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Metadata to the community data of flatland ponds in northwest Spain

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Keywords

flatland ponds, macroinvertebrates, zooplankton, phytoplankton, biological classification, Spain, biosphere, dry climate, temperate/mesothermal climate

Short description of the dataset/summary

This database contains the phytoplankton, zooplankton and macroinvertebrate data collected in 31 ponds in northwest Spain in 2003 and 2004. Macroinvertebrate samples were collected with a pond-net following a time-limited sampling, and were identified to genus level. Phytoplankton and zooplankton were analysed from composite water samples collected with a tube sampler at random points along a transect perpendicular to the main axis of the pond. Phytoplankton and zooplankton were identified to species level. In addition, the database contains information on physico-chemical parameters measured at the ponds. The data were collected during two projects financed by the Spanish Ministry of Science and Technology (REN 2003-03718/ HID) and the Regional Government of Castilla y Leon (LE33/03).

General information

dataset entry ID:	FWM_4
name of the dataset:	
full name of the dataset:	Community data of flatland ponds in northwest Spain
dataset short name:	SENTIZ (flatland ponds of NW Spain)
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
ISO topic category according to ISO 19115:	Biota, Inland Waters

Technical and administrative specifications

data format:	csv
others/details:	can be delivered as Excel 2013
operating system:	Win 7
data language:	English
current access level:	internal
currently available through GBIF:	no
exchange planned:	yes
data in data repository:	yes
specify repository:	BioFresh
update level:	completed
documentation:	
type:	others/specify
others/details:	no documentation available
Do you plan to publish the data on the Freshwater Biodiversity data portal:	yes
media for data delivery:	e-mail
contact details:	
metadata contact person:	
first, last name:	Cristina Trigal
phone:	+46(0)18672327
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web address:	
scientific contact person:	
first, last name:	Margarita Fernandez-Alaez
email:	margarita.fernandez.alaez@unileon.es
institution:	University of Leon
address:	Campus de Vegazana sn
postal code, city:	24071 Leon
country:	Spain
web address:	

Intellectual property rights and citation

dataset publisher:	BioFresh
dataset creator (data compiler):	
contact name:	Cristina Trigal
contact email:	ctrigal@gmail.com

contact institution: Swedsih University of Agricultural Sciences

data contributors to/owners of this dataset:

single

criteria for using this 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): BioFresh (publisher), Cristina Trigal (provider)

title: Community data of flatland ponds in northwest Spain. Published on http://data.freshwaterbiodiveryity.eu, accessed on [DD/MM/YYYY]

year: 2015

citation of the metadata:

author(s): Trigal C. & Fernández-Aláez M.

title and journal (name, number, pages): Metadata to the community data of flatland ponds in northwest Spain. Freshwater Metadata Journal 10: 1-8

year: 2016

doi: http://dx.doi.org/10.15504/fmj.2016.10

dataset related references:

reference 1:

author(s): Trigal, C., Fernandez-Alaez, C. & Fernandez-Alaez, M.

title: Congruence between functional and taxonomic patterns of benthic and planktonic assemblages in flatland ponds. Aquatic Sciences 76: 61-72.

year: 2014

doi: 10.1007/s00027-013-0312-9

General data specifications

regional coverage of the dataset:

scale of the dataset: regional

spatial extend (bounding coordinates):

southernmost latitude [°]: 40

northernmost latitude [°]: 43

westernmost longitude [°]: -6

easternmost longitude [°]: -2

minimum altitude: 750 metres

maximum altitude: 1100 metres

countries: Europe: Spain

comments: Northwest Spain. Douro river basin.

world climatic regions according to Köppen:

Group B: dry (arid and semiarid) climates

Group C: temperate/mesothermal climates

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

Europe: Western Iberia

European ecoregions according to Illies (WFD):

Iberic-Macaronesian Region (ER1)

ecosystem type: lakes/ponds

covered timeframe: 2003 - 2004

Site specifications

coordinate system/grid data:
grid data available: no
other site classification parameters:
Ponds are endorheic, shallow (<2 m mean depth) and temporary or semipermanent. Surface area is < 13 ha. They are located on calcareous substrates. They are classified as mesoeutrophic, eutrophic or hypertrophic.
number of sites: <100
exact number of sites: 31

Climate and environmental data

climate related data: no data available
environmental data: no parameter data per catchment available
available parameters per site: mean depth
physico-chemistry data: total P, total dissolved P, nitrate, ammonium, TOC (total organic carbon), pH, conductivity, chlorophyll, suspended solids
other physico-chemical parameters:
turbidity and percent volume infested with aquatic macrophytes
availability of physico-chemical data, if there is more than one sample per site:
per sample
comments: One composite water sample from each pond taken along a transect perpendicular to the main axis of the pond.
stressors influencing the sites:
reference sites available: no

comments: Data available on stressors include among others land uses, enbankment, hydroperiod modification. The data are based on personal observations made at the time of sampling in each site and has not been validated yet. Therefore, they are not included in the database.

Biological data

biological data origin: from sampling
specify project: REN 2003-03718/ HID and LE33/03
organism group addressed: macro-invertebrates (Mollusca, Ephemeroptera, Odonata, Plecoptera, Coleoptera, Trichoptera, Chironomidae), zooplankton, phytoplankton

Sample specifications/sample resolution

macro-invertebrates:

sample information:
covered timeframe: 2003 - 2004
historical data: no
palaeo data: no
season: summer
temporal resolution/frequency of sampling:
per year

time series data: no

taxonomic resolution:

level: genus

comments: Individuals were identified to genus level. Damaged individuals were also identified to genus level when possible. Otherwise, they were determined to family level. Early instars, oligochaetes and dipteran other than chironomids were identified to subfamily or family level.

taxonomic coding:

coding system: 5 initials of the genus

example: Parat: Paratanytarsus sp.

sample specifications:

type: quantitative (abundance data)

replicate samples: no

number of samples: 31

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

Macroinvertebrate samples were collected with a pondnet (mesh 400 μm) following a time-limited sampling. Three (ponds less than 1 ha) or five (ponds larger than 1 ha) minutes total sampling time was allotted proportionally to the surface area of each dominant habitat in the ponds. Samples were immediately fixed in 96 % ethanol and kept in separate jars at 4 °C until sorting, counting and identification. In the laboratory, a subsample (1/6 of each sample) was processed under 10x magnification. Samples containing less than 200 individuals were fully sorted.

reference(s):

- Collinson, N.H., Biggs, J., Corfield, A., Hodson, M.J., Walker, D., Whitfield, M. & Williams, P.J. (1995): Temporary and permanent ponds: an assessment of the effects of drying out on the conservation value of aquatic macroinvertebrate communities. Biological Conservation 74(2): 125-133.
- Cranston, P.S., Oliver, D.R. & Saether, O.A. (1983): The larvae of Orthocladiinae (Diptera: Chironomidae) of the Holarctic Region keys and diagnosis. Entomological Scandinavian 19: 149-292.
- Fittkau, E.J. & Roback, S.S. (1983): The larvae of Tanypodinae (Diptera: Chironomidae) of the Holarctic Region keys and diagnosis. Entomological Scandinavian 19: 33-112.
- Merrit, R.W. & Cummins, K.W. (1984): An Introduction to the Aquatic Insects of North America, 2nd ed. Kendall/Hunt, New York, USA: 862 pp.
- Pinder, C.V. & Reiss, F. (1983): The larvae of Orthocladiinae (Diptera: Chironomidae) of the Holarctic Region keys and diagnosis. Entomological Scandinavian 19: 293-437.
- Tachet, H., Richoux, P., Bournaud, M. & Usseglio-Polaterra, P. (2002): Invertebres d'Eau Douce: Systematique, Biologie, Ecologie. CNRS Editions, Paris: 588 pp.

sample type (e.g. habitat specific samples, composite samples etc.):

