

Basic Information

This section contains basic information about the dataset, suitable for a minimal metadata entry.

Title: Important Areas for Coral and Sponge in Pacific North Coast Integrated Management Area

Dataset ID: ia-coralsponge-pncima

Quality Control: Check Required

Summary: This layer details Important Areas (IAs) relevant to coral, sponge, and reef-building species in the Pacific North Coast Integrated Management Area (PNCIMA). This data was mapped to inform the selection of marine Ecologically and Biologically Significant Areas (EBSA). Experts have indicated that these areas are relevant based upon their high ranking in one or more of three criteria (Uniqueness, Aggregation, and Fitness Consequences). The distribution of IAs within ecoregions is used in the designation of EBSAs.

Canada's Oceans Act provides the legislative framework for an integrated ecosystem approach to management in Canadian oceans, particularly in areas considered ecologically or biologically significant. DFO has developed general guidance for the identification of ecologically or biologically significant areas. The criteria for defining such areas include uniqueness, aggregation, fitness consequences, resilience, and naturalness. This science advisory process identifies proposed EBSAs in Canadian Pacific marine waters, specifically in the Strait of Georgia (SOG), along the west coast of Vancouver Island (WCVI, southern shelf ecoregion), and in the Pacific North Coast Integrated Management Area (PNCIMA, northern shelf ecoregion).

Initial assessment of IAs in PNCIMA was carried out in September 2004 to March 2005 with spatial data collection coordinated by Cathryn Clarke. Subsequent efforts in WCVI and SOG were conducted in 2009, and may have used different scientific advisors, temporal extents, data, and assessment methods. WCVI and SOG IA assessment in some cases revisits data collected for PNCIMA, but should be treated as a separate effort.

Other datasets in this series detail IAs for birds, cetaceans, fish, geographic features, invertebrates, and other vertebrates.

Though data collection is considered complete, the emergence of significant new data may merit revisiting of IAs on a case by case basis.

Maintainer Email: Joanne.Lessard@dfo-mpo.gc.ca

Cite this data as: Cathryn Clarke, Jeff Ardron, and Jeff Marliave. 2005. Important Areas for Coral and Sponge in Pacific North Coast Integrated Management Area. Published Mar 31 2019. Data distributor: Marine Spatial Ecology Section, Fisheries and Oceans Canada, Nanaimo, BC.

Start Date: 2004-09-01

End Date: 2005-03-31

Contact Information

This section contains contact information for the data creator and program manager.

Data Creator:

Name: Cathryn Clarke

Email: Cathryn.Murray@dfo-mpo.gc.ca
Position: Independent consultant
Organization: Government of Canada; Fisheries and Oceans Canada
Address: 3190 Hammond Bay Road, Nanaimo, British Columbia, V9R 5K6, Canada
Phone: 250-363-3001

Co-Creators: Jeff Ardron, Jeff Marliave

Program Manager:

Name: Joanne Lessard
Email: Joanne.Lessard@dfo-mpo.gc.ca
Position: Program Head
Organization: Fisheries and Oceans Canada, Pacific Biological Station
Address: 3190 Hammond Bay Road, Nanaimo, British Columbia, V9R 5K6, Canada
Phone: 250-729-8364

General

General metadata compatible with the Canada Open Data metadata standard.

Topic Category: Oceans

Date Completed: 2005-03-31

Date Published: 2019-03-31

Status: Completed

Update Frequency: Not Planned

Dataset Level: Series

Keywords (GoC Thesaurus): environmental quality, environmental planning, marine ecosystems, ecology

Science

This section contains metadata specific to the Science branch at DFO.

Science Keywords: ia, british columbia, ebsa, queen charlotte sound, queen charlotte basin, pncima, important areas, sponge reefs, reefs

Theme: Coastal Species or Ecosystem

Methods: Researchers with expertise for key sponge and coral taxa drew polygons on paper map to denote Important Areas for species that met a priori criteria. The experts' hand-drawn polygons were heads-up digitized using ArcView 3.2 on the 50,000 Canadian Hydrographic Service (CHS) coastline watershed basemap. Hand-drawn polygons were clipped using the PNCIMA boundary polygon provided by OHEB-GIS unit. The layers of individual experts were shared among all the experts for the species grouping. Experts were asked to provide confirmation and to check for accuracy and completeness. Any changes requested by the experts were performed and again returned to the experts for vetting.

