

Cottage Lake

Watershed Education Helps to Protect a Valuable Resource



Introduction

Since the early 1970s, King County's Cottage Lake has experienced algae blooms due to excessive amounts of phosphorus entering the lake. To address community concerns regarding declining water quality in Cottage Lake, King County began monitoring the lake and its two inlet streams (Daniels Creek and Cottage Lake Creek) in 1993. As a result of King County's year-long study, the Cottage Lake Management Plan was created. In addition, the lake landed on the state's list of polluted waters in 1996 and again in 1998. Data from the lake management plan aided development of the Cottage Lake Water Quality Cleanup Plan (formally known as a Total Maximum Daily Load study) for phosphorus in 2004, followed by the Cottage Lake Water Quality Implementation Plan in 2007.

Problem

Residents around Cottage Lake have been concerned about the water quality of the lake for many years. They have been active partners working on Cottage Lake health issues with King County and the Department of Ecology (Ecology). Elevated levels of total phosphorus in the lake water led to increased occurrences of blue-green algae blooms. Excessive amounts of noxious weeds, such as White Water Lily and Purple Loosestrife, are present in the lake and have replaced many native plant species in the lake and its wetland areas. Friends of Cottage Lake (FOCL), a local non-profit organization made up of local residents in the watershed, spearheaded local efforts in the area to provide education and outreach to residents within the watershed through their website <http://friendsofcottagelake.org/>. Once the Cottage Lake Implementation Plan was complete, FOCL and King County worked in partnership to develop the *Cottage Lake Total Phosphorus Reduction Plan Grant*, provided by Ecology's Centennial Grant Program.

Project goals

The grant project began in October 2005 and ended in June 2011. The primary purpose of the project was to reduce and control phosphorus pollution in Cottage Lake and its inlet streams. The principal elements in the grant were educating the residents living in the watershed about best management practices, water quality monitoring, habitat assessment, and habitat restoration.

The education aspect focused primarily on reducing phosphorus at the homeowner and local business level. Some of the best management practices initiated were educating residents and businesses about proper septic system maintenance; proper disposal of household materials such as cleaners and motor oil; and properly washing vehicles, and monitoring phosphorus loading (in the lake and inlet streams).



Milestones and outcomes

Efforts from the project yielded:

- More than 1,330 linear feet of public and private shoreline planted with native vegetation.
- A large amount of monitoring data from Cottage Lake and inlet tributaries.
- A guidebook for other groups that may be interested in developing their own implementation projects.
- A *Welcome to the Lake* book, which provides an introduction to lakeside and watershed living to residents.



Other efforts in the Cottage Lake Total Phosphorus Reduction Plan Grant include educational handouts, a website run by FOCL, natural yard care classes, and septic system workshops.

A post-project survey was sent out to residences and businesses in the watershed to gauge any change in community awareness of lake issues and determine if elements of the grant were successful and being implemented. The results revealed that people identify most with the Cottage Lake Park due to its high visibility and easy access to the lake. Signage placed at the park serves as a valuable educational tool to inform visitors about the work performed in the park and how it benefits the lake. The survey also revealed that residents are interested in planting native plants to create buffers and natural settings in their own yards.

King County continues to work in partnership with the FOCL to distribute educational materials and to keep residents interested in protecting Cottage Lake and its watershed. Possible future projects being considered include applying a whole lake alum treatment to bind phosphorus to lake sediments; supporting state-wide bans on certain types of lawn fertilizers and detergents; and implementing innovative strategies to change behaviors and practices that harm the lake.

Overall, the response from residents living in the watershed has been positive. However, it has yet to be determined if projects conducted in the grant have influenced a reduction in total phosphorus in Cottage Lake and its inlet streams. Further monitoring and analysis of water quality data in the next few years will help to answer these questions.

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