Collection and locality information by taxon of Hemichordata from global sites, Table 1, Cannon et al (2013) Biol. Bull. (Antarctic Inverts project)

Website: https://www.bco-dmo.org/dataset/671215
Data Type: Cruise Results
Version: 1
Version Date: 2016-12-29

Project
» Genetic connectivity and biogeographic patterns of Antarctic benthic invertebrates (Antarctic Inverts)

Contributors	Affiliation	Role
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Abstract

This dataset was published as Table 1 from Cannon et al (2013). It contains collection and locality information by taxon of hemichordate specimens collected globally from 2001 to 2013.

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Coverage

Temporal Extent: 2001 - 2013

Methods & Sampling

Eleven specimens sequenced in this study were collected in September 2011 during Senckenberg's German Center for Marine Biodiversity Research (DZMB) IceAGE expedition led by Dr. Saskia Brix aboard the R/V Meteor, which circled Iceland, crossing the Mid-Atlantic and Greenland-Scotland ridges. Cephalodiscus specimens were collected during two research expeditions to the Antarctic Peninsula aboard the R/V Lawrence M. Gould in 2001 and 2004. Antarctic enteropneusts were collected in January-February 2013 in the Amundsen and Ross Seas by the R/V Nathaniel B. Palmer. Enteropneusts from Norway were collected on the R/V Håkon Mosby or R/V Aurelia with the aid of Dr. Christiane Todt and the late Dr. Christoffer Schander. Balanoglossus sp. specimens from Mississippi were collected with the assistance of Dr. Richard Heard. Dr. Jon Norenburg and Dr. Darryl Felder provided material from Rhabdopleura sp. collected in the Gulf of Mexico on the R/V Pelican. Specimens were collected at depths ranging from the intertidal to over 2500 m, using diverse sampling methods (Table 1). Enteropneusts from Iceland were collected by decanting sediment through a 1-1.5-mm sieve, and were retained on either a 500- or 300-um sieve; enteropneusts from Antarctica and off Oregon were decanted from sediment directly onto a 250-um sieve. Freshly collected worms were preserved in 95%-100% ethanol, and when multiple specimens were available, voucher specimens were relaxed in 7.5%

magnesium chloride and fixed in 4%-10% formalin for morphological studies.

Data Processing Description

BCO-DMO Processing notes:
- added conventional header with dataset name, PI name, version date
- modified parameter names to conform with BCO-DMO naming conventions
- removed trailing blank spaces
- converted lat and lon to decimal degrees
- added cruise_id column

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Data Files

File
Cannon_2013_T1.csv(Comma Separated Values (.csv), 3.44 KB) MD5:f1164f521ccba4e2877905102b7505b8 Primary data file for dataset ID 671215

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Related Publications

Cannon, J. T., Swalla, B. J., & Halanych, K. M. (2013). Hemichordate Molecular Phylogeny Reveals a Novel Cold-Water Clade of Harrimaniid Acorn Worms. The Biological Bulletin, 225(3), 194–204. doi:10.1086/bblv225n3p194 <u>https://doi.org/10.1086/BBLv225n3p194</u>
Results

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Related Datasets

IsSupplementTo

Halanych, K. M., Mahon, A. (2016) **Hemichordata and Echinodermata NCBI accessions, Table 2, Cannon et al (2013) Biol. Bull. (Antarctic Inverts project).** Biological and Chemical Oceanography Data Management Office (BCO-DMO). (Version 1) Version Date 2016-12-22 http://lod.bco-dmo.org/id/dataset/671459 [<u>view at BCO-DMO</u>]

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Parameters

Parameter	Description	Units
family	taxonomic family	unitless
taxon	more specific taxonomic group	unitless
locality	location of specimen collection	unitless
cruise_id	cruise identifier	unitless
latitude	latitude; north is positive	decimal degrees
longitude	longitude; east is positive	decimal degrees
depth	collection depth	meters
collection_method	type of gear used for collection	unitless

[ ]

Instruments

Dataset-specific Instrument Name	Blake or Agassiz trawl
Generic Instrument Name	Beam Trawl
Dataset-specific Description	A modified Beam Trawl. USAP Standard 5-ft. net, robust net and frame system good for exploratory fishing. Qualitative sampling device used to sample large numbers of the megabenthos and benthopelagic fauna It is a double sided trawl adapted from the fishing gear of coastal fishermen. Named after the American naturalist Alexander Agassiz. Also called the Blake trawl or Sigsbee trawl (the name of the ship used by Alexander Agassiz and the captain of that ship respectively). from https://www.isa.org.jm/agassiz-trawl
Generic Instrument Description	A beam trawl consists of a cone-shaped body ending in a bag or codend, which retains the catch. In these trawls the horizontal opening of the net is provided by a beam, made of wood or metal, which is up to 12 m long. The vertical opening is provided by two hoop-like trawl shoes mostly made from steel. No hydrodynamic forces are needed to keep a beam trawl open. The beam trawl is normally towed on outriggers, one trawl on each side. While fishing for flatfish the beam trawl is often equipped with tickler chains to disturb the fish from the seabed. For operations on very rough fishing grounds they can be equipped with chain matrices. Chain matrices are rigged between the beam and the groundrope and prevent boulders/stones from being caught by the trawl. Shrimp beam trawls are not so heavy and have smaller mesh sizes. A bobbin of groundrope with rubber bobbins keeps the shrimp beam trawl in contact with the bottom and gives flatfish the opportunity to escape. Close bottom contact is necessary for successful operation. To avoid bycatch of most juvenile fishes selectivity devices are assembled (sieve nets, sorting grids, escape holes). While targeting flatfish the beam trawls are towed up to seven knots, therefore the gear is very heavy; the largest gears weighs up to 10 ton. The towing speed for shrimp is between 2.5 and 3 knots. (from: http://www.fao.org/fishery/geartype/305/en)

Dataset-specific Instrument Name	SmithMac Grab
Generic Instrument Name	Bottom Sediment Grab Samplers
Generic Instrument Description	These samplers are designed to collect an accurate representative sample of the sediment bottom. The bite of the sampler should be deep enough so all depths are sampled equally. The closing mechanism is required to completely close and hold the sample as well as prevent wash-out during retrieval. Likewise, during descent the sampler should be designed to minimize disturbance of the topmost sediment by the pressure wave as it is lowered to the bottom.

