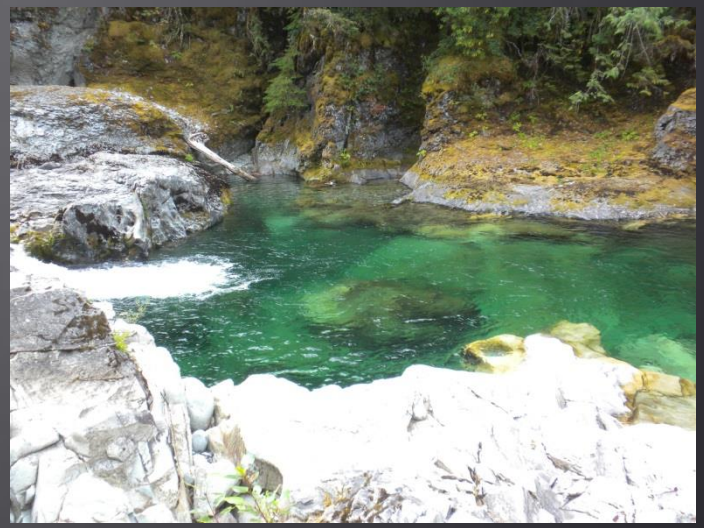
Reporting Sightings of Invasive Species 101

The value of citizen science and reporting options for the public

Presentation Goals

- The value of data collected by citizens
- Provide an overview on options and resources available to the public on reporting sightings of invasive plants, animals, and insects
- Have workshop attendees submit a report
  - Small changes, big results!

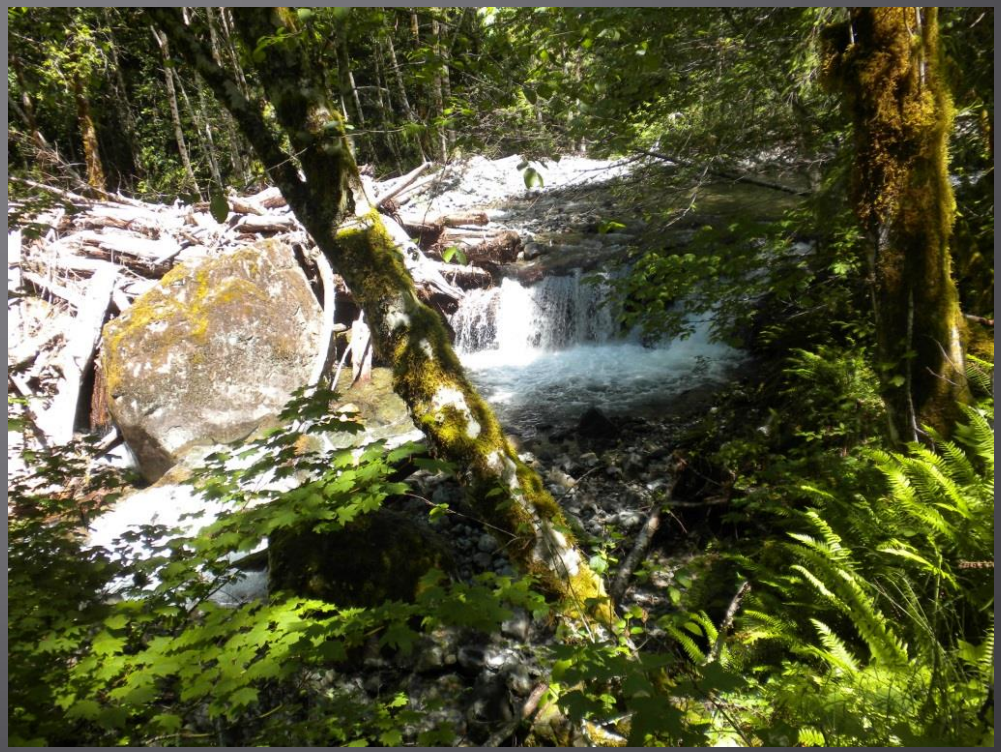


Citizen Science

- What is citizen science?

  An Article in Nature magazine defined it as:

  " The public participation in scientific research"



Hand, E. (2010). "Citizen science: People power". *Nature* **466** (7307): 685–687. doi:10.1038/466685a. PMID 20686547

Citizen Science

- Why as citizens should we be concerned and involved with reporting invasive species sightings ?
  - Time
  - Money
  - Boots on the ground
  - Empowered citizens
  - Increased data collection
  - Enhanced research
  - Informed management decisions and actions
  - Efficient use of public funds
  - EDRR efforts
  - Channeling concern into real world results

Citizen Science

- Case Study: Spotting the Weedy Invasives
  - Developed by Rutgers University and sponsored by the USDA
  - Training and engaged hikers on mapping invasive plants along assigned segments of trail
  - Project goals included generating long term data, helping participants understand weed ecology and impacts, and encourage participants to take personal action towards reduction of invasives
  - Positive participant results
    - Enjoyed the role played in doing something positive for the environment and science
    - Behavioral changes such as considering risk of ornamentals before purchasing and talking to others about impacts of invasive plants

Public Participation in Scientific Research: Defining the Field and Assessing Its Potential for Informal Science Education, A CAISE Inquiry Group Report, July 2009. http://informalscience.org/images/research/PublicParticipationinScientificResearch.pdf

Citizen Science

- Its fun! Ask any natural resource professional what the best part of their job is…

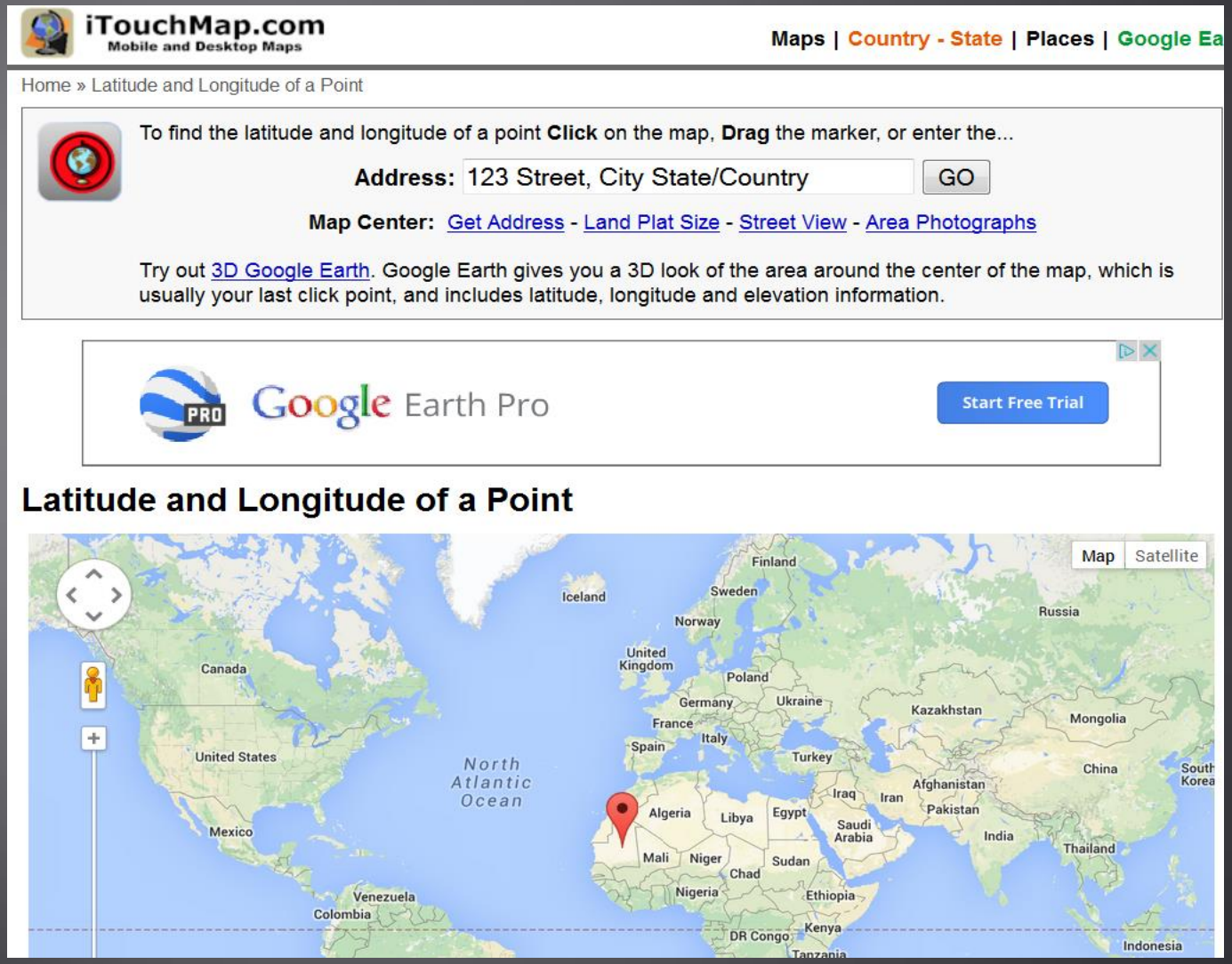
What Are We Reporting?

