



Western Washington University
Western CEDAR

Salish Sea Ecosystem Conference

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Pacific Region Contaminants Atlas

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Knight, Rob; Garrett, Chris; Ross, Peter; and Mason, Brad, "Pacific Region Contaminants Atlas" (2016).
Salish Sea Ecosystem Conference. 11.
https://cedar.wwu.edu/ssec/2016ssec/fate_and_effects_of_pollutants/11

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Pacific Region Contaminants Atlas – Content

www.pacifictoxics.ca



On the Community Mapping Network www.cmnbc.ca

Other priority ecosystems or geographical areas could be added



- Home
- Georgia Basin
 - What are the Contaminant Concerns in the Georgia Basin?
 - What is being done?
 - Success Stories
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Home

Georgia Basin

The Georgia Basin, or the "Salish Sea", is home to a rich diversity of plant and animal species. From sponge reefs to charismatic killer whales (*Orcinus orca*), the inland marine waters within the Georgia Basin is important habitat for over 3,000 species of fish, marine mammals, and birds.

The transboundary waters of Georgia Basin and of the Strait of Georgia, the northern portion of the Salish Sea, extend from the northern end of the Strait of Georgia in British Columbia, to the Oakland Bay at the south end of Puget Sound in Washington State. Although the names of the individual water bodies remain unchanged, the entire area is now officially recognized as the Salish Sea. In this Atlas, Georgia Basin will be used to indicate the Canadian portions of the Salish Sea.

In addition to the rich abundance and diversity of life that characterizes the transboundary



Tools:
➤ Map Explorer
➤ Contaminants Search Engine
➤ CODIS

Links and Fact Sheets provide more extensive information

Slide 1:

The Pacific Region Contaminants Atlas (PRCA) is designed to help users find out more about contaminants primarily in receiving marine environments. PRCA is hosted on the Community Mapping Network along with over 50 interactive web mapping applications – you can ask me more about CMN during the conference.

Those contaminants end up in the Salish Sea in many ways including sediment transport.

There is nothing in the PRCA specifically about sediments but the organizers asked I mention "**sediments**" to sort of relate to the other presentations in this session.

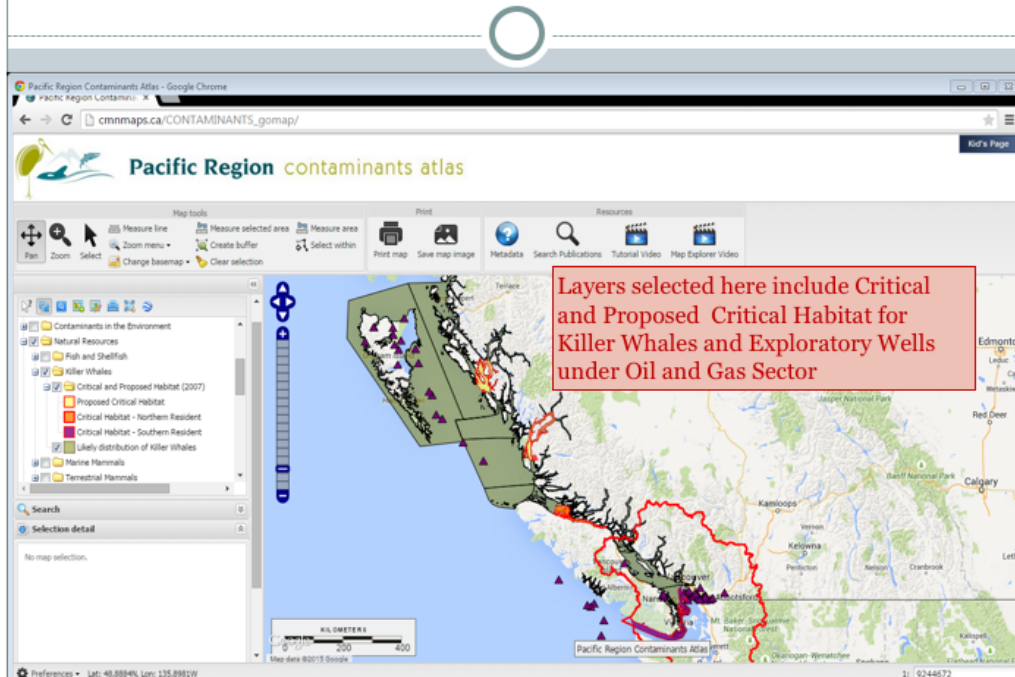
- The industrialized and urbanized Georgia Basin is the current focus of the PRCA. However, PRCA was intentionally designed to collect and provide information for other important eco-regions.
- The PRCA provides information on sources and levels of environmental contaminants, current issues and species of concern, such as salmon, killer whales and other marine mammals.
- There are examples of Government and community actions to address

these concerns and that everyone can take to help minimize their individual contributions to environmental pollution

