

I am presenting from the mouth of Átl'ka7tsem / Howe Sound on Bowen Island, part of the traditional, unceded lands of the Squamish Nation. As an aside Átl'ka7tsem / Howe Sound was recently designated Canada's 19th biosphere region by UNESCO on Sept.15

This two year project to update the Lower Fraser Streams was funded by the Environmental Damages Fund, administered by Environment Canada and Climate Change.

The Community Mapping Network worked with the BC Conservation Foundation to complete this update of the small first order streams for the Lower Fraser River, Hope to the estuary.



PROJECT RATIONALE:

Accurate maps of watercourses across jurisdiction boundaries are critical for many activities including ditch maintenance, water quality issues and application of the BC Riparian Area Regulations. This information is needed to prioritize fish habitat restoration projects for impacted habitat by decades of cumulative effects from human activities and to prioritize intact habitat for protection conservation.




This presentation is an overview of the recent Lower Fraser Streams Update for some of the important habitats of species at risk in the Fraser Valley.

NOTE:

The SCCP web site has a wealth of SAR related information and under the RESOURCES tab, the Mapping Tools item lists the Community Mapping Network along with many other data sources.




To view the web mapping for this Fraser Streams Update, go to the SHIM atlas description page from either the [“Atlas Gallery”](#) or the drop-down [“Atlas Gallery Index”](#) on the home page for CMN <https://cmnbc.ca>


Community Mapping Network
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SHIM (SENSITIVE HABITAT INVENTORY AND MAPPING)



[CLICK HERE TO VIEW ATLAS](#)

As resource development and human populations increase in British Columbia, pressures on all resources and services have accelerated. Rapid growth has often overwhelmed the ability of local planners to manage land and preserve sensitive habitats. This has resulted in loss or degradation of habitats that once supported fisheries and wildlife. Sensitive ecosystems and critical habitats are becoming increasingly threatened.

There is an urgent need for better methods to conserve and protect these habitats. The Sensitive Habitat Inventory and Mapping (SHIM) Atlas represents a response to this need. The SHIM Atlas is a land-planning, interactive GIS tool that identifies sensitive aquatic and terrestrial habitats. The Atlas is intended to provide community stewardship groups, individuals, regional districts and municipalities with an effective low cost delivery system for information on these local habitats and associated land uses. The awareness and commitment to local resources is an important process created through cooperation of local communities, First Nations, municipalities, planners, and managers. SHIM mapping and data systems developed to date reflect the use and interests of many of these agencies and community groups.

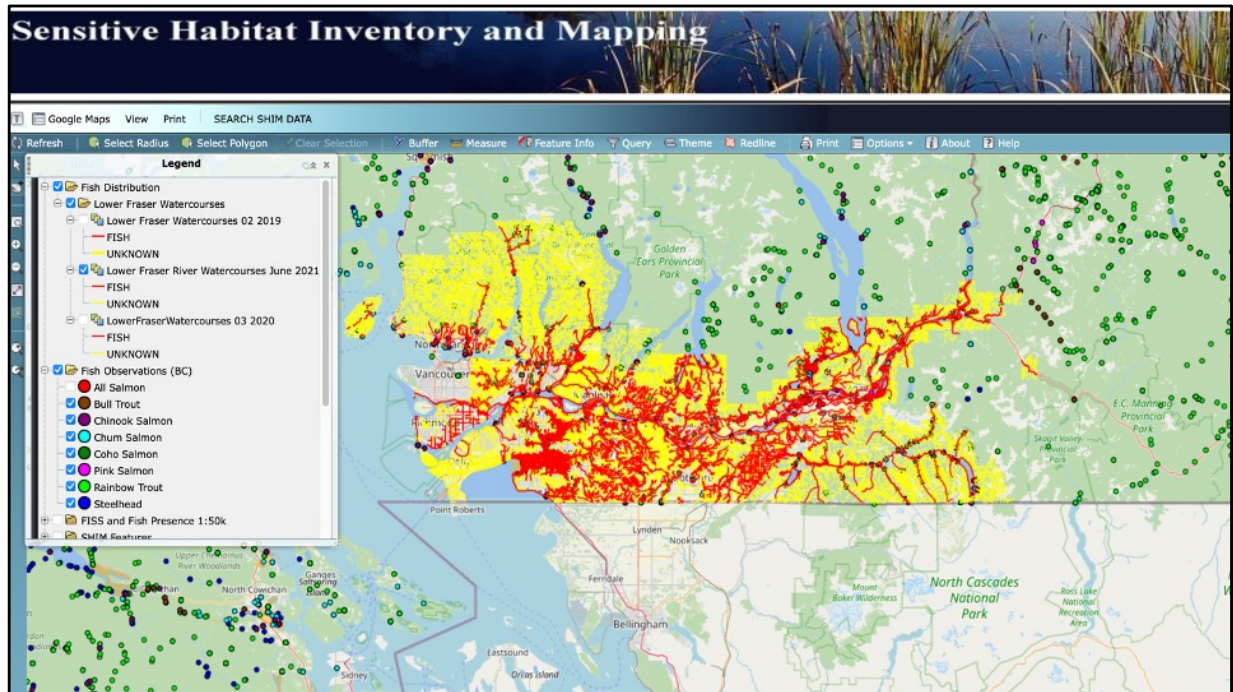
The **SHIM Methods & Standards**, widely used by local governments in BC since 2002, have been the basis for 1:5,000 fish habitat inventory. SHIM methods were designed to use with a Trimble survey grade GPS to provide stream center line accuracy. But now that mobile devices (with GPS) are everywhere it is time for a **SHIMobile** version focused on the most frequently mapped point features. Check out the "Atlas Update & News" section below for announcements about this new feature.