- Species
- Location
- Supporting information

Location, Location, Location!

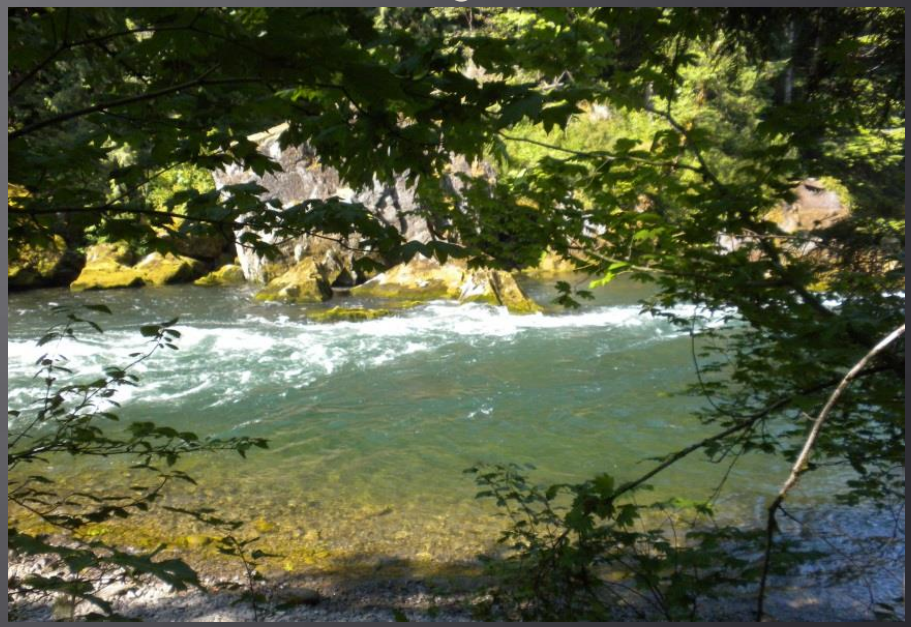
- Location information
  - Address
  - Landmark
  - Coordinates → Gold Standard!
  - iTouchMap
- Essential component
  - Targeted management
  - Effective treatment
  - Long term trend analysis
    - where is the species establishing
    - how is it moving across the landscape

iTouchMap.com



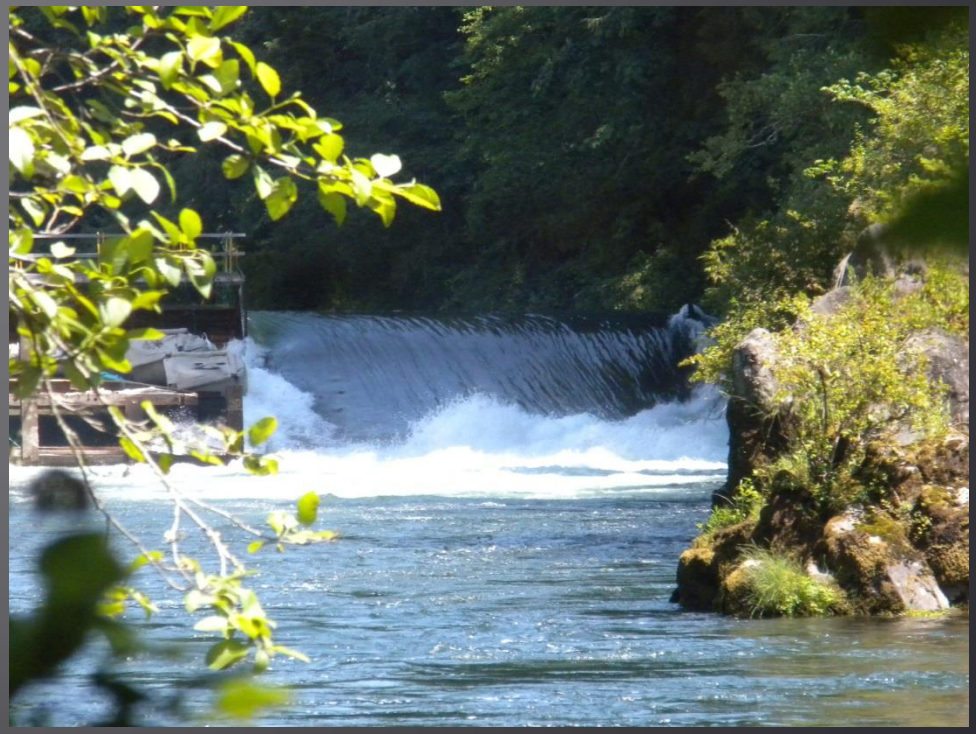
When Are We Reporting?

- Timing is everything!
- New species? New location? Crucial to remember that rapid response efforts are best control method
- Quick and efficient turn around of reports and response
- Mobile apps have significant real time advantage when collecting in the field



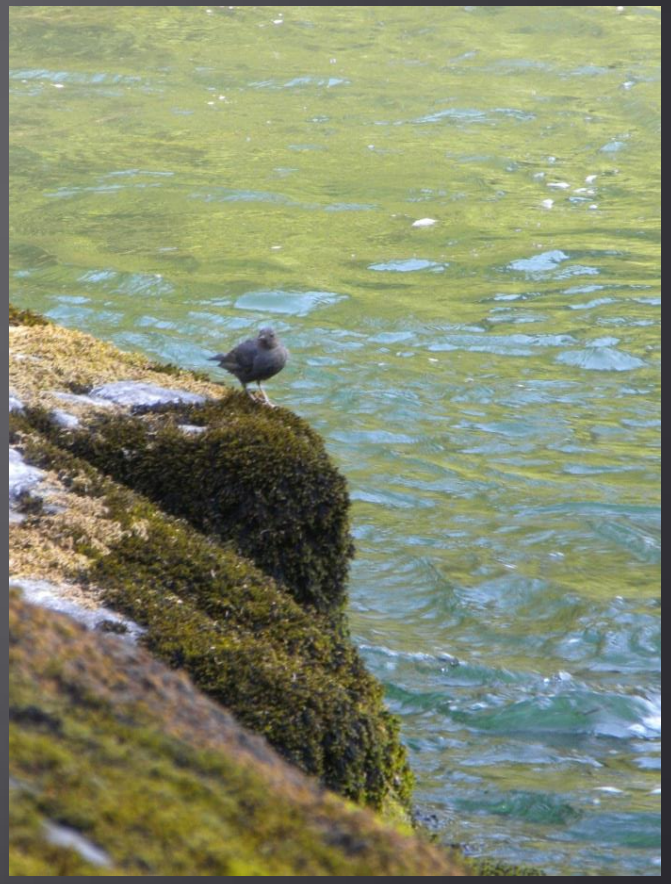
Where Are We Reporting?