Dataset-specific Instrument Name	MegaCore and Box Core
Generic Instrument Name	Box Corer
Generic Instrument Description	General description of a box corer: A box corer is a marine geological tool that recovers undisturbed soft surface sediments. It is designed for minimum disturbance of the sediment surface by bow wave effects. Traditionally, it consists of a weighted stem fitted to a square sampling box. The corer is lowered vertically until it impacts with the seabed. At this point the instrument is triggered by a trip as the main coring stem passes through its frame. While pulling the corer out of the sediment a spade swings underneath the sample to prevent loss. When hauled back on board, the spade is under the box. (definition from the SeaVox Device Catalog) Box corers are one of the simplest and most commonly used types of sediment corers. The stainless steel sampling box can contain a surface sediment block as large as 50cm x 50cm x 75cm with negligible disturbance. Once the sediment is recovered onboard, the sediment box can be detached from the frame and taken to a laboratory for subsampling and further analysis. The core sample size is controlled by the speed at which the corer is lowered into the ocean bottom. When the bottom is firm, a higher speed is required to obtain a complete sample. A depth pinger or other depth indicator is generally used to determine when the box is completely filled with sediment. Once the core box is filled with sediment, the sample is secured by moving the spade-closing lever arm to lower the cutting edge of the spade into the sediment, until the spade completely covers the bottom of the sediment box. (definition from Woods Hole Oceanographic Institution).

Dataset-specific Instrument Name	
Generic Instrument Name	Epibenthic Sled
Generic Instrument Description	An epibenthic sled is a semi-quantitative bottom-sampling device designed to trawl just above the bottom at the sediment water interface (the epibenthic zone). The sled consists of a rectangular steel frame with a mesh net (often more than one) attached to it. Towed along the ocean floor, its weight scrapes into the benthos, collecting any organisms on the surface or in the first few centimeters of sediment. It also collects the organisms in the water column just above the benthos. Descriptions from WHOI and Census of Marine Life.

Dataset-specific Instrument Name	Yabby Pump
Generic Instrument Name	Pump
Dataset-specific Description	Hand pump for use in shallow water or mudflats
Generic Instrument Description	A pump is a device that moves fluids (liquids or gases), or sometimes slurries, by mechanical action. Pumps can be classified into three major groups according to the method they use to move the fluid: direct lift, displacement, and gravity pumps

Deployments

LMG0414

Website	https://www.bco-dmo.org/deployment/57973
Platform	ARSV Laurence M. Gould
Start Date	2004-11-25
End Date	2004-12-14

NBP1210

Website	https://www.bco-dmo.org/deployment/568987
Platform	RVIB Nathaniel B. Palmer
Report	http://dmoserv3.bco-dmo.org/jg/serv/BCO-DMO/OA_Antarctic_organisms/727518.html0%7Bdir=dmoserv3.whoi.edu/jg/dir/BCO-DMO/OA_Antarctic_organisms/,info=dmoserv3.bco-dmo.org/jg/info/BCO-DMO/OA_Antarctic_organisms/mg_ca_ratios%7D
Start Date	2013-01-06
End Date	2013-02-09
Description	Seaglider AUV-SG-503-2012 was recovered on this cruise.

Halanych_lab_2011-16

Website	https://www.bco-dmo.org/deployment/671488
Platform	Auburn University lab
Start Date	2011-08-01
End Date	2016-07-31
Description	Invertebrate genomics

M85-3

Website	https://www.bco-dmo.org/deployment/671711
Platform	R/V Meteor

LMG0102

Website	https://www.bco-dmo.org/deployment/671723
Platform	ARSV Laurence M. Gould
Start Date	2001-02-20
End Date	2001-03-14
Description	Bentho-pelagic studies

Project Information

Genetic connectivity and biogeographic patterns of Antarctic benthic invertebrates (Antarctic Inverts)

Coverage: Antarctica

Extracted from the NSF award abstract:

The research will explore the genetics, diversity, and biogeography of Antarctic marine benthic invertebrates, seeking to overturn the widely accepted suggestion that benthic fauna do not constitute a large, panmictic population. The investigators will sample adults and larvae from undersampled regions of West Antarctica that, combined with existing samples, will provide significant coverage of the western hemisphere of the Southern Ocean. The objectives are: 1) To assess the degree of genetic connectivity (or isolation) of benthic invertebrate species in the Western Antarctic using high-resolution genetic markers. 2) To begin exploring planktonic larvae spatial and bathymetric distributions for benthic shelf invertebrates in the Bellinghausen, Amundsen and Ross Seas. 3) To continue to develop a Marine Antarctic Genetic Inventory (MAGI) that relates larval and adult forms via DNA barcoding.

Funding

Funding Source	Award
NSF Office of Polar Programs (formerly NSF PLR) (NSF OPP)	PLR-1043745
NSF Office of Polar Programs (formerly NSF PLR) (NSF OPP)	PLR-1043670