We used hatchery-reared soft-shell clam, *Mya arenaria*, seedlings reared in 2010 at DEI and overwintered at DEI that were about 12 mm (or ½-inch in length)

The clams were carefully counted out in groups of 12 to be planted on each flat at a density of 660/m^2, or about 60/ft^2

Plastic mesh netting (1/4-inch aperture) was cut for two purposes. First, 18-inch x 18-inch pieces were manufactured as predator-deterrent nets. Second, 30-inch x 6-inch strips of netting were produced to serve as fences to corral clams in a small space.

The strips of netting were secured around the top of a 6-inch plant pot. This pot was filled with sediments and placed into the mud with a small part of the lip and netting extend above the sediment surface. The netting creates an “open enclosure,” or corral for the planted clams. Clams can move laterally in the sediments, but if they encounter a barrier such as the netting, they cannot jump out, so the netting is a device to keep them corralled inside the plant pot (experimental unit). The netting strips do not deter predators.

It felt like a minor miracle when the strip of netting had been secured around the pot. It isn't easy!

The plant pots, clams, and netting were taken to the flat where the pots were dug into the mud Using trowels. The white square is a 1-m2 quadrat that was used temporarily to help us place Four pots near each other in a common group. The sediment was dug with the trowels, and one Pot placed into the hole within each of the four quadrants of the quadrat. Two pots were those with strips of netting secured around the outside edge of the pot, and two pots were those completely encased in the ¼-inch netting to deter predators.

Some youngsters from the Bay Ridge School in Cutler know how it’s done!

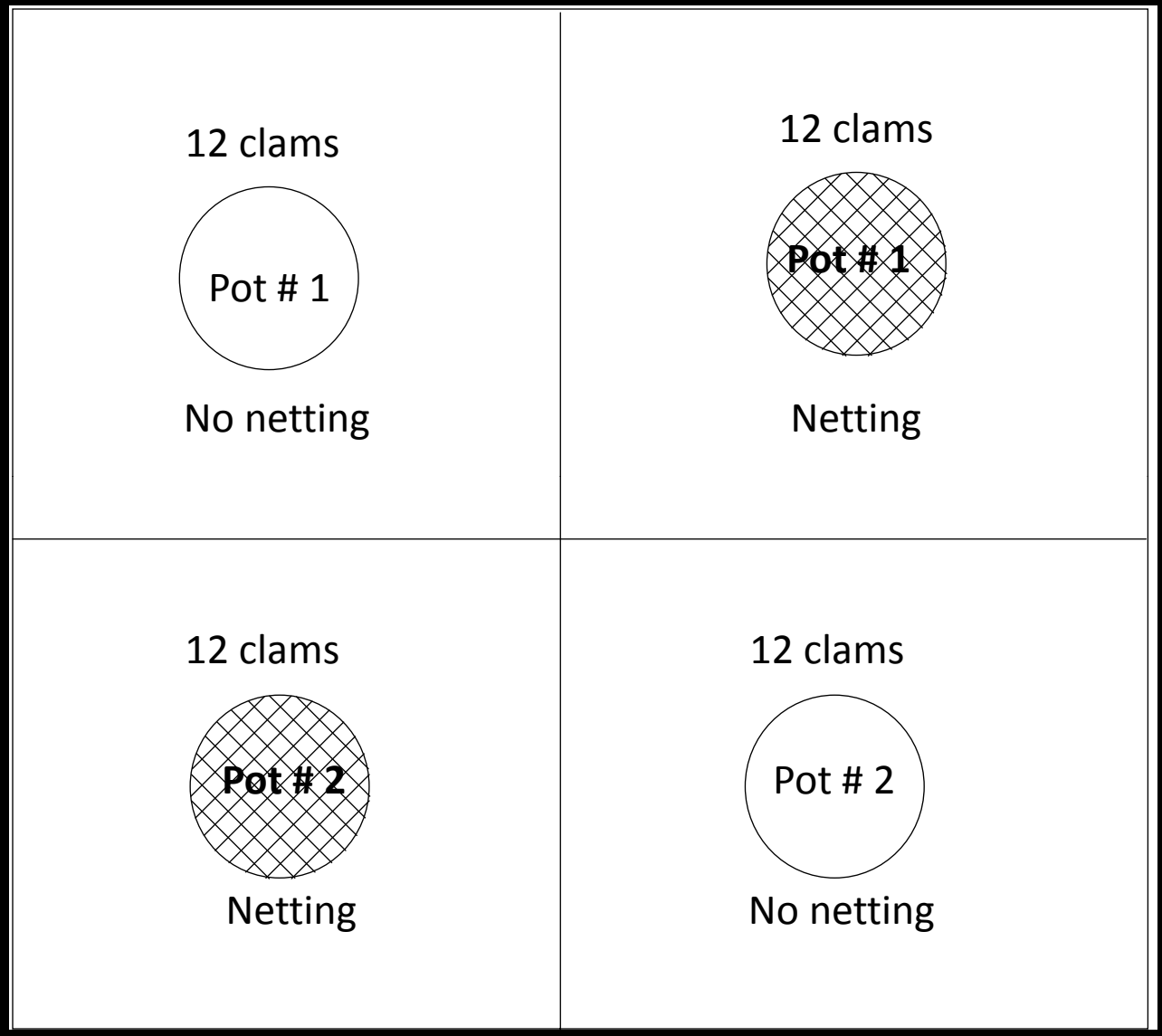
Clams that were counted and put into wax paper packets were carefully placed into the pots filled with sediments from the mudflat. Twelve clams were seeded in every pot

