

WATER QUALITY TESTING

by Jamie Kasey

Since May of 1994 the Klinger Lake Association has been involved in the Cooperative Lakes Monitoring Program (CLMP). CLMP has been an important component of Michigan's inland lakes monitoring program for over 30 years, which makes it the second oldest volunteer monitoring program for lakes in the country. The primary purpose of this cooperative program is to help citizen volunteers monitor indicators of water quality in their lake and document changes in lake quality over time. The goals of the CLMP are:

- Provide baseline information and document trends in water quality for individual lakes.
- Educate lake residents, users, and interested citizens in the collection of water quality data, lake ecology, and lake management practices.
- Build a constituency of citizens to practice sound lake management at the local level and build public support for lake quality protection.
- Provide a cost-effective process for the DEQ to increase baseline data for lakes state-wide.

Since 1992, the Michigan Lake and Stream Associations (MLSA) has administered the CLMP jointly with the Michigan Department of Environmental Quality under a Memorandum of Understanding. The ML&SA will continue to administer this program under the Michigan Clean Water Corps.

From our records and those of the ML&SA the Secchi disk test was our first regular activity, starting in May of 1994. The Phosphorus sampling started in the spring of 1999, followed by Chlorophyll sampling in July of 2004. Our first water sampling and data collecting volunteer was Paul Budreau. Other volunteers have been Bill McBride, Dan Evert, and Nick Harker. Presently it is Jack Grim that makes the Thursday outings for testing. Testing starts the end of April and runs through the end of September.

I took two trips with Jack last year and thought it would be very informative to our membership to do a photo documented story of what Jack does. Lynne Kasey and I went with Jack on the June 19, 2009 trip. Jack takes his pontoon boat out to a specific place on the lake where the water is 72' deep. It is the deepest spot in the lake basin. Although he has a GPS device he has done this so many times that he can find the location by aligning the boat with three land marks. The land marks are two homes and that leaning tree. We didn't get Jack pinned down on which tree was that leaning tree, but he seems to get it right every time I've made the trip with him.

After the boat is anchored the first test is for water clarity. The instrument used is called a Secchi Disk. The disk is lowered on the shady side of the boat until it disappears, then it is raised until it reappears. The average of the two readings is the Secchi disk depth recorded. The disk is suspended on a tape measurer for the depth readings at the surface of the water. The date, time of day, weather conditions, and any unusual condition is recorded. Unusual conditions may be heavy rain or boat traffic.



A water sample is taken to test the chlorophyll levels in the water once each month. A sample bottle is placed in a tin can and lowered to twice the depth of the Secchi Dick reading. That level was 40' on trip. When the air bubbles stop rising to the waters surface it is pulled up, five drops of magnesium carbonate are added, the bottle capped, and placed in a cooler to preserve the sample.



Back at Professor Grim's laboratory the sample is processed for delivery to the DEQ in Kalamazoo. The laboratory also doubles as a bathroom. Jack first places a filter in the filter housing using tweezers. He uses tweezers and a safety pin to remove the blue plastic that separates the individual filters. Touching the filter with your hands can contaminate the sample he explains.



Jack then draws water from the bottle into a 60 CC syringe. He carefully forces out the air bubbles and ends up with a 50CC sample of lake water. The filter is screwed onto the syringe and the water slowly forced through the filter media. Jack said some lakes can't force the full 50CC sample through the filters due to the high levels of suspended solids in their water.



The filter housing is removed from the syringe, opened, and the filter media removed, again with tweezers. Jack then carefully folds the filter to enclose the particulate in the filter. He then places the filter material in a glass tube that is labeled. To minimize the light exposure he wraps the

tube in aluminum foil and dates the sample. The process is done twice. The sample is then placed in the freezer until Jack delivers it to the DEQ.

The process for the phosphorus samples is very similar to the chlorophyll procedure. The phosphorous test samples are taken once in the spring and once in the fall.



A bonus to our trip was getting to meet Momma Duck. For the third consecutive year Joan Grim has had to put off planting her flower pot on the dock. This mother mallard thinks the flower pot it is the perfect setting to lay her eggs. It's no wonder she keeps picking this spot. Jack and Joan look out for her and make sure she is comfortable. To top it off she has a great lake view. We should see twelve ducklings any day now.