BSBD-WG Report to the BSHC 25th 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 without interruptions on the portal itself. There have still been some timeouts on downloading of datasets. Those having experienced problems, and contacted the SMA, have been directed to use the development server instead.

The bathymetric model at present time is the same as the version published in December 2013. An updated 500m model is planned to be published in September, and an update of the portal to contain also a 200m model and the basin names is planned for later 2020. Both models will contain large improvements to the model.

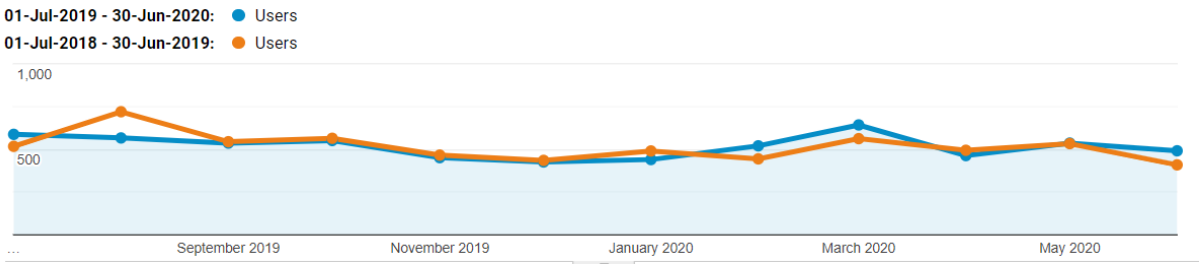
We have continued to use the Amazon Web Services with the same setup. Together with the server for the BSHC webpage and development server, the monthly cost is presently about 250 US$.

2. The use of the bathymetric database

2.1. The portal

The portal address remains as data.bshc.pro and with dev.bshc.pro as backup.

It is still widely used and the number of visits on the portal between the first of July 2019 and 30th of June 2020 is 8356 (7928 visits 2019) made by 5858 unique visitors (5810 unique visitors 2019).



The last year Sweden, Poland and Finland has been the most frequent users of the BSBD portal and together they stand for 49.5% (47.7%) of the visitors. Germany is now number 4 of the users of the portal as Finland now took the third place.

Country	Users ▼	Users
	5,838 % of Total: 100.00% (5,838)	5,838 % of Total: 100.00% (5,838)
1. Sweden	2,022	34.43%
2. Poland	496	8.45%
3. Finland	390	6.64%
4. Germany	361	6.15%
5. United States	308	5.24%
6. Lithuania	199	3.39%
7. United Kingdom	197	3.35%
8. Estonia	171	2.91%
9. Denmark	167	2.84%
10. Japan	140	2.38%

Figure 1 Top ten countries using the portal July 2019-July 2020

The number of registered active links to the portal has dropped this year to 73 (previous year 100). Except from these, we know that in some places our portal is mentioned and the address is given as inactive links (plain text).

- 9% (26% for previous year) of the visitors arrive to the portal from one of the active links.
- 25% (14% for previous year) of the visitors, that use active links to reach the portal, use the link on the BSHC homepage.

The significant drop in % for the visitors from active links indicates most probably, that many users have learnt the address, or have it bookmarked in their browsers.

2.2.Downloads

We have not made any statistic images showing the areas and frequencies for downloads the last years.

We have had 10 (18 for 2018) support questions sent by email to the SMA and they mainly concerns downloads, format and/or questions about higher resolutions.

We know that the model has been used for illustrations in articles and books as well as for use in a number of student theses. A quick search (google scholar) gives at hand that the paper that was written when the model was presented has been cited more than 15 times in scientific articles. A Google Scholar search for "baltic sea bathymetry database" gives 101 (87 last year) hits for articles referencing to that phrase.

2.3.Use of OGC services

The WMS service is 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 161,353 (106,980 year 2019, 100,758 year 2018, 102,324 year 2017, 37,689 year 2014, 46,847 year 2015 and 42,875 year 2016), This is only an indication and not an actual number of requests, but indicates a significant increase in the number of calls.

