

## BSBD-WG Report to the BSHC 28<sup>th</sup> Conference

The Baltic Sea Bathymetry Database Working Group has not held any meeting during the last year.

### 1. Status of the work of BSBDWG

Since the last conference the portal has been up and running with short interruptions until 5 July when the physical servers finally was retired.

The work on migrating the BSBD setup to newer servers on Amazon has been aborted due to that the task has been proven to require too much resources for SMA to handle.

Download of the BSBD 0.9.3 DTM has temporary been made possible by the use of an intermediate webpage on the BSHC homepage [www.bshc.pro/data](http://www.bshc.pro/data) in a number of formats, including a TIFF image.

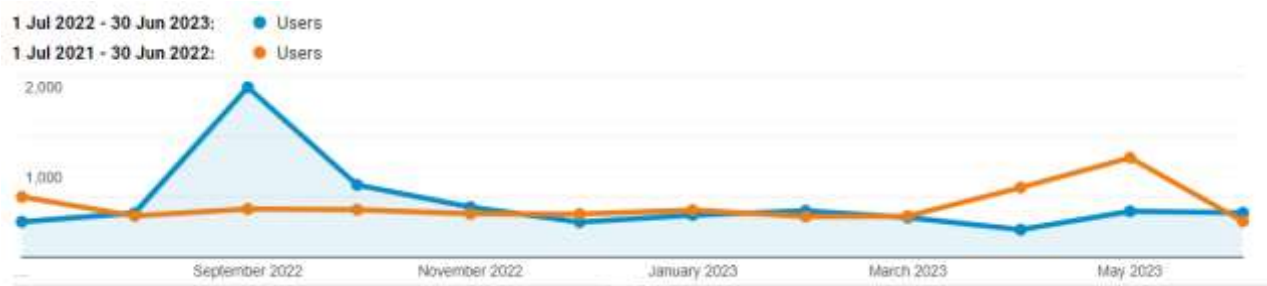
Also as a temporary solution, a link to a OGC-WMS service is published on the BSHC homepage to a newer dataset named BSBD 0.9.6 that has been made available via ArcGIS-Online.

### 2. The use of the bathymetric database

#### 2.1. The portal

The BSBD portal has still been widely used and the number of visits on the portal between the first of July 2021 and 30th of June 2022 is 8696 (8452 visits 2022) made by 6828 unique visitors (6215 unique visitors 2022).

A significant spike can be seen on the 27 September 2022 when 444 visits was made to the site in one single day.



The last year Sweden, Poland and US has been the most frequent users of the BSBD portal and together they account for 53% of the visitors.

Country	Users	% Users
1.  Sweden	2,643	 38.38%
2.  Poland	554	 8.05%
3.  United States	495	 7.19%
4.  Finland	458	 6.65%
5.  China	366	 5.32%
6.  Germany	350	 5.08%
7.  France	193	 2.80%
8.  Denmark	175	 2.54%
9.  United Kingdom	171	 2.48%
10.  Norway	142	 2.06%

**Figure 1 Top ten countries using the portal July 2022-June 2023**

The number of registered active links to the portal has the last year been 39 (previous year 38). There will be no comparable statistics forward.

- 20% (10% for previous year) of the visitors, that use active links to reach the portal, use the link on the BSHC homepage.
- 75% of the visitors used direct addressing to the portal. This indicate that the address is well known.

## 2.2.Support and usage

There have been a few support questions sent by email to SMA, and as usual they mainly concern downloads, format and/or questions about higher resolutions. At some occasions we have had to restart the server on new hardware as Amazon has taken down their machines one after another.

Messages like “*I like to use the Baltic Sea Bathymetry Database as WMS in my QGIS, but since Friday the WMS crashes*” has been received indicating one of the usage types of the BSBD.

A Google Scholar (<https://scholar.google.com/>) search for "baltic sea bathymetry database" gives 184 (168 last year) hits for articles referencing to that phrase, and 11 of them has been published during the first half of 2023.

## 2.3.Use of OGC services

The WMS service has still been used by many users including regional administrations and other governmental organisations. Some users also have an internal cache service for the use in their own GIS systems. This internal cache reduces the number of downloaded tiles from our servers as they only need to download each tile once.

As an example the number of DNS-Queries for the month of April was 408,377 (305,160 year 2021 and 448,017 year 2023). This is only an indication and not an actual number of requests, but indicates steady traffic to our servers during the last year.

### 3. Work Group participants

*Mr. Hans Öiås* has during the last year been acting as the Chair of the WG.

The current WG members and points of contact is:

Country	Name	E-mail address
<b>Denmark</b>	Giuseppe Masetti	<a href="mailto:gimas@gst.dk">gimas@gst.dk</a>
	Nicki Riber Andreasen	<a href="mailto:nirib@gst.dk">nirib@gst.dk</a>
<b>Estonia</b>	Peeter Väling	<a href="mailto:peeter.valing@transpordiamet.ee">peeter.valing@transpordiamet.ee</a>
<b>Finland</b>	Juha Tiihonen	<a href="mailto:juha.tiihonen@traficom.fi">juha.tiihonen@traficom.fi</a>
	Leila Rapeli	<a href="mailto:Leila.Rapeli@traficom.fi">Leila.Rapeli@traficom.fi</a>
<b>Germany</b>	Jürgen Monk	<a href="mailto:juergen.monk@bsh.de">juergen.monk@bsh.de</a>
<b>Latvia</b>	Normunds Duksis	<a href="mailto:normunds.duksis@lhd.lv">normunds.duksis@lhd.lv</a>
<b>Lithuania</b>	Emilis Tertelis (point of contact)	<a href="mailto:emilis.tertelis@ltsa.lt">emilis.tertelis@ltsa.lt</a>
<b>Poland</b>	Piotr Kozłowski	<a href="mailto:piotr.kozlowski0@ron.mil.pl">piotr.kozlowski0@ron.mil.pl</a>
<b>Russia</b>	(No person appointed)	<a href="mailto:main@gunio.ru">main@gunio.ru</a>
<b>Sweden</b>	Hans Öiås	<a href="mailto:Hans.oias@sjofartsverket.se">Hans.oias@sjofartsverket.se</a>

