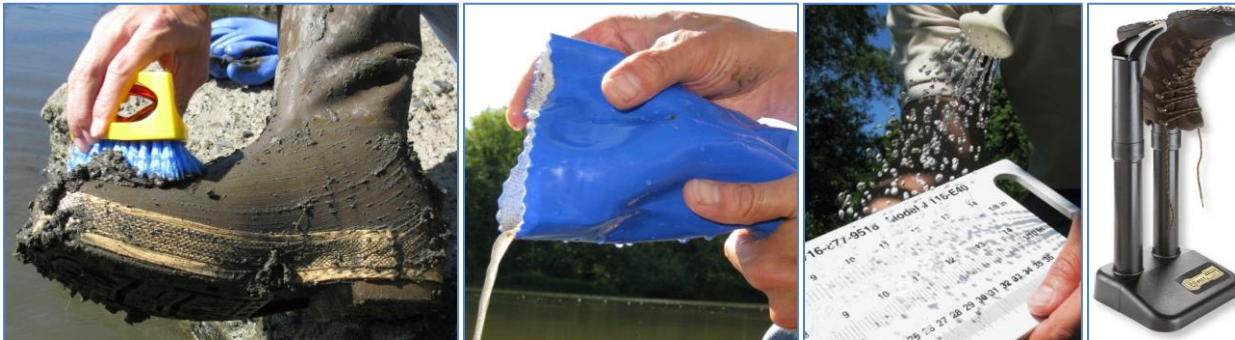


King County Small Gear Decontamination Protocols – Minimal **REQUIRED** Precautions to Prevent Spread of New Zealand Mudsnails

Aquatic nuisance species, invasive species, and diseases can be transferred via wading gear and other sampling equipment. King County staff shall follow these procedures to prevent survival and subsequent transfer of invasive species on monitoring and sampling gear.

- Choose equipment that is easily inspected and cleaned
 - Do NOT wear felt sole wading gear;
 - Smooth surfaces are preferred over shoe laces and textured fabrics;
 - Use one-piece wading gear when possible.
- Plan your field trip to move from the least to the most likely contaminated areas.
- Thoroughly inspect and clean field gear at sampling locations before moving to a new waterbody.
- If working in areas of known New Zealand mudsnail infestation (considered to include all tributaries within the Kelsey/Mercer and Thornton Creek watersheds as of April 2013), you **must** thoroughly clean any gear that contacted the water before leaving the site by scrubbing with a stiff brush and rinsing with clean water. Repeat scrubbing and rinsing until inspection shows that no plants, sediments, organisms, or debris remain. Drain gear and rinse with potable water.
- In addition to the cleaning, after doing field work in an infested location, you **must do at least one** of the following:
 - Use dedicated equipment for these watersheds. This includes boots, waders, and all equipment that touches the water (such as nets), which will never be used in other watersheds.
 - Sample infested watersheds at the end of the day on the last day of field sampling for a given week. Back at the office hang gear in a drafty place (if at all possible) to thoroughly dry for at least 72 hours before gear is introduced to another watershed.
 - Freeze gear overnight (14°F / -10°C for > 8 hours).
 - Soak gear in >140°F hot water for > 5 minutes.
 - Soak gear in a chemical treatment (e.g., 2% Virkon Aquatic for 20 minutes, [WDFW's](#) preferred method).



CLEAN

DRAIN

RINSE

DRY

Basic Gear: (don't forget to clean your cleaning gear with potable water and visually check it too!)



Sturdy bristle brush



Boot pick



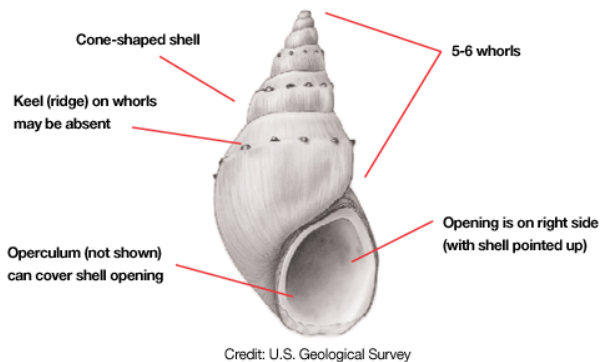
Rinse water



Wash basin (optional)