A gentle push with your finger helps the clams to burrow into the sediments more quickly

An 18-inch x 18-inch piece of netting was placed over a pot with 12 clams, and then the pot and clams were pushed into the mud

A few days after planting, the "open pots" looked like this. You can see evidence of the small clams from some of the larger holes in the mudflat surface inside the pot. Clams will stick their siphons up through the mud into the overlying water when the tide is over them so that they can feed on the microscopic plants (phytoplankton) that are in the water.

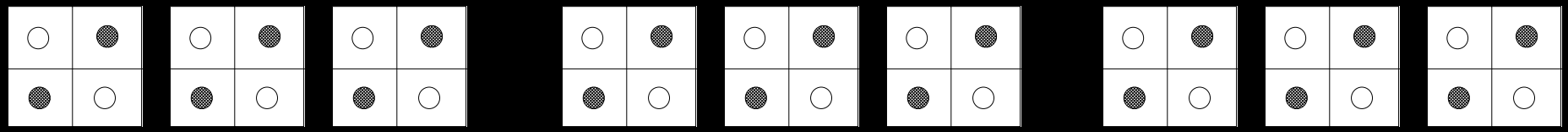
Completely protected pots looked like this.



This is what each group of four pots would have looked like if you happened to be walking on the mudflat.

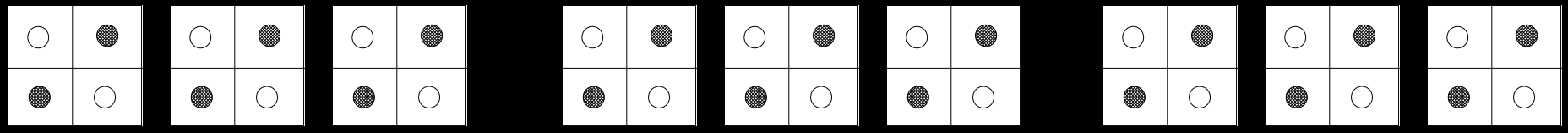
HIGH TIDE BLOCKS

Block I Block 2 Block 3 Block 4 Block 5 Block 6 Block 7 Block 8 Block 9



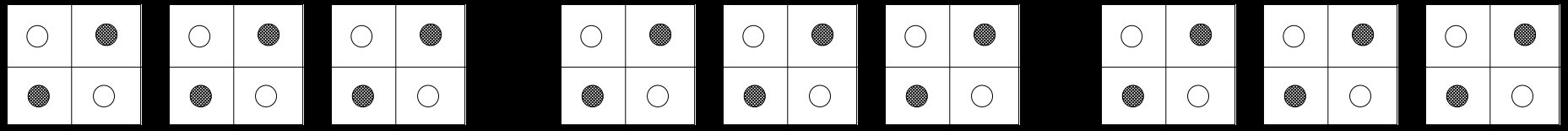
MID TIDE BLOCKS

Block I Block 2 Block 3 Block 4 Block 5 Block 6 Block 7 Block 8 Block 9



LOW TIDE BLOCKS

Block I Block 2 Block 3 Block 4 Block 5 Block 6 Block 7 Block 8 Block 9



This is a schematic of the field layout used at Flake Point Bar in Jonesport. A total of 36 pots with 12 clams each were positioned at each of the three tidal heights. The black circles represent pots with the full pieces of mesh netting, and the open circles represent pots with only the strips of netting around the periphery.

The experiment at each of the four locations was initiated in late May/early June 2011 and remained in the field until late September/early October 2011.

This is a group of four experimental plant pots at Flake Point Bar (Jonesport, ME) in mid-September 2011, a few days prior to pulling them out to learn about the results.

All pots from the four mudflats received a label designating the location of the flat, the treatment (netting vs. no netting), the tidal height (High, Mid, or Low), the group (or block) number, and the treatment replicate within the group (i.e., #1 or #2 for netted or unnetted pot).

