

**An emergence event of *Hemphillia malonei* (Malone's jumping slug)**  
**WA, Thurston County, Rochester, Capitol Forest, Cedar Creek Headwaters (tributary to Chehalis River)**

by Curtis E. Thompson and F. Teal Waterstrat - photos by F T Waterstrat except as noted

***Hemphillia malonei* observations**

**23-Sept-2020:** First substantial rains of the year the week following wildfires and heavy smoke in the West. 13.8 - 16.7 °C; 3.3 cm precipitation (rain)

As I sat tapping away at a keyboard at my remote/semi-permanent work station (i.e. dining room table) I received an text message from Curtis E. Thompson reporting excitedly "hundreds" of individual jumping slugs (*Hemphillia* sp.) were out in abundance in the headwaters of Cedar Creek, (Washington, Thurston County, Rochester) in the extreme southeastern eastern portion of Capitol Forest (WA DNR). The majority of the individuals reported were near wetland areas and on jewelweed (*Impatiens capensis*; nonnative). C. Thompson sent an image (Fig 1) to F. Teal Waterstrat who tentatively identified it as *Hemphillia malonei* (Malone's jumping slug). C. Thompson also noted many individuals had an object or discharge at the posterior end of the slug near the caudal pore.

**24-Sept-2020:** Second day of substantial rains of the year the week following wildfires and heavy smoke in the West. 6.7-13.3 °C; 1.1 cm precipitation (rain) blustery winds

F T Waterstrat's curiosity had been chewing at him all morning from his remote work station. Finally unable to concentrate he drove to the headwaters of Cedar Creek at ~13:30 and walked to forest roads until he came across a road cross-culvert with a seepage running under the road in a west to east direction. Most of the water was in subsurface piping but was visible and flowing in several areas. At this location F T Waterstrat quickly located a number of *Hemphillia* which appeared to be *H. malonei*. Vegetation in the area was characterized by an overstory of Douglas fir (*Pseudotsuga menziesii*) with a several big leaf maples (*Acer macrophyllum*) and a sub-story of cascara (*Rhamnus purshiana*) and red alder (*Alnus rubra*). The immediate area near the road had no direct overhead canopy (Fig 2). Understory vegetation included lady fern (*Athyrium filix-femina*), sword fern (*Polystichum munitum*), horsetail sp (*Equisetum* sp.), hedge nettle (*Stachys* sp.), salmon berry (*Rubus spectabilis*), trailing blackberry (*Rubus ursinus*), sedge sp (*Carex* sp.), grass spp, and numerous species of bryophytes. There was one large decaying stump in the area completely covered in vegetation, but no other large woody debris.

F T Waterstrat left that area after several minutes of observation and wandered around looking for another spot for about ½ hour before returning to the original location. Upon returning he quickly found a second smaller and darker color morph that I thought might be *H. glandulosa* or *H. dromedaries*, but was proven incorrect later (Fig 3).

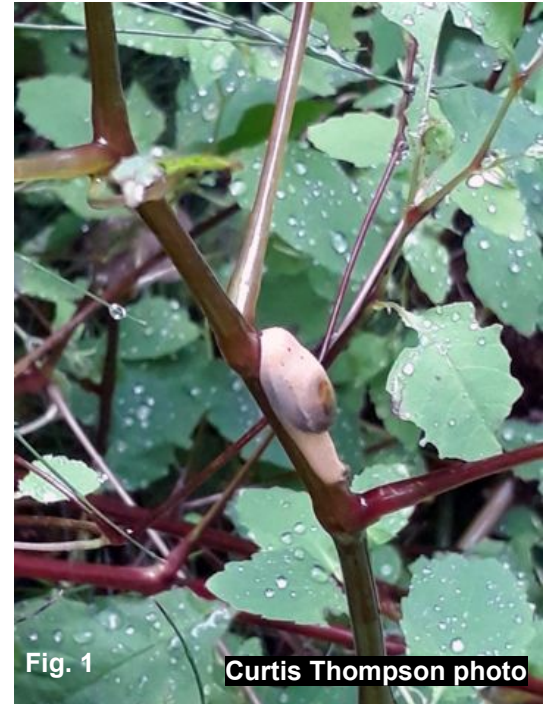


Fig 1: *Hemphillia malonei* on jewelweed.



Fig 2: General habitat where *H. malonei* were found on Sept 24, 2020. The blue line represents approximate location and direction of piped stream. Image on right is of overhead canopy. Image taken from just up slope from gravel road facing generally west and uphill.



Fig 3: 2 color morphs of *Hemphillia malonei* that confused F T Waterstrat. In the 10 meter transect lighter, larger morphs were observed 20 times and darker individuals 3 times.

Walking a quick 10 meter transect F T Waterstrat observed 23 jumping slugs within 0.5 meters to the left or right of the transect. *Hemphillia* were observed from ground level (~10 °C) to 60 cm above the substrate, but always on herbaceous vegetation or salmon berry (there were no trees along the transect). Jumping slugs were observed on sedges, hedge nettle, swordfern, salmonberry, and grass (Fig 4).

Fig 4: From top left: *H. malonei* on sedge, grass and giant horse tail, salmon berry, lady fern and trailing blackberry. In top left corner note the weeping from the caudal gland (where the mucus plug occurs) and posterior end of shell where it goes into mantle.



After mucking around for a while and noting a banana slug (*Ariolimax columbianus*) and a *Vespericola* snail as well, F T Waterstrat wandered back to road. There to his surprise he observed 2 *Hemphilia malonei* on the road roughly 50 cm from the vegetated western edge (Fig 5). These individuals were not observed making directional movements. However one was defecating on the road. Perhaps it was moving fungal spores in a rich compost mixture to help restore ecological processes and eventually restore the native species to the sterile road bed...but then again perhaps it was just defecating.



Fig. 5

Fig 5: Why did the jumping slug cross the road?

That evening I contacted Dr. Casey Richart and he evaluated the images and stated that his best professional opinion was that all individuals encountered were *H. malonei* crushing F T Waterstrat's ego.

This observation may be useful as it demonstrates the emergence of jumping slugs immediately after moisture is available; as was the case after a long dry summer and then a deluge of rain the day before C. Thompson reported the slugs. It also documents *Hemphillia* can be present in large numbers in a forest with multiple past harvests and currently managed under Washington State forest practices, and demonstrates that they can become surface active in the summer (September), occur in areas without large woody debris and with low-to-no canopy cover, although I suspect this was because of the presence of the piped stream keeping the substrate moist and temperatures in the pedosphere moderate below the surface. They can occur on roads and are susceptible to being crushed (or perhaps easy prey for Corvids).