The primary functions of the SHIM Atlas are:

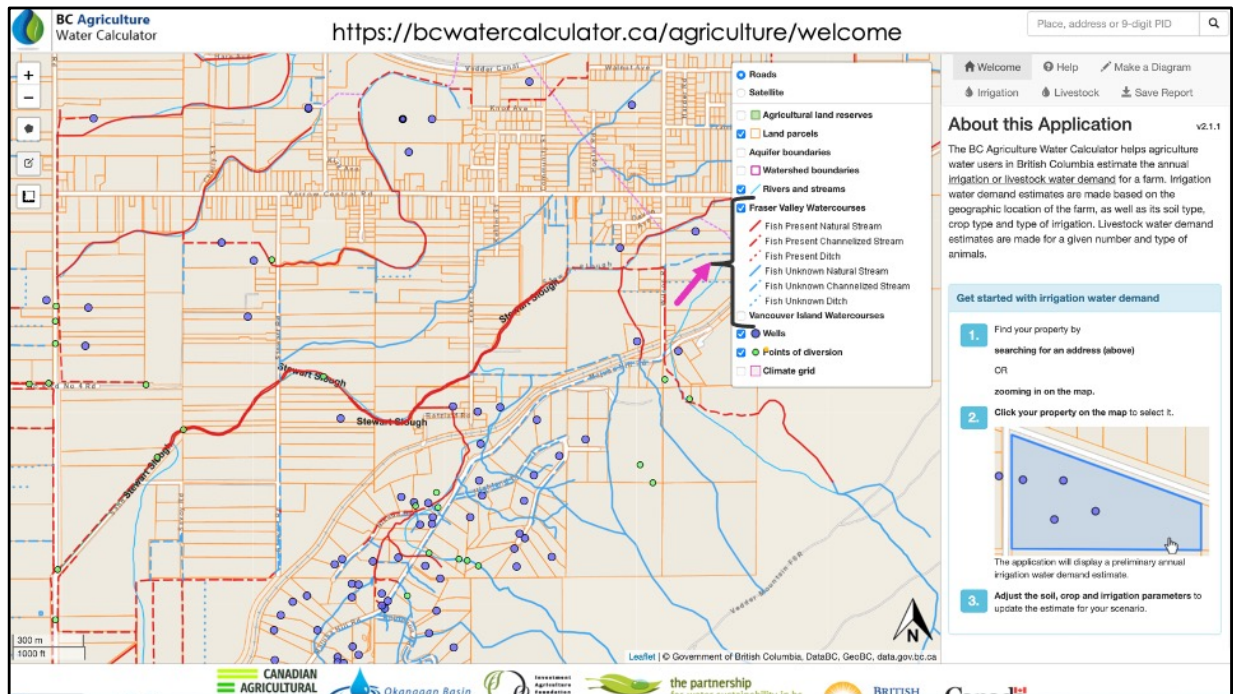
- identify sensitive habitats and resources within local communities;
- integrate property boundaries, and road networks with locations of sensitive resources to facilitate official community plans and development permit applications;
- work within an interactive Geographical Information System (GIS) to provide useful map products for analysis and effective communication;
- facilitate updating and exchange of information;
- establish partnerships with provincial and municipal governments, stakeholders, and the public to protect and manage fish habitat.

