General information

name of the dataset:

    full name of the dataset: *Donau near Neuburg*

    dataset short name: *MONDAU*

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:

         5 year Monitoring of a floodplain restoration project (vegetation, fauna, aquatic - semi-aquatic), add. vegetation data 1969 and 1999

science keywords according to GCMD:

    topic: *Biosphere*

ISO topic category according to ISO 19115:

         Biota

Technical and administrative specifications

data format:	*Access*
operating system:	*all Windows systems*
data language:	*German*
current access level:	*internal*
currently available through GBIF:	*no*
exchange planned:	*no*
update level:	*completed*
documentation:	
type:	*internal description*
language:	*German*
Do you plan to publish the data on the Freshwater Biodiversity data portal:	
media for data delivery:	*CD-ROM/DVD*
contact details:	

metadata contact person:

first, last name:	*Barbara Stammel*
phone:	*8431 645924*
email:	*barbara.stammel@ku.de*
institution:	*Aueninstitut Neuburg*
postal code, city:	*86633 Neuburg a.d.Donau*
country	*Germany*
web address:	*www.ku.de/mgf/geographie/angewandte-physische-geographie/aueninstitut-neuburg/*

technical contact person:
scientific contact person:

Intellectual property rights and citation

    (if the database is already published):

dataset creator (data compiler):

    contact name: *Aueninstitut Neuburg*

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 cannot be used in publication.*

citation of this dataset:

citation of the metadata:

General data specifications

regional coverage of the dataset:

scale of the dataset:	*regional*
continents:	*Europe*
countries:	*Europe: Germany*
comments:	*Donau/Danube between Neuburg und Ingolstadt*
	intensive Monitoring from 2007 (2009) to 2013
	additional: vegetation from 1969 and 1999

Site specifications

coordinate system/grid data: *projected, others others: DHDN_3_Degree_Gauss_Zone_3*
    datum (e.g. WGS84):   *D_Deutsches_Hauptdreiecksnetz*
    grid data available: *yes*
other site classification parameters:

    Floodplain type according to Koenzen (2005):
    KC2 (blau): nivale gefaellereiche (0,5-1 5) Flussaue der Alpen/Voralpen mit
    Kies-Schotter, staugepraegt

number of sites: *100 - 1000*
    exact number of sites: *250*

Climate and environmental data

climate related data:

available per: *per site*

spatial resolution of the data (if not catchment/site related):

10 km, 50 km

available parameters:

mean annual temperature January, July
mean annual temperature for each month
minimal, maximal and mean winter and summer temperatures
daily air temperatures
mean annual precipitation
winter and summer precipitation
evaporation
mean discharge

environmental data:

available parameters per catchment: *catchment size*
data source: Wasserwirtschaftsamt Ingolstadt (WWA)

available parameters per catchment: *presence of barriers/dams/reservoirs (fragmentation)*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *information on floodplain inundation duration*
data source: own gauge data

available parameters per site: *information on groundwater level and amplitude*
data source: own gauge and Wasserwirtschaftsamt Ingolstadt

available parameters per site: *information on riparian vegetation (incl. information on modification)*
data source: vegetation surveys in transects and mapping

available parameters per site: *information on embankment (incl. information on modification)*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *information on channel form (incl. information on modification)*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *information on cross section (incl. information on modification)*
data source: TS and transects

available parameters per site: *information on water uses (e.g., irrigation, fish ponds)*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *distance to next migration barrier upstream*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *distance to next migration barrier downstream*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *distance to the next main village/town upstream*

available parameters per site: *river length*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *distance to source*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *distance to mouth*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *altitude*

available parameters per site: *hydrological regime/flow regime*
data source: Wasserwirtschaftsamt Ingolstadt

available parameters per site: *discharge*
data source: Wasserwirtschaftsamt Ingolstadt

comments: *Catchment data availability can be checked if necessary*

physico-chemistry data: *oxygen content, water temperature, pH, conductivity*

availability of physico-chemical data, if there is more than one sample per site:

per sample

comments: *only for the sample plots of fish, macrozoobenthos*

stressors influencing the sites:

reference sites available: *no*

stressor	restored sites available	data before/after restoration available	stressor gradient available	comments
hydromorphological degradation	yes	yes	yes	different intensities of impact of construction work
general degradation		yes		terrestrialization (no flooding)

comments: *Hydropower (no groundwater and surface water oszillation anymore), restoration Project to bring back dynamic, diversion of water into the disconnected floodplain in different amounts (0,5 to 30 m3/s);*

Biological data

biological data origin: *from sampling*
   specify project: *PhD Thesis, Preservation of evidence, joint research project (MONDAU)*

organism group addressed: *terrestrial invertebrates, fish, macro-invertebrates (Mollusca), macrophytes, other group(s): birds, terrestrial mollusca, tree growth rate, riparian vegetation*

Sample specifications/sample resolution

<u>terrestrial invertebrates:</u>
sample information:
    covered timeframe:
    year from - to: *2007 - 2013*
    historical data: *no*
    season: *spring, summer, autumn*
    temporal resolution/frequency of sampling:
                                per month
    time series data: *yes*
taxonomic resolution: *genus, species*
    comments: *carabids, Heteroptera, Cicadina, Formicidae, Neuroptera*
taxonomic coding:
sample specifications: *quantitative (abundance data)*
    replicate samples: *yes*
    number of samples: *20*
    specification of method(s) used for sampling and sorting:
                                20 plots containing 4-5 individuals of pedunculate oak; stratified random design; 4 strata (3 flooding frequencies and very dry sites of gravel deposit ?Brenne?); 5 replicates,
    sample type (e.g. habitat specific samples, composite samples etc.):
                                five different types of traps (3 vertical strata: forest ground, trunk, canopy of mature pedunculate oak trees; surface active: pitfall traps, trunk traps at approx. 2 m above ground, branch traps close to the trunk in the canopy (on average 11 m above ground; flight active: flight interception traps close to the ground (2 m above ground) and in the core of the tree crown (on average 15.1 m above ground) (Dorow et al. 1992).
    specific sample location (e.g. littoral, profundal, transect, shoreline, hyporheic zone, etc.):
                                oak trees in hardwood riparian forest

