Dataset name: **Microzooplankton abundance and biomass**

|  |  |
| --- | --- |
| Parameters: | * **microzooplankton taxa**
* **microzooplankton abundances**
* **microzooplankton specific biomass per taxon**
 |

PROJECT TITLE: **MOBYDICK**

Oceanographic cruise: **MOBYDICK**

Start date: **18/02/2018**

End date: **27/03/2018**

Project manager: **Bernard Quéguiner** bernard.queguiner@mio.osupytheas.fr

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 Geographic information: **Indian sector of the Southern Ocean**

 Latitude: **49.5°S – 52.5°S**

 Longitude: **67,0°E – 74.5°E**

Parameter supervisor: **Urania Christaki**

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# OPERATIONS

## Sampling device(s)

Rosette bottles (CTD Stock and CTD Omics T).

## List of stations sampled

**Table 1 : Sampling details for microzooplankton taxonomy**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Station** | **Date** | **Operation** | **Cast #** | **Bottle #** | **Depth** | **Lugol** | **Lugol/Gluta** |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 21 | 10 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 19 | 30 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 17 | 50 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 15 | 70 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 13 | 100 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 11 | 125 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 9 | 150 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-Stock | CTD\_007 | 5 | 200 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-OMICS\_T | CTD\_009 | 17 | 10 m | 250 mL | 250 mL ml |
| M2-1 | 26/02/18 | CTD-OMICS\_T | CTD\_009 | 12 | 60 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-OMICS\_T | CTD\_009 | 7 | 125 m | 500 mL |  |
| M2-1 | 26/02/18 | CTD-OMICS\_T | CTD\_009 | 2 | 300 m | 1 L |  |
| M4-1 | 01/03/18 | CTD-OMICS\_T | CTD\_011 | 17 | 10 m | 250 mL | 250 mL |
| M4-1 | 01/03/18 | CTD-OMICS\_T | CTD\_011 | 12 | 60 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-OMICS\_T | CTD\_011 | 7 | 125 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-OMICS\_T | CTD\_011 | 2 | 300 m | 1 L |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 21 | 10 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 19 | 30 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 17 | 50 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 15 | 70 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 13 | 100 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 11 | 125 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 7 | 175 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 5 | 200 m | 500 mL |  |
| M4-1 | 01/03/18 | CTD-Stock | CTD\_013 | 3 | 250 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-OMICS\_T | CTD\_021 | 16 | 10 m | 250 mL | 250 mL |
| M3-1 | 04/03/18 | CTD-OMICS\_T | CTD\_021 | 11 | 60 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-OMICS\_T | CTD\_021 | 6 | 125 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-OMICS\_T | CTD\_021 | 5 | 300 m | 1 L |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 21 | 25 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 19 | 50 m | 500 mL |  |

**Table 1 : Sampling details for microzooplankton taxonomy (cont'd)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 17 | 75 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 15 | 100 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 13 | 125 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 11 | 150 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 9 | 175 m | 500 mL |  |
| M3-1 | 04/03/18 | CTD-Stock | CTD\_023 | 7 | 200 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-OMICS\_T | CTD\_027 | 21 | 10 m | 250 mL | 250 mL |
| M2-2 | 06/03/18 | CTD-OMICS\_T | CTD\_027 | 19 | 60 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-OMICS\_T | CTD\_027 | 17 | 125 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-OMICS\_T | CTD\_027 | 15 | 300 m | 1 L |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 21 | 10 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 19 | 30 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 17 | 50 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 15 | 70 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 13 | 100 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 11 | 125 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 9 | 150 m | 500 mL |  |
| M2-2 | 06/03/18 | CTD-Stock | CTD\_030 | 5 | 200 m | 500 mL |  |
| M1 | 09/03/18 | CTD-OMICS\_T | CTD\_036 | 17 | 10 m | 250 mL | 250 mL |
| M1 | 09/03/18 | CTD-OMICS\_T | CTD\_036 | 12 | 60 m | 500 mL |  |
| M1 | 09/03/18 | CTD-OMICS\_T | CTD\_036 | 6 | 125 m | 500 mL |  |
| M1 | 09/03/18 | CTD-OMICS\_T | CTD\_036 | 2 | 300 m | 1 L |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 21 | 25 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 19 | 50 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 17 | 75 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 15 | 100 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 13 | 125 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 11 | 150 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 9 | 175 m | 500 mL |  |
| M1 | 09/03/18 | CTDStock | CTD\_038 | 7 | 200 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 21 | 25 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 19 | 50 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 17 | 75 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 15 | 100 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 13 | 125 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 11 | 150 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 9 | 175 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-Stock | CTD\_042 | 7 | 200 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-OMICS\_T | CTD\_046 | 17 | 10 m | 250 mL | 250 mL |

