



BC MARINE CONSERVATION ANALYSIS STRATEGY & ACTION PLAN JANUARY 2009

Introduction

Marine planning is emerging as the next big planning issue in British Columbia. There are currently many analyses, research and planning initiatives led by various government agencies, multi-stakeholder bodies, First Nations, and environmental non-governmental organizations (ENGOS) that can become part of a province-wide strategy to conserve marine biological diversity while ensuring sustainable communities. The BC Marine Conservation Analysis project is not intended to replace those planning initiatives. Rather, it intends to provide products that will inform planning through the process and strategy outlined below. The project is designed to be inclusive, transparent, and to be a collaborative effort amongst the Federal Government, Provincial Government, coastal First Nations, user groups, academia, and environmental non-governmental organizations.

Project background

Between 2000 and 2003, the Living Oceans Society (LOS) developed and refined a methodology called the Conservation Utility Analysis (CUA) to help support marine planning initiatives in BC. The CUA used the decision-support tool Marxan to identify marine areas of high conservation value for BC. The CUA was done as part of the Coast Information Team Central Coast Land and Resource Management Plan, and is regarded in BC as one viable and important tool in the effort to identify areas of conservation interest/value¹.

On November 28th, 2005, a one-day workshop was held in Vancouver to review the Conservation Utility Analysis developed by LOS and to offer recommendations for a second version of the analysis. This meeting included representatives from the Provincial and Federal governments, ENGOS and the academic science community. Two key recommendations, among others, were to: (1) conduct a formal and rigorous peer review of LOS' original CUA data layers and methods; and (2) involve partners in a rigorous, collaborative and transparent planning process.

In December 2005, LOS, in partnership with the World Wildlife Fund, Canadian Parks and Wilderness Society BC Chapter, Nature Conservancy Canada, Sierra Club BC and the David Suzuki Foundation, set out to develop and implement a new collaborative version of the CUA. In October 2006, a project team was formed including representatives from the Federal Government, Provincial Government, Coastal First Nations, academia, and environmental non-governmental organizations. It was at this point that the responsibility for the project shifted to a collaborative project team charged with developing the strategy,

¹ See: Manson, MM. 2008. *A Technical Review of the Conservation Utility Analysis: Issues and Recommendations for Future Analyses*. Canadian Manuscript Report of Fisheries and Aquatic Sciences 2774. Also see: Evans, SMJ et al. 2004. *Evaluation of Site Selection Methodologies For Use In Marine Protected Area Network Design*. Canadian Science Advisory Secretariat.

Terms of Reference, workshops, and funding proposals. The project was named the BC Marine Conservation Analysis (BCMCA). This inter-organization project team assumed responsibility for developing, coordinating, and implementing the BCMCA.

In the winter of 2007, the BCMCA received its primary funding based on a project proposal that included a human use component envisioned to match the ecological component in terms of effort and importance. This enabled the project to expand beyond its initial focus on ecological data to include the assembly and analysis of data representing human uses of the ocean. In keeping with its commitment to collaboration, inclusiveness, and transparency, the project team began engaging user groups in spring 2008 to invite their input to the project. Outcomes of the engagement have included the creation of a committee of marine user group representatives in fall 2008 called the Human Use Data Working Group and the addition of user group representatives to the project team from this working group.

Project description

The overall purpose of the BCMCA is to collaboratively identify marine areas of high conservation value and marine areas important to human use. Results of the project are intended to inform and help advance marine planning initiatives in BC by providing collaborative, peer-reviewed scientific analyses based on the best available ecological and socio-economic spatial data at scales relevant to a BC coast-wide analysis.

To achieve this purpose, the BCMCA Project Team and staff will adhere to these principles:

- Use the best available information, including the latest in marine conservation planning theory.
- Assemble and use the best available biological, ecological, oceanographic, and human use data.
- Faithfully and transparently reflect the accuracy, scale and completeness of the data.
- Draw on the knowledge and expertise of governments (federal, provincial and First Nations), other resource managers, the conservation community, user groups, academics, and other scientists to develop sound, scientifically defensible methods and products.
- Utilize methods which are transparent in their application.
- Incorporate ecological and human use objectives in the analysis and balance these in a range of solutions.
- Work cooperatively to achieve project goals.
- Create products which are widely supported by partner organizations.

The BCMCA will involve two main products:

Product A: Atlas of known ecological values and human uses

The atlas will show all the data used in the analysis and will include:

1. Maps of all known and available ecological data layers, such as species distributions and habitats.
2. A richness map of ecological features (combined ecological data).
3. Maps of all known and available human use data layers.
4. A richness map of human use components (combined human data).
5. A map showing both ecological and human use components.

Product B: Marxan analyses

The Marxan analyses will use the data from Product A to:

1. Identify potential areas of high conservation value (using ecological data only).
2. Identify areas of high conservation value that minimize overlap with areas important to human use (using ecological and human use data).
3. Identify areas of high conservation value by incorporating additional marine reserve design principles (For example, maximizing connectivity, minimizing edge to area ratio.)

