Introduction

As King County residents, we want clean lakes so we can enjoy the recreational opportunities and the natural beauty they offer. We also want to ensure that our lakes provide a healthy environment for fish, frogs, waterfowl, and other wildlife.

Our everyday actions can profoundly affect the balance of these freshwater systems, degrading the very qualities that attracted us to them in the first place. For example, nutrients in fertilizers, detergents, failing septic systems, eroding soil, and animal waste can cause algae and aquatic plants to grow and multiply rapidly. Too many plants and algae, in turn, can reduce water clarity and clog our lakes, interfering with recreational uses and the quality of wildlife habitat.

By regularly monitoring our lakes, we can evaluate how our actions affect water quality through time. This information helps us to be better stewards of our lakes and watersheds. King County's Lake Stewardship Program provides opportunities to learn how lakes function and how to protect water quality. The program offers technical assistance to lakeside residents and local jurisdictions, posts lake-related information on the website, provides lake-related workshops, and supports a network of volunteer lake monitors. It also advises groups on grant procurement and occasionally makes lake-related presentations to community groups, schools and youth groups.

Services for rurally zoned lakes in unincorporated King County are funded through the Surface Water Management fees. Services for lakes within city boundaries are funded by the cities through Technical Services Agreements with the County.

Lakeside residents may choose to volunteer as Level I, Level II, or back-up monitors on their lake. Level I volunteers work year-round to collect information on lake level and precipitation every day, as well as Secchi depth and lake temperature on a weekly basis.

Level II volunteers collect water samples for laboratory analysis of phosphorus, nitrogen, and chlorophyll *a* and phytoplankton every other week from late May through October. They also measure physical parameters such as temperature and Secchi depth.

Back-up monitors serve an equally important role by filling in when Level I or Level II monitors are temporarily unavailable to collect data.

This manual provides a standard set of methods for Volunteer Lake Monitors. By following manual guidelines, volunteers will collect consistent, reliable, and representative lake data that can be used to evaluate both seasonal and long-term trends in lake water quality and lake level.

Purpose of Data Collection

Lake water quality is affected by both the quantity and quality of the water flowing into it. Human activity and associated land use practices in the watershed play a large role in determining a lake's overall water quality.

The Lake Stewardship Program depends on the data collected by volunteers to:

- develop historical data records for individual lakes;
- evaluate trends in lake level and water quality over time;
- measure how water quality varies with water depth;
- detect lake problems and assist residents in solving them;
- educate citizens; and
- encourage community stewardship of the region's lakes.

With the participation volunteer monitors, we have built a program that enables us to evaluate and track the health of your lake and other lakes in the region.

Safety Rules for All Monitors

Safety should be the primary consideration for all volunteer monitors. Everyone needs to take personal responsibility for safety, especially during bad weather (thunderstorms and windy or rainy conditions). Additionally, docks and boats can have slippery surfaces and small boats, like canoes and kayaks, can be unstable.

Remember to follow these common sense rules:

- Wear a life jacket when sampling from a boat.
- Know your local boating requirements and obey any specific restrictions applicable to your lake.
- Know how to operate the boat you are using, especially if it is not your own.
- Take a free boating safety course. Call 800-336-BOAT for more information.
- Obey all laws and practice safe boating.
- Use good judgment.

Do not go out on the lake and collect data if you think it is unsafe. No data is worth the risk of an accident.

Spring Lake