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Data Publisher for Earth & Environmental Science

Bouman, Heather A; Platt, Trevor; Doblin, Martina A; Figueiras, Francisco G; Gudmundsson, Kristinn; Gudfinnsson, Hafsteinn G; Huang, Bangqin; Hickman, Anna; Hiscock, Michael R; Jackson, Thomas; Lutz, Vivian A; Melin, Frederic; Rey, Francisco; Pepin, Pierre; Segura, Valeria; Tilstone, Gavin; van Dongen-Vogels, Virginie; Sathyendranath, Shubha (2017): A global dataset of photosynthesis-irradiance parameters for marine phytoplankton. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.874087>,

Supplement to: Bouman, HA et al. (2018): Photosynthesis-irradiance parameters of marine phytoplankton: synthesis of a global data set. *Earth System Science Data*, **10**, 251-266, <https://doi.org/10.5194/essd-10-251-2018>

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Abstract:

The MAPPS global database of photosynthesis-irradiance (P-E) parameters consists of over 5000 P-E experiments that provides information on the spatio-temporal variability in the two P-E parameters (the assimilation number, and the initial slope) that are fundamental inputs for models of marine primary production that use chlorophyll as the state variable. The experiments were carried out by an international group of research scientists to examine the basin-scale variability in the photophysiological response of marine phytoplankton over a range of oceanic regimes (from the oligotrophic gyres to productive shelf systems) and covers several decades. These data can be used to improve the assignment of P-E parameters in the estimation of marine primary production using satellite data.

Source data set:

Bouman, Heather A; Platt, Trevor; Kraay, Gijsbert W; Sathyendranath, Shubha; Irwin, Brian (2000): Bio-optical properties of the subtropical North Atlantic. I. Vertical variability. *Marine Ecology Progress Series*, **200**, 3-18, <https://doi.org/10.3354/meps200003>

Bouman, Heather A; Platt, Trevor; Sathyendranath, Shubha; Stuart, Venetia (2005): Dependence of light-saturated photosynthesis on temperature and community structure. *Deep Sea Research Part I: Oceanographic Research Papers*, **52(7)**, 1284-1299, <https://doi.org/10.1016/j.dsr.2005.01.008>

Dogliotti, Ana I; Lutz, Vivian A; Segura, Valeria (2014): Estimation of primary production in the southern Argentine continental shelf and shelf-break regions using field and remote sensing data. *Remote Sensing of Environment*, **140**, 497-508, <https://doi.org/10.1016/j.rse.2013.09.021>

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Gudmundsson, Kristinn (1998): Long-term variation in phytoplankton productivity during spring in Icelandic waters. *ICES Journal of Marine Science*. **55(4)**. 635-643. <https://doi.org/10.1006/imsc.1998.0391>

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Segura, Valeria; Lutz, Vivian A; Dogliotti, Ana I; Silva, Ricardo I; Negri, Ruben M; Akselman, Rut; Benavides, Hugo (2013): Phytoplankton types and primary production in the Argentine Sea. *Marine Ecology Progress Series*, **491**, 15-31, <https://doi.org/10.3354/meps10461> 

Tilstone, Gavin; Figueiras, Francisco G; Lorenzo, Luisa M; Arbones, Belén (2003): Phytoplankton composition, photosynthesis and primary production during different hydrographic conditions at the Northwest Iberian upwelling system. *Marine Ecology Progress Series*, **252**, 89-104, <https://doi.org/10.3354/meps252089> 

van Dongen-Vogels, Virginie; Everett, Jason D; Doblin, Martina A (2015): Phytoplankton production, photosynthetic (P vs E) parameters, and particulate organic carbon and nitrogen within distinct water masses of eastern Australian coastal and shelf waters between 29 °S and 36 °S during spring 2010. *University of Technology, Sydney, PANGAEA*, <https://doi.org/10.1594/PANGAEA.843554>

Westwook, Karen J; Griffiths, F B; Webb, Jason P; Wright, Simon (2011): Primary production in the Sub-Antarctic and Polar Frontal Zones south of Tasmania, Australia; SAZ-Sense survey, 2007. *Deep Sea Research Part II: Topical Studies in Oceanography*, **58(21-22)**, 2162-2178, <https://doi.org/10.1016/j.dsr2.2011.05.017> 

