



EMODnet



European Marine
Observation and
Data Network

EMODnet Thematic Lot n ° 0 - Bathymetry - High Resolution Seabed Mapping (HRSM2)

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Start date of the project: 20/12/2020 - (24 months)

EMODnet Phase IV – Quarterly Progress Report (1)

Reporting Period: 01/01/2021 – 31/03/2021



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1. Highlights in this quarter

- **Task 1 - Maintain and improve a common method of access to data held in repositories:**
During the reporting period, the number of survey data sets has increased slightly from 30560 to 30723 CDI entries and the number of Composite DTM entries has increased from 203 to 207. Gathering and population of new survey data sets will soon start again as part of the new contract for which it is planned to bring in many new data sets in the period till September 2021. This will also concern survey data sets, composite DTMs and Satellite Derived Bathymetry (SDB) files for the Caribbean Sea region, which has been added as a new region for EMODnet Bathymetry.
- **Task 2 - Construct products from one or more data sources that provide users with information about the distribution and quality of parameters in time and space:**
Following all the work undertaken by the data providers and basin coordinators to gather and produce gridded dataset and integrate them into basin compilations, these have been integrated in the final product (20/12/2020) which was made available for final checks and testing to the members of the consortium. The new **2020 version of the EMODnet DTM** has been officially released on 13th January 2021 in sync with the GEBCO week and Map the Gaps symposium. Compared to the 2018 release, a total of **16.260** unique references to CDI entries and Composite DTMs entries are used in the overall DTM versus **9.456** in the 2018 version. The DTM is an integration of eleven regional DTMs which were prepared by regional basin coordinators, after selecting and merging pre-gridded and pre-processed datasets as received from data providers. The 2020 DTM is also available with 3D visualisation, while 2020 DTM tiles can be downloaded in several formats, and including a version with MSL vertical reference next to LAT.

The **High Resolution DTM layer** has been expanded with an additional **49 HR-DTMs**, now covering **245 HR-DTMs** which can be viewed and downloaded. Related metadata has been populated in a special section of the the Sextant Products Catalogue. The resolution of HR-DTMs varies between 1/32 and 1/512 arc minutes, depending on local data policy of data providers. The HR-DTMs allow to zoom deeper than the common DTM layer and can be interrogated for metadata and downloaded.

Furthermore, the **quality index** analysis has resulted in an improved source reference layer in the Bathymetry viewer with quality indication by means of maps for 'age', 'vertical precision', 'horizontal precision', 'purpose', and 'combined' whereby the last one is resulting from an algorithm combining the earlier four indicators.

Task 2 activities by data providers for processing and pregridding new survey data sets and composite DTMs using the GLOBE software will start in September 2021 with a training workshop, also to be joined by the regional coordinators, to refresh how to use GLOBE software and to give instructions on the upgraded functionality of GLOBE. The preparation of data input by data providers for the regional DTMs will continue till end 2021, so that the regional coordinators can work on the compilation and generation of the 12 regional DTMs early 2022 till summer 2022. While, integration and publication of the new 2022 EMODnet DTM is then planned in the period after summer 2022 till end 2022. Activities by data providers for additional HR-DTMs are planned to take place in the first half of 2022.

End 2020, early 2021, Deltares has concluded its work on generating a new release of the best-estimate digital coastlines for different tidal reference levels (LAT (Lowest Astronomical Tide), MSL

(Mean-Sea-Level), and MHW (Mean-High-Water)). These satellite derived coastlines can be viewed as an extra layer in the Bathymetry Viewing service which also allows downloading them as vector shapefiles. The 2020 version now covers the entire coastline of Europe. The production process has been summarized in a report which can be retrieved from the EMODnet Bathymetry portal. For the new contract, Deltares will update and refine the best-estimate European digital coastlines for the 3 vertical levels. This concerns further optimizing of the applied methodology, the GTSM tidal model, and introducing use of new data sources, such as the ICESat-2 satellite. It This will also include preparing best-estimate coastlines for selected islands in the Caribbean Sea region.