- 4 options covered today
- Criteria: invasive plant species in the State of Oregon
- Citizen and professional uses



Reporting Options

- iMapInvasives
  - Online reporting and mapping platform
  - Must take online training and request account
- Oregon WeedMapper
  - Online reporting and mapping platform
  - Submit data annually
- Oregon Invasive Species Hotline
  - Online reporting and mapping platform
  - Phone calls
- EDDMapS West
  - Online reporting and mapping platform
  - App available



How to Report?

iMapInvasives

An online mapping tool for managers and citizen scientists

http://www.imapinvasives.org/

iMapInvasives

- Developed by the Nature Conservancy and other collaborators
- Program works continually to develop regional partnerships
- Oregon contact: Lindsey Wise, Oregon Biodiversity Center
- Vision of the partnership is to facilitate the management and sharing of invasive species information
  - Includes extent of infestations
  - Search efforts
  - Treatment outcomes
  - Animals, plants, insects

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iMapInvasives

- Program tools are: affordable, sustainable, and collaborative
  - Provides a platform for aggregating invasive species data from a wide variety of sources
  - Standardized dataset supports early detection of new populations
  - Analysis of management strategies at relevant scales for the user
  - Managers can keep track of known infestation areas and areas being treated
  - Email alerts notify managers when new locations are reported in their area
  - Used by federal, state, local government agencies, nonprofits, universities, and volunteers
  - Applications include: EDRR, encroachment analysis, current distribution, predicted future distribution, and habitat suitability

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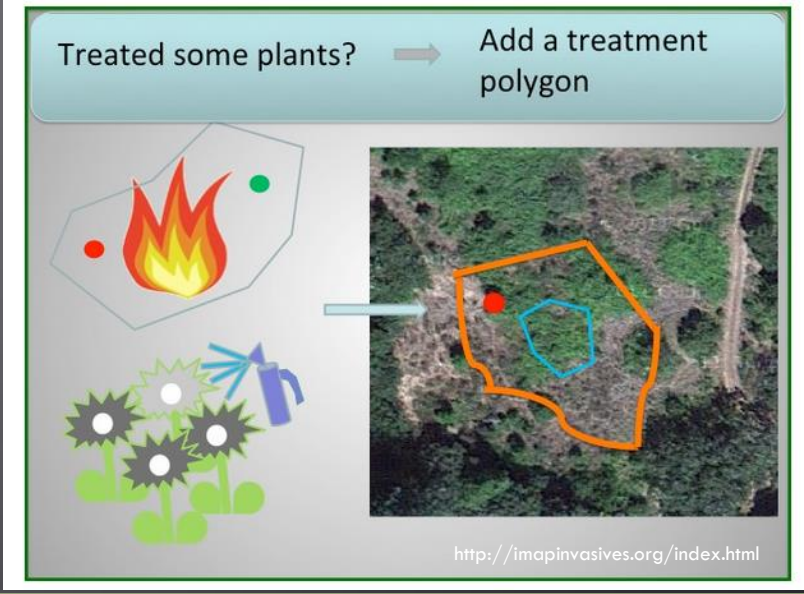
iMapInvasives

- 6 main data types collected and provided
  1. Observation --- who, what, when, where
  2. Assessment --- detailed observation information
  3. Survey --- planned search of an area to determine presence or absence
  4. Treatment --- information about the type: manual, mechanical, chemical, fires, none
  5. Infestation --- population status
  6. Project --- group data



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iMapInvasives | About Us | Resources | Login/Maps

Participating States

*i*MapInvasives is an online tool for invasive species reporting and data management.

For information on how to become a participating state click **here**

To report invasive species from your smartphone, computer or tablet:

1) Request a Login*
2) Take training (in-person or online)
3) Navigate to www.imapinvasives.org on your browser and login.

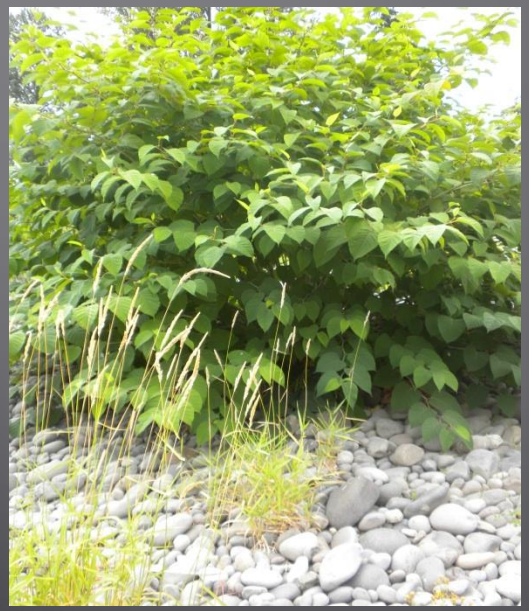
*To request an *i*MapInvasives account, click the "Login" link for your state below, and then select "Request a Login." Someone from your state will email you shortly.

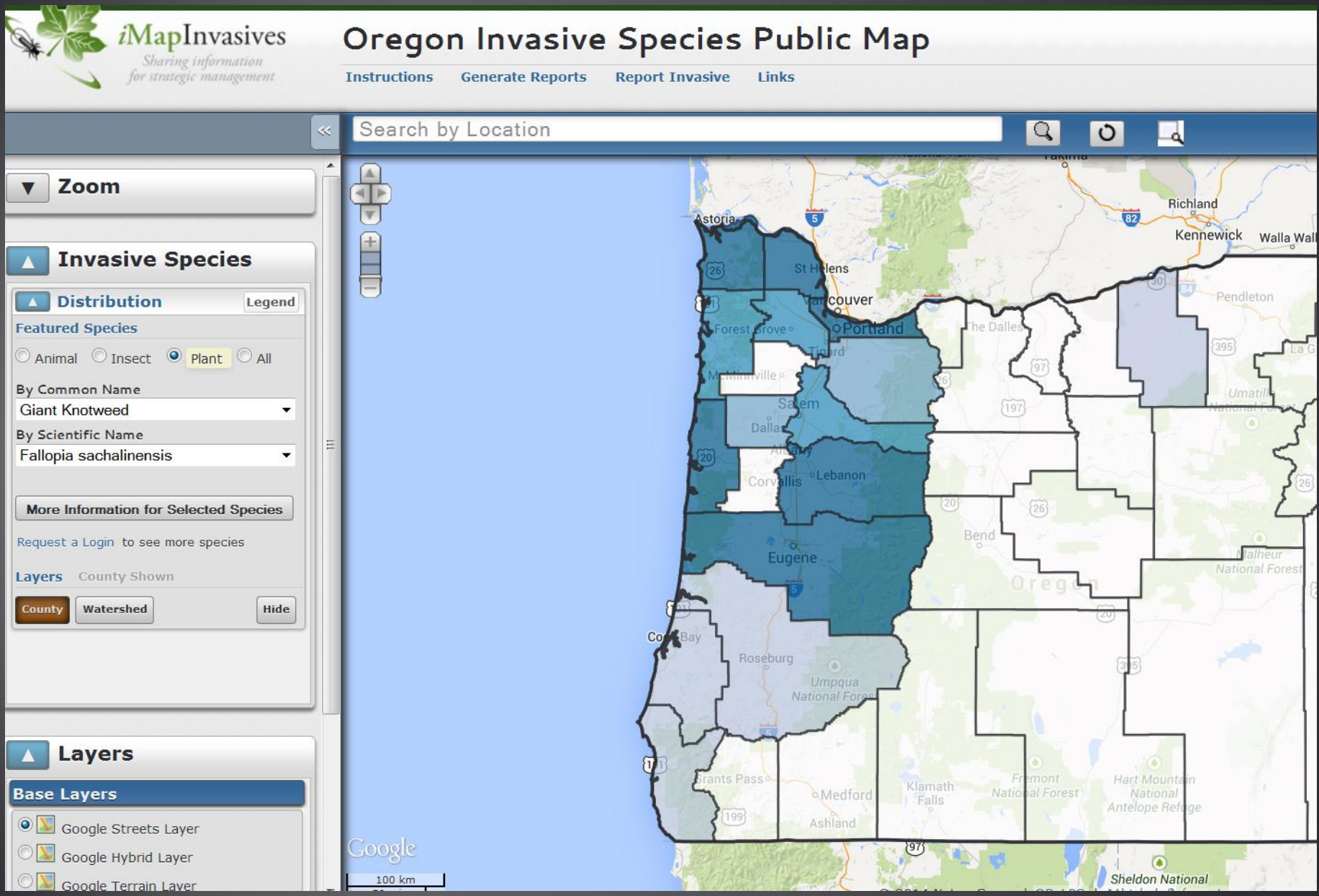
Arizona	**Login**	**Public Map**	
Florida	**Login**	**Public Map**	**Home**
New York	**Login**	**Public Map**	**Home**
Oregon	**Login**	**Public Map**	**Home**
Pennsylvania	**Login**	**Public Map**	
Vermont	**Login**	**Public Map**	**Home**
Virginia	**Login**	**Public Map**	

http://imapinvasives.org/login.html

iMapInvasives

- Tips on reporting
  - Can use the search bar provided to plot location, type an address or zoom to center point
  - Can record data as point or polygon data (single plants vs. large scale infestations)
  - With log-in created can enter data, create and view reports





http://imapinvasives.org/orimi/map/

Oregon WeedMapper

www.weedmapper.oregon.gov

Oregon WeedMapper

- Collection of spatial information on the distribution of noxious weeds that are listed by the Oregon Department of Agriculture
- Website provides data maps that are viewable at the state or county levels
- This reporting option is a web based tool that is designed to assist weed management professionals, land managers, as well as the general public to make informed management decisions on noxious weeds

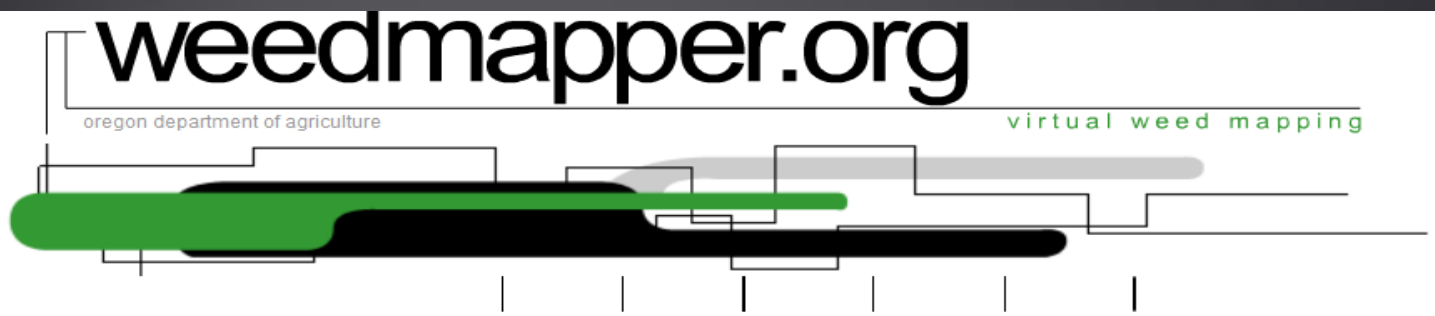
Oregon WeedMapper

- Designed to facilitate weed identification, reporting and verification
- Weed information and an online reporting form are provided
- The goal of the program is foster greater cooperation between state and federal agencies, county weed programs, cooperative weed management areas, and non-profit organizations to improve the effectiveness of weed control programs
- Major organizations that have provided data and support: BLM, USFS, CWPs, CWMAs, and The Nature Conservancy

http://www.oregon.gov/ODA/PLANT/WEEDS/WEEDMAPPER/Pages/about_us.aspx

Oregon WeedMapper

- For small data sets or single observations, use form available at: www.weedmapper.org/submit.php
- For large electronic data sets, they are annual calls for data in the late fall and early winter – calls for data are posted on websites and in email list serves
- The data collected by WeedMapper includes any location information associated with Oregon's listed noxious weeds
- The data accepted is dynamic: updates to previous reports, new reports, or new users submitting data



connections

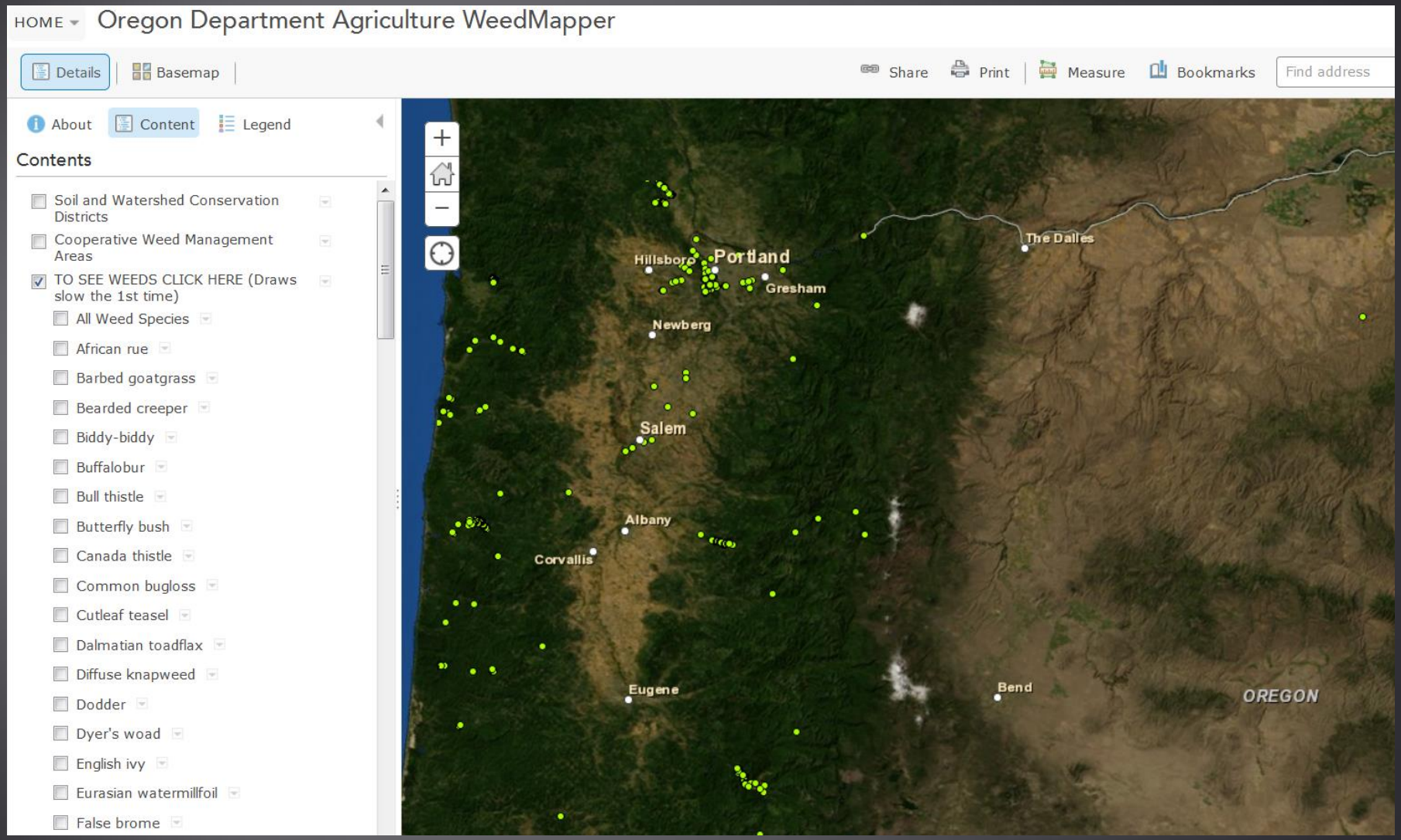
> Oregon WeedMapper

welcome to weedmapper.org

NOXIOUS WEED SIGHTING REPORT FORM

Please Provide the Following Information:

Name:	
E-mail Address:	
Confirm E-mail Address:	
Address:	
Phone: *(###)###-####*	
Date: *(MM-DD-YY)*	
Noxious Weed Species:	
Number of plants: *In Quantity*	
or In Acres	



http://geo.maps.arcgis.com/home/webmap/viewer.html?webmap=04b02fcee1c0400d83f45709b6f731f4

Oregon WeedMapper

- Required Data:
  - Exact weed location --- Lat/Long, UTM, GIS shapefile
  - Type of datum used to collect location information
  - Weed species --- common and scientific name
  - Contact --- name, organization, email, phone, address
  - Indication of report status --- update or new report
- Requested Data:
  - Number of plants --- quantity, net or gross acres
  - Type of location --- roadside, pasture, forest, field, rangeland, urban, riparian
  - Frequency --- patch size, spot, solid stand
  - Treatment --- manual, mechanical, chemical, none
  - Ownership --- federal, state, county, city, private, other, unknown
  - Date of find

http://www.oregon.gov/ODA/PLANT/WEEDS/WEEDMAPPER/Pages/submitdata.aspx

Oregon Invasive Species Hotline

Report an Invader!

http://oregoninvasiveshotline.org/

Oregon Invasive Species Online Hotline

Help stop the spread of invasive species in Oregon

Think you've found an invader?

Have you seen something suspicious in your backyard or neighborhood? Are you having trouble identifying something you've found? Report potential invasive species you've found to the Online Hotline. Your submission will provide vital **early detection** information to the experts working to stop the next invasion before it starts.

There are three easy steps you can take to get involved:

Learn - Familiarize yourself with the potential invasive species in the areas where you live or visit frequently. Get started with the Silent Invasion Quick Guide or the GardenSmart Oregon booklet.

Look - Wherever you are - hiking in the forest, on a fishing trip or digging in your garden - keep your eye out for unusual animals or plants that you have never seen before and be prepared to take a picture and document your find.

Report - Use the Online Hotline to report your find.

Tips for finding and reporting potential invaders >>

Produced by:

OPB

In partnership with:

OISC
Oregon Invasive Species Council

Funding provided by:

cpb

MY SOURCE

Report an Invader

If you spot a potential invasive species in Oregon, use our online form to report it. Or call our toll-free number 1-866-INVADER.

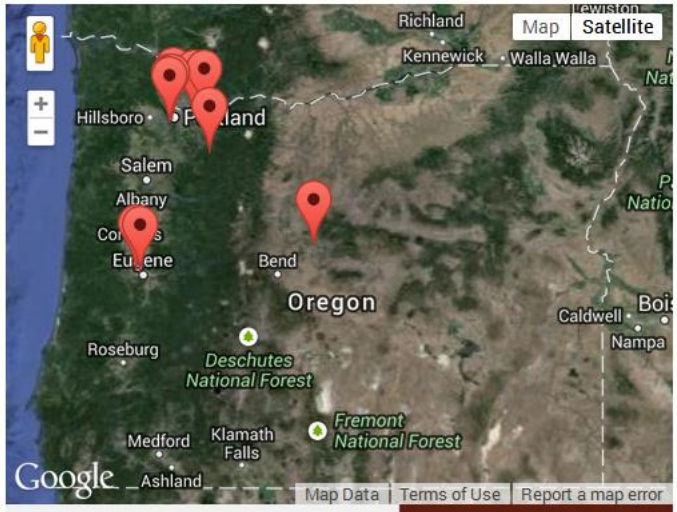
Report Now

Tips for reporting >>

Where Have the Invaders Been Found?

Browse the map to find the ten most recent Hotline Reports. Click on the icons to read more. Or use the search tools to explore the full database of Hotline Reports.

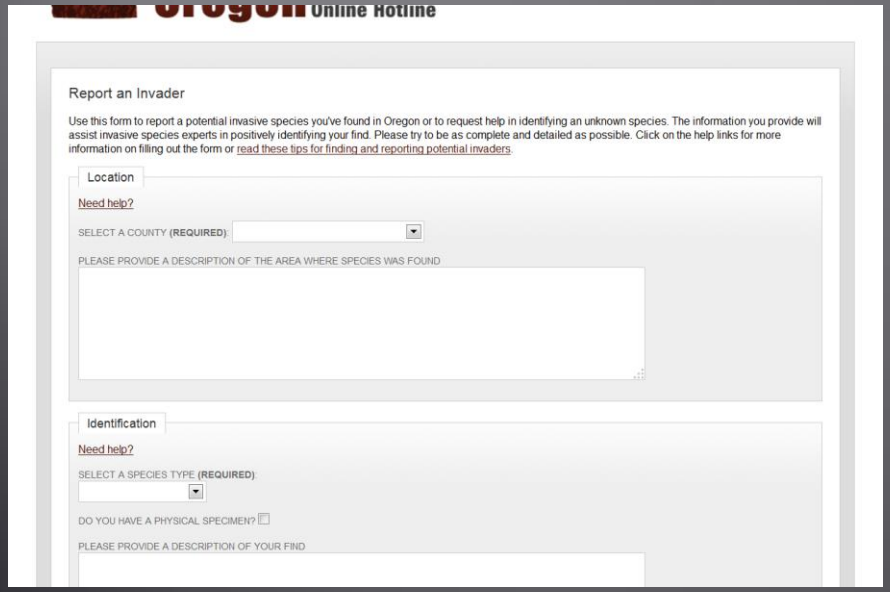
Search Hotline Reports >>

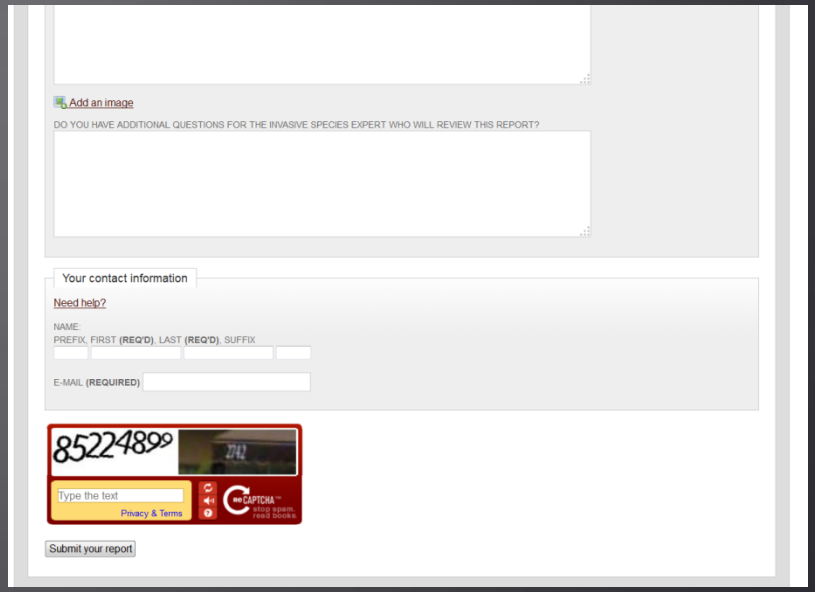


http://oregoninvasiveshotline.org/

Oregon Invasive Species Hotline

- Reporting form
  - Location --- county and description information
  - Species --- drop down list to choose from
  - Photograph --- with description
  - Contact information --- name and email (for response)





http://oregoninvasiveshotline.org/reports/new

Oregon Invasive Species Hotline

- Once a report is submitted, it is sent to the appropriate hotline manager
  - Mangers responsibilities include: opening and reviewing reports immediately upon receipt, sending an acknowledgement to the person who submitted a report, determining the most appropriate person to respond to, confirming the species, and helping to facilitate some sort of response to the species
  - Managers are assigned by species (aquatic, land plant, insect, animal), location (county boundaries), and status (class A, class B, class T)

Is this your report? Have you been invited to participate? Log in here.

Recent Reports

- 5/9/2014 in Clackamas - Garlic Mustard
- 5/1/2014 in Multnomah - Garlic Mustard
- 4/30/2014 in Multnomah - Garlic Mustard
- 4/30/2014 in Lane - Water Primrose
- 4/30/2014 in Lane - Water Primrose
- 4/29/2014 in Multnomah - Celandine, Lesser
- 4/29/2014 in Multnomah - Garlic Mustard
- 4/29/2014 in Multnomah - Garlic Mustard

Review Report

Managed by Tania Siemens

Hotline Report: Submitted on Friday, April 9 2010

Category: Land Plants

Species (Confirmed): Knotweed, Giant

Remedy:

- Manage Giant Knotweed

More Resources:

Want to join forces with your community to fight invasives? There are lots of people involved in this effort already! The links below can connect you with opportunities:

- Association of Soil and Water Conservation Districts (Click on your county)
- OPB Silent Invasion (scroll down to events)
- SOLV
- Invasives Watch Volunteers
- The Nature Conservancy in Oregon