This description page has lots to say about the Sensitive Habitat Inventory & Mapping (SHIM) method, used by many local governments around BC since 2001 to inventory detailed fish habitat.

SHIM mapping **and the “Lower Fraser Streams Update”** have been developed to meet the business needs of many governing agencies and community groups.



This is the current web map on CMN showing the extent of the Lower Fraser Streams Update along with BC Government documented Fish Observations. We used the latest BC Fish Observations data to validate the RED, FISH PRESENT streams. Additional local government FISH PRESENT attributes were also used to identify RED FISH PRESENT streams.

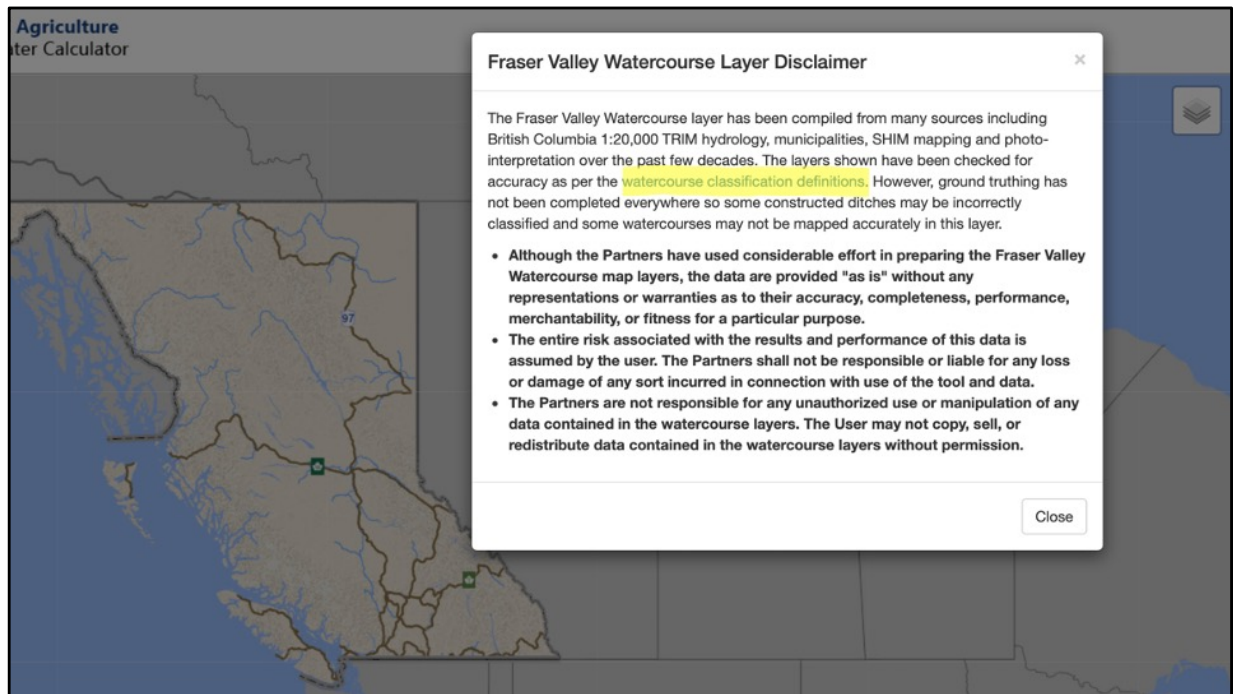


Here is an example of how these data are being used by the BC Agriculture Water Calculator, developed by the Partnership for Water Sustainability in BC.