End 2020, the inventory of national legal baselines and coastlines of EU member states has been updated and made available on the EMODnet Bathymetry portal. The total number of countries covered in the inventory has been expanded from 21 to 26. For the new contract, Deltares will maintain this inventory of national baselines and coastlines,

Finally, Deltares and CNR-ISMAR will establish a high-resolution tidal bathymetry for the Venice Lagoon and surroundings in the Northern part of the Adriatic Sea. These intertidal areas have a great influence on the tidal energy dissipation and improving bathymetry in these areas can be very beneficial for improving hydrodynamic models.

Upgrading of GLOBE software is planned by Ifremer in the coming months, following a list of requirements as collected from consortium members, based upon earlier experiences during the previous contract. The upgrading will also include refining of the interpolation algorithms as developed by CORONIS, that are integrated in GLOBE. Furthermore, IFREMER will work on making the Collaborative Virtual Environment (CVE) at the DATARMOR HPC facility fit for visualising and inspecting regional DTMs by regional coordinators as a way for improving the regional DTM workflow. This is planned to be ready by November 2021 so that regional coordinators can then start to review and annotate the latest regional 2020 DTMs for anomalies and other issues for improvement.

- **Task 3 - Develop procedures for machine-to-machine connections to data and data products:**

The present EMODnet Bathymetry portal and its services have many features for providing a gateway to data, metadata and data products. These are combined with web services, such as OGC services for sharing map layers of the EMODnet DTM and sharing locations and metadata of survey data sets (CDI service) and composite DTMs (Sextant catalogue service). In the new contract, there is a migration planned from thematic portals to one central portal, which will become the one-stop-shop for EMODnet products and services. While, thematic groups will continue to be responsible for the gathering of data sets, generation of their products and the provision of web services and API's which will feed the EMODnet central portal. To find a suitable solution for this migration challenge, there have been 2 technical meetings with the EMODnet Central Portal team, at 21st January 2021 and 4th March 2021, and a meeting with EU DG MARE and EASME contact persons, at 10th February 2021 to present the specific features of EMODnet Bathymetry and ideas how these could be fitted into the draft plan for the Central portal. A further technical meeting took place with EU and CP team at 9th April 2021 and ahead of the meeting EMODnet Bathymetry drafted and distributed a technical document to elaborate its vision. An important aspect is that EMODnet Bathymetry has several added functionalities in its map viewer that should come back in the central portal map viewer service in order not to go down in functionality and user satisfaction. Moreover, use is made of the established SeaDataNet CDI and Sextant services, which

will continue to perform in the new situation for data discovery and access, and thereby will be considered as external systems, supporting EMODnet. While, the data products will be included in the central products catalogue and download service, together with their associated metadata. From these meetings, the feeling is that there is alignment of all 3 parties on the way forward and the EU has arranged extra GIS expertise and capacity to develop added GIS functionalities at the central portal, thereby adopting and possibly adapting the software scripts as developed and handed over by EMODnet Bathymetry. These scripts work on top of the web services that will be continued by EMODnet Bathymetry.