Severity: invasive

EDRR Status: 1. Local expert notified

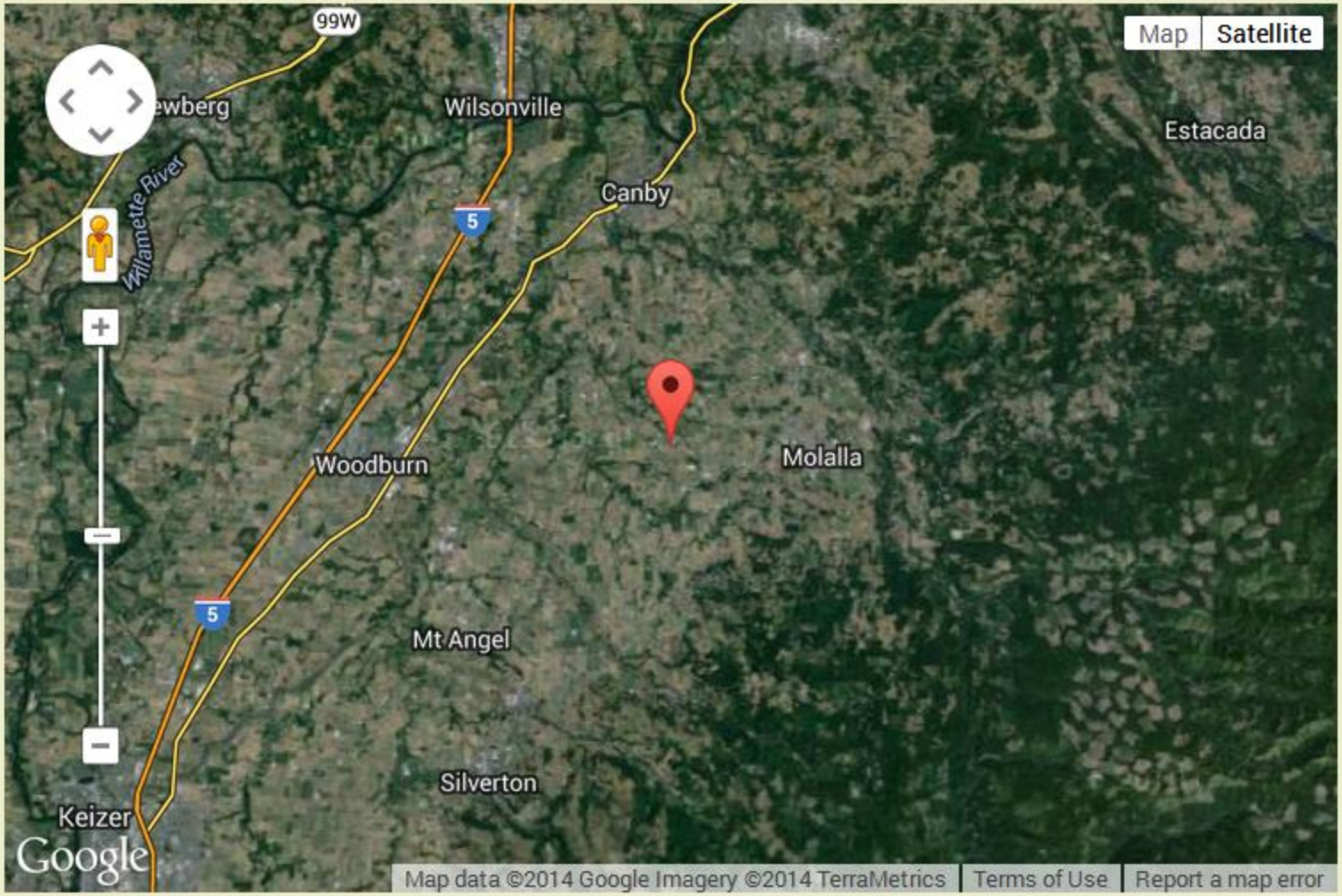
Description of specimen:

Growing in a drainage ditch on north side of Hwy 211.

Submitter does not have sample
Originally misidentified as *Land Plants:Knotweed, Japanese*

Region: Marion

http://oregoninvasiveshotline.org/reports/772



Description of area where specimen was found:

I saw what looked to be Japanese knotweed driving down Hwy 211 last Friday. It was in a drainage ditch on the north side of the road not long after I crossed into Marion County. I'm not sure exactly where to place the red marker on the above map, but think I have it within a mile or two of the location.

http://oregoninvasiveshotline.org/reports/772

Response History

Hotline manager: Tania Siemens - Tuesday, April 27 2010 at 3:58pm

Dear Michael,

Thanks for reporting Japanese knotweed. This is certainly a problem plant we want to catch before it gets out of hand. I will forward your report to the Marion SWCD to see if anyone is able to go check the site out and confirm the ID. If you by chance drive past there often, and have a chance to stop and take a picture then upload it to this report, that would be a big help. Thanks again, and keep on reporting!

Tania

Tania Siemens
Invasive Species Early Detection and Rapid Response Coordinator
The Nature Conservancy
WISE Program Coordinator (Watershed and Invasive Species Education)
Oregon Sea Grant Extension
tania.siemens@oregonstate.edu
541-914-0701

Hotline manager: Tania Siemens - Thursday, May 20 2010 at 5:12pm

Hello again, Micheal,

I forwarded your report to the Marion Soil and Water Conservation District. They were very fast to respond. Here is what they said. Thanks again for you report. Keep them coming! Tania Siemens

"Tania,

I was able to visit this site (I think it is the same one) yesterday. The species is actually Giant knotweed, rather than Japanese. It is along the upper part of a berm and along the fenceline of a private property located along HWY 211 roughly ½ mile east of Cooley Rd. on the north side of the HWY (to provide a more accurate point on the hotline map--the one placed by the reporter is pretty far off, and there are no specimens in the area marked).
The Weed Control District will be contacting the landowner, providing advice, and offering assistance.

Thank you very much for the on-the-ground assistance through the Hotline!

Tanya

Tanya Beard, Environmental Specialist-Botanist Marion County Department of Public Works
5155 Silverton Rd. NE, Salem, OR 97305-3899
Phone: 503-365-3149/Fax: 503-588-7970
tbeard@co.marion.or.us
http://publicworks.co.marion.or.us

http://oregoninvasiveshotline.org/reports/772

Oregon Invasive Species Hotline

- When reporting to the hotline, document your find as accurately as possible so that the species can be positively identified and found again
- Bring an ID guide with you in the field, and ID assistance is available through the website
- Once your report submission is confirmed it will go into the public database of submission and help experts and the public with early detection and tracking of invasive species outbreaks in Oregon

