



Lakeland Biologists

Pond and Lake Management, Services, and Supplies

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Hidden Lakes Community Association
P.O. Box 386
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4/3/12

RE: 3 Year Lake Management Plan

Lakeland Biologists would like to thank the association for an opportunity to help rejuvenate and work on solving some of the problems currently associated with the lakes. Our professional Biologists focus on "total water body management". We focus on what is the root cause of aquatic problems and what can be done to lower overall future management expenses. We always welcome your questions, concerns, and ideas.

We are a full service company providing algae/weed applications by licensed applicators, fish stocking & habitat enhancement, air systems & fountains, shoreline restoration, native plant restoration, biological remediation, koi ponds, decorative water features and more.

Lakeland Biologists proposes the following 3 year management plan for Hidden Lakes.

2012

- **Aggressive Treat Plan and control of nuisance aquatic weeds/algae**
 - past seasons have contributed excessive biomass to the lake resulting in promoted additional plant growth. Early and more often treatments will reduce biomass decomposition furthermore reducing sediment accumulation
- **Maintain and Upgrade Air System components**
 - Spring maintenance is recommended for air system parts. Proper acid wash cleaning diffusers will reduce back pressure on motors allowing the motors to run cooler and longer
 - existing air diffusers are old. There are several air diffusers that should be replaced this season. We recommend replacing 4 -6 diffusers in 2012 and the remaining in 2013. An efficient air system is critical to reducing organic sediment "muck" and reducing nutrient load. (an estimate will be provided).
 - The air system must run 24/7 from approx. April 1st – Sept. 1st. Within as little as 48 hours without air, the biological activity in the bottom sediment will begin to die off.
- **Apply Sludge Pellets** to swim/beach area. Reduce "muck" accumulation in swim area (optional)

2013

- **Treatment plan to control nuisance & invasive weeds/algae**
 - realistically it may take 1 – 3 years of frequent boat inspections, detailed monitoring & records to effectively gain control of nuisance plants in Hidden Lakes. Often plant seeds are resistant to herbicide so we forecast a 1 – 3 year period in order to gain complete effective control of the plant life.
- **Upgrade remaining air diffusers on system**
 - replace remaining diffusers with new high efficient diffusers
- **Introduce additional native aquatic plants to lake**
 - plant diversity (competition) will balance the lake ecosystem and reduce chance of invasive plants growing excessively throughout the lake.

2014

- **Predicted smaller weed treatments**
 - Maintain minimal invasive and nuisance weeds present
- **Additional air system diffusers added (optional)**
 - reduced annual maintenance costs should allow for some additional upgrade to air system which will further reduce “muck” and continue to lower long term lake maintenance costs.
- **Biological Remediation**
 - Apply Sludge Pellets to reduce “muck” accumulation in specific targeted problem area.

An estimate will be provided for the 2012 services. Lakeland Biologists only charges for actual services performed and on an individual per service basis. A signed Lake Management Agreement is required. Service prices will remain the same over all three years if a three year agreement is signed.

Lakeland Biologists looks forward to working with all of you!