Coastal Information Resource Inventory

Prepared by
Ministry of Agriculture, Fisheries and Food
Aquaculture and Commercial Fisheries Branch
for the Coastal Ecosystems Task Force
Resources Inventory Committee

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Preface

This report is submitted to the Resources Inventory Committee (RIC) by the Coastal Task Force.

The Resource Inventory Committee members are resources inventory specialists from a wide variety of professional disciplines and representing provincial, federal, aboriginal and private sector agencies and other resource interests. RIC’s objective is to develop a common set of standards and procedures for provincial resource inventories.

The Coastal Information Resource Inventory provides (a) an overview of data presently being collected on the coastal zone, (b) reviews user needs and (c) provides recommendation for the development of a British Columbia Coastal Data Set.

Funding of the Resources Inventory Committee work, including preparation of this report, is provided by the Canada-British Columbia Partnership Agreement on Forest Resources Development; FRDA II. This is a five-year (1991-1996) $200 million program cost-shared equally by the federal and provincial governments.

Contents of this report are presented for discussion purpose only. A formal technical review of this document has not been undertaken. Funding from FRDA II does not imply acceptance or approval of any statements or information contained herein by either government. This document is not official policy of Forestry Canada or any British Columbia government ministry or agency. For additional copies and/or further information about the Committee and its task forces, please contact the Secretariat, Resources Inventory Committee.
Executive Summary

This report describes results of a Coastal Resource Inventory of the various information sources held by government agencies, universities and individuals that relate to the coastal zone of British Columbia. The three objectives of the project are: (a) to compile a listing of coastal data sets (Coastal Data Set Inventory), (b) conduct a survey of user interest in coastal resource data (User Needs Survey) and (c) develop a priority list of common resource data that is of interest to a wide range of users (BC Coastal Resource Data Set).

Our approach relied heavily on interviews - nearly 300 individuals were contacted during the project and the User Survey Questionnaire was sent to over 207 individuals. As such, the surveys reached a broad range of data collectors and resource users; the one exception is the native groups who did not respond to the questionnaire and who are important users of coastal resources.

The Coastal Data Set Inventory identified 107 data sets of relevance to the coastal zone (base maps were specifically excluded from the survey). Important application areas of these data sets are: Environmental, Protection/Monitoring, Fisheries Management, Physical Baseline Information and Wildlife Management. Data attributes most commonly represented within these data sets are shown below.

<table>
<thead>
<tr>
<th>Data Set Categories</th>
<th>User Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Habitat (19% of data sets)</td>
<td>• Habitat (65% of questionnaires)</td>
</tr>
<tr>
<td>• Marine Plants (15%)</td>
<td>• Oceanography (61%)</td>
</tr>
<tr>
<td>• Coastal Fringe Veg. (13%)</td>
<td>• Aquaculture Use (57%)</td>
</tr>
<tr>
<td>• Water Quality (13%)</td>
<td>• Industrial Use (49%)</td>
</tr>
<tr>
<td>• Tourism and Recreational Use (13%)</td>
<td>• Fish Resources (46%)</td>
</tr>
<tr>
<td>• Birds (waterfowl - 13%)</td>
<td>• Coastal Geology (45%)</td>
</tr>
<tr>
<td>• Fisheries (12%)</td>
<td></td>
</tr>
</tbody>
</table>

Results of the User Needs Survey show interests in resource data (above) with “Habitat” identified as the primary interest. These results provide the framework for a BC Coastal Resources Data Set (CODAS). The framework in terms of applications, high interest categories and priority coastal attributes is summarized (below). Further definition of “water quality” is required to refine data acquisition programs.

<table>
<thead>
<tr>
<th>Priority Application Areas</th>
<th>Priority high Interest Resource Categories</th>
<th>Priority Coastal Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Physical baseline information</td>
<td>• Habitat</td>
<td>• Water quality</td>
</tr>
<tr>
<td>• Environmental protection &amp; monitoring</td>
<td>• Coastal Oceanography</td>
<td>• Wave exposure</td>
</tr>
<tr>
<td></td>
<td>• Aquaculture</td>
<td>• Surficial geology</td>
</tr>
<tr>
<td></td>
<td>• Industrial use</td>
<td>• Shore-zone morphology</td>
</tr>
<tr>
<td></td>
<td>• Fisheries Resources</td>
<td>• Coastal biota</td>
</tr>
<tr>
<td>• Coastal Geology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Acknowledgments

Funding of the Resources Inventory Committee work, including the preparation of this document, is provided by the Corporate Resource Inventory Initiative (CRII) and by Forest Renewal BC (FRBC). Preliminary work of the Resources Inventory Committee was funded by the Canada-British Columbia Partnership Agreement of Forest Resource Development FRDA II.

The Resources Inventory Committee consists of representatives from various ministries and agencies of the Canadian and the British Columbia governments as well as from First Nations peoples. RIC objectives are to develop a common set of standards and procedures for the provincial resources inventories, as recommended by the Forest Resources Commission in its report “The Future of our Forests”.

For further information about the Resources Inventory Committee and its various Task Forces, please access the Resources Inventory Committee Website at: http://www.for.gov.bc.ca/ric.

Coastal Ecosystems Task Force

This document was prepared by John R. Harper of Coastal and Ocean Resources Inc., Sandra Peters of DF Dickins Associates Ltd., Jacqueline Booth of Jacqueline Booth and Associates, David F. Dickins of DF Dickins Associates Ltd., and Mary Morris of Kallahin Surveying.
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1.0 Introduction

1.1 Statement of the Problem

The coastal zone represents a truly unique environment - the triple interface between the ocean, land and atmosphere. This triple-interface, often only a few metres in width, marks the transition between a totally marine environment and a totally terrestrial environment, and is one of the sharpest biome delineations on the planet. Being of both the sea and land, the coastal zone has always posed a problem of jurisdiction and resource management.

Federal, provincial and municipal agencies collect a wide range of environmental and socioeconomic resource information for the coastal zone and surrounding environs. However, at the present time, this data collection is not coordinated (see Howes, 1992), and many agencies may not be aware of some of the information that is collected. This project addresses these issues.

1.2 Project Objectives

There are essentially three major objectives of the project:

- review the existing information that is being collected by the various agencies and summarize the information into a Coastal Data Set Inventory supported by an electronic catalog.

- conduct a User Needs Survey of coastal resource information.

- provide an overview that summarizes common data requirements into a BC Coastal Resources Data Set.

1.3 Basic Terminology

A glossary of terms is provided in Appendix A to assist users in the interpretation of terms used in this project. There are three items of particular significance to the study that are defined below:

Coastal Resources - what constitutes the coastal zone? For the purpose of this project, a relatively narrow definition of the coastal zone or coastal resources was used: coastal resources are defined as those resources falling between the normal limit of the highest high tides (effectively the storm log line limit) and the 20m isobath; the 20m isobath was chosen as this reflects the normal limit of kelp beds and associated nearshore habitat.

Coastal Data Set - what criteria were used to include or exclude various data sets? Our basic criteria for the inclusion of a data set as a “relevant” coastal data set was its essential nature to coastal management planning objectives. In other
words, does the data set represent an essential piece of information to the coastal-zone planner in terms of managing resources within the coastal zone.

As an example, tidal elevation data would be considered essential in that it strongly affects biotic and cultural use of the shore zone. However, offshore tidal current data, as per current atlases (e.g., DFO 1983) is not relevant in that its net effect on the coastal zone is very small. Similarly, herring roe catch statistics data is a “coastal data set” in that the roe is collected from within the coastal zone but salmonoid catch data set is not a coastal data set because only a very small portion of the fishery is within the coastal zone and the data set, provides no locational information.

We also used the guideline that a coastal data set must be either regional in extent (e.g., a single bird survey of the entire Strait of Georgia) or provide a time series of more than one year (e.g., a long-term water quality sampling program). Priority was also given to active and recent (<5 years old) data sets.

**Coastal Habitat** - what is meant by the term coastal habitat? Habitat is a term used widely in this report and requires a definition in that it has a wide-range of meanings to a wide range of users. We believe that the vast majority of users consider “coastal habitat” as the physical framework and associated “fixed” biological communities that determine the biological use of the coastal zone by more mobile terrestrial (including humans), coastal and marine species. Habitat is a general term that refers to a collection of attributes such as: coastal morphology, substrate, wave exposure, tidal range, water quality and intertidal biota.

**Levels of Information** - what levels of information are represented in a data set? General concepts related to the levels of information included within data sets is outlined below; these definitions are our own and apply to this report and not necessarily Consistent with those defined by RIC in the Data Modelling Project, which post-dated the initiation of our project (see DMR, 1992).

- **Data Set** - a systematic collection of information about a coastal resource.

- **Attribute Categories** - some terms, such as “coastal habitat”, represent a collection of many attributes rather than as a single attribute.

- **Attribute** - a feature or characteristic of a coastal resource that is relatively well-defined in time and space.

- **Entity** - a measurable quantity about an attribute.

Additional terminology definitions are included within Appendix A.
2.0 Approach

2.1 Introduction

This project relied heavily on interviews because there are few published summaries of coastal resource inventories. During the project, over three hundred individuals were contacted either directly or indirectly by project team members; a user needs form was circulated to over 200 individuals. As a result, an extensive Contact Database (file CONTACT.DBF) was developed (see Appendix B for listing) and integrated into the main database.

Two additional data sets were developed: the Coastal Data Set Inventory Database (file INVENT.DBF), which categorizes each database, and the Reference Database (file REFER.DBF), which is essentially a citation database linking published reports and documents to the Inventory Database. Figure 2.1 summaries the relation and characteristics of each database.

The data sets are compiled in a dBase III+ format and are linked via a custom-designed data entry and editing program.

2.2 Data Set Inventory Compilation

A catalog or inventory of coastal data sets was compiled primarily by contacting key individuals working in natural science studies, land use and tourism. Approximately 200 individuals were contacted, and approximately 107 data sets were identified. The total number of data sets provides only a very general index of the resources in that (a) there are many overlapping inventories being conducted by the Resource Inventory Committee (RIC) (e.g., fisheries, water and aquatic resources, etc.) and (b) there are some related marine resources that were considered beyond the scope of this project.

2.3 User Needs Survey

A “User Needs Questionnaire” was distributed in early December 1992 to 207 individuals. The distribution to various user groups is indicated in Figure 2.2. Responses to the survey are summarized in Section 4.
Figure 2.2 Distribution of User-Needs Questionnaires
(distributed to 207 individuals)
3.0 Inventory of Coastal Data Sets

3.1 Summary of Data Sets

Questions included in the coastal data set inventory questionnaire are listed in Tables 3.1 and 3.2; generally, the data entry form was completed by a project team member but in some cases was completed directly by the respondent.

An abbreviated listing of data sets is provided in Appendix C; the complete inventory is catalogued on a dBaseIII+ database file (see Appendix D for a listing of database fields). This section of the report provides a general overview of the coastal resource inventory and is designed to answer the following questions:

What is the general agency activity in coastal resources?

How is the information being used?

What types of resource data are being collected?

What level of detail of information is being collected?

What is the geographic coverage of the coastal data sets?

A. Contact Information
   Interviewee?
   Who owns the database?
   Who manages the database?
   Who sponsored development of the database?

B. References
   Are there any reports related to this database?

C. Frequency and Duration of Data Collection
   When did the data collection begin?
   Is the data collection ongoing?
   When did the data collection end?
   What is the frequency of data collections?
   If the data is seasonally collected, what months are represented?

D. Geographical Characteristics
   What is the geographical extent of the data? (descriptive)
   What Fisheries Statistical Areas contain data?
   What was the original scale of mapping?
   Is the data georeferenced?

E. Database Format
   What is the hard-copy storage medium? (e.g., atlas, report, etc.)
   What is the electronic storage medium?
   What computer or operating system was used?
   What software was used?

F. Purpose
   What is the intended purpose of the data? (planning, management, operations)
   What is the major application of the information in the database?
   Is the database available for public use?

