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Floodplain and river monitoring

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Keywords

biological monitoring, Germany, metadatabase, aquatic organisms, riparian organisms

Short description of the dataset/summary

The database contains metadata of biological monitoring projects of rivers and their floodplains in Germany and gives a first overview about nationwide monitoring activities. More detailed information about single projects are given in the data entries UFO_11, UFO_12 and UFO_17 to UFO_24 of the Freshwater Metadatabase (<http://data.freshwaterbiodiversity.eu/metadb>). Metadata were collected in the national project 'Development of biodiversity in floodplains' funded by the Federal Agency of Conservation (BfN). Four institutions were involved: Department of Aquatic Ecology, University of Duisburg-Essen; Institute of Geography and Geoecology, Karlsruhe Institute of Technology; Floodplain Institute Neuburg, University of Eichstätt-Ingolstadt; Department of Conservation Biology, Helmholtz Centre for Biological Research-UFZ.

General information

dataset entry ID:	UFO_25
name of the dataset:	
full name of the dataset:	Floodplain and river monitoring
type of dataset:	others
data type:	descriptive data
science keywords according to GCMD:	
topic:	Biosphere, Terrestrial Hydrosphere

ISO topic category according to [ISO 19115](#):

Biota, Inland Waters

Technical and administrative specifications

data format: Excel
operating system: all Windows systems
data language: German
current access level: internal
currently available through [GBIF](#): no
exchange planned: no
data in data repository: no

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

no

update level: update planned

documentation:
type: internal description
language: German

contact details:

metadata contact person:

first, last name: Kathrin Januschke
phone: +49 (0)201-183 3113
email: kathrin.januschke@uni-due.de
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technical contact person:

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scientific contact person:

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phone: +49 (0)201-183 3113
email: kathrin.januschke@uni-due.de

Intellectual property rights and citation

dataset creator (data compiler):

contact name: Kathrin Januschke
contact email: kathrin.januschke@uni-due.de
contact institution: Department of Aquatic Ecology, University of Duisburg-Essen, Germany

data contributors to/owners of this dataset:

multiple
number: 6

data contributor/owner 1:

contact name: Kathrin Januschke
contact email: kathrin.januschke@uni-due.de
contact institute: Department of Aquatic Ecology, University of Duisburg-Essen, Germany

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

data contributor/owner 2:

contact name: Gloria Ledesma-Krist

contact email: g.ledesma-krist@umwelt.saarland.de

contact institute: until 2015: Karlsruhe Institute of Geography and Geoecology, Rastatt, Germany

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

comments:

Current contact institution: Ministry of Environment and Consumer Protection - Saarland, Germany

data contributor/owner 3:

contact name: Mathias Scholz

contact email: mathias.scholz@ufz.de

contact institute: Department of Conservation Biology, Helmholtz Centre for Biological Research-UFZ

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

data contributor/owner 4:

contact name: Marion Gelhaus

contact email: marion.gelhaus@ku.de

contact institute: Floodplain Institute Neuburg, Cath. University of Eichstätt-Ingolstadt, Germany

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

data contributor/owner 5:

contact name: Barbara Stammel

contact email: barbara.stammel@aueninstitut-neuburg.de

contact institute: Floodplain Institute Neuburg, Cath. University of Eichstätt-Ingolstadt, Germany

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

data contributor/owner 6:

contact name: Daniel Hering

contact email: daniel.hering@uni-due.de

contact institute: Department of Aquatic Ecology, University of Duisburg-Essen, Germany

criteria for using this part of the dataset:

The dataset needs to be requested from dataset creator with specific conditions of use.

citation of this dataset:

author(s): Januschke, K., Ledesma-Krist, G., Scholz, M., Gelhaus, M., Stammel, B. & Hering, D.

title: Floodplain and river monitoring

year: 2016

citation of the metadata:

author(s): Januschke K., Ledesma-Krist G., Scholz M., Gelhaus M., Stammel B. & Hering D.

title and journal (name, number, pages):