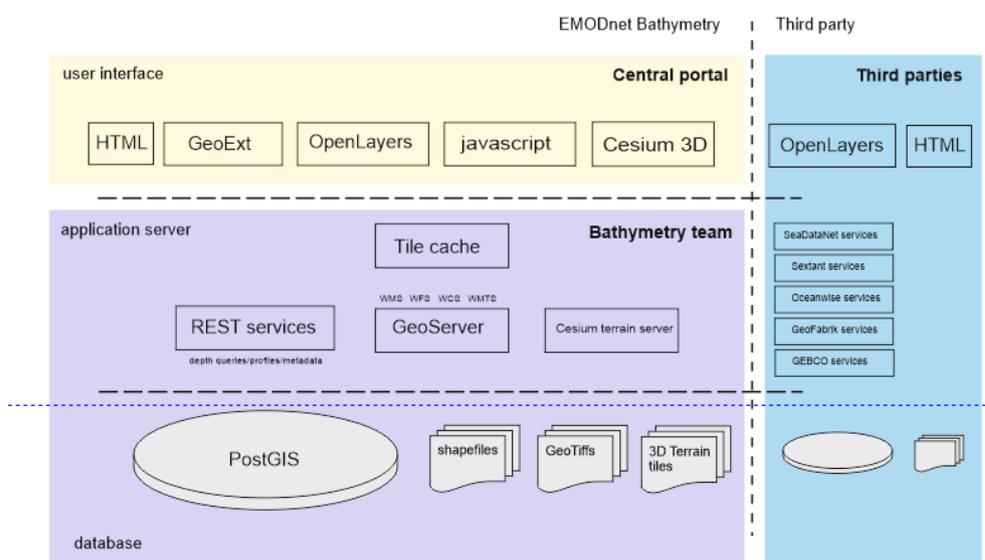


Figure: proposed architecture of interaction between EMODnet Bathymetry services, external services, and the map viewer user interface at the Central portal.

The CP team and GIS expert are currently studying the handed over software scripts and documentation, whereby the EMODnet Bathymetry team is stand-by for technical questions and support.

- **Task 4 - Contribute data, data products and content to a central portal that allows users to find, view and download data and data products:**

This will be a follow-up from the migration activities as described above under Task 3. A start has been made with preparing a set of XML metadata files for describing DTM tiles and later also HR-DTM files, which will be integrated in the data products catalogue service at the central portal. Once operational, there will be an update with every new release of the EMODnet DTM and its HR-DTMs, which currently happens each 2 years.

- **Task 5 - Contributing content to dedicated spaces in Central Portal:**

The CP team will set-up dedicated spaces at the Central Portal for each thematic group, whereby there will be later a joint maintenance by CMS in a staging process. For starters, EMODnet Bathymetry has prepared a full copy, both in HTML and as database of texts, images, and

documents, to the EMODnet Secretariat for preparing a site map, and taking over information for the Bathymetry thematic space at the Central portal. It is expected, that EMODnet Bathymetry will be consulted for further progress and final publishing overtime. Once operational, EMODnet Bathymetry team will provide new and updated content, where required and appropriate.

- **Task 6 - Ensure the involvement of regional sea conventions:**

There are good relationships with the secretariats of the Regional Sea Conventions who are kept up-to-date of the EMODnet Bathymetry services and products, and where possible, engaged in wider promotion and contributing to mobilising more potential data providers.

- **Task 7: Contribute to the implementation of EU legislation and broader initiatives for open data:**

The consortium consists of organisations that have relevant international networks and are well acquainted with international cooperation, also aiming at international interoperability. This includes relationships concerning standards such as: ISO, OGC, INSPIRE, SeaDataNet, IHO, IOC, and ODIP. It also includes relationships concerning collection and sharing of metadata, data and DTMs such as: GEBCO, IBCAO, BSBD, NSBD, NOAA-NCEI as part of Galway declaration. Leading partners of the consortium are involved in SeaDataCloud, Blue-Cloud, EOSC, and other European digital initiatives and projects, and will interact with these developments, to the benefits of EMODnet Bathymetry. This can be done by presentations at conferences and workshops, by dedicated meetings, and by joint projects. Considering the major experience and adoption of EMODnet Bathymetry of Satellite Derived Bathymetry, tidal bathymetry, and complexity of coast – land interfaces, EMODnet Bathymetry will also strive for synergy and cooperation with CMEMS, combining digital bathymetry, topography, and hydrodynamic models for exploring joint initiatives, for instance for dynamic coasts. In this respect, also EMODnet Geology will be interested. Synergy could lead to uptake of the EMODnet DTM in CMEMS models.

Members of the EMODnet Bathymetry consortium have been involved in meetings jointly organised between EMODnet thematic lots and Copernicus Marine Services to foresee collaborations between both groups on possible joint products. A potential axis of convergence identified by CMEMS concerns the estimation of bathymetric depth for coastal areas from satellite information. EMODnet Bathymetry informed that it already is undertaking major efforts for many years integrating both in-situ (single and multibeam sensor data) and remote sensing data (LIDAR, satellite data) and its national bathymetry expertise as national hydrographic services and hydrographic research departments to generate and provide coastal bathymetry as accurate as possible. CMEMS has issued a questionnaire to explore interest of users in possible additional products, which results are being awaited by EMODnet Bathymetry for further discussion.

