PACIFIC SALMON FOUNDATION

THE STRAIT OF GEORGIA DATA CENTRE

PSF's Centralized Repository for
Strait of Georgia Marine Ecosystem Data

VOL.3 | October 2022

psf.ca

This and cover photos by Eiko Jones

A BIG ANNOUNCEMENT

2022 has been a busy year for the Strait of Georgia Data Centre! As we continue to make information on the Strait of Georgia accessible to all, we have created new educational resources and added more data to the portal. Our biggest announcement, however, is our new tool, the Strait of Georgia Marine Reference Guide — read on to find out more about it!

SOG MRG BETA RELEASE

Back in March of 2022, after years of preparation, the Strait of Georgia Data Centre launched the Strait of Georgia Marine Reference Guide (SOG MRG). This new tool allows users to search and visualize marine data in the Strait of Georgia through a sweeping interactive map platform. Currently in a 'beta release', meaning we are still working on further refinements and improvements, we are excited to offer the SOG MRG to you for data access and visualization purposes.

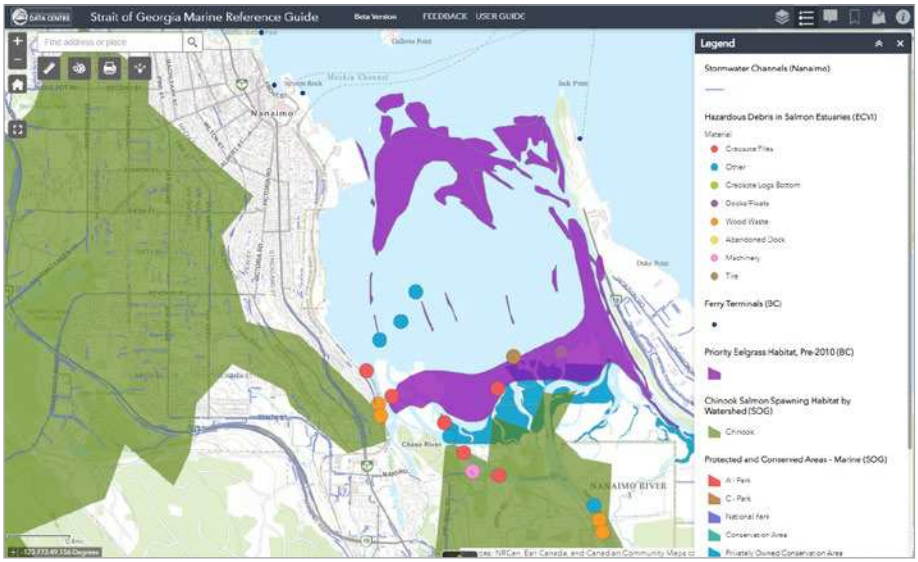


Figure 1: *The SOG MRG can be used to visualise multiple datasets on a single map. In this example, a combination of layers are being utilized to explore salmon habitat and anthropogenic threats in the Nanaimo River Estuary. Turned on are layers for Chinook spawning areas (green polygons), eelgrass habitat (purple polygons), and protected areas (blue polygons) along with the locations of various hazardous debris (multicoloured dots).*

Photo by Eiko Jones

ABOUT THE SOG MRG

The SOG MRG map currently contains 465 layers, with the number evolving as new sources of data emerge. You can search and explore the layers of data, turn them on and off, mix and match, while zooming in and out to the locations and extent of interest (Figure 1). Together, it allows you to form a picture of what is going on in the Strait like never before. The map also includes widgets (tools) that allow users to measure features, draw on the map, and create a PDF map that can be shared. Each of the data layers that are available in the map has a metadata record within our Marine Data BC Portal, which you can directly connect through a link (Figure 2). From there, you can learn more about the data set, as well as access a direct data download, link back to a source portal or find the contact information for whom to acquire the data from. Ultimately, the SOG MRG serves as a visual search engine and digital mapping library that can be used for educational and decision-making purposes.

