

## **RI EQIP Oysters**

### **Sampling Procedure for Biweekly Oyster Collection and Measurements**

#### **Goals:**

You are conducting this sampling to track the size, growth, and mortality of restoration oysters during the growing season. These data will help to ensure that you meet the deployment threshold requirements of the practice and/or allow time to remediate issues such as high mortality or slow growth. Importantly the data collected are critical for tracking your SOS growth across the life of the contract to better understand how we can improve EQIP oyster practices.

#### **Staff:**

We recommend that 2-3 staff be on hand to ensure that the following procedures are done efficiently.

#### **Materials Needed:**

1. Pencils and preprinted data sheets for recording shell heights and relevant data on sampling
  - a. See Excel Workbook “NRCS-Sampling-Growers-Biweekly”
    - i. Print out copies of Sheets: “1-Field Notes-Blank” and “2-Measurements-Field- Blank.”
2. Have your Grow out Plan/Diagram ready with Randomly chosen numbers that correspond to 10% of your gear that your final basket of shell sample will be drawn from.
3. 1-Basket for collecting SOS
4. 1-5-gallon bucket for measuring the volume of the shell measured
5. 2 or more sets of vernier calipers. NOTE: It is very important that you make sure you are reading the right measurements from your calipers, typically calipers have a top and bottom for measuring objects inside or outside.

#### **Procedure for Gear Sampling:**

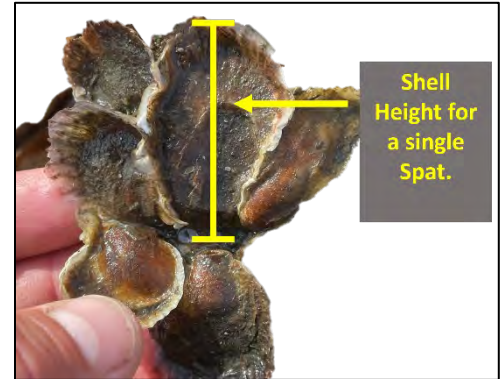
1. For each sampling event (every two weeks), randomly choose 10% of your gear to sample from.
  - a. For example, out of 50 cages, 5 randomly selected cages will be sampled from.
2. If there are multiple bags within a cage or multiple trays, randomly sample from half of the bags/trays within those cages.
  - a. Make sure to choose bags from inside and outside sections of a rack or stack. Growth may be different based on water flow and bag position within the array.
3. From each bag, remove one or two handfuls of material and place those in an empty basket.
  - a. Give the bag a shake before pulling out the material to ensure the bag is thoroughly mixed.
4. Once all of your sample has been collected in the basket, mix the material in the basket thoroughly to ensure that the first and last handfuls are mixed.
  - a. Make sure to shake the basket and roll the bottom shell to the top and vice versa.

### **Procedure for Counting and Measuring:**

1. Each measurer will take one shell at random from the basket at a time.
  - a. SOS should be measured by “Shell Height” in whole millimeters from the umbo or where the hinge is located to the outer growing lip (see photo at right).
  - b. This can be difficult with small spat on shell, do your best to get accurate measurements.
2. Measure all spat on that shell, discard it into an empty bucket, and grab another at random from the basket.
3. Repeat steps 1&2 until a minimum of 100 shell heights have been recorded, at least 50 of these must be alive.
 

Feel free to count/measure more than 100, the larger the number, the better the accuracy of the estimates.

  - a. A dead spat is counted if the hinge is still intact, but the animal is dead.
4. Count and record the number of shells that were discarded into the bucket.
5. Estimate the volume of the shell in gallons based on how full the bucket is.
6. Evenly redistribute the shell that was sampled back into your restoration gear.



*Height Measurement of Spat-on-Shell (SOS).*

### **Additional Notes on Sampling:**

- I. Early in the growing season the above procedure should result in less than 1 basket full of shell for a single contract, out of that basket you will only measure a small amount of the total shell due to low early mortality, small SOS size, and high counts of SOS per shell or shell fragment.
- II. Late in the growing season the volume of your growing Spat on Shell will increase substantially, and you will likely only need to grab a single handful of shell/SOS from each bag to fill the basket. Your numbers of SOS will decrease per shell, and this will result in a higher volume in your bucket.

### **Data Entry and Calculations:**

1. Enter all your measurements into the Excel workbook “NRCS-Sampling-Growers-Biweekly”.
  - a. Within that workbook are helpful printable sheets for use in the field, and then an entry worksheet to calculate summary statistics such as:
    - i. Average size
    - ii. Maximum/minimum, range
    - iii. # of dead and alive.
    - iv. # of SOS per Shell
2. It is important that you first copy the Worksheet labeled: “4-SOSMsrmts Data Entry BLANK.”
  - a. Then give that new worksheet a unique name “FARMNAME-DATE” and keep it in the workbook.
    - i. Each biweekly maintenance report will have a separate worksheet, at the end of the season you will have a complete record of your sizes and sampling effort.
    - ii. If a catastrophic event were to happen (oil spill/heat event/disease) these sheets and your submitted forms will allow us to evaluate your practice.