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Keywords

blooms, phytoplankton, cyanobacteria , microcystin

Short description of the dataset/summary

The B-BLOOMS2 dataset resulted from the monitoring of 4 Belgian reference lakes during the bloom seasons in 2007 and 2008. It is composed of 278 sample events for which 17 environmental parameters are available, as well as HPLC based pigment analysis, zooplankton counting, proportion of cyanobacterial populations (from genus to species), and MC-LR concentrations determined by ELISA. Molecular data acquired during this project are also available (http://hdl.handle.net/2268/213145).

These data were acquired with the financial support of BELSPO in the frame of the Science for a Sustainable Development programme funding the project B-BLOOMS2 (SD/TE/01).
The final report is available at: http://www.bblooms.be/BBLOOMS2_FinalReport.pdf

General information

dataset entry ID:	SF_13
name of the dataset:	
full name of the dataset:	B-BLOOMS2
dataset short name:	B-BLOOMS2
type of dataset:	species (taxonomic group) per site database including environmental information
data type:	point data/observation data
science keywords according to GCMD:	
topic:	Biosphere, Biological Classification, Terrestrial Hydrosphere
own science keywords:	cyanobacteria, blooms, eutrophic lakes, genetic diversity, monitoring, cyanotoxins, modelling Biota, Environment, Inland Waters

Technical and administrative specifications

data format:	MySQL
operating system:	all operating systems
data language:	English
current access level:	web (public)
web address:	http://www.bblooms.be/protected/data.htm
currently available through GBIF:	no
exchange planned:	yes
data in data repository:	no
Do you plan to publish the data on the Freshwater Biodiversity Data Portal:	already published through the Freshwater Biodiversity Data Portal
update level:	update planned
documentation:	
type:	scientific paper
language:	English

contact details:

metadata contact person:	
first, last name:	Yannick Lara
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scientific contact person:	
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email:	awilmotte@uliege.be

Intellectual property rights and citation

dataset creator (data compiler):

contact name:	Jean Pierre Descy
contact email:	jpdescy@gmail.com

data contributors to/owners of this dataset:

	multiple
number:	4

data contributor/owner 1:

contact name:	Annick Wilmotte
contact email:	awilmotte@uliege.be
contact institute:	University of Liège
criteria for using this part of the dataset:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

data contributor/owner 2:

contact name:	Jean Pierre Descy
contact email:	jpdescy@gmail.com
contact institute:	--
criteria for using this part of the dataset:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

data contributor/owner 3:

contact name:	Ludwig Triest
contact email:	ltriest@vub.ac.be
contact institute:	VUB
criteria for using this part of the dataset:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

data contributor/owner 4:

contact name:	Wim Vyverman
contact email:	Wim.Vyverman@UGent.be
contact institute:	University of Gent
criteria for using this part of the dataset:	
	The dataset is publicly available (data portal, data archive) and can be used without restrictions, but dataset creator/data contributors must be informed prior to publication. Data must be acknowledged and cited correctly.

citation of this dataset:

author(s):	Verniers, G., Pirlot, S., Viroux, L., Leporcq, B., Vanormelingen, P., Van Wichelen, J., Van der Gucht, K., Peretyatko, A., Teissier, S., Lara, Y., Lambion, A., Reilly, M., Menzel, D., Wojnicz, A., Everbecq, E., Codd, G.A., Triest, L., Vyverman, W., Wilmotte, A. & Descy, J.P.
title and journal (name, number, pages):	
	Cyanobacterial blooms: toxicity, diversity, modelling and management "B-BLOOMS2"
year:	2017
	https://doi.org/

citation of the metadata:

author(s):	Lara Y., De Wever A., Verniers G., Pirlot S., Viroux L., Leporcq B., Vanormelingen P., Van Wichelen J., Van der Gucht K., Peretyatko A., Tessier S., Lambion A., Reilly M., Menzel D., Wojnicz A., Codd G.A., Triest L., Vyverman W., Descy J.-P. & Wilmotte A.
title and journal (name, number, pages):	Metadata compilation for the B-BLOOMS2 dataset: Cyanobacterial bloom monitoring. Freshwater Metadata Journal 28: 1-8
year:	2017
doi:	https://doi.org/10.15504/fmj.2017.28

dataset related references:

reference 1:

author(s):	Descy, J., Leprieur, F., Pirlot, S., Leporcq, B., Van Wichelen, J., Peretyatko, A., Teissier, S., Codd, G.A., Triest, L., Vyverman, W. & Wilmotte, A.
title:	Identifying the factors determining blooms of cyanobacteria in a set of shallow lakes. Ecological Informatics 34: 129-138.
year:	2016
doi:	https://doi.org/10.1016/j.ecoinf.2016.05.003

reference 2:

author(s):	Van Wichelen, J., Gremberghe, I., Vanormelingen, P., Codd, G.A., Descy, J.P. & Vyverman, W.
title:	Strong effects of amoebae grazing on the biomass and genetic structure of a Microcystis bloom (Cyanobacteria). Environmental Microbiology 12: 2797-2813.
year:	2010
doi:	https://doi.org/doi:10.1111/j.1462-2920.2010.02249.x

General data specifications

regional coverage of the dataset:

spatial extent of the dataset:	national
continents:	Europe

spatial extent (bounding coordinates):

southernmost latitude [°]:	51.42
northernmost latitude [°]:	49.68
westernmost longitude [°]:	2.84
easternmost longitude [°]:	5.95
countries:	Europe: Belgium

world climatic regions according to Köppen:

Group C: temperate/mesothermal climates

freshwater ecoregions of the world (FEOW) according to WWF:

Europe: Central & Western Europe

European ecoregions according to Illies (WFD):

Western Plains (ER13)

ecosystem type: lakes/ponds, general freshwater

covered timeframe: 2007 - 2008

Site specifications

coordinate system/grid data: latitude/longitude, format: DD
projected, local
datum (e.g. WGS84): WGS84
grid data available: no
site coding:
site coding available: yes, alphanumerical
number of digits: 8
example: IXP1; FAL; Donkmeer
number of sites: <100
exact number of sites: 5

Climate and environmental data

climate related data: no climate data available
environmental data:
no environmental data per catchment available

available parameters per site: wind speed
physico-chemical data: total P
stressors influencing the sites: no stressor data available
reference sites available: no

Biological data

biological data origin:
organism group addressed: zooplankton, phytoplankton, other group(s): Cyanobacteria

Sample specifications/sample resolution

zooplankton:

sample information:
covered timeframe: 2007 - 2008
historical data: no
palaeo data: no
season: spring
temporal resolution/frequency of sampling:
per week
time series data: yes
taxonomic resolution:
level: order
other taxonomic levels: suborder
comments: calanoids, cylcopoids, nauplii, cladocerans (large and small), rotifers
taxonomic coding:
coding system: no coding available
sample specifications:
type: quantitative (abundance data)

replicate samples: no
number of samples: 278
specification of method(s) used for sampling and sorting:
Zooplankton was collected from each lake, using buckets or a Schlindler-Patalas plankton trap. Enumeration was performed using a dissecting microscope for larger taxa (cladocerans, copepodites and adult copepods) and using a microscope for small 'forms' (nauplii, rotifers).

Cladocerans were identified as large or small cladocerans, whereas copepods were identified as calanoids, cyclopoids, and nauplii.

phytoplankton:

sample information:

covered timeframe: 2007 - 2008
historical data: no
season: spring
temporal resolution/frequency of sampling:
per week
time series data: yes

taxonomic resolution:

level: genus
other taxonomic levels: class, phylum
comments: chlorophytes, chrysophytes, cryptophytes, cyanobacteria, diatoms, dinoflagellates, euglenophytes

taxonomic coding:

coding system: no coding available

sample specifications:

type: semi-quantitative
replicate samples: yes
number of samples: 278
specification of method(s) used for sampling and sorting:
Phytoplankon abundance has been assessed by observation and HPLC using CHEMTAX as described by Descy et al. 2000.
reference(s): Decsy, J.-P, Higgins, K., Mackey, D.J., Hurley, J.P. & Frost, T.M. (2000). Pigment ratios and phytoplankton assessments in north Wisconsin lakes. Journal of Phycology, 36: 274-286

other group(s):

sample information:

covered timeframe: 2007 - 2008
historical data: no
season: spring
temporal resolution/frequency of sampling:
per week
time series data: yes
comments: cyanobacteria

taxonomic resolution:

level: genus, species
percentage of species level data: 15
comments: taxalist:
Anabaena spp., Anabaenopsis spp., Aphanocapsa spp., Aphanizomenon flos

aquae, Aphanizomenon issathschenkoi, Aphanothece spp., Chroococcus spp., Coelosphaerium spp., Cyanogranis liberia, Gomphosphaeria spp., Limnothrix spp., Merismopedia spp., Microcystis spp., Woronichinia spp., Oscillatoria spp., Pseudanabaena spp., Planktothrix spp., Pannus spp., Snowella spp.

taxonomic coding:

taxalist according to: Komárek & Anagnostidis (1998), Komárek & Anagnostidis (2005)

reference(s): Komárek, J. & Anagnostidis, K. (1998): Cyanoprokaryota 1. Teil: Chroococcales. - In: Ettl, H., Gärtner, G., Heynig, H. & Mollenhauer, D.(eds): Süsswasserflora von Mitteleuropa 19/1, Gustav Fischer, Jena-Stuttgart-Lübeck-Ulm, 548 pp.

Komárek, J. & Anagnostidis, K. (2005): Cyanoprokaryota 2. Teil/ 2nd Part: Oscillatoriales. - In: Büdel, B., Krienitz, L., Gärtner, G. & Schagerl, M. (eds): Süsswasserflora von Mitteleuropa 19/2, Elsevier/Spektrum, Heidelberg, 759 pp.

sample specifications:

type: semi-quantitative

replicate samples: no

number of samples: 278

specification of method(s) used for sampling and sorting:

For microscopy counting, 250 mL of sample were immediately fixed with lug and concentrated by settling for 24h. Then concentrate samples were preserved by addition of neutral formaldehyde (2-4% final concentration).

Other specifications

GIS layers, shape files related to the dataset:

no data available

availability of photos: no

availability of maps: no

quality control procedures:

Were any quality control procedures applied to your dataset?

no

related information: Molecular dataset available at: http://hdl.handle.net/2268/213145

Acknowledgements

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References

Descy, J., Leprieur, F., Pirlot, S., Leporcq, B., Van Wichelen, J., Peretyatko, A., Teissier, S., Codd, G. A., Triest, L., Vyverman, W., Wilmotte, A., 2016. Identifying the factors determining blooms of cyanobacteria in a set of shallow lakes. Ecological Informatics 34: 129-138. https://doi.org/10.1016/j.ecoinf.2016.05.003

Descy, J.-P, Higgins, K., Mackey, D.J., Hurley, J.P. & Frost, T.M., 2000. Pigment ratios and phytoplankton assessments in north Wisconsin lakes. Journal of Phycology, 36: 274-286

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