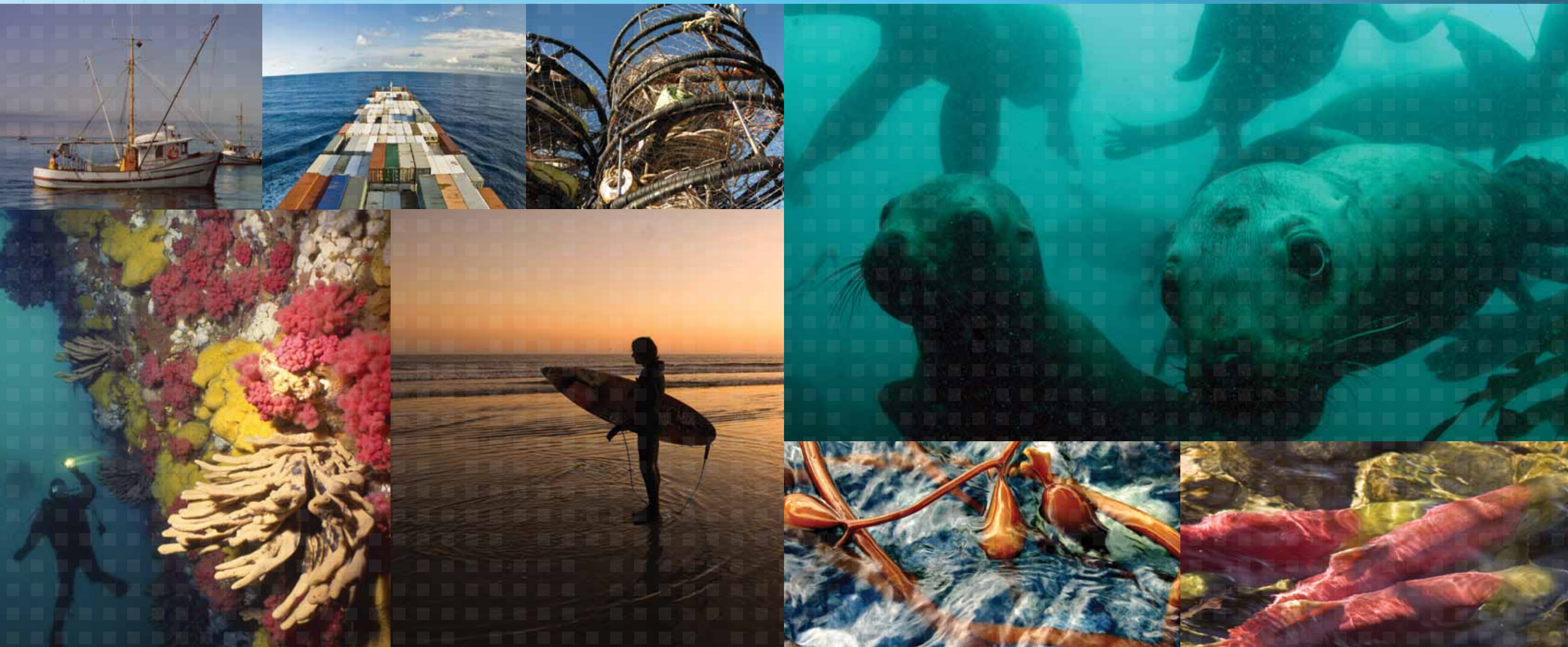




BRITISH COLUMBIA
MARINE CONSERVATION ANALYSIS

Marine Atlas of Pacific Canada

a product of the British Columbia Marine Conservation Analysis (BCMCA)



This atlas is dedicated to all the people who gather information about this coast and the people who create maps to share this information with the public. Without their tireless efforts, this project would not have been possible. The BCMCA Project Team would like to make a special recognition of Jacqueline Booth (August 13, 1954 - March 20, 2009). Jacky was a highly respected practitioner in the field of coastal and marine resources who bridged the interface between marine science and management particularly well and pioneered the application of GIS to this science. Through her consulting work in BC for federal, provincial, and local governments, First Nations, land trusts and not-for profit organizations she influenced many of the datasets portrayed in this atlas. Jacky volunteered her time generously to the BCMCA and she is greatly missed by all her coastal colleagues. We are thankful that she inspired many people in this field.