Samples from dominant habitats in the pond: submerged vegetation, bare sediments, vegetated shores and shores without vegetation. Samples were kept separate until identification and counting. The data from different habitats has been pooled for this database (i.e. one pooled sample per pond).

specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):

littoral, shoreline, profundal

zooplankton:

sample information:

covered timeframe: 2003 - 2004

historical data: no
palaeo data: no
season: summer
temporal resolution/frequency of sampling:
per year
time series data: no

taxonomic resolution:

level: species
percentage of species level data: 73

taxonomic coding:

coding system: 4 initials of the genus and 3 of the species name with no separator
example: Alonqua: Alona quadrangularis

sample specifications:

type: quantitative (abundance data)
replicate samples: no
number of samples: 31
specification of method(s) used for sampling and sorting:
Zooplankton was analysed from composite water samples collected with a water column sampler, consisting of an acrylic plastic tube sampler (length 1 m inner diameter 5 cm), at random points along a transect perpendicular to the main axis of the pond. Zooplankton abundance was estimated from 1 to 3 l composite water samples and filtered through 25 and 50 μm mesh nets, respectively. Samples were fixed with carbonated water, preserved in 4 % formalin, and stored at 4 °C until analysed. Identification was carried out with a light microscope.
sample type (e.g. habitat specific samples, composite samples etc.):
Composite water samples.
specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):
Transect perpendicular to the main axis of the pond.

phytoplankton:

sample information:

covered timeframe: 2003 - 2004
historical data: no
season: summer
temporal resolution/frequency of sampling:
per year
time series data: no

taxonomic resolution:

level: species
percentage of species level data: 66
comments:

taxonomic coding:

coding system: 4 initials of the genus and 3 of the species name with no separator
example: Crucfen: Crucigenia fenestrata

sample specifications:

type: quantitative (abundance data)
replicate samples: no
number of samples: 31
specification of method(s) used for sampling and sorting:
Phytoplankton was analysed from composite water samples collected with a water column sampler, consisting of an acrylic plastic tube sampler (length 1 m inner diameter 5 cm), at random points along a transect perpendicular to the

main axis of the pond. A subvolume of 250 ml taken from the composite water samples was fixed in Lugol's iodine and processed using an inverted light microscope following the Utermölh technique. Phytoplankton biomass was estimated from geometric forms of cells.

reference(s): - Utermölh, H. (1958): Zur Vervollkommnung der quantitativen Phytoplankton Methodik. Mitteilungen der Internationalen Vereinigung der Theoretischen und Angewandten Limnologie 9: 1-38.

sample type (e.g. habitat specific samples, composite samples etc.):

Composite samples.

specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):

Transect perpendicular to the main axis of the pond.

Other specifications

GIS layers, shapes 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?

yes

quality control protocols and comments:

Quality control for taxonomic identification of macroinvertebrates: taxa that could not be positively identified were validated by a taxonomist specialist. Samples sorted and identified by new persons were reviewed by specialists. Samples were not included when the number of errors was large.
All phytoplankton samples were sorted and identified by a phytoplankton specialist. No QA procedures were applied to zooplankton.

Acknowledgements

We are grateful to all the people who helped during the sampling and processing of samples. The data were collected during two projects financed by the Spanish Ministry of Science and Technology (REN 2003-03718/ HID) and the Regional Government of Castilla y Leon (LE33/03).

References

Collinson, N.H., Biggs, J., Corfield, A., Hodson, M.J., Walker, D., Whitfield, M. & Williams, P.J. , 1995. Temporary and permanent ponds: an assessment of the effects of drying out on the conservation value of aquatic macroinvertebrate communities. Biological Conservation 74(2): 125-133. http://dx.doi.org/10.1016/0006-3207(95)00021-U

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Utermölh, H. , 1958. Zur Vervollkommnung der quantitativen Phytoplankton Methodik. Mitteilungen der Internationalen Vereinigung der Theoretischen und Angewandten Limnologie 9: 1-38.