

**Fifteen years of freshwater biological monitoring at the Experimental Ponds Area
and other places in Newfoundland - experiences and suggestions**

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The Experimental Ponds Area is eight small lakes and their watershed at the headwaters of the northwest Gander River. Limnological data have been collected from the Area by Department of Fisheries and Oceans since 1977 for the purpose of documenting chemical, physical, and biological changes. In 1987 and 1989, similar monitoring programs were started at Stevenson's Pond on Grandy Brook (north of Burgeo) and at Harding Pond (on the Humber River in Gros Morne Park). Participating agencies include Forestry Canada, Conservation and Protection Branch, Canadian Wildlife

Service, Memorial University, and Parks Canada. Examples of seasonal, annual, and between-lake variations in water quality and the abundances of zooplankton, benthic invertebrates, and fishes are shown. Long-term anthropogenic (i.e., acid rain) and natural (i.e., stream flow and temperature) correlates of habitat quality are compared to biotic changes. Data are presented which show that short-term (5 years) trends may not be indicative of longer-term (15 years) trends and that frequency of observations and sampling interval are major determinants of long-term biotic trend indications.