Marine Environmental Database
MUDAB
User Manual

https://www.mudab.de

Federal Institute of Hydrology - Department M4: Geodatenzentrum, WasserBLIcK, GRDC

Content

1 Home Page

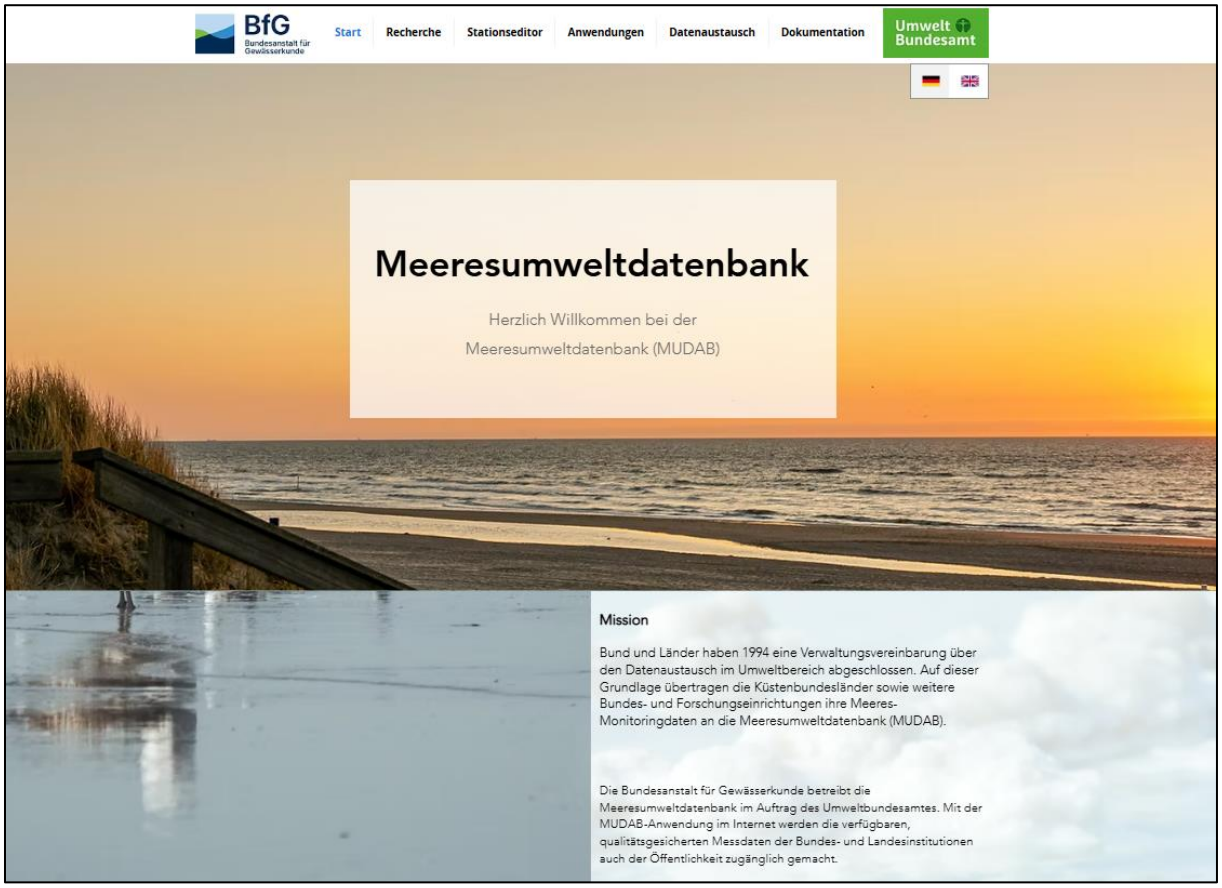


Figure 1: Landing Page of the MUDAB Application

1.1 Welcome at the MUDAB

The MUDAB records physical, hydrographic, hydrochemical, and biological parameters of the marine environment. The central database supports, among other things, the activities of the Federal/State Working Group on the North and Baltic Seas (BLANO). Furthermore, the MUDAB makes a significant contribution to Germany's international commitments to provide environmental data for marine conservation. Among other things, the Marine Environmental Database provides measurement data to support the international "Oslo/Paris Convention on the Monitoring of the North Sea" (OSPAR) and the "Helsinki Convention on the Monitoring of the Baltic Sea" (HELCOM). Last but not least, the MUDAB makes a significant contribution to the "Marine Environmental Reporting" (SOE Report) to the European Environment Agency (EEA) in Copenhagen.

