

Chlorophyll data associated with salp swarm collections in the Slope Waters off northeastern USA from R/V Oceanus OC370, OC379, OC381 in the slope waters off NJ, DE, MD from 2001-2002 (SalpSwarmDyn project)

Website: <https://www.bco-dmo.org/dataset/3150>

Data Type: Cruise Results

Version: 1

Version Date: 2009-07-02

Project

» [Salp Swarm Dynamics](#) (SalpSwarmDyn)

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Abstract

Chlorophyll data associated with salp swarm collections in the Slope Waters off northeastern USA from R/V Oceanus OC370, OC379, OC381 in the slope waters off NJ, DE, MD from 2001-2002.

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Coverage

Spatial Extent: N:40.60553 E:-67.994893 S:36.802395 W:-74.733377

Temporal Extent: 2001-09-15 - 2002-09-25

Dataset Description

Chlorophyll data associated with salp swarm collections in the Slope Waters off northeastern USA.

Associated datasets: [salp_swarms](#)

Acquisition Description

Seawater was collected with Niskin bottles at several depths and filtered through both GFF filters and 2 µm pore glass fibre filters for analysis of Chlorophyll a and total phaeopigment. Immediately after water samples were filtered, filter pads were transferred into 6 ml of 90% acetone and the pigment was extracted in a dark refrigerator for 24 hours. Filter pads were removed and the test tubes centrifuged just prior to reading the fluorescence. Following the initial fluorescence reading, samples were acidified with ~0.2ml of HCl and reread. The fluorometer was calibrated using a spectrophotometer during each cruise using standard Chl-a derived from spinach. Chlorophyll-a and phaeopigments were calculated from standard equations (Strickland and Parsons 1972).

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Parameters

Parameter	Description	Units
cruise_id	cruise designation	
year	year, reported as YYYY	
month_local	month of year, local time	
yrday_local	local day and decimal time, as 326.5 for the 326th day of the year, or November 22 at 1200 hours (noon)	
day_local	day, local time	
comments	free text comments	
sample	sample identification or number	
filter	size or type of filter: gff=glass fiber filter	microns
chl_a	total chlorophyll-a pigment	microgram/liter
phaeo	total phaeopigment	microgram/liter
pig_tot	total pigments	microgram/liter
chl_per_tot	ratio of chlorophyll to total pigments	
depth	sample depth	meters

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Generic Instrument Description	<p>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.</p>

Deployments

OC370

Website	https://www.bco-dmo.org/deployment/57991
Platform	R/V Oceanus
Start Date	2001-09-14
End Date	2001-09-26
Description	Original cruise data are available from the NSF R2R data catalog

OC379

Website	https://www.bco-dmo.org/deployment/57992
Platform	R/V Oceanus
Start Date	2002-06-01
End Date	2002-06-14
Description	salp study Original cruise data are available from the NSF R2R data catalog

OC381

Website	https://www.bco-dmo.org/deployment/57993
Platform	R/V Oceanus
Start Date	2002-09-14
End Date	2002-09-27
Description	Original cruise data are available from the WHOI Data Library and Archives: http://dlacruisedata.whoi.edu/OC/OC381L01/ and from the NSF R2R data catalog: http://www.rvdata.us/catalog/OC381 . The cruise was supported by NSF OCE award: OCE-0002540

Project Information

Salp Swarm Dynamics (SalpSwarmDyn)

Coverage: slope water off mid-Atlantic Bight

Salps are holoplanktonic grazers that have a life history, feeding biology and population dynamic strikingly different from copepods or other crustacean zooplankton. They can occur in very dense populations that cover large areas, and these blooms have been shown to have major impacts due to grazing and production of fast-sinking fecal pellets. However the conditions supporting bloom formation, and the energetics, reproduction and behavior of the bloom-forming salps are still poorly understood. This study will focus on two species of salps that are global in their distribution and representative of two genera that commonly form large blooms. *Salpa aspera* regularly occurs during the summer in high concentrations in the slope waters of the Mid-Atlantic Bight, while *Thalia democratica* regularly forms dense populations during the winter spring in the Georgia Bight. The investigators will examine feeding, metabolism, growth, reproduction and population dynamics of these salps. They will use two independent modeling approaches, grounded in experimental and field data, to extend their observations to other time and space scales. Interpret our experimental and modeling results will be interpreted within the context of the environmental conditions to which the salps are exposed. This integrated approach will provide the best basis for understanding how salp blooms form and persist. Results of this study will extend to other species that occur in high densities in many locations, allowing scientists to better evaluate the importance of salps in biogeochemical cycles and in structuring the pelagic environment.

Funding

Funding Source	Award
NSF Division of Ocean Sciences (NSF OCE)	OCE-0002540