

Phytoplankton Collection

Field Sampling: Phytoplankton Net Tow

Materials:

- Phytoplankton net with 3-5 meters of string attached.
- Sample bottle and cap
- Thermometer
- Refractometer

Phytoplankton Collection Steps

1. **Record the date, time sampled, tide level, current weather, and wind intensity.**
2. **Doing the plankton tow:**
 - a. Screw the clear sample bottle (not the brown bottle) into the cod end of the net. Make sure it is on securely.
 - b. Drop the plankton net into the water and scoop up a netful of water. Lift the net out of the water and allow the sample bottle to fill. Repeat as necessary until the sample bottle is completely full, with no air bubbles.
 - c. Slowly sink the bottle and net into the water until both are completely submerged (~0.5-1 meter down), making sure air bubbles don't get trapped in the net.
 - d. Next, walk the net horizontally through the water for three minutes, allowing it to "swim" through the top meter of water. Make sure the whole net and bottle always remain beneath the surface when you bring towards the surface.
 - e. When the three minutes has passed, stop towing and pull the net and bottle vertically out of the water.
3. **Rinsing the net and preserving the sample:**
 - a. Hold up the plankton net and dip back into the water a couple of times. This rinses off any phytoplankton off the side of the net and into the bottle.
 - b. Next, determine by looking at the color the relative abundance of phytoplankton in the sample. If the water looks clear and has a low density, only add 3-5 drops of Lugol's solution, if the water in the sample bottle looks green and full of plankton add 10-12 drops of Lugol's. Once the Lugol's is added transfer water from the clear bottle to the brown sample bottle. Label the sample bottle with the location and date.
4. **Cap your phytoplankton sample and set it aside**
5. **Take the air and water temperature and the salinity**
 - a. Using your thermometer, record the air temperature. Then take the water temperature by allowing the thermometer to sit underwater for a few minutes – if you have a battery powered thermometer you could also place it in phytoplankton sample bottle.
 - b. If using a refractometer, apply water drops to the slide until entire slide is covered. Place the slide cover on and hold the refractometer up to the sun and read and record the salinity in %.
 - c. If using a YSI, take probe out of clear case and insert into the metal protective cover. Press the power button to turn on the YSI and place the probe in the water. The probe should be dropped to 0.5-1 meter in depth and should be held there until the numbers on the YSI stabilize.