The Federal Institute of Hydrology operates the Marine Environmental Database on behalf of the Federal Environment Agency. With the MUDAB application on the Internet, the available, quality-assured measurement data of federal and state institutions are also made accessible to the public.

1.2 Overview

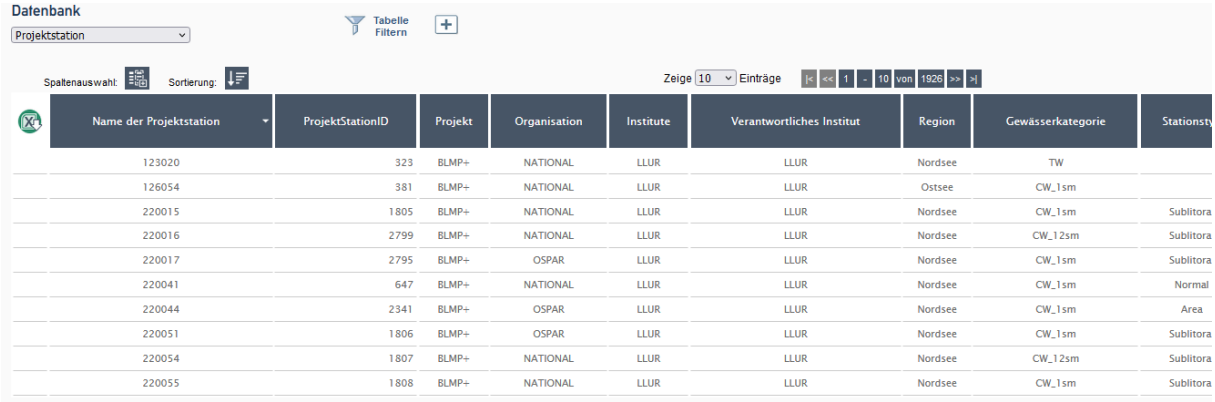
The homepage offers a user-friendly introduction to MUDAB through clearly structured information blocks. Its role and responsibilities within marine monitoring, as well as its networking with institutions and partners, are explained. An overview of the various subject areas shows which compartments contain measurement data in the database. A news section also provides information on current developments—for example, new mapping applications or the publication of relevant reports.

A dashboard illustrates the number of measurement values available in the database and the reporting years for which data are available. Color-highlighted data fields are displayed for project stations, measuring stations, parameters, station measurements, and for the compartments of biology, biota, water, and sediment.

The website complies with the current data protection standards of the Federal Institute of Hydrology. It is barrier-free and available in both German and English. Further information on data protection, usage, and accessibility can be found via the corresponding links in the footer (Imprint, Data Protection, Accessibility).

2 Research

The research client can be used to query and download the MUDAB database.



Name der Projektstation	ProjektStationID	Projekt	Organisation	Institute	Verantwortliches Institut	Region	Gewässerkategorie	Stationsty
123020	323	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	TW	
126054	381	BLMP+	NATIONAL	LLUR	LLUR	Ostsee	CW_1sm	
220015	1805	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	CW_1sm	Sublitora
220016	2799	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	CW_12sm	Sublitora
220017	2795	BLMP+	OSPAR	LLUR	LLUR	Nordsee	CW_1sm	Sublitora
220041	647	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	CW_1sm	Normal
220044	2341	BLMP+	OSPAR	LLUR	LLUR	Nordsee	CW_1sm	Area
220051	1806	BLMP+	OSPAR	LLUR	LLUR	Nordsee	CW_1sm	Sublitora
220054	1807	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	CW_12sm	Sublitora
220055	1808	BLMP+	NATIONAL	LLUR	LLUR	Nordsee	CW_1sm	Sublitora

Figure 2: Research page

The search view presents the various subject areas of the MUDAB in tabular form. 10 to 100 rows can be displayed per page. To move forward or backward, click the corresponding arrows "<<" and ">>". Various search options are available, such as sorting, filtering, or showing or hiding individual columns. These functions are explained in more detail below.

2.1 Choosing tables

The drop-down bar at the top left allows you to select the individual data tables for the measured parameters as well as the specific measured values in the respective compartments.