http://oregoninvasiveshotline.org/pages/report

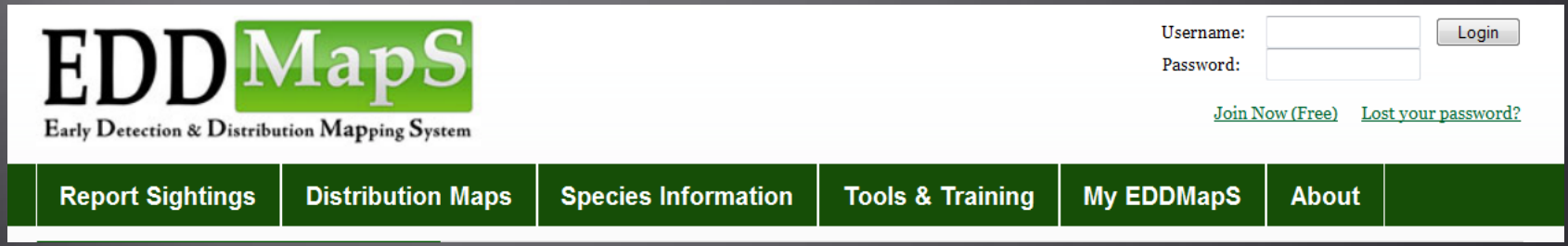
EDDMapS West

Early Detection and Distribution Mapping Systems

http://www.eddmaps.org/west/

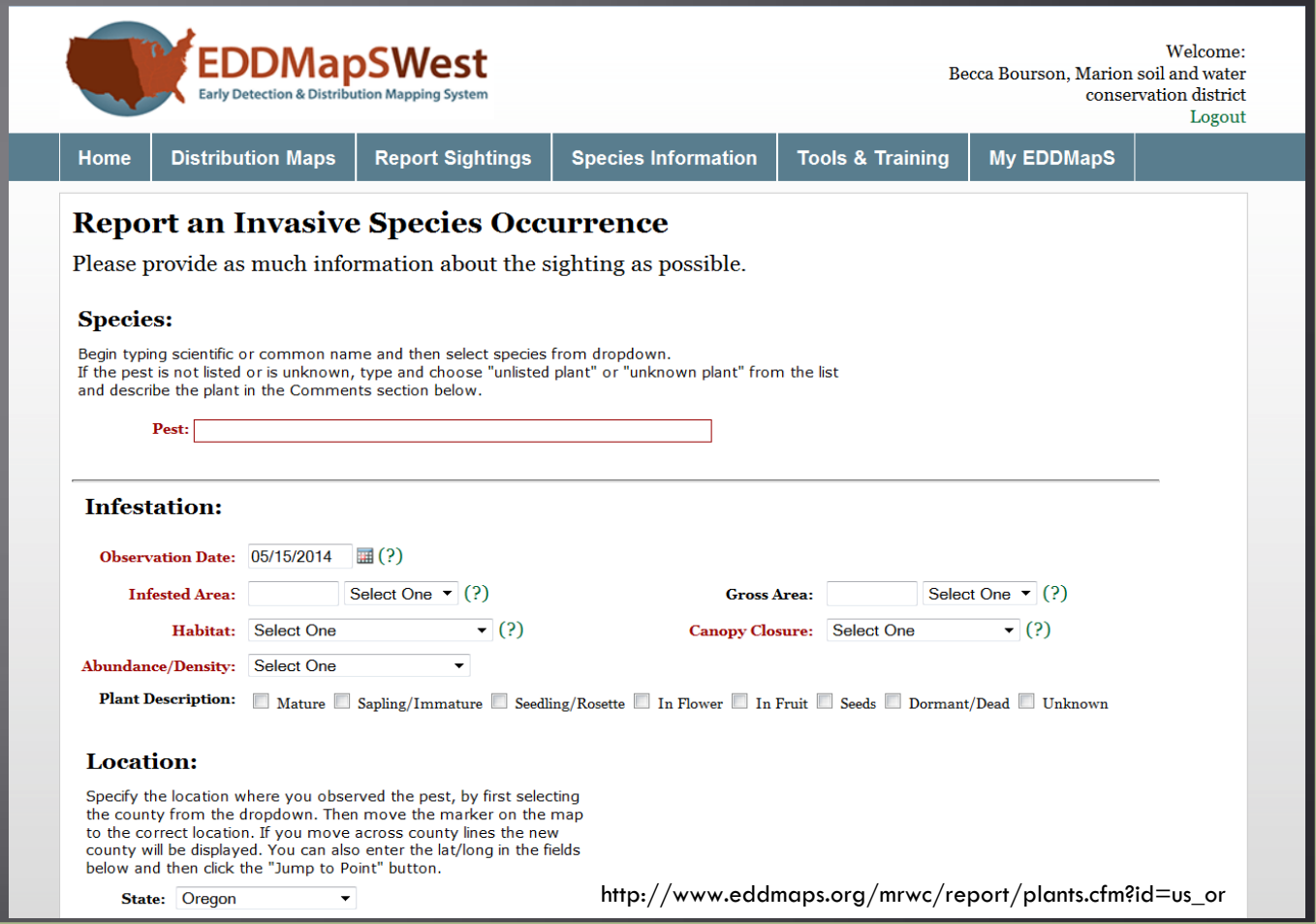
EDDMapS West

- "Invasive Species Mapping Made Easy!"
- Currently only option with app available
- Real time tracking of invasive species occurrences
- Local and national distribution maps
- Electronic early detection reporting tools
- Library of identification and management information



EDDMapS West

- Innovative web based mapping tool that relies on volunteers learning how to collect and enter data
  - Electronic forms with related field sheets
  - Mobile app



EDDMapS West

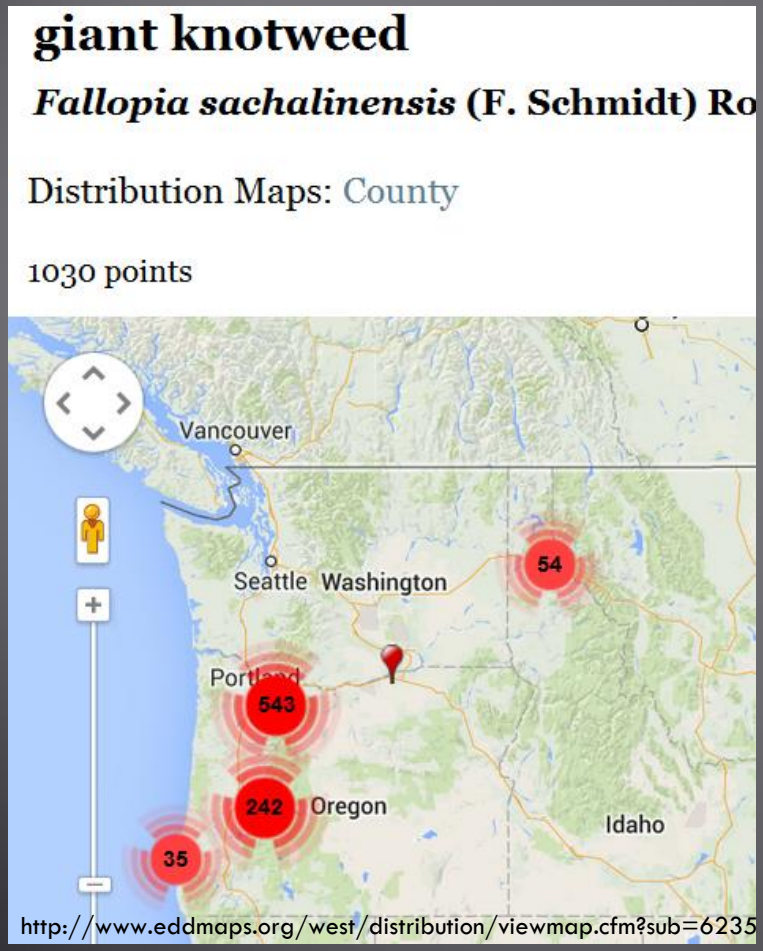
- Standardized online data form allows for adding specific infestation information and uploading images

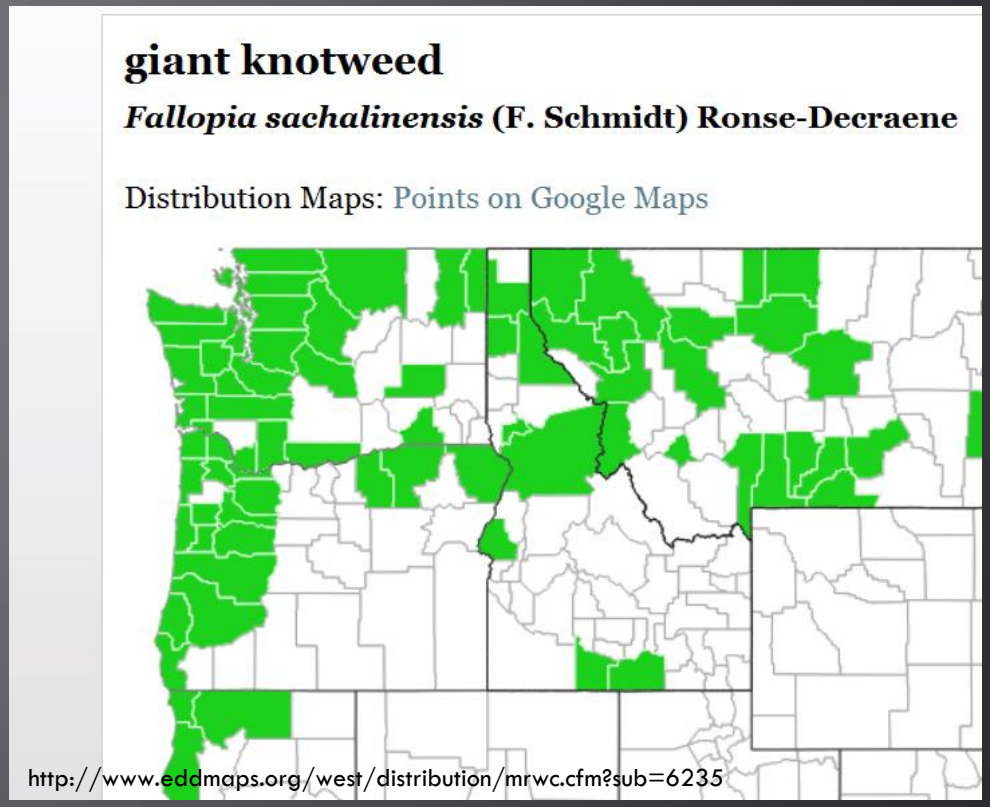
- Database aggregates data from other mapping projects and cooperation groups to display invasive species distribution data at the county, state, and national levels