The HELCOM map portal (uses ESRI server) can still not make use of external WMS services and for that reason redistributes the BSBD by themselves and we do not know the frequency of users on that service.

3. Work Group participants

Mr. Hans Öiås has during the last year been acting as the Chair of the WG.
The activity during the year has been low.

The current WG members and points of contact is:

Country	Name	E-mail address
Denmark	Jens Peter Weiss Hartmann (Used as point of contact)	jepha@gst.dk
Estonia	Peeter Väling Signe Paevere	peeter.valing@vta.ee signe.paevere@vta.ee
Finland	Juha Tiihonen Leila Rapeli	juha.tiihonen@traficom.fi Leila.Rapeli@traficom.fi
Germany	Jűrgen Monk	juergen.monk@bsh.de
Latvia	Normunds Duksis	normunds.duksis@lhd.lv
Lithuania	Emilis Tertelis (Used as points of contact)	emilis.tertelis@ltsa.lrv.lt
Poland	Witold Stasiak	w.stasiak@ron.mil.pl
Russia	(No contact person appointed)	main@gunio.ru
Sweden	Hans Öiås	Hans.oias@sjofartsverket.se

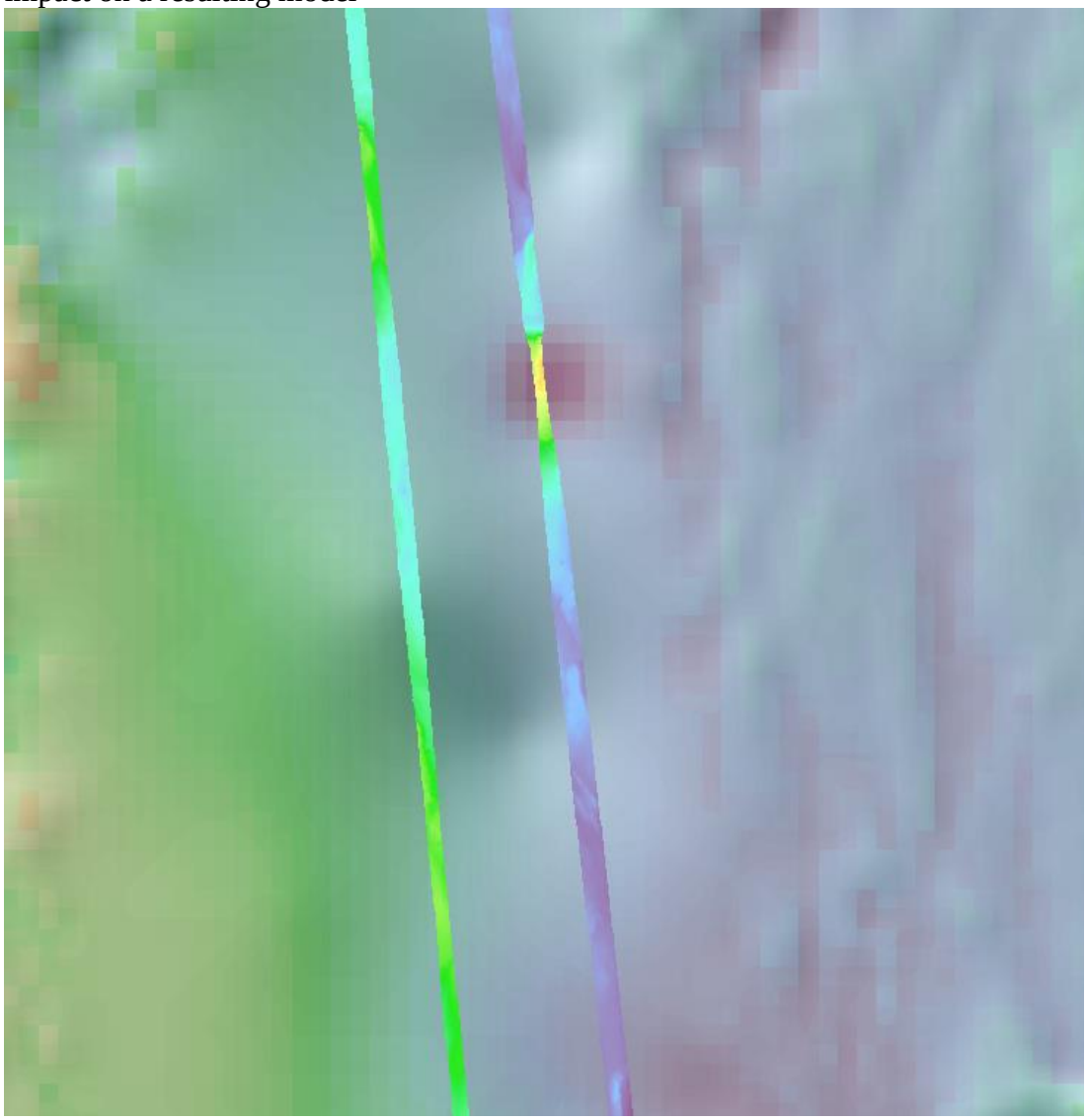
Denmark, Lithuania and Russia have not appointed participants for the WG.