EMODnet Bathymetry members are regularly discussing technical matters with GEBCO / Seabed 2030 counterparts. EMODnet Bathymetry has released its latest version of the full DTM during the GEBCO / Seabed 2030 “Map the gaps” conference week, illustrating the ongoing intense collaboration between the two groups. As before done for the previous grid, the 2020 EMODnet full DTM will be included in the next release of the GEBCO grid to be generated in mid-2021. Thanks to the delivery of web services, the inventory of worldwide bathymetric data held by the IHO Data Centre for Digital Bathymetry, has been automatically updated with new datasets from the EMODnet contribution. Promotion of EMODnet at different IHO related commission has

raised interest for new data providers to join the group. Discussion are notably undergoing with the Icelandic Coast Guards and the Spanish Hydrographic Service.

INSPIRE compliance for all EMODnet Bathymetry OGC web services, both from the CDI service and the Bathymetry Viewing and Download service components is satisfied. The latest validation by the EMODnet Secretariat indicates that EMODnet Bathymetry now has a full score. This will be maintained.

Also, the metadata and data gridding methodology developed as part of EMODnet Bathymetry has been successfully adopted by Chinese colleagues as part of EMOD-PACE project.

- **Task 8 - Monitor quality / performance and deal with user feedback:**

The overall performance of the portal and its services is continuously measured and its results are reported in the separate indicators spreadsheet. It demonstrates that the Bathymetry portal and its services and products continue to be highly popular and in great demand for a wide range of user applications. Also, several user feedback questions were received and answered by the helpdesk. The user questions received and answered are detailed in chapter 3 and Annex 1.

- **Task 9 - Maintain the existing thematic web portal for a maximum of six months from the start of the project:**

As always, activities are undertaken for maintaining the existing EMODnet Bathymetry portal. In the reporting period, several new releases of products took place, which required updates and new information on the portal.

- **Project management:**

As follow-up to the signing of the new contract by EU and Shom, valid from 20 December 2020 for 2 years period, preparations were made for the consortium agreement for consortium partners and subcontracts for subcontractors. The drafts have been finalised and all members have been requested to sign the relevant documents which is now underway. A core group meeting was organised and held at 8th March 2021 to prepare for the Kick-off meeting and associated Training Workshop for the new contract and full consortium which were planned for 7 – 9 April 2021.

Status of the Milestones and Deliverables listed in the workplan

Milestone/Deliverable	WP	Date due	Status (Delivered/Delayed)	If Delayed: reason for delay and expected delivery date
D1.1: Quarterly concise progress reports	WP1	M4, M7, M10, M13, M16, M19, M24,	M4 delivered	
D1.2: Annual Interim report	WP1	M12		
D1.3: Final report	WP1	M24		
D1.4: Plan for service continuity, incl. docs and sources	WP1	M24		
D2.1: Upgraded guidelines for data pre-processing	WP2	M3	M4 delivered	

and population of metadata				
<i>D2.2i: Training Workshop for data pre-processing and metadata population</i>	WP2	M3	M4 delivered	
D2.3: Pre-processed survey data sets and included in CDI Service	WP2	M12	Striving for M8	
D2.4: Pre-processed composite DTMs and included in Sextant service	WP2	M12	Striving for M8	
D2.5: Satellite Derived Bathymetry data sets and included in Sextant Service	WP2	M12	Striving for M8	
D3.1: Upgraded guideline of EMODnet methodology for DTM production, including using prototype CVE	WP3	M8		
<i>D3.2i: Upgraded Globe software</i>	WP3	M8		
<i>D3.3i: Training and intercalibration Workshop</i>	WP3	M11	Striving for M9	
<i>D3.4i: Processed and pre-gridded data sets as input for RDTMs</i>	WP3	M14	Striving for M12	
<i>D3.5i: Regional DTMs with common resolution of 1/16 arc minutes grid</i>	WP3	M17		
<i>D3.6i: Best version HR DTMs for coastal waters and hotspots</i>	WP3	M20		
D3.7: New EMODnet DTM incl Quality Index and loaded in EMODnet web services for viewing and downloading	WP3	M23		
D3.8: HR-DTMs loaded as separate layer in EMODnet web services for viewing and downloading	WP3	M23		
D3.9: Source reference layer to link to CDI and Sextant Catalogue services	WP3	M23		
D3.10: Refined best-estimate European digital	WP3	M22		