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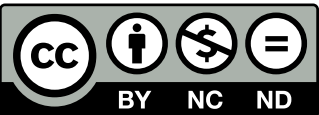
Cite as: British Columbia Marine Conservation Analysis. 2011.
Marine Atlas of Pacific Canada: a product of the British Columbia Marine Conservation Analysis (BCMCA)
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Layout and Design:
Caribou Creative

Printing:
Hemlock Printers Ltd.

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ISBN 978-0-9867511-0-3

The maps printed in this atlas represent a selection of all the marine features mapped by the BCMCA. The full collection is available online at www.bcmca.ca/data

Published by:
British Columbia Marine Conservation Analysis, a project of Tides Canada Initiatives
Vancouver, British Columbia
e-mail: info@bcmca.ca



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acknowledgements

acknowledgements

The BCMCA Project Team is grateful to the many people who participated in workshops, contributed data and knowledge and helped to steer this work to completion.

This work would not have been possible without the fundingsupport of the Gordon and Betty Moore Foundation (GBMF) Marine Conservation Initiative and the David and Lucile Packard Foundation. In particular we thank Meaghan Calcari from the GBMF who understood our vision and worked to help us achieve our goals. Other organizations who contributed funding include the David Suzuki Foundation, Fisheries and Oceans Canada, Living Oceans Society and the Royal Caribbean Oceans Fund. We also thank the Pacific Marine Analysis and Research Association (PacMARA) for jointly hosting and funding the PacMARA/BCMCA international Marxan workshop.

We would like to acknowledge and thank all the organizations and agencies represented by the BCMCA Project Team and Human Use Data Working Group (HUWG) for their generous contributions of in-kind staff time and other resources. We recognize and thank all the BCMCA Project Team participants and representatives on the Human Use Data Working Group for their thoughtful collaboration in steering the project. Current and former members and observers of the BCMCA Project Team are Susan Anderson Behn from Island and Approach First Nations Fisheries, Cheri Ayers from Hul'qumi'num Treaty Group, Natalie Ban from University of British Columbia (2006-2008) and James Cook University (2008-2011), Julie Beaumont from Coastal First Nations, Karin Bodtker from Living Oceans Society*, Christopher Bos from Sport Fish Advisory Board, Tanya Bryan from Nature Conservancy of Canada*, Kevin Conley from Fisheries and Oceans Canada, Ken Cripps from Coastal First Nations, Sarah Davies from Fisheries and Oceans Canada, Andrew Day from West Coast Vancouver Island Aquatic Management Board, Steve Diggon from West Coast Vancouver Island Aquatic Management Board (2007), Dana Haggarty from Hul'qumi'num Treaty Group, Christa Hrabok from British Columbia Ministry of Environment, Hilary Ibey from Fisheries and Oceans Canada, Kate Ladell from Living Oceans Society (2007) and Fisheries and Oceans Canada (2010), Lynn Lee from Haida Oceans Technical Team, Sean MacConnachie from Fisheries and Oceans Canada, Greg MacMillan from Parks Canada, Murray Manson from Fisheries and Oceans Canada, Chris McDougall from Haida Oceans Technical Team, Dave Nicolson from Nature Conservancy of Canada (2006-2008)*, Miriam O from Fisheries and Oceans Canada, Manish Om Prakash from British Columbia Ministry of Environment, Craig Outhet from North Coast-Skeena First Nations Stewardship Society, Rob Paynter from British Columbia Integrated Land Management Bureau, Glen Rasmussen from Fisheries and Oceans Canada, Krista Royle from Living Oceans Society (2006) and Parks Canada (2007-2011), Wayne Saito from BC Ministry of Environment, Charlie Short from British Columbia Integrated Land Management Bureau (2006 – 2010) and Ministry of Forests, Lands and Natural Resource Operations (2011), Karen Topelko from British Columbia Ministry of Environment, Bruce Turriss from British Columbia Seafood Alliance, and Charlie Twaddle from British Columbia Ministry of Environment. Current and former members and alternates of the BCMCA Human Use Data Working Group are Kim Barbero from British Columbia Marine Trades Association, Christopher Bos from Sport Fishing Advisory Board, Doug Daugert from Sport Fishing Advisory Board, Paula Galloway from British Columbia Salmon Farmers Association, Michelle James from Underwater Harvesters Association, Kim Johnson from Shell Canada, Les Kiss from Coast Forest Products Association, Jessica McIlroy from Ocean Renewable Energy Group, Jane McIvor from British Columbia Marine Trades Association, David Minato from British Columbia Salmon Farmers Association, Phillip Nelson from Council of Marine Carriers, Norm Penton from British Columbia Salmon Farmers Association, and Bruce Turriss from British Columbia Seafood Alliance.

