Diver-collected jellies from NOAA Ship Ronald H. Brown RHB0603 in the Sargasso Sea from April 2006 (CMarZ_2004-2010 project)

Website: https://www.bco-dmo.org/dataset/3383
Version: 1
Version Date: 2010-11-15

Project
» Census of Marine Zooplankton-2004-2010 (CMarZ_2004-2010)

Program
» Census of Marine Life (CoML)

Contributors	Affiliation	Role
Madin, Laurence P.	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
Horgan, Erich	Woods Hole Oceanographic Institution (WHOI)	Co-Principal Investigator

Table of Contents

Dataset Description

Blue-water, or tethered open-water, diving is a simple technique that allows observation, photography, and collection of undamaged live zooplankton, particularly larger gelatinous forms that are commonly damaged or destroyed in nets. During the CMARZ cruise, 8 dives were made by Larry Madin and Erich Horgan, assisted by RV Brown crew members, Lt. Liz Jones, Ens. James Brinkley and 1st Asst. Engineer Keegan Plaskon. Dives were supported by the RV Brown's RHIB workboat, driven by Phil Pokorsky. We made at least one dive at each station, with 5 during daylight and 3 at night.

Methods & Sampling

Collection of living or intact specimens of gelatinous zooplankton is difficult with nets or trawls because the organisms are usually damaged and sometimes destroyed. During the last 30 years, the technique of blue-water diving to make observations and collections of these fragile animals by SCUBA has been developed and this technique was used on this cruise. A group of (usually) 4 divers worked from a small inflatable boat launched from the ship. They were connected by 10 m long tether lines to a central line hanging down from the inflatable and manned by a safety-diver who watched over the others. Each diver moved about within a 10 m radius to locate, observe, and collect free-swimming gelatinous animals. The technique was only semi-quantitative, but allowed collection of live and undamaged specimens, as well as in-situ photos of behavior. Organisms were collected in simple wide-mouth jars and returned to the ship for further study. The same technique was used at night, with the addition of underwater flashlights or headlamps.

[table of contents | back to top]

Data Files

File
dive_RHB.csv (Comma Separated Values (.csv), 28.66 KB) MD5:3ac17a66a117a7a4787b12c3f17fb94d Primary data file for dataset ID 3383

[table of contents | back to top]

Parameters

Parameter	Description	Units
dive_no	dive number	
depth	dive depth	meters
station	station number	
lat	latitude	decimal degrees
lon	longitude	decimal degrees
month_local	local month	
day_local	local day	
time_local	local time	
animal_group	animal group name	
species	scientific name	
count	number of individuals	
comments	free text comments	

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	Manual Biota Sampler
Generic Instrument Name	Manual Biota Sampler
Dataset-specific Description	Each diver moved about within a 10 m radius to locate, observe, and collect free-swimming gelatinous animals. The technique was only semi-quantitative, but allowed collection of live and undamaged specimens, as well as in-situ photos of behavior. Organisms were collected in simple wide-mouth jars and returned to the ship for further study.
Generic Instrument Description	"Manual Biota Sampler" indicates that a sample was collected in situ by a person, possibly using a hand-held collection device such as a jar, a net, or their hands. This term could also refer to a simple tool like a hammer, saw, or other hand-held tool.

[table of contents | back to top]

Deployments

RHB0603

Website	https://www.bco-dmo.org/deployment/57686
Platform	NOAA Ship Ronald H. Brown
Report	http://www.cmarz.org/CMarZ_RHBrown_April06/Cruise_Report/working.htm
Start Date	2006-04-10
End Date	2006-04-30

[table of contents | back to top]

Project Information

Census of Marine Zooplankton-2004-2010 (CMarZ_2004-2010)

Website: http://www.cmarz.org/

Coverage: Global ocean

The Census of Marine Zooplankton (CMarZ) is a field project of the Census of Marine Life (see www.CoML.org). CMarZ is working toward a taxonomically comprehensive assessment of biodiversity of animal plankton throughout the world ocean. The project goal is to produce accurate and complete information on zooplankton species diversity, biomass, biogeographical distribution, genetic diversity, and community structure by 2010. Our taxonomic focus is the animals that drift with ocean currents throughout their lives (i.e., the holozooplankton, Fig. 1). This assemblage currently includes ~6,800 described species in fifteen phyla; our expectation is that at least that many new species will be discovered as a result of our efforts. The census encompasses unique marine environments and those likely to be inhabited by endemic and undescribed zooplankton species.

[table of contents | back to top]

Program Information

Census of Marine Life (CoML)

Website: http://www.coml.org/

Coverage: global

The Census of Marine Life is a global network of researchers in more than 80 nations engaged in a 10-year scientific initiative to assess and explain the diversity, distribution, and abundance of life in the oceans. The world's first comprehensive Census of Marine Life - past, present, and future - will be released in 2010.

The stated purpose of the Census of Marine Life is to assess and explain the diversity, distribution, and abundance of marine life. Each plays an important role in what is known, unknown, and may never be known about what lives in the global ocean.

First, diversity. The Census aims to make for the first time a comprehensive global list of all forms of life in the sea. No such unified list yet exists. Census scientists estimate that about 230,000 species of marine animals have been described and reside in jars in collections in museums of natural history and other repositories. Since the Census began in 2000, researchers have added more than 5600 species to the lists. They aim to add many thousands more by 2010. The database of the Census already includes records for more than 16 million records, old and new. By 2010, the goal is to have all the old and the new species in an on-line encyclopedia

with a webpage for every species. In addition, we will estimate how many species remain unknown, that is, remain to be discovered. The number could be astonishingly large, perhaps a million or more, if all small animals and protists are included. For comparison, biologists have described about 1.5 million terrestrial plants and animals.

Second, distribution. The Census aims to produce maps where the animals have been observed or where they could live, that is, the territory or range of the species. Knowing the range matters a lot for people concerned about, for example, possible consequences of global climate change.

Third, abundance. No Census is complete without measures of abundance. We want to know not only that there is such a thing as a Madagascar crab but how many there are. For marine life, populations are being estimated either in numbers or in total kilos, called biomass.

To complete the context, it is important to understand the top motivations for the Census of Marine Life. Most importantly, much of the ocean is unexplored. Most of the records in its database are for observations near the surface, and down to 1000 meters. No observations have been made in most of the deep ocean, while most of the ocean is deep.

Another important issue is that diversity varies in space. Marine hot spots, like the rain forests of the land, exist off for large fish off the coasts of Brazil and Australia. The goal is to know much more about marine hot spots, to help conserve these large fish. Their abundance and thus their diversity is changing, especially for commercially important species. Between 1952 and 1976, for example, fishermen and their customers emptied many areas of the ocean of tuna.

The Census has evolved a strategy of 14 field projects to touch the major habitats and groups of species in the global ocean. Eleven field projects address habitats, such as seamounts or the Arctic Ocean. Three field projects look globally at animals that either traverse the seas or appear globally distributed: the top predators such as tuna and the plankton and the microbes. The projects employ a mix of technologies. These include acoustics or sound, optics or cameras, tags placed on individual animals that store or report data, and genetics, as well as some actual capture of animals. The technologies complement one another. Sound can survey large areas in the ocean, while light cannot. Light can capture detail and characters that sound cannot. And genetics can make identifications from fragments of specimens or larvae where pictures tell little.

This mix of curiosity, need to know, technology, and scientists willing to investigate the unexplored and undiscovered will result in a Census of Marine Life in 2010 that provides a much clearer picture of what lives below the surface around the globe. Several reasons make such a report timely, indeed urgent. Crises in the sea are reported regularly. One recent study predicted the end of commercial fishery globally by 2050, if current trends persist. Better information is needed to fashion the management that will sustain fisheries, conserve diversity, reverse losses of habitat, reduce impacts of pollution, and respond to global climate change. Hence, there are biological, economic, philosophical and political reasons to push for greater exploration and understanding of the ocean and its inhabitants. Indeed, the United Nations Convention on Biological Diversity requires signatories to collect information on living resources, but, as yet, no nation has a complete baseline of such information. The Census of Marine Life's global network of researchers will help to fill this knowledge gap, providing critical information to help guide decisions on how to manage global marine resources for the future.

[Text copied from the CoML web site, November 5, 2008]

[table of contents | back to top]

Funding

Funding Source	Award
Alfred P. Sloan Foundation (Sloan)	unknown CMarZ_2004-2010 Sloan

[table of contents | back to top]