4. Performed work

During the last year we have continued the work in SMA to set up a production line and instructions for creation of BSBD, as well as EMODNet regional contribution. This will lead to that we in the future will not be as dependant on individual resources in the future for updates.
The updated BSBD 500m grid has not yet been published on the website and includes the Lithuanian dataset. A published open dataset over the Kaliningrad area has been found and will be used instead of the old GEBCO information that shows a rather flat interpolated area. The model will be drastically improved due to a high grade of new data compared to the version 0.9.3.

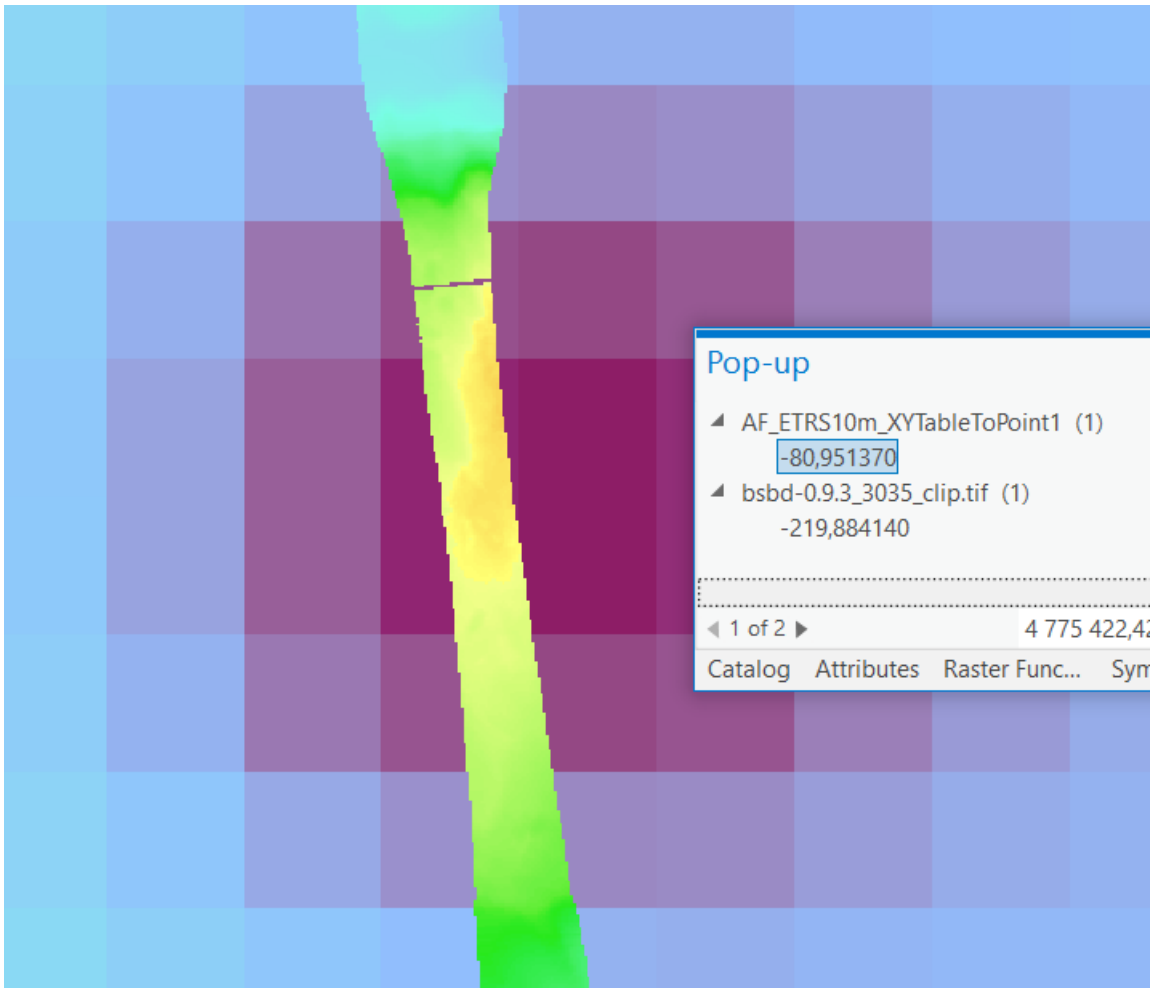
We are simultaneously also working on a 200m model using the same datasets that was used by SMA for the EMODNet High Resolution Bathymetry. This is as far as reasonable to go, for a homogenous model, without too high degree of interpolation except for the Estonian and German waters, where higher resolutions is available and no financial or legal restrictions exist. Even though the EMODnet HRSM model seems to have higher resolution (115x57.5m at LAT 60deg.), it is still built on the same source data and gets an uneven distribution as it is not based on a projected grid.
The plan is to provide both the 500 and the 200m from the BSBD portal.