Each pot was placed into its own plastic bag and carried off the flat.

Each mud-filled pot weighed about 10 pounds.

Each sample (plant pot) was carried off the flat to be processed.

Processing entailed placing the contents of each pot separately into a box sieve (2 mm mesh) and spraying the mud through the mesh with freshwater exposing the clams, broken pieces of clam shells, and other mudflat fauna.

All live clams and all broken pieces from each sample were carefully removed for counting and measuring. Some samples revealed that green crabs (*Carcinus maenas*) or moon snails (*Euspira heros*), well-known clam predators, had preyed on clams -- sometimes in pots with clams that had been "protected" with a piece of predator-deterrent netting.

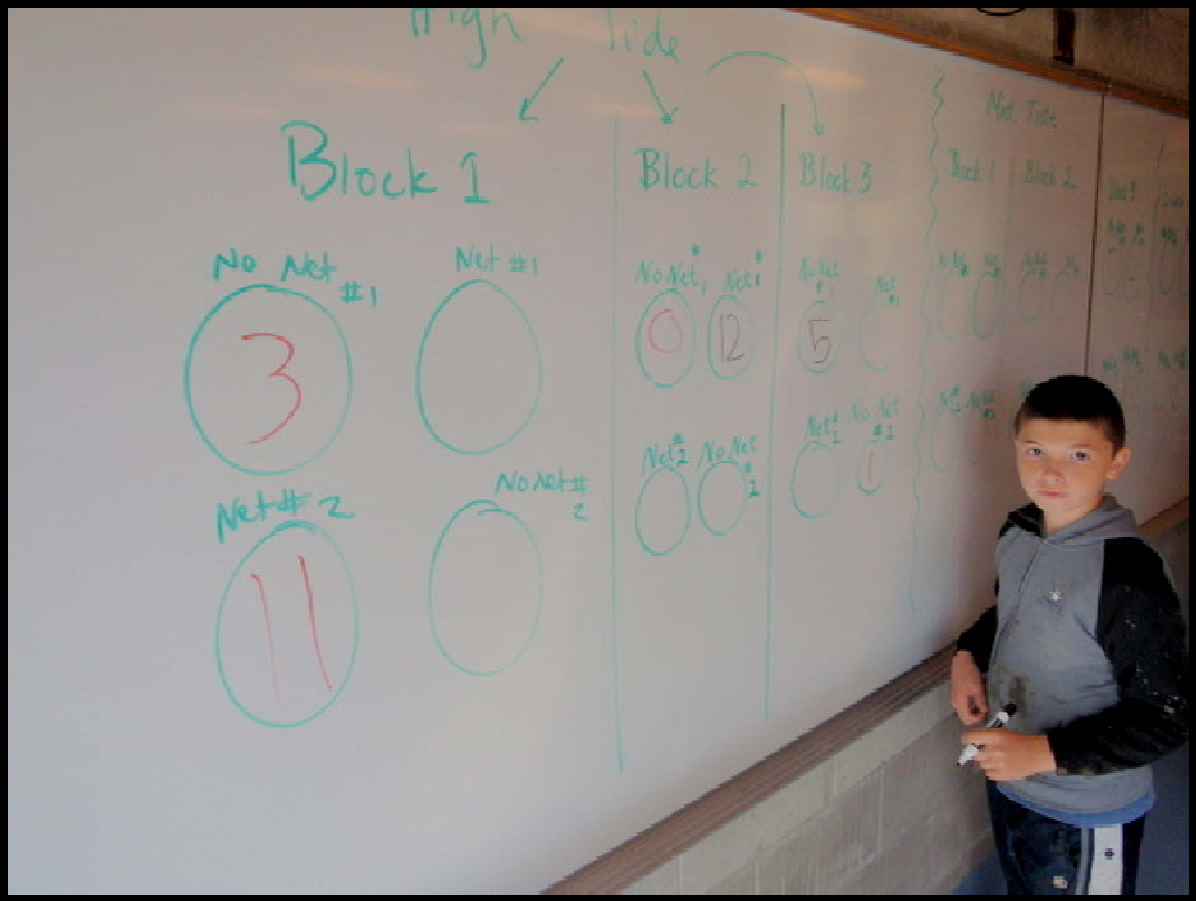
The clam on the left has been consumed by a green crab, whereas the clams on the right have been drilled and eaten by moon snails.

Live, hatchery-reared clams lay down a disturbance line in their shells at the moment when they begin growing in sediments. Students took two measurements on each live clam using digital calipers -- the initial shell length in May/June and the final shell length at the end of the study (September/October). The difference between the two measurements equals the absolute growth of clams during the experiment.