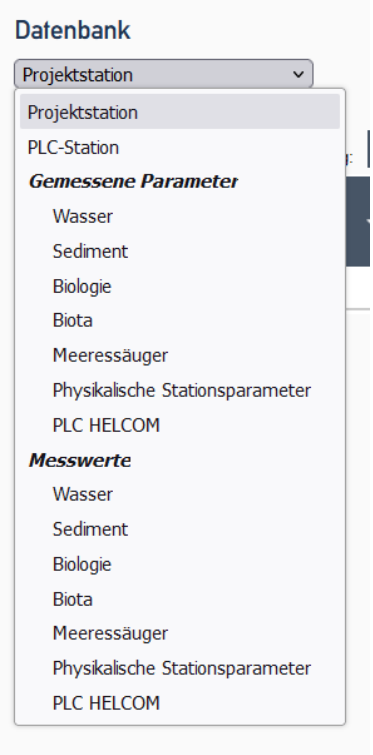


Figure 3: Choosing data tables

2.2 Filter tables and add columns

Using the filter function, columns can be filtered by one or more values using an operator. The following operators are available:

equal to

greater than

less than

greater than or equal to

less than or equal to

unequal to

As wenn als „contains“, „unset“, „set“

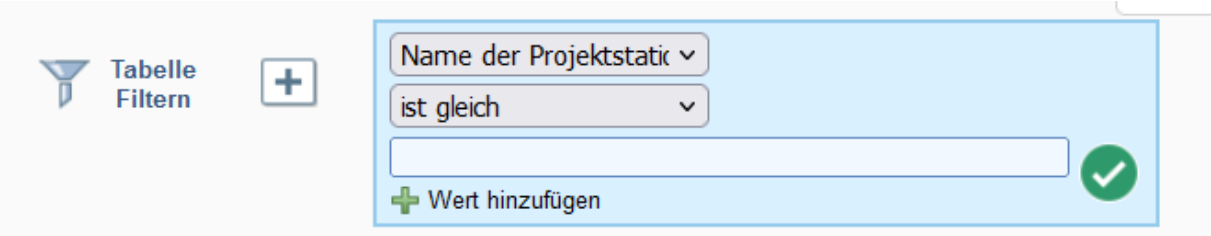


Figure 4: Filtering

Clicking in the input field displays initial filter suggestions. Each filter can be removed or edited later. Filter conditions can also be set for a displayed column. Hovering over a column allows you to select the filter button, and the column is preselected in the filter form.

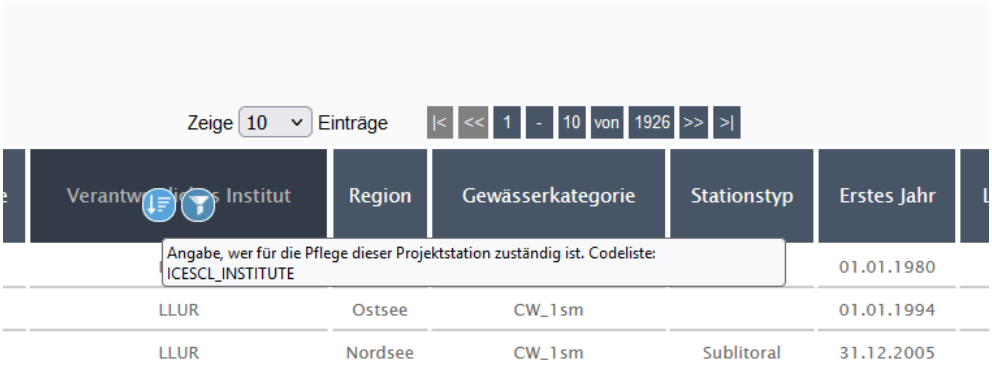


Figure 5: Tabellenspalte filtern

Using the column selection button, specific columns can be shown or hidden depending on the selected data table. Tooltips for the individual column names help with this.

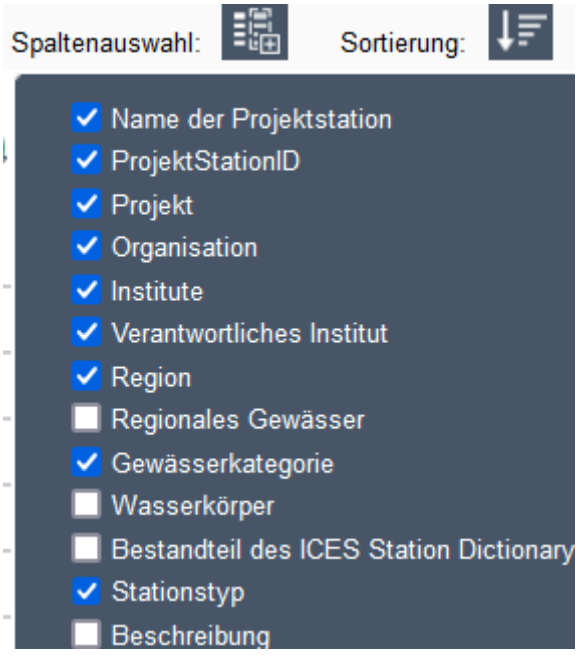


Figure 6: Show and hide columns

Using the sort button, the table can be sorted alphabetically according to a specific column.