For the sparsest area in the Swedish part of the Sea of Bothnia, described in the previous report a few survey lines has been made during transit and the results has a significant impact on a resulting model



Figur 1Two transit lines over the sparsely surveyed area overlayd on BSBD 0.9.3

The area above is in the present plan aimed to be surveyed 2021, but two lines in the centre part of it has been surveyed during transit to other survey areas. The largest difference found is 140m compared to an existing old plummet sounding.



BSBD 0.9.3 as backgroud and the new survey line on top.

If the charted depth from the old plummet is totally wrong, or if such depth really exists in near vicinity can only be proven when the entire area has been surveyed.

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.
No delivery to GEBCO has been made during the last year but will be done when a new model has been published.

6.2.EMODnet

A delivery has been made for the coming EMODnet High Resolution Seabed Mapping model that is planned for publication by the end of October.
SMA as well as Germany and Latvia are partners in the EMODnet “High Resolution Seabed Mapping” (phase III). SMA has the role of coordinator for the Baltic and BSH for the North Sea.

7. Future plans

Publishing of the updated 500m model and after that to publish a 200m model that is less smoothed and interpolated than the Emodnet model.
The new version will also cover the Norwegian areas of Skagerrak and include the data delivered from Lithuania and the published dataset for the Kaliningrad area.
An updated coastline is planned to be used after the publication of the 200m resolution grid.

We have on our development environment prepared to include the basin borders and names for presentation in the portal, but these have yet not been converted to polygons as needed for the publication.

- In a future revision of BSBD to include at least data from Russian ENC cells, if and when that will be delivered/allowed by the Russian HO.
- We still hope to get better, un-modelled dataset from Denmark in higher resolution than 500m grid from Denmark as it also restricts the modelling accuracy, especially for the positioning of the depths due to different projections.
- Optimization of the production tools and documentation.
- Compile and provide additional bathymetric layers with higher resolution where the data providers and legislation permit (Germany and Estonia).
- Enhance the coastline for cutting, masking and presentation in the portal.

8. Actions for the BSHC 25th Conference

The BSHC 23d Conference is requested to:

1. Note this report