Land Snails & Slugs of Oregon

Photos by Thomas Shahan

Oregon Department of Agriculture

1. Ariolimax columbianus, 2. Limax maximus, 3. Helix aspersa, 4. Arion hortensis, 5. Prophysaon andersoni, 6. Deroceras reticulatum, 7. Limacus flavus, 8. Haplotrema vancouverense, 9. Oxyxhilus draparnardi, 10. Monadenia fidelis, 11. Deroceras hesperium, 12. Monadenia fidelis, 13. Ancotrema sportella, 14. Oxychillus alliarius, 15. Vespericola euthales, 16. Succinea sp., 17. Candidula intersecta, 18. Arion subfuscus., 19. Arion rufus, 20. Prophysaon andersoni, 21. Prophysaon foliolatum, 22. Lehmannia valentiana

Oregon Pest Alert

Eastern Heath Snail

Xerolenta obvia (Stylommatophora: Hygromiidae), also known as the Eastern heath snail (EHS), is originally from Europe. Although it has NOT been found in Oregon at this time, the risk of introduction is high due to its establishment in several areas in North America. It was found in Ontario, Canada in 1969 and Detroit, Michigan in 2001. In 2012 the snail was detected in Cascade County, Montana.

A typical Eastern heath snail.
Dr. Jan Vaněk at http://www.biolib.cz/cz/image/id197670/

While EHS feeds on a wide variety of plants, the primary reason it is considered a pest is the behavior of climbing up on plants and other objects during the summer months. They climb onto forage, wheat, and other crops resulting in contamination of the commodity. EHS population densities may be very high; 70 to 100 snails per square foot have been reported (White-McLean 2011). The combination of climbing and large numbers may result in damage to seed and grain harvesting equipment.

Signs of infestation

- White, dime-sized snails that usually have at least one brown spiral band
- Pale snails attached to plants, fence posts, or other objects during summer days. Any species exhibiting this behavior is most likely an exotic species.

Xerolenta obvia.
T. Shahan, Oregon Department of Agriculture

Snails in hay field in Montana.
Ian Foley, Montana Department of Agriculture.

Common shell color variations.
Francisco Welter Schultes, Zoologisches Institut at http://www.animalbase.uni-goettingen.de/animalbaseimage/Xerolenta-obvia_02.jpg

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Over 350 pounds of the dime-sized snails were collected in a "snail roundup" near Belt Montana.

Ian Foley, Montana Department of Agriculture

It poses a threat to many mechanically harvested crops, but especially small grains where machinery is most vulnerable to damage. It is known to feed on fodder crops (alfalfa, clover, etc.), and within Europe, it is intercepted on fruit and vegetable shipments (White-McLean 2011). It is a vector of fungal pathogens (*Fusarium, Phytophthora*, etc.) and is a vector of sheep and goat parasites (White-McLean 2011).

How could it get here?

During dry hot periods EHS climbs up on and attaches itself to just about any inanimate object including fence posts, firewood, cars, trucks, trailers, railroad cars, shipping containers and campers, or even crop plants and nursery stock. The snail could easily be transported to Oregon on any of these objects.

Description

These are small snails up to 22mm (0.86 inches) in width. They are often described as being dime-sized or smaller. The snails are white, usually with at least one brown spiral band, but there may not be any bands or there may be additional, typically fainter, bands.

Life cycle

Eggs hatch in fall. Snails develop over one to two years depending on climate, and lay eggs in the fall. Each adult can lay up to 95 eggs in the soil (Maňas 2011). Like most snails, adults have both male and female genitalia; therefore all adults can produce eggs. Adults die in the fall after reproducing.

Snails attached to a caution sign in a field.

Ian Foley, Montana Department of Agriculture

References

Maňas, M. 2011. Mating of *Xerolenta obvia*. Gastropods: Blog about gastropods. http://gastropods.wordpress.com/tag/xerolentaobvia/ accessed April 2014.

White-McLean, J.A. (September, 2011). Terrestrial Mollusc Tool. USDA/APHIS/PPQ Center for Plant Health Science and Technology and the University of Florida. [April 2014] - http://idtools.org/id/mollusc

If you see snails attached to plants in the summer or think you have found a eastern heath snail, please contact ODA.

Thank you for your interest!

For further information please contact:

Oregon Department of Agriculture
Plant Division
635 Capitol St. NE
Salem, OR 97301-2532
503-986-4636 or 1-800-525-0137
www.oregon.gov/ODA

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revised: 5/2014

The Other Side of Invasive Pests in Oregon

Invasive pests in Oregon can have far reaching effects beyond the well-known negative impacts on agriculture and natural resources. Invasive pests can also directly affect jobs, water quality, watersheds, pesticide use, and human health.

