SUPPORTED BY

General information

name of the dataset:

    full name of the dataset: *AQEM/STAR invertebrate database*

type of dataset (more information**):**   *species (taxonomic group) per site database including environmental information*

    data type: *point data/observation data*

    short description of the dataset/summary:

> *This database contains the macro-invertebrate data that were collected during the AQEM and STAR projects. Samples were taken in 14 European countries using the multi-habitat-sampling (MHS) method as well as the RIVPACS methodology for selected sites. Taxa were identified to the most precise achievable level. Additionally the database contains information on hydromorphology and environmental parameters. The latter include stressor gradients along which the samples were taken. Supplementary fish, macrophyte and diatom data from the STAR project are separately available and can be linked to the invertebrate database. The AQEM and STAR projects were funded by the EU 5th Framework Programme (FP5).*

science keywords according to GCMD**:**

    topic: *Biosphere, Biological Classification, Terrestrial Hydrosphere*

ISO topic category according to ISO 19115**:**

    Biota, Inland Waters

Technical and administrative specifications

data format:	*Access*
others/details:	*Access 97/2000*
operating system:	*Win XP*
others/details:	*all Windows systems possible*
data language:	*English*
current access level:	*restricted access, internal*
web address (URL):	*www.eu-star.at*
currently available through [GBIF](#):	*no*
exchange planned:	*no*

Do you plan to publish the data on the Freshwater Biodiversity Data Portal:

	yes
media for data delivery:	*online internet (HTTP), e-mail*
web address:	*www.eu-star.at*
fees:	*free*
comments:	*Access currently for STAR/AQEM consortium only; please contact the responsible persons for other options.*
	Different extracts of the database are available as Excel files: abiotic data, adjusted taxalists, combinations of river types per ecoregion, shape files for sample points, etc. Data can be sent by mail or downloaded from eu-star.at after access granted.
update level:	*completed*
documentation:	
type:	*internal description*
language:	*German*
contact details:	
metadata contact person:	
first, last name:	*Astrid Schmidt-Kloiber*
phone:	*0043-1-47654-5225*
email:	*astrid.schmidt-kloiber@boku.ac.at*
institution:	*BOKU - University of Natural Resources & Life Sciences*
address:	*Max Emanuel Straße 17*
postal code, city:	*1180 Vienna*
country	*Austria*
web address:	*http://www.wau.boku.ac.at/en/ihg*
technical contact person:	
first, last name:	*Joerg Strackbein*
phone:	*0049-201-183-4993*
email:	*joerg.strackbein@uni-due.de*
scientific contact person:	
first, last name:	*Daniel Hering*
email:	*daniel.hering@uni-due.de*

Intellectual property rights and citation

dataset publisher (if the data is already published): *not published yet*

dataset creator (data compiler):

contact name:	*AQEM and STAR project partners and the EU*
contact email:	*joerg.strackbein@uni-due.de*
contact institution:	*University of Duisburg-Essen*

data contributors to/owners of this dataset:

single

criteria for using the data in a publication/scientific analysis:

Other/Additional criteria

other/additional criteria: *Data provider must be informed of publication 45 days in advance and can object to the use of the dataset within 30 days. Data must be publicly acknowledged and cited correctly.*

citation of this dataset:

author(s):	*AQEM and STAR consortia*
title:	*AQEM and STAR macro-invertebrate database.*
year:	*2005*

citation of the metadata:

author(s): *Schmidt-Kloiber A., Strackbein J., Vogl R., Furse M.T. & Hering D.*

title and journal (name, number, pages):

Description of the AQEM/STAR invertebrate database

year:	*2014*
doi (if applicable):	*http://dx.doi.org/10.15504/fmj.2014.2*

comments: *The database was collated and is owned by AQEM and STAR project partners and the EU (in total 22 partners).*

General data specifications

regional coverage of the dataset:

scale of the dataset:	*continental*

continents: *Europe*

spatial extent (bounding coordinates):

southernmost latitude [°]:	*35*
northernmost latitude [°]:	*60*
westernmost longitude [°]:	*-8*
easternmost longitude [°]:	*26*
minimum altitude:	*1 metres*
maximum altitude:	*1820 metres*
countries:	*Europe: Austria, Czech Republic, Denmark, France, Germany, Greece, Italy, Latvia, Netherlands, Poland, Portugal, Slovakia, Sweden, United Kingdom*

Site specifications

coordinate system/grid data:	*latitude/longitude, format: DMS*
datum (e.g. WGS84):	*different national systems*
grid data available:	*no*
comments:	*Converted UTM coordinates are available as extra Excel sheet.*
site coding:	
site coding available:	*yes*
	alphanumerical
number of digits:	*8*
example:	*S0100571*
number of sites:	*100 - 1000*
exact number of sites:	*785*
comments:	*Coordinates: decimal and deg-min-sec values.*
	Number of waterbodies was not documented.
	Geology for several sites not surveyed.