How does the BCMCA relate to other marine conservation initiatives in BC?

The Government of Canada and Province of BC have signed a Memorandum of Understanding Respecting the Implementation of Canada's Oceans Strategy on the Pacific Coast of Canada, and are currently developing a subsidiary agreement Respecting a Marine Protection Areas (MPnA) Framework and a relevant Implementation Plan. The principles of the BCMCA reflect the following objectives of the MPnA Implementation Plan: 1) Protect and maintain marine biodiversity, representative ecosystems and special natural features; 2) Conserve and protect fishery and aquatic resources and their habitats; and 6) Contribute to social, community and economic certainty and stability. BCMCA outputs can be used at a variety of planning scales across the province, and can provide a starting point to achieving these shared objectives.

The BCMCA is striving to achieve scientific rigour and maximal acceptance throughout by incorporating expert advice, peer reviews and a transparent process. This project also represents a relationship-building exercise between all parties involved. Thus, completion of the BCMCA has the potential to result in strengthened partnerships focused on marine planning and scientifically defensible outcomes to better inform such planning.

Marxan

Identifying areas of high conservation value involves the consideration of multiple objectives and the use of large data sets that show the distribution of ecological, biological, and human use data. The BCMCA is using the decision-support tool Marxan to help identify areas of high conservation value that meet conservation objectives (see list below) while minimizing overlap with areas important to human use. Marxan was developed by researchers at the University of Queensland to help in the recent rezoning of the Great Barrier Reef. The BCMCA will draw on the recommendations of the Marxan Best Practices Workshop, which was hosted by the Pacific Marine Analysis and Research Association (PacMARA) in April 2007.

Use of the decision-support tool, Marxan, will be guided by six conservation objectives and principles:

- (1) represent the diversity of BC's marine ecosystems across their natural range of variation;
- (2) maintain viable populations of native species;
- (3) sustain ecological and evolutionary processes within an acceptable range of variability;
- (4) build a conservation network that is resilient to environmental change;
- (5) identify options that minimize overlap with areas important to human use, while still meeting conservation objectives; and
- (6) consider a variety of conservation scenarios and options.

Study area

The BCMCA study area comprises all of British Columbia's marine waters to the extents of Canada's Exclusive Economic Zone (0-200nm), including the North Coast, Central Coast, Haida Gwaii, the Strait of Georgia and the West Coast of Vancouver Island.

Timeline

It is proposed that this initiative will take approximately three years to complete, starting October 2006.

Project Team

The BCMCA is an inclusive and collaborative effort lead by a project team consisting of representatives from Government (Federal and Provincial), First Nations, user groups, academia and environmental non-governmental organizations. The project team is responsible for developing, coordinating, and implementing the BCMCA. They provide input into project-scale decisions and monitor the achievement of project goals and objectives. Each member of the Project Team serves as a liaison between the Project Team and the sector they represent. Project Team members are guided by agreed upon Terms of Reference, data sharing protocols, and a communications strategy. All partner organizations agree to be involved in the process but will not be mandated to endorse the output products.

Project staff

The BCMCA has three project staff that work with the Project Team, Human Use Working Group, and Expert Subcommittees (see below). The Project Team oversees and directs staff work. Staff organize, attend, and provide support for Project Team and Human Use Data Working Group meetings, and help implement their decisions.

Assembling the best available ecological data

Six subcommittees composed of experts in each respective field are requested to review and advise on the development of the ecological atlas and analytical components of the BCMCA. Expert Subcommittees are formed around the following themes:

- (1) Seabirds;
- (2) Marine Plants;
- (3) Marine Mammals;
- (4) Marine and Anadromous Fish;
- (5) Marine Invertebrates;
- (6) Physical Marine Representation;

All Expert Subcommittees except Physical Marine Representation will meet for a one day workshop. During the workshops, specific recommendations for features to include in the analysis, data sources, data processing requirements, and conservation targets will be developed by the experts. Subcommittees will also have opportunities to review the data collected. Reports summarizing workshop recommendations will be posted to the BCMCA website for further review by any additional interested parties. Specific to the proposed Physical Marine Representation, the BCMCA will draft a proposal for independent review and comment. Once the proposal has been reviewed, comments and concerns will be incorporated into the document and posted on the website.

The BCMCA Project Team will consider and work towards recommendations of the subcommittees when compiling data for the atlas and performing each step in the analysis.

Assembling the best available human use data

In order to assemble the best available human use data, the BCMCA has categorized human uses into six general sectors: (1) commercial fisheries, (2) recreational fisheries, (3) shipping and marine transportation, (4) energy, (5) marine and foreshore tenures (e.g., aquaculture, log handling sites), and (6) recreation/tourism (non-extractive uses). To engage these sectors, the Project Team is assembling all spatial human use data that is known and available to the project, and then soliciting feedback from the user groups whose use is represented by each dataset. The BCMCA is seeking feedback related to spatial accuracy, data gaps, relative importance, and other potential data sources. User group feedback will be summarized in reports which will be publicly accessible from the BCMCA atlas.