The scope of the data topics within the SOG MRG ranges from ecology to human use to oceanography. Datasets have been sourced from diverse places, for example:

- Government of Canada Open Data Portal (e.g. Commercial Salmon in Season Catch Estimates)
- Province of BC Data Catalogue (e.g. Crownland Tenures)
- 25 municipal data portals (e.g. Zoning from the Municipality of North Cowichan)
- Partner non-profits (e.g. Spawning Beaches from the BC Forage Fish Monitoring Network)
- Consultants (e.g. ShoreZone shoreline inventory from Coastal and Ocean Resources)
- Pacific Salmon Foundation programs (e.g. Sea Surface Temperature from the Citizen Science Oceanography Program)

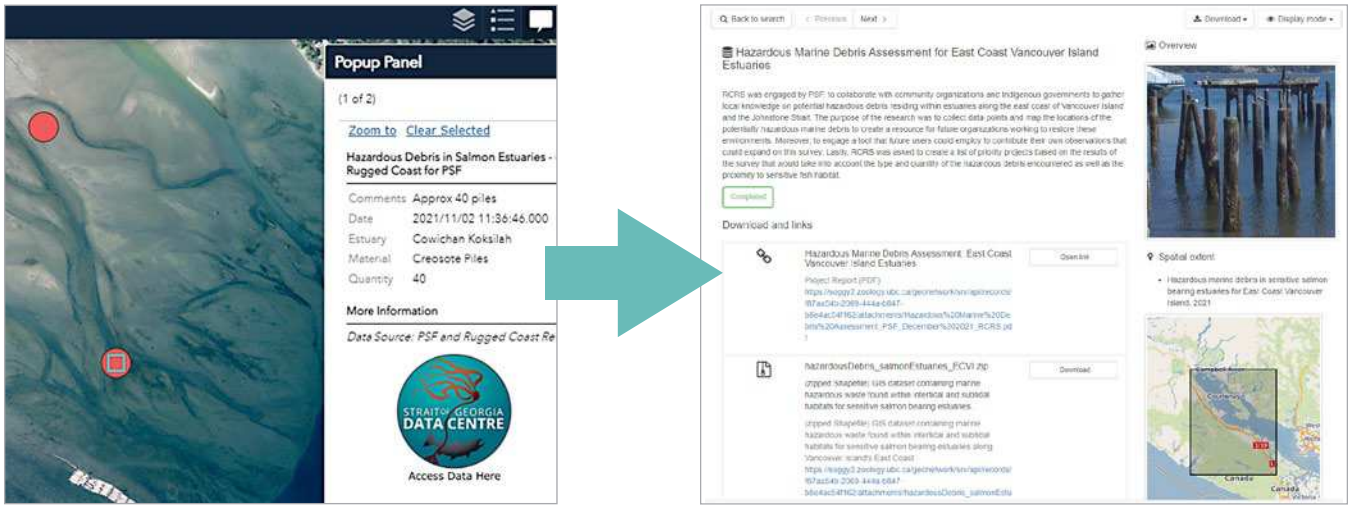


Figure 2: *The SOG MRG serves as a map-based interface for accessing many of the holdings in our Marine Data BC metadata library, furthering our goal of streamlining access to marine data.*

Photo by Nicole Christiansen

SOG MRG WORKSHOPS

With the SOG MRG beta release providing an interface for accessing and viewing hundreds of data layers, we want to know how we can tailor this broadly applicable tool to be of most use to you. This summer, SGDC staff started holding workshops with various targeted audiences (e.g. First Nations, environmental NGOs, municipal government) to increase awareness of the tool, demonstrate how it works, and learn from our users (Figure 3). In the workshops, we pose questions like:

1. Do you have any feedback on the usability of the tool?
2. What potential uses for the SOG MRG are you interested in?
3. Do you have any data you would be open to sharing for incorporation with the map?
4. Are there any data missing from the map that you would like to see?