- Various sections of the PRCA provide brief summaries on topics of interest and more detailed information on these issues can easily be accessed through links to fact sheets and other websites.

- There are also "Tools" in the PRCA to assist users to find published information. These include:
 - the Contaminants Database Search Engine
 - the Map Explorer with lots of geo-referenced data and
 - CODIS (which I will come back to) is one of those data sets about research findings mostly outside of the Georgia Basin.

PRCA – Map Explorer



Slide 2:

Here are some examples of what you will find in the Pacific Region Contaminants Atlas:

- The Map Explorer contains over 200 layers depicting information and datasets
- Map layers identify and provide information on contaminant sources; environmental levels; natural resources; sensitive and protected areas; crucial areas with respect to habitat, migration, and distribution of numerous species, including salmon, killer whales and other marine mammals; shellfish closure areas; regional land use and land cover; and much more.
- These layers can be viewed individually or in combinations, to assist in identifying issues and relationships to the release or presence of contaminants.
- In this example, the layers selected include Killer Whale Habitat (Critical and Proposed Critical) with Oil and Gas Sector Exploratory Wells

Disposal at Sea

The screenshot displays the 'Pacific Region contaminants atlas' web interface. The main map shows the Vancouver region with various geographical features and disposal sites marked. A legend on the left lists categories such as 'Disposal at Sea' and 'Disposal Sites'. A scale bar indicates distances up to 80 kilometers. On the right, a 'PUBLICATIONS, View record [PUBID:625]' panel is visible, containing the following information:

Regional Districts	Metro Vancouver
Watershed	Lower Fraser/Fraser
Group	
Publication Information	
Title	An environmental assessment of the Point Grey ocean disposal area in the Strait of Georgia, BC (#425)
Publisher	Environment Canada
Author	Packman, G.A.
Publication Year	1980
Data Acquired From	1975
Data Acquired To	1978
Document ID	Regional Program Report 80-3
Abstract	Two surveys were conducted at the designated Point Grey disposal area off Point Grey in the Strait of Georgia in 1975 and 1978. The purpose of the surveys was to assess the impact of ocean disposal activities upon the marine receiving environment with respect to water quality, sediment chemistry and benthic biological communities.
The data indicated that significant increase in the proportion of the coarse sediment fraction occurred between 1975 and 1978, particularly in the northeast sector of the sample grid between the dumpsite and Vancouver. The Places VI submersible dives showed an accumulation of woodwastes on the bottom between the designated dumpsite and the North Arm of the Fraser River. The benthic infaunal data indicated poorly defined but different biological province in the northeast sector. The differing province may have been due to dumping activity or natural changes in substrate and currents in that area. The results of the study generally indicated that a significant proportion of dumping had occurred outside the confines of the designated dumpsite.	
Web Link	not available online
PDF File	EPPR8003.pdf 4.45 MB

Slide 3:

This view shows the layer of documented "Disposal at Sea" locations and the linked abstracts for surveys in 1975 and 1978 of the Point Grey disposal area.

PRCA – Contaminants Database Search Engine

Result of search:
60 documents

Any field Contains search Show all Details found: 60 Page 1 of 1 Records Per Page: 100

Criteria: all any

Add field Show options

General Search

Polychlorinated biphenyls (PCBs):

Mammals:

Title:

Author:

Publication Year:

Abstract:

Watershed Name:

Region Name:

Search Reset Search

Filter Options

Contaminants

Alkylphenols

Title	Author	Publisher	Publ	Watershed Name	Region Name	Web Link	PDF File
Proceedings of the First Annual Pacific Ecozone Workshop Sidney, B.C., February More...	Harding, L., Landucci, J., and Wilson, R.C.H. (Editors)	Environment Canada	1994	Work Channel, Washington State, Victoria, V...> aser, Cowichan, Comox-Strathmore marine areas More...	Washington State, Sunshine Coast, Squamish-Lillooet, Powell River, Nanaimo, Mount Wad More...	not available online	CW699r.pdf
Proceedings of the Georgia Basin - Ecosystem Initiative Georgia Basin A...	Garnett, C. (Environment Canada)	Ecosystem Initiative/Georgia Basin A...	2004	Island, Toba Inlet, Squ...> aser, Cowichan, Comox-Strathmore More...	Sunshine Coast, Squamish-Lillooet, Powell River, Nanaimo, Metro Vancouver, Fraser Val More...	not available online	GA0479r.pdf
Organochlorine compounds in marine mammals from the Strait of Georgia (#1029)	Burlinson, N.E. for BC Ministry of Environment	British C Ministry of Environ			Sunshine Coast, Powell River, Nanaimo, Metro Vancouver, Cowichan Valley, Comox-Strathmore More...	http://www.enr.g	GA0480.pdf
Fireproof killer whales (Orcinus orca): flame retardant chemicals and the conser	Ross, P.S.	Scientific Journal	2005	Work Channel, Victoria, Vancouver Island, T...> aser, Cowichan, Comox-Strathmore marine areas More...	Skeena-Queen Charlotte, Nanaimo, Mo Waddington, Metro Vancouver, Kitimat-Sikine, More...	http://www.prcar	SJ-A135.pdf

Search Example:
 Contaminant = PCBs
 Media = Mammals
 Watershed = Coastal Marine Areas

Direct access to a pdf or online versions of most documents

Slide 4:

The Contaminants Database Search Engine is a geo-referenced searchable database of documents regarding contaminants - published reports and scientific journal articles.

The database currently contains more than 2500 documents, with more being added on a regular basis.

- Documents are not limited to the Georgia Basin. The database contains documents relating to other west coast regions including the Yukon, Washington, Oregon and Alaska.
- General and Advanced literature searches can be conducted based on a wide variety of parameters such as title, author, date, publisher, specific contaminants, media type, source type, watershed and Regional District.
- The search parameters used for this example were:
 - Watershed: Coastal Marine Areas
 - Contaminant: PCBs, and,
 - Media type: mammals
- This search produced 60 documents and could have been further refined by adding additional parameters.

- Adobe pdfs or online versions of most documents are available directly from the search results (unless prohibited by copyright protection). The database is not just a bibliography of relevant documents, but is a repository of the documents themselves.

Contaminant Publications

Pacific Region contaminants atlas

Map tools: Measure line, Measure selected area, Measure area, Print, Save map image, Metadata, Search Publications, Tutorial Video, Map Explorer Video

Legend:

- Contaminant Publications
- MDE-FLNRO South Coast Library
 - Waterbody/Watershed Areas
 - Streams with Reports
 - Lakes with Reports
 - Contaminant Publications
- Sources of Contaminants
- Contaminants in the Environment
- Natural Resources
- Ecological Regions and Boundaries / Sensitive and Protected Areas
- Human Use

Search: [Search bar]

Selection detail: No map selection.

WAP Library Catalogue, View record [ID: 4327]

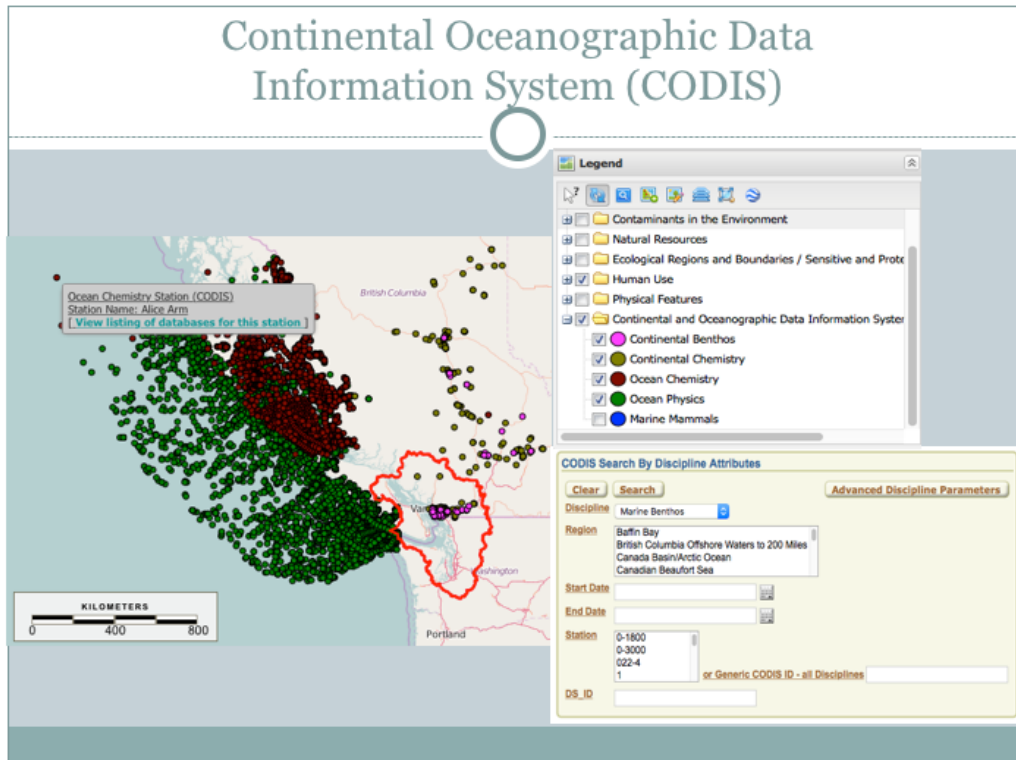
Reference Number	EQ48013
Title	DRAFT POWELL RIVER ENVIRONMENTAL EFFECTS MONITORING (EEM) PRE-DESIGN REPORT
Authors	HATFIELD CONSULTANTS
Waterbody Name	LOIS RIVER
Species Code	ARTHROPODS
Date Published	02/1/94
Publisher	MCMILLAN BLOEDEL LIMITED
Report Location	SURREY

<<< Back to list

Slide 5:

This is a view of another PRCA information channel to the BC Ministries of Environment (MOE) and Forests, Lands and Resource Operations (FLNRO) for the South Coast library of reports and publications:

- Documents are not on-line but you are able to find out the basic title, author, keywords for a document and know it is shelved in the Surrey offices.
- This example is for a consultants report linked to Okeover Cr. Near Powell River.
- The MOE reports focus on environmental quality issues and the FLNRO reports relate to Fish, Wildlife, Habitat and Water management.



Slide 7:

The Continental Oceanographic Data Information System (CODIS) is the complete legacy data set that I believe was mothballed by DFO a few years ago.

As far as I know CODIS is only available as a searchable catalogue with geo-referenced points on the CMN – a Google search yesterday confirmed that: This example of CODIA shows:

- Four of the five CODIS point layers with the far upper left point displaying a link to that specific entry in the catalogue database
- The marine locations are mostly outside the Georgia Basin except in the Fraser Estuary
- There is also a searchable web form with basic key words and a much more detailed form to refine your search interest

PRCA – Where do we go from here?

Our Goals:

- Improve existing content, format and function
- Promote awareness and encourage use
- Find resources for maintenance, updating and improvements

How You Can Help?

Review the PRCA at www.pacifictoxics.ca and provide feedback through the contact form on Community Mapping Network website <http://www.cmnbc.ca/contact> or directly to Rob Knight rknight@telus.net or Brad Mason masonb12@telus.net

The PRCA Team:

Peter Ross, Vancouver Aquarium Marine Science Centre
Chris Garrett, retired from Environment Canada
Brad Mason, retired from Fisheries and Oceans
Rob Knight, retired from BC Ministry of Environment

Slide 8:

Those are the highlights for the PRCA and the future for PRCA is:

- to continue with improvements to the PRCA to make it even more useful
- to promote awareness and interest and encourage use
- to access resources for maintenance and updating, which is crucial to the usefulness of any tool.

The PRCA currently has no source of funding and much of the work is being done on a voluntary basis.

We are looking for suggestions to improve on the site and to access resources to keep it current and useful so please send your feedback to contact info on slide

The PRCA Team:

Peter Ross, Vancouver Aquarium Marine Science Centre
Chris Garrett, retired from Environment Canada

Brad Mason, retired from Fisheries and Oceans
Rob Knight, retired from BC Ministry of Environment

Thanks very much.