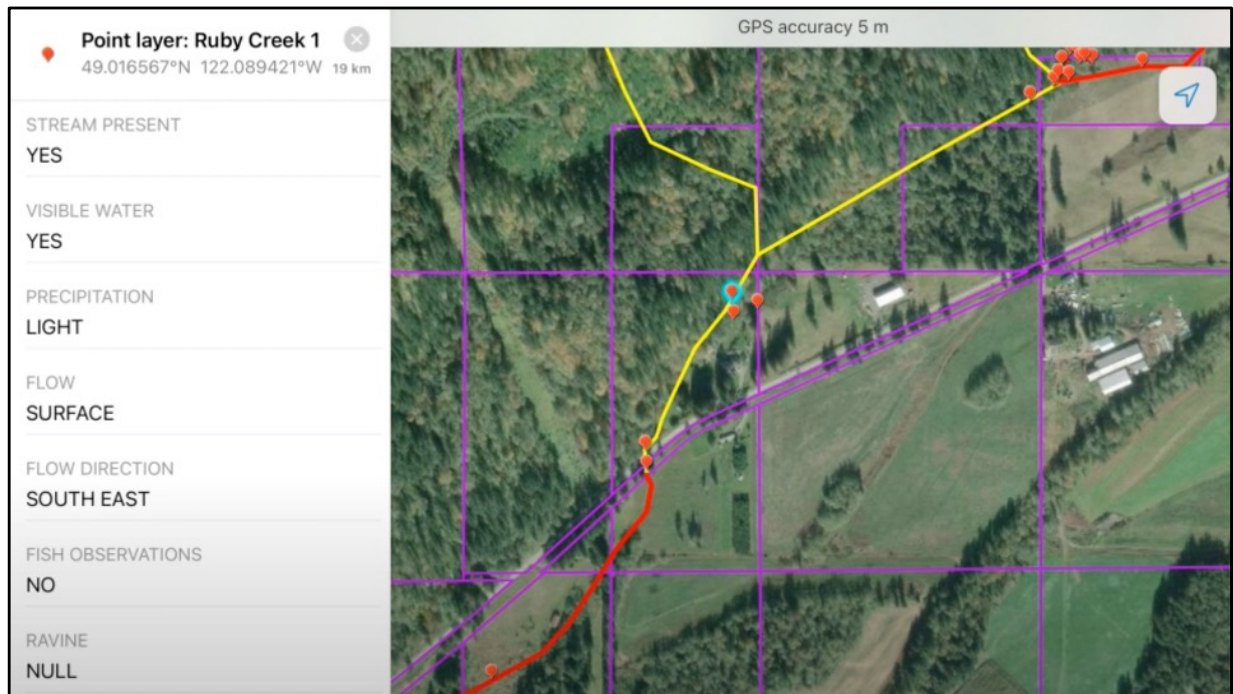
<https://bcwatercalculator.ca/agriculture/welcome>

The CMN provides a customized view of the Streams Update data layer using a Web Mapping Server (WMS), indicated by the bracket in this view of Water Calculator near Yarrow.

Notice there is also a second layer group for southern Vancouver Island that CMN prepared for the Water Calculator – no field verification of streams was used.