G. Attributes of Database
   (see Table 3.2)

Table 3.1 Questions Asked During the Data Set Inventory Review
<table>
<thead>
<tr>
<th>Table 3.2 List of Attributes Recorded in the Inventory Database</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological Resources</strong></td>
</tr>
<tr>
<td>Habitat</td>
</tr>
<tr>
<td>Fish</td>
</tr>
<tr>
<td>salmon</td>
</tr>
<tr>
<td>herring</td>
</tr>
<tr>
<td>bottomfish</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Shellfish</td>
</tr>
<tr>
<td>oysters</td>
</tr>
<tr>
<td>geoducks</td>
</tr>
<tr>
<td>clams</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>mussels</td>
</tr>
<tr>
<td>abalone</td>
</tr>
<tr>
<td>PSP (red tide)</td>
</tr>
<tr>
<td>Birds</td>
</tr>
<tr>
<td>shorebirds</td>
</tr>
<tr>
<td>seabirds</td>
</tr>
<tr>
<td>nesting</td>
</tr>
<tr>
<td>waterfowl</td>
</tr>
<tr>
<td>eagles/osprey</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>beached birds</td>
</tr>
<tr>
<td>Marine Mammals</td>
</tr>
<tr>
<td>seals</td>
</tr>
<tr>
<td>sea lions</td>
</tr>
<tr>
<td>sea otters</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Terrestrial Mammals</td>
</tr>
<tr>
<td>river otters</td>
</tr>
<tr>
<td>deer</td>
</tr>
<tr>
<td>raccoons</td>
</tr>
<tr>
<td>bears</td>
</tr>
<tr>
<td>mink</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Marine Plants/Algae</td>
</tr>
<tr>
<td>Coastal Fringe Vegetation</td>
</tr>
<tr>
<td>Invertebrates</td>
</tr>
<tr>
<td><strong>Physical Resources</strong></td>
</tr>
<tr>
<td>Geology</td>
</tr>
<tr>
<td>bedrock</td>
</tr>
<tr>
<td>surficial geology</td>
</tr>
<tr>
<td>shore-zone geology</td>
</tr>
<tr>
<td>estuary character</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>paleo-sealevels</td>
</tr>
<tr>
<td>trace metals</td>
</tr>
<tr>
<td>Oceanography</td>
</tr>
<tr>
<td>nearshore circulation</td>
</tr>
<tr>
<td>water quality</td>
</tr>
<tr>
<td>wave characteristics</td>
</tr>
<tr>
<td>temperature/salinity</td>
</tr>
<tr>
<td>tides</td>
</tr>
<tr>
<td>waterway ranking sheets</td>
</tr>
<tr>
<td>trace metals</td>
</tr>
<tr>
<td>Meteorology</td>
</tr>
<tr>
<td>winds</td>
</tr>
<tr>
<td>temperature</td>
</tr>
<tr>
<td>precipitation</td>
</tr>
<tr>
<td>visibility</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td><strong>Heritage Resources</strong></td>
</tr>
<tr>
<td>Archaeological</td>
</tr>
<tr>
<td>Historic</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>Cultural Resources</strong></td>
</tr>
<tr>
<td>Tourism/Recreation</td>
</tr>
<tr>
<td>use patterns</td>
</tr>
<tr>
<td>resources</td>
</tr>
<tr>
<td>capability</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>recreational features</td>
</tr>
<tr>
<td>Fisheries (catch)</td>
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<tr>
<td>commercial</td>
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<tr>
<td>recreational</td>
</tr>
<tr>
<td>subsistence</td>
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<tr>
<td>other</td>
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<td>Native Use</td>
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<tr>
<td>land claims</td>
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<tr>
<td>traditional use</td>
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<tr>
<td>other</td>
</tr>
<tr>
<td>Aquaculture</td>
</tr>
<tr>
<td>finfish</td>
</tr>
<tr>
<td>shellfish</td>
</tr>
<tr>
<td>plants</td>
</tr>
<tr>
<td>crustaceans</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Industrial</td>
</tr>
<tr>
<td>general</td>
</tr>
<tr>
<td>log-handling</td>
</tr>
<tr>
<td>drill-site/well site</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Commercial</td>
</tr>
<tr>
<td>general</td>
</tr>
<tr>
<td>fishing camp</td>
</tr>
<tr>
<td>commercial wharf</td>
</tr>
<tr>
<td>marina</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>fish processing</td>
</tr>
<tr>
<td>marine plant</td>
</tr>
<tr>
<td>harvesting</td>
</tr>
<tr>
<td>fish sales</td>
</tr>
<tr>
<td>anchorages</td>
</tr>
<tr>
<td>Residential</td>
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<tr>
<td>general</td>
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<tr>
<td>floating cabin(s)</td>
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<td>private moorage</td>
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<td>other</td>
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<tr>
<td>Utility</td>
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<td>electric power line</td>
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<td>gas/oil pipeline</td>
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<td>telecommunications</td>
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<td>water line</td>
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<tr>
<td>sewage/effluent line</td>
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<td>other</td>
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<tr>
<td>Transportation</td>
</tr>
<tr>
<td>roadway</td>
</tr>
<tr>
<td>railway</td>
</tr>
<tr>
<td>ferry terminal</td>
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<tr>
<td>public wharf</td>
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<tr>
<td>navigation aid</td>
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<tr>
<td>other</td>
</tr>
<tr>
<td>shore-zone access</td>
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<tr>
<td>Land Use</td>
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<tr>
<td>reserve</td>
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<tr>
<td>fish/wildlife res.</td>
</tr>
<tr>
<td>public access</td>
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<tr>
<td>fishery facility</td>
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<tr>
<td>recreational reserve</td>
</tr>
<tr>
<td>environmental protection area</td>
</tr>
<tr>
<td>other</td>
</tr>
<tr>
<td>Emergency Response</td>
</tr>
<tr>
<td>dangerous goods</td>
</tr>
<tr>
<td>incidents</td>
</tr>
<tr>
<td>pollutant sources</td>
</tr>
</tbody>
</table>

Coastal Information Resource Inventory
What is the General Agency Interest in Coastal Resources?

General agency activity is summarized in terms of the percentage of data sets included for the federal, provincial and local governments as well as for universities and consultants (Fig. 3.1). The federal and provincial holdings appear approximately equal with only a small portion maintained by municipalities, universities, consultants and others.

What is the Primary Application of the Resource Data?

The data set were catalogued by the project team in terms of the primary application of the data set. Figure 3.2 shows the percent occurrence by resource category for the 107 data sets currently included in the data inventory.

![Figure 3.1 Agency Holdings of Coastal Resource Data Sets](image)

![Figure 3.2 Primary Application of Data Sets](image)
The primary category for data set application is Environmental Protection and Monitoring (27% of the data sets); this category includes: water quality and contaminant monitoring programs and oil spill response mapping projects. Wildlife Management, Fisheries Management and Tourism & Recreational Planning represent important categories with representation in 15% or more of the data sets.

The data sets were also characterized in terms of secondary applications (e.g., a physical shore-zone mapping project might have a primary application for oil spill response and planning but a secondary application for physical baseline information). The relative weighting of categories, including secondary applications is included in Figure 3.3. The data for the primary + secondary applications show a similar distribution to the primary application with some minor ranking changes. Environmental Protection and Monitoring is either a primary or secondary focus of 45 of the 107 data collections followed by Fisheries Management (36), Physical Baseline Information (30) and Wildlife Management (28).

![Figure 3.3 Primary and Secondary Applications of Data Sets](image-url)

**What Types of Resource Data Are Being Collected?**

The data set inventory also catalogues attributes associated with each data set (as coded by project team members). The occurrence of various attributes included within the 107 data sets are summarized in Figures 3.4a, 3.4b and 3.4c. It should be noted that these attributes are not necessarily primary data. Many of the data sets summarize previously collected data.
The eleven most commonly characterized attributes are listed in the inset (below). Interestingly, the four most common attributes of these data sets probably do not reflect primary data collection but rather reconstituted or derivative information from other sources. For example, habitat information summarized in the “Oil Spill Response Atlas for the Southern Strait of Georgia” is derived from physical shore-zone mapping data rather than representing new field data collections and/or interpretation. Similarly, we are aware of only one systematic data collection for Marine Plants (the MAFF Kelp Inventory Program), yet marine plants and algae are characterized in 16 of the 107 data sets.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Occurrence (number of data sets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>21</td>
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<tr>
<td>Marine Plants</td>
<td>16</td>
</tr>
<tr>
<td>Coastal Fringe Vegetation</td>
<td>14</td>
</tr>
<tr>
<td>Water Quality Tourism &amp;</td>
<td></td>
</tr>
<tr>
<td>Recreation Use Patterns</td>
<td>14</td>
</tr>
<tr>
<td>Bird Resources</td>
<td>14</td>
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<tr>
<td>Waterfowl</td>
<td>14</td>
</tr>
<tr>
<td>Commercial Fisheries</td>
<td>13</td>
</tr>
<tr>
<td>Recreational Fisheries</td>
<td>13</td>
</tr>
<tr>
<td>Subsistence Fisheries</td>
<td>13</td>
</tr>
<tr>
<td>Recreational Land Use</td>
<td>13</td>
</tr>
</tbody>
</table>

What Level or Detail of Information is Being Collected?

This question is summarized in terms of two items recorded for each data set: (1) the design application of the data set and (2) scale of mapping, where applicable. In terms of general levels of application, the coastal resource information is relatively uniformly distributed (Fig. 3.5) with the “management”-scale application being most common (65% of the data sets) and the “planning”-scale application the least common (45% of the data sets).

The most common mapping scales represented in the data sets (Fig. 3.6) are in the 1:20,000 - 50,000 range followed by the 1:10,000 - 20,000 range.

The data suggest that the most common uses are satisfied by mapping scales in the 20,000 - 50,000 range with a slight bias towards the 1:20,000 end of the range. This mapping scale is consistent with the most common application purposes, i.e., reconnaissance, management and operations.

What is the Geographic Coverage of the Data Sets?

The relative geographic distribution of the data sets is shown in Figures 3.7 and 3.8. The surprising facet of this figure is the relative uniformity of the distribution. There are 49 data sets that are identified as occurring within all the regions. The Southern Strait of Georgia has the greatest number of resource programs (represented in 36 of the data sets), not surprising due to the greater population and development of this area, followed by the Northern Strait of Georgia (77 data sets) and Southwestern Vancouver Island (75 data sets). The remainder of the regions are relatively similar with about 65 of the data sets represented in each.
The reason that the distribution is so geographically uniform is that many of the data sets incorporate data from the entire province, for example fish licensing sales, the Land Tenure System, the Stream Information Catalogues (SISS), etc.
Human-Use Resources

Figure 3.4c Human-Use Data Attributes
3.2 General Overview

The Coastal Data Set Inventory provides a characterization of known coastal resource information within the Province. Some important information sources have been excluded because they are considered beyond the scope of the study; these sources include: (a) marine resource data sets that lie seaward of the 20m isobath and (b) basemaps (maps, charts, aerial photographs, satellite images and digital files such as TRIM).
Figure 3.6  Mapping Scales in the Data Sets

Figure 3.7  Geographic Distribution of Databases
Coastal information sources are used in the following primary applications:

- Environmental Monitoring and Protection (29%)
- Fisheries Management (21%)
- Wildlife Management (17%)
- Tourism and Recreational Planning (15%)
- Physical Baseline Information (11%)

Features characterized in the data sets are summarized in terms of about 100 attributes (Fig. 3.4). Of the data sets included within the survey, the most common attributes are:

- Coastal Habitat (21 of data sets)
- Marine Plants (16)
- Coastal Fringe Vegetation (14)
- Water Quality (14)
- Tourism and Recreational Use (14)
- Birds [especially waterfowl] (14)
- Fisheries [commercial, recreational, subsistence] (13)

The above-ranking of data sets does not necessarily reflect the occurrence of primary data collection, however. Some of the attributes refer to derivative features of the data set or represent different presentations of other source information. For example, while a large number of the data sets apparently reference marine plant data, we are aware of only one systematic, primary data collection program (i.e., the Ministry of Agriculture, Fisheries and Food’s Kelp Resources Inventory Program).
Figure 3.8  Numbers of data sets represented within each of the DFO statistical region indicating the general geographic distribution of resource data. The total number of data sets that were inventoried was 107.
4.0 User Needs Assessment

In early December 1992, a Coastal Information User Survey was conducted to characterize the needs of coastal resource data users. This section contains a summary of that survey.

Figure 4.1 provides an indication of the response in terms of the various user groups. The distribution of questionnaires that were returned were reasonably representative of the questionnaires distributed (see Figure 2.2) except for native groups where only one response was received. The current survey information may not reflect the needs of all user groups but the response was considered sufficiently broad to provide a reasonable sample cross-section. The return of 77 questionnaires (37%) far exceeds that of typical mail-out returns.

![Pie chart showing distribution of questionnaire response]

**Figure 4.1 Summary of Questionnaire Response**

4.1 Summary of User Needs

As with the Resource Inventory, the User Survey was designed to answer a series of questions and the results are summarized in terms of these questions.

What is the Intended Use of the Resource Data?

It is clear that there is no single application of coastal resource information - it is being used for planning, management and operational use (Fig. 4.2). As such, the coastal data is being applied to a full-range of regional to site specific activities. This pattern is in general agreement with the intended application of the existing data sets (Fig. 3.4).
What is the General Application of the Coastal Resource Data?

There are two distinct categories that stand out in terms of needs for coastal resource data (Fig. 4.3): physical baseline information (46 of the 77 responses) and environmental protection and monitoring (43 of the 77 responses). Education and subsistence use are the categories for which coastal data is least likely to be used.

What are the Types of Coastal Resource Information of Most Interest?

Figure 4.4a shows the overall response to the “Most Interest” question. Over 50 of the 77 responses identified Coastal Habitat (see page 2 for definition of “Coastal Habitat”) as the highest interest category. There is also high interest in the following coastal resources (in descending order): oceanography, aquaculture, industrial use, fish, geology, commercial use and industrial use. Meteorology appeared to be the category of least interest.

The question of “Most Interest” is critical to the development of a common-needs coastal data set; consequently, federal (24 questionnaires returned) and provincial (18 questionnaires returned) responses were extracted and interpreted separately. The federal agency response (Fig. 4.4b) shows a strong interest in oceanography followed by habitat, aquaculture-use, industrial-use, fish and others. It is important to note that a large component of the federal response (11 of the 24 responses) were from the Institute of Ocean Sciences.

The provincial agency response was quite different (Fig. 4.4c) with aquaculture being of primary interest followed by coastal geology, coastal fringe vegetation, habitat, residential--use and transportation-use. The provincial agencies appear to have a much broader interest than the federal agencies with 16 categories identified in 8 or more responses and only 3 categories identified in less than 6 responses.
What Scale of Mapping is of Greatest Interest?

The survey data (Fig. 4.5) indicate that most users have a preference for map data plotted at the scale of 1:20,000 to 1:50,000 with a bias towards more detailed scale maps (i.e., 1:10,000 to 1:20,000).
Figure 4.4a Categories of Coastal Resource Needs (All Responses)

Figure 4.4b Categories of User Needs (Federal Agencies)
Figure 4.4c  Summary of User Needs (Provincial Agencies)

Figure 4.5  User Preferred Mapping Scales
What are the Primary Geographic Areas of Interest?

Not surprisingly, the Southern Strait of Georgia is the primary area of interest to coastal resource data users (Fig 4.6; Fig 4.7). The Central Coast and Northern Strait of Georgia are high interest areas with the remainder of the regions falling in the same range. Figure 4.7 provides greater detail on the subregional interest.

![Geographic Areas of Interest](image)

**Figure 4.6 Geographic Regions of Interest**
Figures 4.7 Numbers of responses for each DFO statistical region indicating the general geographic areas of user interest. Numbers indicate the number of positive responses from the 77 questionnaires returned.
What is Your Data Access Preference?

Users were asked their preference for data access in the questionnaires. The results show a strong preference for the use of data sets in-house (Fig. 4.8); that is, the ability to manipulate the data to their own needs. However, almost a third of the respondents indicated an interest in on-line data searches. The interest in custom data searches was largely concentrated in the federal agency response.

![Data Access Preference](chart)

**Figures 4.8 Data Access Preference**

### 4.2 General Overview

The User Survey documented both general and specific resource information. Some of the key results are:

1. The primary areas of use for coastal resource data are:
   - **Physical Baseline Information** (identified in 60% of the 77 responses)
   - **Environmental Protection and Monitoring** (56% of responses)
   - **Fisheries Management** (34% of responses)
   - **Land-Use Development** (31% of responses)

2. Coastal resource attributes or summary attributes of greatest interest to users are summarized in terms of six highest ranking categories for three different user groups:
There is some overlap between these categories. For example, the term “Habitat” incorporates several attributes including: shoreline morphology and substrate, wave exposure and nearshore water quality; these attributes may be cross-referenced in other categories such as coastal geology and oceanography. As such, the user survey data provides a general guide as to the attributes of primary interest to the users. The response ranking of “All Users” is most representative as it represents the aggregate response of all 77 respondents.

3. The preferred mapping or data collection scale is in the 1:20,000 to 1:50,000 range with a slight bias towards more detailed maps.

4. There is a strong geographic preference for data in the Southern Strait of Georgia followed by preferences in the Central Coast/Queen Charlotte Sound and Northern Strait of Georgia regions.
5.0 Discussion

5.1 Sources of Information

Our assessment of the present needs of the coastal data users and of the development of a “corporate” coastal data set is based on two sources:

- the User Needs Survey conducted as part of this project (see Section 4),
- extensive interviews with coastal users and coastal data collectors during the course of this project; during the project a contact list of over 300 individuals was developed, and many of the individuals on this list were contacted during either the Data Set Inventory phase or during the User Needs Survey.

As such, the conclusions are drawn largely from the qualitative assessment of the project team and from statistical trends identified in the User Needs Survey.

5.2 General Applications of Coastal Data Sets

The User Needs Survey provides a general indication of the primary areas of data application (Fig. 5.1). These categories are not necessarily mutually exclusive and indicate general trends. For example, water quality data could be used as physical baseline information, as environmental protection/monitoring information and as fisheries management information. The trends are important, however, in providing insight to the intended use areas for data.

![Intended Use of Data](image)

**Figure 5.1 Applications of Coastal Data Identified in the User Survey Responses**
The top four categories are discussed below in terms of (a) their use in resource management and (b) data attributes associated with each category.

**Physical Baseline Information Category**

Physical Baseline Information was identified as the highest category of user needs (60% of the responses). Baseline Information provides a basic building block for resource management and bridges a wide range of disciplines. It can be built into various models to assess resource capabilities; for example, wave exposure provides an important constraint to aquaculture capability.

Coastal attributes that appear to be of primary interest in this category include: sufficial geology, shore-zone morphology, shore-zone wave exposure and water quality (e.g., contaminants, suspended sediment concentration, temperature and salinity characteristics).

**Environmental Protection and Monitoring (EP&M) Category**

EP&M was identified as an important application category (56% of the responses). EP&M includes: (a) compliance monitoring, (b) monitoring of non-point pollutant sources, (c) state-of-the-environment monitoring, and (d) resource management (e.g., habitat or stock assessment).

In addition to those physical baseline attributes identified above, EP&M is likely to include a variety of biological attributes, depending on the specific application area. Coastal Habitat and associated attributes appears to be one of the most widely used components of EP&M. For example, in oil spill protection planning, habitat provides an important framework to which derivative impact models are attached.

**Fisheries Management Category**

Fisheries Management was identified as an important application category in 34% of the responses. In terms of coastal resources, fisheries management concerns include: estuarine habitat, coastal habitat, coastal fish (fish that spend either a major portion of their life cycle in the coastal zone) and coastal fisheries (a fishery that takes place predominantly within the coastal zone).

**Land-Use Development Category**

Land-Use Development is a concern to coastal resource managers in that upland development can significantly affect the coastal zone; 30% of the User Needs respondents identified Land-Use Development as an important application area. It is not entirely clear what specific attributes are of interest but these are thought to include: land-use classifications (e.g., industrial, commercial, residential), land ownership, foreshore leases, watershed management and permitted discharges.
5.3 Types of Coastal Information

The User Needs Survey is the principal guide to identifying summary attributes of high interest to users. The inset at right shows the top six summary attributes identified in the User Survey. It is important to note that Coastal Habitat is the highest ranking category in terms of user interest. This is followed closely by Oceanography (including water quality) and Aquaculture.

There is some overlap of categories (right inset) identified in the user survey. In attempt to clarify what parameters would have to be measured to address these needs, the project team identified a derivative set of attributes (Table 5.1). These “derived” parameters represent building blocks for the high interest coastal resource categories. Their selection is based on experience of the project team and on our discussions with users during the project. Table 5.1 indicates the six attributes categories and associated derivative attributes. These attributes provide a framework for a common coastal data set.

<table>
<thead>
<tr>
<th>Table 5.1 Associated Attributes for Six Summary Attribute Categories</th>
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</thead>
<tbody>
<tr>
<td>Habitat</td>
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<tr>
<td>---------</td>
</tr>
<tr>
<td>water quality</td>
</tr>
<tr>
<td>wave exposure</td>
</tr>
<tr>
<td>surficial geology</td>
</tr>
<tr>
<td>shore-zone morphology</td>
</tr>
<tr>
<td>supratidal, intertidal and subtidal biota</td>
</tr>
</tbody>
</table>

The most common “attribute” is Water Quality, which is also a summary attribute in that it incorporates a wide range of parameters such as organic pollutant measurements, inorganic pollutant measurements, suspended sediment concentrations, temperature and salinity concentrations and nutrients (DO, CO₂, nitrates, phosphates, etc.). Water quality is identified as a constituent in five of the six top attribute categories. Some additional research is required to more precisely define what components of water quality are of interest to users.

Coastal Wave Exposure is also identified as a constituent in five of the six attribute categories. Wave exposure provides an important constraint to development in the foreshore (e.g., aquaculture siting) as well as to the use by intertidal and subtidal biota. Wave exposure also strongly influences shore-zone morphology and sediment transport.

Surficial Geology is identified as important constituent of three of the six attribute categories. In particular, surficial sediment type is an important component of coastal and estuarine habitat.
Coastal Biota are identified as an important constituent of three of the six attribute categories. The coastal biota represent the “fixed”, relatively permanent species that occur within the terrestrial fringe, the intertidal zone and the subtidal zone to the 20m isobath.

Other important coastal attributes are: shore-zone morphology, nearshore currents, permitted discharges, industrial-use classification and coastal fisheries catch or census data.

The province has extensive mapping programs underway for wave exposure, surficial geology and short-zone morphology. A Coastal Mapping Manual (Howes et al., 1993) provides a classifications system and standards for mapping.

A Coastal Biota/Habitat manual is currently under preparation by the Ministry of Environment and scheduled for release in September of 1993. This manual will provide a classification system and standards for coastal habitat or community mapping for fixture coastal mapping projects of the Ministry of Environment.

5.4 Coastal Data Scale Considerations

Users indicated a map-scale preference of 1:20,000 - 1:50,000 with a bias towards more detailed mapping scales (e.g., 1:20,000). Users expect to use this information for planning, management and operational activities in approximately equal amounts. Since more detailed information can be generalized to meet the less detailed requirements of planning and assessment applications, it is recommended that future data sets be collected and mapped at 1:20,000 - 1:50,000 map scales; this presentation scale appears to be adequate for most users.

5.5 Geographic Areas of Interest

The Southern Strait of Georgia is the area of highest user interest followed by strong interest in both the Queen Charlotte Strait region and the Northern Strait of Georgia regions.

5.6 Miscellaneous Observations

A wide-range of individuals and agencies were contacted during this project and there are a number of areas of concern, in addition to that of a coordinated BC Coastal Data Set that are of interest. This section identifies some of these concerns or interest.

Information Exchange

It is clear that there are a large numbers of individuals within the province who deal with coastal resources on almost a day-to-day basis - probably thousands within the province. However, because of the fragmented nature of jurisdictions and regulations related to the coastal zone, there is little communication between individuals. An informal newsletter (or in the future, an electronic bulletin board) focusing on coastal zone projects, issues and individuals would greatly facilitate information exchange.
Human-Use Classifications

There is a large amount of coastal data related to human-use activities. However, the information is spread across a wide range of diverse data sets and tends to be very site specific. A standardized, human-use classification system would allow for a uniform characterization of coastal human-use activities. Such a classification should incorporate upland fringe activities as well as nearshore and marine activities.

A sub-category of the classification should focus on recreational boater use. There appears to be little hard information on recreational boater use within the province.
6.0 Recommendations

6.1 British Columbia Coastal Data Set

The User Needs Survey provides the framework for a BC Coastal Data Set (CODAS) The Coastal Data Set should incorporate the following constraints:

**INTENDED USE OF COASTAL DATA**

In terms of general application areas, Physical Baseline Information and Environmental Protection and Monitoring are of greatest interest to users.

**COASTAL RESOURCE CATEGORIES OF HIGHEST USER INTEREST**

The top six coastal attribute categories in terms of user interest are:

- Habitat
- Coastal Oceanography
- Aquaculture
- Industrial Use
- Fisheries Resources
- Coastal Geology

**DATA ATTRIBUTES OF HIGH USER INTEREST**

Analysis of the top six coastal attribute categories suggests that as a first approximation, CODAS should concentrate on the following coastal attributes:

- water quality
- wave exposure
- surficial geology
- shore-zone morphology
- coastal biota (terrestrial fringe, intertidal, subtidal)

**Water quality** is loosely defined and additional survey work is required to refine the definition of water quality. Water quality measurements are shared among a number of federal, provincial and municipal agencies, and coastal users would benefit from a centralized source agency for accessing results. Such a clearing-house might also function as a coordinating agency to minimize duplication of measurements.

**MAPPING SCALES**
Since more detailed information can be generalized to meet the less detailed requirements of planning and assessment applications, it is recommended that future data sets be collected and mapped at 1:20,000 - 1:50,000 map scales; this presentation scale appears to be adequate for most users.

DATA COVERAGE

Although province-wide data coverage is desirable, it is clear that there is a strong user preference for information in the Southern Strait of Georgia followed by the Queen Charlotte Strait and Northern Strait of Georgia regions.

6.2 Other Recommendations

COASTAL ZONE NEWSLETTER

The implementation of a coastal zone newsletter would greatly facilitate the exchange of information between the many agencies and institutions involved with coastal zone activities in the province. The multi-jurisdictional nature of the coastal zone tends to fragment communications.

HUMAN-USE CLASSIFICATION

The development of a standardized Human-Use Classification to characterize human activities within the coastal zone would greatly facilitate resource management. Information is spread across a wide range of diverse data sets and is difficult to access.

Appendix A
# Appendix A
## Contact List

<table>
<thead>
<tr>
<th>No.</th>
<th>Organization</th>
<th>Address</th>
<th>City, Province</th>
<th>Phone</th>
<th>Fax</th>
<th>Specialties</th>
<th>Contact</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>Alliance Tribal Council</td>
<td>6615 Salish Drive</td>
<td>Vancouver, BC</td>
<td>604/263-1975</td>
<td>604/263-4201</td>
<td>Tribal council</td>
<td>Peters</td>
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<td>117</td>
<td>First Nations of South Island Tribal Council</td>
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<td>Mill Bay, BC</td>
<td>250/743-3228</td>
<td>250/743-7207</td>
<td>Tribal council</td>
<td>Peters</td>
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<td>118</td>
<td>BC Aboriginal Peoples Fisheries Commission</td>
<td>Suite 204 - 990 Homer St.</td>
<td>Vancouver, BC</td>
<td>604/264-1114</td>
<td>604/682-3550</td>
<td>Subsistence; traditional use</td>
<td>Peters</td>
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Coastal Information Resource Inventory Page 37
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<td>University of British Columbia</td>
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<td>4635 Alder Glen Pl.</td>
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<td>160 Beach Dr.</td>
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<td>4330 Kingsway, Vancouver, BC V5H 4G8 wk: 604/451-6000</td>
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<td>2250 South Boundary Rd, Burnaby, BC V5M 4L9</td>
<td>604/666-3150/fax: 604/666-4440</td>
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Institute of Ocean Sciences
PO Box 6000
Sidney, BC V8L 4B2
wk: 250/363-6335
dx: 250/363-6479
Contact: Harper
Notes: responded to user survey

Dalzell, Bob 17
BC Marine Parks
Ministry of Environment, Lands and Parks
Victoria, BC V8V 1X4
Specialties: parks; recreation
Contact: Harper
Notes: personal friend of JRH

David, Alain 252*
Pollution Abatement
Environment Canada
224 W Esplanade
North Vancouver, BC V7M 3H7
Specialties: pollution
Contact: Dickins
Notes: user survey only

Dalzell, Bob 17
Canadian Hydrographic Service
Institute of Ocean Sciences
PO Box 6000
Sidney, BC V8L 4B2
wk: 250/363-6335
dx: 250/363-6479
Contact: Harper
Notes: responded to user survey

Dalzell, Bob 17
BC Marine Parks
Ministry of Environment, Lands and Parks
Victoria, BC V8V 1X4
Specialties: parks; recreation
Contact: Harper
Notes: personal friend of JRH

Day, Chad 263*
Natural Resource Department
Simon Fraser University
Burnaby, BC V5A 1S6
Notes: user survey only

Demarchi, Dennis 20*
Habitat Inventory Section
Ministry of Environment, Lands and Parks
780 Blanshard St.
Victoria, BC V8V 1X4
wk: 250/387-9145
dx: 250/387-9145
Specialties: fish; habitat
Contact: Booth
Notes: not contacted; on sabbatical

Dennison, Dave 207*
Alberta Environment
Edmonton, AB T6P 2H2
wk: 780-934000
dx: 780-934000
Specialties: coastal studies; engineering
Contact: Dickins
Notes: CIRI interviewer

Dunn, Michael 22*r
Canadian Wildlife Service
Environment Canada
PO Box 340, Delta, BC V4K 3Y3
wk: 604/946-8546
dx: 604/946-7022
Specialties: shore-zone character; fish, habitat; base maps
Contact: Booth
Notes: Coastal Task Force Member

Duval, Wayne 277*
AXYS Group Ltd.
407-1155 Robson St.
Vancouver, BC V6E 1B9
Notes: user survey only

Eade, Alan 257*r
State of the Environment Reporting
Institute of Ocean Sciences
PO Box 6000
Sidney, BC V8L 4B2
wk: 250/363-6568
dx: 250/363-6479
Contact: Morris
Notes: user survey only

Eby, Philip 23*
Fishing Vessel Owner’s Association of BC
206 - 5316 Victoria Dr.
Vancouver, BC V5P 3V7
wk: 604/321-4574
dx: 604/321-2940
Specialties: fisheries; commercial
Contact: Godon
Notes: contacted; no further follow-up

Elkington, Bill 278*
HBT Agr Ltd.
2227 Douglas Rd
Burnaby, BC V5C 5A9
Notes: user survey only

Emmett, Brian 279*
Archipelago Marine Research
200-252 Head St.
Victoria, BC V9A 4S1
Notes: user survey only

English, Karl 135*
LGL Limited
9768 Second Ave.
Sidney, BC V8L 378
wk: 250/656-0127
dx: 250/655-4761
Specialties: marine biology; coastal mapping
Contact: Harper
Farlinger, Sue 148*
Management Biology Unit
Fisheries and Oceans Canada
417 2nd Ave. West
Prince Rupert, BC  V8J 1G8
wk: 250/624-0464
fax: 250/624-0411
Specialties: marine biology; abalone
Contact: Peters
Notes: contacted; no follow-up required

Farrell, Tony 237*
Biological Sciences
Simon Fraser University
Burnaby, BC  V5A 1S6
wk: 604/291-3647
Contact: Peters
Notes: not contacted yet; referred by Chad Day

Ferguson, Duncan 255*
Ministry of Environment
Lands and Parks
1106-1175 Douglas St.
Victoria, BC  V8V 1X5
wk: 250/387-9952
fax: 250/953-3856
Notes: user survey only

Forbes, J. Roderick (Rod) 162*r
Institute of Ocean Sciences
PO Box 6000
Sidney, BC  V8L 4B2
wk: 250/363-6443
fax: 250/363-6390
Specialties: ocean ecology; red tide; PSP
Contact: Harper
Notes: contacted; no follow-up required

Forbes, Trudie 156
Geological Survey of Canada
Pacific Geoscience Centre
PO Box 6000
Sidney, BC  V8L 4B2
wk: 250/363-6425
fax: 250/363-6565
Specialties: sediment samples; sediment analyses
Contact: Harper
Notes: contacted; no follow-up required

Freeland, Howard 154 r
Ocean Physics
Institute of Ocean Sciences
PO Box 6000
Sidney, BC  V8L 4B2
wk: 250/363-6590
fax: 250/363-6746
Specialties: oceanography; lighthouse data
Contact: Harper

Freeman, Ron 280*
Botany Department
University of British Columbia
6270 University Blvd.
Vancouver, BC  V6T 1Z4
wk: 604/822-4672
Notes: user survey only

Gale, Stuart 26 r
Policy, Planning, Development and Implementation
Ministry of Tourism and Culture
1117 Wharf St.
Victoria, BC  V8W 2Z2
wk: 250/387-9000
fax: 250/387-1420
Specialties: tourism
Contact: Booth

Garrett, John 27
Ocean Physics
Institute of Ocean Sciences
9865 W. Saanich Rd.
Sidney, BC  V8L 4B2
wk: 250/356-6474
Notes: user survey only

Gibson, Margaret 323
Community Health Services
Capital Regional District
3995 Quadra St.
Victoria, BC  V9A 5A9
wk: 250/388-9019
Specialties: water quality; fecal coliform counts
Contact: Harper
Notes: Les potter provided info; database manager

Gibson, Tim 186*r
Geological Survey Branch
Ministry of Energy, Mines & Petroleum Resources
553 Superior St., Victoria, BC  V8V 1X4
wk: 250/387-6330
fax: 250/356-8153
Specialties: geology
Contact: Peters
Notes: sent a questionnaire in; Ralph Schmidt

Gower, Jim 300*r
Institute of Ocean Sciences
PO Box 6000
Sidney, BC  V8L 4B2
wk: 250/363-6588
fax: 250/363-6479
Notes: responded to survey

Green, Bill 124
Nuu-Chah-Nulth Tribal Council
PO Box
Port Alberni, BC  V9Y 7M2
wk: 250/724-5757
fax: 250/724-0463
Specialties: tribal council
Contact: Peters/Dickins

Goyette, Darcy 29*
Conservation and Protection
Environment Canada
224 W Esplanade
Vancouver, BC  V7M 3H7
wk: 604/666-2880/ fax: 604/666-6281
Specialties: marine ecology; water quality; habitat
Contact: Peters
Notes: not contacted; John Powers supplying master list
<table>
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<td>250/383-9581</td>
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<td>250/756-7268</td>
<td>shellfish</td>
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<td>250/756-7053</td>
<td>fisheries</td>
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<td>250/387-2416</td>
<td>archaeology</td>
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<td>Henwood, Bill</td>
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Hickey, Dwight 314 r
ECL Envirowest Consultants Ltd.
204-800 McBride Blvd.
New Westminster, BC V3L 2B8
wk: 604/521-6500
fax: 604/521-2208
Contact: Peters
Notes: responded to user survey

Hill, Bob 37*
Tsimshian Tribal Council
PO Box 7
Prince Rupert, BC V8J 3P4
wk: 250/627-8782
fax: 250/627-1938
Specialties: subsistence use; traditional use
Contact: Peters
Notes: Coastal Task Force Member

Hodgson, Christine 115*r
Courtenay Access Centre
Ministry of Agriculture, Fisheries and Food
2500 Cliffe Ave.
Courtenay, BC V9N 5M6
wk: 250/334-1408
fax: 250/334-1410
Specialties: marine plants
Contact: Harper
Notes: contact; marine plants licensing
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<td>224 W Esplanade</td>
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<td>416-555 W Hastings</td>
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<td>Jordan, A.J.</td>
<td>Dickins</td>
<td>604/666-2833</td>
<td>no follow-up required</td>
<td>Minerals, quaternary geology</td>
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<td>Keller, Peter</td>
<td>604/666-7294</td>
<td>Geography Department, University of Victoria, PO Box 3050, BC V8W 3PS</td>
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<td>Kelso, Brian</td>
<td>604/666-5193</td>
<td>Pollution Abatement Branch, Environment Canada, 224 W Esplanade, BC V7M 3H7</td>
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<td>Kenk, Evert</td>
<td>250/387-9309</td>
<td>Survey and Resource Mapping Branch, Ministry of Environment, Lands and Parks, 4th Fl., 1802 Douglas St, Victoria, BC V8V 1X4</td>
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<td>Khristensen, Dag</td>
<td>250/752-9611</td>
<td>Resources Inventory Branch, Ministry of Forests, 1319 Government St, Victoria, BC V8W 3E7</td>
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<td>Kristiansen, D.</td>
<td>250/387-6734</td>
<td>Inventory Branch, Ministry of Forests, 1450 Government St, Victoria, BC V8W 3E7</td>
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<td>Kuwahara, Dr. Ronald</td>
<td>250/387-2191</td>
<td>Defense Research Establishment Pacific, Victoria, BC V0S 1B0</td>
<td>aquaculture, fish</td>
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<td>Lawrence, Dr. Greg</td>
<td>604/822-2637</td>
<td>Department of Civil Engineering, University of British Columbia, Vancouver, BC V6T 1Z4</td>
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<td>LeBlond, Dr. Paul</td>
<td>604/922-1211</td>
<td>Department of Oceanography-RM 1461, University of British Columbia, Vancouver, BC V6T 1Z4</td>
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<td>Lees, Eric</td>
<td>604/922-6214</td>
<td>Parks and Recreation, District of West Vancouver, 750 - 17th St, West Vancouver, BC V7V 3T3</td>
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<td>Lefevre, Al</td>
<td>250/387-1819</td>
<td>Land Policy, Ministry of Environment, Lands and Parks, 6th Fl., 1802 Douglas St, Victoria, BC V8V 1X4</td>
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<td>Leung, William</td>
<td>604/666-6271</td>
<td>Small Crafts Harbours Branch, Fisheries and Oceans Canada, 327-555 W Hastings, Vancouver, BC V6B 5G3</td>
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<td>West Vancouver Lab Fisheries and Oceans Canada 4160 Marine Dr. West Vancouver, BC V7V 1N6</td>
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<td>Lewis, Karen</td>
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<td>BC Parks Ministry of Environment, Lands and Parks 2nd Fl., 800 Johnson St. Victoria, BC V8V 1X4</td>
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<td>Fisheries Branch Ministry of Environment, Lands and Parks 780 Blanshard Victoria, BC V8V 1X4</td>
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<td>Lihman, Sue</td>
<td>325</td>
<td>Salmoenid Enhancement Program</td>
<td>Fisheries and Oceans Canada 323-555 W Hastings St. Vancouver, BC V6B 5G3</td>
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<td>Lindsay, David J.</td>
<td>132</td>
<td>South Island Division</td>
<td>Crofton, BC V0R 1R0 wk: 250/246-9332 fax: 250/246-9644 Specialties: forestry Contact: Morris</td>
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<td>Lynds, Pegi</td>
<td>212</td>
<td>Parks and Recreation City of Burnaby</td>
<td>4949 Canada Way Burnaby, BC V5G 1M2 wk: 604/294-7102 fax: 604/294 7710</td>
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<td>March, Doug</td>
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<td>Commercial Fishing Industry Council</td>
<td>400 845 Cambie St. Vancouver, BC V6B 2P4 wk: 604/683-9148 Specialties: fisheries; commercial Contact: Godon</td>
<td>Peters</td>
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<td>Marchant, Brad</td>
<td>129</td>
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<td>Coastal Research Inc. 80 Niobe St. North Vancouver, BC V7J 2C9 Specialties: marine biology; environmental testing Contact: Peters</td>
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<td>Mason, Brad</td>
<td>58</td>
<td>Habitat Management Division</td>
<td>Fisheries and Oceans Canada 327 - 555 W Hastings St. Vancouver, BC V6B 5G3 wk: 604/666-683/ fax: 604/666-7907 Specialties: habitat Contact: Peters</td>
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<td>Martin, Al</td>
<td>65</td>
<td>Fisheries, Wildlife and Integrated Management Ministry of Environment, Lands and Parks 4th Fl., 810 Blanshard Victoria, BC V8V 1X4</td>
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<td>MacAllister, Carey</td>
<td>60</td>
<td>Pacific Biological Station</td>
<td>Fisheries and Oceans Hammond Bay Road Nanaimo, BC V9R 5K6 wk: 250/756-7000 fax: 250/756-7053 Specialties: estuarine ecology; fisheries Contact: Booth</td>
<td>Peters</td>
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McGreer, Eric  
Beak Association Consulting Ltd.  
160 14480 River Rd  
Richmond, BC  V6V 1Z4  
Notes: user survey only

McLernery, John  
Bamfield Marine Station  
Bamfield, BC  V0R 1B0  
Notes: user survey only

McIntosh, Lorne  
Fish and Wildlife Service  
Ministry of Environment, Lands and Parks  
Bag 5000  
Smithers, BC  V0J 2N0  
wk: 250/847-7307  
fax: 250/847-7728  
Contact: Morris  
Notes: responded to user survey

McKelvey, Rick  
Canadian Wildlife Service  
PO Box 340  
Delta, BC  V4K 3Y3  
wk: 604/946-8546  
fax: 604/946-2357  
Contact: Booth  
Notes: not contacted yet

McLaren, Patrick  
Geosea Research Ltd.  
General Delivery  
Fulford Harbour, BC  
wk: 250/653-4060  
fax: 250/653-4060  
Specialities: marine geology  
Contact: Harper  
Notes: contacted; no follow-up required

Meakins, Donald  
Data Dissemination  
Statistics Canada  
340F - 757 W. Hastings St.  
Vancouver, BC  V6C 3C9  
wk: 604/666-3691  
fax: 604/666-4863  
Contact: Dickins  
Notes: user survey

Millen, Sandra  
Department of Zoology  
University of British Columbia  
6270 University Blvd.  
Vancouver, BC  V6T 1Z4  
wk: 604/822-2087  
fax: 604/822-2416  
Contact: Dickins  
Notes: user survey

Montieth, Derick  
Aquatic Toxicity  
BC Research  
3650 Westbrook Mall  
Vancouver, BC  V6S 2L7  
wk: 604/224-4331  
fax: 604/224-0540  
Notes: user survey only

Morrison, Jim  
Southwestern BC Regional Office  
Fisheries and Oceans  
Hammond Bay Rd  
Nanaimo, BC  V9R 5K6  
wk: 250/756-7267  
Specialities: water quality; habitat  
Contact: Booth  
Notes: contacted; no info; no follow-up required

Moore, Kathleen  
Canadian Wildlife Service  
Environment Canada  
PO Box 340  
Delta, BC  V4K 3Y3  
wk: 604/946-8546  
fax: 604/946-7022  
Contact: Booth  
Notes: contacted; referred to Peggy Ward

Munro, Bill  
Fisheries, Wildlife and Integrated Management  
Ministry of Environment, Lands and Parks  
4th Fl., 810 Blanshard St.  
Victoria, BC  V8V 1X4  
wk: 250/387-9791  
fax: 250/356-9145  
Specialities: wildlife  
Contact: Morris/Booth

Murray, Ted  
Recreation  
Ministry of Forests  
1450 Government St.  
Victoria, BC  V8W 3E7  
wk: 250/387-8480  
Specialities: recreational use; forestry  
Contact: Morris  
Notes: Coastal Task Force Member
Murtha, Mike 328
BC Parks-Northern Regional Headquarters
Ministry of Environment, Lands and Parks
1011 Fourth Ave.
Prince George, BC V2L 3H9
wk: 250/565-6400
dx: 250/565-6629
Specialties: recreational planning
Contact: Morris
Notes: Don Benn provided info

Nash, Laurel 160*
Ecological Reserves Program
Ministry of Environment, Lands and Parks
2nd Fl., 800 Johnson St.
Victoria, BC V8V 1X4
wk: 250/387-8608
Specialties: ecological reserves
Contact: Peters
Notes: not contacted; info supplied by Brian Price

Nash, Laurel 160*
Ecological Reserves Program
Ministry of Environment, Lands and Parks
2nd Fl., 800 Johnson St.
Victoria, BC V8V 1X4
wk: 250/387-8608
Specialties: ecological reserves
Contact: Peters
Notes: not contacted; info supplied by Brian Price

Nelson, Gordon 157
Commercial Fisheries Division
Fisheries and Oceans Canada
418 - 555 W Hastings St.
Vancouver, BC V6B 5G3
wk: 604/666-0752
dx: 604/666-8525
Specialties: fisheries openings
Contact: Peters
Notes: not contacted; no follow-up required

Nelson, Hal 327
Environment and Protection
Environment Canada
224 W Esplanade
N Vancouver, BC V7M 3H7
wk: 604/666-2947
Specialties: shellfish
Contact: Peters
Notes: not contacted; info provided by John Powers

Nelson, Hal 327
Environment and Protection
Environment Canada
224 W Esplanade
N Vancouver, BC V7M 3H7
wk: 604/666-2947
Specialties: shellfish
Contact: Peters
Notes: not contacted; info provided by John Powers

Nichol, Jennifer 68*r
Tourism, Policy, Planning & Implementation
Ministry of Tourism and Culture
2F-1117 Wharf St.
Victoria, BC V8W 2Z2
wk: 250/387-1474
dx: 250/387-6555
Specialties: tourism; recreational use
Contact: Booth
Notes: Coastal Task Force Member; not contacted

North, Margaret 287*r
Geography Department
University of British Columbia
1984 West Mall
Vancouver, BC V6S 2L7
Notes: user survey only

Osmond, Dave 289*
Gartner Lee Ltd.
490-6400 Roberts St.
Burnaby, BC V5G 4C9
Notes: user survey only

Osmond, Dave 289*
Gartner Lee Ltd.
490-6400 Roberts St.
Burnaby, BC V5G 4C9
Notes: user survey only

Pearson, Vic 69*
Nuu-cha-nulth Tribal Council
PO Box 1383
Port Alberni, BC
Specialties: subsistence use; traditional use
Contact: Dickins/Peters

Pearson, Vic 69*
Nuu-cha-nulth Tribal Council
PO Box 1383
Port Alberni, BC
Specialties: subsistence use; traditional use
Contact: Dickins/Peters

Paisley, R.K. 317 r
Westwater Research
University of British Columbia
1933 West Mall
Vancouver, BC V6T 1Z2
wk: 604/822-9224
Contact: Peters
Notes: responded to user survey

Paisley, R.K. 317 r
Westwater Research
University of British Columbia
1933 West Mall
Vancouver, BC V6T 1Z2
wk: 604/822-9224
Contact: Peters
Notes: responded to user survey

Parsons, Tim 229*
Department of Oceanography
University of British Columbia
6270 University Blvd.
Vancouver, BC V6T 1W5
wk: 604/228-4273
dx: 604/228-6091
Specialties: biological oceanography
Contact: Dickins/Peters
Notes: contacted; no follow-up required

Parsons, Tim 229*
Department of Oceanography
University of British Columbia
6270 University Blvd.
Vancouver, BC V6T 1W5
wk: 604/228-4273
dx: 604/228-6091
Specialties: biological oceanography
Contact: Dickins/Peters
Notes: contacted; no follow-up required

Peden, Alex 241*r
BC Royal Museum
675 Belleville St.
Victoria, BC V8V 1X4
wk: 250/387-2422
dx: 250/356-8197
Specialties: biology
Contact: Peters
Notes: contacted but no info; referred to by Gay Fredericks; no follow-up required
Pendergast, Bruce 70*
Fisheries, Wildlife and Integrated Management
Ministry of Environment, Lands and Parks
4th Fl., 810 Blanshard St.
Victoria, BC V8V 1X4
wk: 250/387-9770
fax: 250/356-9145
Specialties: Wildlife; habitat
Contact: Morris/Booth
Notes: Coastal Task Force Member

Penuay, Gary 301*r
City of North Vancouver
141 W 14th St.
North Vancouver, BC V7M 1H9
wk: 604/985-7761
fax: 604/985-0576
Contact: Peters
Notes: responded to user survey

Peters, Sandra 104*r
D.F. Dickins Associates Ltd.
Vancouver, BC V6B 1A1
wk: 604/684-0516
fax: 604/684-2357
Specialties: coastal studies; engineering
Contact: Peters
Notes: CIRI interviewer

Pinnell, Bill 259*
Malaspina College
900 - 5th Ave.
Nanaimo, BC V9R 5S5
Notes: user survey only

Pike, Captain Wayne 211*
Marine Investigations
Transportation Safety Board
409-100 Park Royal S.
West Vancouver, BC V7T 1A2
Contact: Dickins

Pilone, Paul 71*
Resources Inventory Branch
Ministry of Forestry
1319 Government St.
Victoria, BC V8W 3E7
wk: 250/387-5262
fax: 250/387-5999
Specialties: base maps; satellite imagery; forestry
Contact: Morris

Pond, Dr. Steve 196*
Department of Oceanography-Rm. 1461
University of British Columbia
Vancouver, BC V6T 1Z4
wk: 604/822-3278
Contact: Dickins

Pond, Steve 72*
Conservation and Protection
Environment Canada
224 West Esplanade
North Vancouver, BC V7M 3H7
wk: 604/666-2514
fax: 604/666-6858
Specialties: habitat oil spill planning
Contact: Peters
Notes: contacted; John Power supplied info

Potter, Les 322
Health Department
Capital Region District
524 Yates St.
Victoria, BC
wk: 250/360-3118
Specialties: water quality; fecal coliforms
Contact: Harper
Notes: contacted; no follow-up required

Powers, John 326
Conservation and Protection
Environment Canada
224 W Esplanade
N Vancouver, BC V7M 3H7
wk: 604/666-2099
fax: 604/666-9107
Specialties: sewage discharge
Contact: Peters
Notes: contacted; no follow-up required

Powers, Tim 315 r
Resource Systems Management International Inc.
306-604 Columbia St. West
New Westminster, BC V3L 2B8
wk: 604/525-6110
fax: 604/525-7735
Contact: Peters
Notes: responded to user survey

Power, Beth 290*r
EVS Environmental Consultants
195 Pemberton Ave.
North Vancouver, BC V7P 2R4
wk: 604/986-4331
fax: 604/986-4331
Notes: user survey only

Power, John 142
Environment and Conservation
Environment Canada
224 W Esplanade
North Vancouver, BC V7M 3H7
wk: 604/666-3859
fax: 604/666-6713
Specialties: database management
Contact: Peters
Notes: contacted; no follow-up required

Prelusky, Allen 73
Resources Inventory Branch
Ministry of Forestry
1319 Government St.
Victoria, BC V8W 3E7
wk: 250/387-8387
Specialties: base maps; GIS
Contact: Morris

Peppin, Nellie 335
Water Resources Branch
Ministry of Environment, Lands and Parks
765 Broughton St., Victoria, BC V8V 1X4
wk: 250/387-9962
fax: 250/356-8298
Specialties: water quality; SEAM database
Contact: Harper
Notes: contacted; info on SEAM database; no follow-up required

Poppleton, John 131*
Triton Environmental Consulting Ltd.
120-13151 Commerce Parkway
Richmond, BC V6V 2L1
Specialties: environmental monitoring; marine biology
Contact: Peters
Notes: contacted; no follow-up required

Powers, John 326
Conservation and Protection
Environment Canada
224 W Esplanade
N Vancouver, BC V7M 3H7
wk: 604/666-2099
fax: 604/666-9107
Specialties: sewage discharge
Contact: Peters
Notes: contacted; no follow-up required
Price, Brian  
Non-Conforming Use & Heritage Resources  
Ministry of Environment, Lands and Parks  
4th Fl., 810 Blanshard St.  
Victoria, BC  V8V 1X4  
wk: 250/387-4597  
fax: 250/387-5669  
Specialties: parks; recreational use  
Contact: Peters  
Notes: contacted; no follow-up required

Quick, Dr. Michael  
Department of Civil Engineering  
University of British Columbia  
Vancouver, BC  V6T 1Z4  
wk: 604/822-3278  
Contact: Dickins

Radford, Ron  
Fisheries and Oceans Canada  
417 2nd Ave. W.  
Prince Rupert, BC  V8J 1G8  
wk: 250/624-0420  
fax: 250/627-3056  
Contact: Peters  
Notes: Mackinnon supplied info; user survey only

Redpath, Ken  
Canadian Wildlife Service  
Environment Canada  
PO Box 340  
Delta, BC  V4K 3Y3  
wk: 604/946-8546  
fax: 604/946-7022  
Specialties: wildlife  
Contact: Booth  
Notes: not contacted yet

Reid, Bruce  
Fraser River Division  
Fisheries and Oceans Canada  
610 Derwent Way  
New Westminster, BC  V3M 5P8  
wk: 604/666-0514  
fax: 604/666-6627  
Contact: Peters  
Notes: contacted; referred us to FREMP & Burrard Inlet Action Plan

Reimer, P. Douglas  
EML Environmental Mapping Ltd.  
237 Portsmouth Dr.  
Victoria, BC  V9C 1S1  
wk: 250/478-9727  
fax: 250/478-5307  
Specialties: coastal mapping; coastal geology; database management  
Contact: Harper  
Notes: CIRI team member

Reimer, Dr. Ken  
Environmental Sciences Group  
Royal Roads Military College  
Victoria, BC  V0S 1B0  
wk: 250/363-4600  
Contact: Dickins

Remington, Dawn  
Habitat Management  
Ministry of Environment, Lands and Parks  
3726 Alfred Ave.  
Smithers, BC  V0J 2N0  
wk: 250/847-7591  
Contact: Morris  
Notes: contacted; no info; no follow-up required

Roberts, Judy  
Licensing-Commercial  
Fisheries and Oceans Canada  
327-555 W Hastings  
Vancouver, BC  V6B 5G3  
wk: 604/666-2075  
fax: 604/666-7907  
Contact: Peters  
Notes: contacted; no info

Ross, Paul  
D. Environmental Emergency Group  
Environment Canada  
224 W Esplanade  
North Vancouver, BC  V7M 3H7  
wk: 604/666-6950  
fax: 604/666-1140  
Contact: Harper  
Notes: responded to user survey

Saunby, Wanda  
Recreational Fisheries Division  
Fisheries and Oceans Canada  
415-555 W Hastings St.  
Vancouver, BC  V6B 5G3  
wk: 604/666-5835  
fax: 604/666-7369  
Specialties: recreational fisheries; licensing  
Contact: Peters  
Notes: info provided; no follow-up required

Rutgers, Piet  
Parks Board  
City of Vancouver  
2099 Beach Ave.  
Vancouver, BC  V6G 1Z4  
wk: 604/681-1141  
fax: 604/643-2877  
Specialties:  
Contact: Dickins

