



## DEEP PONDS: WEEKLY AND BIWEEKLY WATER MONITORING SOP

This section summarizes the monitoring procedures used on **locations with a maximum depth of at least 5 meters (15 feet)**. Detailed descriptions of each procedure are in *Section III, Specific Monitoring Techniques*. Detailed instructions for the water sampler is in *Section IV, Directions for Water Samplers*. Items and steps preceded with **an asterisk (\*)** are for **biweekly (every other week) monitoring only**.

1. Before going out on the water **go over the checklist on the next page** to make sure you have everything you need. Have all testing items organized (preferably inside) to test your samples as soon as you come off the water.
2. Go to your sampling location, anchor your boat. Keep your sampler out of direct sunlight, especially in the heat of the summer. You may store it in your cooler.
3. Make your first set of **Secchi depth transparency** measurements.
4. **\*Rinse your water sampler** with surface water.
5. **\*Put your thermometer in the sampler.**
6. **\*Close the lid on the sampler and plug top with stopper. *Do not put glass dissolved oxygen bottle inside.***
7. **\*Lower the sampler to 1 meter depth**, pull out the stopper, wait until no more bubbles come to the surface, then pull the sampler rapidly to the surface.
8. **\*Rinse one chlorophyll bottle** with some of this water, discard the rinse water and **then fill one chlorophyll bottle**. Cap the bottle and store out of direct sunlight, in a cooler.
9. **\*Repeat steps 7 and 8 to rinse and fill the second chlorophyll bottle.**



10. **\*Record the water temperature** on your monitoring postcard before you fill the second chlorophyll bottle.
  11. Make a second set of **Secchi depth transparency** measurements.
  12. **\*Put a clear glass dissolved oxygen** bottle in sampler. Secure lid and stopper, making sure that inlet tube extends into bottle. **Rapidly lower sampler to depth listed in the chart on the next page, pull out stopper.** After no more bubbles come to the surface, rapidly raise sampler. Remove sampler lid and cap glass bottle while it is in the sampler. Remove glass bottle and place in cooler bag.
  13. **\*Repeat step 12 to collect a second deep water sample for dissolved oxygen testing.**
  14. **\*Record the water temperature of one of the "deep" water** samples.
  15. Check depth to pond bottom.
  16. **\*Once on-shore, do the first three steps of dissolved oxygen analysis immediately** on all water samples. *Remember that the dissolved oxygen sample bottle must be filled to the brim with water before you begin the test. The presence of an air bubble will "contaminate" the sample with oxygen from the air.*
  17. **\*While waiting for the D.O. flocculent to settle, OUT OF DIRECT SUNLIGHT do the chlorophyll filtration twice on each of your two shallow samples**, taking care to properly label the filters before freezing them.
- CAUTION: You should not have to push with all your strength in order to filter the water. If you see water drops coming out from between the top and bottom of the white plastic filter holder the filter has become plugged (either with algae or sediment). You must start over with a fresh filter and water sample. Use less water, for example 25 ml, and record the amount used on your postcard and on the filter itself.*
18. **\*Finish the first set of dissolved oxygen analyses. Make a second set of dissolved oxygen analyses.** This will give you a total of 4 deep dissolved oxygen measurements. Record all of them on your postcard. Flush the reagent chemicals down the drain with plenty of water. Rinse everything with tap water; air dry on a paper towel.
  19. Mail monitoring postcard to URI.



### "Deep" water sampling depths

if your monitoring location has a

maximum depth of:

5 to 7 m (16 to 23 ft)

7 to 10 m (23 to 33 ft)

> 10 m (>33 ft)

take your "deep" sample at a depth of:

0.5 - 1.0 m from the bottom

7 m from surface

10 m from surface

## Weekly and Biweekly (\*) Monitoring Checklist - Deep Locations

### On the water:

- personal flotation device, boat anchor
- map of pond with landmarks and sampling site noted
- note pad with pencil, **monitoring postcard**
- Secchi disk**, 2 clothespins, view tube
- water sampler** and weight
- \*2 white plastic chlorophyll sample bottles
- \*2-3 clear glass dissolved oxygen bottles with stoppers
- \*thermometer
- \*insulated cooler with freezer pack

### On shore:

- \*Chlorophyll filtration apparatus** (stored in a resealable plastic bag)
  - 60 ml syringe (marked at 50 ml)
  - 2 white plastic filter holders
  - glass fiber filters (stored in 35 mm film cannister)
  - tweezers
  - squeeze bottle of magnesium carbonate
  - resealable bag containing desiccant chips
  - sheet of chlorophyll filter sample labels
  - blotting paper (supplied by volunteer- coffee filter, paper towel)
  - aluminum foil squares (supplied by volunteer)
- \*Dissolved oxygen test kit** (with plenty of paper towels), goggles, gloves