

Ewwwww. Slugs.



Not All Slugs Are Pests!

Pest - Gray field slug, *Deroceras reticulatum* Muller -

- Not native
- Common garden pest in the PNW
- Omnivorous - eats a wide variety of plants (leaves, fruits, seedlings), tubers, grains, earthworms and dead slugs, for example



Not a pest - Pacific banana slug, *Ariolimax columbianus* -

- Not a garden pest
- Native
- Most often found in moist areas of forest floor
- Fun fact - it's the largest slug in North America! Can get to be almost 10" long.



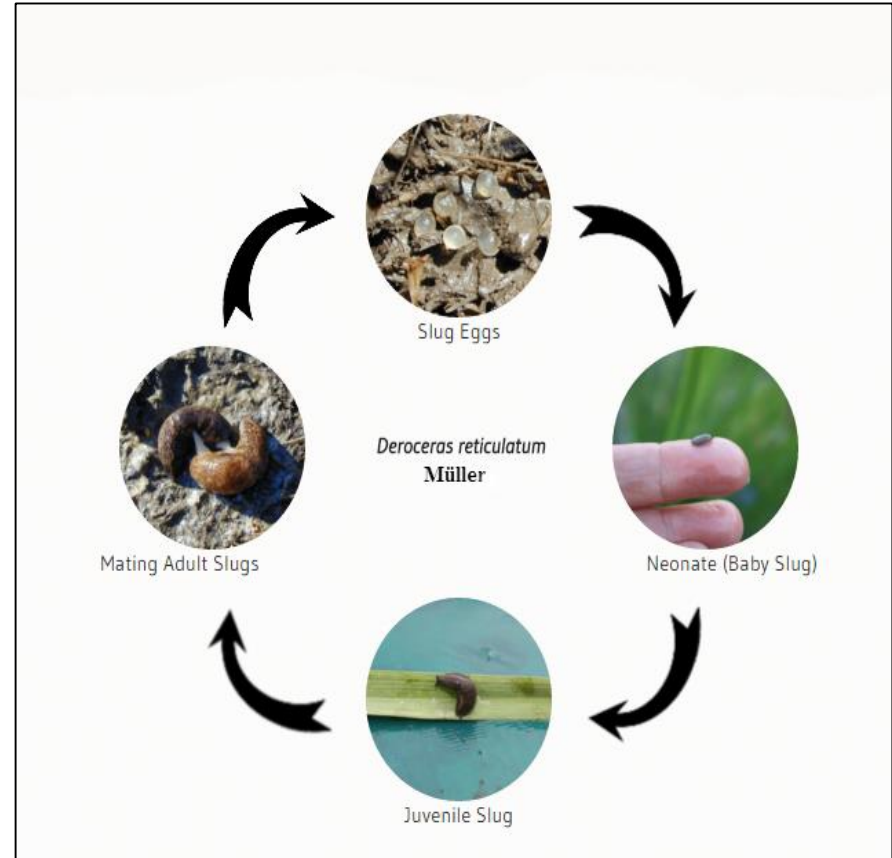
Life Cycle

- Important to understand life cycle to know when slugs are active and to determine how to manage them based on stage in life cycle
- Slugs become active in the fall when seasonal rains start and temperature fall
- Slugs mate from Oct. to June and lay eggs when conditions are right
- Slugs are not active when temperatures are below freezing
- Eggs take from 2 weeks to 5 months to hatch depending on conditions
- Eggs are translucent when young, turning white as they mature
- Eggs can be found in sheltered cavities near the soil surface or under residue on the soil surface



Life Cycle (cont.)

- Newly hatched slugs are neonates. Neonates eat algae, fungi and plants (but not most bait!). They are very small.
- Juveniles feed throughout the spring, sometimes in summer depending on level of moisture and temperature
- Slugs aestivate in the summer, going underground when it's hot and dry



Source: <https://agsci.oregonstate.edu/slug-portal/life-slug/biology-and-life-cycle-gray-field-slug>

Habit

- Slugs need moisture to move
- Slugs are most active -
 - At night, dusk and dawn
 - On cool, cloudy days or days with light rain
 - Prefer 40 to 70 degree temperatures



Identification

Do you see -

- Raggedy holes in leaves?
- Shredded seedlings and tender plants?
- Smooth-sided pits on roots, tubers and fruits?

Slug damage looks similar to the damage caused by other pests, so...

