Photosynthetically available radiation (PAR) from R/V Endeavor cruises in the Gulf of Maine and Georges Bank in 1995 as part of the U.S. GLOBEC program (GB project)

Website: https://www.bco-dmo.org/dataset/2476
Data Type: Cruise Results
Version: 1
Version Date: 2004-08-31

Project
» U.S. GLOBEC Georges Bank (GB)

Program
» U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Contributors	Affiliation	Role
Keuren, Jeff Van	Woods Hole Oceanographic Institution (WHOI)	Principal Investigator
Allison, Dicky	Woods Hole Oceanographic Institution (WHOI)	BCO-DMO Data Manager

Abstract
Photosynthetically available radiation (PAR) from R/V Endeavor cruises in the Gulf of Maine and Georges Bank in 1995 as part of the U.S. GLOBEC program

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Coverage

Spatial Extent: **N**:42.327 **E**:-66.287 **S**:40.52 **W**:-69.02
Temporal Extent: 1995-01-12 - 1995-06-04

Dataset Description

Photosynthetically Available Radiation

1. Most information regarding individual profiles is provided with the individual data files (location, correction to GMT, light units, sensor type and characteristics, date of latest calibration).
2. Upcast and downcast profiles sorted separately by depth, then time. Downcast listed first. Raw values listed - no averaging.
3. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95.
4. The December 1995 recalibration results have been applied to all readings. The change in calibrations from the previous April 1993 factory measurements were less than 2%.

5. All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

Contributor:
Dr Jeff Van Keuren
Wood Hole Oceanographic Inst.
MS#35
Woods Hole, MA 02543-1521

Updated: August 31, 2004; G.Heimerdinger

Methods & Sampling

Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95.

Data Processing Description

All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

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Data Files

File
spherical_par.csv (Comma Separated Values (.csv), 1.85 MB) MD5:f77872734d9e6c614302e4d7d055a2eb Primary data file for dataset ID 2476

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Parameters

Parameter	Description	Units
cruiseid	Cruise identification	
platform	Platform name	
region	Geographical region	
cast	Cast number	
station	Station number or identifier	
day_local	Local day	
month_local	Local month	
year_local	Local year	
timezone	Time zone correction for GMT conversion, modified to account for day light savings time	
lat	Latitude, negative = South	decimal degrees
lon	Longitude, negative = West	decimal degrees
time_local	Local time	hours and minutes
depth	Depth of sample	meters
par_d	downwelling photosynthetically activeradiation with cosine sensor response	microEinstein/meter^2/second PAR (400-700nm)
par_platform	downwelling photosynthetically activeradiation with cosine sensor response, from ship's deck	microEinstein/meter^2/second PAR (400-700nm)

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Instruments

Dataset-specific Instrument Name	Photosynthetically Available Radiation Sensors
Generic Instrument Name	Photosynthetically Available Radiation Sensor
Dataset-specific Description	Photosynthetically Available Radiation Sensors. Biospherical Inst. PUV-500, PUV-510. Last Calibration of Sensors
Generic Instrument Description	A PAR sensor measures photosynthetically available (or active) radiation. The sensor measures photon flux density (photons per second per square meter) within the visible wavelength range (typically 400 to 700 nanometers). PAR gives an indication of the total energy available to plants for photosynthesis. This instrument name is used when specific type, make and model are not known.

Dataset-specific Instrument Name	Radiometer
Generic Instrument Name	Radiometer
Dataset-specific Description	underwater unit (PUV-500) and matched deck unit (PUV-510).Last Calibration of Sensors
Generic Instrument Description	Radiometer is a generic term for a range of instruments used to measure electromagnetic radiation (radiance and irradiance) in the atmosphere or the water column. For example, this instrument category includes free-fall spectral radiometer (SPMR/SMSR System, Satlantic, Inc), profiling or deck cosine PAR units (PUV-500 and 510, Biospherical Instruments, Inc). This is a generic term used when specific type, make and model were not specified.

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Deployments

EN259

Website	https://www.bco-dmo.org/deployment/57399
Platform	R/V Endeavor
Report	http://globec.whoi.edu/globec-dir/reports/en259.html
Start Date	1995-01-10
End Date	1995-01-22
Description	process zoology **Methods & Sampling** Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95. **Processing Description** All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

EN262

Website	https://www.bco-dmo.org/deployment/57402
Platform	R/V Endeavor
Report	http://globec.whoi.edu/globec-dir/reports/en262/EN262.pdf
Start Date	1995-02-23
End Date	1995-03-10
Description	process zoology **Methods & Sampling** Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95. **Processing Description** All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

EN264

Website	https://www.bco-dmo.org/deployment/57404
Platform	R/V Endeavor
Report	http://globec.whoi.edu/globec-dir/reports/en264.html
Start Date	1995-03-26
End Date	1995-04-08
Description	process zoology **Methods & Sampling** Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95. **Processing Description** All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

EN266

Website	https://www.bco-dmo.org/deployment/57406
Platform	R/V Endeavor
Report	http://globec.whoi.edu/globec-dir/reports/en266/EN266.pdf
Start Date	1995-04-26
End Date	1995-05-08
Description	process zoology **Methods & Sampling** Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95. **Processing Description** All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

EN267I

Website	https://www.bco-dmo.org/deployment/57407
Platform	R/V Endeavor
Report	http://globec.whoi.edu/globec-dir/reports/en267/EN267.pdf
Start Date	1995-05-22
End Date	1995-06-05
Description	process zoology **Methods & Sampling** Photosynthetically Available Radiation. All profiles were taken with the same two (Biospherical Instruments, Inc. San Diego, CA) instruments: underwater unit (PUV-500) and matched deck unit (PUV-510). Last Calibration of Sensors: 15 DEC 95. **Processing Description** All profiles were taken from same location on the R/V Endeavor: starboard side using the J-frame. Whenever sea condition allowed, the ship was turned such that the sun was shining on the starboard side and as close to amidship as possible.

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Project Information

U.S. GLOBEC Georges Bank (GB)

Website: http://globec.whoi.edu/globec_program.html

Coverage: Georges Bank, Gulf of Maine, Northwest Atlantic Ocean

The U.S. GLOBEC Georges Bank Program is a large multi- disciplinary multi-year oceanographic effort. The proximate goal is to understand the population dynamics of key species on the Bank - Cod, Haddock, and two species of zooplankton (*Calanus finmarchicus* and *Pseudocalanus*) - in terms of their coupling to the physical environment and in terms of their predators and prey. The ultimate goal is to be able to predict changes in the distribution and abundance of these species as a result of changes in their physical and biotic environment as

well as to anticipate how their populations might respond to climate change.

The effort is substantial, requiring broad-scale surveys of the entire Bank, and process studies which focus both on the links between the target species and their physical environment, and the determination of fundamental aspects of these species' life history (birth rates, growth rates, death rates, etc).

Equally important are the modelling efforts that are ongoing which seek to provide realistic predictions of the flow field and which utilize the life history information to produce an integrated view of the dynamics of the populations.

The U.S. GLOBEC Georges Bank Executive Committee (EXCO) provides program leadership and effective communication with the funding agencies.

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Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: http://www.usglobec.org/

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea.

The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

Funding Source	Award
National Science Foundation (NSF)	unknown GB NSF
National Oceanic and Atmospheric Administration (NOAA)	unknown GB NOAA

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