



Environmental Health Services  
3010 Grand Avenue  
Waukegan, IL 60085-2399

June 20, 2008

Mr. Michael Kalstrup  
21820 W. Washington  
Grayslake, IL 60030

**RE: Highland Lake**

Dear Mr. Kalstrup:

This letter summarizes today's site visit to Highland Lake by Leonard Dane and I. At your request, we assessed the aquatic plant populations in the lake. It is our understanding that the lake is treated with herbicides approximately every other year, with the most recent treatment occurring this spring. The chemical used on Highland Lake is fluridone, which is a systemic herbicide that when used at low concentrations can be selective at controlling nuisance aquatic vegetation such as Eurasian watermilfoil (*Myriophyllum spicatum*; EWM). At higher concentrations fluridone can affect many aquatic plant species.

As you are aware, the Lake County Health Department's Lakes Management Unit (LMU) conducted a detailed water quality study of the lake in 2001. As part of that assessment, monthly aquatic plant surveys were conducted. A total of nine (9) species of aquatic plants were found during 2001, which was a "non-treatment" year. Both EWM and curlyleaf pondweed (*Potamogeton crispus*) were found in 2001. Plants were found growing down to a depth of nine (9) feet.

Today, we spent approximately one hour canoeing around the lake, surveying for plant species and depths where they were growing. During this visit we observed the following species: chara (*Chara* sp.), sago pondweed (*Stuckenia pectinatus*), coontail (*Ceratophyllum demersum*), white water lily (*Nymphaea tuberosa*), spatterdock (*Nuphar variegata*), and small duckweed (*Lemna minor*). Plants were found growing to a depth of approximately six (6) feet. Chara was the most common species, as expected after a fluridone treatment as this species is actually a macro algae and not affected by the chemical. Sago pondweed and white water lily were present but not common in the lake. Coontail was only found in the inlet channel in low densities. Spatterdock (which looks similar to white water lily, except its leaves are more oval shaped than circular, and has a yellow flower instead of a white one) was common with a few nice patches near the northwestern side of the lake. However, the leaves of this rooted floater showed signs of chlorosis (yellowing), possibly from the early fluridone treatment. During the brief survey, no exotic species (EWM or curlyleaf pondweed) were found as they were in 2001. This is good news. However, the overall coverage of aquatic plants in the lake was very poor. We understand that our survey was conducted a couple months after the fluridone treatment and that this significantly affected the abundance of aquatic plants, however, our recommendation is to develop a plan to allow for higher plant densities (as long as they are not EWM or curlyleaf).

The lake's vegetation should be continually monitored for the presence of EWM and curlyleaf. If the association maintains its current schedule, 2010 would be the next chemical treatment. The LMU is tentatively planning on including Highland Lake in its 2009 water quality assessments. If this occurs we will be conducting a detail aquatic plant mapping survey. After this assessment, it is recommended that the association use this information to make decisions on current and future aquatic plant management.

Regarding fluridone, it is our experience that some lakes in the County that regularly use fluridone to control nuisance plants have been able to either reduce the target concentration or delay the treatment at least another year once the target species are reduced. For example, once EWM is under control maintenance applications of fluridone may target 4-6 ppb, instead of 8-10 ppb. On Highland Lake, this could result in the use of four (4) gallons of fluridone, instead of five (5), a significant savings. Another option that could be considered is during the third year spot treat the EWM or curlyleaf, particularly if the acreage is small. This could save the association money without harming the native plant beds that are present.

Aquatic vegetation plays an important role in the health of a lake. Benefits include nutrient assimilation, bottom sediment stabilization, and habitat for fish and their prey. Lack of aquatic plants generally leads to poor water clarity and more algae blooms. This was apparent during our visit today as an algae bloom was occurring and water clarity was approximately five (5) feet. Your VLMP data from this week confirms this as you had a 5.5 foot Secchi disk reading (in June 2007 when plants were present it was 9.5 feet). However, recent rain events this month likely contributed to the poor clarity as well.

We would be willing to come to an association meeting to discuss our findings or answer any questions you may have. Please contact me if we can be of assistance.

Sincerely,



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