Sagert, Peter  
Cirrus Consultants  
410-475 West Georgia St.  
Vancouver, BC  V6B 4M9  
Notes: user survey only

Salem, Rod  
Provincial Emergency Program  
2914 Eby St.  
Terrace, BC  V8G 2X5  
wk: 250/638-3514  
fax: 250/638-3498  
Contact: Dickins

Richardson, Heather  
Council of the Haida Nation  
PO Box 589  
Skidegate, BC  V0S 1S0  
wk: 250/559-4468  
Notes: contacted; no follow-up required

Russell, James E  
Courtenay Access Centre  
Ministry of Agriculture, Fisheries and Food  
2500 Cliffe Ave.  
Courtenay, BC  V9A 5M6  
wk: 250/334-1409  
fax: 250/334-1410  
Specialties: oysters; shellfish habitat  
Contact: Harper  
Notes: contacted; wild oyster stock assessment

Rochinini, Roland  
Water Quality Branch  
Ministry of Environment, Lands and Parks  
765 Broughton St.  
Victoria, BC  V8V 1X4  
wk: 250/387-9502  
fax: 250/356-8298  
Specialties: water quality  
Contact: Harper  
Notes: contacted;JRH to pick up annual report
Sawayama, Gary  77  
Lands, Surveys and Resource Mapping Branch  
Ministry of Environment, Lands and Parks  
4th Fl., 1802 Douglas St.  
Victoria, BC  V8V 1X4  
wk: 250/387-6316  
Specialties: base maps  
Contact: Booth  
Notes: not contacted; use Roger Balser as contacted

Selbee, Donna  151*  
BC Parks  
Ministry of Environment, Lands and Parks  
2nd Fl., 800 Johnson St.  
Victoria, BC  V8V 1X4  
wk: 250/387-4502  
fax: 250/387-5757  
SPECIALTIES: park attendance; recreational planning  
Contact: Peters  
Notes: not contacted; Brian Price supplying info

Simmons, Rik  161*  
Parks, Strathcona Division  
Ministry of Environment, Lands and Parks  
PO Box 1479  
Parksville, BC  V9R 2S0  
wk: 250/755-2483  
fax: 250/248-8584  
SPECIALTIES: recreational planning  
Contact: Peters  
Notes: not contacted; info supplied by Greg Chin

Smiley, Brian  79*  
Information Services  
Institute of Ocean Sciences  
PO Box 6000, Sidney, BC  V8L 4B2  
wk: 250/363-6551  
fax: 250/363-6479  
SPECIALTIES: oceanography; habitat  
Contact: Harper  
Notes: Coastal Task Force Member; contacted; Harper to have him check responses

Somntag, Nicholas  130*  
ESSA Environmental and Social Systems Analysts Ltd.  
300-1765 West 8th Ave.  
Vancouver, BC  V6J 5C6  
SPECIALTIES: environmental monitoring  
Contact: Peters

Stephenson, Fred  321  
Canadian Hydrographic Service  
Institute of Ocean Sciences  
PO Box 6000  
Sidney, BC  V8L 4B2  
wk: 250/363-6350  
fax: 250/363-6323  
SPECIALTIES: tides; tidal currents  
Notes: user survey only

Schwindt, Ralph  78*  
Land Use Policy  
Ministry of Energy, Mines and Petroleum Resources  
124 - 525 Superior St.  
Victoria, BC  V8V 1X4  
wk: 250/356-2847  
SPECIALTIES: geology; land use  
Contact: Peters  
Notes: Coastal Task Force Member; sending

Serbie, Greg  225*  
Pacific Biological Station  
Hammond Bay Rd  
Nanaimo, BC  V9R 5K6  
wk: 250/756-7000  
fax: 250/756-7053  
SPECIALTIES: salmon  
Contact: Booth  
Notes: contacted; no follow-up required

Skydtd, Paul  200*r  
Greater Vancouver Regional District  
Parks Planning  
4330 Kingsway  
Vancouver, BC  V5H 4G8  
wk: 604/432-6357  
fax: 604/432-6296  
Contact: Dickins

Smith, Hugh  248*  
Fish and Water Resources  
BC Hydro  
808 Nelson St.  
Vancouver, BC  V6C 2H2  
wk: 604/663-4481  
Contact: Dickins  
Notes: user survey only

St. Peirre, Paul  296*  
ARA Consulting Group Inc.  
402-475 Howe St.  
Vancouver, BC  V6C 2B3  
Contact: Peters  
Notes: no follow-up required

Steer, Greg  174*r  
Salmonid Enhancement Program  
Fisheries and Oceans Canada  
327-555 W Hastings St.  
Vancouver, BC  V6B 3G3  
wk: 604/666-0115  
fax: 604/666-6894  
Contact: Harper  
Notes: not contacted

Stockwell, Alan  128*  
AGRODEV CANADA LTD  
160-14480 River Rd.  
Richmond, BC  V6V 1L4  
SPECIALTIES: fisheries  
Notes: user survey only

Sekela, Mark  183*  
Water Quality  
Environment Canada  
248 West Esplanade  
North Vancouver, BC  V7M 3H7  
wk: 604/666-8086  
Contact: Peters  
Notes: contacted; no info

Sholte, Joe  293*  
Reid Crowther and Partners Ltd.  
300-4170 Still Creek Dr.  
Burnaby, BC  V5C 6C6  
Notes: user survey only

Slaney, Tim  294*  
Aquatic Resources Ltd.  
40-942 SW Marine Dr.  
Vancouver, BC  V6P 5Z2  
Notes: user survey only

Simmons, Rik  161*  
Parks, Strathcona Division  
Ministry of Environment, Lands and Parks  
PO Box 1479  
Parksville, BC  V9R 2S0  
wk: 250/755-2483  
fax: 250/248-8584  
SPECIALTIES: recreational planning  
Contact: Peters  
Notes: not contacted; info supplied by Greg Chin

Stewart, Ian  295*  
EBA Environmental Ltd.  
550-1100 Melville St.  
Vancouver, BC  V6E 4A6  
Contact: Peters

Smith, John  226  
Canadian Wildlife Service  
PO Box 340  
Delta, BC  V4K 3Y3  
wk: 604/946-8546  
fax: 604/946-7022  
Contact: Booth  
Notes: not contacted yet
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
<th>Position/Office</th>
<th>Address/Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sullivan, Melanie</td>
<td>147</td>
<td>Water Quality Unit, Fisheries and Oceans Canada</td>
<td>PO Box 6000, Sidney, BC V8L 4B2 wk: 250/666-7215 fax: 250/666-7907 Contact: Peters</td>
</tr>
<tr>
<td>Taylor, Janna</td>
<td>214</td>
<td>Parks and Recreation, City of Port Coquitlam</td>
<td>Port Coquitlam, BC V3C 1Z2 wk: 604/941-5411 fax: 604/944-5405 Contact: Dickins</td>
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<tr>
<td>Townsend, Gerry</td>
<td>82</td>
<td>Canadian Wildlife Service, Environment Canada</td>
<td>PO Box 340, Delta, BC V4K 3Y3 wk: 604/946-8546 fax: 604/967022 Contact: Booth</td>
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<tr>
<td>Valencourt, Paul</td>
<td>332</td>
<td>Provincial Emergency Program, Ministry of Agriculture, Fisheries and Food</td>
<td>3287 Oak St., Vancouver, BC V8X 1P8 wk: 604/387-9595 Contact: Harper</td>
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<tr>
<td>Vold, Terje</td>
<td>86</td>
<td>Integrated Resources Branch, Ministry of Forestry</td>
<td>1450 Government St., Victoria, BC V8W 3E7 wk: 250/387-8482 Contact: Morris</td>
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<tr>
<td>Taylor, Dr. Max</td>
<td>198</td>
<td>Department of Oceanography, Institute of Ocean Sciences</td>
<td>PO Box 6000, Sidney, BC V8L 4B2 wk: 604/8223278 Contact: Dickins</td>
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<tr>
<td>Thompson, Jeff</td>
<td>309</td>
<td>Ocean Chemistry Division</td>
<td>PO Box 6000, Sidney, BC V8L 4B2 wk: 250/363-6408 fax: 250/363-6807 Contact: Harper</td>
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<tr>
<td>Tremblay, Tom</td>
<td>185</td>
<td>Water Quality, Environment Canada</td>
<td>1450 Government St., Victoria, BC V8W 3E7 wk: 250/387-9595 Contact: Harper</td>
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<tr>
<td>Van Barneveld, Jim</td>
<td>76</td>
<td>Integrated Management Branch, Ministry of Environment, Fisheries and Oceans Canada</td>
<td>780 Blanshard, Victoria, BC V8W 1X4 wk: 250/387-9945 fax: 250/356-7183 Contact: Morris</td>
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<tr>
<td>Ward, Peggy</td>
<td>227</td>
<td>Canadian Wildlife Service</td>
<td>3567 Island Highway West, Qualicum Beach, BC V9K 2B7 wk: 250/751-9611 fax: 250/752-9611 Contact: Booth</td>
</tr>
</tbody>
</table>

Coastal Information Resource Inventory
Watts, Teresa 297*
Resource Systems Management International Inc.
300-604 Columbia St. W
New Westminster, BC V3M 1A6
Notes: user survey only

Wayne, Maureen 87*
Habitat Conservation Fund
Ministry of Environment, Lands and Parks
780 Blanshard St.
Victoria, BC V8V 1X5
wk: 250/387-1159
fax: 250/356-9145
Specialties: habitats; estuarine mapping
Contact: Morris/Booth
Notes: contacted; no follow-up required

Weir, Gary 88
Planning and Statistics
Ministry of Finances
2nd Fl., 1405 Douglas St.
Victoria, BC V8V 1X4
wk: 250/387-0327
Contact: Peters
Notes: no relevant info

Wells, Gary 89
Atmospheric Environment Service
Environment Canada
200 1200 W. 73rd Ave.
Vancouver, BC V6P 6H9
wk: 604/604-9000
fax: 604/604-9004
Specialties: meteorology
Contact: Peters
Notes: not contacted; Earl Coalta is alternative

Western, Charlie 108*r
Ministry of Forests
4595 Canada Way
Burnaby, BC V5G 4L9
wk: 604/660-7608
fax: 604/660-7778
Specialties: recreational planning
Contact: Morris
Notes: contacted; no follow-up required; coastal videos

Wetmore, Steve 90
Canadian Wildlife Service
Environment Canada
PO Box 340
Delta, BC V4K 3Y3
wk: 604/356-8546
fax: 604/356-7022
Specialties: birds; migratory birds
Contact: Booth
Notes: not contacted yet

Whitbrad, Ian 187*
Archaeology Branch
Ministry of Tourism and Culture
800 Johnson St.
Victoria, BC V8V 1X4
wk: 250/387-4420
Contact: Peters
Notes: owner of dbase written up by Jack Foster; spoke to Foster only

White, Dinah 97*
Economic Planning Group
Suite 14 - 3318 Oak St.
Victoria, BC V8X 1R1
wk: 250/383-5818
fax: 250/383-9581
Specialties: tourism
Contact: Morris
Notes: contacted; supplied report to Harper

White, Richard 213*
City of North Vancouver
141 West 14th St.
North Vancouver, BC V7M 1H9
wk: 604/985-0576
fax: 604/985-576
Contact: Dickins

Whitehead, Phil 228
Canadian Wildlife Service
PO Box 340
Delta, BC V4K 3Y3
wk: 604/946-4946
fax: 604/946-7022
Contact: Booth
Notes: not contacted yet

Whitfield, Paul 188
Water Quality
Environment Canada
248 West Esplanade
North Vancouver, BC V7M 3H7
wk: 604/666-6756
Contact: Peters
Notes: contacted; no info

Wier, Josette 119*r
Haisla Village Council
Haisla PO Box 1101
Kitamaat Village, BC V0T 2B0
wk: 250/539-9382
fax: 250/332-2840
Specialties: tribal council
Contact: Peters

Wolferstan, Bill 93*
Environmental Emergency Services Branch
Ministry of Environment, Lands and Parks
737 Courteney St.
Victoria, BC V8V 1X5
wk: 250/356-9300
fax: 250/356-6742
Specialties: risk assessment; shore zone character
Contact: Peters/Harper
Notes: contacted; supplied data on previous

Wong, C. S. 94
Ocean Chemistry Division
Institute of Ocean Sciences
PO Box 600
Sidney, BC V8L 4B2
wk: 250/356-6407
Specialties: water quality
Contact: Harper

Wolfe, Nancy 136*
G.L. Williams and Associates Ltd.
2300 King Albert Ave.
Coquitlam, BC V3J 1Z8
wk: 604/936-0185
fax: 604/936-6992
Specialties: habitat mapping; estuarine management
Contact: Harper

Wilson, Bob 299*r
Institute of Ocean Sciences
PO Box 6000
Sidney, BC V8L 4B2
wk: 250/363-6335
fax: 250/363-6479
Specialties:
Contact: Harper
Notes: responded to user survey

Wolferstan, Bill 93*
Environmental Emergency Services Branch
Ministry of Environment, Lands and Parks
737 Courteney St.
Victoria, BC V8V 1X5
wk: 250/356-9300
fax: 250/356-6742
Specialties: risk assessment; shore zone character
Contact: Peters/Harper
Notes: contacted; supplied data on previous

Wong, C. S. 94
Ocean Chemistry Division
Institute of Ocean Sciences
PO Box 600
Sidney, BC V8L 4B2
wk: 250/356-6407
Specialties: water quality
Contact: Harper