<u>fish:</u>
sample information:
    covered timeframe:
    year from - to: *2010 - 2013*
    historical data: *no*
    palaeo data: *no*
    season: *spring, summer*
    temporal resolution/frequency of sampling:
                                  2 times a year April and August, in 2012 monthly from April to August
    time series data: *yes*
    comments: *April and August due to the first year of sampling (2 month before and 3 month after the opening of the new floodplain river)*
taxonomic resolution: *genus, species*
taxonomic coding:
sample specifications: *quantitative (abundance data)*
    replicate samples: *yes*
    number of samples: *43*
    specification of method(s) used for sampling and sorting:
                                30 stretches of 30 m; 2 macrohabitats (new floodplain river, reconnected backwaters); 15 replicates, additionally, 13 reference sites (not affected by

the restoration measures); electrofishing by the method described in
Pander & Geist (2010);

macro-invertebrates:
sample information:

 covered timeframe:

 year from - to: *2010 - 2013*

 historical data: *no*

 palaeo data: *no*

 season: *spring, summer*

 temporal resolution/frequency of sampling:

           2 times a year (April and March); in 2012 monthly from April to August

 time series data: *yes*

taxonomic resolution: *genus, species*

taxonomic coding:

sample specifications: *quantitative (abundance data)*

 replicate samples: *yes*

 number of samples: *30*

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

           see 'fish' in each stretch 3 macroinvertebrate samples by kick-sampling
           (Hauer & Lamberti 2007);

macrophytes:
sample information:

 covered timeframe:

 year from - to: *2007 - 2013*

 historical data: *no*

 palaeo data: *no*

 season: *summer*

 temporal resolution/frequency of sampling:

           per year

 time series data: *yes*

 comments: *a few data from 1969 and 1999 (see 'riparian vegetation'); additional data*
           attended to the sampling method 'fish'

taxonomic resolution: *species*

taxonomic coding:

 taxalist according to: *Wißkirchen und Häupler1998*

sample specifications: *quantitative (abundance data)*

 replicate samples: *yes*

 number of samples: *900*

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

           > 800 plots of 1 m2 in 18 vertical transects (length
           depending on channel morphology); additional, 100
           plots, randomly stratified (actual vegetation types);
           method of Londo (1976); abiotic parameters (shading,
           water depth, inclination, exposition)

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

           transects from hardwood riparian forest to aquatic habitats

other group(s):
sample information:

covered timeframe:

year from - to: *1969 - 2013*

historical data: *no*

season: *spring, summer, autumn, winter*

temporal resolution/frequency of sampling:

per year

time series data: *yes*

comments: *1. Birds (2007 - 2013)*

2. terrestrial mollusks (2009 and 2013)

3. forest trees (2009 - 2013)

4. hardwood riparian forest vegetation (2008,2011, 2012)and (1969, 1999)

taxonomic resolution: *genus, species*

taxonomic coding:

taxalist according to: *vegetation: Wisskirchen & Häupler 1998*

sample specifications: *quantitative (abundance data)*

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

1. Birds: 20 plots (same as 'terrestrial invertebrates')of 200 m in diameter; by point count census (20 min, monthly; 5 years); surrounding landscape by quantitative grid mapping methods (50 grid cells á 6.25 ha; 10 min; monthly; 2 years) based on subareas (relief, habitat type and grid cell). microhabitat

structure by foraging niche dimensions (20 plots; April, August, October, January; 40 min; 2 years); climate data (nearby meteorological station).

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

2. terrestrial mollusks:20 plots (same as 'terrestrial invertebrates'; time standardized sampling (spring and autumn) by hand and sieving of soil samples; sampling of floating material

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

3: Forest trees: 18 plots of 600 m2 in ash/sycamore-stands; stratified random design; 3 strata (flooding frequency: yearly, 10yearly, never); 6 replicates;

20 round plots (same as 'terrestrial invertebrates')of 300 m2; recording of the complete tree vegetation; DBH (1.3 m height) bigger than 1 cm; wooden cores (2 horizontal cores, in the height of 1.1 m; one tree species each plot). Rejuvenation in circular areas of 1 m²: 16 replicates in ash / sycamore-plots; 3 replicates in pedunculate oak-plots

other important sample related informations:

4. two data types: 1. comparison before and after dam construction (1969 and 1998), 2. Part of the monitoring MONDAU (2008, 2011, 2012)

1. data 1969 and 1998: 309 plots of different size, Braun-Blanquet (1964)

2. data 2008 - : 117 plots of 200 m2; stratified random design; 39 strata combinations of 4 parameters: segment, ecological flooding, vertical distance to thalweg, lateral distance to thalweg) in 3 replicates; method of Londo (1976); abiotic parameters regarding nutrients, soil and groundwater parameter.

Other specifications

GIS layers, shapes related to the dataset:

hydrological information (as HydroSHEDS)
land use
dams/reservoirs/barriers
protected areas
environmental variables (freshwater or terrestrial)
others/specify

others (specify): *Groundwater and soil moisture model, DGM, vegetation mapping (1969 and 1999), soil type and major grain size; sample sites*

availability of photos: *yes*
availability of maps: *yes*
quality control procedures:

Were any quality control procedures applied to your dataset?

no