

**Dataset:** Chlorophyll data from McMurdo Sound, Antarctica from 2012 to 2015 (McMurdo Predator Prey project)

**Project(s):** Food web dynamics in an intact ecosystem: the role of top predators in McMurdo Sound (McMurdo Predator Prey)

**Abstract:** Discrete chlorophyll a data were collected as part of an ecosystem study in McMurdo Sound, which is located at the southern extent of the Ross Sea in the Southern Ocean. The major goal of this multi-disciplinary project was to assess the influence of top-down forcing (predation) on pelagic zooplankton and fish. Samples were collected using Niskin water bottles deployed through the fast ice (sea ice attached to land) during two spring/summer seasons: 3 November 2012 – 21 January 2013 and 17 November 2014 – 1 January 2015. Water samples were collected at the surface and in the chlorophyll maximum, when present, as determined by a fluorescence sensor during a CTD cast. During 2012/2013, stations were located along a transect in the middle of McMurdo Sound, perpendicular to the fast ice edge. During 2014/2015, stations were located along the fast ice edge, and along three transects into the fast ice along the eastern side of the McMurdo Sound (Ross Island), in the middle of the Sound, and on the western side of the Sound. For a complete list of measurements, refer to the supplemental document 'Field\_names.pdf', and a full dataset description is included in the supplemental file 'Dataset\_description.pdf'. The most current version of this dataset is available at: <http://www.bco-dmo.org/dataset/679685>

**Description:** Chlorophyll data from McMurdo Sound, Antarctica

This dataset includes chlorophyll, phaeopigments, depth, lat, lon, and station from McMurdo Sound, Antarctica collected between the austral years 2012/2013 and 2014/2015.

**Acquisition** Small holes were drilled through the McMurdo Sound fast ice. A Niskin Bottle was

**Description:** deployed below the fast ice and water was collected just below the ice-water interface and at a pre-determined depth (Chlorophyll maximum) as determined by a fluorescence sensor on a CTD. Water samples from the Niskin bottles were collected in 4 L amber Nalgene bottles and then immediately stored in a dark cooler. Gloves were worn for sample collection and bottles and caps were rinsed three times before sample collection. The sample bottles were immediately processed as soon as they returned from the field. The collection bottle was gently swirled and 50 to 2000 mL were filtered under low vacuum onto a 25 mm GF/F filter. Filters were immediately placed in 13 mm borosilicate test tubes containing 7 mL 90% v/v HPLC grade acetone and extracted in the dark for 24 h at -20 degrees C. After extraction, fluorescence was measured with a Turner Designs 10 AU fluorometer before and after acidification. The fluorometer was calibrated at McMurdo Station at the beginning of the field season using Chlorophyll a

standards from Sigma-Aldrich and rechecked using a solid standard from Turner Designs several times during the field season. Chlorophyll a was determined using the methods of Parsons et al. (1984).

Reference:

Parsons, T.R., Maita, Y., Lalli, C.M., 1984. A Manual of Chemical and Biological Methods for Seawater Analysis. Pergamon Press, New York, pp. 107–110.

**Processing** BCO-DMO Data Manager Processing Notes:

- Description:**
- \* added a conventional header with dataset name, PI name, version date
  - \* modified parameter names to conform with BCO-DMO naming conventions
  - \* blank values replaced with no data value 'nd'
  - \* changed all dates to yyyy-mm-dd that were not already

## Instrument Information

<b>Instrument</b>	
<b>Description</b>	<i>local description not specified</i>
<b>Generic Instrument Name</b>	Niskin bottle
<b>Generic Instrument Description</b>	A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24 or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.

<b>Instrument</b>	WET Labs ECO-AFL/FL
<b>Description</b>	<i>local description not specified</i>
<b>Generic Instrument Name</b>	Wet Labs ECO-AFL/FL Fluorometer
<b>Generic Instrument Description</b>	The Environmental Characterization Optics (ECO) series of single channel fluorometers delivers both high resolution and wide ranges across the entire line of parameters using 14 bit digital processing. The ECO series

excels in biological monitoring and dye trace studies. The potted optics block results in long term stability of the instrument and the optional anti-biofouling technology delivers truly long term field measurements. more information from Wet Labs

<b>Instrument</b>	
<b>Description</b>	<i>local description not specified</i>
<b>Generic Instrument Name</b>	CTD Sea-Bird SBE SEACAT 19plus
<b>Generic Instrument Description</b>	Self contained self powered CTD profiler. Measures conductivity, temperature and pressure in both profiling (samples at 4 scans/sec) and moored (sample rates of once every 5 seconds to once every 9 hours) mode. Available in plastic or titanium housing with depth ranges of 600m and 7000m respectively. Minature submersible pump provides water to conductivity cell.