



# SOURCE WATER PROTECTION PHASE I: RISK ASSESSMENT TOOLS AND DATA PROJECT BACKGROUNDER

## Introduction

- Source water is untreated, raw water from surface or groundwater sources used for drinking water or other uses. Source Water Protection (SWP) is a risk management process designed to maintain or improve the conditions of water through proactive and collaborative identification, validation, assessment, and management of risk.
- Having access to safe and secure drinking water sources is important for the health and well-being of Albertans, as stated in the Government of Alberta's *Water for Life* strategy. Many factors, including a growing population, climate change, aging infrastructure, and increasing development have increased the need for a more integrated approach to protecting sources of drinking water in Alberta. Protecting these sources can reduce public health risks and disruption in public services and strengthen natural ecosystems.

## Outcomes

- This project developed an online centralized inventory of tools and data, and a suite of associated educational resources within an existing online web tool, The Healthy River Ecosystem Assessment System™ (THREATS), to improve water-related data access, analysis, and visualization to support source water protection (SWP) planning.
- THREATS integrates extensive environmental data with powerful analytical tools to help:
  - Delineate watersheds with precision using interactive mapping tools.
  - Characterize landscape activities including land use, municipal boundaries, and protected areas.
  - Assess water quality and quantity through robust statistical analysis and trend identification.
  - Visualize complex data through user-friendly interactive maps, charts, and dashboards.
  - Access real-time and historical data from multiple sources including Water Survey of Canada, provincial databases, and Environment Canada.
  - Identify potential contamination risks to drinking water sources.
- The intent was to facilitate quick and convenient analysis which would support multiple uses, such as assisting drinking water providers to enhance their source water risk assessment and collaboration efforts, and supporting Watershed Planning and Advisory Councils (WPACs) to develop State of the Watershed reports.

- Engagement on the tool was conducted to gather feedback on its use from potential end users, which included webinars and workshops. Feedback from these sessions included that the user interface needed improvement and communications about the tool and SWP were missing.
- In response to this feedback, webpages (with general information on source water protection and the web tool) were created for the Alberta Water Council (AWC) website, the consultant redesigned the THREATS user interface, and a user-aimed educational tutorial was created in THREATS to help users navigate and understand the data and functions available.

## Recommendations

- The project team developed three recommendations based on key learnings from the project.
  - Recommendation 1: Form a “Source Water Protection Phase II” working group to scope a project with the goals of communicating about the tool to potential users and to teach municipalities, Indigenous communities, Watershed Planning and Advisory Councils, and other relevant groups how to use THREATS.
  - Recommendation 2: Form a source water protection “data committee” to ensure relevant and up-to-date information is included in the tool.
  - Recommendation 3: AWC to write a letter to Alberta Environment and Protected Areas to support their initiative to connect the Water Quality Data Portal to DataStream.

Funding for this project was provided by Alberta Innovates and Alberta Environment and Protected Areas.

## For more information

Copies of the report and more information on the AWC and the Source Water Protection Phase I: Risk Assessment Tools and Data Project can be found at <https://www.awchome.ca/projects/source-water-protection-phase-1-risk-assessment-tools-data-28/>.

The THREATS tool can be accessed at <https://threats3.greenlandgroup.ca/>. Please use the Contact Us button on the landing page to submit technical questions.

*The Alberta Water Council (AWC) is a collaborative partnership that provides leadership, expertise, and sector knowledge and perspectives to help governments, Indigenous Peoples, industry, and non-governmental organizations to advance the outcomes of Water for Life.*

For more information on the project, please contact [albertawatercouncil@gmail.com](mailto:albertawatercouncil@gmail.com)