To verify the culprit -

- Inspect plants at dusk, night or dawn
- Look for pretzel or sausage-shaped droppings
- Look for slime trails



Management



Good garden habits for slug control -

- Water in the morning, not in the evening. Use drip irrigation if you can but avoid overhead watering.
- Remove debris they can hide under - leaves, rocks, pots, boards, etc.
- Keep the garden weeded and the area around it mowed.
- Welcome their natural predators - birds, snakes, spiders, centipedes, and, especially, ground beetles.
- Grow slug-resistant plants.
- Frequently monitor your garden, especially when slugs are generally active.



Management

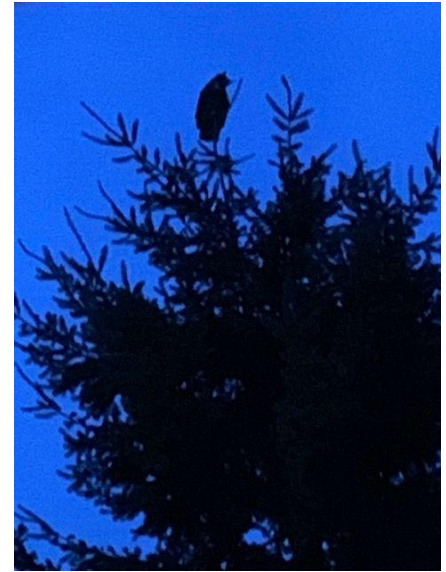
Spring anti-slug gardening tasks -

- Remove any remaining straw and leaf mold mulches from garden beds
- Trim off any dead or frost- or snow-damaged leaves and stems from garden plants
- Stake plants and remove lower leaves on plants that slugs like so that no leaves are touching the ground
- Clean up garden debris
- Weed, weed, weed
- When planting, space appropriately to allow for enough air circulation and sunlight (and to make it easier to inspect for pests!)
- Put out slug traps and check them and your plants that are susceptible to slug damage every morning



Control

- Multi-faceted approach works best and you must be diligent about it if you hope to get them under control
- Controls are best done in the fall, to reduce overwintering population
 - In the fall, lightly till the garden to can expose eggs and slugs to elements
- Handpick at dawn or dusk often, daily at first. Pick and crush or put in a container of water with soap or ammonia in it. If the slugs are neonates, baits will not work, so resorting to handpicking before they get big (and eat everything) may be your best option.



Control (cont.)

- Use beer, yeast/sugar/water or bread dough mixture in traps. Make you own or buy them, but traps should -
 - have sides that make it hard for slugs to escape,
 - be placed with the top edge at soil level,
 - have some sort of cover over it that allows the slugs access but deflects rain, and
 - be replaced every few days.
 - These traps will trap other animals as well (worms, sowbugs, earwigs, millipedes, etc.).





Control (cont.)

Baiting with boards, inverted melon rinds and similar objects -

- Board should be slightly elevated off ground
- Soil underneath should be moist
- Bait underneath board with commercial bait or something else they like to eat
- Lift boards and check for slugs early in the morning. Pick and repeat!



Control (cont.)

- Commercial baits -

- Choose carefully. Some are organic, some are not, some are toxic to pets and other animals, and some are not.
- Do not use metaldehyde baits around where children or pets could encounter them. Also avoid getting these baits on plants, especially vegetables.
- Iron phosphate formulas are not toxic to pets, birds and aquatic life, and some can be used for organic applications.
- Multiple applications may be needed - generally as often as every 10 to 14 days
- Bait Sept. to Oct, and Feb. to May, if needed.
- Bait in the evening when the soil is moist but not when rain is expected.
- Overapplication is not necessary. 5 to 6 pellets every sq. ft. should do it.
- Sprinkle, don't pile.
- And sprinkle beds where slugs are a problem and surrounding areas.

- Copper barriers -

- Expensive - may work best around pot rims or on rings around select plants
- Need to be at least 2" wide

Controls (cont.)

Cautions -

- Do not use salt!
- Dry diatomaceous earth may work but large quantities are needed and it doesn't work if it gets damp
- Egg shells, coarse sand and coffee grounds have not been shown to work

Interesting Facts about Slug Slime!

- Slime absorbs water.
- Slugs follow other slug's slime trails to find mates.
- Slime is a liquid crystal because of the way its molecules are organized, making it somewhere between a liquid and a solid.
- Slime is a non-Newtonian liquid, meaning its viscosity does not remain constant. Slime acts like a solid glue at rest, but liquifies when adequate stress is applied.



Questions?

Resources

<https://agsci.oregonstate.edu/slug-portal>

<http://ipm.ucanr.edu/PMG/PESTNOTES/pn7427.html>

<https://extension.umn.edu/yard-and-garden-insects/slugs#handpick-or-trap-slugs-298062>

Caution - Use reliable resources (like .edu sites)! There is a lot of information about controlling slugs on the internet, and much of it is not research-based.