

MOCNESS-CTD Data from Guaymas Basin vent region, All-112-28, 1985 from R/V Atlantis II All-112-28, July 1985

Website: <https://www.bco-dmo.org/dataset/535546>

Data Type: Cruise Results

Version: 1

Version Date: 2014-01-22

Project

» [Benthic Ecology of Soft Sediments Associated with Hydrothermal Vents](#) (Vent Benthos)

Contributors	Affiliation	Role
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Abstract

MOCNESS-CTD Data from Guaymas Basin vent region, All-112-28, 1985 from R/V Atlantis II All-112-28, July 1985.

Table of Contents

- [Coverage](#)
 - [Dataset Description](#)
 - [Data Processing Description](#)
 - [Data Files](#)
 - [Parameters](#)
 - [Instruments](#)
 - [Deployments](#)
 - [Project Information](#)
 - [Funding](#)
-

Coverage

Spatial Extent: N:27.08 E:-111.37 S:26.94 W:-111.46

Temporal Extent: 1985-07-26 - 1985-08-01

Dataset Description

MOCNESS-CTD Data from Guaymas Basin vent region, All-112-28, 1985 from R/V Atlantis II All-112-28, July 1985. The first three tows report conductivity in the cond_sal column and thereafter, salinity is reported.

From cruise report:

The MOCNESS, Multiple Opening/Closing Net and Environmental Sensing System, was used to sample the zooplankton in the Guaymas Basin deep sea vents study area (Southern Trough) between 26 July and 1 August 1985. The purpose of the sampling was to characterize the zooplankton populations within 100 meters of the sea floor in the vicinity of the hydrothermal vent activity and to compare animals caught in this region with animals caught in adjacent areas outside the immediate influence of the vents and in the water column above the vents area.

A MOCNESS-1 was used to make these collections. This system was equipped with 9 1-m² nets of 333 µm nitex nylon mesh, which presented a 1-m² mouth opening when towed with the frame at 45 degrees from the vertical. The system carried Sea Bird temperature and salinity probes, a down welling light sensor, a bottom finding 12 kHz pinger, a pressure transducer, a modified TSK flowmeter, and an angle inclinometer. Data from the sensors were transmitted up to a deck unit via conducting cable where they were displayed and saved on 1/4" cassette tape. Data were also passed from the deck unit to a CBM microcomputer for real time processing, storage on floppy disc, printing, and plotting.

A variety of towing strategies were used (Figures 1 and 2). Four long horizontal tows with the MOCNESS

maintained approximately 100 m above the sea floor in approximately 2000 meters of water were taken both along the axis of the Southern trough above the benthic study area and perpendicular to the axis of the trough. On these tows, the system was traveling above the bottom at between 1 and 2 knots and eight nets were opened sequentially at about fifteen minute intervals. Water filtered by each net was at least 500 m³.

Three oblique tows were made to 1000 m. While hauling the system back to the surface, nets were opened and closed to sample the following depth strata: 1000-850, 850-700, 700-550, 550-400, 400-300, 300-200, 200-100, 100-0m. Volume of water filtered by each net was between 500 and 1000 m³. Two additional oblique tows were made to sample from within 50 meters of the bottom in the Southern Trough area to 850 m. The depth strata sampled were: 1950-1800, 1800-1700, 1700-1600, 1600-1450, 1450-1300, 1300-1150, 1150-1000, 1000-850 m and approximately 1000 m³ was filtered by each net. On the second of these tows, batteries in the underwater unit failed, and only depth specific samples from 1950-1800 and 1800-1700 m were obtained. A single oblique tow sampling 25 m intervals from 200 m to the surface was obtained on the last night of the MOCNESS work.

As part of this investigation, F. Manrique made visual and photographic observations of the plankton throughout the water column and especially in the vicinity of the deep-sea floor during ALVIN dive #1609 (1 August 1985).

This combination of tows (a total of 85 samples) and ALVIN observations provides a rather complete characterization of the vertical distribution of zooplankton populations from the deep-sea floor to the sea surface in the Guaymas Basin region. In addition, the horizontal distribution of zooplankton in the bottom water zone above this hydrothermal vents area can, for the first time, be studied and the results placed in the larger context of the distribution of the zooplankton in the water column as a whole.