coastlines for a range of vertical levels at the portal				
D3.11: Updated Inventory of existing and ratified baselines and registered claims / disputes under UNCLOS, for European countries at the portal	WP3	M20		
D3.12: Tidal bathymetry for Venice Lagoon	WP3	M23		
D4.1: Standard machine-to-machine services delivered for common functionalities	WP4	M3	M1 delivered	
D4.2: Dedicated machine-to-machine services adapted / delivered for special functionalities	WP4	M6		
<i>D4.3i: CVE adapted for handling review of RDTMs</i>	WP4	M14	Striving for M11	
<i>D4.4i: Globe software + GGSGC workbench upgraded with extra functionality</i>	WP4	When required		
D5.1: Operational Help-desk	WP5	continuously		
D5.2: Monitoring data about visits and usage	WP5	continuously		
D5.3: Promotional material and up-to-date thematic space at central portal	WP5	continuously		
D5.4: Presentations at relevant conferences	WP5	regularly		

Note: deliverables indicated with *Dx.xi* are internal deliverables which will not be published externally nor handed over to EU as project deliverables.

2. Identified issues: status and actions taken

A. Priority issue(s) identified and communicated by EASME/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
EM-126 Bathymetry to report on number and volume of downloaded data and data products by 6th of January	Resolved	Report as requested	6/1/2021	5/1/2021
EM-136 Inverted Atlas Style on bathymetry DTM WMS request	Resolved	Inverted style	15/01/2021	30/03/2021
EM-147 Bathymetry Source Reference Layer Problem	Resolved	Precision given	28/01/2021	29/01/2021
EM-148 Request to increase level of detail in EMODnet Bathymetry	Resolved	11 zoom levels conform with OGC WMTS service.	28/01/2021	01/02/2021
EM-162 Issue in information display for the mean depth in multi-colour layer	Pending	Further investigation needed	22/02/2021	01/05/2021
EM-140 and EM-169 Bathymetry Quality of Service Monitoring	Continuous	EMODnet Bathy conforms to Service Requirements	20/01/2021	-
EM-180 Inconsistent WMS layer name for EMODnet DTM	Resolved	Intermittent issue, Geoserver service restarted. Problem seems to be resolved	29/03/2021	30/03/2021

B. Issues / challenges identified by the thematic assembly group itself				
Priority issue / challenge	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
After release of the new 2020 EMODnet DTM it appeared that some coastal stretches along Sardinia, Liguria, and Sicily had wrong coastal bathymetry.	Resolved	Communication between GGSGC, MARIS, CNR, and IIM revealed that some IIM data sets had been delivered and processing with wrong depth convention (+/-), giving the wrong bathymetry. This was corrected by GGSGC,	asap	25/01/2021

		using the right convention, reproducing part of the DTM and releasing an updated DTM tile for the area in 8 formats.		

