

## Mission protocol detail - printable instructions to take into field *Final Draft 03042021*

Overall instructions: It is best to look for smelt at night and smelt eggs during the day in streams, creeks, brooks or rivers approximately 3ft deep or less with gravel to cobble substrate (bottom).

Smelt eggs can be found above the head of tide.

Smelt can be found both above and below the head of tide.

Most smelt can be found during high tide. It is best to visit streams close to the nighttime high tide, when the smelt run up the streams to spawn. Ideally, this should be done a couple of nights a week, from about March 15<sup>th</sup> to June 15<sup>th</sup>, depending on your location along the coast – west of Penobscot Bay, most runs last from March – early May, while east of Penobscot Bay, runs last from late April until mid-June. The height of the run may last only a few nights and depends on many factors, so it is important to visit the stream regularly until the run is complete.

### **Conducting fieldwork safely**

- Do your field work with a partner or in a team
- **Follow the current State of Maine CDC COVID-19 mask-wearing and social distancing protocols.**
- Choose sites that are easily accessible.
- Bring a flashlight/headlamp when working at night. Wear light or reflective clothing if working near a road. Take care when parking and exiting your vehicle.
- Move cautiously near streams. Expect icy, slippery, uneven, or mucky footing. Stay low.
- Marine clay, which is abundant in tidal habitats, is extremely slippery.
- Check closely for ticks after each field day
- Do not step into the stream at any point during your survey data collection, this disturbs the habitat, wildlife, and could alter your survey results.
- Only observe what you can see standing on the bank of the stream looking upstream and downstream. There is no need to walk up and down the stream bank recording data.

### Finding Adult Smelt:

- 1) Walk down to streambed with buddy and flashlight after sunset.
- 2) While standing on the bank facing across the river, periodically shine your flashlight over the water to see the smelt. Please note that if you shine the light continually the smelt will swim away.
- 3) Estimate number of smelt seen. Watch the smelt traveling upstream in your field of vision for approximately 5 minutes. After the 5 minutes set a timer or watch for approximately one minute and estimate how many smelt are traveling upstream. The estimate should be in tens, hundreds, thousands, or ten thousands.

Finding smelt eggs:

- 1) During daylight hours walk down to the streambed.
- 2) If there are smelt eggs present, estimate the size of the egg bed (how long is it? And how wide?). A single layer of eggs just touching each other contains about 60,000-70,000 eggs per square foot. Use this fact to estimate the number of eggs per square ft in 100s, 1000s, 10,000s.

Note that live eggs are clear in color and dead are white in color.

Tips for identifying substrate types:

- a. Boulder (> 10.1 in; Bigger than a basketball)
- b. Cobble (2.5 - 10.1 in; Tennis ball to basketball)
- c. Gravel (0.08 - 2.5 in; Peppercorn to tennis ball)
- d. Sand (0.002 - 0.08 in; Salt to peppercorn)
- e. Silt & Clay (< 0.002 in; Finer than salt)
- f. Aquatic Vegetation