Data Processing Description

NOTE: Tows 1, 2, and 3 contain conductivity data instead of salinity data

BCCO-DMO Processing Notes:

- added conventional header with dataset name, PI name, version date
- removed non-printing characters, tabs and spaces from ends of lines (MOC7, 8)

[[table of contents](#) | [back to top](#)]

Data Files

File
moc_ctd.csv (Comma Separated Values (.csv), 3.71 MB) MD5:b545fd1223a6f03e417a3d0edd664f06 Primary data file for dataset ID 535546

[[table of contents](#) | [back to top](#)]

Parameters

Parameter	Description	Units
cruise_id	cruise identification	unitless
tow	tow number	unitless

year	year	unitless
month	month	unitless
day	day	unitless
time_start_local	local time at start of tow	HHMM
time_end_local	local time at end of tow	HHMM
lat_start	latitude at start of tow; north is positive	decimal degrees
lon_start	longitude at start of tow; east is positive	decimal degrees
lat_end	latitude at end of tow; north is positive	decimal degrees
lon_end	longitude at end of tow; east is positive	decimal degrees
depth_interval	sampling depth	meters
tow_type	towing strategy	unitless
num_samples	number of samples resulting from the tow	unitless
comment	whether conductivity or salinity is reported in the cond_sal column	unitless
yrday_local	local day and decimal time eg. 326.5= 326th day of the year or November 22 at 1200 hours (noon)	unitless
net	MOCNESS net number	unitless
press	pressure	decibars
temp	temperature	degrees Celsius
cond_sal	either conductivity of salinity measurement; the first three tows report conductivity and thereafter, salinity is reported	unitless
angle	angle of net frame relative to vertical (0-89 degrees)	degrees

flow_cnts	consecutive flow counts	unitless
hor_spd	horizontal net velocity	m/min
vert_vel	vertical net velocity	m/min
vol_filt	volume filtered	meters ³

[[table of contents](#) | [back to top](#)]

Instruments

Dataset-specific Instrument Name	MOC1
Generic Instrument Name	MOCNESS1
Dataset-specific Description	This system was equipped with 9 1-m ² nets of 333 µm nitex nylon mesh, which presented a 1-m ² mouth opening when towed with the frame at 45 degrees from the vertical. The system carried Sea Bird temperature and salinity probes, a down welling light sensor, a bottom finding 12 kHz pinger, a pressure transducer, a modified TSK flowmeter, and an angle inclinometer. Data from the sensors were transmitted up to a deck unit via conducting cable where they were displayed and saved on 1/4" cassette tape. Data were also passed from the deck unit to a CBM microcomputer for real time processing, storage on floppy disc, printing, and plotting.
Generic Instrument Description	The Multiple Opening/Closing Net and Environmental Sensing System or MOCNESS is a family of net systems based on the Tucker Trawl principle. The MOCNESS-1 carries nine 1-m ² nets usually of 335 micrometer mesh and is intended for use with the macrozooplankton. All nets are black to reduce contrast with the background. A motor/toggle release assembly is mounted on the top portion of the frame and stainless steel cables with swaged fittings are used to attach the net bar to the toggle release. A stepping motor in a pressure compensated case filled with oil turns the escapement crankshaft of the toggle release which sequentially releases the nets to an open then closed position on command from the surface. -- from the MOCNESS Operations Manual (1999 + 2003).

[[table of contents](#) | [back to top](#)]

Deployments

All-112-28

Website	https://www.bco-dmo.org/deployment/473669
Platform	R/V Atlantis II
Report	http://bcodata.whoi.edu/Wiebe_Vents/ATII-112-28_cruise_rpt_Wiebe.pdf
Start Date	1985-07-24
End Date	1985-08-03
Description	Zooplankton from the Guaymas Basin deep-sea vent field were collected with a 1 m ² MOCNESS to examine the distribution of total standing stock, taxonomic composition, size-frequency distribution of zooplankton, and the species composition of calanoid copepods.

[[table of contents](#) | [back to top](#)]

Project Information

Benthic Ecology of Soft Sediments Associated with Hydrothermal Vents (Vent Benthos)

Coverage: Guaymas Basin

Description not available.

[[table of contents](#) | [back to top](#)]

Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-8311201

[[table of contents](#) | [back to top](#)]