Amongst other things, workshop participants have been providing valuable insight into how the map can be used, such as:

- Evaluating new conservation areas
- Identifying potential habitat restoration sites
- Mitigating impact on the environment when planning a shoreline development
- Providing educational outreach on the marine ecosystem to the general public

Generally, we are finding that the MRG is well received with many participants expressing how useful it will be. It is not just for planners or environmental professionals – we invite anyone to, as we say, sub-MRG into the data! We think it will be a useful tool for boaters, fishermen, and weekend warriors to explore.

If you have thoughts on potential uses of the map, or any of the other questions above, we'd love to hear it! You can submit your feedback through the SOG MRG User Survey. If you are interested in participating in a demonstration about the tool and learning from a workshop reach out to Ben Skinner (bskinner@psf.ca). We anticipate holding more workshops through the fall and winter.

Some layers that have been added to the SOG MRG and Marine Data BC metadata library include:

- Pacific Estuary Conservation Program Ratings (source: Pacific Birds Habitat Joint Venture)
- Vessel Generated Wake Study for Burrard Inlet (source: Tsleil-Waututh Nation)
- Official Community Plan Land Use Designation (source: District of North Saanich)
- Potential Impact Areas of Sea Level Rise by the Year 2100 in BC (source: Kerr Wood Leidal Associated Ltd.)
- Distribution of kelp on the BC coast extracted from CHS source data: 1904—2004 (source: DFO)
- Salish Sea Bioregion Impervious Surfaces (source: Salish Sea Atlas, Western Washington University)

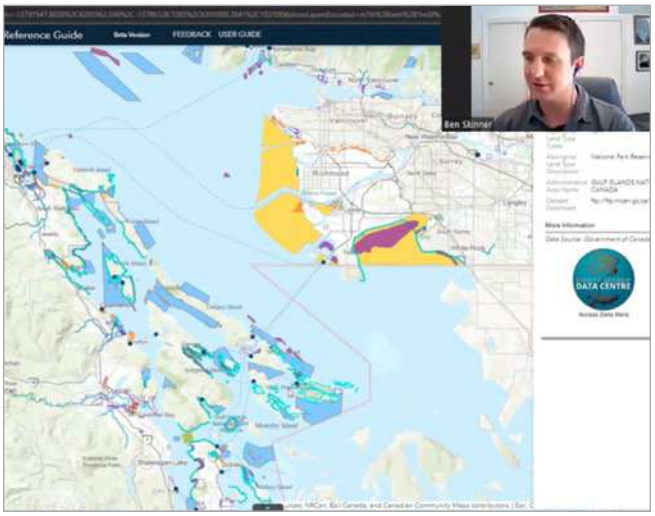
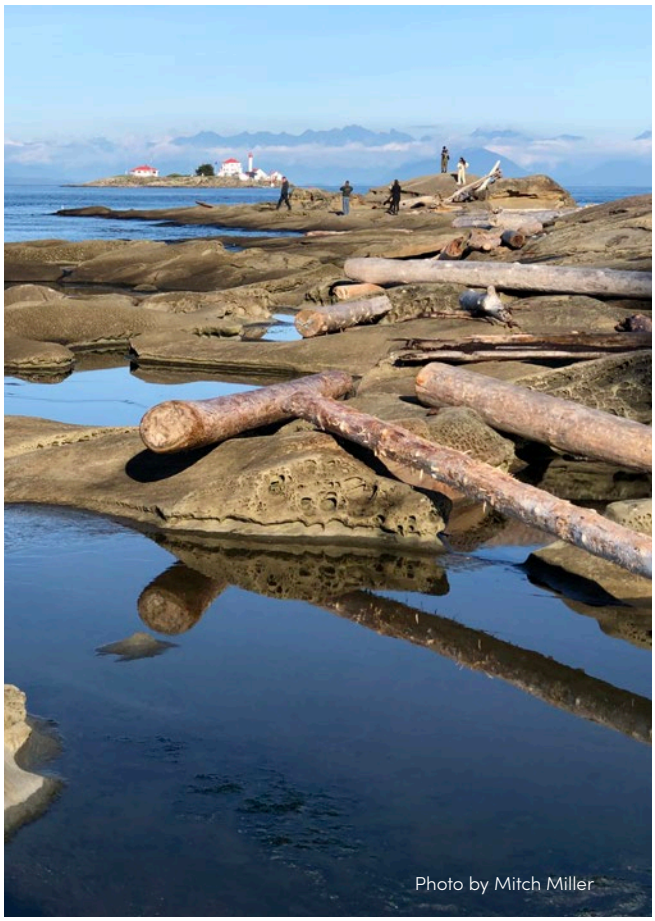


