### General information

**name of the dataset:**  
full name of the dataset: Metadata: MARS multiple stressors and biological dataset of Drava & Mura Basins  
dataset short name: MARS DRAVA/MURA stressors and biological dataset  
**type of dataset** (more information): species (taxonomic group) per site database including environmental information  
specify: Fish ecological data  
data type: point data/observation data, vector data (shape files), descriptive data  
short description of the dataset/summary: This work/dataset addresses human stressors and their impacts on fish assemblages in the Austrian Drava and Mura River Basins. It supports the EU-project MARS (Managing Aquatic ecosystems and water Resources under multiple Stress) by analysing single and multiple stressors, environmental effects and stressor combinations/interactions. Data sources are mainly shape files and MS ACCESS databases. With the help of point data on connectivity disruptions (barriers) and line data on hydromorphological & water quality stressors (on water body level), six mainly hydromorphological stressors from the national inventory assessment of the EU Water Framework Directive were recoded and aggregated into new variables, i.e. stressor metrics. These then were compared with point data (fish sampling sites) and related information on fish assemblages (Fish Index Austria and related single metrics as well as the WFD biological and total status).  

**science keywords according to GCMD:**  
topic: Biosphere, Biological Classification, Terrestrial Hydrosphere  
keywords: Fish assemblages, metrics, rivers, stressors, impacts, ecological status, Water Framework Directive, Fish Index Austria, hydromorphological alterations, barriers  

**ISO topic category according to ISO 19115:**  
Biota, Environment, Inland Waters
### Technical and administrative specifications

<table>
<thead>
<tr>
<th><strong>data format:</strong></th>
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<tr>
<td><strong>shapefiles and MS ACCESS database</strong></td>
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<th>German</th>
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<th><strong>current access level:</strong></th>
<th>restricted access</th>
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<tr>
<td><strong>web address (URL):</strong></td>
<td><a href="http://www.bmlfuw.gv.at/en.html">http://www.bmlfuw.gv.at/en.html</a></td>
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<tr>
<th><strong>currently available through GBIF:</strong></th>
<th>no</th>
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<tr>
<td><strong>exchange planned:</strong></td>
<td>no</td>
</tr>
<tr>
<td><strong>data in data repository:</strong></td>
<td>no</td>
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**Do you plan to publish the data on the Freshwater Biodiversity Data Portal:**

| **no** | |

**comments:**

River Basin Management Data (including stressor information and biological quality element monitoring sites) are public data, but have to be requested from the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (see http://www.bmlfuw.gv.at/en.html).

The same applies for data on the Fish Index Austria, which have to be requested from the Institute for Water Ecology, Fish Biology and Lake Ecology (IGF; see http://www.baw.at/index.php/igf-home.html).

**update level:**

| **update planned** | |

**documentation:**

<table>
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**contact details:**

<table>
<thead>
<tr>
<th><strong>metadata contact person:</strong></th>
<th>Helena Mühlmann</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>first, last name:</strong></td>
<td>MÅ¼hlmann</td>
</tr>
<tr>
<td><strong>phone:</strong></td>
<td>+43 1 71100 7158</td>
</tr>
<tr>
<td><strong>email:</strong></td>
<td><a href="mailto:helena.muehlmann@bmlfuw.gv.at">helena.muehlmann@bmlfuw.gv.at</a></td>
</tr>
<tr>
<td><strong>institution:</strong></td>
<td>Austrian Federal Ministry of Agriculture, Forestry, Environment &amp; Water Management</td>
</tr>
<tr>
<td><strong>address:</strong></td>
<td>Marxergasse 2</td>
</tr>
<tr>
<td><strong>postal code, city:</strong></td>
<td>1030 Vienna</td>
</tr>
<tr>
<td><strong>province, state:</strong></td>
<td>Vienna</td>
</tr>
<tr>
<td><strong>country:</strong></td>
<td>Austria</td>
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<tr>
<th><strong>technical contact person:</strong></th>
<th>Helena Mühlmann</th>
</tr>
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<tbody>
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<p>| <strong>scientific contact person:</strong> | |
|--------------------------------|</p>
<table>
<thead>
<tr>
<th>first, last name:</th>
<th>Rafaela Schinegger</th>
</tr>
</thead>
<tbody>
<tr>
<td>phone:</td>
<td>+43 1 47654 81216</td>
</tr>
<tr>
<td>email:</td>
<td><a href="mailto:rafaela.schinegger@boku.ac.at">rafaela.schinegger@boku.ac.at</a></td>
</tr>
</tbody>
</table>
Dataset: Metadata: MARS multiple stressors and biological dataset of Drava & Mura Basins

Intellectual property rights and citation

(if the dataset is already published):

dataset creator (data compiler):
  contact name: Rafaela Schinegger
  contact email: rafaela.schinegger@boku.ac.at
  contact institution: Institute of Hydrobiology and Aquatic Ecosystem Management (IHG)

data contributors to/owners of this dataset:
  number: 2
  provider 1:
    provider institute: Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
    contact name: Helena Mühlmann
    contact email: helena.muehlmann@bmlfuw.gv.at
    criteria for using the data in a publication/scientific analysis:
      The dataset needs to be requested from dataset creator with specific conditions of use.
  provider 2:
    provider institute: Institute for Water Ecology, Fish Biology and Lake Ecology (IGF) Scharfling
    contact name: Brigitte Sasano
    contact email: brigitte.sasano@baw.at
    criteria for using the data in a publication/scientific analysis:
      The dataset needs to be requested from dataset creator with specific conditions of use.

citation of this dataset:
  author(s): Schinegger, R., Aschauer, C., Mühlmann, H., Schmutz, S.
  title: MARS stressor and biological dataset on Drava & Mura River Basins (Austria)
  year: 2016

citation of the metadata:
  author(s): Schinegger R., Aschauer C., Mühlmann H. & Schmutz S.
  title and journal (name, number, pages): Metadata: MARS multiple stressors and biological dataset of Drava & Mura Basins. Freshwater Metadata Journal 0: 0-0
  year: 0000
  doi (if applicable): https://doi.org/10.15504/fmj.0000.0
General data specifications

regional coverage of the dataset:
  scale of the dataset: regional
  continents: Europe

spatial extent (bounding coordinates):
  southernmost latitude [°]: 46.6408
  northernmost latitude [°]: 46.76153
  westernmost longitude [°]: 12.92196
  easternmost longitude [°]: 14.94884
  minimum altitude: 237 metres
  maximum altitude: 3798 metres
  countries: Europe: Austria
  comments: Environmental information based on entire Drava/Mura basins in Austria.