### 4. Performed work

Attempts to set up a new server with the same functionality has been made, but if the data is to be provided in the future, a more modern solution is needed. A temporary page under [www.bshc.pro](http://www.bshc.pro) has been set up making downloads of the 500m resolution possible directly from the Amazon storage. Also a temporary WMS service via ArcGIS-online, that is linked to from the website, has been setup providing a newer 250m DTM useable as backgrounds in GIS systems.

The EMODnet HRSM model has higher resolution (115x57.5m at LAT 60deg.), but is built on the similar source data and gets an uneven distribution of data points. Its unprojected grid often causes extreme amounts of interpolations. As an example given the restrictions for bathymetry in Swedish territorial waters, maximum 2 out of 13 Emodnet cells (at 60° Lat) will be populated by true soundings and the rest is interpolated.

## 5. Presentations

No presentation has been held or is planned for the near future.

## 6. Cooperation's

### 6.1.GEBCO

GEBCO still recognizes the BSHC database as a Regional Mapping Project. The last three GEBCO models has used EMODnet Bathymetry as their main source

### 6.2.EMODnet Bathymetry

At SMA we have been actively participating in the development of the Emodnet HRSM 3 project that was published in the beginning of 2023. The resolution is still 1/16 arc-min (115x57m at Lat 60°). Anna Wall at SMA acts as Project Manager for SMA, as well as regional coordinator for the Baltic Sea region. SMA (Sweden), BSH (Germany), MAL (Latvia) and Stockholm University are partners in the present EMODnet “High Resolution Seabed Mapping III” and provide data. DGA (Denmark) has been subcontracted by the consortium to provide data and metadata.

For the present project period HRSM4 the EU decided to use the option for a direct renewal of the contract for a second contract period. The present contract will end in December 2024.

It is highly probable that a new tender will be sent out around May/June 2024 for yet another contract for Emodnet. If you want to be updated when a new call for tender is issued, please inform Thierry Smith [thierry.schmitt@shom.fr](mailto:thierry.schmitt@shom.fr) and Dick Schaap [dick@maris.nl](mailto:dick@maris.nl) and you will get the invitation when it is published.

SMA need to start gathering new data and metadata for the upcoming regional EMODnet High Resolution Seabed Mapping DTM compilation closer to the end of this year.

### 6.3.Seabed 2030

The project has been presenting its result in the form of webinars under the name “Map the Gaps Symposium” as well as regional hybrid meetings or webinars.

The next Map the Gaps Symposium is planned to be held 7-8 November in Monaco (also live-streamed) as part of GEBCO Week 2023 see the link:

<https://www.mapthegaps.org/symposium-2023>

In addition to the symposiums/webinars, Seabed 2030 also issue a newsletter several times a year. Seabed has their own homepage at <https://seabed2030.org/>

For the Baltic region, we already participate in the work for Seabed 2030 as we make bathymetry available via BSBD and EMODnet Bathymetry for inclusion in the GEBCO grid. However, in several places higher resolution data would improve the bathymetric models.

## 6.4. Crowd Sourcing CSBWG

GEBCO and SEABED2030 is also involved in the IHO CSBWG team and where represented in the last meeting, held in Stavanger 16-18 August. SE, DE and DK were participating in the meeting in person and LV via VTC.

SDB is an important source to Seabed 2030. On <https://sdbday.org/> there is an opportunity to get to know the technology and its capability from the recorded presentations and future events.

A separate short presentation regarding the last CSBWG meeting will be made during the meeting.

## 7. Proposed way forward for BSBD

**Please note that the suggested way forward is presented by Sweden as SMA has the main responsibility for the maintenance of BSBD. The proposed way forward has not yet been circulated to the entire BSBDWG.**

Since the ordinary BSBD portal is not working anymore a change of direction is needed. An option is to cancel BSBD entirely and only refer to the EMODNET Bathymetry data portal for the future. During a transition phase publish the existing bathymetry datasets for download on the BSHC homepage. SMA is prepared to continue to provide the data in simplest way using ArcGIS-Online for WMS and a simple online viewing service. Though, this would only be as a temporary solution maximum one year until September 2024. Any interested BSHC MS who is interested to take over the responsibility from SMA is welcomed.

We should continue to influence EMODNET to follow the INSPIRE requirement of providing large DTMs using either ETRS89 LAEA/LCC, or to start using “Zoning” if WGS84 positions still will be used. Zoning would reduce the difference in distance between the cells in E-W and N-S direction as the Latitude increases, leading to datasets with a more homogenous distribution. We have tried to influence this earlier but they seem hesitant to change.

## 8. Actions for the BSHC 28th Conference

The BSHC 28th Conference is requested to:

1. Note this report
2. Agree to make the BSDB datasets available for download through the BSHC website and make a simple WMS service available. Can be handled temporarily by SMA with limited resources, but with a limit of one year to September 2024.
3. Hand over the BSBD portal and the maintenance from SMA to another voluntary BSHC MS. Before September 2024.
4. If no other BSHC MS takes over the maintenance from SMA, agree upon to direct BSBD users to the EMODNet Bathymetry portal and consider the current BSBD datasets as historical datasets.
5. Recommend MS to participate in future Emodnet consortiums.