1. Job creation

Many nursery and agricultural products must be certified as pest-free before they can be exported to other states and foreign countries. Without certification many Oregon products could not be shipped and agricultural businesses would be severely affected. This would directly result in job losses for those involved in the production and exportation of commodities.

2. Water Quality, Watersheds Protection, and Pesticides

There are critical connections between water quality, watershed health, invasive pests, and pesticide use. For example, the **Spotted Wing Drosophila** (SWD), *Drosophila suzukii*, an invasive fruit fly pest, has caused increased pesticide use in orchards and has disrupted many of the advances in Integrated Pest Management (IPM) practices. Its adverse impact on cherry crop production over the past 3 years has resulted in increased spray regimens of every 5-7 days. The use of older pesticides, such as Malathion, has resulted in pesticide concentrations in local streams that are above water quality standards and sensitive aquatic life may be negatively affected.

The **Brown Marmorated Stink Bug** (BMSB), *Halyomorpha halys*, is another invasive pest that is rapidly spreading throughout Oregon. It feeds on over 170 host plants, including orchard crops, vegetables, small fruit, and ornamentals. It can also be a household nuisance pest. Communications from growers and private homeowners indicate that pesticide applications are increasing to combat this pest.

The Oregon Department of Agriculture has been successful in keeping the **Gypsy moth** out of Oregon for more than 30 years with early detection and successful eradication programs. Continuous defoliation by Gypsy moth, *Lymantria dispar* caterpillars in the eastern US can cause an increase in water and soil temperature. These temperature increases can have a series of cascading effects on other wildlife and riparian plant communities. In addition, the Gypsy moth may displace some threatened or endangered species in their natural habitats.

Flowering rush is an escaped ornamental that invades and dominates slow moving waters with muddy substrates up to 20 feet deep. It threatens irrigation systems on the Columbia River, salmon migrating through the Columbia, and water quality in general. This plant forms large monocultures that compete with native plants such as cattails and willows.

3. Human Health

Invasive pests have the potential to affect every aspect of our lives, including human health. With increases in pesticide use and the effects that some pests can have on human health (e.g., West Nile virus, Dengue virus, allergic reactions to Gypsy moth caterpillar hair), we will have to maintain vigilant detection and monitoring programs to enable us to rapidly respond to new invaders and minimize unnecessary pesticide applications down the road.

Summary

An effective early detection and rapid response system to invasive pests will decrease adverse impacts to Oregon by maintaining access to important export markets, protecting Oregon's watersheds and water quality, reducing pesticide applications, decreasing the impacts of invasive species in natural watersheds, and decreasing potential impacts to human health.

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Oregon Department of Agriculture

For more information,
please contact Dr. Helmuth Rogg
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Oregon Department of Agriculture
635 Capitol Street N.E.
Salem, OR 97301-2532

Exotic Snails
Oregon Pest Alert

Dime-sized

We need your help.

There are several exotic snails that could become pests to gardens and agriculture if they establish in Oregon. We do not have any good methods for trapping these snails, so we need your help to find them.

What should I look for?

- Snails up high on plants, fence posts, trailers or other objects during summer days
- Pale-shelled snails, often with dark bands

What do they do?

- Form huge populations, possibly hundreds per square yard
- Contaminate grain and seed crops
- Clog and even break harvesting equipment
- Contaminate forage crops such as hay and alfalfa
- Damage fruits and vegetables
- Transmit plant and animal pathogens

Native to Europe, the Eastern heath snail is currently established in central Montana and southeast Michigan.

Xerolenta obvia = Eastern heath snail
Image by Ondřej Zicha at
http://www.biolib.cz/en/image/id578/

Which snails are okay?

- Native Oregon snails do not climb up on objects during the heat of the day.
- The European brown garden snail *(Helix aspersa)* does climb, but has a nearly spherical and chocolatey-brown shell with irregular banding.

Do not report these species.

How do they get here?

Snails hitchhike by climbing up and attaching themselves to plants or objects including campers, firewood, stone, cars, trucks, plants, and shipping containers.

What should I do if I find them?

- Email a picture to plant-info@oda.state.or.us
- Call the Oregon Department of Agriculture Insect Plant Pest Management staff at: 503-986-4636 or 1-866-INVADER

Background image by Ian Foley at the Montana Department of Agriculture.

