Laying the foundations of the MBON Pole to Pole of the Americas

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https://marinebon.github.io/p2p/

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Why is MBON Pole to Pole needed?

Major biodiversity data gaps exist along the east and west coastal areas of the Americas.

Density of biodiversity records vary significantly among taxonomic groups.

Lack of time series data in critical areas.
Goal: Build a regional Community of Practice for understanding and conserving life in the ocean

• Develop capacity to:
  • expand our knowledge of biodiversity and its services
  • coordinate disaggregated biodiversity monitoring
  • share data and best practices
  • increase understanding of physical and biological connectivity
  • foster integration of in situ observations with satellite data
Capacity Building – Data workflows

Essential Ocean Variables (EOV’s)

Essential Biodiversity Variables (EBV’s)

Integrated Publishing Toolkit

Darwin Core-Event Core

Field data collection

Data tables

Converted

Wrangled

Open-source R packages

devtools::install_github("obis/obistools")

Open data

Shared

Indexed

Inform
Satellite biogeographic seascape maps (Kavanaugh et al. 2016, ICES J. Mar. Sci., 73) at 9-km pixel resolution are made available to MBON Pole to Pole via NOAA CoastWatch.
Marine Biodiversity Workshops: from the Sea to the Cloud

- São Sebastião, Brazil, August 6-10, 2018
  - 38 participants
  - 11 countries

- Puerto Morelos, Mexico, April 2-5, 2019
  - 35 participants
  - 12 countries

http://www.goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=2284

http://www.goosocean.org/index.php?option=com_oe&task=viewEventRecord&eventID=2382
Marine Biodiversity Workshops: from the Sea to the Cloud
Dashboard: Biodiversity survey records and satellite data

Example: Rocky shore at Arraial do Cabo - Brazil
Dashboard: Biodiversity indicators

Example: Rocky shore at Arraial do Cabo – Brazil
Simplifying data analysis and sharing

Analysis-ready data files

Darwin Core Archive
Community analysis R-based tools

**Community Analysis**

- P2P community analysis - Google Docs
  - NMDS Tutorial in R – sample(ECOLOGY)
  - Lab 8. Communities

**load packages**

**Gregorio’s Argentina rocky shore data**

- P2P data templates
- Gregorio enters data: Biodiv surveys/Argentina/GBiagetti/Data_Sheet_RockyShore_GB_Puerto_Madryn.xlsx
- → Eduardo’s P2P transformation: R5_dataTransform
- → P2P cleaned data: sites.csv, obs.csv
- → P2P analytical products, eg p2p-dashboard, ....

**load data**

Show [10 +] entries

<table>
<thead>
<tr>
<th>occurrenceId</th>
<th>eventID</th>
<th>eventDate</th>
<th>country</th>
<th>locality</th>
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<th>strata</th>
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<td>Argentina</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Cluster Dendrogram**

- Height 0.30
- Shikmona1
- Akhdv
- Shikmona2
- Palmachim
- Habonim1
- Shikmona1
- Michna2
- Akhdv
- Shikmona2
- Palmachim
- Habonim1
- Shikmona1
Time series data of seascape area per class at monitoring sites

Puerto Madryn (Argentina)
Outputs: standard field protocols

- Rocky shores
- Sandy beaches
Outputs: HOW TO data quality check WoRMS
Outputs: HOW TO upload and publish data in OBIS and GBIF

1 Introduction

This guide will assist you in publishing your data to OBIS and GBIF, and by doing this you obtain a DOI for your collection.

This is an easy process that can be accomplished within 30 minutes or less. To publish your data you through THREE

2.3 Taxonomic Coverage

Here you need to input all the scientific names of taxa present at your study site. You can extract this information from the occurrence file for your site from the DataAnalysisFile folder in the projects google drive.

Here is an example of the list of taxa from Puerto Madryn rocky shores sites:

```r
occurrence <- readr::read_csv("ARGENTINA_PUERTOMADRYN_PUNITAESTE_dashboard_occurrence.csv", progress = TRUE)
```

```r
sppList <- unique(occurrence$ScientificName_accepted)
```

```r
# remove NAs
sppList <- sppList[!sapply(sppList, is.na)]
```

```r
# Write the names to a text file
writeLines(toString(sppList), "sppList.txt")
print(sppList)
```
Open data is becoming real

MBON POLE TO POLE: SANDY BEACH BIODIVERSITY OF YUCATAN COAST

URL: http://ipt.iobis.org/mbon/resource?r=yucatan_sandybeach2018
Installation URL: http://ipt.iobis.org/mbon/
Node: OBIS Secretariat
Published: 2019-05-10 16:59
Updated: 2019-05-15 10:14
Abstract: The MBON Pole to Pole effort seeks to develop a framework for the collection, use and sharing of marine biodiversity data in a coordinated, standardized manner leveraging on existing infrastructure managed by the Global Ocean Observing System (GOOS; IOC-UNESCO), the GEO Biodiversity Observation Network (GEO BON), and the Ocean Biogeographic Information System (OBIS). The MBON Pole to Pole aims to become a key resource for decision-making and management of living resource across countries in the Americas for reporting requirements under the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Aichi Targets of the Convention of Biological Diversity (CBD), and the UN 2030 Agenda for Sustainable Development Goals (SDGs). This collection corresponds to the species registered on sandy beaches of the State of Yucatan, Mexico, using the MBON P2P sampling protocol for sandy beaches, with funding from the LANRESC UNAM-CONACYT (Laboratorio Nacional de Resiliencia Costera, Universidad Nacional Autonoma de Mexico - CONACyT).

MBON Pole to Pole handbook tools

- Field protocols
- R-based analysis tools
- Dashboards
- HOW-TO documents
EnvLoggers network (temperature)

Galapagos Islands

T °C

Thermic amplitude 27.5°C

Antarctica

Erasmo Macaya

Nicolás Moity
Photo-quadrat versus visual intercept records

Photoquadrats vs visual

nMDS

Gregorio Bigatti – IBIOMAR-CONICET
MBON Pole to Pole species catalogs on iNaturalist
Thank you!

Website

Follow us @mbonpoletopole

https://marinebon.github.io/p2p/index.html