

Metro Regional Parks and Greenspaces

AMPHIBIAN EGG MASS MONITORING PROTOCOL

- Assessing and tracking wetlands habitat quality and restoration effectiveness using pond-breeding amphibians as a bio-indicators

BASICS:

To assess and track wetland ecosystem quality and the impacts and effects of Metro's restoration projects by monitoring egg masses from target amphibian populations

TARGET HABITATS:

Emergent wetlands, Shrublands and open ponds

TARGET SPECIES:

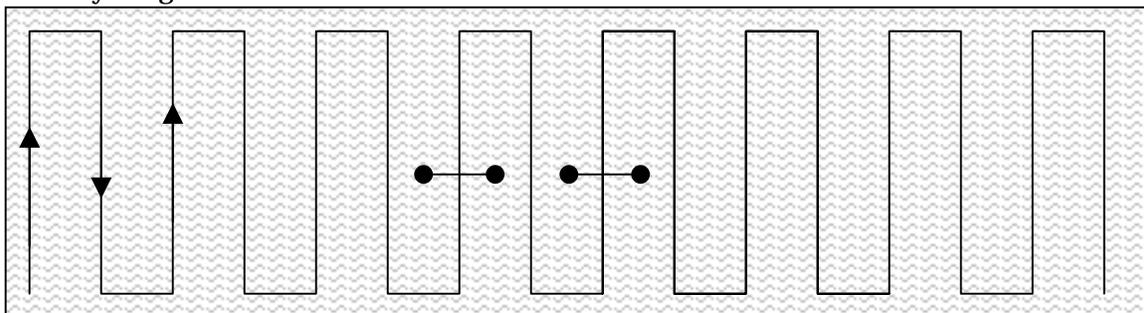
- Northern red-legged frog (*Rana aurora aurora*) = RAAU
- Pacific chorus frog (*Pseudacris regilla*) = PSRE
- Northwestern salamander (*Ambystoma gracile*) = AMGR
- Long-toed salamander (*Ambystoma macrodactylum*) = AMMA
- Bullfrog (*Rana catesbeiana*)* = RACE *non-native species

METHODS:

Visual Encounter Survey: Conducting visual surveys within assigned wetland units, keeping track of the amount of time spent actively searching for egg masses (e.g., not including time spent writing data as search time).

1. Visit your assigned wetland unit.
2. Pick a logical starting point in unit (usually a corner of the unit).
3. Start stopwatch/chronometer function on watch.
4. Move slowly and methodically through study area, walking from one end of the unit to the other. It will take several back and forth passes to survey the full unit and each pass should be separated by an appropriate distance to allow you to survey the entire wetland unit without missing portions (i.e. because the passes are spaced too widely) or double-counting the same egg mass (i.e. because you spaced passes too closely).

Survey Diagram:

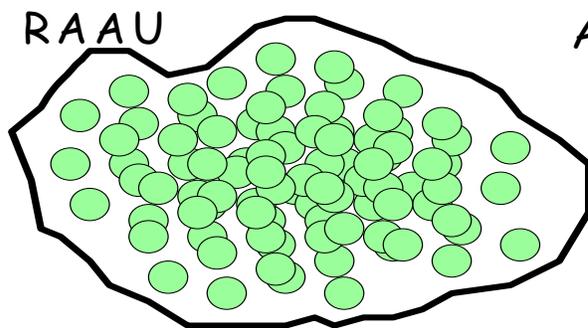


→ = direction of survey
●—● = distance with clear visibility

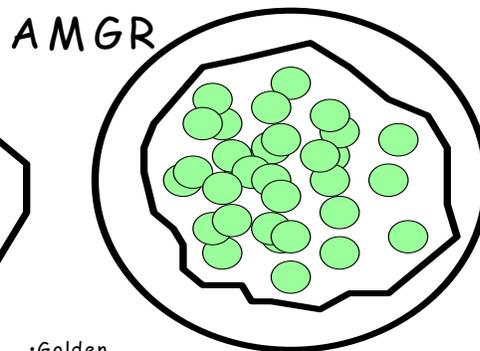
5. Move slowly enough to prevent stepping on egg masses and walking slowly to avoid stirring sediment.
6. If an egg mass is encountered, stop the clock.
7. Mark the egg mass by flagging a piece of nearby vegetation (or using a bamboo pole if necessary). We will only be marking northwestern salamanders (AMGR) and northern red-legged frogs (RAAU).
8. Mark on unit map where the egg mass was found with red (RAAU) or blue (AMGR) sharpie.
9. Record data on datasheet.
10. Restart stopwatch when search resumes.
11. Survey as much of the unit as possible. After entire area is surveyed or when you have completed the portion of the survey planned for that visit:
 - mark the end time (equal to total search time) showing on your stop watch in the box entitled "Total Search Time".
 - Mark the real time (AM/AP time) in the box entitled "End Time".
12. Rate Subsurface visibility.
13. Rank none/few/many for chorus frogs (PSRE) and long-toed salamanders (AMMA).

Note: Handling amphibians/eggs

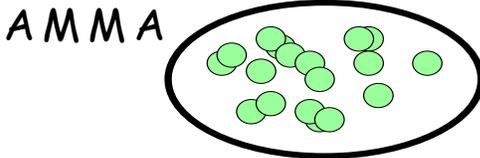
- Make sure there is no suntan lotion or insect repellent on your hands
- Keep your hands wet during handling
- Make sure that you keep egg masses in cold water, or in a cold, wet environment
- Do not detach individual eggs from the mass, nor the mass from the supporting vegetation



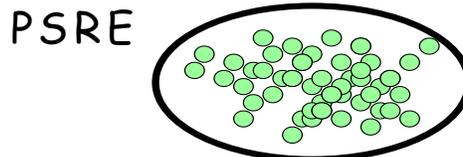
- Black
- Grapefruit- to cantaloupe-sized mass
- Irregular, lobed shape
- Often detached, floating on surface



- Golden
- Orange -sized
- Smooth, rounded shape
- Sometimes green algae buildup in jelly layer



- Dark Brown/Tan
- Size of a large, oblong grape
- Fewer, larger (>2 mm) eggs, widely spaced



- Tan
- Size of a large, oblong grape
- Many, very small (<1.5 mm) eggs, closely packed