# Inventory of dams in Germany
## (https://doi.org/10.5880/GFZ.4.4.2020.005)

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## 1. Licence



## 2. Citation

**When using the data please cite:**

Speckhann, G.; Kreibich, H.; Merz, B. (2020): Inventory of dams in Germany. V. 1.0. GFZ Data Services. http://doi.org/10.5880/GFZ.4.4.2020.005

**The data are supplementary material to:**

Speckhann, G. A., Kreibich, H., & Merz, B. (2020, preprint). Inventory of dams in Germany. Copernicus GmbH. https://doi.org/10.5194/essd-2020-266

## 3. Data Description

The inventory of dams in Germany contains information on name, date of construction, the start of operation, state, river, dam height, crest length, lake area, lake volume, purpose of the dam, dam type, building characteristics, and coordinates in WGS84. The inventory is a zip-file composed of 3 tab-delimited files and 1 shapefile **Table 1**. The shapefile contains all 530 dams with all 15 columns and can be opened with every GIS program. The geographic coordinate system used is WGS 1984.

*Table 1 – Name, size and type of the files of the German Inventory of Dams.*

| Name | size | | type |
|---|---|---|---|
| DIG_v1.0.cpg | 1 | kb | .cpg |
| DIG_v1.0.dbf | 310 | kb | .dbf |
| DIG_v1.0.prj | 1 | kb | .prj |
| DIG_v1.0.sbn | 6 | kb | .sbn |
| DIG_v1.0.sbx | 1 | kb | .sbx |
| DIG_v1.0.shp | 23 | kb | .shp |
| DIG_v1.0.shx | 5 | kb | .shx |
| Dams_in_Germany_v.1.0.txt | 112 | kb | .txt |
| Abreviations.v.1.0.txt | 1 | kb | .txt |
| Sources_v.1.0.txt | 41 | kb | .txt |

The file **2020-005_Speckhann-et-al_Dams_in_Germany_v.1.0.txt** has the same information as the shapefile, i.e. contains 530 dams with the same 15 columns and it is delimitated using tab. The **2020-005_Speckhann-et-al_Abreviation.txt** file contains 4 different tables which presents every abbreviation used at the inventory. The abbreviations were used for several applications: dam building characteristics, purpose of the dams, German states, and dam's type. They were separated in four different tables (Building characteristics, Purpose, States and Type). The Building Characteristics are related to the structural formation of the dams e.g. embankment dam is listed as "EDD". All abbreviations regarding the building characteristics of the dam can be visualized at **Table 2**.

The Purpose of the dam construction was divided into eight categories: energy production, flood control, recreational use, water supply, industrial and agricultural water supply, fishing, transport and nature protection (

**Table** 3). At the inventory there are multi-purposes dams and single-purposes dams, i.e. a dam might have more than one purpose. The States in Germany were also abbreviated at the inventory using 2 letters. Due to no observed entries at the inventory for Berlin, Bremen and Hamburg, those states are not shown at **Table 4**. The types of dams were also abbreviated (**Table 5**). 2020-005_Speckhann-et-al_Source_v.1.0.txt contains the name of every dam and the main source used for the obtention of the information.

*Table 2 –Abbreviation of the dam building characteristics.*

| **Building Characteristics** | |
|---|---|
| *BSM* | Arch dam |
| *EDD* | Embankment dam |
| *EHD* | Homogenous dam |
| *GWD* | Gravity dam |
| *KW* | Flap weir |
| *PFM* | Buttress dam |
| *RGD* | Ring dam |
| *SFK* | Segment with Fish belly flap |
| *STD* | Rockfill dam |
| *TG* | Residual lake associated with mining |
| *WZW* | Rolling Weir |
| *ZND* | Zone dam |

*Table 3 – Abbreviations of the dam purposes.*

| **Purpose** | |
|---|---|
| *E* | Energy production |
| *HWS* | Flood control |
| *NEG* | Recreational use |
| *TWv* | Water supply |
| *BWv* | Industrial and agricultural water supply |
| *F* | Fishing |

| | |
|---|---|
| *NWA* | Transport |
| *NSG* | Nature protection |

*Table 4 –Abbreviation of German states.*

| **States** | |
|---|---|
| BW | Baden-Württemberg |
| BY | Bavaria |
| BB | Brandenburg |
| HE | Hessen |
| MV | Mecklenburg-Vorpommern |
| NI | Lower Saxony |
| NW | North Rhine-Westphalia |
| RP | Rhineland-Palatinate |
| SL | Saarland |
| SN | Saxony |
| ST | Saxony-Anhalt |
| SH | Schleswig-Holstein |
| TH | Thuringia |

*Table 5 – Abbreviation for dam types.*

| **Type** | |
|---|---|
| T | Dam |
| HWR | Flood control |
| PP | Pump storage |
| WS | Water tank |
| VS | Upstream dam |
| VB | Forebay |
| PD | Polder |
| TG | Residual lake associated with mining |
| SS | Reservoir |
| SB | Storage basin |
| KW | *Kulturwehr* |
| SSe | Barrage |
| Te | Pond |

## 4. File description

The dataset contains files for four uses:

(1) Shapefile with name, date of construction, start of operation, state, river, dam height, crest length, lake area, lake volume, purpose of the dam, dam type, building characteristics, and coordinates

(2) Tab-delimited (.txt) with the same information as in the shapefile.
(3) Tab-delimited (.txt) with all abbreviations used in the inventory.
(4) Tab-delimited (.txt) with the main source of information used in each dam.

## 5. Description of data tables

*Table 6: Definition of columns in the data files:*

| Variable | Unit | Description |
|---|---|---|
| FID | - | Sample identifier |
| Name | - | Name of the dam. |
| date_start | - | Year in which dam construction started (YYYY). |
| date_oper | - | Year in which the construction was finished (YYYY). |
| state | - | Represented by two letters (e.g. BY - for Bayern). |
| river | - | Name of the river where the dam is located or close to. |
| crest_leng | m | Length of the dam crest. |
| dam_height | m | Dam height from base to top. |
| lake_area | $km^2$ | Lake area at the full capacity. |
| lake_volum | $Mio.m^3$ | Lake volume at the full capacity. |
| constr_typ | - | Type of structure (e.g. barrage, pond). |
| purpose | - | Dam function(s) (e.g. flood control, energy production). |
| build_ char | - | Structural dam characteristics (e.g. embankment dam). |
| coord_X | DD,dddd | Geographic coordinates using WGS84. |
| coord_Y | DD,dddd | Geographic coordinates using WGS84. |

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