



Northeast Aquatic Research Volunteer Monitoring Guide

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“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only thing that ever has.”

-Margaret Mead

Materials

- | | |
|--|---|
| <input type="checkbox"/> Secchi Disk | <input type="checkbox"/> Bottles (one bottle for each water sample) |
| <input type="checkbox"/> View scope | <input type="checkbox"/> Pencil |
| <input type="checkbox"/> Water sampler | <input type="checkbox"/> Black sharpie |
| <input type="checkbox"/> DO meter with batteries | <input type="checkbox"/> Cooler |
| <input type="checkbox"/> Data recording sheet | <input type="checkbox"/> Depth sounder |
| <input type="checkbox"/> GPS with batteries | <input type="checkbox"/> Anchor |
| <input type="checkbox"/> Clipboard | |

Getting Started

1. Use a GPS or make a pinpoint on Google Maps on your phone at your monitoring location so you can return to the same spot each time.
2. On your data sheet, record your name, the name of the lake, the station at which you are monitoring, the data, and the weather (such as sunny, cloudy, breezy, temperature, etc).

Water Clarity

You will determine water clarity using the Secchi disk and view scope.

1. Take off you sunglasses.
2. Place the Secchi disk in the water on the shady side of the boat, keeping tight hold of the handle.
3. While looking through the view scope, slowly lower the Secchi disk until it completely disappears from sight. Move the disk up and down slightly, bringing it in and out of view, and note the exact depth at which the disk disappears.
4. On your data sheet, record the depth at which the Secchi disk disappears.

You can practice taking Secchi readings using the Maine Volunteer Lake Monitoring program's virtual Secchi reading simulator: <http://www.mainelakedata.org/recertify/disk.php>

Dissolved Oxygen (DO)

Record the dissolved oxygen at the surface of the water and then every meter down until you reach the bottom of the lake.



1. Turn on the DO meter and allow it to fully load.
2. Lower the probe into the water so that about half of the probe is underwater. Press the green button on the Hach monitor.
3. Hold the probe steady, keeping the tip underwater, and allow the meter to finishing stabilizing.
4. Once the meter has stabilized, record the DO (mg/L) and temperature (in degrees Celsius) on you data sheet. You may also record the percent oxygen saturation number.
5. Lower the probe to the one-meter mark. Again, press the green button on the monitor and allow it to finish stabilizing. When it has locked in, record the DO and temperature on your data sheet.
6. Lower the probe again and repeat step 5 at every meter until you have reached the bottom of the lake. (Note: Be sure to not record DO when the probe is in the sediment on the lake bottom, as this can result in faulty data. Sediment on the lake bottom can be very loose and the probe can easily be lowered down into the sediment. You will know you have reached the bottom if you feel a light suction on the probe's cord while pulling the probe up).

Water Sample

Before going out to conduct lake monitoring, be sure that you know at which depths to gather water samples. Make sure that you have one bottle for each sample you will be gathering.

1. Label each of your bottles with the date, the lake name, the station at which you are gathering the sample (if data is only gathered at one location on the lake, label the location "Station 1"), and the depth at which the water sample will be collected in meters.
2. Carefully open the sides of the water sampler. Lower the sampler until you reach the correct depth. Lightly sway the water sampler horizontally through the water to ensure that the sampler is filled with water from that depth.
3. Drop the messenger down the string the close the sides of the sampler. You should feel and/or hear the sides snap shut. Pull up the sampler.
4. Open the bottle that is labeled with the depth at which you just took the sample. Do not touch the inside of the bottle or the bottle cap, as this could contaminate the sample.
5. Fill the bottle about halfway with water from the sampler's spigot, shake the bottle vigorously, and then pour the water out. Do this two times to clean out the bottle.
6. Fill the bottle a third time, this time filling it completely, and screw on the cap. Place the bottle in the cooler.
7. Repeat steps 2-6, gathering a sample at each required depth.

Inlet Sampling

1. For each inlet that you will be sampling, label a bottle with the date, the name of the lake, and the name of the inlet. It is also useful to record information about the flow and conditions of the sampling location at the time of collection. Notes from inlet sampling may be added to the water quality sampling sheet notes section at the bottom of the page.
2. Open the bottle, making sure to not touch the inside of the bottle or the bottle cap. Place the bottle in the inlet with the opening facing upstream so that water will flow into the bottle. Do not step in or put your hand in the inlet upstream of where you are taking the sample, as this could contaminate the sample.
3. Close the bottle and place in the cooler.