**Thanks to the environmental non-governmental organizations (ENGOS) that supported representatives on the Project Team and generously contributed their knowledge: Canadian Parks and Wilderness Society, David Suzuki Foundation, Living Oceans Society, Nature Conservancy of Canada, Sierra Club BC, and World Wildlife Fund Canada.*

This project and atlas would not have been possible without the hard work and dedication of the individuals who worked in different capacities under the direction of the Project Team. We thank Dave Nicolson, who tirelessly served as Project Manager; Carrie Robb, our steadfast Data Manager; Neil Davis and Rick Page, as Project Coordinators; Richard Delaney, facilitator; and Jason Thompson, James Gates, and Jaclyn McPhadden as Project Assistants.

We would like to thank Bird Studies Canada for supplying BC Coastal Waterbird Survey data, and all the volunteer participants who gathered data for the project. The BCMCA is grateful for the many valuable contributions of time, data, knowledge and experience generously volunteered and shared by expert workshop participants, data custodians, data and atlas page reviewers, additional reviewers of workshop reports, GIS and other contractors, and many advisors. A full list of contributors appears in Appendix 2. Thank you to all the photographers, professional and amateur alike, who donated the great photographs that enhance this atlas.

Finally, we would like to acknowledge that the BCMCA was initiated in 2006 to address recommendations from a formal peer review of Living Oceans Society's Conservation Utility Analysis in 2005. We thank Living Oceans Society who, with the support of the Canadian Parks and Wilderness Society, David Suzuki Foundation, Nature Conservancy of Canada, Sierra Club BC, and World Wildlife Fund Canada, initiated the BCMCA and worked to assemble the initial Project Team.

“Thank you, all!”

introduction, guiding principles & identifying and collating data

introduction

The British Columbia Marine Conservation Analysis (BCMCA) is a collaborative project designed to provide resource managers, scientists, decision-makers, and those with a vested interest in the marine environment with products to help inform integrated marine planning and management initiatives. This atlas is one of those products. The BCMCA produced this Marine Atlas of Pacific Canada as a collection of peer-reviewed, expert-recommended, and best spatial data available to this project at scales relevant to coastwide marine planning and resource management.

The overall purpose of the BCMCA project is to collaboratively identify marine areas of high conservation value and areas important to human use in Canada's Pacific Ocean. The BCMCA used the data presented in this atlas in a series of analyses designed for that purpose. Please see www.bcmca.ca for results and reports on these analyses.