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603-052-0129

Quarantine; Against Exotic Phytophagous Snails

(1) Establishing Quarantine. A quarantine is established against exotic phytophagous snails that are members of the Phylum Mollusca of the Class Gastropoda characterized by a calcareous shell covering the visceral hump. This quarantine applies to exotic phytophagous snails in any stage of development, and includes, but is not limited to: brown garden snail (*Cornu aspersum* Müller), white garden snail (*Theba pisana* Müller), milk snail (*Otala lactea* Müller), giant African snail (*Achatina* spp.), giant South American snail (*Megalobulimus oblongus* Müller), and all other exotic phytophagous snails (hereafter, "exotic phytophagous snails") except for species on the approved species list (OAR 603-052-1320). These snails are very important garden and agricultural pests causing severe damage to leaves and fruits of many plants.

(2) Areas Under Quarantine. The entire states of Arizona, California, Hawaii, Michigan, New Mexico, Texas, Utah, Washington, and any other state or territory where exotic phytophagous snails are established.

(3) Covered Commodities. Exotic phytophagous snails in any stage of development. Grass sod and all plants with roots in soil and any other plant material or articles capable of transporting exotic phytophagous snails into Oregon are hereby declared to be hosts or possible carriers of the pests herein quarantined and are prohibited entry into this state directly, indirectly, diverted, or reconsigned unless there is compliance with section (4) of this rule.

(4) Conditions:

(a) Covered commodities from regulated areas may be permitted entry into Oregon only when such commodities are accompanied by a certificate of quarantine compliance issued by an authorized official from the state of origin which certifies that it has been determined by official inspection immediately prior to shipment that such covered commodities were found to be free of all life stages of exotic phytophagous snails or that such commodities originate from an area determined by official inspection to be free of exotic phytophagous snails. The original certification document shall be forwarded to the Oregon State Department of Agriculture, Plant Program Area, 635 Capitol St. NE, Salem, Oregon 97310, immediately by First Class mail or fax (503) 986-4786. Each lot or shipment of the covered commodities shall be accompanied by a copy of the above described certification document. The Oregon receiver to whom the commodities are shipped shall notify the department immediately upon receipt of such commodities and shall hold the same until they are released by the department.

(b) Cut greens, cut flowers and soil-free plants including bare root plants, plant crowns, roots for propagation, bulbs, corms, tubers, and rhizomes of plants washed free of adherent soil are excepted from the quarantine, if such plant materials are found upon inspection not to be infested with exotic phytophagous snails or are found not to bear soil accumulations sufficient to carry or obscure any life stage of exotic phytophagous snails.

(c) Certified and noncertified covered commodities shall not be shipped together in the same transporting vehicle, and any such mixing of certified and noncertified covered commodities shall nullify certification and result in the rejection of the entire shipment of covered commodities. Upon inspection and determination by the Oregon State Department of Agriculture that the transporting vehicle or any properly certified covered commodities are infested with any life stage of exotic phytophagous snails, such shipment shall be found in violation of this quarantine.

(5) Heliculture Prohibited. Raising, maintaining, selling, shipping and/or holding live exotic phytophagous snails for any purpose within the State of Oregon is prohibited except for species on the approved species list (OAR 603-052-1320).

(6) Disposition of Commodities in Violation of the Quarantine. All covered commodities described in section (3) of this rule found to be in violation of this quarantine shall be returned immediately to point of origin by the Oregon receiver, or at the receivers option be destroyed under the supervision of the department, without expense to or indemnity paid by the department.

(7) Exceptions. Upon request, and upon investigation and finding that unusual circumstances exist justifying such action, the department may issue a permit allowing entry into this state of covered commodities without meeting the requirements of subsection (4)(a) of this rule. However, all conditions specified in the permit shall be met before such permit will be recognized.

Stat. Auth.: ORS 561 & 570 Stats. Implemented: ORS 561.190, 561.510 - 561.600, 570.305, 570.405 & 570.410 - 570.415 Hist.: AD 14-1983, f. 11-15-83, ef. 12-1-83; AD 12-1997, f. & cert. ef 7-31-97; DOA 8-1999, f. & cert. ef. 5-14-99; DOA 1-2006, f. & cert. ef. 1-13-06; DOA 2-2007, f. & cert. ef. 1-30-07; DOA 7-2008, f. & cert. ef. 2-8-08; DOA 3-2009, f. & cert. ef. 2-13-09; DOA 3-2013, f. & cert. ef. 3-1-13; DOA 2-2014, f. & cert. ef. 2-14-14