3. User feedback (Contact Us form, online chat & other communication means)

Overview of user feedback and/or requests received in this quarter							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query: resolved/pending	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
6 Jan 2021	Company, Quiet Oceans, France	Question about possible map shift. There was issue with land mask which was solved.	Email feedback form	Five days later, because of checks with colleagues	Resolved	Explanation given and problem solved	
6 Jan 2021	Company, Quiet Oceans, France	Question about download options.	Email feedback form	Same day	Resolved	Checked and explanation given	
11 Jan 2021	?, France	Question about quality index.	Email feedback form	Same day	Resolved	Explanation given	
7 Jan 2021	?, Portugal	Remarks about quality of bathymetry for Azores.	Email feedback form	One week later because of checks with colleagues	Resolved	Explanation given	
12 Jan 2021	University of Catalunya, Spain	Problem with downloaded DTM tile.	Email feedback form	Same day	Resolved	Explanation given	

13 Jan 2021	Research Institute, NOC, United Kingdom	Problem with downloading	Email feedback form	Same day	Resolved	Explanation given	
14 Jan 2021	University, Instituto Politécnico de Setúbal, Portugal	Question about negative/positive depths and issue with depth profile function, which was solved.	Email feedback form	Five days later, because of checks with colleagues	Resolved	Explanation given and problem solved in software	
15 Jan 2021	National Metrology Institute, United Kingdom	Question about downloading and WCS function	Email feedback form	Same day	Resolved	Explanation given	
16 Jan 2021	?,?	Alert about issues with new DTM for part of Sardinia and Sicily coast. Was an error in processing, which was repaired and gave a new release of the 2020 DTM.	Email feedback form	Same day	Resolved	Problem analysed and solved and colleague thanked for this alert	
28 Jan 2021	Research Institute, Observatoire Océanologique de Villefranche sur Mer, France	Question about availability of HR data for Arctic fjords.	Email feedback form	Five days later, because of checks with colleagues	Resolved	Checked and info provided from IBCAO	
4 March 2021	Research Institute, TNO, The Netherlands	Question about downloading for specific area.	Email feedback form	Same day	Resolved	Explanation given	

3 March 2021	?,?	Question about availability of wrecks data	Email feedback form	Same day	Resolved		
4 March 2021	National Research Institute of Astronomy and Geophysics (NRIAG), Egypt	Question about downloading bathymetry for Eastern Mediterranean	Email feedback form	Same day	Resolved	Explanation given	
8 March 2021	Research Institute, LNEG, Portugal	Issue with WMS service. Solved for the user.	Email feedback form	Same day	Resolved	Checked and solved	
8 March 2021	University, WUR, The Netherlands	Issue with WCS service. Solved for the user.	Email feedback form	Same day	Resolved	Explanation given	
9 March 2021	Company, OceanExplorer / Norway	Questions about how to download bathymetry and the EMO format.	Email feedback form	Same day	Resolved	Explanation given	
17 March 2021	Company, IBM, ?	Question about the legend of RGB colours.	Email feedback form	Five days later, because of checks with colleagues		Explanation given	
23 March 2021	Research Institute, RBINS, Belgium	Question about MSL version of DTM.	Email feedback form	Next day	Resolved	Explanation given	

See ANNEX for more details

4. Meetings/events held/attended & planned

A. Meetings/events organised and attended					
Date	Location	Type event (internal or external meeting, training/workshop)	Indicate if a ppt was given (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
16 January 2021	WebConf	External, GEBCO committees and symposium	Yes presenting EMODnet Bathymetry and release of new DTM	A	Mapping the Gaps conference with IHO, GEBCO, and Seabed 2030
21 January 2021	WebConf	External meeting with Central Porta team about migration	Yes to present present services and products and ideas for migration	A	Technical members + CP team
10 February 2021	WebConf	External meeting with DG MARE and EASME about migration and our vision	Yes to present present services and products and ideas for migration	A	Technical members + DG MARE + EASME
4 March 2021	WebConf	External meeting with Central Porta team about migration	Yes to present present services and products and ideas for migration	A	Technical members + CP team
8 March 2021	WebConf	Internal meeting with project core group	Yes, about Work Plan and WPs where needed for discussion	O	Core members present to prepare for plenary kick-off meeting and overall planning
SUM				O	Total # of meetings organised = 1
SUM				A	Total # of meetings attended = 4

B. Meetings/events planned in the future				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
7 - 9 April 2021	WebConf	Internal Project Kick-off meeting and Training Workshop	O	Kick-off to discuss overall workplan
10 April 2021	WebConf	External meeting with EU and Central Portal team about migration	A	Alignment on vision and way forward
12-14 April 2021	WebConf	International Conference on Marine Data and Information Systems	A	Promoting bathymetric data management