Zhai, Li; Gudmundsson, Kristinn; Miller, Peter; Peng, Wenjun; Gudfinnsson, Hafsteinn G; Debes, Hogni; Hátún, Hjálmar; White III, George N; Walls, Rafael Hernández; Sathyendranath, Shubha; Platt, Trevor (2012): Phytoplankton phenology and production around Iceland and Faroes. *Continental Shelf Research*, **37**, 15-25, doi:10.1016/j.csr.2012.01.013 

Further details:

Ancillary information for the MAPPS datasets 

Forget, Marie-Hélène; Platt, Trevor; Sathyendranath, Shubha; Fanning, Paul (2010): Phytoplankton size structure, distribution, and primary production as the basis for trophic analysis of Caribbean ecosystems. *ICES Journal of Marine Science*, **68(4)**, 751-765, <https://doi.org/10.1093/icesjms/fsq182> 

Coverage:

Median Latitude: 18.220744 * Median Longitude: 19.131649 * South-bound Latitude: -76.629900 * West-bound Longitude: -178.174700 * North-bound Latitude: 83.310500 * East-bound Longitude: 179.998500

Date/Time Start: 1977-04-30T00:00:00 * Date/Time End: 2013-09-09T00:00:00

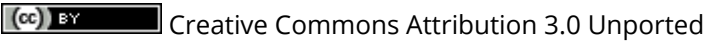
Minimum DEPTH, water: 0.00 m * Maximum DEPTH, water: 200.30 m

Parameter(s):

#	Name	Short Name	Unit	Principal Investigator	Method/Device	Comment
1	Identification 	ID		Bouman, Heather A 		
2	Chief scientist(s) 	Chief scientist(s)		Bouman, Heather A 		PI
3	Name 	Name		Bouman, Heather A 		of ship
4	Project 	Project		Bouman, Heather A 		cruise program

5	Station label 	Station		Bouman, Heather A 		
6	Sample ID 	Sample ID		Bouman, Heather A 		
7	LATITUDE 	Latitude		Bouman, Heather A 		Geocode
8	LONGITUDE 	Longitude		Bouman, Heather A 		Geocode
9	DEPTH, water 	Depth water	m	Bouman, Heather A 		Geocode
10	DATE/TIME 	Date/Time		Bouman, Heather A 		Geocode
11	Chlorophyll a 	Chl a	µg/l	Bouman, Heather A 		
12	Maximum light utilization coefficient in carbon normalized to chlorophyll a 	alpha	(mg C/mg Chl a/h)/(µE/m ² /s)	Bouman, Heather A 		
13	Production rate, maximal, light saturated, as carbon normalized to chlorophyll a 	PBmax	mg C/mg Chl a/h	Bouman, Heather A 		
14	Biogeographical province 	BG province		Bouman, Heather A 		Longhurst
15	Comment 	Comment		Bouman, Heather A 		LAMP_CORR [Y/N]
16	Light saturation 	Ek	µmol/m ² /s	Bouman, Heather A 		

License:



Size:

61295 data points

Download Data

Download dataset as tab-delimited text (use the following character encoding:

UTF-8: Unicode (PANGAEA default)

)

View dataset as HTML (shows only first 2000 rows)

Datasets with similar metadata

Lin, H; Kuzminov, F; Park, J et al. (2015): Chlorophyll fluorescence lifetimes and variable fluorescence parameters from phytoplankton in the global ocean. <https://doi.org/10.1594/PANGAEA.855653>

Huang, Y; Liu, X; Laws, EA et al. (2019): Seawater carbonate chemistry and marine phytoplankton and bacterial metabolism during a bloom. <https://doi.org/10.1594/PANGAEA.901015>

Pajusalu, L; Martin, G; Põllumäe, A et al. (2017): Seawater carbonate chemistry and net photosynthesis of seagrass *Zostera marina* in a brackish water environment. <https://doi.org/10.1594/PANGAEA.879821>