

Clam Flat Research and Conservation

Students can carry out projects on clam flats that support shellfish harvesting in their community.

These projects can:

- * Inventory clam populations
- * Test factors that impact clam survival
- * Provide data about the health of local clam populations



Photo by Casco Bay Estuary Partnership.

Clam Flat Survey

Many shellfish committees carry out clam flat surveys annually to get a rough estimate of the number of bushels of harvestable clams present on a clam flat. The results from these surveys help them make decisions about the number of harvesters and licenses that their resources can support.

- * Check with the Committee: Ask the local shellfish committee if there are any flats where it would be useful for students to help carry out a population survey.
- * Resource: The Maine Clam Handbook, a publication of Maine Sea Grant, provides a detailed description of how to carry out a survey. It also includes a good description of the math that translates the field survey numbers to an estimate of bushels.
⇒ <https://seagrant.umaine.edu/wp-content/uploads/sites/467/2019/05/1998-maine-clam-handbook.pdf>

- * Equipment:
 - Survey Boxes - a 1ft.² wooden box with window screen mesh attached to one side
 - Calipers or Rulers - rulers can also be screwed right onto the box
 - 100 ft. Tape Measure or 100 ft. Rope
 - Clam Rakes

Clam Recruitment Boxes

Square wooden boxes with mesh on both sides do a surprisingly good job of catching baby clams. The microscopic clam larvae floating in the water settles between the two layers of mesh and grows to be a centimeter or two in size over a season. The boxes can provide a source of small clams (called seed) to spread across the flats or protect under nets. By installing boxes and recording the number and size of clams within them, students could help to figure out which areas have the best recruitment for seed clams and provide a source of seed that a community could use to help repopulate their flats.

- * Check with the Committee: Ask the local shellfish committee if they are already using clam recruitment boxes—also called Beal boxes. Ask if there are any flats where they would be interested in having some boxes installed.

- * Resource: The Downeast Institute developed the recruitment boxes and has used them in a couple places. More info is at:
⇒ https://downeastinstitute.org/wp-content/uploads/2019/04/6_17-st.-george-and-weskeag-project-clam-recruitment-study.pdf
⇒ <https://downeastinstitute.org/research/soft-shell-clams/freeport-investigating-the-cause-of-the-clam-decline-2013-2017/4/>

- * Equipment:
 - Clam Recruitment Boxes
 - 1x3 Board - cut to make a 1ft. x 2ft. Box
 - Pet Screen
 - Thin Wooden Lath - to hammer or screw in over screen
 - At least 2ft. long wooden stakes or lath cut to have a point - to stake the box to the ground (important because the boxes will float away if not staked down securely)
 - Screws
 - Battery Powered Drill
 - Rubber Mallet

Plant Pot Experiment

Plant pot experiments are a relatively easy way to see how clams grow and document how well netting protects clams from predators. These experiments were piloted by the Downeast Institute. Students bury a 6in. plastic plant pot in the mud with just the edges sticking up. Some pots are left open, and others have netting covering their tops and buried around them in the mud. Experiments track how many wild clams settle and survive in the open vs. the covered pots, or students can place 10 hatchery seed clams in the pots and see how survival and growth differ between the open vs. the covered pots.

* Check with the Committee: Ask the local shellfish committee if there are any flats that are easy to access where the students could carry out a plant pot study and find out information about predation.

* Resource: The Downeast Institute is the expert in plant pot studies. Here's a link to information about a project they carried out with students in the Webhannet and Fore River:

⇒ <https://downeastinstitute.org/research/soft-shell-clams/webhannet-and-fore-river-studies-2014-2015/>

* Equipment:

- 6 inch plant pots
- Window screen mesh
- Optional: Clam Seed

* Finding Clam Seed: Clam seed can be collected on the flats or purchased from the Downeast Institute - the one hatchery in Maine that grows clams. Because it takes time to grow clams to a plantable size, they need order information months in advance. Details about ordering clams are at:

⇒ <https://downeastinstitute.org/hatchery/soft-shell-clams/>

Predator Protection Netting

Shellfish committees place nets with floats on their clam flats to protect the netted areas from predators. Sometimes, they will also place seed clams under the nets that they collected from somewhere in town or purchased from the Downeast Institute. This repopulates the flats while also protecting the clams when they are small and most vulnerable.

* Check with the Committee: Ask the local shellfish committee if they have used nets on clam flats and have net materials. Ask if there are any flats where they would like students to help with netting and if a harvester or warden is available to show the students how to put in a net.

* Resources: Information about setting up nets can be found on pages 6-8 of the Manomet Clam Farm Guidebook
⇒ https://www.manomet.org/wp-content/uploads/2018/10/Manomet-Clam-Farm-Guidebook-2018_electronic-version.pdf

Information from the Downeast Institute about how nets protect clams:

⇒ <https://downeastinstitute.org/research/soft-shell-clams/dei-maine-dmr-collaborative-study-2014-2015/>

* Equipment:

- Large nets with floats attached to the net with zip ties
- Clam rakes
- Optional: Clam Seed

* Purchasing Clam Seed: The one place in Maine that sells clam seed is the Downeast Institute. Because it takes time to grow clams to a plantable size, they need order information months in advance. Details about ordering clams are at:

⇒ <https://downeastinstitute.org/hatchery/soft-shell-clams/>

* Permitting Needs:

1) If you're transporting undersized clams from one place to another, either from the hatchery or from another flat in town, you will need a DMR permit (free) available at:

⇒ <https://www.maine.gov/dmr/shellfish-sanitation-management/programs/municipal/forms/documents/TransplantFormEdited9.2018.pdf>

2) Large netting projects fall under US Army Corps of Engineers jurisdiction over structures in navigable waters. They may require a general permit. Contact info for the Maine USACE office is at:

⇒ <https://www.nae.usace.army.mil/Missions/Regulatory/>

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www.kennebecestuary.org - www.cascobayestuary.org