The BCMCA project is directed by a project team that coordinates, organizes, prioritizes, and reviews the work of the project. The project team is comprised of representatives from federal and provincial government agencies, academia, ENGOs, and marine user groups. Representatives of First Nations, as well as some other organizations, chose to sit on the project team as observers. Each team member serves as a liaison between the BCMCA project and the organization, agency or sector they represent. A Human Use Data Working Group (HUWG) provided guidance on human use data, atlas pages, and the use of human use data in analyses. The HUWG is made up of representatives from six marine use sectors: commercial fisheries, recreational fisheries, ocean energy, shipping and transportation, marine and foreshore tenures, and tourism and recreation.

guiding principles

Eight principles, drafted by the project team, guide work on the project:

- 1) use the best available information, including the latest in marine conservation planning theory;
- 2) assemble and use the best available biological, ecological, oceanographic, and socio-economic data;
- 3) faithfully and transparently reflect the accuracy, scale, and completeness of the data;
- 4) draw on the knowledge and expertise of governments (federal, provincial, and First Nations), other resource managers, user groups, the conservation community, academics, and other scientists to develop sound, scientifically defensible methods and products;
- 5) utilize methods which are transparent in their application;
- 6) incorporate ecological, social, and economic objectives in the analysis and balance these in a range of solutions;
- 7) work cooperatively to achieve project goals; and
- 8) create products which are widely supported by partner organizations.

identifying and collating data

Differing approaches were used to identify ecological and human use data to incorporate in the BCMCA atlas. Ecological features and datasets were recommended by experts via workshops. Individual workshops were held for seabirds, marine plants, marine mammals, marine and anadromous fish, and marine invertebrates. Approaches used, and other details of the workshops, are described in workshop reports at www.bcmca.ca/document-library/. A list of features and data sets to represent the physical marine environment was first proposed by the BCMCA project team based on a review of similar projects, then revised following expert review. Once all available datasets for a given feature were obtained, data were collated using GIS and prepared following advice given at the workshops or given by data providers. Maps were drafted to display features on atlas pages.

Human use datasets were first sourced by BCMCA project team members within each of their organizations (e.g., federally held fisheries data, provincially held recreation data). Example maps were drafted and user group review of these data was sought through a two-pronged strategy of group-by-group engagement and through convening a human use data working group (HUWG). Six sectors or categories of human use were identified, and a nomination process was held to identify representatives from each sector to participate in the HUWG and to advise on the collation, mapping and analysis of human use data.

Due to data limitations, it was not possible to create spatial data for some recommended features, while other datasets not specifically mentioned at workshops were developed from available data (e.g., general kelp). The explicit focus of the BCMCA project was to collate existing data, but opportunities arose to create or update some ecological and human use datasets. For each feature, specific information about the source(s) and any data manipulation prior to mapping is documented on the facing page.

Once data for all features were compiled, the data were mapped and reviewed by experts. During the review process, feedback was requested about accuracy, completeness and the rigor of the methods used to represent the data. Based on feedback, several features were revised (e.g., nearshore birds, oil and gas prospects, cruise ship routes). Feature count maps (available online at www.bcmca.ca/data) that illustrate the number of data sets collated were created for each ecological group and human use sector, counting only datasets designated for use in Marxan.

known data gaps, guidelines for use & general caveats for atlas maps

known data gaps

- During the process of data collation and review, additional data for some features shown in these atlas pages was identified. BCMCA could not always obtain and incorporate these data and, in these cases, additional data sources are acknowledged in the facing page of each relevant atlas page.
- At the ecological workshops, features were sometimes recommended even though experts were aware that data were lacking to enable mapping them. These known data gaps are recorded in the workshop reports specific to each ecological feature group, available online at www.bcmca.ca/document-library/.
- For each ecological feature group and each human use sector a feature count map, available online at www.bcmca.ca/data, illustrates the spatial distribution of all the data for that group or sector that were collated and used in the Marxan analyses. These feature count maps are instructive for identifying regions and areas that may be considered data poor, where fewer data are available.

guidelines for use

One of the goals of the British Columbia Marine Conservation Analysis was to provide open access to BCMCA products with appropriate and complete documentation. These guidelines were developed to help interested parties make the most of the BCMCA products and reduce inappropriate use.