### Site specifications

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<th>Description</th>
<th>Details</th>
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<tr>
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<td></td>
<td>projected</td>
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<td>datum (e.g. WGS84):</td>
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<td><strong>site coding:</strong></td>
<td>yes</td>
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<td>number of digits:</td>
<td>9</td>
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<td>example:</td>
<td>ATDRAU738</td>
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<tr>
<td><strong>number of sites:</strong></td>
<td>100 - 1000</td>
</tr>
<tr>
<td>exact number of sites:</td>
<td>525</td>
</tr>
</tbody>
</table>
Climate and environmental data

climate related data: no data available

environmental data:

available parameters per catchment: catchment size
IHG database

available parameters per catchment: presence of barriers/dams/reservoirs (fragmentation)

available parameters per catchment: hydrological regime/flow regime

available parameters per site: information on embankment (incl. information on modification)

available parameters per site: information on channel form (incl. information on modification)

available parameters per site: information on cross section (incl. information on modification)

available parameters per site: information on water uses (e.g., irrigation, fish ponds)

available parameters per site: distance to next migration barrier upstream

available parameters per site: distance to next migration barrier downstream

available parameters per site: distance to the next lake upstream

available parameters per site: river length

available parameters per site: distance to source

available parameters per site: distance to mouth

available parameters per site: stream order (according to Strahler)

available parameters per site: slope
IHG database

available parameters per site: altitude
IHG database

available parameters per site: hydrological regime/flow regime

available parameters per site: information on instream habitat (incl. information on modification)

physico-chemistry data:


comments: Detailed physico-chemistry data available upon request from the Federal Ministry of Agriculture, Forestry, Environment and Water Management.

stressors influencing the sites:

reference sites available: yes
## Metadata: MARS multiple stressors and biological dataset of Drava & Mura Basins

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Restored sites available</th>
<th>Data before/after restoration available</th>
<th>Stressor gradient available</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Eutrophication</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Chemical status (WFD)</td>
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<tr>
<td>Hydromorphological degradation</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Hydromorphological status (WFD)</td>
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<tr>
<td>Organic pollution</td>
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<td>No</td>
<td>Yes</td>
<td>Chemical status (WFD)</td>
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<tr>
<td>Toxic stress</td>
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<td>Toxic substances (WFD)</td>
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<td>General degradation</td>
<td>No</td>
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<td>Yes</td>
<td>Measured via ecological status (WFD)</td>
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<tr>
<td>Hydrologic stress (e.g. impoundment, flow velocity reduction, hydropeaking, water abstraction, flow velocity increase)</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Residual flow, hydropeaking, impoundments (WFD)</td>
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</table>

**Comments:**

Various restoration studies in Upper Drava catchment conducted in the last 20 years, see [http://www.life-drau.at](http://www.life-drau.at) and Martina Humpel (2012): Metaanalyse von Eingriffen und deren Restaurationsmaßnahmen an der österreichischen Drau. Diplomarbeit / Masterarbeit - Institut für Hydrobiologie, Gewässermanagement (IHG), BOKU-Universität für Bodenkultur, pp 189. [http://permalink.obvsg.at/bok/AC08907751](http://permalink.obvsg.at/bok/AC08907751)
Biological data

biological data origin: from sampling
specify project: "Fish Database Austria" (FDBA, 2015), which is managed by the Institute for Water Ecology, Fish Biology and Lake Ecology (IGF) of the Federal Office of Water Management (BAW)

organism group addressed: fish
Sample specifications/sample resolution

fish:

covered timeframe:
- year from: 2006
- to: 2014

historical data: no

palaeo data: no

season: spring, summer, autumn, winter

temporal resolution/frequency of sampling: single date

time series data: no

taxonomic resolution:
- percentage of species level data: 100

taxonomic coding:
- taxalist according to: Leitbildkatalog (BAW IGF, 2015)
- coding system: full latin name
- example: Thymallus thymallus

sample specifications:
- replicate samples: yes
- number of samples: 525

specification of method(s) used for sampling and sorting:
- electro fishing, wading


comments:
The fish based indicators include the Fish Index Austria (FIA) and its single metrics, an IBI that was developed for the assessment of the fish-ecological status in Austria according to the WFD needs. The FIA is composed of a number of core metrics. They include number of dominant species, number of subdominant species, number of rare species, number of habitat guilds (rheophilic, limnophilic, indifferent), number of reproductive guilds (lithophilic, phytophilic, psammophilic), fish region index and population age structure of dominant and subdominant species.
Other specifications

GIS layers, shapes related to the dataset:
- catchments, river-sub-basins
- dams/reservoirs/barriers
- environmental variables (freshwater or terrestrial)

availability of photos: no
availability of maps: yes

quality control procedures:
- Were any quality control procedures applied to your dataset? yes
- quality control protocols and comments:

Datasets were screened and data mining was conducted within a related master thesis and within MARS WP 4 Drava basin analyses.

reference: