Station locations from MI-LOCO project cruises off the coast of Chile (Oxygen Minimum Zone off Concepcion Chile); 2009-2011 (MI-LOCO project)

Website: https://www.bco-dmo.org/dataset/3878
Version: 24 July 2013
Version Date: 2013-07-24

Project
» Microbial Initiative in Low Oxygen areas off Concepción and Oregon (MI-LOCO)

Contributors	Affiliation	Role
Letelier, Ricardo	Oregon State University (OSU-CEOAS)	Lead Principal Investigator, Co-Principal Investigator, Contact
Ulloa, Osvaldo	Universidad de Concepcion (UdeC)	Co-Principal Investigator
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Dataset Description

Chile - Station Names and Locations

Methods & Sampling

Generated from Chile deployment report submitted by Jasmine Nahorniak

Data Processing Description

Generated from Chile deployment report submitted by Jasmine Nahorniak

Updated 24 July 2013 - Water depth at station added

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Data Files

File
Chile_Stations.csv (Comma Separated Values (.csv), 107 bytes) MD5:dafde59196d096062f213f5973acba94 Primary data file for dataset ID 3878

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Parameters

Parameter	Description	Units
Station_Id	Station Identifier	text
Latitude	Latitude of station in decimal degrees (South is negative)	decimal degrees
Longitude	Longitude of station in decimal degrees (West is negative)	decimal degrees
Depth_Water	Depth of water at station.	meters

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Deployments

MILOCO_Chile_2009-01-13

Website	https://www.bco-dmo.org/deployment/58937
Platform	R/V Kay-Kay II
Start Date	2009-01-13
End Date	2009-01-13
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-03-04

Website	https://www.bco-dmo.org/deployment/58938
Platform	R/V Kay-Kay II
Start Date	2009-03-04
End Date	2009-03-04
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-03-23

Website	https://www.bco-dmo.org/deployment/58939
Platform	R/V Kay-Kay II
Start Date	2009-03-23
End Date	2009-03-23
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-04-16

Website	https://www.bco-dmo.org/deployment/58940
Platform	R/V Kay-Kay II
Start Date	2009-04-16
End Date	2009-04-16
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-05-28

Website	https://www.bco-dmo.org/deployment/58941
Platform	R/V Kay-Kay II
Start Date	2009-05-28
End Date	2009-05-28
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-06-25

Website	https://www.bco-dmo.org/deployment/58942
Platform	R/V Kay-Kay II
Start Date	2009-06-25
End Date	2009-06-25
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-07-14

Website	https://www.bco-dmo.org/deployment/58943
Platform	R/V Kay-Kay II
Start Date	2009-07-14
End Date	2009-07-14
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-08-31

Website	https://www.bco-dmo.org/deployment/58946
Platform	R/V Kay-Kay II
Start Date	2009-08-31
End Date	2009-08-31
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-09-28

Website	https://www.bco-dmo.org/deployment/58947
Platform	R/V Kay-Kay II
Start Date	2009-09-28
End Date	2009-09-28
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-10-14

Website	https://www.bco-dmo.org/deployment/58948
Platform	R/V Kay-Kay II
Start Date	2009-10-14
End Date	2009-10-14
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2009-11-25

Website	https://www.bco-dmo.org/deployment/58949
Platform	R/V Kay-Kay II
Start Date	2009-11-25
End Date	2009-11-25
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms Note: Samples from this deployment were lost in the Feb 27, 2010 tsunami along the coast of Chile.

MILOCO_Chile_2010-01-21

Website	https://www.bco-dmo.org/deployment/58950
Platform	R/V Kay-Kay II
Start Date	2010-01-21
End Date	2010-01-21
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms Note: Samples from this deployment were lost in the Feb 27, 2010 tsunami along the coast of Chile.

MILOCO_Chile_2010-02-26

Website	https://www.bco-dmo.org/deployment/58951
Platform	R/V Kay-Kay II
Start Date	2010-02-26
End Date	2010-02-26
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms Note: Samples from this deployment were lost in the Feb 27, 2010 tsunami along the coast of Chile.

MILOCO_Chile_2010-04-29

Website	https://www.bco-dmo.org/deployment/58952
Platform	R/V Kay-Kay II
Start Date	2010-04-29
End Date	2010-04-29
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-05-30

Website	https://www.bco-dmo.org/deployment/58953
Platform	R/V Kay-Kay II
Start Date	2010-05-30
End Date	2010-05-30
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-06-26

Website	https://www.bco-dmo.org/deployment/58954
Platform	R/V Kay-Kay II
Start Date	2010-06-26
End Date	2010-06-26
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-07-31

Website	https://www.bco-dmo.org/deployment/58955
Platform	R/V Kay-Kay II
Start Date	2010-07-31
End Date	2010-07-31
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-10-05

Website	https://www.bco-dmo.org/deployment/58958
Platform	R/V Kay-Kay II
Start Date	2010-10-05
End Date	2010-10-05
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-10-26

Website	https://www.bco-dmo.org/deployment/58959
Platform	R/V Kay-Kay II
Start Date	2010-10-26
End Date	2010-10-26
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

COPAS-115

Website	https://www.bco-dmo.org/deployment/58960
Platform	R/V Kay-Kay II
Start Date	2010-12-02
End Date	2010-12-02
Description	One in a series of separate cruises undertaken for COPAS in the Oxygen Minimum Zone off Concepción Chile between January/2009 and March/2011 See COPAS Deployments for a list of all COPAS deployments