Floodplain and river monitoring. Freshwater Metadata Journal 16: 1-16

year: 2016

doi: <http://dx.doi.org/10.15504/fmj.2016.16>

dataset related references:

reference 1:

author(s): Januschke, K., Ledesma-Krist, G., Scholz, M., Gelhaus, M., Stammel, B. & Hering, D.

title: Biologisches Auenmonitoring in Deutschland. Auenzentrum Neuburg/Ingolstadt, Neuburg a.d. Donau. Auenmagazin 10/2016.

year: 2016

reference 2:

author(s): Januschke, K., Ledesma-Krist, G., Scholz, M., Gelhaus, M., Stammel, B. & Hering, D.

title: Metadaten - aktueller Bestand zum Monitoring in Auen. In: Schneider, E., Werling, M., Stammel, B., Januschke, K., Ledesma-Krist, G., Scholz, M., Hering, D., Gelhaus, M., Dister, E. & Egger, G. (Hrsg.): Entwicklung der Biodiversität von Flussauen, NaBiv Schriftenreihe.

year: 2016

comments: Articles mentioned as dataset related references will be published within 2016.

General data specifications

regional coverage of the dataset:

scale of the dataset: national

spatial extent (bounding coordinates):

southernmost latitude [°]: 47.392186

northernmost latitude [°]: 54.046898

westernmost longitude [°]: 6.108089

easternmost longitude [°]: 14.337918

minimum altitude: 5 metres

maximum altitude: 1120 metres

countries: Europe: Germany

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 \(WFD\)](#):

Central Highlands (ER9), Central Plains (ER14)

ecosystem type: rivers, wetlands

covered timeframe: 1938 - 2014

Site specifications

coordinate system/grid data: latitude/longitude, format: DD

projected, others others: DHDN_3_Degree_Gauss_Zone_3

datum (e.g. WGS84): WGS84

grid data available: no

ecosystem type classification:

rivers (classification according to WFD):

altitude typology

high: >800 m, mid-altitude: 200 to 800 m, lowland: <200 m

size typology based on catchment area

small: <100 km², medium: 100-1000 km², large: 1000-10000 km², very large: 10000-100000 km²

geology

calcareous, siliceous, organic

wetlands (classification according to GLWD):

wetland type

freshwater marsh, floodplain

wetland size

50-100% wetland, 25-50% wetland, wetland complex (0-25% wetland)

other site classification parameters:

Floodplain typology (Koenzen, 2005)

site coding available:

no

number of sites:

100 - 1000

exact number of sites:

138

comments:

Number of sites means here: number of restoration projects with monitoring data.

Climate and environmental data**climate related data:**

no data available

environmental data:

no parameter data per catchment available

no parameter data per site available

physico-chemistry data:

no data available

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	some projects with before/after or time series
hydrologic stress (e.g. impoundment, flow velocity reduction, hydropeaking, water abstraction, flow velocity increase)	yes	yes	yes	some projects with before/after or time series
other stressors	yes	yes	yes	dam construction; some projects with before/after or time series

Biological data

biological data origin:	from sampling
specify project:	metadata collection from 138 projects focusing on biological monitoring in rivers and floodplains
organism group addressed:	mammals, water birds, amphibians, terrestrial invertebrates (Carabidae), fish, macro-invertebrates (Mollusca, Crayfish, Ephemeroptera, Odonata, Plecoptera, Coleoptera, Trichoptera, Chironomidae), (benthic) diatoms, macrophytes, angiosperms (riparian vegetation), other group(s): butterflies and moths (Lepidoptera)

Sample specifications/sample resolution

mammals:

sample information:

covered timeframe:	1996 - 2002
historical data:	no
season:	summer, autumn
temporal resolution/frequency of sampling:	differs between projects
time series data:	yes
comments:	13 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 2 with one-time records.

taxonomic resolution:

level:	species
percentage of species level data:	100
comments:	Projects focused on <i>Lutra lutra</i> , <i>Castor fiber</i> , <i>Ondatra zibethicus</i> , <i>Myocastor coypus</i> .