Yates, Nancy 238*
Burrard Inlet Environment Action Plan
803-510 W Hastings St.
Vancouver, BC V6B 1L8
wk: 604/775-5195
Specialties:
Contact: Peters
Notes: contacted; no info
Young, Rick
MacMillan Bloedel Limited
925 W. Georgia St.
Vancouver, BC V6C 3L2
wk: 604/661-8283
fax: 604/661-4480
Specialties: forestry; environmental permitting;
spill response
Contact: Morris
Notes: user survey
## Appendix B
### Abbreviated Listing of Coastal Data Sets

<table>
<thead>
<tr>
<th>PHYSICAL RESOURCE DATA SETS</th>
<th>019 Coastal and Marine Sediment Database</th>
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</thead>
<tbody>
<tr>
<td>003 Physical Shore-zone Mapping (MELP)</td>
<td>EMR - Geological Survey of Canada</td>
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<tr>
<td>MELP - Environmental Emergency Services</td>
<td>data on sediment texture for coastal and marine surficial sediments</td>
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<tr>
<td>mapping of the shore-zone substrate, morphology and wave exposure</td>
<td></td>
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<tr>
<td>004 Physical Shore-zone mapping (CPS)</td>
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<tr>
<td>BC - Canadian Park Service</td>
<td></td>
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<tr>
<td>mapping of the shore-zone substrate, morphology and wave exposure</td>
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<tr>
<td>006 Physical Shore-zone Mapping (EC)</td>
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<td>EC - Environmental Conservation</td>
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<td>mapping of the shore-zone substrate, morphology and wave exposure</td>
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<tr>
<td>007 Physical Shore-zone Mapping (LD)</td>
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<tr>
<td>Lands Directorate (now Environment Canada)</td>
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<tr>
<td>mapping of the shore-zone substrate, morphology and wave exposure</td>
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<tr>
<td>008 Paleo Sea Level Data</td>
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<tr>
<td>Simon Fraser - Institute of Quaternary Research</td>
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<tr>
<td>record of coastal radiocarbon dates in BC and associated paleo sea levels</td>
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<tr>
<td>009 Surficial Geology Maps</td>
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<tr>
<td>MEMPR - Geological Survey Branch</td>
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<tr>
<td>maps of surface sediment character, slope stability, or terrain</td>
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<tr>
<td>010 Coastal Aerial Videotapes</td>
<td></td>
</tr>
<tr>
<td>MELP - Environmental Emergency Services</td>
<td></td>
</tr>
<tr>
<td>oblique, low-altitude aerial videotapes of the shore-zone, usually flown at low tide</td>
<td></td>
</tr>
<tr>
<td>011 Coastal Aerial Videotapes (CPS)</td>
<td></td>
</tr>
<tr>
<td>EC - Canadian Park Service</td>
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<tr>
<td>oblique, low-altitude aerial videotapes of the shore-zone, usually flown at low tide (Pacific Rim National Park and Gwaii Haanas)</td>
<td></td>
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<tr>
<td>019 Coastal and Marine Sediment Database</td>
<td>EMR - Geological Survey of Canada</td>
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<tr>
<td>data on sediment texture for coastal and marine surficial sediments</td>
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<tr>
<td>Meteorological</td>
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<tr>
<td>050 Climatological Data</td>
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<tr>
<td>EC - AES</td>
<td>coastal weather observations (wind speed, direction; temperature; etc.</td>
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<tr>
<td>051 Anchored Buoy Data BC</td>
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<tr>
<td>EC - AES</td>
<td>weather data collected by offshore and nearshore weather buoys</td>
</tr>
<tr>
<td>053 Marine Lighthouse Weather Observations</td>
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<tr>
<td>EC - AES</td>
<td>weather data collected by lighthouses; quality control may be more variable than AES climate data</td>
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<tr>
<td>Oceanography/Water Quality</td>
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<tr>
<td>001 Tide Data</td>
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<tr>
<td>DFO - Canadian Hydrographic Service</td>
<td>water elevation for coastal stations</td>
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<tr>
<td>002 Lighthouse Temperature and Salinity Data</td>
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<tr>
<td>DFO/EC - IOS</td>
<td>records dating to 1914 of surface water temperature and salinity for selected lighthouses</td>
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<tr>
<td>026 Nearshore Fecal Coliform Surveys</td>
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<tr>
<td>Capital Regional District</td>
<td>surveys of recreational beaches for fecal coliform; summer only</td>
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<td>028 Dioxin/PCB Database</td>
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<tr>
<td>DFO - IOS</td>
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</table>
records data on all dioxin and PCB analyses run at IOS dioxin lab

029 Water Quality Objectives
MELP - Water Resources Branch
sets water quality objectives for coastal water bodies and usually includes 2-3 of data collection when initiated

030 System for Environmental Assessment and Management (SEAM)
MELP - Water Resources Branch
primarily a water quality database related to compliance monitoring programs

031 Water Quality Monitoring
Capital Regional District
sewer outfall water quality monitoring program

032 Ocean Data Information System
DFO - IOS
systematic cataloging of oceanographic temperature, salinity and current data collected by various agencies and universities

064 Dioxin/Furan Measurement Inventory
DFO - Habitat Management Division
database or dioxin and furan measurements in fish, shellfish, marine mammals and algae from coastal areas

069 Marine Parks Water Quality
MELP - Parks Branch
fecal coliform counts in 17 marine parks

076 Marine Environmental Quality Data
BC - Environmental Conservation
water quality data and trace metal data in marine sediments
**BIOLOGICAL RESOURCE DATA SETS**

**Birds**

021 Beached Bird Surveys
    MELP - Environmental Emergency Services Branch
    monitoring of the frequency of beached bird carcasses for baseline information

084 Ornithology Collection
    BC Royal Museum
    georeferenced data on bird specimens collected in BC; maintained at BC Royal Museum

089 Distributions and Densities of Marine Birds
    EC - CWS
    atlas with bird distribution and density by species

107 Eagle Nest Tree Surveys
    MELP - Wildlife Branch
    inventory of eagle nest locations for southern Vancouver Is.; northern Vancouver Is. in progress

110 Eagle Population Estimates
    MELP - Wildlife Branch
    ongoing eagle population estimates coordinated with Alaska

154 East Strait of Georgia Waterbirds
    EC - CWS
    regular monthly surveys for waterbirds

155 Seabird Colony Inventory of BC
    EC - CWS
    1988 to 1989 survey of the Fraser Delta

158 heron Colony Census
    EC - CWS
    census of heron colonies and reproductive success

159 Boundary Bay Bird Surveys
    EC - CWS
    1991 Weekly survey of birds in Boundary Bay

164 Snowgeese in the Fraser and Skagit Deltas
    EC - CWS
    surveys of the abundance and distribution of snowgeese in the Fraser and Skagit River deltas

085 Abundance and Distribution of Swans on the Fraser Delta
    EC - CWS
    surveys of the abundance and distribution of swans on the Fraser River delta

167 *Scirpus americanus* in the Fraser River Delta
    EC - CWS
    surveys of *Scirpus americanus* in the Fraser River delta

168 Chlorinated Hydrocarbons in Marine Bird Eggs of the Strait of Georgia
    EC - CWS
    database on chlorinated hydrocarbons in marine birds eggs from nest sites around the Strait of Georgia

169 Birds of BC Wildlife Records Scheme
    MELP - Wildlife Branch
    records of BC birds currently being synthesized

**Environmental Atlases/Review**

033 TECHREF
    DFO - IOS
    systematic database of technical references related to oceanography and environmental science for the marine area of British Columbia

070 Bibliography of Publications on Ecological Reserves
    MELP - Ecological Reserves Program
    publications related to marine reserves; updating is ongoing

**Fisheries**

058 Stream Information System (SISS)
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<td>Maps of Spawning and Fishing Areas</td>
<td>DFO - Habitat Management Division</td>
<td>compiled by Fishing Vessel Owners Association; confidential</td>
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<td>Salmon Escapement Database System</td>
<td>DFO - Biological Service Branch</td>
<td>database of salmon escapement records</td>
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<td>151</td>
<td>Salmon Escapement Estuaries</td>
<td>Jaqueline Booth and Associates</td>
<td>salmon escapement data linked to estuaries</td>
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<td>152</td>
<td>Herring Spawn Surveys</td>
<td>DFO - PBS</td>
<td>1:100,000 scale maps of spawning data; summarized data public but maps confidential</td>
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<td>102</td>
<td>Estuary Mapping System</td>
<td>MELP - Environmental Emergency Services Branch</td>
<td>mapping and classification system applied to approximately 15 estuaries; not active</td>
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<td>Wetlands of the Comox Valley</td>
<td>EC - CWS</td>
<td>baseline inventory of wetland distribution for environmental protection monitoring</td>
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<td>153</td>
<td>Wetlands of the Fraser Delta</td>
<td>EC - CWS</td>
<td>wetlands mapped in SPANS GIS</td>
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<td>166</td>
<td>Intertidal and Upland Habitat of E Vancouver Is</td>
<td>EC - CWS</td>
<td>a pilot assessment of historical changes in estuarine habitat</td>
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<td>005</td>
<td>Habitat Mapping (CPS)</td>
<td>EC - Canadian Park Service</td>
<td>mapping of intertidal physical shore-zone character, wave exposure and macro biota</td>
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<tr>
<td>013</td>
<td>Kelp Inventory Program</td>
<td>MAFF - Aquaculture and Commercial Fisheries Br.</td>
<td>systematic survey program for estimating kelp standing stock</td>
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<td>022</td>
<td>Intertidal Habitat Mapping (MELP)</td>
<td>MELP - Environmental Emergency Services Branch</td>
<td>mapping of physical shore-zone character, wave exposure and macro biota</td>
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<td>088</td>
<td>FREMP Habitat Management Maps</td>
<td>Fraser River Estuary Management Program</td>
<td>detailed maps of physical shore-zone character, riparian vegetation, marsh, and land use data</td>
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<td>Habitat Assessment and Rating of Coastal Wetlands</td>
<td>MELP - Smithers</td>
<td>north coastal wetland programs; biological, physical, human use and land tenure data</td>
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**Marine Mammals/Zoology**

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<td>BC Royal Museum</td>
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<td>Mammalogy Collection</td>
<td>BC Royal Museum</td>
<td>mammalogy collection maintained at BC Royal Museum</td>
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<td>annual census of harbour seals at selected locations on the BC coast</td>
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<td>annual census of sea lion colonies in BC; not georeferenced</td>
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<td>Sea Lion Colony Locations</td>
<td>Jaqueline Booth and Associates</td>
<td>georeferenced data file on the location of sea lion colonies listed in the annual sea lion census</td>
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<td>Sea Otter Surveys</td>
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annual surveys of sea otters to evaluate population and distribution

Shellfish/Invertebrates

017 Wild Oyster Stock Assessment
MAFF - Aquaculture and Commercial Fisheries Br.
yearly survey of standing stock of wild oysters; mostly Clayoquot Sound, Desolation Sound, Nootka Sound, Barkley Sound

018 Shellfish Habitat Capability
MAFF - Aquaculture and Commercial Fisheries Br.

maps of water quality and oceanographic data indicating suitability for shellfish habitat

020 Red Tide (PSP) Monitoring Program
DFO - IOS
weekly monitoring of selected sites in Gulf Is, S Strait of Georgia and Long Beach for red tide; research program

056 Paralytic Shellfish Poisoning Database (DFO)
DFO - Inspection Branch
archive of paralytic shellfish poison levels in bivalves; maintained by shellfish area and sub-areas
HUMAN-USE RESOURCE DATA SETS²

Archaeological/Heritage Resources

052 Designated Heritage Site
Registry MOT/MRC - Archaeology Branch
gereferenced locations of heritage sites

054 Shipwreck Information Database (SID)
MOT/MRC - Archaeology Branch
gereferenced locations and data on BC shipwrecks

055 Archaeological Site Inventory
MOT/MRC - Archaeology Branch
confidential database with the locations of
archaeological sites

057 Annotated Bibliography of Archaeological
Research
MOT/MRC - Archaeology Branch
printed annually in Word Perfect

Fisheries

012 Aquaculture License and Revenue
Administration System (ALRAS)
MAFF - Aquaculture and Commercial Fisheries
Br.
licensing system for all aquaculture leases and
operations

014 Marine Plant Harvesting Licensing System
MAFF Aquaculture and Commercial Fisheries
Br.
licensing program for harvesting of marine plants
(kelp, salicornia)

015 Fish Sales Licensing
MAFF - Aquaculture and Commercial Fisheries
Br.
licensing for shore stations, barges, vessels, vehicles
and fish processing plants

016 Finfish Aquaculture Capability Atlas
MAFF - Aquaculture and Commercial Fisheries
Br.
summarizes existing data and provides suitability
codes for potential aquaculture

067 Fisheries Openings/Closings
DFO - Commercial Fisheries Division
documentation of all fisheries openings/closings by
species, gear type and areas (also PSP closures)

077 Environmental Planning Information Control
Database
DFO - Salmonid Enhancement Program
salmonid enhancement program database

079 Commercial Catch Statistics Program
DFO - Fisheries Data Management Unit
summarizes data from commercial sales slip records

081 Recreational Catch Statistics
Biological Services Division
database on recreational fisheries catch data

083 Tidal Water Sport Fishing Licenses
Recreational Fisheries Division
database on salt water fishing licenses

091 Record Management Strategy
DFO - Biological Sciences Division
annual, detailed record of the fishing season used for
assessing the effectiveness of strategies

171 Shrimp Trap Prawn Log Books
DFO - PBS
summaries or about 25,000 records annually for catch
and effort by vessel, subarea or location; used for
stock assessment

172 Geoduck Harvest Logs
DFO - Shellfish Management
log data used to assess stock, catch and effort and
regional harvest

173 Miscellaneous Dive Fisheries Log Books
DFO - Shellfish Management

² including fisheries management data sets
log book data on clams, urchins, scallops, sea cucumber, octopus, and mussels

**Foreshore Use/Land Use**

023 Shore-zone Access Database  
MELP - Environmental Emergency Services Branch  
mapping and database or shore-zone access points from both land and water

061 East Vancouver Island Coastal and Marine Data Atlas  
MELP - Land Policy Branch  
summary atlas of foreshore data (1984)

062 Lands Tenure Administration System (TAS)  
MELP - Land Policy Branch  
licensing data of all foreshore leases and land status

063 Coastal Resource Interests Studies (CRIS)  
MELP - Land Policy Branch  
collection of biological and human-use information for selected areas of the BC coast

078 Discharge Inventory  
EC - Conservation and Protection  
municipal discharges (sewage) including permitted discharge, location, flow, treatment

080 Harbour Sites and Mooring Buoys  
DFO - Small Craft Harbour  
locations of all public wharves and buoys maintained by DGO Small Craft harbours

087 Foreshore Referrals Program  
Habitat Management Division  
database on the evaluation of coastal and estuarine development proposals; habitat description procedure

**Native use/Subsistence Use**

025 Native Resource Use Sites  
MELP - Environmental Emergency Services Branch  
locations of native harvest data determined from interviews with coastal bands; data is confidential and owned by band

075 Native Food Fishery Statistics System  
DFO - Biological Services Division  
data on permitted catch data; does not include Fraser River

105 Coastal Zone mapping & Digital Database  
ESRF/Council of Haida Nation  
inventory of fisheries, birds, coastal geology, and traditional use of the shore-zone of the Queen Charlotte Islands.