COPAS-116

Website	https://www.bco-dmo.org/deployment/58961
Platform	R/V Kay-Kay II
Start Date	2010-12-28
End Date	2010-12-28
Description	One in a series of separate cruises undertaken for COPAS in the Oxygen Minimum Zone off Concepción Chile between January/2009 and March/2011 See COPAS Deployments for a list of all COPAS deployments

COPAS-117

Website	https://www.bco-dmo.org/deployment/58962
Platform	R/V Kay-Kay II
Start Date	2011-01-18
End Date	2011-01-18
Description	One in a series of separate cruises undertaken for COPAS in the Oxygen Minimum Zone off Concepción Chile between January/2009 and March/2011 See COPAS Deployments for a list of all COPAS deployments

MILOCO_Chile_2011-03-02

Website	https://www.bco-dmo.org/deployment/58963
Platform	R/V Kay-Kay II
Start Date	2011-03-02
End Date	2011-03-02
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2011-03-30

Website	https://www.bco-dmo.org/deployment/58964
Platform	R/V Kay-Kay II
Start Date	2011-03-30
End Date	2011-03-30
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-08-31

Website	https://www.bco-dmo.org/deployment/58956
Platform	R/V Kay-Kay II
Start Date	2010-08-31
End Date	2010-08-31
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

MILOCO_Chile_2010-09-29

Website	https://www.bco-dmo.org/deployment/58957
Platform	R/V Kay-Kay II
Start Date	2010-09-29
End Date	2010-09-29
Description	One in a series of separate cruises undertaken for MI-LOCO in the Oxygen Minimum Zone off Concepción Chile between January/2009 and August/2011 See MI-LOCO Chile Deployments for a list of all MI-LOCO Chile deployments as well as information about the deployment ids and synonyms

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Project Information

Microbial Initiative in Low Oxygen areas off Concepción and Oregon (MI-LOCO)

Website: http://mi-loco.coas.oregonstate.edu/

Coverage: Along the Oregon Coast, USA (44.25 N, 124.25 W), and off the coast of Concepción, Chile (36.513 S, 73.129 W)

Two Oxygen Minimum Zones are studied in this project. One is along the Oregon Coast, USA (44.25°N, 124.25°W), and the other is off the coast of Concepción, Chile (36.513°S, 73.129°W).

Microbial Initiative in Low Oxygen areas off Concepción and Oregon
Although Eastern Boundary Current Ecosystems (EBCE) represent less than 5% of the ocean's surface, they support regions of high biological activity that contribute significantly to global elemental cycles. Of particular interest in these regions is the strong role that microbial assemblages play in the production and transport of organic matter from the well-lit surface layers into the deeper ocean environment where it is remineralized.

Naturally occurring regions of hypoxia found along the EBCE support microbial communities that strongly affect marine and global biogeochemical cycles. Some of these largest regions, also known as Oxygen Minimum Zones (OMZs), are found in the upwelling areas of these EBCE along the North and South Pacific Ocean where their intensity, thickness, and temporal stability varies as a function of latitude.

With the support of the Gordon and Betty Moore Foundation (GBMF, Palo Alto, California), a project was proposed to study the OMZ along the coast of Oregon-USA and Concepción-Chile.

With this study we will understand the spatial and temporal variability of the OMZ along both the Oregon and Concepción regions, and their associated mechanisms, by integrating Physical, Biogeochemical, Microbial, and Paleo-oceanography. The outcome of the proposed effort will allow us to identify similarities and distinctions between the microbial assemblages inhabiting both regions, characterize physical and biogeochemical seasonal patterns in the development and maintenance of hypoxic zones over both shelves, and determine the long term changes in the seasonal fluctuation of oxygen concentration over the shelves with the use of paleo proxies.

Our study is aimed at developing databases to:

- compare the marine microbial assemblages associated with the seasonal hypoxia observed on the continental shelf off Concepción, Chile, and Oregon, USA, and

- assess potential use of paleoceanographic approaches to characterize the interannual and long-term variability in local oceanographic physical, chemical, and biological conditions driving the development of these hypoxic coastal environments.

This project is an integrated effort between researchers at Oregon State University (OSU), Universidad de Concepción (UdeC), Aarhus University (AU), Massachusetts Institute of Technology (MIT), and the University of Pennsylvania (Penn). Results from this proposed effort will significantly complement ongoing marine microbial and biogeochemical studies supported by the Agouron Institute in the permanent OMZ off northern Chile and Peru (ESP-OMZ Website).

Centro de Estudios Oceanográficos en el Pácifico Sur-oriental (COPAS Website)

El Laboratorio de Procesos Oceanográficos y Clima (PROFC Website)

Funding:
Gordon and Betty Moore Foundation (GBMF) Grant # 1661 (11/01/2008 to 11/01/2012)

Justification for using OCE-1260164 for COPAS and MILOCO Written by Ricardo Letelier:
There are two connections from OCE that support the inclusion of COPAS and data in BCO-DMO, as the data relates to OCE. Because COPAS is one of the longest oceanographic biogeochemical/physical time-series in South America, the data generated by this program is useful for time-series comparative studies. As such, some of us - myself included - are interested in comparing general temporal patterns and trends. Hence, we could use our present HOT time-series grant to support this effort in order to access the data.

The second one is the connection with the work of Ed Delong as part of MI_LOCO and C-MORE. The microbial diversity analysis, as a function of biogeochemical gradients is an integral part of both projects. One of the C-MORE cruises took place in the OMZ off Chile and the data collected by MI-LOCO allows us to place our results into a broader temporal context.

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Funding

Funding Source	Award
Gordon and Betty Moore Foundation (GBMF)	GBMF1661

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