- Please acknowledge the BCMCA for products that you use in your own work. Cite as: British Columbia Marine Conservation Analysis. 2011. *Marine Atlas of Pacific Canada: a product of the British Columbia Marine Conservation Analysis (BCMCA)*, Map Title. Available online at www.bcmca.ca
- BCMCA products should be used with the understanding that they were assembled for the purposes of the BCMCA project, which was to collaboratively identify marine areas of high conservation value and areas important to human use in Canada's Pacific Ocean.
- Atlas pages are to be used in conjunction with their facing pages. When copying or printing additional pages, please keep the facing page with the map page.
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general caveats for atlas maps

- Maps are not to be used for navigation purposes.
- Information assembled by the BCMCA is the best data available to the project and comes from a variety of spatial scales. In general, data were collated for use at a coast-wide scale, but many features are appropriate for use at regional scales. Please see facing page text for feature-by-feature data resolution. We do not recommend using these maps or datasets for local-scale planning or analyses.
- Information assembled by the BCMCA also comes from a variety of temporal periods, and the mapped features may or may not represent the current state. In addition, the presence/absence, abundances, or relative importance of many features vary temporally and this variability is not represented.
- In general, absence of any thematic feature in any particular area on an atlas page should not be interpreted as true absence, as it may indicate a data gap. Areas where any feature is absent may still be important to that feature or human use, but we currently lack associated data to confirm presence or value. Wherever known, the BCMCA illustrates the spatial extents of data collection effort.
- Presence, as portrayed on a BCMCA product, may not represent the exact location of a feature.
- The BCMCA acknowledges that there may be additional existing information on features at finer scales, for limited spatial extents, other time periods, or otherwise not available to the BCMCA (e.g., for privacy concerns).
- Additional caveats for use specific to each feature are listed in each atlas facing page text.

appendix 1 – base map sources & appendix 2 – project contributors

appendix 1 – base map sources

| Layer | Source | Layer | Source |
|-----------------------|-------------------------------------|----------------------|---|
| Annotation | Caslys Consulting Ltd | Alaska Land Mass | Environmental Systems Research Institute (ESRI) |
| Terrestrial Hydrology | Natural Resources Canada | Washington Land Mass | Washington State Government |
| Boundaries | Natural Resources Canada, Geobase | Bathymetry | Natural Resources Canada, United States Geological Survey (USGS), National Oceanic and Atmospheric Administration(NOAA), ESRI |
| BC Land Mass | Province of British Columbia, GeoBC | Hillshade | Caslys Consulting Ltd |

appendix 2 – project contributors

Project contributors include expert workshop participants, data custodians, data and atlas page reviewers, additional reviewers of workshop reports, GIS and other contractors, and many advisors.

| Name | Organization | Name | Organization |
|------------------|---|-------------------|--|
| Hussein Alidina | World Wildlife Fund for Nature - Canada | Leanna Boyer | Mayne Island Conservancy Society |
| John Andres | Province of British Columbia | Gary Bradfield | University of British Columbia |
| Jeff Ardron | Marine Conservation Biology Institute / PacMARA | André Breault | Environment Canada (Canadian Wildlife Service) |
| Bill Austin | Invertebrate expert | Laura Brown | Fisheries and Oceans Canada |
| Nicole Backe | Consultant | Brad Buckam | University of Victoria |
| Patrick Bartier | Parks Canada | Dan Buffett | Ducks Unlimited Canada |
| Leslie Barton | Fisheries and Oceans Canada | Alan Burger | Seabird expert |
| Carita Bergman | Parks Canada | Rob Butler | Bird Studies Canada |
| Doug Bertram | Environment Canada (Wildlife Science Division) | Chris Campbell | Ocean Renewable Energy Group |
| Doug Biffard | Province of British Columbia | Rosaline Canessa | University of Victoria |
| Edwin Blewett | Counterpoint Consulting Inc. | Harry Carter | Seabird expert |
| Ann Blyth | Caslys Consulting Ltd. | Trudy Chatwin | Province of British Columbia |
| Melanie Bogusz | Town of Sidney | Samantha Chilcote | University of Montana (Flathead Lake Biological Station) |
| Jacqueline Booth | Jacqueline Booth & Associates | Murray Clarke | Town of Sidney |
| Brian Bornhold | Archipelago Marine Research Ltd. | Jaclyn Cleary | Fisheries and Oceans Canada |
| Christopher Bos | Consultant | James Clowater | Seabird data consultant |
| James Boutillier | Fisheries and Oceans Canada | Mike Collyer | Parks Canada |
| Sean Boyd | Environment Canada (Wildlife Science Division) | Kim Conway | Natural Resources Canada |