Figure 3: *Ben Skinner, PSF GIS Specialist, hosts a SOG MRG Workshop presented to NGOs and First Nations. Here he is demonstrating how the tool works using an example tailored to the interests and regional areas of the audience.*

A special thanks to MakeWay and West Coast Aquatic who have generously supported this project with time and materials.



NEW EDUCATIONAL PRODUCTS

While their main focus has been the SOG MRG, the Data Centre team have continued to support other PSF Marine Science projects by making other educational products that bring data to life. This is a common theme for the team, they often field requests for maps or make outreach products about the work that PSF Marine Science does. Below we highlight a recently created map dashboard and their latest story map.

ADULT SALMON DIET PROGRAM DASHBOARD MAP

Learn what salmon are eating in the Strait of Georgia through this interactive dashboard map produced in collaboration with the Adult Salmon Diet Program. The Adult Salmon Diet Program is a citizen-science initiative of the Juanes Lab at the University of Victoria and is primarily funded by the Pacific Salmon Foundation. Salmon digestive tracts and associated capture data are submitted by anglers and samples are processed by UVic researchers. The study seeks to improve our understanding of salmon feeding – particularly their winter diets; provide insights into forage fish distribution and ecology; and facilitates cost-effective monitoring of changes in the Salish Sea ecosystem. The map allows you to visualize detailed graphs of Chinook salmon stomach contents for different areas of the Strait of Georgia between 2017 and 2021 (Figure 4).

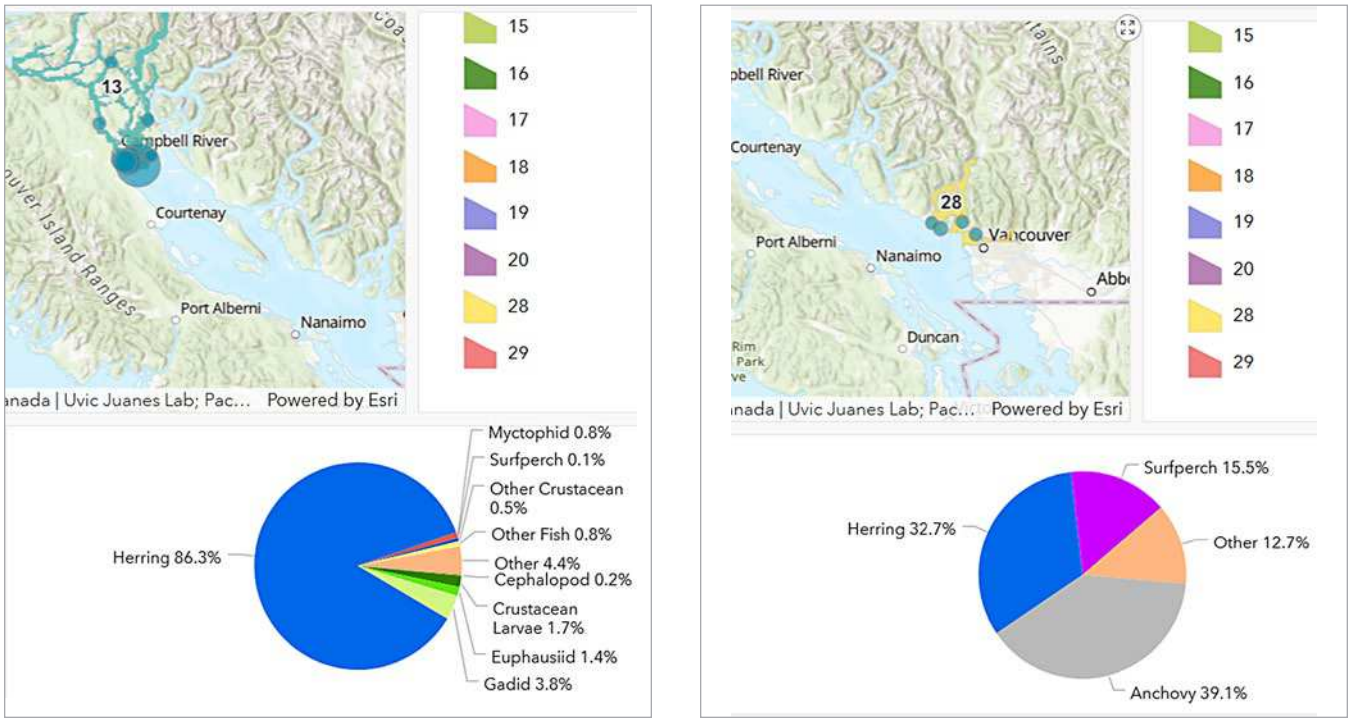


Figure 4: *By exploring the Adult Salmon Diet Program Dashboard Map you can learn what Chinook are eating in different areas of the Strait. In the examples captured above you can see that the diet in the northern areas around Campbell River (PFMA 13) are primarily made up of herring (blue portion of the pie chart), whereas around Howe Sound (PFMA 28), anchovy comprised the greatest proportion (gray portion of the pie chart). Results such as these also provide inferences into changes in the availability of prey and ecosystem wide shifts.*

Figure 5: *Climate Action for Salmon is a story map put together by the Strait of Georgia Data Centre Team.*

CLIMATE ACTION FOR SALMON STORY MAP

The effects of climate change are unequivocally one of the greatest threats to wild Pacific salmon. Among others, increased frequency of heatwaves and storm events, reduced glacier input in freshwater streams, and changing physicochemical properties in the Pacific Ocean are just some of the many issues adversely affecting salmon. If unchecked, the combined threat of climate change, urban development, and pollution could result in dire consequences for wild Pacific salmon populations. In a story map produced by the Strait of Georgia Data Centre, we cover the work the Pacific Salmon Foundation and partners are completing to mitigate and understand how climate change will impact wild salmon (Figure 5).

WHAT EXACTLY IS A STORY MAP?

Story maps are an engaging educational experience combining narrative text and other multimedia content such as images, videos, and interactive maps. Together these elements showcase a topic of interest in a way that all can enjoy and learn from. To date, we have created several story maps that focus on various datasets held within the Data Centre such as Citizen Science Oceanography program to Forage Fish monitoring. Our story maps are available through the Strait of Georgia Data Centre Storytelling page, check out this library of works here.

Photo by Danny Swainson

SEARCHING FOR RESEARCHERS

Did you know on the Data Centre website we have an inventory of researchers working in the Strait of Georgia? It is a great way to find who is working on what and to connect and collaborate! If you are a researcher and your name is not there, please let us know – we'd love to include you!

FOR FURTHER INFORMATION, PLEASE CONTACT:

GIS Specialist Ben Skinner bskinner@psf.ca
or Isobel Pearsall pearsalli@psf.ca

PACIFIC SALMON FOUNDATION
1682 West 7th Ave,
Vancouver, BC, V6J 4S6
Tel: 604-664-7664
Email: salmon@psf.ca

STRAIT OF GEORGIA DATA CENTRE
sogdatacentre.ca

sitka foundation

UBC Institute for the Oceans and Fisheries