The original HEB layer “NRCan Spongereefs” was compared to the most recent published reports of sponge reef locations in B.C. A field was added where arbitrary numbers were assigned to each of the sponge reef geographical groupings in order to remove the line work dividing the reefs into bioherms and biostromes to produce the sponge reefs layer.

Jeff Ardron performed density analysis on the coral and sponge bycatch data from the DFO observer database 1996-2002. Density analysis used 10 km kernel (decay). The twelve areas of concentration found during the analysis were presented in Ardron and Jamieson (2006). This data was provided to the Department of Fisheries and Oceans and was subsequently clipped to the PNCIMA boundary by Cathryn Clarke (Feb 4, 2005), and the IA project schema was applied to produce the bycatch layer.

The experts consulted were: Jeff Ardron (coral and sponge bycatch) and Jeff Marliave (sponge reefs, cloud sponge).

The dataset was updated in 2019 to conform to MSEA's GIS Hub publication standards. The PNCIMA IA data series was split into taxonomic themes (birds, cetaceans, coral and sponges, fish, geographic features, invertebrates, and other vertebrates). The Check Geometry tool was used to validate each layer.

This package also includes project documentation and tech reports relevant to the IA process and its role within the selection of EBSAs.

Data Sources:

Source: Data Set Name: Place names Creation Date: 2005-01-24 Creator: Jeff Marliave (Jeff.Marliave@vanaqua.org) Organization: Vancouver Aquarium Marine Science Centre Position: Vice President of Marine Science. This data was used to produce the Cloud Sponge layer.

Source: Data Set Name: NRCan Sponge Reefs (GIS Layer) Creation Date: Unknown Creator: NRCan Distributor: HEB Spatial Data Warehouse Original Source Path: f:\themes\bc\bc_albers\nrcan\habitat\spongereefs.

Source: Data Set Name: Geomorphology of unique reefs on the western Canadian shelf: sponge reefs mapped by multibeam bathymetry. Creation Date: February 2005 Creator: Kim W. Conway, J. Vaughn Barrie, Manfred Krautter Organization: Natural Resources Canada. This data was used to produce the Sponge Reefs layer.

Source: Data Set Name: coral-sponge-areas1.shp (GIS Layer) Creation Date: 2004 Creator: Jeff Ardron (jardron@livingoceans.org) Organization: Living Oceans Society Position: Marine Analyst Link: http://www.livingoceans.org/sites/default/files/Protecting_BCs_Corals_and_Sponges.pdf (information and maps). This data was used to produce the Coral and Sponge Bycatch layer.

Scripts or Software Routines: Data was digitized from paper maps in ArcView 3.2, using polygons which were hand-drawn upon maps by experts. Where spatial data sources already existed, the IA schema was applied and polygons were clipped to geographic features.

Spatial Data Quality: Location data is typically digitized from paper charts and snapped to geographic features such as coast-lines. Accuracy of locations designated is limited by expert knowledge of available research at time of publication. Sponge reef and bycatch data are dependant upon data sources provided by NRCan and the Living Oceans Society.

Positional Accuracy: Positional accuracy is dependent on the expert responsible for polygon creation. Where data was provided in the form of place names or paper maps, polygons were hand-drawn on PNCIMA-scale maps so boundaries at different scales may not be accurate.

Attribute Accuracy: This information is a one-time summary of the available expert knowledge.

Logical Consistency: All features are rated by standard criteria across the PNCIMA IA's, though multiple experts are used for different IA's and ratings are selected based upon their knowledge. Experts and their knowledge may change between the PNCIMA, WCVI and SOG IA's. Rating schema were adhered to in differing degrees between these series. The delineating and rating of IA's is dependant upon the experts cited. The experts themselves may have used a variety of study methods and literature to determine what areas are important to given taxa. Less information may have been available for particular taxa at time of publication. More easily studied taxa (eg those occurring in more accessible geography and water depth) may have better data.