| Name | Organization | Name | Organization |
|-------------------|---|---------------------|---|
| Michael Coon | Marine Plant expert | Tony Gaston | Laskeek Bay Conservation Society |
| Andrew Cornett | Natural Resources Canada | Tom Gelatt | National Oceanic and Atmospheric Administration |
| Maycira Costa | University of Victoria | Charlie Gibbs | Pacific Marine Life Surveys Inc. |
| Andrew Couturier | Bird Studies Canada | Geoff Gilliard | Living Oceans Society |
| Deb Cowper | SeaChange Working Group | Heather Gilroy | International Pacific Halibut Commission |
| Kristen Daniel | Fisheries and Oceans Canada | Todd Golumbia | Parks Canada |
| Peter Davidson | Bird Studies Canada | Rob Gowan | Province of British Columbia |
| Ramona de Graaf | Bamfield Marine Sciences Centre | Tess Grainger | Laskeek Bay Conservation Society |
| Rick Deegan | Province of British Columbia | Darcy Gray | University of Victoria |
| Richard Delaney | Delaney and Associates | Ed Gregr | SciTech Consulting |
| Vincent Delogne | BC Marine Trails Network Association | Catherine Griffiths | GIS consultant |
| Robert DeWreede | University of British Columbia | Jack Grisley | Council of BC Yacht Clubs |
| Jim Dietrich | Natural Resources Canada | Anna Hall | University of British Columbia |
| Larry Dill | Simon Fraser University | Russ Halliday | Natural Power |
| Dan Dorfman | Intelligent Marine Planning | Lorena Hamer | Herring Research and Conservation Sociey |
| Louis Druehl | Canadian Kelp Resources Ltd. | Peter Hannigan | Natural Resources Canada |
| David Duffus | University of Victoria | Bob Hansen | Parks Canada |
| Michael Dunn | Environment Canada (Canadian Wildlife Service) | Rick Harbo | Fisheries and Oceans Canada |
| Cynthia Durance | Precision Identification | Susie Harders | Transport Canada |
| Claude Dykstra | International Pacific Halibut Commission | Anne Harfenist | Seabird consultant |
| Dan Edwards | BC Dogfish Association / Commercial Industry Caucus | Michael Hawkes | University of British Columbia |
| James Elphick | Global Energy Horizons | Greg Hayden | Chevron Canada Resources Ltd |
| Mathew Evans | GIS consultant | Margo Hearne | Delkatla Sanctuary Society |
| Deborah Faust | Seabird data consultant | Matthias Herborg | Province of British Columbia |
| Zach Ferdaña | The Nature Conservancy | Mark Hipfner | Environment Canada (Wildlife Science Division) |
| Doug Fetherston | Province of British Columbia | Heather Holmes | Parks Canada |
| Jessica Finney | Fisheries and Oceans Canada | Jason Howes | Monterey Environmental Services |
| Mike Foreman | Fisheries and Oceans Canada | Doug Hrynyk | Parks Canada |
| Charles Fort | Fisheries and Oceans Canada | Falk Huettmann | University of Alaska |
| Tom Foulds | Mainstream Canada | Grant Humphries | University of Alaska |
| Ian Francis | Creative Salmon | Michelle James | Underwater Harvesters Association |
| Moretta Frederick | Royal British Columbia Museum | Glen Jamieson | Fisheries and Oceans Canada |
| Eddie Game | The Nature Conservancy | Linda Jennings | University of British Columbia Herbarium |
| Kevin Gardner | Copy editor | Kim Johnson | Shell Canada Ltd. |