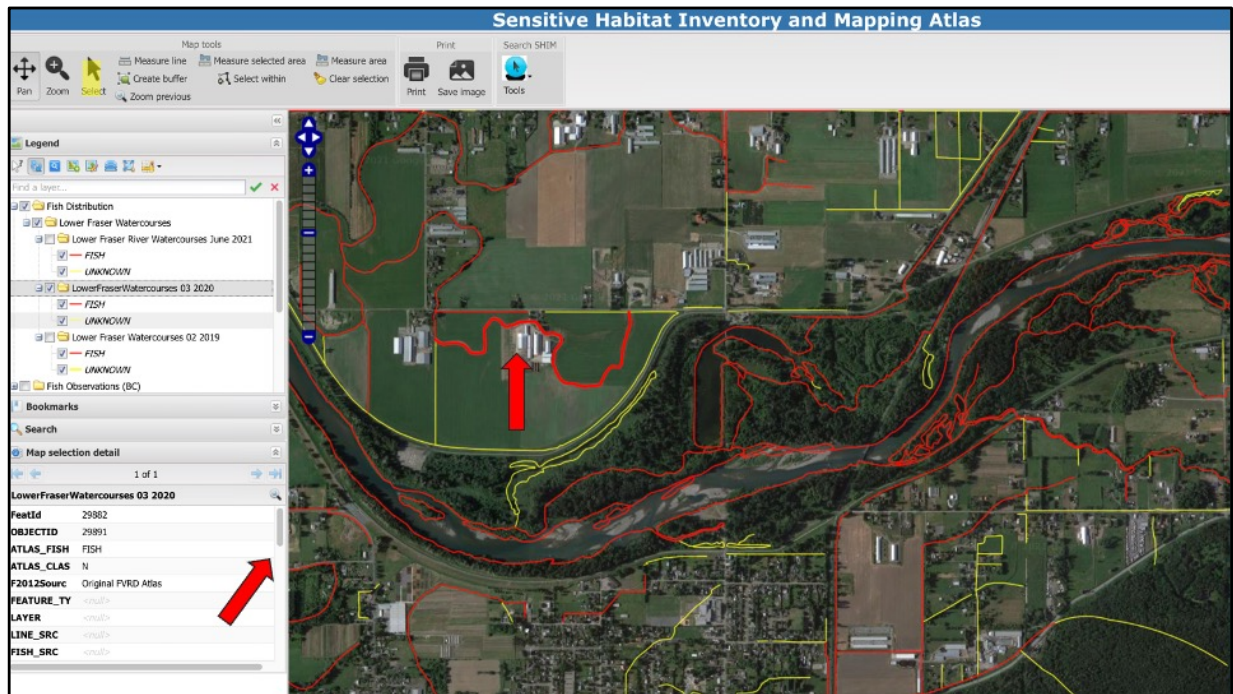


When you first turn on this Lower Fraser Streams layer in the Water Calculator (called the Fraser Valley Watercourse layer) a disclaimer pops up. Along with the expected disclaimer it describes some of the limitations of the Streams Update project and a link to the [watercourse classification definitions](#) as in the legend in the previous slide.



We used LiDAR visually in some cases to help verify the location of a questionable watercourse. This helped to prioritize areas where the field crew would visit. Field observations were limited to confirming stream location, flows and possibly fish observations.

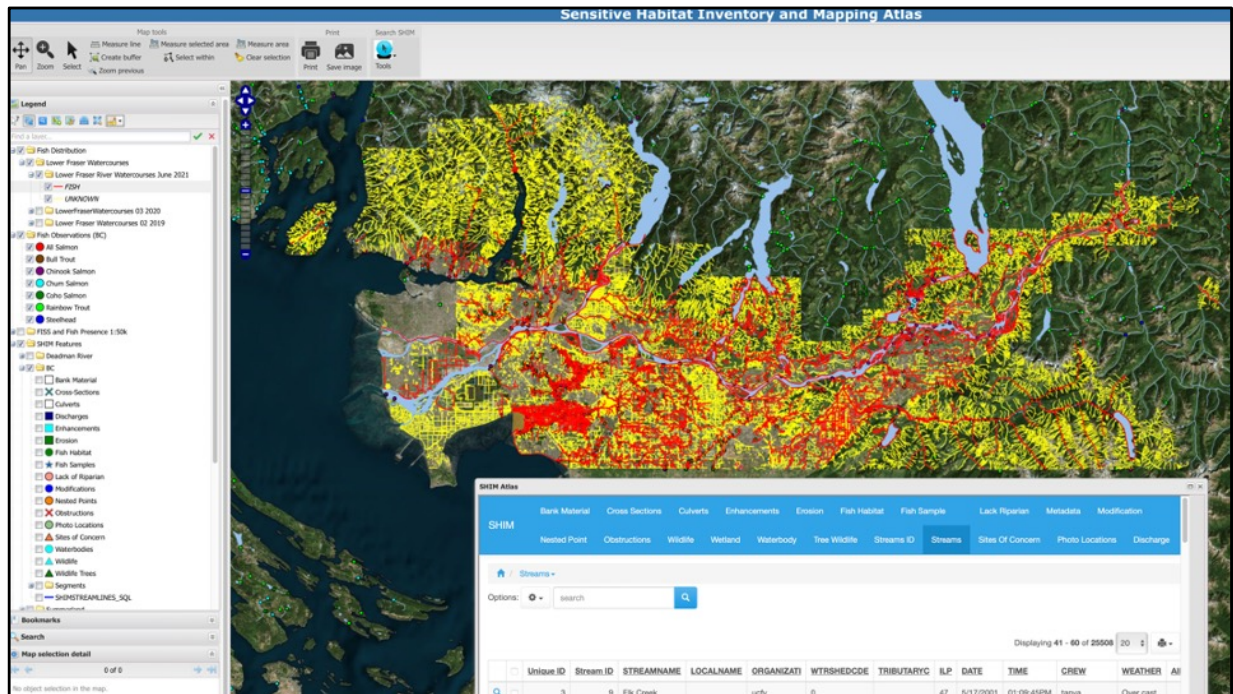
This is a view of a few field observation locations using the ESRI Collector app. The attributes on the left are for the point with a blue halo. The purple lines are lot boundaries.



To view the attributes for a stream or stream segment use the “Selection” tool (yellow highlight, upper left in the map frame) and click/select a stream line. The attributes are displayed lower left under the Map selection detail heading.

NOTE:

This is how the SHIM Atlas will look in the coming months and the same stream selection methods can be used on the current SHIM Atlas except the Map selection detail window will pop up rather than be anchored to the lower left.



Soon the SHIM Atlas will have a different look with improved tools to view and query data in the atlas.

But CMN was not able to build a backside database with web forms for the Streams Update as we have for SHIM data, seen here.

The screenshot displays the SHIM Atlas web application interface. The top navigation bar includes tabs for Bank Material, Cross Sections, Culverts, Enhancements, Erosion, Fish Habitat, Fish Sample, Lack Riparian, Metadata, Modification, Nested Point, Obstructions, Wildlife, Wetland, Waterbody, Tree Wildlife, Streams ID, Streams, Sites Of Concern, Photo Locations, and Discharge. The 'Streams' tab is currently selected.

Below the navigation bar, there is a search bar and a table of stream data. The table has columns: STREAMNAME, LOCALNAME, ORGANIZATI, WTRSHED, TRIBUTARY, ILP, DATE, TIME, CREW, WEATHER, and WATER. The table shows three rows of data for Elk Creek.

Red arrows highlight several features:

- An arrow points to the 'Export results' button in the 'Options' menu.
- An arrow points to the 'Advanced search' button in the 'Options' menu.
- An arrow points to the 'Show search panel' button in the 'Options' menu.
- An arrow points to the 'Export' button in the 'Options' menu.
- An arrow points to the 'Print' button in the 'Options' menu.
- An arrow points to the 'Records Per Page' dropdown menu.
- An arrow points to the 'Scope' dropdown menu.
- An arrow points to the 'LOCALNAME' search filter.
- An arrow points to the 'STREAMNAME' search filter.

The 'Export' menu is open, showing options for Data range (All records, Current page only), Data format (formatted values, raw values), and Output format (Excel 2007, Word, CSV (comma separated values)).

The 'Options' menu is open, showing options for Export selected, Advanced search, Show search panel, Export results, and Print.

The 'Records Per Page' dropdown menu is open, showing options for 10, 20, 30, 50, 100, 500, and All.

The 'Scope' dropdown menu is open, showing options for Print all pages, Print this page, and Print selected.

The 'LOCALNAME' search filter is open, showing a search bar and a dropdown menu with options: Contains, Equals, Starts with, More than, Less than, Between, Empty, and Is not empty.

The 'STREAMNAME' search filter is open, showing a search bar and a dropdown menu with options: Contains, Equals, Starts with, More than, Less than, Between, Empty, and Is not empty.

This is an overview of the web form's advantages which provide advanced searching of the database, data export, a range of records displayed in the main table and printing of the table view (red arrows).