taxonomic coding:

taxalist according to:	selected species only
coding system:	no coding used

sample specifications:

type:	quantitative (abundance data)
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replicate samples: yes
 number of samples: 11
 specification of method(s) used for sampling and sorting:
 Information about sample methods is not available.

water birds:**sample information:**

covered timeframe: 1988 - 2014
 historical data: no
 season: spring, summer, autumn
 temporal resolution/frequency of sampling:
 differs between projects
 time series data: yes
 comments: 21 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 4 projects with one-time records.

taxonomic resolution:

level: species
 percentage of species level data: 100

taxonomic coding:

taxalist according to: Barthel (1993, 2005)
 reference(s): Barthel, P.H. (1993): Artenliste der Vögel Deutschlands. Journal für Ornithologie 134, 2: 113-135.
 Barthel, P.H. (2005): Bemerkungen zu den Kategorien, Einstufungen und Veränderungen in der Artenliste der Vögel Deutschlands. Limicola 19: 129-141.
 coding system: no coding used

sample specifications:

type: quantitative (abundance data), presence/absence
 replicate samples: yes
 number of samples: 25
 specification of method(s) used for sampling and sorting:
 Predominantly the method according to Bibby et al. (1992) was used. The intensity and frequency of records differ between projects. Some projects only focus on selected bird species.
 reference(s): Bibby, C.J., Burgess, N.D. & Hill, D.A. (1992): Bird Census Techniques. Academic press, London.

amphibians:**sample information:**

covered timeframe: 1989 - 2011
 historical data: no
 season: spring, summer
 temporal resolution/frequency of sampling:
 differs between projects
 time series data: yes
 comments: 12 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 3 projects with one-time records.

taxonomic resolution:

level: species
 percentage of species level data: 100

taxonomic coding:

taxalist according to: Stresemann (1987), Nöllert (1992), Günther (1996), Berninghausen (2007)

reference(s):	<p>Stresemann, E.(1987): Exkursionsfauna - Wirbeltiere Bd. 3, 10. Aufl., 370 p.</p> <p>Nöllert, A. & Nöllert, C. (1992): Die Amphibien Europas. Bestimmung - Gefährdung - Schutz. Kosmos Naturführer, Kosmos Verlag GmbH, Stuttgart, 382 p.</p> <p>Günther, R. (Editor) (1996): Die Amphibien und Reptilien Deutschlands. - Gustav Fischer Verlag, Jena 1996. 824 p.</p> <p>Berninghausen, F. (2007): Feldbestimmungsschlüssel für Amphibien. Naturschutzbund Deutschlands, Landesverband Niedersachsen e.V., Hannover, 40 p.</p>
coding system:	no coding used
sample specifications:	
type:	quantitative (abundance data), presence/absence
replicate samples:	yes
number of samples:	61
specification of method(s) used for sampling and sorting:	Methods differ between projects.
terrestrial invertebrates:	
sample information:	
covered timeframe:	1972 - 2014
historical data:	no
season:	spring, summer, autumn
temporal resolution/frequency of sampling:	differs between projects
comments:	53 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 70 projects with one-time sampling.
taxonomic resolution:	
level:	family, genus, species
percentage of species level data:	80
comments:	87 (of 123) projects focused on ground beetles (species level). The other projects differ strongly in investigated organism groups: single investigations of e.g. bugs (Heteroptera), millipedes (Isopoda, Diplopoda), ants (Formicidae), rove beetles (Staphylinidae), longhorn beetles (Cerambycidae) or beetle families in general.
taxonomic coding:	
taxalist according to:	Fauna Europaea, Trautner et al. (1997), Müller-Motzfeld (2004)
reference(s):	<p>Fauna Europaea: Coleoptera 2; http://bdj.pensoft.net/articles.php?id=4750</p> <p>Trautner, J., Müller-Motzfeld, G.M. & Bräunicke, M. (1997): Rote Liste der Sandlaufkäfer und Laufkäfer Deutschlands (Coleoptera: Cicindelidae et Carabidae). 2. Fassung, Stand Dezember 1996. Naturschutz und Landschaftsplanung 29, 261-273.</p> <p>Müller-Motzfeld, G. (2004): Adephaga 1: Carabidae (Laufkäfer). In: Freude, H., Harde, K.W., Lohse, G.A. & Klausnitzer, B. (Eds.), Die Käfer Mitteleuropas Bd. 2. Spektrum Verlag Heidelberg/Berlin. 521 p.</p>
coding system:	no coding used
sample specifications:	
type:	quantitative (abundance data), qualitative, presence/absence
replicate samples:	yes
number of samples:	281
specification of method(s) used for sampling and sorting:	Predominantly pitfall traps (Barber, 1931) and hand sampling (Trautner, 1996) were used, but intensity and frequency of sampling strongly differ between projects. In some projects light traps, strip nets, sweeping off the upper soils or