| Name | Organization | Name | Organization |
|-------------------|--|--------------------|--|
| Tim Joys | Canadian Sablefish Association / Underwater Harvesters Association | Jonathan Martin | Simon Fraser University |
| Gary Kaiser | Seabird expert | Brad Mason | Fisheries and Oceans Canada |
| Cheryl Katnick | NEPTUNE Canada | Lindsay McBlane | Parks Canada |
| Dan Kelly | The Nature Conservancy | David McCallum | BC Shellfish Growers Association |
| Jamie Kenyon | Ducks Unlimited Canada | Bruce McCarter | Fisheries and Oceans Canada |
| Lisa Kirkendale | Royal British Columbia Museum | Dwight McCullough | Fisheries and Oceans Canada |
| Les Kiss | Coast Forest Products Association | Jessica McIlroy | Ocean Renewable Energy Group |
| Sarah Klain | University of British Columbia | Jane McIvor | Cruise BC |
| Rose Klinkenberg | E-Flora | Michael McNall | Royal British Columbia Museum |
| Tom Kong | International Pacific Halibut Commission | Melissa Meneghetti | Coastal Resource Mapping Ltd. |
| John Koolman | Commercial Industry Caucus | Emrys Miller | Rocketday Arts |
| Robert Kung | Natural Resources Canada | David Minato | BC Salmon Farmers Association |
| Cynthia Lake | Province of British Columbia | Kathleen Moore | Environment Canada (Canadian Wildlife Service) |
| Andy Lamb | Pacific Marine Life Surveys Inc. | Ken Morgan | Environment Canada (Canadian Wildlife Service) |
| Phil Lambert | Royal British Columbia Museum | Lance Morgan | Marine Conservation Biology Institute |
| Mary Ann Lea | Marine Mammal expert | Marry Morris | Archipelago Marine Research Ltd. |
| Janis Leach | Province of British Columbia | Anne Murray | BC Nature |
| Olivia Lee | University of British Columbia Herbarium | Melanie Nadeau | Canadian Hydraulics Centre, Natural Resources Canada |
| Moirá Lemon | Environment Canada (Canadian Wildlife Service) | Linda Nichol | Fisheries and Oceans Canada |
| Joanne Lessard | Fisheries and Oceans Canada | Kevin Obermeyer | Pacific Pilotage Authority Canada |
| Roanna Leung | Environment Canada | Carol Ogborne | Province of British Columbia |
| Colin Levings | Fisheries and Oceans Canada | Patrick O'Hara | Environment Canada (Canadian Wildlife Service) |
| Bethany Lindsay | Vancouver Aquarium and Marine Science Centre | Thomas Okey | West Coast Vancouver Island Aquatic Management Board |
| Sandra Lindstrom | University of British Columbia | Norm Olsen | Fisheries and Oceans Canada |
| Sarah Loos | Nature Conservancy of Canada | Sylvie Olynyk | D&D Pacific Fisheries Ltd. |
| Carmel Lowe | Natural Resources Canada | Richard Opala | Marine Harvest Canada |
| Cheryl Lynch | Fisheries and Oceans Canada | Rod Palm | Strawberry Isle Research Society |
| Sean MacConnachie | Fisheries and Oceans Canada | Debbie Paltzat | Province of British Columbia |
| Darin Macey | D&D Pacific Fisheries Ltd. | Christine Pansino | Laskeek Bay Conservation Society |
| Kirsten MacTavish | International Pacific Halibut Commission | Bruce Patton | Fisheries and Oceans Canada |
| Patrick Mahaux | Fisheries and Oceans Canada | Marlow Pellatt | Parks Canada |
| Murray Manson | Fisheries and Oceans Canada | Sean Pendergast | Province of British Columbia |
| Mirjana Maras | Blue Energy | Ian Perry | Fisheries and Oceans Canada |
| Dušan Markovic | MTS Consulting | Andreas Pettersson | GIS consultant |

