OSU), specifically partnering with Dr. Fritzi Grevstad, at the OSU Forestry Sciences Quarantine Laboratory, working on biological control of knotweeds and gorse.

**ISBCW AND W-4185 MEETINGS**

During the XV International Symposium on Biological Control of Weeds (ISBCW) in Engelberg, Switzerland, we presented two scientific posters. Oregon was internationally recognized as a leader in biological control advocacy, working with state legislators and federal agencies to reestablish functioning agent approval processes. Partly as a result of our efforts, APHIS now has self-imposed due dates for processing paperwork and US Fish and Wildlife Service assigned a 3/4-time employee in the Branch of Environmental Review. Both agencies now have monthly conference calls and are drafting a deregulation for movement of widespread agents that have been approved for many years. Attendance at the W-4185 Western Weed Biocontrol Conference in Whitefish, MT allowed further collaboration with...
Montana researchers holding permits for whitetop and yellow toadflax agents. Plans were announced at the meeting to petition for further YST weevils, RSW moth, and Scotch broom mites.

**CANADA THISTLE, Cirsium arvense** – B(T)

*Puccinia punctiformis* 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 in supplying inoculum to many western states. Oregon was left out of the initial year of inoculum spread but we worked in 2018 to bring Oregon up to speed. Field nursery/monitoring sites were established with Portland Parks, USFWS, ODFW, BLM-Burns/Florence, TNC, OPRD, and Buford Park.

**GORSE, Ulex europaeus** – B(T)

In 2008, testing of the gorse shoot moth, *Agonopterix ulicitella*, and the gorse thrips, *Sericothrips staphylinus*, began at the OSU quarantine facility. Insects were collected near Hilo, HI and brought to Oregon. The project is being coordinated by Dr. Fritzi Grevstad, OSU, and is primarily funded by the US Forest Service. A petition for field release of the gorse thrips was submitted in 2012 and pre-release studies were conducted along Oregon's southwest coast. There are plans for 2019 field release, as the Technical Advisory Group (TAG) approved the gorse agent petition to APHIS, and are now in the final stage of Environmental Assessment with USFWS HQ review. Several host plants were collected and are being grown at the Noxious Weed Control Program's greenhouse facilities in preparation for thrip pre-release colony build-up. As part of his trip to the WGA's “Biosecurity and Invasive Species” initiative in December, Joel Price collected over 600 adult thrips from gorse populations in the Big Island Hawaii. The thrips were shipped to Dr. Grevstad’s quarantine facility to refresh the original thrips population.

**JAPANESE KNOTWEED, Fallopia japonica** – B

Host specificity tests of the plant sucking psyllid, *Aphalara itadori*, at the OSU Quarantine Lab by Dr. Fritzi Grevstad were finalized and a petition for field release was submitted to TAG. More testing is required on the southern strain; however, the northern strain was approved by TAG, passed the Section 7 consultation process, and the petition is now in the Office of the Federal Register. Petition approval is expected in the spring of 2019 and host plants have been grown at the Noxious Weed Control Program’s greenhouse facilities in preparation for psyllid pre-release colony build-up.

**PUNCTUREVINE, Tribulus terrestris** – B(T)

The seed weevil, *Microlarinus lareynii* was introduced to Oregon in 1983. Weevils were found established throughout the Rogue Valley in Jackson County 2015 and Irrigon, Umatilla County. The weevils do not readily overwinter in other areas in Oregon, despite numerous introductions. In warmer regions in the southwest US, these insects have been successful in controlling puncturevine. Numerous releases were made using infested plant material collected in Irrigon in 2009. The original weevils were imported from Colorado at a time when populations there were thought to seasonally migrate up from warmer climes in New Mexico and Texas. Today, overwintering populations have established throughout Colorado and are thought to be a “cold-hardy” strain. We imported 500 weevils to Malheur, Grant, and Umatilla counties with intent to revisit in 2019 and redistribute statewide as cold-hardy weevils build in numbers.

**WHITETOP, Lepidium spp. – B(T)**

We visited several Whitetop infestations throughout northeastern Oregon searching for locations to set up additional pre-release Standardized Impact Monitoring Protocol (SIMP) transects. Three new SIMP sites were established near Vale and Izee, Oregon. We maintain communications with and offer support to Montana State University for the 2018 PPQ permitted *Aceria drabae*. This eriophyid mite colony in quarantine lost much of its size shortly before permits were issued.
and as a result, no releases have been made in the US to date. Shipping efforts have largely failed; mites will be hand-carried to the US spring 2019.

**LEAFY SPURGE, EUPHORBIA ESULA – B(T)**

Established in 1994, the stem-boring beetle *Oberea erythrocephala* now occurs at most sites and has led to a decline of larger plants at many infestations in eastern Oregon. Sites were monitored in Deschutes, Malheur, Wallowa, Grant, and Crook counties. Over 20,000 leafy spurge agents were collected from Bryant Mountain, Klamath County. *Aphthona* spp. beetle populations were above average in south-central Oregon and *O. erythrocephala* damage was noted constantly during site monitoring. Significant decline in leafy spurge was observed near Willow Creek (Huntington, OR). Over 20,000 agents were collected in June from Klamath County and released in Wallowa County.

**PURPLE LOOSESTRIFE, LYTHRUM SALICARIA – B(T)**

We arranged for the root weevil, *Hylobius transersovittatus*, to be shipped from the Idaho Nez Perce Biological Control Center in Lapwai, ID and the Palisade, Colorado Department of Agriculture Insectary to Jackson, Wasco, Harney (Stinkingwater creek), Coos, and Tillamook counties. More than 46,000 *Galerucella* beetles were collected from St. Paul, Oregon, and shipped to Harney County (Stinkingwater creek) and cooperators in ID, WA, NV, NY, and RI.

**RUSH SKELETONWEED, CHONDRILLA JUNCEA – B(T)**

Three agents have been released on rush skeletonweed: a root-boring moth, *Bradyrrhua gilveolella*, a stem-gall midge *Cystiphora schmidtii*, and a gall mite, *Eriophyes chondrillae*. Midge and mite agents were found most prolific and exerting control at the Umatilla Army Depot. We focused efforts into monitoring nine *B. gilveolella* release locations. We attended a skeletonweed training in Banks, Idaho (the US epicenter of moths), but found their populations in continual decline and with a dozen people, failed to collect a single release. We observed abundant midges and mites in eastern Oregon, but statewide only one site (Douglas County Line) with *B. gilveolella* observed (3 adults). One release of 100 adults was conducted at the Umatilla Army Chemical Depot. We will continue to request *B. gilveolella* releases from Idaho as long as they are available at no cost through the NPBC greenhouse colony. Additionally, we will turn our focus toward alternative agents for control that *B. gilveolella* has failed to provide.

**RUSSIAN KNAPWEED, ACROPTILON REPENS – B(T)**

The gall midge, *Jaapiella ivannikovi*, was established as a greenhouse colony in 2018 for early spring 2019 releases. Early spring has proved to be most successful in establishing midges before summer heat triggers estivation. We grew knapweed plants from seed and imported greenhouse adapted midges from Colorado. We also collected 800 galls of the gall wasp, *Aulacidea acroptilonica* from the McNabb Road site along Willow Creek, Morrow County, and redistributed the galls in Harney, Umatilla, Wasco, and Morrow counties. Monitoring the State’s largest population for impact at McNabb Road in Morrow County continued in cooperation with APHIS-PPQ.
Northwest Region
By Beth Myers-Shenai & Glenn Miller

LOTTERY FUND PROJECTS

Common Reed (*Phragmites australis*)
Multnomah Channel, Lower Willamette River – Portland Metro Area

- B-rated
- Cost Center: Lottery

Invasive Noxious Weed Control Program staff, in cooperation with Portland State University’s Center for Lakes and Reservoirs and West Multnomah Soil and Water Conservation District, continue to locate and treat patches of non-native common reed on the lower Willamette River and in the Multnomah Channel.

Common reed is an aggressive invasive grass capable of colonizing wetlands and moist lowlands throughout the Pacific Northwest. High water events often fragment and transport root fragments downstream from parent populations. Elimination of these Portland area populations reduces the chance of colonization on the prime marshlands on the lower Columbia River.

Old and new infestations were treated in September utilizing backpack applications of imazapyr herbicide. These treatments are effective in eradicating common reed if annual monitoring and follow-up treatments are consistently applied.

- 0.30 net acres treated
- 17.8 river miles surveyed

Garden Yellow Loosestrife (*Lysimachia vulgaris*)
Willamette River – Wheatland Bar

- A(T)-rated
- Cost Center: Lottery

Invasive Noxious Weed Program staff were not able to visit this site in 2018 due to logistical constraints. The site, on an island in the Willamette River just north of the Wheatland Ferry, was reported in 2016 via the Invasive Species Hotline website by a recreational kayaker.

The source of this infestation is unknown, but further reports from the area indicate there may be more plants across the small channel from the island and further monitoring and treatment is high priority for 2019.

Garden yellow loosestrife was introduced to the US as an ornamental plant and would cause severe disruption to sensitive wetland habitats if allowed to become established.

Giant Hogweed, (*Heracleum mantegazzianum*)

- A(T)-rated
- Cost Center: Lottery

In 2018, Noxious Weed Program staff collaborated with the City of Portland, Clackamas SWCD, Hood River SWCD, Tillamook SWCD and Tualatin SWCD to monitor and treat active locations of giant hogweed.

One new site was reported in Beaverton via the Invasive Species Hotline website and was treated by a Tualatin SWCD contractor, and another was discovered in a natural area recently purchased and surveyed by City of Portland which teamed up with ODA for treatment. A previously undiscovered patch in the Fanno Creek floodplain was found by ODA and treatment was arranged later in the week by Tualatin SWCD. Most sites are in current or former residential landscape settings, and respond well to treatments once discovered.

Overall, active giant hogweed sites and plant numbers have dropped significantly since it was first discovered in Oregon in 2001. Giant hogweed is a federally-listed noxious weed with sap that can cause serious burns.

The plant is considered a public health hazard. It also is an aggressive invader of riparian and open areas and produces...
large amounts of seed that can easily scatter and float. It is being managed aggressively in Oregon with the goal of eradication.

- 0.01 net acre treated over 1 gross acres

**Goatsrue** (*Galega officinalis*)
*Tualatin*

- A(T)-rated
- Cost Center: Lottery

The City of Portland, Metro, Clean Water Services, and Clackamas SWCD are all working on active sites in the Portland metro area, the largest of which was discovered in 2016 along the banks of the Clackamas River at an old gravel quarry site, possibly a source for other plants in the region. Plant numbers are in slow decline at all these sites. One agricultural site in the Upper Willamette Valley was reported growing it in 2018 for herbal trade but tilled under the crop at the request of ODA. A follow up site visit confirmed that the crop was destroyed. Goatsrue is a federally listed noxious weed that is highly toxic to livestock and is being managed aggressively with the goal of eradicating it in Oregon to prevent potential damage to the agriculture industry.

- 0 net acres treated
- 0.10 gross acres monitored

**Matgrass, (*Nardus stricta*)**
*Gearhart*

- A(T)-rated
- Cost Center: Lottery

In 2018, the Invasive Noxious Weed Control Program conducted a follow up visit to the only known site of matgrass in northwest Oregon on the coast north of Gearhart. The small site was found in 2015 during a survey of Neacoxie Forest by North Coast Land Conservancy, which owns the property, and was first treated in the summer of 2016 by Clatsop SWCD. The treatment was very effective, but another small patch was discovered in an adjacent area after further survey by Clatsop SWCD in 2018. ODA treated all the plants in the new area and many small emerging plants in the previous treated location. This patch is growing in the Clatsop Plains, an area of sensitive coastal prairie habitat that serves as a migration corridor for wildlife. Matgrass is being managed aggressively in Oregon and the goal is to extirpate it from this site.

- 0.01 net acres treated over 1 gross acre
- 200 acres surveyed

**Mouse-ear Hawkweed** (*Pilosella pilosella*)
*Gopher Valley, Yamhill County*

- A(T)-rated
- Cost Center: Lottery

The only known Oregon location of mouse-ear hawkweed is on private and Nature Conservancy land in Gopher Valley, Yamhill County. Treatments by the Conservancy, Invasive Noxious Weed Control Program staff and Yamhill Soil and Water Conservation District staff have reduced populations significantly on reserve property. Treatment is complicated by populations of Kincaid’s lupine, a federally threatened obligate food source for the federally endangered Fender’s blue butterfly. Noxious Weed Control Program staff monitored the site in 2018. Yamhill SWCD staff worked with the Nature Conservancy to secure grant funding for more comprehensive treatment on the property this year. Yamhill SWCD also surveyed the surrounding area but no further finds have been reported.

- 15 acres evaluated

**Oblong Spurge** (*Euphorbia oblongata*)
*Salem, greater Willamette Valley*

- A(T)-rated
- Cost Center: Lottery

In 2018, the Invasive Noxious Weed Control Program continued oblong spurge treatment in Salem at the Oregon State Penitentiary and Oregon Office of Emergency Management with the assistance of grounds keeping staff. No additional plants were found.
Invasive Noxious Weed Control Program Annual Report—2018

decreased by over 99%. However, an area where blackberry was mowed this year had a large number of plants emerge; all were treated. A new infestation at a residence in the City of Salem was surveyed and hand pulled by ODA staff because it had begun to go to seed. There have been a number of new oblong spurge sites reported by cooperators around NW Oregon in recent years, although it appears this is due more to increased awareness of this noxious weed rather than a sudden spread. Invasive Noxious Weed Control Program staff will be working on a tracking system to keep tabs on the progress cooperators are making on these sites and will directly manage locations as needed.

Oblong spurge was introduced to Oregon both as a contaminant of flax seed (there was a former processing facility at the Salem locations) and as an ornamental displayed for its showy yellow bracts. It is a perennial plant that spreads rapidly by seed and grows densely, crowding out native plants, and it is a threat to riparian and prairie habitats. It is being managed aggressively with the goal of eradicating it in Oregon.

- 0.08 net acres treated over 29 gross acres

**Paterson's Curse, (Echium plantagineum)**
Lebanon, Oregon

- A(T)-rated
- Cost Center: Lottery

There were six visits to the Lebanon Paterson’s curse roadside sites conducted by Noxious Weed Program staff in 2018. Newly emerged plants were found at each visit, sometimes by the dozens, and in one case by the hundreds. Because these sites are adjacent to agricultural fields with rotating crops, use of residual herbicides has not been used and long term control with has been elusive. The site visits were doubled this year over the previous year in an attempt to prevent more plants from going to seed. Paterson’s curse is a showy wildflower that produces copious amounts of long-lived seed and easily outcompetes native grasses and forbs in open, sunny areas due to its drought tolerance. It is a threat to pastureland and native prairies and is also toxic to livestock. It is being treated aggressively for eradication at this site and others in Oregon.

- 0.1 net acre treated over 20 gross acres

**Yellow Floating Heart (Nymphoides peltata)**
Willamette River

- A(T)-rated
- Cost Center: Lottery

Yellow floating heart has emerged center stage in recent years along with Ludwigia as a rapidly growing threat to backwaters in the Willamette Basin and the vertebrates that live in them. Fragmentation and seed production is increasing on the Willamette River, creating new downstream infestations. As new sites establish, weed control practitioners have expanded their efforts to contain these species in response.

- 0.75 net acres treated over 3 gross acres
- 9 gallons applied

Fragmentation of plant material at the shoreline by trespassing cows has created challenges to eradicating yellow floating heart at this site on the Willamette River.

Noxious Weed Control Program staff treated a large infestation of floating heart on a side channel of the Willamette River at the confluence with the old Long Tom River channel. This is an old and well-established infestation, highly disturbed and fragmented by cattle grazing in the riparian zone. Documented yellow floating heart locations are increasing in the Willamette Basin due, in large part, to survey efforts, and fragmentation from upstream infestations, the largest of which was identified near Eugene in 2017. With the assistance of State Parks staff and a jetboat, a backpack application of imazapyr was applied to all plants that were accessible in the Long Tom River area. Eradication may be a very long-term prospect, though 2016-17 treatments reduced the weed density by 75%. Efforts to begin treatment at the Eugene location have been initiated for 2019.

- 0.75 net acres treated over 3 gross acres
- 9 gallons applied
US ARMY CORPS OF ENGINEERS

South Valley Projects

Meadow Knapweed (Centaurea pratensis) – B-rated, Fern Ridge Dam
Yellow Flag Iris (Iris pseudacorus) – B-rated, Fern Ridge Dam
Meadow Knapweed (Centaurea pratensis), Cottage Grove Reservoir

Sulphur cinquefoil (Potentilla recta) – B-rated, Hills Creek Reservoir

- Cost Center: US Army Corps

The Army Corp of Engineers is a manager of significant acres of natural area land adjacent to the flood control projects in the South Willamette Valley. These land holdings contain populations of rare plants and animals such as Kincaid’s lupine and the Fender’s blue butterfly that feeds on it. Meadow knapweed is a pernicious weed that threatens the lupine habitat through competition for available space and resources. ODA staff work with the Army Corp to spot treat knapweed populations to reduce their density primarily at Fern Ridge Reservoir.

Fern Ridge Reservoir also contains scattered populations of yellow flag iris in the marshes. Backpack treatments have eliminated many plants when they can be found. Locating and accessing the clumps as difficult due to the extensive bulrush and canarygrass vegetation. Surveys and treatments will continue.

The final target species is sulfur cinquefoil, located in the lowlands beneath Hills Creek Reservoir near Oakridge. Not well known in Western Oregon, the species was introduced by vehicles from other states or eastside counties. Previous treatments have reduced the plant numbers to a fraction of original density but the habitat is ideal for re-invasion without annual treatments.

- 2.5 gallons applied to 12 gross acres, 0.05 acres net, at Cottage Grove Reservoir
- 16.6 gallons applied to 50 gross acres, 0.33 acres net, at Fern Ridge Reservoir
- 26 gallons applied to 110 gross acres, 0.4 acres net, below Hills Creek Reservoir

US FOREST SERVICE PROJECTS

Mt. Hood National Forest (MHNF)

Diffuse Knapweed (Centaurea diffusa): B-rated
False Brome (Brachypodium sylvaticum): B-rated
Garlic Mustard (Alliaria petiolata): B (T)-rated
Japanese Knotweed (Fallopia japonica): B-rated
Meadow Hawkweed (Pilosella caespitosa): B(T)-rated
Orange Hawkweed (Pilosella aurantiaca): A(T)-rated
Spotted Knapweed (Centaurea stoebe): B(T)-rated
Sulfur Cinquefoil (Potentilla recta): B-rated

- Cost Center: USFS-MHNF

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. All priority sites in these areas were treated by the Noxious Weed Control Program in 2018, and new sites were discovered and treated as surveys of road systems continue to expand.

Clackamas and Zig Zag Ranger Districts

Most of the effort in this area was aimed at suppressing meadow and orange hawkweeds in the 5,000-acre Lolo Pass site in order to protect vulnerable wilderness meadow habitat. The Bonneville Power Administration corridor and Lolo Pass Rd. 18 system...
treatment was a cooperative effort with the Invasive Noxious Weed Control Program, USFS, Clackamas SWCD, and Portland Water Bureau staff, as well as contract crews hired by Clackamas SWCD. Orange hawkweed was also treated in a meadow along the Burnt Lake trail in the Zig Zag Wilderness. Both hawkweed species plant counts are down considerably from original population levels. Native forbs and shrubs continue to repopulate the sites, contributing significant competition to the hawkweed and preventing seed escape from under the canopy. A previously undocumented infestation of meadow hawkweed was found along the upper section of Top Spur road, off the 1828 Rd.

Other areas of treatment include Highway 26, Highway 224/Road 46, Timberlake Job Corps campus, Ripplebrook Rd. 4631 & 4635, and Bagby Hot Springs Rd. 70. Other priority species include false brome, Japanese knotweed, and sulfur cinquefoil.

- 3 net acres treated over 1,000 gross acres

### Hood River Ranger District

Activities on the Hood River Ranger District were primarily focused on treating priority sites of spotted, diffuse, and brown knapweed along roadsides to prevent further spread, and exploring lightly used roads to find and treat new infestations. Some of the Lolo Pass area hawkweed treatments occurred on the Hood River Ranger District, but most Hood River County treatments for the Lolo Pass project were in the privately owned section. Treatment areas for knapweed included Lost Lake and Wahtum Lake Rd. 13 and Rager quarry area, Laurence Lake Rd. 2840, and Red Hill Rd. 16.

In 2018, Invasive Noxious Weed Control Program staff also assisted Hood River SWCD staff with a garlic mustard survey and manual control on private property in organic production adjacent to Mt. Hood N.F. land where garlic mustard suppression efforts are underway. The 2017 survey also detected a small 20-plant patch of false brome, but no plants were present at that location this year. Surveys for this plant will be expanded in 2019 to try to discover a source population.

- 6.92 net acres of knapweed treated over 690 gross acres
- 0.13 net acre of hawkweeds acres over 15 gross acres
- 700 acres surveyed for garlic mustard, 65 acres manually treated on organic production property

### Willamette National Forest

- **Armenian Blackberry (Rubus armeniacus):** B-rated
- **Dalmatian Toadflax (Linaria dalmatica):** B(T)-rated
- **Diffuse Knapweed (Centaurea diffusa):** B-rated
- **False Brome (Brachypodium sylvaticum):** B-rated
- **Giant Knotweed (Fallopia sachalinensis):** B-rated
- **Herb Robert (Geranium robertianum):** B-rated
- **Japanese Knotweed (Fallopia japonica):** B-rated
- **Perennial Peavine (Lathyrus latifolius):** B-rated
- **Reed Canarygrass (Phalaris arundinacea):** Not rated
- **Spotted Knapweed (Centaurea stoebe):** B(T)-rated
- **Yellow Archangel: (Lamiastrum galeobdolon):** B-rated

- **Cost Center: USFS-WNF**

Primary targeted species continue to be roadside spotted knapweed, forest populations of false brome, reed canarygrass at Lost Lake, Dalmatian toadflax, and blackberries on forest roads and road spurs, and outlier populations such as yellow archangel and Japanese knotweed on and adjacent to the Detroit district.

Treatments utilized truck mounted sprayers, RTV mounted sprayers, and backpacks. In most treatment areas, weed populations are stable or reduced, though a large increase in false brome was noted on the McKenzie district due to the fact that a key partner on the Andrews Experimental Forest had retired and no replacement had stepped in to continue treatments.

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.

### Detroit Ranger District

Nearly all treatments on the Detroit district in 2018 were at small, dispersed sites, which helped prevent further spread on the district. Plant numbers are steadily declining at nearly all locations. Priority areas treated in 2017 were Highway 22, Blowout Rd. 10, Straight Creek Rd. 11 and interior roads north of there,
French Creek Rd. 2223 areas, Breitenbush Rd. 46, Woodpecker Ridge Rd. 040, and Marion Creek Rd. 2255. False brome, spotted knapweed, shiny geranium, herb Robert and yellow archangel were all treated on the district, and 2 privately owned knotweed sites near district boundaries were also treated.

- 1.49 net acres treated over 320 gross acres

**McKenzie Ranger District**

Priority areas included Horse Creek, East Fork McKenzie, Road 1501 near Blue River Reservoir, Road 19, Foley Ridge Rd. Road 2643 and spurs, Highway 126, Deer Creek Rd. Road 2654 and spur, Road 2657, Highway 20, and Lost Lake.

Treatment conditions were vastly improved in 2018 compared to 2017. Incidence of forest fires and road closures were minor. Increased gross and net acreage resulted from new project locations opened up for access. Gated roads east of Hwy 126 near Robinson Lake were treated for the first time. Knapweeds and false brome were found on almost all roads traveled.

Priority species were spotted knapweed, false brome, and reed canarygrass.

- 4.1 net acres treated over 460 gross acres

**Middle Fork Ranger District**

Priority areas include: Aufderheide Rd. 19, Fall Creek roads, Winberry Creek roads, Hills Creek Rd. 23, Rigdon Rd. 21, and Highway 58. Priority species included false brome, spotted knapweed, Japanese knotweed, blackberries and dalmatian toadflax.

Blackberry treatments occurred on Forest roads 5828, 5826, and the North Shore Road near Westfir. The seed orchard was also treated to remove blackberries in the understory.

Japanese knotweed was treated from multiple access points including La Duke Road, Hwy 58, Buckhead, North Shore Road and Black Canyon Campground.

- 12.41 net acres treated over 418 gross acres

**Sweet Home Ranger District**

Priority areas were Moose Mountain and Moose Creek roads, Vine Maple Rd, Canyon Creek Rd, Lava Lake and Highway 20. False brome was the primary target, spotted knapweed and reed canarygrass were secondary.

Weed populations remain relatively stable with some increases where previous treatments failed to provide adequate control.

- 2 net acres treated over 268 gross acres

**BUREAU OF RECLAMATION PROJECTS**

**Hagg Lake**

Armenian Blackberry (*Rubus armeniacus*): B-rated

Scotch Broom (*Cytisus scoparius*): B-rated

- Cost Center: USBR-Hagg Lake

Noxious Weed Program staff treated Armenian blackberry and Scotch broom in a 20-acre parcel on the shores of Hagg Lake in Washington County that provides core habitat for Kincaid’s lupine and its associated threatened and endangered Fender’s blue butterfly.

This is a collaborative project between the Noxious Weed Control Program, Bureau of Reclamation, US Fish and Wildlife Service, and Washington County Parks to reopen prairie habitat. Large monocultures of blackberry and Scotch broom were treated using an RTV handgun during prescribed treatment windows to avoid disturbing the lupine and butterflies. Following treatments, large mowing equipment was brought in to knock down dead canes. This work has resulted in a transformed landscape that will hopefully allow the lupine population to greatly increase its range at this end of the lake.

- 3.44 net acres treated over 21 gross acres

Successive years of Armenian blackberry and Scotch broom treatment at Hagg Lake has opened acres of new habitat for Kincaid’s lupine and Fender’s blue butterfly.
REGIONAL EDUCATION AND OUTREACH ACTIVITIES

- Cost Center: Lottery

NW Oregon Noxious Weed Program staff gave presentations, updates and provided technical expertise at 13 regional CWMA meetings, Western Invasives Network meeting, Willamette Aquatic Invasives Network meetings, Garlic Mustard Working Group meeting, Western Oregon University Science Career Fair, Oregon Concrete and Aggregate Producers Association, Oregon Vegetation Management Association Meeting, Lane County Master Woodland meeting, EddMapps planning meeting, Pacific Northwest Invasive Plant Council Weed Watcher Training, Oregon State Weed Board Meeting, City of Portland Invasives 2.0 Summit, Baskett Slough and Ankeny National Wildlife Refuge weed prioritization workshop, and the Oregon State Fair booth. Staff also delivered a live video presentation on water primrose via Facebook.
Southwest Region
By Carri Pirosko

STATE FUNDED LOTTERY PROJECTS

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. At a minimum, each site is worked three times each year. The Invasive Noxious Weed Control Program continues to provide supervision and coordination for this project.

- 98% decrease in distaff thistle since program began in 1987
- 2.3 net acres treated over 4,000 gross acres surveyed in 2018
- Out of 55 total sites: 12 sites have zero plants; 19 sites have less than 100 plants.

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 the Douglas SWCD, the Invasive Noxious Weed Control Program, Roseburg Forest Products, the Cow Creek Band of the Umpqua Tribe, and private landowners.

Only 1.1 net acres of Paterson’s curse plants was detected and treated this season.

- This project has achieved a 99% decrease in plants since first detected in 2004.
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.

- No plants were found at Little Squaw Lake in Jackson County in 2018.
- No plants have been detected for three years in ponds at a golf course in Roseburg.
- A private pond near Elkton had no plants this season, while a private pond near Kellogg continues to show a reduction in percent cover.
- Only a handful of plants were found at a pond near Melrose.

See table below for location and status of yellow floating heart treatments in southwest Oregon, ponds listed from top to bottom in order detected, 2009–2017. No new ponds were detected in 2018.

<table>
<thead>
<tr>
<th>County</th>
<th>Location, Land use</th>
<th>Years Treated</th>
<th>Population Status/Treatment Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackson (Rogue River-Siskiyou NF)</td>
<td>Little Squaw Lake, USFS</td>
<td>7</td>
<td>NO plants found for 2 years/ manual &amp; mechanical only</td>
</tr>
<tr>
<td>Douglas</td>
<td>Roseburg golf course, private</td>
<td>2</td>
<td>NO plants found for 3 years/ herbicide</td>
</tr>
<tr>
<td>Douglas</td>
<td>Kellogg, private</td>
<td>5</td>
<td>99% reduction/ herbicide</td>
</tr>
<tr>
<td>Douglas</td>
<td>Elkton, private</td>
<td>4</td>
<td>NO plants found for 1 year/ herbicide</td>
</tr>
<tr>
<td>Douglas (Umpqua NF)</td>
<td>Willow Sump, USFS</td>
<td>4</td>
<td>99% reduction/ herbicide</td>
</tr>
<tr>
<td>Douglas</td>
<td>Melrose, private</td>
<td>2</td>
<td>Only handful of plants/ herbicide year 1 then switched to manual in year 2</td>
</tr>
<tr>
<td>Douglas (Umpqua NF)</td>
<td>Beaver Pond, USFS</td>
<td>1</td>
<td>Year 1 treatment, % reduction will be evaluated in 2019/ herbicide</td>
</tr>
</tbody>
</table>

Before (top) and after (bottom) treatments at a pond on the Umpqua National Forest.
Invasive Noxious Weed Control Program Annual Report—2018

BLM, USFS AND LOTTERY: REGIONAL EDUCATION AND OUTREACH ACTIVITIES

Noxious Weed Program staff gave 6 presentations and 2 field tours this season:

- Douglas and Coos County Weed Days
- Joint meeting of the State Noxious Weed Board and Oregon Invasive Species Council
- Gorse Blossom Festival
- Oregon Interagency Noxious Weed Symposium
- USFS Region 6 Annual Botany Meeting

Lottery, Collaborative Working Groups

Noxious Weed Staff served as the lead in the facilitation and coordination of several collaborative working groups in southern Oregon. Funds from the USFS and BLM helped promote collaborations across southwest Oregon.

Italian Thistle Collaborative

The Nature Conservancy and ODOT approached Invasive Noxious Weed Control Program staff about the spread of Italian thistle at Whetstone Preserve in White City, Jackson County. This B-rated noxious weed is very limited in distribution in Jackson County and threatens valued vernal pool habitat and agricultural lands should it continue to spread. Through a series of site visits and meetings, a 5-Year Control Plan was developed that will begin implementation in 2019.

I-5 Noxious Weed Partnership

Invasive Noxious Weed Control Program staff organized and facilitated an annual meeting of partners from northern California and southwestern Oregon to discuss noxious weed concerns along the I-5 corridor. Participants included representatives from the Invasive Noxious Weed Control Program, ODOT, CalTrans, Siskiyou County Agricultural Commissioner’s office, BLM, USFS Rogue River-Siskiyou NF, Siskiyou Weed Management Area group, SWCDs from Jackson and Douglas counties, and CWMA representing Jackson, Josephine, and Siskiyou (CA) counties.

Past collaborations have included:

- Weed treatments on the Siskiyou Summit
- Early Detection and Rapid Response (EDRR)
- Biocontrol releases
- Discussion around herbicide efficacy

Alyssum Working Group

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

Lake County, OR and Modoc County, CA Joint Meeting

A need to initiate collaboration on shared noxious weed concerns across the OR/CA border was met through the organization of a partner meeting in 2018. Partners included the Invasive Noxious Weed Control Program, BLM-Lakeport, BLM-Alturas, Lake CWMA, and the Modoc Agricultural Commissioner’s Office.

Dyers woad is the primary noxious weed of concern. Dyer’s woad focused helicopter and ground surveys, as well as, the posting of weed awareness signs aimed at reducing seed spread through highly trafficked lands were two positive outcomes this year.
Invasive Noxious Weed Control Program Staff was an active member of the GAG Coordinating Committee and led the GAG Science and Mapping teams. Staff helped install a gorse removal demonstration area just south of Bandon on Highway 101 with the goal of showing home and landowners the do's and don'ts of gorse control on the south coast. Several other large-scale gorse removal projects were undertaken in Coos County. Staff attendance at the Gorse Blossom festival helped educate the public about the impacts of this noxious weed and inform citizens about effective control methods.

The Invasive Noxious Weed Control Program, BLM, USFS, The Nature Conservancy, Cultural Ecological & Enhancement Network, private landowners, and citizen volunteers have collaborated in pushing Alyssum closer to our eradication goals.

- No new sites of Alyssum were found in 2018.
- In less than ten years, gallons of herbicide sprayed to treat Alyssum have been reduced by 99%. Only 3 gallons were sprayed at originally planted fields.
- A concerted effort by local, state, and federal partners continues to make Alyssum eradication goals possible.

**ROGUE RIVER-SISKIYOU NATIONAL FOREST (NF)**

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: Illinois Valley, Josephine County**

*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.
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 29 gallons of mix at spotted knapweed sites along Highway 140 and at a few sites off of adjacent side roads.
- USFS and Noxious Weed Program staff put out 8.5 gallons of mix at spotted knapweed sites along Highway 230.

**USFS STATE AND PRIVATE FORESTRY PROGRAM & BLM COOS BAY**

Funds from both the State and Private Forestry Program and the BLM Coos Bay Office are instrumental in A-rated weed eradication efforts for matgrass and biddy biddy.

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.

- Three years of treatment have been completed along trails at Blacklock Point in Curry County; Imazapyr herbicide in proving to be an effective tool.
- An 86% reduction in matgrass cover has been realized at Devil’s Kitchen and Bandon Wayside just south of Bandon in Coos County.
- Treatments have been a collaborative effort between Oregon State Parks and Recreation Department, Oregon Department of Aviation, and ODA Noxious Weed Program staff.
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, biddy-biddy is only known to occur in limited distribution along the coastline in Coos and Curry counties. Biddy biddy targeted for treatment included populations at the Cape Blanco Lighthouse and USFS Ranger Station in Gold Beach.

- Noxious Weed Program staff entered year three of a collaborative biddy-biddy control effort with Oregon Parks and Recreation Department at Cape Blanco State Park.
- Treatment of heavily infested lawns at the USFS Ranger Station in Gold Beach are ongoing.

**UMPOQUA NATIONAL FOREST**

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 4 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% after three years of treatment.
- 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. Percent cover will be evaluated in 2019.

Diffuse Knapweed (*C. diffusa*)

Spotted Knapweed (*C. stoebe*)

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 assisted 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 and diffuse knapweed on the Umpqua NF. This season, 30 gallons of mix were used to treat knapweed sites along Highways 138 and 230 and other locations across the Diamond Lake Ranger District. Long stretches of PacifiCorp canals near the Tokatee Ranger District were de-watered for maintenance allowing more extensive treatments this season. Umpqua NF staff accompanied Invasive Noxious Weed Control Program staff and took detailed records as to the number of plants treated each season.
BLM GRANTS PASS/MEDFORD DISTRICT

Noxious Weed Control Program staff collaborates regularly with the Grants Pass/Medford BLM District staff and seasonal crews. The BLM Medford District support both BLM and USFS seasonal Weed and Botany crews that contribute toward critical noxious weed work across the Medford/Grants Pass/Cave Junction region. This BLM District is also instrumental in funding Jackson and Josephine CWMA groups, resulting in valued B-rated weed control across the region. In 2018, the Grants Pass BLM District staff began implementation of their Noxious Weed EA that allowed for some more effective and efficient weed control 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 two known populations are known to occur in Oregon. Both populations are found off of Highway 199 in Josephine County.

- The Gold Canyon site, detected last season, was sprayed in the spring; only 10 tiny plants were found in follow-up surveys.
- Four sweeps were made across the Rough and Ready Creek area to manually remove and bag plants; only ½ bag of plants was removed this season, a reduction from all previous seasons.

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.

<table>
<thead>
<tr>
<th>Tracking Barbed Goatgrass Sites</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rough and Ready Creek, south of Cave Junction</td>
<td>1.3  bags</td>
<td>2.5  bags</td>
<td>4  bags</td>
<td>1  bag</td>
<td>3/4  bag</td>
<td>1/2  bag</td>
</tr>
<tr>
<td>Gold Canyon, south of Selma</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>3  bags</td>
<td>10  plants</td>
</tr>
</tbody>
</table>

Bags of barbed goatgrass manually removed by project cooperators annually. The detection of a new site in Gold Canyon, south of Selma in Josephine County, brings the total number of barbed goatgrass sites in Oregon to two.

BLM Coos Bay

Spotted Knapweed

In 2018, Noxius Weed Program staff treated a spotted knapweed population found last season on private timber ground immediately adjacent to BLM land. This is the only known population of spotted knapweed in Coos County.

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. The Noxious Weed Control Program committed to taking a leadership role in mapping development, EDRR, promoting effective gorse control methods, and biological control. In 2017, the Governor designated GAG as an Oregon

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. Three populations of matgrass are currently under control on the south coast.

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. Fifteen populations are known to occur between Ophir and Brookings. Noxious Weed Program staff collaborate with the Curry SWCD in survey, control, and monitoring of Cape ivy populations in Curry County.
North and South Central Region
By Mike Crumrine

NORTH AND SOUTH CENTRAL LOTTERY FUND PROJECTS

Biocontrol Distribution
- Cost Center: Lottery
In 2014, initial releases of the biological control agent for Russian knapweed Aulacidea acroptilonica were made and are highly collectible from Rimrock Springs on the Crooked River National Grasslands south of Madras, Oregon. A second site near Mitchell, Oregon in Wheeler County has also established and has been determined collectible as well.

In 2018, independently and coupled with a OSWB grant funded project with the Crooked River CWMA, several collections and releases were made from the nursery sites to release sites in Crook, Gilliam, Klamath, Lake, Wasco, and Wheeler Counties.

Other biocontrol agents collected from sites in Crook, Deschutes, Jefferson, and Klamath Counties include the Canada thistle stem gall fly Urophora cardui, the leafy spurge root-feeding flea beetles Aphthona lacertosa and Aphthona nigriscutis, the leafy spurge stem boring beetle, Oberea erythrocephala, the Russian knapweed bud gall midge Jaapiella ivannikovi, and the yellow toadflax weevil Mecinus janthinus.
- 30 biocontrol releases collected and distributed

Private Land Noxious Weed Treatments
- Cost Center: Lottery
Throughout the central region, ODA conducts herbicide treatments to isolated patches of state listed B rated noxious weeds and to A rated noxious weeds. In 2018, treatments were made to the only known infestation of matgrass east of the Cascades in Klamath county, isolated spotted knapweed patches in Klamath county, two sites of Taurian thistle in Klamath county, isolated patches of African rue in Crook county, one private pond was treated for flowering rush in Klamath county, and several private ponds were treated for yellow floating heart in Deschutes county.

NORTH AND SOUTH CENTRAL BUREAU OF LAND MANAGEMENT FUND PROJECTS

Lakeview BLM Noxious Weed Treatment Projects
- Cost Center: BLM
The Warner Valley pepperweed project is a combined effort of ODA treatment crews from the south central and south east regions. The whole BLM Wetlands area has been designated as an ACEC area or Area of Critical Environmental Concern.

Strategies continued from the 2017 season for the Warner Wetland project in 2018. ODA was tasked with pepperweed and Canada thistle treatments in the northern portion of the valley around Flagstaff Lake and on the canal banks near Hart Lake. Treatments were made by the ODA in July and early November utilizing UTV handguns and UTV broadcast nozzles. ODA treated 130 net acres of perennial pepperweed and Canada thistle.
- 130 acres treated with herbicide
- Approximately 5,000 acres surveyed

Klamath Falls Resource Area BLM Noxious Weed Treatment Projects
- Cost Center: BLM
In 2018, five regions within the KFRA were the focus of treatment and survey. Noxious weed species in the area include; Canada thistle, Musk thistle, yellow starthistle, Scotch thistle, Mediterranean sage, yellow toadflax, Dalmatian toadflax, leafy spurge, diffuse knapweed, spotted knapweed, Russian knapweed, Dyers woad, spiny cocklebur, whitetop, perennial pepperweed, and St. Johnswort.
- 21 acres treated with herbicide
- Approximately 15,000 acres surveyed

Flowering rush identified and treated in Klamath county.

Rob Banks on Bryant Mountain.
NORTH AND SOUTH CENTRAL BUREAU OF RECLAMATION FUND PROJECTS

Crane Prairie, Haystack, Prineville, and Wickiup Reservoirs

- Cost Center: BOR

The Bureau of Reclamation (BOR) owns and manages several facilities throughout central Oregon. The Bend Field Office of the Pacific Northwest Region has contracted with the Noxious Weed Program and Crook County to address weed and vegetation problems in both eastern and western Oregon. Within the North Central region, the Noxious Weed Program conducts treatments at Crane Prairie, Haystack, Prineville, and Wickiup Reservoirs.

Since 2015, the key project identified for ODA’s involvement on BOR managed waterbodies is a joint effort with Crook County for the aquatic treatment of Eurasian watermilfoil, *Myriophyllum spicatum* on Haystack Reservoir. Based on an August 18, 2015 inventory, 10 acres of the 233 acre lake were affected by mix of elodea, coontail, and milfoil. Despite nearly half of the original infested acres remaining untreated, extensive survey in the 2017 season revealed no evident patches. Surveys continued in the 2018 season and as in 2017, no evident patches of milfoil were detected.

Treatments continued through the 2018 season for Russian and spotted knapweeds, St. Johnswort, perennial pepperweed, and mullein along the banks and earthen dams of Crane, Prineville, and Wickiup reservoirs.

- 9.33 net acres treated over approximately 6,000 gross acres
- 6,300 gross acres surveyed

NORTH AND SOUTH CENTRAL FOREST SERVICE FUND PROJECTS

Deschutes National Forest

- Cost Center: USFS

The Oregon Department of Agriculture has had a long-standing partnership with the Deschutes National Forest to complete noxious weed control activities. Over the course of the 2018 season, ODA staff worked independently and supervised the herbicide treatments carried out by the Heart of Oregon Corps young adult crews. During the summer and fall, these efforts treated 191 acres of noxious weeds over thousands of gross acres. Treatments spanned from spotted knapweed in campgrounds, recreation areas, and open forest to roadside knapweed, St. Johnswort, and medusahead treatments and on to riparian treatments of orange hawkweed, ribbon grass, and yellow flag iris.
The most notable and highest profile project continues to be the treatment of ribbongrass and yellow flag iris on the Metolius River. Treatments began in 2013 for ribbongrass and yellow flag iris on the Metolius River downstream of Camp Sherman, immediately adjacent to the Gorge Campground. 2018 treatments, however were dramatically increased. Nearly all known ribbongrass, reed canarygrass, and yellowflag iris was treated in the 11 mile stretch from the mouth of the Metolius to Candle creek at the border of the Warm Springs Reservation.

Over four days, five ODA employees backpack sprayed the eleven miles of river. Significant reductions of ribbongrass and yellowflag iris have been realized.

- 191 net acres treated over approximately 10,000 gross acres
- Approximately 10,000 acres surveyed

**Forest Service State and Private Projects**

- **Cost Center:** USFS S&P

In 2018, the ODA conducted treatments to private forest in three areas of Klamath county. Amongst the east slope of the Cascade mountains, 7 acres of dyer’s woad was treated, near the eastern extent of Klamath county by Boulder Creek, 5 acres of spotted knapweed received treatment by herbicide, and near Keno, 19.5 acres of diffuse knapweed was treated.

- 31.5 net acres treated over approximately 1,000 gross acres
- Approximately 2,000 acres surveyed

**REGIONAL EDUCATION AND OUTREACH ACTIVITIES**

Noxious Weed Program staff gave presentations at the: Deschutes National Forest Aquatics Management meeting in Sisters, Deschutes National Forest ID Team meeting in Bend, participated and presented at the Friends and Neighbors of the Deschutes Canyon weed pull, participated and presented at the Let’s Pull Together event in Bend, the Crooked River Ranch Board of Directors meeting, the newly formed Jefferson County Weed Board meetings in Madras, and at the Klamath County Weed Board meeting in Klamath Falls. Regularly attended meetings include the Deschutes County Weed Board, Crooked River CWMA, Jefferson County Weed Board, and Klamath County Weed Board.
LOTTERY FUND PROJECTS

Flowering Rush, *Butomus umbellatus*
Morrow and Umatilla County

- Cost Center: Lottery

Since 2014, ODA Noxious Weed Program staff have assisted the Army Corps of Engineers (ACE) and multiple partners accomplish early detection inventories and rapid response treatments for flowering rush (Oregon A-List) in the Lower Columbia River. ODA staff continues to co-lead the Lower Columbia River Flowering Rush Work Group that guides collaborative work to accomplish all aspects of flowering rush management in the Lower Columbia Basin. This includes facilitating biannual work group meetings as well as managing a list serve for over 70 managers across the Pacific Northwest Region.

In 2018 ODA staff collaborated to:

- Assist ACE staff in monitoring of 270 acres of shoreline sites in the McNary Pool. One new site was found and flowering rush persisted at approximately 50% of the sites that had been covered historically.
- Produce up-to-date and standardized GIS inventory for all of the EDRR sites in the Lower Columbia. These were shared with Work Group partners to assist all in locating and monitoring known sites.
- Assist Portland State University Center for Lakes and Reservoir’s staff in new inventory for flowering rush sites in the Brownlee, Oxbow, and Hells Canyon Dam reservoirs on the Snake River. The plant is known to be upriver in Idaho. No flowering rush was found; though Eurasian Water Milfoil and Curly Leaf Pond Weed were found and documented.
- Portland State University’s Center for Lakes and Reservoirs also used grant funds from the Oregon State Weed Board (OSWB) to complete a re-inventory of the McNary Pool. Many old sites that had been covered have plants growing around them. They remained untreated this year as ACE staff did not have funds to conduct treatment work this year. Also inventories in the John Day Dam reservoir documented 22 new sites of flowering rush. All but two of those sites were hand pulled.

Map of all know sites in the Lower Columbia at the outset of 2018.
Hoary Alyssum, *Berteroa Incana*  
Wallowa County

- Cost Center: Lottery

The only known sites of hoary alyssum (Oregon A list) in NE Oregon occupies two adjacent private properties near the town of Wallowa. Treatments are timed to prevent viable seed production. Broadcast treatments were employed this year to reduce the cover of other weedy species on the site and to provide residual control of seedling establishment. This increased the number of acres treated from 2017 but is reducing the number of plants at each site and is providing a release for the perennial grasses on the site which should help to control alyssum over time. Treatment timing is early bloom which provides for good visibility of existing plants but also prevents viable seed production.

- 3.00 net acres treated over 32 gross acres

Orange Hawkweed, *Pilosella aurantiacum*  
Wallowa and Morrow Counties

- Cost Center: Lottery, Wallowa Whitman National Forest

Orange Hawkweed (Oregon A list) is rare in NE Oregon with only five sites known. Three sites are on the Wallowa Whitman National Forest, one is in the town of Wallowa and the other is a historic site in Morrow County. Of the sites on the Wallowa Whitman, two are in the bottom of Davis Creek Canyon. These sites were very active this year with many new plants and patches to be found within the historic infestation. Staff pulled and bagged all flowers and treated the areas with residual herbicide to prevent further seed germination and root sprouts. There were no plants found at the third meadow hawkweed site for the second year in a row. The Wallowa site is in two yards and an adjacent pasture and is monitored and treated by Wallowa County Noxious Weed Control staff. Only two hawkweed plants were found there this year! However, two small patches of hawkweed rosettes were also found in a nearby yard - they were both treated but it is not certain if they were meadow or orange hawkweed. The Morrow County site has been declared eradicated as multiple recent surveys have come up empty and the last documented plants there were found in 1992!

- Less than 0.4 net acres treated over approximately 160 gross acres

Plumeless thistle, *Carduus acanthoides*  
Wallowa, Morrow and Grant Counties

- Cost Center: Lottery

Plumeless thistle is an Oregon A-rated weed with a limited distribution in NE Oregon. Invasive Noxious Weed Program staff annually treat five of the seven known sites in Wallowa County. None of the sites have produced seed in four years. Only one site had any plants this year and it only had seven plants total. Wallowa County Vegetation Department Staff manages a one-acre site of plumeless thistle that was only discovered in 2016. This year only 6 plants were found and treated there. The seventh Wallowa County site is on the Snake River and was monitored by WWNF staff. It was a historic occurrence of a single plant and no plants have been found there since its original discovery.

- 0.02 net acres treated over 390 gross acres

In 2017 a plumeless thistle site was found in Southern Morrow County. Initial treatments of the core area greatly reduced the population. This year Invasive Noxious Weed Program staff worked with the Morrow County Vegetation Manager to do a follow up treatment and survey. Several peripheral sites were found and treated and an aerial treatment of nearly 40 acres was completed over the general area to prevent germination of seeds.

- 0.02 net acres treated over 390 gross acres
Grant County manages two infestations of Plumeless thistle for many years with the support of OSWB grants. The Project Area is around 40,000 acres in size. All known sites were treated in 2018 but only tallied 7.8 net acres of treatment.

**Ravenna grass, *Saccharum ravennae***  
Umatilla, Morrow and Malheur Counties

- **Cost Center: Lottery**

Ravenna grass is an escaped ornamental plant in NE Oregon that has earned a place on the A-list. It is tall with showy plumes and is cold tolerant. It spreads rapidly by seed into a variety of natural environments. Invasive Noxious Weed Control Program staff will treat the infestation in the McNary Wildlife Area for the US Army Corps of Engineers for the fourth year in a row. Treatment includes removal of seed heads and spraying leaves with glyphosate. While net acres have remained about the same, the structure of the population is changing from mature stands to seedlings.

- **0.01 net acres treated over 340 gross acres**

Ornamental plants have been documented by ODA Noxious Weed Control Program staff in Milton-Freewater, Pendleton, and Boardman. These sites are small enough to be controlled by the respective county or municipality. Malheur County has multiple sites and some are moving out of yards and into waste areas, irrigation ditches, and roadsides and the county is preparing a grant to the OSWB for 2019 control work.

**Giant Cane Grass, *Arundo donax***  
Morrow and Umatilla Counties

- **Cost Center: Lottery**

Portland General Electric (PGE) has been experimentally growing giant cane grass in the Columbia Basin as a potential source of biofuel for their coal fired power plant in Boardman. That project was terminated by PGE in 2017 with the intent shifting from growing to eradicating the plant. ODA Noxious Weed Control staff is working with Morrow County Weed Control, Oregon State University Extension, and Morrow County SWCD to monitor the eradication process being undertaken by PGE and private landowners. Giant cane 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; used by OSU Extension to test control methods). Two of the three private fields were taken out of Arundo production in 2016; both fields had giant cane volunteer plants emerging in 2017. No plants were found at the "Lloyd field" in 2018 which starts the clock for the three years of no plants that is required to declare the plant eradicated from the site. At the "Greenwood field" multiple volunteer Giant Cane plants were emerging from roots where the ground had not been plowed. They were dug up and left on the surface to dry out.

- **90 net acres surveyed and monitored**

Welted Thistle, *Carduus crispus*  
Wallowa County

- **Cost Center: Lottery, OSWB Grant funds through Wallowa County**

Welted thistle was discovered at one site (350 gross ac) in Wallowa County in 2016. It is the only known site of this plant west of the Rockies besides a location in British Columbia. The OSWB listed it as an A-rated weed in 2017. Treatments in 2016 after an intensive inventory treated less than five net acres. In 2018 Wallowa County used county weed levy funds and funding from an OSWB grant to hand pull and/or treat all known sites. A total of 15 plants were found in 2018.
Squarrose Knapweed, *Centaurea virgata*
Grant County

- OSWB Grant funds through Grant County
  The Grant County Weed Control District manages the only known squares knapweed site in northeast Oregon. The Invasive Noxious Weed Control Program first treated an estimated 200 net acres spread across 800 gross acres in 1988. The number of acres has declined over the life of the project to 15 acres in 2004 and to only just over 3 acres in 2018. One historic site was found to have many plants so 3 acres were broadcast there. All tallied, there were 333 plants found this season.
- 3,200 gross acres surveyed 333 plants treated

Rush Skeletonweed EDRR, *Chondrilla juncea*
Union and Grant Counties

- Cost Center: Lottery and Wallowa Whitman and Umatilla National Forests
  The two most interior counties in northeastern Oregon have very little skeletonweed. Grant County has one 1/4-acre site near Ritter that was discovered in 2016. In 2017 Grant County and ODA's Noxious Weed Control Program surveyed nearly 1,000 proximal acres but found no skeletonweed at all. With help from OSWB grant funding Grant Weed Control inventoried four thousand acres in 2018 and only five small plants were found and treated at the original site. While the history of skeletonweed in Union County dates back to 2005, known populations are small. The Invasive Noxious Weed Control Program manages three populations of skeletonweed along the I-84 corridor with Union County and ODOT. The large majority of historic sites had no plants in them, but all sites are checked and broadcast treatments continue as needed to control regeneration from seed or root sprouts. At the “Flying J” site only 10 of the 155 historic points had plants and they totaled less than 400 square feet. This is down from 1.4 net acres treated in 2015 and is a 99% reduction in net area and a 94% reduction in active sites. At the Hilgaard site 1.36 net acres were treated across 43 gross acres and about 30% of the half acre site at “the Bridge” required treatment for scattered plants.

Another small site was discovered during weed inventories in 2016 near Jarboe Creek on the Umatilla National Forest. ODA's Invasive Noxious Weed Program Staff teamed up with Union County and Umatilla NF staff to conduct EDRR surveys and treatments in that area. Five new very small skeleton weeds sites were found and treated. In 2017, a fourth site was discovered near the Ladd Marsh Wildlife Area. In 2018, Union County staff used OSWB grant funding to inventory nearly 7,100 acres. Three new sites were found and the project completed 12 acres of net treatment project wide (just over 10,000 acres).

US FOREST SERVICE

Meadow Hawkweed, *Pilosella caespitosum*

- Cost Center: S&P, Wallowa Whitman and Umatilla National Forests
  Meadow hawkweed control is the largest project in northeast Oregon and thus involves many private, state, and federal partners from Union, Wallowa, Umatilla and Morrow counties. Meadow hawkweed is one of the most versatile and aggressive invaders in this part of the state. Left unchecked, the plant takes over a wide variety of habitats and forage production systems, often crowding out desirable vegetation. The majority of hawkweed in the region occurs in Wallowa and Union counties. Morrow and Umatilla counties only have one and two sites respectively.
The site in Morrow County is along a roadside in a lodge pole pine stand just west of Ukiah. The Invasive Noxious Weed Control Program and Umatilla NF staff treated 0.23 acres total. The Umatilla sites were detected while conducting tansy ragwort inventory in the Saddle Mountain area in 2017. Three patches, totaling around two acres were treated in 2018. Umatilla County used funding for EDRR inventory and treatment from a 2018 OSWB application.

In Union and Wallowa counties, meadow hawkweed is much more widespread and therefore treatment goals are containment and control. That said, most sites are small and herbicide applications are effective. The challenge is finding plants before they go to seed each season. Area cooperators meet often to coordinate work across the landscape, address labor needs, discuss herbicide prescriptions, mapping standards, and other relevant topics. Invasive Noxious Weed Control Program’s help comes as technical assistance, outreach and education, OSWB grants, and treatments of outlying sites.

As a part of this effort, the Invasive Noxious Weed Control Program treated 68.69 net acres of meadow hawkweed over nearly 2,000 gross acres.

**Tansy Ragwort, Senecio jacobaea**

- **Cost Center:** S&P, Wallowa Whitman and Umatilla National Forests

Tansy ragwort is kept largely in check by biological control agents on the west side of the state. However, tansy is a persistent invader on the east-side where the agents do not survive the colder winters. Tansy ragwort is found primarily in the forested rangelands and riparian areas of eastern Oregon.

ODA’s Invasive Noxious Weed Program managed a tansy ragwort monitoring and treatment program in NE Oregon for more than 30 years. Starting in 2016, tansy monitoring and treatment are conducted by counties and CWMA groups in the region. To help facilitate this process the Invasive Noxious Weed Control Program has almost completed an up-to-date tansy GIS layer that can be shared with partners. Over 1,000 small tansy infestations were detected over the years; the number of active locations has dropped to less than ten per year.

Three areas of active infestation can still be found at Bear Creek and Saddle Mountain in Umatilla County and Looking Glass Creek in Union County. Annual visits by Invasive Noxious Weed Control Program staff and partners receiving OSWB funding help to address tansy in these areas.

The Invasive Weed Control Program Staff treated 4 net acres treated over 1,940 gross acres as a part of that effort this year.

**Common Bugloss, Anchusa officinalis**

- **Cost Center:** S&P, Umatilla National Forest

Most of the common bugloss in Oregon is either in the Imnaha River Canyon of Wallowa County or in the Walla Walla River drainage in Umatilla County. Consistent treatment efforts by the Wallowa Canyonlands Partnership for over a decade have largely kept the Imnaha population contained. In 2017 Umatilla County commenced with a large common bugloss containment project in the croplands and riparian area of the Walla Walla River near Milton Freewater. In addition, Wallowa County Vegetation Management Department addresses small sites in the Wallowa Valley and in the riparian areas of the Lostine and Wallowa Rivers. All of these programs are funded in part by OSWB grant funding.

Outside of Wallowa County, Union and Baker and Umatilla each have one or two small sites of common bugloss that county and/or Invasive Noxious Weed Control Program staff treat and monitor.

Invasive Noxious Weed Program staff treated 0.67 net acres over 145 gross acres in Umatilla and Wallowa Counties this year.

**BUREAU OF LAND MANAGEMENT (BLM)**

**Rush Skeletonweed Containment**

- **Cost Center:** BLM, Wallowa Whitman National Forest

Rush skeletonweed management is a top priority for eastern Oregon. 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. Populations drop drastically as you move west and south in the region triggering cooperators to switch from containment to an early detection and rapid response mode. Invasive Noxious Weed Control

Dave Pranger monitoring the results of a 2017 treatments of skeletonweed on the Umatilla Army Depot.
Program staff helped treat skeletonweed in Northern Malheur County (3,100 gross acres and 126 net acres) and in Baker County in the vicinity of Halfway (546 gross acres and 15.2 net acres).

Discovery and treatment of new sites in outlying areas are critical to a containment effort. Population levels are steady to decreasing in areas where regular treatments have been consistently implemented. That said, getting to all populations is a challenge, as more sites are discovered each year. The Invasive Noxious Weed Control Program staff helped coordinate a skeletonweed-focused stakeholder meeting aimed at: prioritizing treatment areas, verifying and scheduling treatment of outlier sites, expanding the role of private landowners, increasing the use of aerial survey and treatment, and promoting integrated management, where possible.

The rush skeletonweed root moth (*Bradyrrhoa gilveolella*) was introduced at seven sites in northeast Oregon beginning in 2012. Unfortunately, after close scrutiny, it appears the moths have failed to establish East of the Cascades in Oregon. Three other skeletonweed specific biocontrol agents are present in North Eastern Oregon. In relatively arid areas like the Columbia Basin and Northern Malheur County they seem to have an important impact reducing plant stature and seed production, particularly where the plants get grazed by livestock and or wildlife. This does not seem to be the case in the more mesic areas of the NE region.

**MISCELLANEOUS PROJECTS**

**“Turkish” Thistle, *Carduus cinereous***

The identification of a weedy thistle located in Hells Canyon once thought to be Italian thistle (*Carduus pycnocephalus*) underwent scrutiny in 2014 because of several subtle morphological differences. Genetic testing at Montana State University and subsequent consultation with national thistle experts indicate that this plant is not a match for any thistle currently known to exist in the United States, but resembles plants documented in Turkish botanical guides. Botanically establishing this as a new species is a slow process. Invasive Noxious Weed Program staff provided USDA Agricultural Research Service Botanists with plants samples for a published documentation of the plant phenology and genetic profile. The plant is on the Wallowa County’s List and the Invasive Noxious Weed Control Program’s Watch List.

Invasive Noxious Weed Control Program staff also accomplished the following:

- Documented the presence and identification of smooth stem bedstraw (*Galium mollugo*) in the Halfway Area.
- Determined the plant has been present for approximately 30 plus years with very few reports of problems from area landowner or county staff.

A new site of common crupina was found near Halfway Oregon this year. It is thought to be very rare in Baker County otherwise. Other rare weedy plants that have been noted in NE Oregon and are being closely monitored include: Blueweed (*Echium vulgare*), Giant Foxtail (*Setaria febari*), and Italian bugloss (*Anchusa azurea*).

Invasive Noxious Plant Program staff has worked with APHIS and local cooperators to establish and or read nine Standard Indicator Monitoring Plots for monitoring biocontrol management impacts (primarily) and helped to coordinate the release of seven biocontrol agents for four different weeds in the region.
Invasive Noxious Weed Control Program Annual Report—2018

Education and Outreach

Invasive Noxious Weed Control Program staff gave noxious weed presentations to the following groups.

- Baker, Union and Wallowa county commissioner meetings regarding ODA's role, priorities, and program accomplishments.
- NE Oregon noxious weed managers' meeting where managers from all jurisdictions could hear about weed identification, treatment methods, inventory, monitoring techniques and ODA's biocontrol program.
- NE Oregon noxious weed managers toured around NE Oregon to show regional managers weeds of concern that they do not have in their own counties.
- Columbia River Basin Flowering Rush Summit which gathered Canadian and American aquatic resource managers from around the region to assess the issue of flowering rush invasion into the Columbia River Watershed and to begin creating a coordinated response plan. This was the seminal meeting of what was to become of the Columbia River Basin Cooperative Weed Management Area (CWMA). ODA is represented on the steering committee of the CWMA. Invasive Noxious Weed Control Program staff presented on the status of flowering rush in Oregon and about manual control methods for flowering rush.
- OSWB regarding the status of Giant Cane Eradication efforts in Morrow and Umatilla Counties.
- Monument Soil and Water Conservation District and the Malheur County Pest Management Short Course (OSU Extension) regarding herbicide resistance in weed populations and identification of new weeds in Eastern Oregon.
- Helped to coordinate and guide a rush skeletonweed planning meeting for the Baker County weed management partners.
- Presented an interactive version of basic weed ecology and management concepts to all Wallowa County Sixth Grade students at Wallowa County Outdoor school.

Invasive Noxious Weed Control Program staff also facilitate the Lower Columbia River Flowering Rush Work Group. The group meets twice a year to share treatment and research information, coordinate work, mapping and monitoring efforts and to identify policies and funding issues that need attention in the region.

Invasive Noxious Weed Control Program staff attended the Oregon SageCon Summit, Oregon Department of Transportation Integrated Pest Management Workshop, and many local planning meetings for CWMA and County Weed Boards.
Southeast Region
By Bonnie Rasmussen

BLM-BURNS DISTRICT
Steens Wilderness

The ODA/BLM Steens Wilderness project was partially put on hold for the 2018 season because the BLM Weed Coordinator position went vacant. The helo treatment trip is coordinated by this position so it did not happen. A fall treatment trip was made into the project area utilizing a UTV by ODA staff. Plants were treated 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.

BIOLOGICAL CONTROL
Purple Loosestrife, Lythrum salicaria

ODA staff coordinated with APHIS and made two releases of the purple loosestrife root boring weevil, Hyllobius transversovittatus in the Stinkingwater Creek drainage.

The releases were made on private land adjacent to BLM managed lands. This was the first release of this biological agent in south eastern Oregon. The weevil larvae mine roots and stems and the adults feed on leaf edges.
Canada thistle, *Cirsium arvense*

ODA staff coordinated with Ty Cronin to make the first release of the Canada thistle rust *Puccinia punctiformis*. ODA’s Bonnie Rasmussen and Joel Price met with Ty Cronin, Burns BLM and Ed Sparks, Malheur Refuge, to tour perspective release sites on the Refuge and BLM managed lands.

No rust evidence was recovered and a release was made later in the season. A release site including a check site was established fall of 2018. Bonnie and Joel made an application of the rust spores above Page Springs Campground.

Diffuse knapweed and Dalmatian toadflax

Joel Price was able to tour the East Steens diffuse knapweed release areas for the first time. The plants around the Grant place and in the vicinity of Little McCoy Creek. Plant density is the same but the plant bio mass is less. All released biocontrol agents including bangasternus and Larinus were present and plants are stunted.

ODA and APHIS staff monitored Dalmatian toadflax sites in Devine Canyon and made a collection on several occasions for distribution in other areas. The original nursery sites are diminished to small patches and the bio agents have been highly successful. Staff monitored multiple front range sites for bio presence and no further release was needed and all locations had experienced a resurgence in bio agent population. A remote site located north of Riley was monitored for the first time in numerous years.

There was a very good population of *Mecinus janthiniformis* with diminished plant bio mass and no blooms.

P Hill Project

The P Hill project is located southwest of Frenchglen along both sides of highway 205 up to the intersection with the Rock Creek Road and just breaking over to the downward side of P Hill above Frenchglen. The Project area also includes the often disturbed dump and gravel pit area. The project targets are primarily Mediterranean sage and Scotch thistle. Over the
past 20 years plant numbers have fluctuated due to weather and fire events. This season ODA completed the main treatment with two applicators utilizing UTV units. The area is suffering from drought conditions and staff feels plant numbers were similar to or perhaps reduced from the previous treatment season.

- 9.97 net acres treated
- 1200 gross acres surveyed

**Stinkingwater Creek Project**

This project focuses on control of targeted noxious weeds including perennial pepperweed, Scotch thistle, diffuse knapweed, Russian knapweed and Purple loosestrife on the BLM managed. Purple loosestrife, spotted knapweed and diffuse knapweed are targeted on the adjacent private land. The project encompasses the Stinkingwater Creek Drainage from headwaters to the confluence with the Malheur River and some side tributaries. In 2018 ODA crew covered the drainage from headwaters to Highway 20. Two applicators with UTV units were utilized for the treatment.

Purple loosestrife along this creek continues to be widespread and persistent. Wildlife and livestock grazing continues to make finding and control of this plant challenging. This season ODA staff teamed up with APHIS and released Hylobius transversovittatus in the portion of the project area that has proven most problematic for treatment (see biocontrol section). Changing stream corridor and steep banks make this an ever changing project area.

- 7.88 net acres treated
- 1,750 gross acres surveyed

**BLM-VALE DISTRICT**

**Three Forks Project Area**

The ODA staff completed a summer treatment for this area and a portion of the access road leading into 3 Forks. Puncturevine, Scotch thistle and whitetop are the weeds treated along roadsides. The 3 Forks Campground project area continues to decrease in Scotch thistle, perennial pepperweed and whitetop. Leafy spurge however continues to be persistent and even increase but appears to be coming down river from Idaho.

The yellow starthistle site treated in 2013 near grassy reservoir was extensively surveyed and again no plants were found this season. This area continues to show serious impacts from multi-year drought conditions and fires and the ODA crew did not revisit this area in the fall.

- 2.8 net acres treated
- 1,000 gross acres surveyed
Pascal Reservoir Project Area

ODA staff found no yellow starthistle in project area this season. Once the fire danger reached dangerous level no more trips were made into the project area. The past few years have been pretty dismal and even with some moisture the plant community still has not recovered from past few drought years. Scotch thistle numbers continue to be present and are targeted when surveying for yellow starthistle. No new areas of infestation were found and the rim above Jordan Creek Canyon remained clean. Staff continues to coordinate with Jordan Valley Cooperative Weed Management Area to ensure known plants on adjacent private lands to the north and southeast are monitored. Visibility and the sheer size of the gross project area continues to be a big challenge. There was no fall survey or treatment due to no drought conditions.

- 1 net acre treated
- 1,500 gross acres surveyed

Rush Skeletonweed

Succor Creek Area

This area was incredibly dry this season with a high fire danger shutting things down early. There were several passes made through the project area. ODA staff did not work in Devil’s Gate/Camp kettle Creek project areas in 2018.

- 0.01 net acres treated
- 2,500 gross acres surveyed

Sage Creek

George Petty made one trip into the Sage Creek project area targeting yellow starthistle. This year proved very challenging due to an explosion of non-target plants specifically yellow sweet clover. Treatment for the season was completed as was safe for the conditions on plants in the sage brush area and the area will be a priority again in 2019.

- .02 net acres treated
- 120 gross acres surveyed

Cow Creek

ODA staff followed up on treatment of the leafy spurge project area at Cow Creek. There was good control on the central/northwest parts of the site but a lot of treatment was needed on the northeast and southern portions of the project area.

- 9.55 net acres treated
- 7,100 gross acres surveyed

Dago Canyon Spotted Knapweed and Lesley Gulch

During fire fighting efforts in the summer of 2015 a new spotted knapweed site was identified. Cat lines and the fire both went through a good portion of the site exasperating the situation. A fall treatment was implemented in 2015 and has been followed up yearly since. This year a quick pass was made in the project just before fire closures where put in place.
A ranger was used and applications were made with handgun. Limited plants were found throughout the known project area. Crew were able to get equipment further down the drainage this year and were able to pick up a new group of plants that had got a start last fall.

Rush skeletonweed was treated on the Lesley Gulch Road in route to Dago Canyon. Numerous single and multiple plant sites were treated anywhere from road edge to several hundred feet out.

- 1.14 net acres treated over
- 3,000 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.

This year Harney County treated the African rue with Capstone (triclopyr and aminopyralid) at 6 pints to the acre. Included in the mix was Escort XP at 1.33 ounces per acre, 2,4-D product at 1 pint per acre, a sticker (Syltac) at 1 pint per 50 gallons, a spray marking dye, and a no foam agent. The treatment crew ran transects completing one pasture at a time. All treatment was done with a handgun, spot treatments at 50 gallons of water per acre. This high coverage rate is the only thing that has shown positive results. The treatments were done between July 9-17, 2018. After completing the first round of treatments with the crew went back out and did broad transects throughout the project area a second time August 18-19, 2018. This second pass did result in treatment of a few more plants totaling close to 1/2 of an acre. Over all the total population of African rue decreased again this year. The net treatment was 3.3 acres.
Southeast EDRR

ODA worked with Harney County on survey and control orange hawkweed and Japanese knotweed sites in Hines. The orange hawkweed is persisting in the heavily watered and managed lawn atmosphere but is being monitored by Harney County for escapes. There was less than a quarter acre treated.

ODA staff continued management of the med sage site located along HL creek in the Catlow Valley. The site borders BLM managed lands and is the only known site in the Catlow of med sage and medusahead. This is a very remote and vast area with thousands of acres susceptible to invasion of these two plants. A spring treatment occurred on the med sage. Staff coordinated with Harney County to treat medusahead rye on the County road and continued survey and treatment in an old fire scar. Two net acres was treated over 600 acres.

ODA staff monitored the historical tansy ragwort sites in the Kiger and at yellow jacket creek and there were no new plants located at either site.

Staff monitored historical yellow starthistle, spotted knapweed, squarrose knapweed and dyer's woad sites in Southeastern region.

With the ongoing efforts to improve sage grouse habitat ODA is often at the table and consulting at many levels for habitat improvement and management with cooperators.

SE Region Biological Control Work

ODA assists with biocontrol work on diffuse knapweed, Canada thistle, Dalmatian toadflax and Russian knapweed on non Federal lands. Joel Price was able to travel several times this season to SE Oregon. Monitoring of Larinus minutis, Bangasterus fausti, Mecinus janthiniformis, Puccinia punctiformis, Galerucella calamiensis and G. pusilla, Aulacidea acroptilonica and Jaapiella ivannikovi took place in the Harney County area. One portion of the trip time was spent looking at Russian knapweed infestation issues along organic farming operations. The gall midge was recovered adjacent to the new release site and are from prior release efforts.

The first release in the region of Hylobius transversovittatus was made on Stinkingwater creek in eastern Harney County. The release was made in a portion of the project area that has proved very problematic. The release was on private land adjacent to BLM managed lands.
US FOREST SERVICE

Emigrant Creek Ranger District

ODA staff started a new agreement with the Malheur Forest focusing on the Southeast portion of the Forest. Specifically, the interface with private and BLM lands where annual grass issues are known to occur. In addition to covering those areas staff surveyed a large portion of the road network between State Highway 395 and the Eastern Boundary of the Forest. Very limited weed problems were found occurring in the focal area.

Control was limited to one spotted knapweed plant, a small patch of white top, two very small Scotch thistle plants and several hounds tongue plants that were pulled.

The historical site of Scotch broom was monitored with no plants found. There was approximately an acre of ventenata grass found and management/treatment plans will be made at this winter’s review with USFS staff. ODA staff continued monitoring of historical sites on 31, 37, 43 and 47 roads. A few plants were hand pulled but otherwise things were clean.

Yellow Jacket Reservoir

There were no new plants found for the sixth year in a row at the historical tansy ragwort site at the head of Yellow Jacket Creek. Spotted knapweed plants persist on site above and below the 37 road on private land.

REGIONAL EDUCATION AND OUTREACH ACTIVITIES

Numerous presentations were given at meetings and trainings. Consultation was given to many Ranchers, Land Managers and public entities. Weed Board and CWMA meetings were attended in Grant County, Lake County, Malheur County, and Harney County.

- .01 net acres treated over
- 5,000 gross acres