2.3 Showing subtables

The data tables for the measured parameters offer an additional function for expanding subtables. This allows the measured values of individual stations to be displayed. To display these values, a subtable must be expanded using the "+" symbol in front of the respective row.

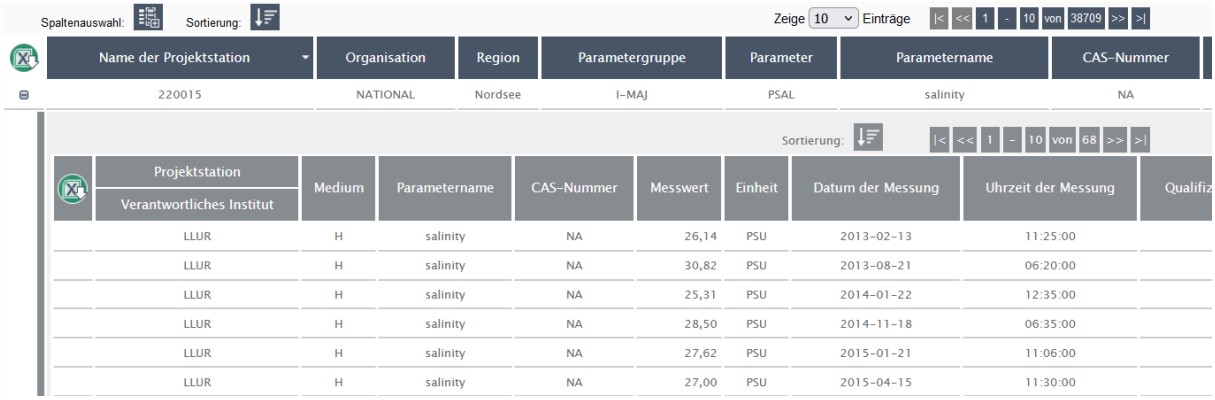


Figure 7: Subtables

2.4 Export tables

Using the green Excel logo, you can export and download the currently viewed table view in XLS format. This downloads all columns of the table, including those currently hidden. If a yellow warning symbol appears, this indicates that the download contains too many data rows, for example, because no prior filtering was performed (especially for the water compartment). Pre-filtering is always recommended.

3 Station editor

The publicly accessible MUDAB station view is used to display, create, and edit project stations. When you first access the station view, you can search for the name of the project station using a search bar or navigate to it spatially using a map view. Once you select a station, a table overview opens on the left, and a map overview of the project station and its associated measuring range opens on the right. The measuring points (measuring stations) assigned to this project station are located within this range.