sieving methods have been used.

reference(s): Barber, H.S. (1931): Traps for cave inhabiting insects. *Journal of the Mitchell Society* 46, 259-266.

Trautner, J. (1999): Handfänge als effektive und vergleichbare Methode zur Laufkäfer-Erfassung an Fließgewässern? Ergebnisse eines Tests an der Aich (Baden-Württemberg). *Angewandte Carabidologie, Supplement* 1, 139-144.

fish:**sample information:**

covered timeframe: 1991 - 2014

historical data: no

palaeo data: no

season: spring, summer, autumn

temporal resolution/frequency of sampling: differs between projects

time series data: yes

comments: 32 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 35 projects with one-time records.

taxonomic resolution:

level: species

percentage of species level data: 100

taxonomic coding:

taxalist according to: Diekmann et al., 2005, Mauch (2003-2011)

reference(s): Diekmann, M., Dußling, U. & Berg, R. (2005): Handbuch zum fischbasierten Bewertungssystem für Fließgewässer (FIBS). Fischereiforschungsstelle Baden-Württemberg, Langenargen. 71 p.

Mauch, E., Maetze, A. & Schmedtje, U. (2003-2011): Taxaliste der Gewässerorganismen Deutschlands zur Erfassung und Kodierung biologischer Erhebungen im und am Gewässer. Bayerisches Landesamt für Wasserwirtschaft, München. Informationsberichte des Bayerischen Landesamtes für Wasserwirtschaft 1/03: 1-388.

coding system: no coding used

sample specifications:

type: quantitative (abundance data), semi-quantitative

replicate samples: yes

number of samples: 177

specification of method(s) used for sampling and sorting: Method following the Water Framework Directive (Diekmann et al., 2005).

reference(s): Diekmann, M., Dußling, U. & Berg, R. (2005): Handbuch zum fischbasierten Bewertungssystem für Fließgewässer (FIBS). Fischereiforschungsstelle Baden-Württemberg, Langenargen. 71 p.

macro-invertebrates:**sample information:**

covered timeframe: 1987 - 2014

historical data: no

palaeo data: no

season: spring, summer, autumn

temporal resolution/frequency of sampling: differs between projects

time series data: yes

comments: Investigations of benthic macro-invertebrates: 38 projects with replicate samplings (continuous time-series with yearly samplings or selected years) and 34

projects with one-time records.

Investigations of aquatic (and terrestrial) molluscs: 10 projects with replicate samplings (continuous time-series with yearly samplings or selected years) and 2 projects with one-time records.

Investigations of adult dragon- and damselflies: 13 projects with replicate samplings (continuous time-series with yearly samplings or selected years) and 3 projects with one-time records.

Investigations of adult, winged macro-invertebrates: 4 projects with replicate samplings (continuous time-series with yearly samplings or selected years).

taxonomic resolution:

level: family, genus, species

percentage of species level data: 80

taxonomic coding:

taxalist according to: differs between organism groups (see below)

reference(s): Benthic invertebrates:

Meier, C., Böhmer, J., Biss, R., Feld, C., Haase, P., Lorenz, A., Rawer-Jost, C., Rolauuffs, P., Schindehütte, K., Schöll, F., Sundermann, A., Zenker, A. & Hering, D. (2006): Weiterentwicklung und Anpassung des nationalen Bewertungssystems für Makrozoobenthos an neue internationale Vorgaben. Abschlussbericht im Auftrag des Umweltbundesamtes. <http://www.fliessgewaesserbewertung.de> [Stand Juni 2006].

