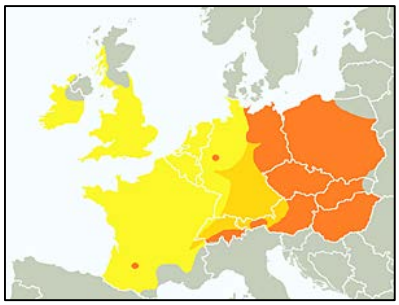
Eastern Heath Snail

Terrestrial snail in the Hygromiidae family
Scientific Name: *Xerolenta obvia* (Menke)

Description: a little smaller than a dime (0.63" (16 mm) - 0.75 (19 mm) in diameter); white with dark brown spiral brown bands

Hosts: feeds on a wide range of plant species (254 genera). Is a known pest of alfalfa, clover, lupine, sanfoin, serradella (a legume), wheat, and barley. Observed locally on a wide variety of plant materials, e.g., grasses, ornamentals, trees (including fruit), shrubs and weeds.

Biology & Behavior: found in vegetation, under rocks, boards, and refuse. Known for climbing on vegetation, fence posts and other upright objects to escape high ground temperatures and will aggregate in enormous numbers in a behavior called massing. Snails survive long periods of dry conditions by withdrawing into their shells and sealing the opening with a mucous membrane. Reproduces in the fall in Europe (typically October and early November) but has been observed to have a spring and fall reproductive cycle in North America. Overwinters in the soil.



Source: KERNEY et al.

Distribution: southeastern and eastern Europe (Bulgaria, Czech Republic, Poland, Slovakia) and isolated populations in western Germany and southern France (depicted in orange). Established population in southern Ontario (Bethany in 1969 and 1972) and detected in Detroit, Michigan in 2001. Introduction and spread of snail populations is largely by anthropogenic means (man). Snails readily attach themselves to a variety of materials.

Damage/Impacts: feeds on plant material, reducing yields and lowering crop quality

- Contaminant in grains; products may be downgraded (e.g., malting barley to feed barley) or may be unacceptable to grain handling authorities
- Contaminate of fruits and vegetables
- Transmits spores of *Alternaria* sp., *Fusarium* sp., and *Phytophthora* sp. (plant diseases)
- Vector of animal diseases: *Protostrongylus rufescens* (sheep lungworm), *Davainea proglottina* (cestode), and *Dicrocoelium dendriticum* (trematode).

Contacts

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United States Department of Agriculture
Animal and Plant Health Inspection Service (APHIS)
Plant Protection and Quarantine (PPQ)
406-449-5210

Best Management Practices
Eastern Heath Snail

Site Sanitation
Trash, litter, debris or other forms of waste provide snails with daytime hiding places or harborage. Infested areas/properties should be kept clean to help facilitate management and improve the effectiveness of control measures. Removal of trash, litter or other debris should be conducted to prevent the spread of an infestation by hitchhiking snails. To mitigate risks, ensure waste is free of snails, place waste in regular waste bags and seal prior to normal proper disposal.

Artificial Movement Prevention and Inspection
Various articles can provide snails an opportunity to "hitchhike" and travel to other locations. Articles may include any product, commodity, vegetation or any means of conveyance, that present a pathway for the spread of snails or snail eggs. To address this concern, the following practices are recommended:

- Thoroughly inspect articles that will be leaving infested areas.
- Articles should not be staged in infested areas or where vegetation is present. Articles that need to be staged in vegetated or known infested areas should be inspected for snails prior to being moved.
- If snails are observed, they should be removed and eliminated by crushing.
- If possible, the article/s in transit should be properly inspected at the point of origin and at its destination to verify the condition as "snail free." If shipping to Oregon or California, an official inspection prior to shipment or transit is required.

Site Management and Modification
Vegetation Management: Maintenance of vegetation in infested areas is an effective means of controlling the natural spread of snails by reducing food sources/habitat, in addition to enhancing the effectiveness of mollusk control measures. Some examples of vegetation management include mechanical cutting and herbicide applications.

- Vegetation should be mowed to a maximum height of 5 inches.
- Green waste such as small trees, brush, and other vegetation should be chipped on site prior to removal to prevent artificial movement of snails.
- After clearing and removal of vegetation, mow or apply thorough, regular pesticide applications.
- Inspect all equipment before it leaves the infested site to prevent artificial spread.
- Optimally, equipment used for vegetation management should be cleaned and stored inside buildings. Any equipment stored outside can be protected by establishing a salt barrier.
- For questions about disposal procedures to help prevent artificial spread, contact the Montana Department of Agriculture or local USDA APHIS PPQ office.

Site Modification: Site modification may be used in lieu of vegetative controls if the facility determines such practices would be more feasible and cost/effective. Site modification such as grading or resurfacing kills snails and eggs present in the shallow surface soils (0-4 inches below ground). Grading also disrupts existing vegetation and destroys snail habitat. Examples of site modification include raking, rough grading with a bulldozer or resurfacing with crushed stone or gravel, asphalt millings, pavement, or concrete to retard vegetation regrowth.

Treatment- To reduce and manage snail numbers, apply molluscicides approved for use in your state to the infested areas. Use granular molluscicide baits having either metaldehyde or iron phosphate as the active ingredient. There are a variety of brand name molluscicides with these ingredients which have appropriate labeling for the sites to be treated.

Summary
Property owners are encouraged to implement Exotic Snail Best Management Practices to prevent additional snail species from establishing active populations. The Exotic Snail Best Management Practices is not intended to be complete and all-inclusive, but provides a foundation for effective management. Property owners are encouraged to customize/tailor these Best Management Practices to their own property and unique set of conditions.

Additional Resources - ***New Pest Response Guidelines: Temperate Terrestrial Gastropods***
http://www.aphis.usda.gov/import_export/plants/manuals/emergency/downloads/nprg_temp_terr_gastro.pdf