Methods to engage user groups are tailored for each sector and will include holding workshops, attending sector conventions or other events, or attending meetings of industry associations and advisory groups.

User group input emerging from the BCMCA's early engagement efforts lead to the formation of the Human Use Data Working Group in fall 2008. The Working Group is a committee of user group representatives convened by the Project Team as a means of soliciting input from each of the six human use sectors identified by the BCMCA. Two seats are available on the Working Group for each human use sector. The Working Group is lead by an independent facilitator. Two members of the Working Group also participate on the Project Team, with the support of other Working Group members. A third seat is available on a provisional basis where other Working Group members have an interest in specific Project Team agenda items. Priority for the provisional third seat will be given to sectors not represented by the two Working Group members already on the Project Team.

The Working Group will provide recommendations and advice to the Project Team on the human use component of the BCMCA. The Project Team will incorporate their advice and recommendations wherever possible while respecting the goals, intended products, principles, budget, and timelines of the BCMCA. Further details of the Working Group's responsibilities and structure are described in its Terms of Reference.

Integration with Marxan Best Practices Workshop

The BCMCA also plan to co-host a Marxan expert workshop with the Pacific Marine Analysis and Research Association (PacMARA) to obtain expert guidance on proper and robust use of Marxan, a decision support tool, specific to the BCMCA. Where feasible, the BCMCA Project will also act on the recommendations of the earlier Marxan Best Practices Workshop hosted by PacMARA in April 2007.

Action Plan

The action plan describes the work that must be undertaken to achieve the stated objectives. Please note: this Action Plan is subject to change based on the recommendations of the Project Team. Additionally, dates are projected estimates.

Activity	Task #	Task	Actions	Estimated timeline
Preparation	1	Outreach	<ul style="list-style-type: none"> Introduce the idea of a revised conservation utility analysis project Solicit feedback on project direction Determine who is interested in partnering on project 	Spring-Fall 2006
	2	Introduction to Marxan Workshops	<ul style="list-style-type: none"> Develop and conduct <i>Introduction to Marxan</i> workshops Workshop intent: to increase familiarity with Marxan and in so doing facilitate effective input into sub-committee workshops. 	Fall 2006
	3	Draft BCMCA Strategy and Action Plan	<ul style="list-style-type: none"> Establish Project Team Draft and finalize BCMCA Strategy and Action Plan Draft Terms of Reference, communications protocols 	Fall 2006

Activity	Task #	Task	Actions	Estimated timeline
	4	Secure long term funding	<ul style="list-style-type: none"> Identify potential funders Develop proposals for potential funders Secure funding and fiscal agent for project 	Fall-winter 2007
	5	Hire BCMCA staff	<ul style="list-style-type: none"> Create job postings Interview candidates, develop contracts, and hire staff 	Spring 2008
Ecological Expert Feedback	6	Gather ecological expert input -Seabird -Marine Plants -Marine Mammals -Physical Marine Representation -Marine and anadromous fish -Marine invertebrates	<ul style="list-style-type: none"> Create list of potential workshop participants/invite participants Prepare for workshop (prepare materials on CUA data, methods, penalties, targets) Conduct workshop (review CUA data/methods, record recommendations for BCMCA) Workshop follow up (generate/circulate/sign-off on summary notes from workshop) 	Dec 2006 – Mar 2008
User Group engagement	7	Group-by-Group engagement process	<ul style="list-style-type: none"> Identify user groups and initiate contact with their representatives Engage each interest group or sector in a way they have identified as appropriate Prepare and print maps for review by user groups. Follow up (generate/circulate summary reports and other follow-up as needed) 	Mar 2008 – Sep 2009
	8	Human Use Data Working Group	<ul style="list-style-type: none"> Invite user groups to participate on Working Group, develop Terms of Reference Select participants and convene Working Group Coordinate and report out on Working Group meetings Ensure communication with the Project Team 	June 2008 – Sep 2009

Analysis/Review	9	Data requests and data compilation	<ul style="list-style-type: none"> • Request data identified by experts • Compile and collate data from different sources • Preprocess data for use in spatial analyses • Prepare data for atlas products 	Oct 2007 – May 2009
	10	Marxan Expert Workshop	<ul style="list-style-type: none"> • Conduct workshop as per Terms of Reference agreed to with PacMARA 	May 2009
	11	Perform Marxan Spatial Analysis	<ul style="list-style-type: none"> • Prepare input files for Marxan • Perform Marxan Spatial Analysis • Generate output products 	Mar – Jul 2009
	12	Review Results	<ul style="list-style-type: none"> • Review Marxan results • Provide feedback on results • Fine-tune analysis 	Jul - Aug 2009
Communicate Outputs	13	Communications I	<ul style="list-style-type: none"> • Establish a long term, publicly accessible, online data repository to host BCMCA atlas and analysis results • Release atlas of ecological, human use and data gaps components 	Spring 2009
	14	Communications II	<ul style="list-style-type: none"> • Publish BCMCA Marxan results, final reports, poster, findings • Disseminate BCMCA products 	Sept 2009