Aquatic (and terrestrial) molluscs:

Fechter, R. & Falkner, G. (1990): Weichtiere. Europäische Meeres- und Binnenmollusken. Steinbachs Naturführer 10. München, 287 p.

Glöer, P. (2002): Mollusca I. Süßwassergastropoden Nord- und Mitteleuropas. Bestimmungsschlüssel, Lebensweise, Verbreitung. 2. Aufl., 327 p.

Glöer, P. & Meier-Brook, C. (2003): Süßwassermollusken. Ein

Bestimmungsschlüssel für die Bundesrepublik Deutschland. Deutscher Jugendbund für Naturbeobachtung (DJN), Hamburg. 13. Aufl., 134 p.

Adult dragon- and damselflies:

Dreyer, W. (1986): Die Libellen: Das umfassende Handbuch zur Biologie und Ökologie aller mitteleuropäischen Arten mit Bestimmungsschlüsseln für Imagines und Larven. Gerstenberg Verlag. 1. Auflage. 219 p.

Wendler, A. & Nüß, J.-H. (1991): Libellen. Deutscher Jugendbund für Naturbeobachtung (DJN), Hamburg. 130 p.

Buchwald, R. & Sternberg, K. [Hrsg.] (1999): Die Libellen

Baden-Württembergs. Band 1: Allgemeiner Teil. Kleinlibellen (Zygoptera). Verlag Eugen Ullmer, Stuttgart. 468 p.

Jurzitza, G. (2000): Der Kosmos Libellenführer - Die Arten Mittel- und Südeuropas. Franckh-Kosmos Verlag. 191 p.

Adult, winged macro-invertebrates:

Mauch, E., Schmedtje, U., Maetze, A. & Fischer, F. (2003): Taxaliste der Gewässerorganismen Deutschlands. Informationsberichte des Bayerischen Landesamtes für Wasserwirtschaft 01/03. 388 p.

coding system: no coding used

sample specifications:

type: quantitative (abundance data), semi-quantitative

replicate samples:	yes
number of samples:	330
specification of method(s) used for sampling and sorting:	<p>Benthic invertebrates: Multihabitat-sampling according to Meier et al. (2006) was predominantly used. In some projects substrate-specific samplings were applied. In 4 projects light traps for sampling of adult, winged macro-invertebrates were installed.</p> <p>Aquatic (and terrestrial) molluscs: 'Biocoenometer'-method according to Mühlenberg (1993) and Krebs (1999), 'soil-grabber-method' according to Schwörbel (1994). Intensity and frequency of samplings differ strongly between projects.</p> <p>Adult dragon- and damselflies: Sight observations and dip net catches. Intensity and frequency of samplings differ strongly between projects.</p>
reference(s):	<p>Benthic invertebrates: Meier, C., Böhmer, J., Biss, R., Feld, C., Haase, P., Lorenz, A., Rawer-Jost, C., Rolaufts, P., Schindehütte, K., Schöll, F., Sundermann, A., Zenker, A. & Hering, D. (2006): Weiterentwicklung und Anpassung des nationalen Bewertungssystems für Makrozoobenthos an neue internationale Vorgaben. Abschlussbericht im Auftrag des Umweltbundesamtes. http://www.fliessgewaesserbewertung.de [Stand Juni 2006].</p> <p>Aquatic (and terrestrial) molluscs: Mühlenberg, M. (1993): Freilandökologie. 3. Auflage. Quelle & Meyer, Heidelberg. UTB 595. 512 p. Krebs, C.J. (1999): Ecological Methodology. 2nd edition. Menlo Park: Addison-Wesley Educational. 624 p. Schwörbel, J. (1994): Methoden der Hydrobiologie - Süßwasserbiologie. 4., neubearbeitete Auflage. Gustav Fischer Verlag, Jena, Stuttgart. Serie UTB für Wissenschaft/Uni-Taschenbücher, 979. 368 p.</p> <p>Adult dragon- and damselflies: Buchwald, R. & Sternberg, K. [Hrsg.] (1999): Die Libellen Baden-Württembergs. Band 1: Allgemeiner Teil. Kleinlibellen (Zygoptera). Verlag Eugen Ullmer, Stuttgart. 468 p.</p>
(benthic) diatoms:	
sample information:	
covered timeframe:	2005 - 2010
historical data:	no
palaeo data:	no
season:	spring, summer
temporal resolution/frequency of sampling:	differs between projects
time series data:	yes
comments:	6 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 3 projects with on-time records.
taxonomic resolution:	
level:	species