5. Communication assets

A. Communication products				
Date	Communication material	Short description (of the material, title, ...) of the asset	Main results	Name of event at which material was disseminated (if applicable)
13 January 2021	Public release of the new EMODnet DTM	https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/press-release-emodnet-bathymetry_jan2021_final.pdf	Informing our data users and potential new users of the existence of this new DTM.	Map the Gaps conference and EMODnet promotion channels

B. Planned communication products			
Date	Communication material	Short description (of the material, title, ...) and/or link to the asset	Main results expected

List of known publications using EMODnet data or data products

Date	Type and name of journal, conference, ...	Publication title including DOI (if known)	Author(s)	Organisation(s)
01/2021	<i>Frontiers in Earth Science</i>	Marine Sedimentary Carbon Stocks of the United Kingdom's Exclusive Economic Zone https://doi.org/10.3389/feart.2021.593324	Smeaton, C., Hunt, C. A., Turrell, W. R., & Austin, W. E.	University of St Andrews, United Kingdom
01/2021	<i>Journal of Marine Science and Engineering</i> , 9(2), 208.	Dynamical Downscaling of ERA5 Data on the North-Western Mediterranean Sea: From Atmosphere to High-Resolution Coastal Wave Climate. https://doi.org/10.3390/jmse9020208	Vannucchi, V., Taddei, S., Capecchi, V., Bendoni, M., & Brandini, C.	LaMMA Consortium, Italy
01/2021	<i>Deep Sea Research Part I: Oceanographic Research Papers</i> , 103475.	Megabenthic assemblages on bathyal escarpments off the west Corsican margin (Western Mediterranean). https://doi.org/10.1016/j.dsr.2021.103475	Grinyó, J., Chevaldonné, P., Schohn, T., & Le Bris, N.	Sorbonne Université, CNRS, France
01/2021	<i>Earth System Science Data Discussions</i>	An Integrated Marine Data Collection for the German Bight—Part II: Tides, Salinity and Waves (1996–2015 CE). https://doi.org/10.5194/essd-2021-45	Hagen, R., Plüß, A., Ihde, R., Freund, J., Dreier, N., Nehlsen, E., ... & Kösters, F.	Federal Waterways Engineering and Research Institute, Germany
01/2021	<i>Master's thesis</i> ,	<i>Use of Machine Learning techniques for the study of the distribution of the fin whale (Balaenoptera physalus) on the Catalan Coast</i>	Tort Castro, B.	Universitat Politècnica de Catalunya
01/2021	<i>Frontiers in marine science</i>	CMEMS-based coastal analyses: conditioning, coupling and limits for applications. 10.3389/fmars.2021.604741	Sánchez-Arcilla Conejo, A., Staneva, J., Cavaleri, L., Espino Infantes, M., & Mestres Ridge, M.	Universitat Politècnica de Catalunya, BarcelonaTech (UPC), Spain
01/2021	<i>Journal of Quaternary Science</i> .	Timing and pace of ice-sheet withdrawal across the marine–terrestrial transition west of Ireland during the last glaciation. https://doi.org/10.1002/jqs.3295	Ó Cofaigh, C., Callard, S. L., Roberts, D. H., Chiverrell, R. C., Ballantyne, C. K., Evans, D. J., ... & Sacchetti, F.	Durham University, UK
01/2021	<i>In : Guide to Maritime Informatics (Artikis, Zissis (eds))</i> https://doi.org/10.1007/978-3-030-61852-0_2	Navigating the ocean of publicly available maritime data	Tzouramanis, T.	University of Tessaly, Greece

