

Our Favorite Garden Pests?

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February 13, 2015



Snails and slugs

The snails and slugs that have invaded our gardens in the Pacific Northwest are members of the phylum *Mollusca* in the class known as *Gastropoda*; they are thus related to sea creatures such as clams, mussels, oysters and octopi. Terrestrial snails and slugs (basically snails without shells) are pulmonates, which have lungs rather than gills.

The pulmonates who do the most damage are not PNW natives, such as the banana slug—but imported relatives. The brown garden snail is common in our gardens but non-native slugs, such as the spotted leopard slug and the European brown slug, are the most destructive pulmonates in Northwest gardens.

Characteristics

The first step in controlling snails and slugs is to understand their habits and preferences.

A slug is basically a stomach traveling on a large foot. These lovely critters thrive in moist conditions, using mucus (which often leaves a slime trail) for “locomotion, self-defense, moisture control, trail finding and mating.” (OSU bulletin) They are rapacious, often eating several times their weight in a day. Slugs are chewers, using their mouths, which in some species are equipped with up to 27,000 backward-pointing, replaceable teeth—a pretty scary vision. They are nocturnal, feeding primarily at night.

Favorite meals include hostas; ornamentals such as asters, chrysanthemums, coleus, cyclamen, dahlias, dogwood, hibiscus, ivy, primroses, some species of rhododendron and roses, viburnums and zinnias; and French marigolds. A variety of vegetables, including lettuces and cabbage, are favorite meals. As opposed to snails, which stay above ground, slugs prefer to spend their time underground, and thus also pose a danger to a number of root crops, bulbs and tubers. Slugs do have some natural enemies—in addition to gardeners. These include predacious ground beetles and larvae, toads and frogs, salamanders and garter snakes. Birds such as blackbirds, crows, ducks, jays, starlings and some thrushes consider them to be tasty treats.

Slugs are hermaphrodites, beginning life as males and becoming females as adults. Their courtship ritual is fairly elaborate and “not for the faint-hearted” (OSU bulletin). Slug eggs are small, round or oval, and approximately ¼ inch in diameter. The eggs may be transparent, white or golden. Most slugs lay eggs in clutches of 3-50, and can lay as many as 500 eggs annually. Slug eggs can be found in moist places—in holes in the soil, in plant debris, or under boards or stones. Eggs laid in late fall usually overwinter and may hatch as early as January.



A native banana slug. *Photo by Carla Glassman / WSU Skagit County Master Gardener.*

Control

It's a good idea to assume that you will never rid your garden of snails and slugs, but they can be controlled. However, consider these management options before using any insecticides. Particularly avoid use of broad-spectrum insecticides which kill beneficial insects and may be harmful to pets and children.

It's best to monitor for snails and slugs in the Northwest during March, April, May, June and October, particularly after rain and when night temperatures are warm. Slugs are especially active in the fall after the rains begin and the cool temperatures stimulate egg-laying, which makes this a good time to search for slug eggs.

Here are some suggestions for pulmonate management:

1. First of all, change slugs' environment by eliminating their hiding places. Get rid of ivy, tall grasses and weeds, rocks, boards and compost piles that are close to your garden.
2. Remove ground cover plantings around targeted plants and don't mulch too heavily around plants likely to attract slugs.
3. Search for slug eggs and dispose of them—but not in your compost pile! This is particularly effective in the late winter or early spring before their eggs hatch.

4. Monitor your garden for slime trails and the pretzel-shaped fecal droppings that slugs leave when they feed.
5. Because slugs are nocturnal, they can be trapped at night. Go out at night with a flashlight or headlamp and search your garden, picking up slugs and dropping them into a bucket of soapy water. If you find particular pleasure in killing them, clipping a slug or two in half can be very satisfying.
6. In the morning, check under hiding places such as boards (you may place them near your garden for this reason) and pick off the slugs.
7. Slugs are attracted to beer. You can make beer traps by placing beer cans or other containers of beer with one-inch holes in the soil in and around your garden. Slugs will crawl in and get trapped.
8. Copper stripping deters slugs and snails. This is particularly effective if you use it on raised beds or pots—where the critters have to crawl over a barrier to feed.
9. Encourage slug predators such as birds, garter snakes, frogs, ducks, and predacious ground beetles.

There are a number of plants that slugs do not like, including alyssum, azaleas, daylilies, daffodils, foxglove, Peruvian lily, mint, red cabbage, red oak leaf lettuce and parsley. While including these plants in your garden will not eliminate the slimy pests, they may discourage them.

Chemical control or baits should be the gardener's last resort. Remember that it's impossible to completely rid your garden of pulmonates—the best we can do is control them. By far the safest bait is iron phosphate, which has been found to be comparably non-toxic to children and animals and has been approved for organic gardening. Baits need to be applied every few weeks, particularly during weather favorable to slugs; however, when applied during dry weather baits can serve to increase slug activity because they are attracted to the bait. Be sure to follow the instructions on the label.

RESOURCES:

- Antonelli, A.L. & D.F. Mayer (October 1991). *Slug control*. Washington State University Cooperative Extension Bulletin 0968.
- Gordon, D.G. (1994). *Field guide to the slug*. Western Society of Malacologists. Seattle: Sasquatch Books.
- Gordon, D.G. (2010). *The secret world of slugs and snails: Life in the very slow lane*. Seattle: Sasquatch Books.
- Slugs: <http://oregonstate.edu/dept/nurspest/slugs.htm>