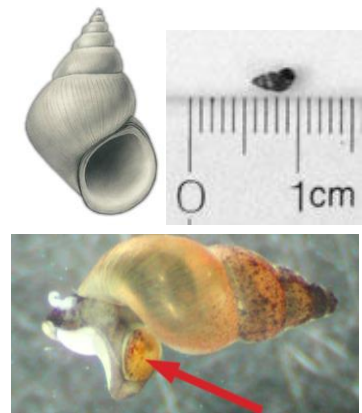
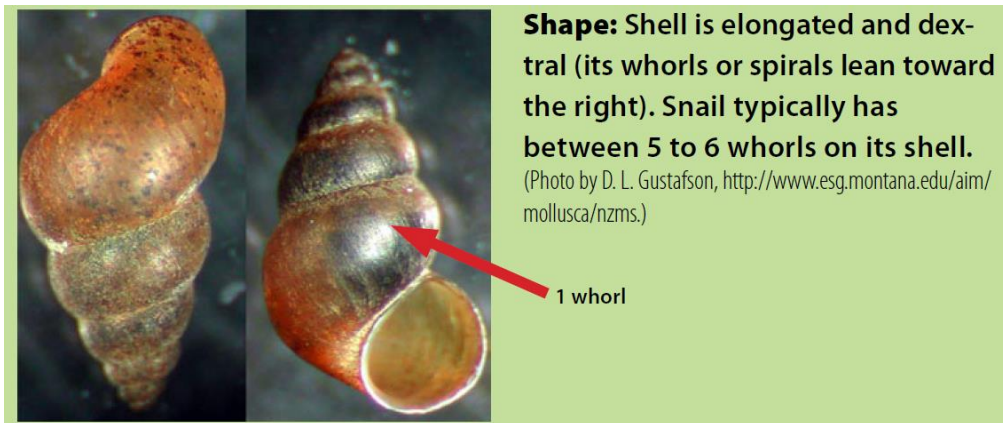
King County New Zealand Mudsnail (NZMS) Surveys – Look while conducting field work and report back!

There is limited money to conduct surveys to determine the extent of NZ mudsnail infestations. We are asking for just a few minutes of your time while in the field to help us get a better handle on where they are located.



How to identify NZMS:

- Small! Usually < 6 mm long
- Elongate shells usually with 5 to 6 whorls
- Right opening: when the tip points up, the shell opening is to the observer's right
- Variable color: gray, light brown, dark brown
- Operculum (rounded plate that covers the opening) visible on live snail



How to look for NZMS:

New Zealand mudsnails are often under rocks during daylight hours. As you are walking down a stream or lake shoreline, turn over a few rocks and look for small snails.



Comparison of NZMS with 3 freshwater snails native to the PNW. From left to right: NZMS, a pond snail (family Lymnaeidae), two pebblesnails (*Fluminicola* sp.), and two rock snails (*Juga plicifera*) <http://seagrant.oregonstate.edu/sgpsubs/onlinepubs/g10001.pdf>

How to differentiate the natives from NZMS:

- Lymnaeidae: no operculum, broader shell
- *Fluminicola*: rounded, globose-shaped shell (NZMS more conical); proportionally large bottom whorl (NZMS more uniform whorls)
- *Juga*: larger size up to 30 mm (NZMS no larger than 6 mm). Reddish brown shell. Small, young *Juga* can look very similar to NZMS, but juvenile *Juga* have thin spiral incised lines and raised ridges on early whorls.

Report your survey!

- Please let Sally Abella (sally.abella@kingcounty.gov) and Jo Wilhelm (jo.wilhelm@kingcounty.gov) know where you conduct surveys and whether any NZMS are found.
- If you think you found NZMS please:
 - Report possible sightings online at <http://wdfw.wa.gov/ais/reporting/>
 - Take photos and notes to document your sighting
 - Note the location (adjacent street crossing, water body name, GPS coordinates, etc.)
 - Possibly bring back a sample

