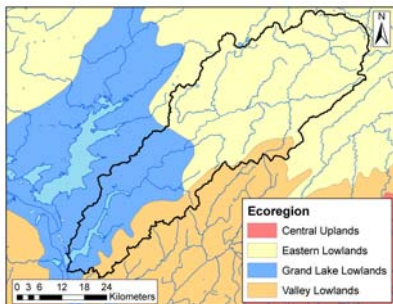


Location

The Canaan River is located in the southeastern portion of New Brunswick. The river drains into Washademoak Lake, in turn draining into the Saint John River. The watershed is composed of 17 tributaries. The total watershed area is 2167 km²



Physical Setting and Climate

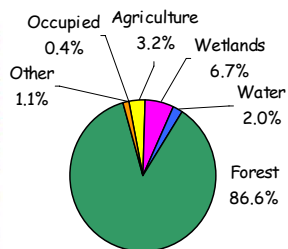
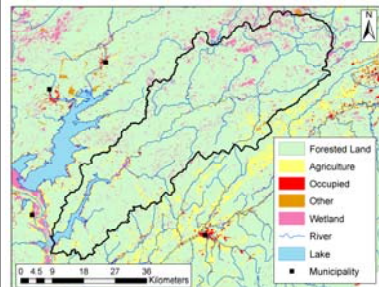


The average summer temperature ranges between 15 and 18°C while average winter temperatures range from -6 to -10° C. The Canaan watershed receives about 1100 mm of precipitation annually.

Fish Community

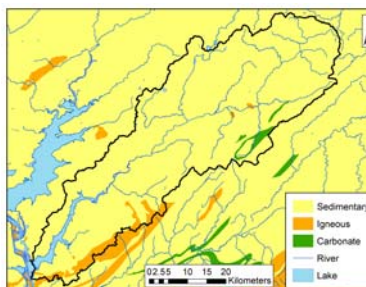
There are at least 11 species of fish that typically reside in the Canaan River. These species include: landlocked salmon, smallmouth bass, smelt, striped bass, sturgeon, trout, pickerel, muskellunge, burbot, yellow perch and white perch (Department of Natural Resources).

Land Use



Forested land and wetlands are the predominant land uses in the Canaan watershed.

Geology



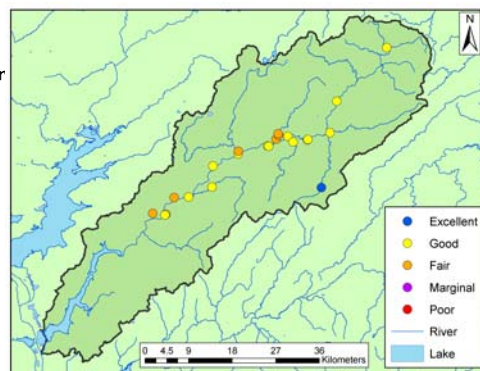
Water Quality Survey (1996-2006)

The Water Quality Index (WQI) is a tool that allows water to be classified into different categories based on the CCME Guidelines for Freshwater Aquatic Life. The index is a number between 0 and 100, with zero representing poor water quality and 100 representing excellent water quality. The categories for the index are as follows:

Excellent: 95-100 Marginal: 45-64
Good: 80-94 Poor: 0-44
Fair: 65-79

The following parameters are included in the Water Quality Index: aluminum, ammonia, arsenic, chloride, copper, dissolved oxygen, iron, lead, nickel, nitrate, pH, sulphate, total phosphorus, and zinc.

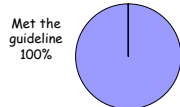
The map (right) depicts the location of the sample sites within the Canaan watershed and indicates the calculated WQI rating for each site.



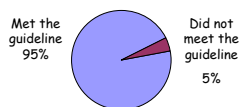
Key Indicators

In addition to using the CCME Water Quality Index, four key indicators of water quality were evaluated against available guidelines. E. coli is compared to recreational use guidelines, while the other indicators are compared with freshwater aquatic life guidelines.

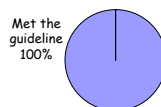
Dissolved Oxygen



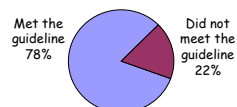
E.coli



Nitrate



pH



Community Involvement

The Canaan-Washademoak Watershed Association was formed in 2002. The association's main concerns include water quality, recreational fishing, and the social structure of local communities. Within their watershed they are involved in outreach and partnering activities as well as various types of ecological monitoring such as water quality monitoring. One of their main goals is to protect and enhance the ecological structure and function of the Canaan River.



Summary

Based on the WQI, 1 site had excellent water quality, 15 sites were good and 9 sites were fair.

- The fair water quality may be due in part to land disturbance and clearing, especially the removal of riparian vegetation and allowing livestock direct access to streams, which results in increased erosion.
- Of the four key indicators, E.coli did not meet the guideline in 5% of the samples and pH did not meet the guideline in 22% of the samples. E.coli concentrations may have been elevated due to manure spreading on agricultural lands. Acid deposition ("acid rain") may contribute to pH values exceeding guidelines in some areas.

Additional Information

This watershed summary was based on data collected by the Canaan-Washademoak Watershed Association and the Department of Environment.

For additional information concerning this watershed, please contact the Department of Environment, Sciences and Reporting Branch, at (506) 457-4844.

Photos and maps by: Department of Environment