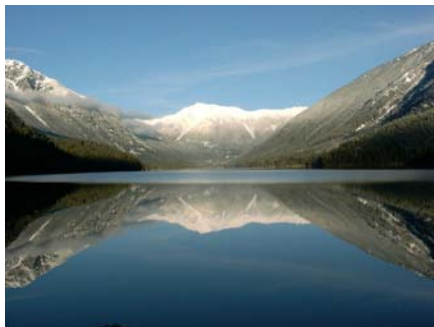


**Upper Birkenhead River Watershed  
A PRELIMINARY WATER QUALITY ASSESSMENT  
REPORT SUMMARY**  
Ministry of Water, Land and Air Protection,  
Environmental Quality Section



This report presents the results of sampling and information gathering undertaken in 2001 by the Upper Birkenhead Watershed Stewardship Group (UBWSG) with funding support from the Ministry of Water, Land and Air Protection (MWLAP). The Birkenhead watershed supports many important fisheries resources, including many species of salmon and trout as well as the blue-listed bull trout, which is found in Birkenhead Lake and surrounding creeks.

The goals of the stewardship group were to gather information and data which related to the Birkenhead watershed, and to compile this into a report in order to assist future watershed initiatives. There are no site specific water quality objectives established in the watershed and sampling has not previously been conducted by MWLAP in the Upper Birkenhead River watershed.



Birkenhead Lake from the Birkenhead Provincial Park.

**Why Monitor Water Quality?**

Water quality information guides people in their decisions on how to use water and promotes action to

correct problems. Fish and other aquatic life are dependent upon good water quality. Human health also depends upon clean water for drinking and irrigation. In addition, commercial, recreational and even cultural water uses can depend upon water quality conditions.

Certain water quality parameters can be associated with specific land uses. For example, bacteriological parameters such as fecal coliforms, or nutrients such as ammonia nitrogen, are used as indicators of agricultural waste or sewage presence (potentially from leaking septic tile systems or urban stormwater). Elevated levels of suspended sediments in a watercourse may reflect land disturbance, such as from forestry or agriculture, while polycyclic aromatic hydrocarbons (PAHs) and heavy metals may be indicators of stormwater runoff from urban streets.

Water quality measurements can be compared to known standards such as Provincial Water Quality Guidelines or watershed specific objectives, both of which set safe limits for various uses of a waterbody such as for recreation, aquatic life protection, or drinking water.

**What was Monitored?**

Water samples were collected during a summer storm event in the Birkenhead River, Tenquille Creek and Tenas Creek and were analyzed for *total suspended sediments* (TSS)

in order to examine the potential impact of forestry activities. Potential impacts from recreational usage were examined during summer long weekends by measuring *fecal coliforms*, *nutrients* and *TSS* at sampling sites in Birkenhead Lake, Taillefer Creek and lower Phelix Creek. *Dissolved oxygen*, *water temperature* and *water clarity* were also measured in Birkenhead Lake throughout the summer. To examine potential impacts of agricultural activities, water samples were also collected in Phelix Creek during a fall rain event and analyzed for *TSS*, *nutrients* and *fecal coliforms*.

### What were the Results?

The following observations were made from the limited sampling:

- TSS concentrations were low in the Birkenhead River and Tenquille, Texas and Phelix Creeks during a summer storm.
- Fecal coliform concentrations were low or undetectable, and pH was close to neutral in Taillefer Creek, Phelix Creek and Birkenhead Lake.
- Nutrients were low in Birkenhead Lake and Phelix Creek.
- Dissolved oxygen and water temperature in Birkenhead Lake were suitable for aquatic life.
- Water clarity in Birkenhead Lake was good, however, recent algal blooms indicate the possibility of deteriorating conditions.

### Recommendations

Although sample sizes were small, the limited data as well as visual observations support the conclusion that forestry, agriculture and recreation were not having major detrimental impacts at the time of sampling. Consequently, future Ministry monitoring in this watershed

is not currently considered a high priority. However, an automated monitor, which can record measurements every 15 minutes, could provide valuable data regarding the potential impacts of short-term storm events.

The Birkenhead watershed is not yet too developed however it will face increased pressure in the future from the growing populations in the Sea-to-Sky corridor. Due to this and the high tourism and recreational values of this area, it is recommended that UBWSG continue to track changes which could help provide early warnings to prevent deterioration in the environmental quality. It is recommended that the UBWSG continue to monitor water clarity, temperature and dissolved oxygen in the lake during the summer, as well as maintain their outreach programs, and carry on with fisheries habitat protection and restoration work in the local area.



Secchi disc measurements on Birkenhead Lake.

For further information or to view the complete report, please contact:

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