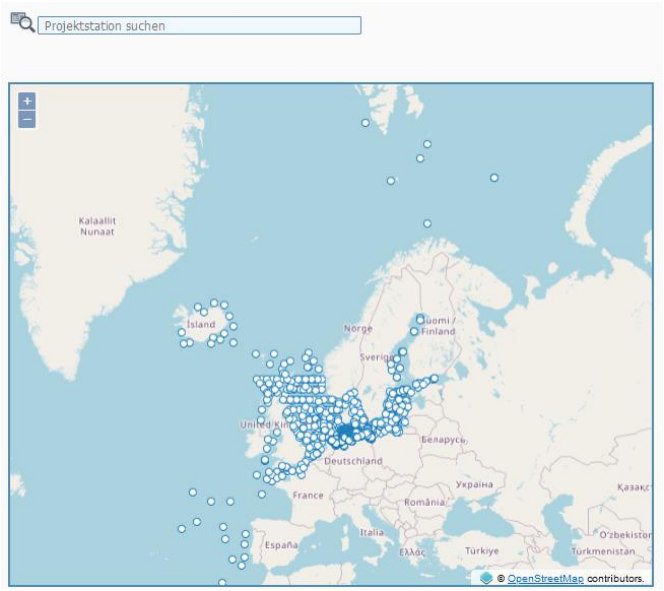


Figure 8: Research functions in the station editor

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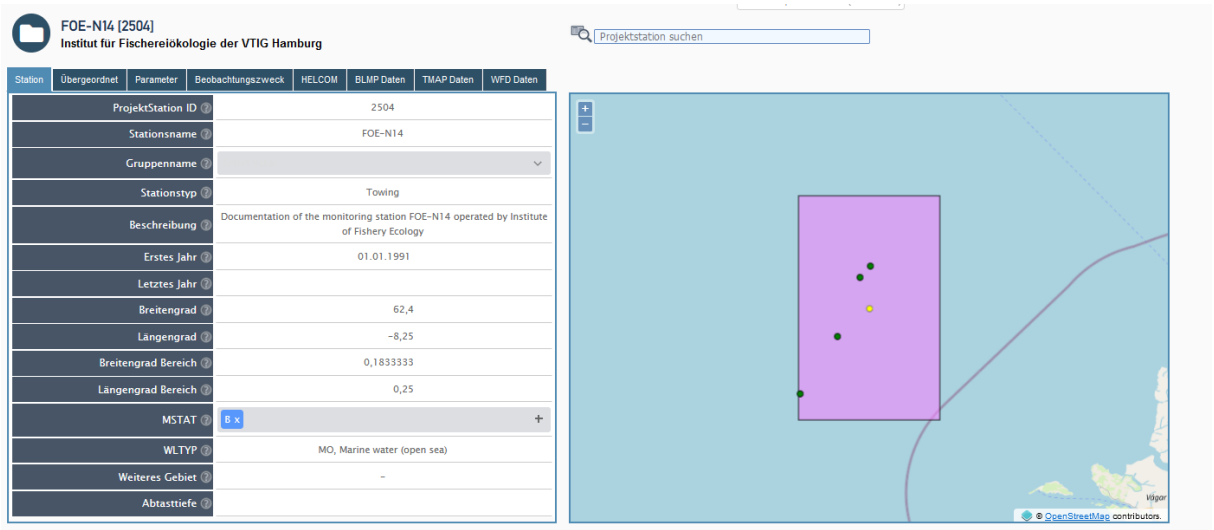

Figure 9: Detailed information of the station

You can access another station at any time using the search bar or the map.

If you log in with a MUDAB Account, you can edit the project stations associated with your institute or create new ones. Please use the separate manual for the station editor.

4 Applications

MUDAB offers various mapping and analysis applications that enable a technical view and spatial research of the MUDAB database. The following applications are currently available:

- **MSFD Reporting 2018 - Reporting Units (MRU), Indicators, and Descriptors:**
  This application shows the relationship between reporting units, indicators, and descriptors of the 2018 reporting under Articles 8, 9, and 10 of the MSFD.
- **MUDAB Monitoring Stations:**
  This map application allows you to display the contents of the maps in the monitoring manual and check whether the station properties are correctly specified in the MUDAB station editor.
- **Macrophyte Atlas - Distribution Maps of Macrophytes in the Baltic Sea:**
  This map application displays the maps of the analogous Macrophyte Atlas of the German Environment Agency.
- **Data Analysis - Analysis of the MUDAB Dataset:**
  This application allows you to analyze the MUDAB dataset using predefined views.
- **Nutrient Atlas – Nutrient data for the North Sea:**
  This map application graphically displays parameters such as temperature, salinity, ammonium, and nitrate in the North Sea.
- **Nitrate Report 2020 and 2024 – Maps for the Nitrate Report:**
  This map application provides the maps created for the 2020 and 2024 Nitrate Reports compiled by the Federal Environment Agency.
- **Nitrate Report 2020 and 2024 – Data Analyses:**
  This application provides the data used for the 2020 and 2024 Nitrate Reports compiled by the Federal Environment Agency.

5 Data exchange

In this area, data providers who supply measurement data to MUDAB receive information on data submission, report formats, data transmission to ICES, and machine-to-machine communication (web services). These include, for example, sample templates for data delivery as well as various map and download services (WFS and WMS) for project and measurement stations, etc., for use by third parties. These services can be integrated into applications.

MUDAB supplies data to ICES regularly and also as required. The "Delivery Status to ICES" and "Delivery Status to MUDAB" sections provide an overview of which data was delivered to MUDAB and, accordingly, to ICES. These sections are only visible after logging in with a registered MUDAB function ID, as this information is reserved for the data-providing institutions. The IDs correspond to those of the MUDAB uploaders (e.g., MUDAB_BFGG).Dokumentation

The Documentation tab offers additional information about the MUDAB application. First, there is API documentation for the MUDAB data structure, which can be accessed here. A link to the code lists and the user guide supports users in data research.

6 Contact

If you have any questions or suggestions about MUDAB and the MUDAB application, please feel free to contact us at any time:

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