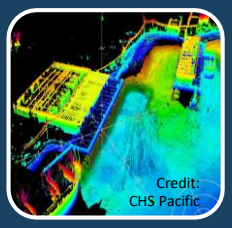
Fieldnotes

Spotlight on the Canadian Hydrographic Service

The Canadian Hydrographic Service (CHS) studies Canadian waters to ensure their safe, sustainable, and navigable use. To achieve this, the CHS identifies underwater features, monitors tides, water levels and currents, and produces nautical charts and publications.



BATHYMETRY measures the depth of the seafloor with the goal of positioning underwater features. The data can be used to identify hazards, classify habitats, create nautical publications, and perform time series studies.

TIDES, WATER LEVELS & CURRENTS monitoring activities facilitate the measurement of fluctuations in sea level height caused by lunar and atmospheric forces, and by the unique shape of water bodies.

CHARTS & PUBLICATIONS display and describe information regarding natural and human-made features which influence route planning and decision-making. Members of the public may browse online charts or the paper chart catalogue.

COMMITTED TO DATA ACCESSIBILITY

The CHS in Pacific Region received 178 data requests in 2024-25.

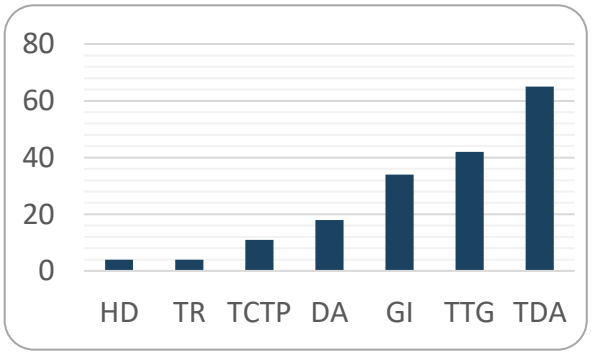
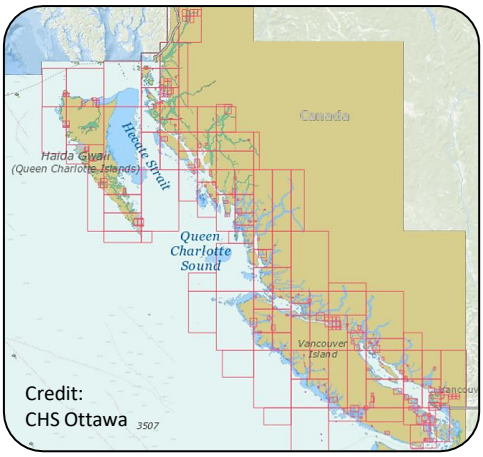


Figure 1. CHS Pacific data requests in 2024-25:

- Historical Documents (HD: 4)
- Tsunami Response (TR: 4)
- Tide & Current Table Publications (TCTP: 11)
- Data & Analysis (DA: 18)
- Geospatial Information (GI: 34)
- Temporary Tide Gauges (TTG: 42)
- Tidal Data & Advice (TDA: 65)

Publicly available data

- NONNA (Non-Navigational) Portal: bathymetric data at 10m or 100m resolution
- DFO's data viewer: bathymetric data coverage, charts, marine geospatial layers



Map 1. Pacific navigation chart coverage: 384 electronic charts and 169 paper charts.

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Cat. No. Fs141-7E-PDF | ISSN 2816 5268

DEPTH OF KNOWLEDGE: BATHYMETRIC APPLICATIONS

Investigating the seafloor

Bathymetry can be used to monitor the seafloor, including the observation of sensitive benthic areas for human impact.

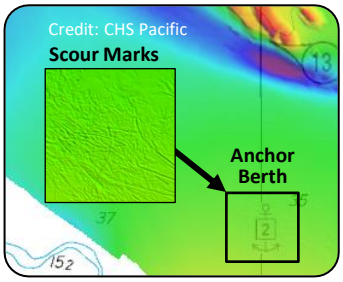


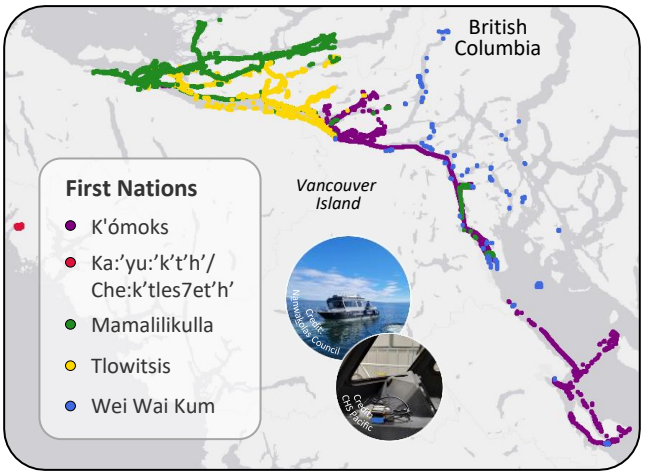
Figure 1. Bathymetry of the seafloor, showing scour.

For example, anchor scour marks can be identified to mitigate their influence on marine habitats.

Did you know?
CHS charts more than 75 anchor berths in the Pacific Region.
Learn more...

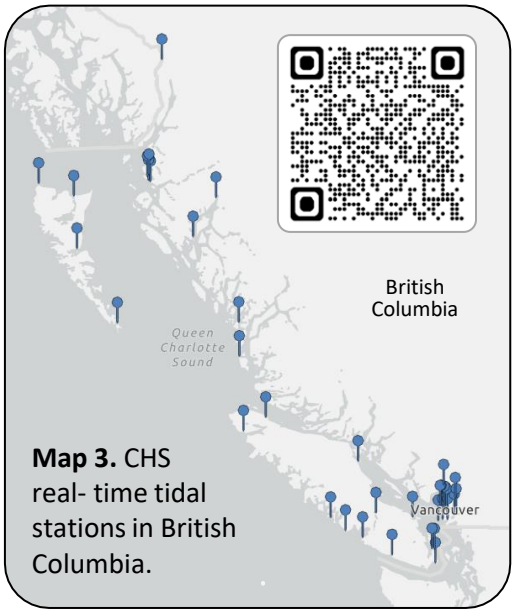
Community hydrography

The CHS assists First Nations to collect hydrographic data in their Territories. Five Vancouver Island First Nations are now equipped with bathymetric data loggers to support marine protection and habitat mapping projects.



Map 2. Bathymetric data collected by First Nations in 2024-25.

Tides, water levels, and currents monitoring



Map 3. CHS real- time tidal stations in British Columbia.

Water level information is critical to voyage planning. The CHS maintains a network of 97 sensors on the Pacific Coast, which measure tides, water levels, and currents.

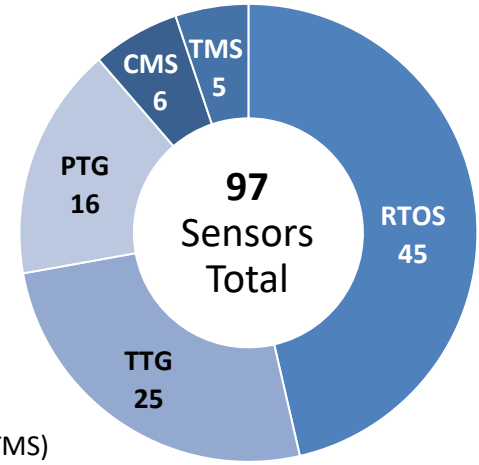


Figure 2 (right). Pacific Coast CHS water level and current sensors, by type:

- Real-time Observation Stations (RTOS)
- Temporary Tide Gauges (TTG)
- Permanent Tide Gauges (PTG)
- Current Meter Stations (CMS)
- Tsunami Monitoring Stations (TMS)

OFF THE CHARTS: HYDROGRAPHIC MAPPING APPLICATIONS

Restoring Indigenous place names

In 2024-25 CHS restored the following Indigenous place names on its navigation charts, in the Éy7á7juuthem (left) and sháshishálem languages (right):

- Tohkwonon to toqʷanan
- Kahkeeky to q̓aq̓ɛyq̓ay
- Kwehtums kahkeeky to q̓ʷətəms q̓aq̓ɛyq̓ay
- Pahkeeahjim to p̓aq̓iʔajʧm
- Tuxwnech to toxʷnač
- Teehshohsum to ƚtšosəm
- Ahgykson Island to ʔaʔgayqsən
- Tlukeht kwukthyehs to θoqʷɛt kʷukʷθays
- Jervis Inlet (northern arm) to lekw'emin
- Pender Harbour to kalpilin
- Earls Cove to skelh
- Deserted Bay to ts'unay
- Mount Victoria to k'els