http://www.eddmaps.org/west/

EDDMapS West

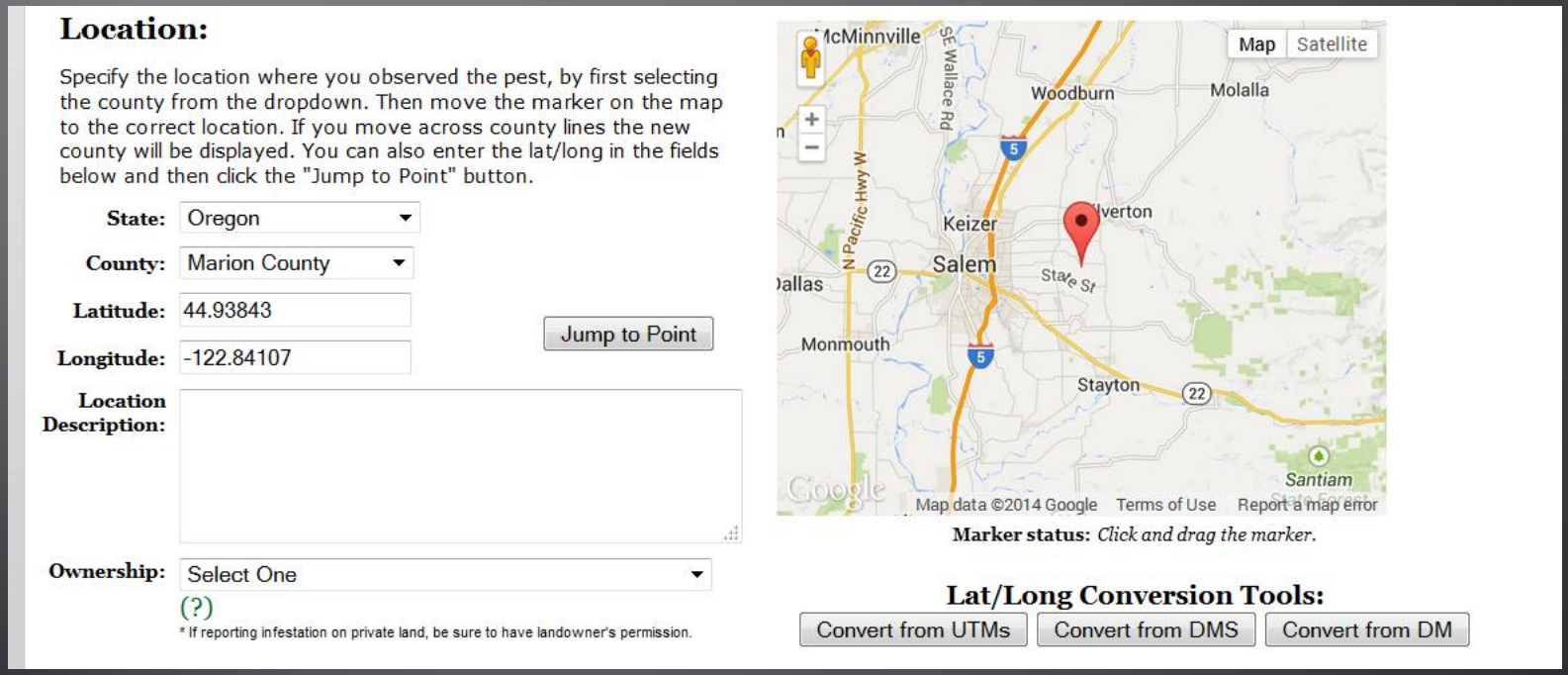
- Point or County Distribution Maps for viewing for 155 species





EDDMapS West

- Create account to start recording sightings
- Gathering information is simple: species, location, pictures
- Can use GPS or online mapping function to locate the point of the infestation



http://www.eddmaps.org/mrwc/report/plants.cfm?id=us_or

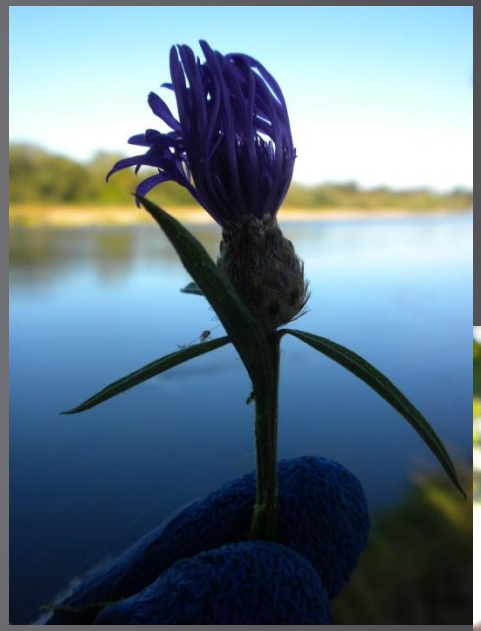
EDDMapS West

- Supplemental report information and guides
  - The species name is can be selected from the A-Z Scientific Name list
  - You must first select the state you are reporting in
  - Other data: infested area, gross area, canopy cover, habitat, abundance, density, patch type, plant description, date and county collected in
  - Take pictures! Verification made fool proof.
  - Website has a tools and training section which discuss in detail using a GPS, understanding coordinate and mapping systems, and provides expanded identification keys and field guides

http://www.eddmaps.org/tools/index.cfm

Photographs of Invasive Species

- Essential for accurate identification and verification
- Tips:
  - Leaf shape
  - Leaf arrangement
  - Flowers, fruits, roots
  - Unique features (hairs, thorns)
  - Whole plant images
    - scope of infestation
  - Take photos with sun behind you



Adapted from EDDMapS Invasive Plant Mapping Handbook. Available: http://www.eddmaps.org/training/EDDmapS.pdf

Respect private property rights!

Know Your Native Plants!

http://endurazone.blogspot.com/2009/07/please-dont-pick-flowers.html

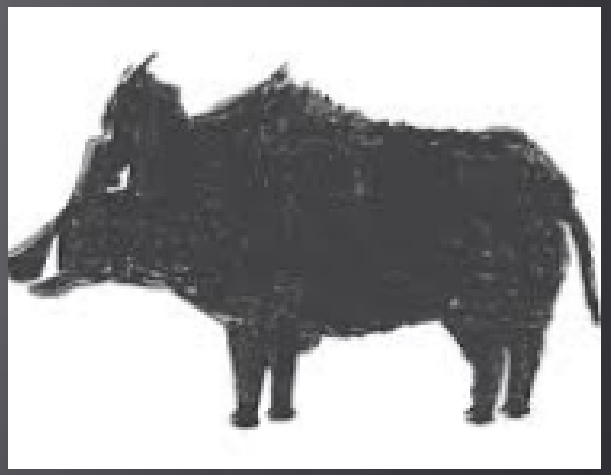
Resources

- ODA Noxious Weed Control Program. The Oregon Department of Agriculture's Noxious Weed Control Program protects Oregon´s natural resources from the invasion and proliferation of exotic noxious weeds.
- Oregon Aquatic Nuisance Species Management Plan (PDF). The goal of the plan is to minimize the harmful ecological, economic, and social impact of Aquatic Nuisance Species (ANS) through prevention and management of introduction, population growth, and dispersal of ANS into, within, and from Oregon.
- Oregon Invasive Species Council. OISC was created by the Oregon legislature in 2002. Its purpose is to conduct a coordinated and comprehensive effort to keep invasive species out of Oregon and to eliminate, reduce, or mitigate the impacts of invasive species already established in Oregon. The OISC Web site has links to many resources about invasive species in Oregon.
- The Silent Invasion - This is the companion site the 2008 Oregon Public Broadcasting series on invasive species in Oregon. It provides extensive links and information on invasive species in Oregon including a video archive of stories about invasives in Oregon.
- US Army Corps of Engineers Aquatic Plant Information System. The system helps aquatic plant managers to successfully control aquatic plant infestations by providing access pertinent and up-to-date information including distribution of exotic plants.
- USDA Forest Services' Invasive Plants Inventory. The Forest Service Natural Resource Information System (NRIS) supports a corporate computer application for Invasive Plants Inventory. The application is an Oracle database, utilizing Oracle data entry forms and ESRI's Spatial Data Engine (SDE) for storing and managing spatial data in Oracle. ESRI's ArcMap is used to display the Invasive Plants Feature Class containing the invasive plants inventory polygons.
- USGS Non-Indigenous Aquatic Species. Tracks aquatic vertebrate and invertebrate species throughout the US and provides fact sheets on hundreds of species.

Portland State University, Oregon Biodiversity Information Center http://orbic.pdx.edu/inv-links.html

Related Apps

- Squeal on Pigs
  - Feral pig sightings and reporting
- Firewood Buddy
  - Clean firewood sources, insect pest ID, firewood and camping tips
- Stink Bug Scout
  - Brown marmorated stink bug sightings
- Forest Insect Pests in North America
  - Identification app
- What's an Invasive?
  - Identification app
- iBioControl
  - Noxious weeds and their biocontrol counterparts



Thank you!

Questions? Comments? Jokes?

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