

Soft Shell Clam Population Survey Field Guide

This guide is a reference for those who have already been trained in the standard survey method. The quality of the survey depends on how carefully all clams are removed and measured. The standard survey method is to remove, count and measure the length of all clams from small representative sample plots and then use this data to estimate the abundance and the size distribution of all clams in the surveyed area.

Personnel: a survey crew may be composed of two or more people.

Recorder –maps approximate plot locations on a map of the area surveyed (gps points are preferred but not required) and records all information on the data sheet to include: clam data, plot size, grid interval, and all other observations. *See sample data sheet.*

Digger – outlines the plot with a screen frame, digs and measures all clams taken in each plot and measures distance between plots.

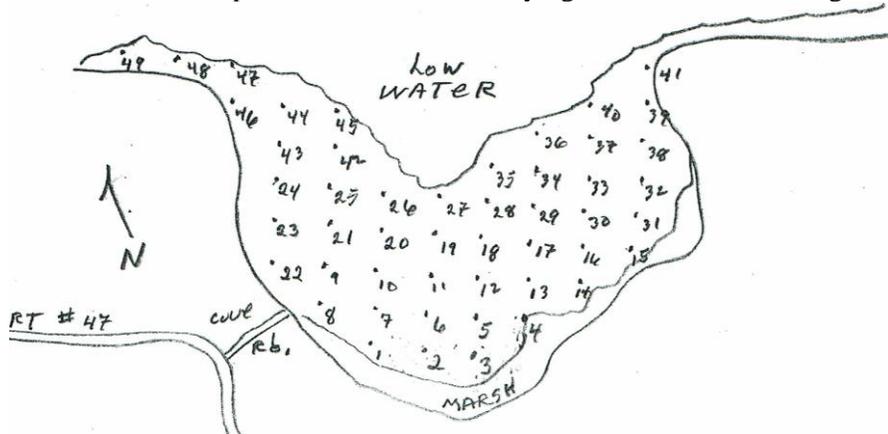
Equipment:

map of the survey area	clipboard	pencils
datasheets	clam hoe	survey box
ruler	50 ft. or 100 ft. rope	GPS (optional)
compass (optional)	camera (optional)	plot stakes or markers (optional)

Remember to bring a sufficient number of data sheets to complete the survey. If requested, the maps and data sheets can be provided by the Department's area biologists. Use a clam hoe suitable for the sediment. The survey box is typically a one-foot-square frame with a screened bottom and a metric ruler attached. A screen size no larger than $\frac{1}{4}$ " is recommended. Use the rope, e.g., 50 ft. or 100 ft. to determine the location of each plot dug and distance between plots.

Preparation: If possible, visit the flat prior to the survey to estimate area of survey (where the clams are), determine distance between plots, time necessary to survey area, and tidal characteristics.

Procedure: Determine the plot distance of 50 feet or 100 feet. Large flats may be adequately sampled at 100 foot plot intervals. The recorder should locate a readily recognizable landmark to locate the first plot. Use the measured line, e.g 100' rope to determine the location of each plot to be dug. Align the plots by sighting from plot to plot. Small sticks or stakes, gps and compass can all be used to aid in plot alignment. The plots should be evenly spaced in this manner. Cove size and shape, tide stage and the number of participants will determine the survey approach. For example, start at the upper intertidal and follow the tide out, or if the tide is low the survey may be started at the low tide and proceed toward shore staying ahead of the incoming tide.



Mapping/Recording - accurately record the plot numbers on the survey map. If you are using a GPS, record the coordinates for each plot on datasheet. Employ a system of tally marks to record the number of clams of each size in each plot. *See example data sheet.*

Digging

1. The survey box should be dropped to the ground where the measured line denotes the distance selected (50' or 100'); make no effort to place the survey box on a visible concentration of clams.
2. The plot is outlined by pressing the survey box into the flat two times so that the total sample area is two square feet in size.



3. Spat collection (less than 10 millimeters): to specifically sample spat, remove sediment from one-eighth of the plot to an estimated depth of 1-2 inches.



4. Place the sediment in the screened survey box and sieve the sediment with water. Count and record the number of spat on data sheet.
5. Prior to digging the plot, clean the sediment away from the outside of one of the edges of the plot to make access to the plot easier.
6. The digger should make every effort to retrieve every clam in each plot. Be sure to dig deep enough to ensure no clams are left behind (at least 8"). Clams falling outside of the plot boundaries do not get counted and measured.

Measuring

1. One side of the survey box should have a metric ruler attached. Use the ruler to measure the clams in five millimeter (.5 centimeter) intervals. Call out the measurements to the recorder. Put the clams back in the sediment and cover to aid in survival.
2. If no clams are present in the plot, a zero is recorded.

The final step is the data analysis. In working up the data clams 50-54 millimeters and larger are considered commercial size. Data analysis generally includes calculating an average population density in bushels per acre and summarizing all length data in a size-frequency distribution graph. The Department's area biologists are available to assist in or complete the data analysis as well as to provide survey training.

All of this information including how to run the data analysis is available in The Maine Clam Handbook; A Community Guide for Improving Shellfish Management.

<http://www.seagrant.umaine.edu/files/pdf-global/98clamhandbook.pdf>