Climate and environmental data

climate related data:

    available per: *per site*

    available parameters:

                                 mean discharge

                                 depends on country *data source*

environmental data:

available parameters per catchment:	*catchment size*
	GIS *data source:*
available parameters per catchment:	*catchment geology*
	GIS *field survey (site protocol)* *data source:*
available parameters per catchment:	*presence of barriers/dams/reservoirs (fragmentation)*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*catchment land use upstream of sampling site*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*information on riparian vegetation (incl. information on modification)*
	field survey (site protocol) *data source:*
available parameters per site:	*information on embankment (incl. information on modification)*
	field survey (site protocol) *data source:*
available parameters per site:	*information on channel form (incl. information on modification)*
	field survey (site protocol) *data source:*
available parameters per site:	*information on cross section (incl. information on modification)*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*information on water uses (e.g., irrigation, fish ponds)*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*distance to next migration barrier upstream*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*distance to next migration barrier downstream*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*river length*
	GIS *data source:*
available parameters per site:	*distance to source*
	GIS *data source:*
available parameters per site:	*stream order (according to Strahler)*
	GIS *other* *data source:*
available parameters per site:	*slope*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*altitude*
	GIS *field survey (site protocol)* *data source:*
available parameters per site:	*discharge*
	field survey (site protocol) *data source:*
available parameters per site:	*current velocity*
	field survey (site protocol) *data source:*
available parameters per site:	*maximum depth*
	field survey (site protocol) *data source:*
available parameters per site:	*mean depth*
	field survey (site protocol) *data source:*
available parameters per site:	*substrate composition*
	field survey (site protocol) *data source:*
physico-chemistry data:	*total P, ortho P, nitrate, nitrite, ammonium, hardness, alkalinity, oxygen*

content, BOD5 (biochemical oyxgen demand), pH, conductivity, chlorophyll, colour, substrate

stressors influencing the sites:

reference sites available: *yes*

stressor	restored sites available	data before/after restoration available	stressor gradient available	comments
hydromorphological degradation	no	no		parameters of the STAR site protocol used for gradient classification
acidification	no	no		parameters of the STAR site protocol used for gradient classification
organic pollution	no	no		parameters of the STAR site protocol used for gradient classification
general degradation	no	no		parameters of the STAR site protocol used for gradient classification

Biological data

biological data origin: *from sampling*
   specify project: *AQEM and STAR , EU FP5 funded projects*

organism group addressed: *macro-invertebrates (Mollusca, Crayfish, Ephemeroptera, Odonata, Plecoptera, Trichoptera, Chironomidae)*
   comments: *Fish data are stored in the EFI+ database, which is linked to this database. Macrophyte and diatom data are also available. Replicate samples are included.*

Sample specifications/sample resolution

<u>macro-invertebrates:</u>
sample information:
    covered timeframe:
    year from - to: *2000 - 2003*
    historical data: *no*
    palaeo data: *no*
    season: *spring, summer, autumn, winter*
    temporal resolution/frequency of sampling:
                                  per season
    time series data: *no*
    comments: *Identification to the most precise achievable level; identification level depends on the country and on the taxonomic group.*
taxonomic resolution: *genus, species, other*
    other taxonomic levels: *higher than genus level 20%*
    percentage of species level data: *55*
taxonomic coding:
    taxalist according to: *AQEM/Star*
    citation: *Schmidt-Kloiber, A., Graf, W., Lorenz, A., Moog, O. (2006): The AQEM/STAR taxalist - a pan-European macro-invertebrate ecological database and taxa inventory. Hydrobiologia 566, 325-342.*
    coding system: *ID_AQEM, DV, TCM, Perla, shortcode, Furse code*
sample specifications: *quantitative (abundance data)*
    replicate samples: *yes*
    number of samples: *260*
    specification of method(s) used for sampling and sorting:
                                  Multi-Habitat-Sampling (MHS), RIVPACS sampling
    citation: *Hering, D., Buffagni, A., Moog, O., Sandin, L., Sommerhäuser, M., Stubauer, I. Feld, C.K., Johnson, R., Skoulikidis, N., Verdonschot, P.F.M. & Zarádková, S. (2003): The development of a system to assess the ecological quality of streams based on macroinvertebrates - design of the sampling programme within the AQEM project. International Review of Hydrobiology 88, 345-361.*
                                  Wright, J.F., Sutcliffe, D.W. & Furse, M.T. (eds) (2000): Assessing the biological quality of fresh waters: RIVPACS and other techniques, published by the Freshwater Biological Association, Ambleside, ISBN 978-0900386-62-6.
    sample type (e.g. habitat specific samples, composite samples etc.):
                                  composite samples
    specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):
                                  Number and location of the individual samples based on the proportional cover of substrates at the sampling site.

Other specifications

GIS layers, shapes related to the dataset:

no data available

availability of photos: *yes*

availability of maps: *yes*

quality control procedures:

Were any quality control procedures applied to your dataset?

yes

quality control protocols and comments:

Complete invertebrate samples and difficult to identify specimens were sent between project partners and cross-checked, site protocol data were entered and quality checked, taxonomic adjustments were made, raw and adjusted taxa lists are available

comments: *General information: www.aqem.de and www.eu-star.at. The projects were funded under FP5, contract numbers and EVK1-CT1999-00027 and EVK1-CT 2001-00089.*