**Recreational Planning & Management**

066 BC Parks Attendance System  
MELP - Ecological Reserves Program  
documents locations, character, purpose and information about each reserve

074 BC Parks Subregional Plans  
MELP - Parks Branch  
summary of use patterns, resources and capability of various subregions; 5 yr update frequency (intended)

101 Landscape/Recreation Program  
MOF - Port McNeil  
MOF maps on recreational capability and use

103 Ministry of Forests Recreation Inventory  
MOF - Recreation Division  
mapping and classification system includes coastline as well as uplands

104 North Coast parks Evaluation Survey  
MELP - Parks Division  
parks systems study to evaluate potential park sites; partial shore data inventory
106 TFL 46 & 47 - Resource Use Inventory
   Fletcher Challenge
   documentation of human-use in terms of recreational potential and use patterns

108 TFL 6, 24 & 25 - Resource Use Inventory
   Western Forest Products
   ecosystem classification, terrain classification, slope stability, environmental sensitivity and some stream classification recorded on GIS

Shellfish Harvesting

060 Oyster Production
   BC Oyster Marketing Board
   production records of oyster growers; confidential

065 Abalone Harvest Log
   DFO - Fisheries Branch
   database of commercial harvesting records

068 Desolation Sound Shellfish Inventory
   MELP - Parks Branch
   water quality, visitor use and shellfish capability analysis

082 Canadian Shellfish Sanitation Program
   EC - Conservation and Protection
   classification of shellfish growing waters to ensure protection of public health

Tourism

160 Coastal Tourism Inventory Project (CTRP)
   MT - Tourism Policy Planning and Implementation
   compilation of biological, physical and human use resource data for use in tourism and recreational planning
Appendix C
Electronic Database Structures

INVENT.DBF Database Structure

Inventory Database (INVENT.DBF)

This database catalogues information collected in the Coastal Data Set Inventory phase of the project - it provides a systematic catalog of the coastal data sets and their associated data.

INV_IDENT - the unique record number of the database.

SET_NAME - the descriptive name of the database.

DESCRIPT - a short summary description of the database.

INTER_E - the interviewee who provided information on the database. Cross referenced to the contact database.

INTER_R - the project team interviewer who contacted the interviewee and who completed the data entry form. Cross referenced to the contact database.

INTER_DATE - the date of the interview.

OWNER - the owner of the database.

MANAGER - the current database manager.

DEVELOPER - the database developer.

REFERENCE - technical reports on the database; these are a cross-reference code to the reference database (REFER.DBF)

START_DATE - the date when the database was initially developed.

END_DATE - the date of last updating; indicated as “resent” if ongoing.

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**Total** 1183

Structure for database:  C:INVENT.dbf
Number of data records:  107
Date of last update:  01/28/93

ONGOING - a yes (Y) or no (N) indication if the database is still actively maintained.

SEASON - months (indicated by 1 - 12) for which there is data; “*” indicates all.

Coastal Information Resource Inventory
FREQ_COL - an indication of the frequency of data collections (erratic, hourly, daily, weekly, monthly, seasonal, bi-annual, annual).

GEO_DESCRPT - provides a description of the extent of the database.

GEO_EXTENT - number(s) of the DFO management regions in which data occurs.

SCALE - indicates the scale of mapping associated with the original data collection.

GEO_REF - a yes (Y) or no (N) indication if the data is georeferenced.

HARD-COPY - an indication if there is a hard-copy of the database, and if so, the hard-copy type (report, atlas, maps, photographs, other).

EL_MEDIUM - an indication if the database is on an electronic medium (disk, CD-ROM, tape, video or other).

EL_SYSTEM - an indication of the system type under which the data is stored (IBM, MAC, UNIX, other).

EL_SOFT - an indication of the software under which the database is compiled.

PURPOSE - the general level of application of the data (overview/planning; reconnaissance/management; operational).

APPLICATE - the major application area of the database (physical baseline information, wildlife management; fisheries management, heritage conservation, tourism/recreational planning, land-use planning, transportation planning, subsistence/traditional use).

PUBLIC - a yes (Y) or no (N) indication of the public availability of the database.

KEYWORDS - one or more keywords that describe the attributes of the database. Table 3.2 includes a glossary of attributes.

NOTES - miscellaneous notes on the database provided by the interviewer.

TAG - cress-reference number between INVENT.DBF, CONTACT.DGF and REFER.DBF.
Contact Database (CONTACT.DBF)

This database catalogues individual contacts made during both the Coastal Resource Information Review phase of the project and User Survey phase of the project.

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**CONT_IDENT** - the unique record number of the contact.

**FIRST-NAME** - the first name of individual.

**INITIAL** - the middle initial of the individual.

**LAST_NAME** - the last name of the individual.

**TITLE** - the individual’s title.

**ORGANIZAT** - the organization or institution with which the individual is associated.

**STREET** - the street address of the individual; in some cases the postal address.

**CITY**, **PROVINCE**, **COUNTRY**, **WORKPHONE**, **FAX** - self-explanatory

**SPECIALTY** - general field of training or experience.

**NOTES** - notes made during the interview regarding follow-up.

**TAG** - cross-reference number between INVENT.DBF, CONTACT.DBF and REFER.DBF.
Reference Database (REFERE.DBF)

REFERE.DBF Database Structure

This database catalogues printed reports that relate to the databases in INVENT.DBF.

**REF_IDENT** - the unique record number of the reference.

**LAST_NAME** - the last name of senior author; agency name if no stated author.

**FIRST_NAME** - the first name or initial of the senior author.

**OTHERS** - names of other authors.

**DATE** - year of publication.

**TITLE** - the published title of the report.

**SOURCE** - the issuing agency or institution of the report.

**PUBLISHER** - the agency or institution responsible for publishing the report.

**LOCATION** - the location of the source institution.

**PAGES** - number of pages in the report

**NOTES** - notes made by the interviewer on the publication contents.

**TAG** - cross-reference number between INVENT.DBC, CONTACT.DBF and REFERE.DBF.

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Appendix E
User Survey Comments

• Excellent project. Please keep us in touch. (Dwight Hickey, Envirowest Environmental Consultants)

• Keep us updated. (Beth Power, EVS Environmental Consultants)

• Are non-shellfish invertebrates of no interest to anyone but me? Good to see all these databases put together. (Sandra Millen, UBC)

• It is only if GIS format is available that users can assess the utility of these databases. If only georeferences and numerical data they may be of limited use. (Margaret North, Geog. Dept., UBC)

• Our GIS curator suggests that the integration of all these data sources is long overdue. This department has obtained funding to purchase and/or create a GIS for the Federal and Federal airphoto indexes, it would be a logical extension to have this photo database fully integrated with the provincial resource inventory so that one lat/long or UTM locator can be used to access both map and photo sources. (Margaret North, Dept. of Geog., UBC).

• SRMB produces base maps. A requirement to integrate this data is that a common georeferencing system and related base maps be used. To share the data, a common data model must be developed. Access via Land Data BC should be considered. (Roger Balser, B.C. Surveys and Resource Mapping)

• Monitoring for change usually requires a data quality and precision not inherent in “reconnaissance” surveys. The data bases may, therefore, prove to be of limited use. Monitoring is largely done only as a research objective. We are at the beginning of recognizing a need to monitor “as an audit of performance”, I can therefore not foresee what data would be required to facilitate “early trend detection”. (Jim van Barneveld, Integrated Management Branch)

• This is a wonderful start, and the information provided here is already of great value. For marine park/protected area system planning it would be ideal to have a marine ecological classification system (something equivalent to the Ministry of Forests biogeoclimatic ecosystem classification system). I understand that in Washington there has been some work undertaken in this regard. Do you know of any other examples or any efforts underway in B.C. (e.g., through academic institutions) to develop a classification system for marine ecosystems? (Kaaren Lewis BC Parks)?

• Please don't spend any money collecting new data in the sense of taking and analyzing samples or digitizing photographs, etc. The first priority has got to be to provide interagency access to a "compiled" set of existing data. I'd like to be able to sit at my computer, identify a geographic area, and find out what information or attributes are available for that area. (Bob Wilson, IOS, DFO)
Glossary (abbreviated)

Attributes - feature or characteristic of a coastal resource that is relatively well-defined in time or space.

Attribute Categories - a collection of attributes about a coastal resource or feature.

Bird Resources - an attributes category that collectively refers to coastal birds.

BC Coastal Resources Data Set - a recommended data set that reflects priority interests and needs of users of coastal data. This recommended data set is based on results for the User Needs Survey and from the many discussions that project team members had with users over the course of the project.

Coastal Data Set Inventory - the phase of the project associated with documenting existing coastal information data sets.

Coastal Fringe Vegetation - an attribute category referring to the terrestrial vegetation in the immediate backshore of the coastal zone.

Commercial Fisheries - an attribute category that collectively refers to fish catch, escapement and other management data.

CONTACT.DBF - a dBaseIII+ database file that contains names, addresses and notes on contacts made during the project.

Data Set - systematically collected coastal resource data that is: active or recent, regional in extent or spans more than one year and focused on a resource that is important to coastal zone resource managers.

Education - activities related to education or public awareness on coastal zone resources.

Entity - a measurable quantity about an attribute.

Environmental Protection/Monitoring - resources or activities related to environmental protection or to environmental monitoring (e.g., compliance monitoring of pulp mills).

Fisheries Management - resource information and/or activities that are used in fisheries (or shellfish) management.

Habitat - an attribute category that considers the physical and “fixed” biological framework of the coastal zone as “habitat” for more mobile organisms (including man).

Heritage Conservation - resources or activities related to anthropological, archaeological or historical features of the coastal zone.

INVENTORY.DBF - a dBaseIII+ database file that records information on the coastal data sets identified in this survey; see Appendix C for a summary listing.

Management Scale Application Purposes - application of coastal data that are used in regional or sub-regional applications; usually associated with map scales in the range of 1:50,000.
**Marine Plants** - an attribute category that collectively identifies marine and coastal plant resources.

**Operations Scale Application Purposes** - applications of coastal data that are used for day-to-day type operational decision-making; usually associated with map scales of 1:10,000 - 1:20,000.

**Physical Baseline Information** - physical features of the coastal zone such as surficial geology, water quality, tidal range, currents, etc. This information is often a building block for derivative models of the coast (e.g., stranded oil residence; shellfish capability).

**Planning Scale Application Purposes** - applications of coastal data that are used in regional-type applications; usually associated with map scales in the range of 1:100,000 to 1:250,000.

**Recreational Fisheries** - an attribute category that refers to attributes on coastal and marine parks and park management.

**REFERENCE.DBF** - a dBaseIII+ database file that contains technical references associated with the Coastal Data Set Inventory.

**Subsistence Fisheries** - an attribute category that refers to coastal resource harvesting by aboriginal peoples.

**Subsistence/Traditional Use** - resources or activities related to native use of coastal resources.

**Tourism/Recreational Planning** - resources or activities related to the management and planning of coastal tourism, parks, park reserves.

**Tourism & Recreational Use Patterns** - an attribute category that collectively refers to attributes related to tourism and recreational use activities (see Recreational Land use for marine and coastal park).

**User Needs Survey** - a phase of the project where questionnaires were distributed to determine the needs of individuals and institutions for coastal data.

**Waterfowl** - an attribute category that collectively refers to the various species of coastal waterfowl.

**Water Quality** - a loosely defined attribute category that incorporates a wide range of parameters such as organic pollutant measurements, inorganic pollutant measurements, suspended sediment concentrations, temperature and salinity concentrations and nutrients (DO, CO2, nitrates, phosphates, etc.)

**Wildlife Management** - resource information that is primarily used for wildlife management.
References

