

## **Phytoplankton Monitoring Network (PMN) Sampling Protocol for North Inlet – Winyah Bay NERR**

### **Driving to the Baruch Marine Field Lab**

1. Press #009 at the gate kiosk to call the BMFL office

### **Prep the Classroom**

1. Set up microscopes on the lab tables. Scopes are located in the tall, black cabinet.

\*Tip: Make sure to carry scopes with one hand under the base of the microscope and one on the arm

2. Get sampling supplies from left side drawers of cupboards.

### **Before you leave...**

#### **Checklist of sampling Equipment**

- Plankton Net and Rope
- 1 L bottle and cap
- 125 mL bottle and cap
- 30 mL bottle and cap
- Thermometer
- Refractometer and pipettes
- Squirt bottles with filtered sea water
- Datasheet, Clipboard, and Pen
- 5 gallon bucket – **\*Don't forget the bottle cap!**

### **Collecting the Sample**

The Oyster Landing PMN sample site is the metal ramp from the standing dock to the floating dock

1. First walk down to the floating dock to collect a water sample by dipping the 5 gallon bucket over the side

\*Tip: Kneel down to dip the bucket, don't bend over

2. Leave the thermometer in the bucket to acclimate
3. Fill the 30 mL and 1L bottles with water straight from the bucket.
4. Use the pipette to put a few drops of water on the refractometer. Read the salinity (ppt) at the line where the blue and white meet.

\*Tip: If it's too dark to get a reading, look toward a light source

5. Record the water temp, salinity, air temp, and wind on the data sheet
6. Now it's time to collect the plankton sample! Walk back to the metal ramp.

7. Lower the net into the water. Dunk the net a few times to get air bubbles out of the bottle. Once the bottle begins to sink, lower the net until the mouth is below the surface. **Start the timer for 3 minutes now!**

\*Tip: It's never a bad idea to tie the rope onto the dock, especially if there is a strong current! Be careful not to snag the net on oysters, pilings, or the dock. It will rip easily.

8. The net should be horizontal with water flowing through the mouth. Think of a wind sock. If it's hanging down, water is not being filtered and you will have no plankton in the bottle.
9. If there is not a strong current, walk the net back and forth for the three-minute tow.
10. After three minutes, pull the net up and rinse the outside with filtered sea water from the squirt bottle.
11. Remove the sample bottle and cap it for the walk back to the classroom

### Analyzing the Sample

1. Prepare a slide and coverslip (make sure they are not dirty, smudged, chipped).
2. Fill a pipette with water from the live sample
3. Place a few drops of water on the slide. Touch the coverslip to one side over the drop and let it fall flat.

\*Tip: If you have too much water and some spills out under the coverslip, place the slide down on a paper towel to soak up the excess. Otherwise, the coverslip can float around on top of the slide, making it hard to spot plankton!

4. At your microscope, start by adjusting the focus on 4X magnification until you spot some phytoplankton
5. Move to a magnification and begin moving through the grid of cells in a "lawnmower" pattern (one row at a time)
6. Refer to the species ID sheets and PMN datasheet to tell when a target species is present or elevated

### Clean Up Procedure

1. Thoroughly rinse the plankton net with freshwater from the hose at the base of the back steps. You can do this on the way back from the dock or at the end.
2. Rinse all equipment that touched saltwater (thermometer, bucket, refractometer, etc.)
3. Rinse slides and cover slips under tap water. No need for soap.
4. Dry slides and cover slips with lens paper (not paper towels – these will damage the grid pattern!).
5. Lay slides and slips to dry on paper towels
6. Unplug and cover microscopes. If any salt water spilled on scopes, wipe with damp power towel and dry. Return to cabinet.

## Resources

### SWMP (System Wide Monitoring Program) Mobile

Real Time Water Quality Data Application

1. Go to [cdmo.baruch.sc.edu](http://cdmo.baruch.sc.edu)
2. Scroll to the “SWMP Mobile Application” and click the link
3. Add to “My Stations” - North Inlet – Winyah Bay Oyster Landing Water Quality (NIWOLWQ) and - North Inlet – Winyah Bay Oyster Landing Meteorological (NIWOLMET)
4. Click on Real Time Data to get current temperature, salinity, and wind conditions for Oyster Landing

### Phytoplankton Monitoring Network

Home: <https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/pmnl/>

Volunteer Resources: <https://coastalscience.noaa.gov/research/stressor-impacts-mitigation/pmnl/volunteering/>

### Phyto App

Species ID Application

1. Go to the Google Play Store on your phone and look up “Phyto”
2. Download the free app – available for iphone or android
3. Youtube Demo: <https://www.youtube.com/watch?v=RswbKVnf-Dw>