

Water Program

Business Strategy

2012 – 2017

April 2012

## Theme 2: Data Management and Innovative Support for Long-term Watershed Research



Axel Anderson

FRI Water Program Lead

## FOREST HYDROLOGY RESEARCH IN CANADA

W. W. JEFFREY

*Research Scientist, Canada Department of Forestry, Calgary, Alberta, and  
Co-ordinator, East Slopes (Alberta) Watershed Research Program*

# The Walt Jeffrey Project

Axel Anderson

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## W. W. Jeffrey

Dr. Walter W. Jeffrey, associate professor of forest hydrology, University of British Columbia, was one of three persons killed on August 14 in a helicopter crash on the Liard River at Fort Liard in the North West Territories.



Born in Ayton, Berwickshire, Scotland, in 1933, Dr. Jeffrey obtained a Bachelor of Science degree (Forestry) in 1953 and a Bachelor of Science (Honours) degree in 1954 from the University of Edinburgh. He studied at the Swiss Federal Institute of Technology, Zurich, Switzerland during 1954-1955. He obtained a Master of Forestry degree from Oregon State University in 1956 and the Doctor of Philosophy degree from Colorado State University in 1968.

Prior to joining the U. B. C. Faculty of Forestry in 1966, Walt spent several years as a Research Officer and Research Scientist in the Forest Research Branch of the Canada Department of Forestry in Ottawa, Ontario, and Calgary, Alberta. In 1962 he was appointed Co-ordinator, East Slopes (Alberta) Watershed Research Program and in 1965 was appointed Section Head, Watershed Management and Tree Biology Research for Alberta, the North West Territories and the Yukon Region.

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# Data and Knowledge Paradigm

- How does data support development of knowledge?
- What data are worth preserving and sharing?
- What has value?

The screenshot shows the Weatheroffice website (www.weatheroffice.gc.ca) with a navigation menu on the left and a main content area. The navigation menu includes links for Warnings, Current Conditions & Forecasts, Radar & Satellite, Marine Info, Air Quality, Aviation Weather, Analyses & Modelling, Text Bulletins, Historical Weather, Educational Resources, About Us, FAQ, Links, and Site Map. The main content area features a "Forecast Quick Link" form with dropdown menus for "Select a Region" and "Select a Location", and a "Go" button. Below the form is a map of Canada with weather icons and temperatures for various cities. The website is branded with the Environment Canada logo and the text "Canada".

## Surface water quality data

Alberta Environment tests the water quality of surface waters, rivers, streams, lakes, wetlands - across the province. All water quality data is available through a Water Database System.

**Data disclaimer:** Before utilizing any of these reports, please read the attached disclaimer.

### Inventory of Sampling Locations and Water Quality Data

The [Inventory of Sampling Locations and Water Quality Data](#) report provides surface water quality sampling locations (stations), number of samples collected (sample count), sample count for four parameter groups (inorganics, trace metals, pesticides, organics), and the date ranges of sample collection.

### Trophic State of Alberta Lakes

The [Trophic State of Alberta Lakes](#) report summarizes average yearly values (concentrations) for all years of data for Alberta lakes. The variables summarized are three indicators of a lake's productivity or fertility: total phosphorus, chlorophyll-a and Secchi depth.

### River Network Station Water Quality Data

The River Network Station Water Quality Data report provides data for Long-Term River Network monitoring stations in Alberta. The report provides data in two ways:

### Lake Water Quality Data

The [Lake Water Quality Data](#) report provides data for the lake selected. The report can be viewed in two ways:

- **Detailed Data option:** provides all the data over the period of record, for several commonly requested water quality variables. The data are provided in table format.
- **Average Annual Trophic Data option:** provides annual averages over the period of record, for three variables that are commonly associated with a lake's productivity or trophic state: total phosphorus, chlorophyll-a, and Secchi disk visibility. The annual averages are provided in table or graph format.
- **Data download:** common water quality variables for one or more stations. The data are provided in table format.

Data used to produce these reports are refreshed frequently from the surface water operational database (WDS). Data will not appear in these reports until they have fully passed the AENV validation process.

These reports are designed for on-screen viewing. Data reports can be downloaded to a comma delimited text file (.csv) and most graphs can be exported to an Acrobat file (.pdf). Reports are best viewed using Internet Explorer browser. Printer-friendly versions are not available at this time.

For further information on how to run these reports, send your questions to [AENV-Web.SWQ@gov.ab.ca](mailto:AENV-Web.SWQ@gov.ab.ca)

If you require data not included in these reports, please contact [swq.requests@gov.ab.ca](mailto:swq.requests@gov.ab.ca).





# Theme Objectives

- Determine if data management systems can be designed to archive watershed research data while still respecting unique privacy issues and at the same time foster researcher collaboration and preserve research investment.
- Determine the location and research value of historical datasets.
- Determine if the potential research value can be captured by archiving datasets with the intent of making them accessible for future research projects.
- Explore the history of forest hydrology research in the Province of Alberta and determine what how it relates to current and planned future initiatives.
- Determine if the coverage of long-term research sites is adequate to address potential future needs of the FRI partnership.
- Determine if the researcher and practitioner capacity is adequate to support long-term research sites and to respond to changing knowledge needs.

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**Long-term watershed monitoring - From science to water management II**

**Session Coordinator: Sarah Boon**

**Session Chairs: Sarah Boon & Rita Winkler**

**HW11B - Friday June 8, 2012 - 13:30 to 15:00 - Room: KC 305**

**One hillslope does not a watershed make: An analysis of throughflow thresholds across 30 hillslopes for 6 years**

K. Jencso, B. McGlynn & L. Marshall

**Using long term agricultural runoff water quantity and quality monitoring data in the initial assessment of more recent installations**

J. A. Elliott, D. A. A. Gallen, J. A. Vanrobaeys & J. Yarotski

**Sensitivity of Yukon hydrologic response to climate warming: A case study for community and sectoral climate change adaptation**

J. R. Janowicz

**Not losing the investment: Can we archive data and foster collaboration between watershed researchers?**

S. Ouellet, A. Anderson & M. Scarth





**WATER AND  
ENVIRONMENTAL  
HUB** BETA  **EXPLORUS**



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