Measurements from each live clam were written on data sheets. One data sheet was used for each plant pot. All information contained on the label associated with each pot was transferred to each data sheet. In addition, notes were made of dead clams, and whether they were crushed, drilled, or undamaged.

Sometimes "big kids" helped out "little kids".....

And, sometimes, just the opposite!



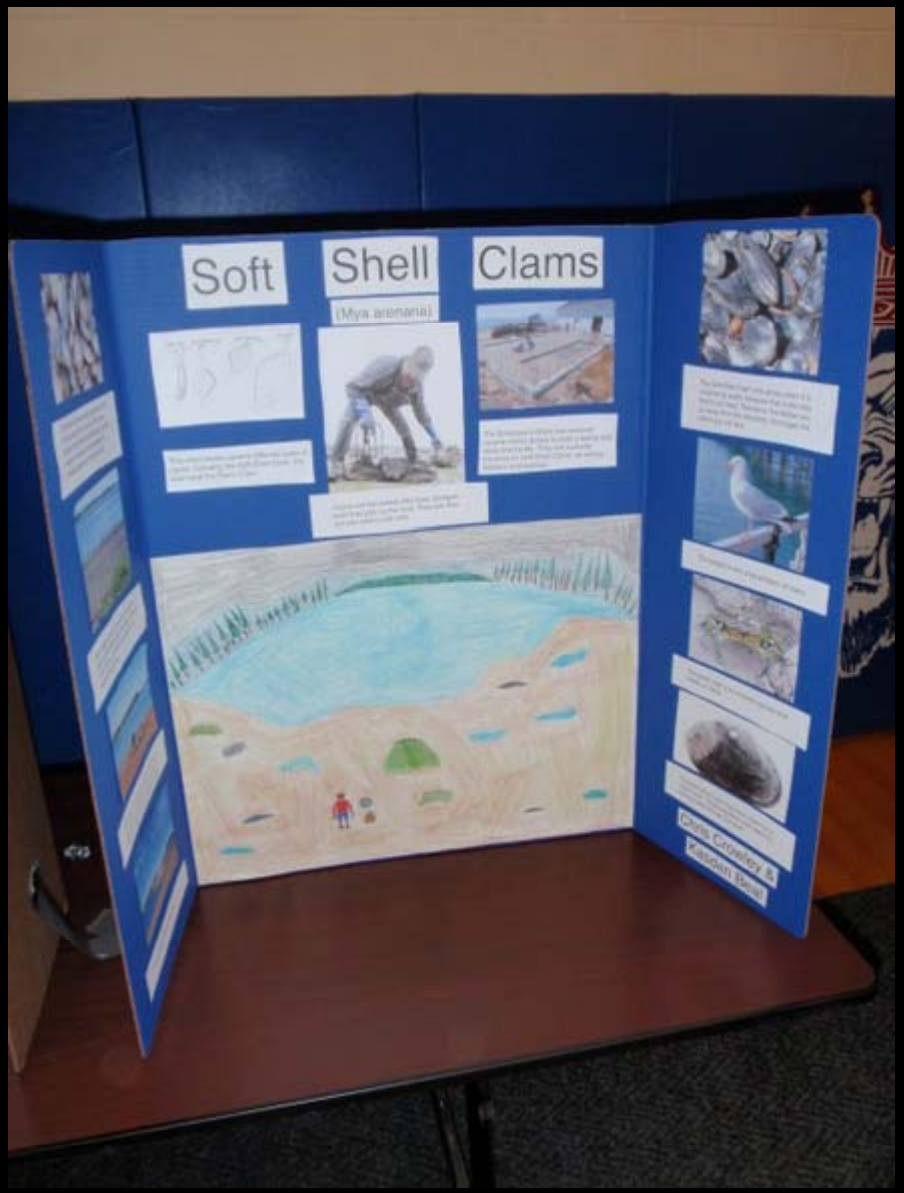
The data from each sheet was collated and survival results displayed directly on the board.

All students from the five schools came together for a "Marine Science Festival" at Jonesport-Beals High School on November 4, 2011 where each class presented their results in their own unique way.

Mya Arenaria
Low tide

Jonesport 6th Elementary
CLAMS!
Flake Point Bar at (Mason's Bay)
Clam Survival
Percentage Rate
62 %
Clam Growth Rate
in Millimeters
High Tide
Mid Tide
Low Tide
High Tide
Mid Tide
Low Tide
6th Grade
Jonesport Elementary

Lower Grades
Upper Grades


Soft Shell Clams
(Mya arenaria)

JES
7TH GRADE
STATISTICS
MYA ARENARIA
JMA