**Table 1 : Sampling details for microzooplankton taxonomy (cont'd)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| M4-2 | 12/03/18 | CTD-OMICS\_T | CTD\_046 | 12 | 60 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-OMICS\_T | CTD\_046 | 7 | 125 m | 500 mL |  |
| M4-2 | 12/03/18 | CTD-OMICS\_T | CTD\_046 | 2 | 300 m | 1 L |  |
| M2-3 | 16/03/18 | CTD-OMICS\_T | CTD\_049 | 16 | 10 m | 250 mL | 250 mL |
| M2-3 | 16/03/18 | CTD-OMICS\_T | CTD\_049 | 11 | 60 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-OMICS\_T | CTD\_049 | 6 | 125 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-OMICS\_T | CTD\_049 | 2 | 300 m | 1 L |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 21 | 15 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 19 | 30 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 17 | 50 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 15 | 70 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 13 | 100 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 11 | 125 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 9 | 150 m | 500 mL |  |
| M2-3 | 16/03/18 | CTD-Stock | CTD\_053 | 7 | 200 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-OMICS\_T | CTD\_059 | 16 | 10 m | 250 mL | 250 mL |
| M3-3 | 19/03/18 | CTD-OMICS\_T | CTD\_059 | 11 | 60 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-OMICS\_T | CTD\_059 | 6 | 125 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-OMICS\_T | CTD\_059 | 2 | 300 m | 1 L |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 21 | 25 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 19 | 50 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 17 | 75 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 15 | 100 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 13 | 125 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 11 | 150 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 9 | 175 m | 500 mL |  |
| M3-3 | 19/03/18 | CTD-Stock | CTD\_061 | 7 | 200 m | 500 mL |  |

# INSTRUMENTS

Instrument Type: **Inverted Microscope**

Manufacturer: **Nikon**

Model:

Instrument Features / Calibration: **N/A**

# DESCRIPTION of PARAMETERS

## Measurement details

Water samples (500 mL) for microscopic analyses were collected at all stations from the CTD stock casts (all depths). Additional samples (250 mL to 1L) for microzooplankton were also taken from the CTD omics T casts from four depths (the same as for microbial eukaryote molecular diversity analyses) between the surface and 300 m. All samples were fixed with acid Lugol's solution (2 % v/v) and stored in the dark.

## Analytical procedure

Samples will be examined with an inverted microscope (x 400 magnification) after sedimentation. Microzooplankton will be identified based on their morphology (morphospecies) at the lowest possible taxonomic level. Biovolumes of cells will be calculated assuming the nearest geometrical shape. Biovolumes will be converted to carbon biomass based on a C:biovolume factor of 0.19 pg C *μ*m−3 (Putt & Stoecker, 1989) for ciliates and on the C:biovolume algorithm for heterotrophic dinoflagellates of Mender-Deuer & Lessard (2000).

## Units

* Microzooplankton abundances cell numbers L–1
* microzooplankton specific biomass µg C L–1 per taxon
* Total microzoplankton biomass µg C L–1

## Sensor precision

N/A

## Post-cruise data analysis/treatment required

N/A

## Estimated Date of Delivery

End of 2019.

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