| Name | Organization | Name | Organization |
|-------------------|--|--------------------|--|
| Erin Prescott | BC Conservation Data Centre | Ken Summers | Ken Summers Biological Services |
| Mike Preston | Biodiversity Centre for Wildlife Studies | Wendy Szanislo | Marine mammal expert |
| Nigel Protter | SyncWave Systems | Michael Tarbotton | Triton Consultants Ltd. |
| Laura Prpich | Caribou Creative | Paul Tatryn | Province of British Columbia |
| Michael Renwick | BC Dogfish Hook & Line Industry Association | Clinton Tippet | Shell Canada Ltd. |
| Laura Richards | Fisheries and Oceans Canada | Dave Trim | Western Forest Products Inc. |
| Suzanne Richer | GIS consultant | Marc Trudell | Fisheries and Oceans Canada |
| Cliff Robinson | Parks Canada | Alex Tu | BC Hydro |
| Krista Roessingh | Raincoast Conservation Foundation | Verena Tunnicliffe | University of Victoria |
| Juanita Rogers | Fisheries and Oceans Canada | Geoff Turner | Province of British Columbia |
| Adrian Round | VENUS Canada | Bruce Turris | BC Seafood Alliance |
| Shane Ruljancich | Capital Regional District | Adam Valair | Natural Power |
| Kate Rutherford | Fisheries and Oceans Canada | Ross Vennesland | Parks Canada |
| Dennis Rutherford | Fisheries and Oceans Canada | Johnny Voong | Canadian Coast Guard |
| Gary Saunders | University of New Brunswick | Brenda Waddell | Fisheries and Oceans Canada |
| Amber Saundry | University of British Columbia Herbarium | Ian Wade | Canadian Coast Guard |
| Bernard Schroeder | Seabird expert | Scott Wallace | David Suzuki Foundation |
| Jake Schweigert | Fisheries and Oceans Canada | Sheri Ward | Archipelago Marine Research Ltd. |
| Dan Segan | University of Queensland | Nils Warnock | Point Reyes Bird Observatory |
| Pippa Shepherd | Parks Canada | Jody Watson | Capital Regional District |
| Dan Shervill | Environment Canada (Canadian Wildlife Service) | David Welch | Pacific Ocean Shelf Tracking project |
| Norm Sloan | Parks Canada | Philip Westoby | Prince Rupert Port Authority |
| Dave Smith | Environment Canada (Canadian Wildlife Service) | Penny White | University of British Columbia |
| Ron Smyth | Province of British Columbia | Diane Whited | University of Montana (Flathead Lake Biological Station) |
| Will Soltau | Living Oceans Society | Darren Williams | Fisheries and Oceans Canada |
| Donna Spalding | Northwest CruiseShip Association | Rob Williams | University of British Columbia |
| Chris Sporer | Pacific Halibut Management Association / Prawn Caucus | Peter Wills | Canadian Hydrographic Service |
| Jack Stanford | University of Montana (Flathead Lake Biological Station) | Greg Wirtz | Port Metro Vancouver |
| Paul Stanley | Council of BC Yacht Clubs | Greg Workman | Fisheries and Oceans Canada |
| Rick Stanley | Fisheries and Oceans Canada | Nikki Wright | SeaChange Working Group |
| Paul Starr | Trophia Consulting | Stewart Yee | Environment Canada |
| Charles Steinback | Ecotrust | Mark Zacharias | Province of British Columbia |
| Katrina Stipee | BC Conservation Data Centre | Yuri Zharikov | Parks Canada |
| Russ Stothers | Clean Current | | |



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