percentage of species level data: 70
 comments: Detailed information about the percentage of species level data is not available.

taxonomic coding:

taxalist according to: Schaumburg et al. (2004)
 reference(s): Schaumburg, J., Schranz, C., Foerster, J., Gutowski, A., Hofmann, G., Meilinger, P., Schneider, S. & Schmedtje, U. (2004): Ecological classification of macrophytes and phytobenthos for rivers in Germany according to the water framework directive. *Limnologica* 34, 283-301.
 coding system: no coding used

sample specifications:

type: quantitative (abundance data)
 replicate samples: yes
 number of samples: 15
 specification of method(s) used for sampling and sorting: Method following the Water Framework Directive (Schaumburg et al., 2006).
 reference(s): Schaumburg, J.S., Schranz, C., Stelzer, D., Hofmann, G., Gutowski, A. & Förster, J. (2006): Handlungsanweisung für die ökologische Bewertung von Fließgewässern zur Umsetzung der EU-Wasserrahmenrichtlinie: Makrophyten und Phytobenthos, Stand Januar 2006.

macrophytes:

sample information:

covered timeframe: 1978 - 2014
 historical data: no
 palaeo data: no
 season: summer, autumn
 temporal resolution/frequency of sampling: differs between projects
 time series data: yes
 comments: 21 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 35 projects with one-time records.

taxonomic resolution:

level: genus, species
 percentage of species level data: 80

taxonomic coding:

taxalist according to: Van de Weyer & Schmidt (2007)
 reference(s): Van de Weyer, K. & Schmidt, C. (2007): Bestimmungsschlüssel für die aquatischen Makrophyten (Gefäßpflanzen, Armeleuchteralgen und Moose) in Deutschland. 128 p.
 coding system: no coding used

sample specifications:

type: quantitative (abundance data)
 replicate samples: yes
 number of samples: 96
 specification of method(s) used for sampling and sorting: Method following the Water Framework Directive (Schaumburg et al., 2006).
 reference(s): Schaumburg, J.S., Schranz, C., Stelzer, D., Hofmann, G., Gutowski, A. & Förster, J. (2006): Handlungsanweisung für die ökologische Bewertung von Fließgewässern zur Umsetzung der EU-Wasserrahmenrichtlinie: Makrophyten und Phytobenthos, Stand Januar 2006.

angiosperms:

sample information:

covered timeframe:	1938 - 2010
historical data:	no
season:	spring, summer, autumn
temporal resolution/frequency of sampling:	differs between projects
time series data:	yes
comments:	Projects focused predominantly on riparian vegetation. 52 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 30 projects with one-time records.
taxonomic resolution:	
level:	species, other
other taxonomic levels:	vegetation units
percentage of species level data:	90
comments:	Vegetation units after Oberdorfer (1992), Ellenberg (1996).
taxonomic coding:	
taxalist according to:	differs between projects
reference(s):	Oberdorfer, E. (1983, 1992). <i>Süddeutsche Pflanzengesellschaften</i> . Teil I-III. Fischer, Stuttgart, Germany. Pott, R. (1995): <i>Die Pflanzengesellschaften Deutschlands</i> . 2. Aufl. Stuttgart. 622 p. Ellenberg, H. (1996): <i>Vegetation Mitteleuropas mit den Alpen in ökologischer, dynamischer und historischer Sicht</i> . 5. Auflage, Ulmer-Verlag, Stuttgart. 1095 p. Raabe, U., Foerster, E., Schumacher, W. & Wolff-Straub, R. (1996): <i>Florenliste von Nordrhein-Westfalen</i> , 3. Aufl.- LÖBF-Schriftenreihe (Recklinghausen) 10: 196 p. Wisskirchen, R. & Haeupler, H. (1998): <i>Standardliste der Farn- und Blütenpflanzen Deutschlands</i> . Verlag Eugen Ulmer, Stuttgart. 765 p. Scheuerer, M. & Ahlmer, W. (2003): <i>Rote Liste gefährdeter Gefäßpflanzen Bayerns mit regionalisierter Florenliste</i> . In: <i>Schriftenreihe des Bayerischen Landesamtes für Umweltschutz</i> . Bd. 165, Augsburg, 1-372.
coding system:	no coding used
sample specifications:	
type:	quantitative (abundance data), qualitative, presence/absence
replicate samples:	yes
number of samples:	81
specification of method(s) used for sampling and sorting:	Methods differ between projects: e.g. method according to Barkmann et al. (1964), Braun-Blanquet (1964), transect-based records of vegetation units with species records on sample plots according to Jähnig et al. (2009) and Januschke et al. (2011).
reference(s):	Barkmann, J.J., Doing, H. & Segal, S. (1964): <i>Kritische Bemerkungen und Vorschläge zur quantitativen Vegetationsanalyse</i> . <i>Acta Bot. Neerlandica</i> 13: 394-419. Braun-Blanquet, J. (1964): <i>Pflanzensoziologie, Grundzüge der Vegetationskunde</i> . 3. Auflage. Springer Verlag, Wien. 865 p. Jähnig, S.C., Brunzel, S., Gacek, S., Lorenz, A.W. & Hering, D. (2009): <i>Effects of re-braiding measures on hydromorphology, floodplain vegetation, ground beetles and benthic invertebrates in mountain rivers</i> . <i>Journal of Applied Ecology</i> 46, 406-416. Januschke, K., Brunzel, S., Haase, P. & Hering, D. (2011): <i>Effects of stream restorations on riparian mesohabitats, vegetation and carabid beetles</i> .

Biodiversity and Conservation 20, 3147-3164.

other group(s):

sample information:

covered timeframe: 1992 - 2014
 historical data: no
 season: spring, summer, autumn
 temporal resolution/frequency of sampling: differs between projects
 time series data: yes
 comments: Lepidoptera sample information: 7 projects with replicate samplings (continuous time-series with yearly samplings or selected years), 1 project with one-time records.

taxonomic resolution:

level: species
 percentage of species level data: 100

taxonomic coding:

taxalist according to: Karsholt & Razowski (1996), Settele et al. (1999)
 reference(s): Karsholt, O. & Razowski, J. (1996): The Lepidoptera of Europe, A Distributinal Checklist. Apollo Books, Stenstrup. 380 p.
 Settele, J., Feldmann, R. & Reinhardt, R. [Hrsg.] (1999): Die Tagfalter Deutschlands - Ein Handbuch für Freilandökologen, Umweltplaner und Naturschützer. Ulmer Verlag, Stuttgart. 452 p.
 coding system: no coding used

sample specifications:

type: quantitative (abundance data), presence/absence
 replicate samples: yes
 number of samples: 30
 specification of method(s) used for sampling and sorting: Sight observations, light traps, dip net catches. Intensity and frequency strongly differ between projects.
 reference(s): No information available.

Other specifications

GIS layers, shapes related to the dataset:

no data available

availability of photos: yes

availability of maps: no

quality control procedures:

Were any quality control procedures applied to your dataset?
 yes

quality control protocols and comments:
 Quality control was made after data input by checking the input table for inconsistencies.

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