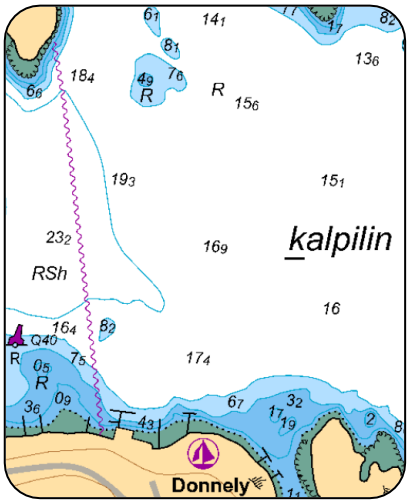


Figure 3 (right). Paper Chart 3535 showing the restored place name *kalpilin* in the sháshishálem language.

Identifying biological features

CHS provides data on biological features, which support habitat conservation. For example, a 2023 collaborative effort was able to predict kelp canopy presence at 88 to 94% accuracy off the east coast of Haida Gwaii.

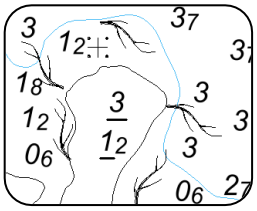
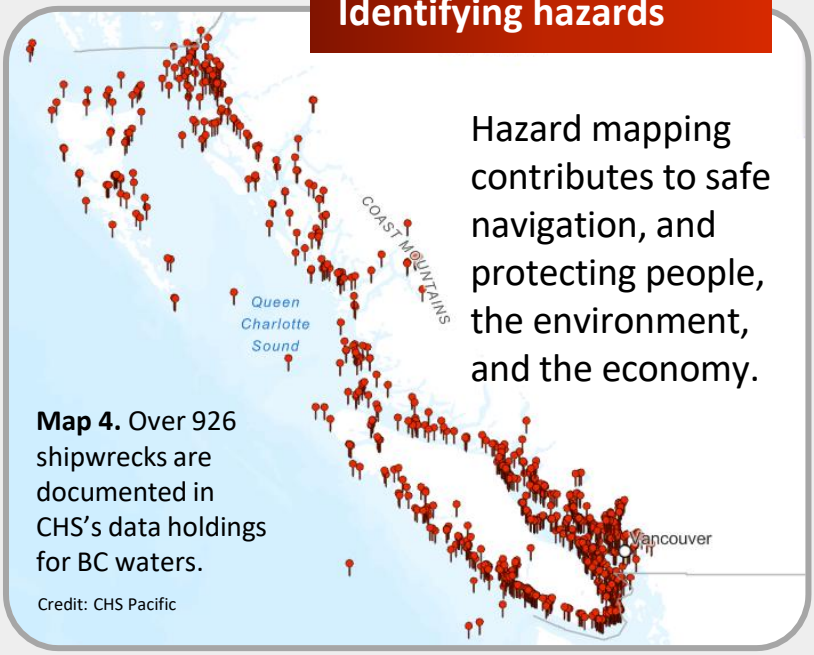


Figure 4. Field sheet denoting depth and kelp presence.

Identifying hazards



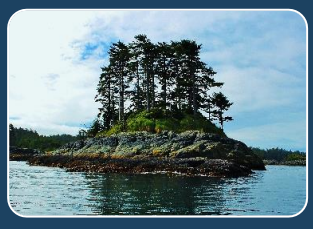
Hazard mapping contributes to safe navigation, and protecting people, the environment, and the economy.

Map 4. Over 926 shipwrecks are documented in CHS's data holdings for BC waters.

Credit: CHS Pacific

Contact CHS Pacific Region

Credit: CHS Pacific



Credit: CHS Pacific

- **Bathymetry:** Stacey.Verrin@dfo-mpo.gc.ca
- **Community Hydrography:** Michel.Breton@dfo-mpo.gc.ca
- **Tides and Water Levels:** Denny.Sinnott@dfo-mpo.gc.ca
- **Navigation Charts:** Elizabeth.Bonner@dfo-mpo.gc.ca
- **Questions or comments:** CHSInfo@dfo-mpo.gc.ca

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