Completeness: This information is a one-time summary of the available expert knowledge.

Absence Data: No absence data

Uncertainties: Criteria scores are subjective ratings assigned by experts based upon their understanding of their best available data.

Use Restrictions: This data was created to inform the selection of EBSAs. Not for navigational purposes. Criteria may be unsuitable for other forms of assessment.

Change History:

Date of Change	Description of Change
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Species Code List:

- 3S0 - GORGONACEA (ORDER) (GORGONIAN CORALS), Targeted
- 3T6 - STYLATULA (GEN), Targeted
- 3J2 - SCLERACTINIA (ORDER) (STONY CORALS), Targeted
- 2A0 - PHYLUM PORIFERA (SPONGES), Targeted
- 2I0 - HEXACTINELLIDA (CLASS) (GLASS SPONGES), Targeted
- PGA - APHROCALLISTES VASTUS, Targeted
- 3A1 - CNIDARIA (PHYLUM) (COECLENTERATES), Targeted

Species Data:

Code and Name	Age Data	Obs Type
3S0 - GORGONACEA (ORDER) (GORGONIAN CORALS)		Targeted
3T6 - STYLATULA (GEN)		Targeted
3J2 - SCLERACTINIA (ORDER) (STONY CORALS)		Targeted
2A0 - PHYLUM PORIFERA (SPONGES)		Targeted
2I0 - HEXACTINELLIDA (CLASS) (GLASS SPONGES)		Targeted
PGA - APHROCALLISTES VASTUS		Targeted
3A1 - CNIDARIA (PHYLUM) (COECLENTERATES)		Targeted

References:

Reference: Clarke, C.L., and G. S. Jamieson. 2006a. Identification of Ecologically and Biologically Significant Areas in the Pacific North Coast Integrated Management Area: Phase I - Identification of Important Areas. 2678: 97 p.

Reference: Clarke, C.L., and G. S. Jamieson. 2006b. Identification of Ecologically and Biologically Significant Areas for the Pacific North Coast Integrated Management Area: Phase II - Final Report. 2686: 32 p.

Reference: DFO. 2004. Identification of Ecologically and Biologically Significant Areas. DFO Canadian Science Advisory Secretariat Ecosystem Status Report 2004/006: 15 p.

Reference: DFO. 2007. Guidance Document on Identifying Conservation Priorities and Phrasing Conservation Objectives for Large Ocean Management Areas. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2007/010.

Reference: Jamieson, G.S. and C. Levesque. 2014. Identification of Ecologically and Biologically Significant Areas on the West Coast of Vancouver Island and the Strait of Georgia, and in some nearshore areas on the North Coast: Phase II – Designation of EBSAs. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/101: 36 p.

Reference: Conway, K.W., Barrie, J.V. & Krautter, M. Geomorphology of unique reefs on the western Canadian shelf: sponge reefs mapped by multibeam bathymetry. *Geo-Mar Lett* (2005) 25: 205. <https://doi.org/10.1007/s00367-004-0204-z>

Reference: Ardron, J.A. and Jamieson, G.S. 2006. Reducing Bycatch and Sponges in British Columbia's Groundfish Trawl Fishery through Trawl Fishery Closures. Canadian Science Advisory Secretariat. 2006/061.

Reference: Ardron, J.A.; Jamieson, G.S.; Hangaard, D. 2007 Spatial identification of closures to reduce the by-catch of corals and sponges in the groundfish trawl fishery, British Columbia, Canada *Bulletin of Marine Science*, Volume 81, Supplement 1, November 2007, pp. 157-167 (11)

Collaboration: Kim W. Conway, J. Vaughn Barrie, and Manfred Krautter were associated with Natural Resources Canada, and produced the bathymetry data which was used to produce the sponge reef layer. Jeff Marliave was affiliated with the Vancouver Aquarium. Jeff Ardron was affiliated with the Living Oceans Society.

Confidentiality: Not Protected