01/2021	<i>Journal of the Marine Biological Association of the United Kingdom</i>	Preliminary observations on abundance and distribution of fish fauna in a canyon of the Bay of Biscay (ICES Division 8c). https://doi.org/10.1017/S0025315420001265	Diez, G., Arregi, L., Basterretxea, M., Cuende, E., & Oyarzabal, I.	Azti- Basque Research and Technology Alliance, Spain
01/2021	<i>Biological Invasions</i> , 1-20.	Unaided dispersal risk of <i>Magallana gigas</i> into and around the UK: combining particle tracking modelling and environmental suitability scoring. https://doi.org/10.1007/s10530-021-02467-x	Wood, L. E., Silva, T. A., Heal, R., Kennerley, A., Stebbing, P., Fernand, L., & Tidbury, H. J.	Centre for Environment Fisheries and Aquaculture Science, UK
01/2021	<i>Lithosphere</i>	Morphostructural Setting and Tectonic Evolution of the Central Part of the Sicilian Channel (Central Mediterranean) https://doi.org/10.2113/2021/7866771	Civile, D., Brancolini, G., Lodolo, E., Forlin, E., Accaino, F., Zecchin, M., & Brancatelli, G.	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale (OGS), Italy
01/2021	<i>Diversity and Distributions</i>	Specific niche requirements underpin multidecadal range edge stability, but may introduce barriers for climate change adaptation. https://doi.org/10.1111/ddi.13224	Firth, L. B., Harris, D., Blaze, J. A., Marzloff, M. P., Boyé, A., Miller, P. I., ... & Hawkins, S. J.	University of Plymouth, UK
01/2021	<i>Frontiers in Earth Science</i>	Testing Tsunami Inundation Maps for Evacuation Planning in Italy. https://doi.org/10.3389/feart.2021.628061	Tonini, R., Di Manna, P., Lorito, S., Selva, J., Volpe, M., Romano, F., ... & Vittori, E.	Istituto Nazionale di Geofisica e Vulcanologia, Italy
01/2021	<i>Quaternary Science Reviews</i>	Late Quaternary coastal uplift of southwestern Sicily, central Mediterranean sea. https://doi.org/10.1016/j.quascirev.2021.106812	Ferranti, L., Burrato, P., Sechi, D., Andreucci, S., Pepe, F., & Pascucci, V.	University Federico II, Italy
01/2021	<i>Frontiers in Earth Science</i>	Broadband Q-Factor Imaging for Geofluid Detection in the Gulf of Trieste (Northern Adriatic Sea). https://doi.org/10.3389/feart.2021.640194	Vesnaver, A., Böhm, G., Buseti, M., Dal Cin, M., & Zgur, F	National Institute of Oceanography and Applied Geophysics–OGS, Italy
01/2021	<i>BÖLÜM XIV</i>	A Bayesian Network Based Decision Support System Proposal for The Prevention of Ship Accidents in The Bosphorus	Esra Yağdır Çeliker	İstanbul Bilgi Üniversitesi, Turkey
01/2021	<i>Natural Hazards and Earth System Sciences</i>	Assessing the impact of explosive eruptions of Fogo volcano (São Miguel, Azores) on the tourism economy.	Medeiros, J., Carmo, R., Pimentel, A., Vieira, J. C., & Queiroz, G.	Centro de Informação e Vigilância Sismovulcânica dos Açores, Portugal
01/2021	<i>Report of the EU INTERREG Joint Monitoring Programme for Ambient Noise North Sea</i>	Assessment North Sea.	Kinneging, N., & Tougaard, J.	Rijkswaterstaat, The Netherlands

01/2021	<i>Earth and Planetary Science Letters</i>	Destructive episodes and morphological rejuvenation during the lifecycles of tectonically active seamounts: Insights from the Gorrige Bank in the NE Atlantic. https://doi.org/10.1016/j.epsl.2021.116772	Gamboa, D., Omira, R., Piedade, A., Terrinha, P., Roque, C., & Zitellini, N.	IPMA, Portugal
01/2021	<i>Rapport fra havforskningen.</i>	Havforskningsinstituttets rådgivning for menneskeskapt støy i havet- Kunnskapsgrunnlag, vurderinger og råd for 2021.	Sivle, L. D., Forland, T. N., de Jong, K., Kutti, T., Zhang, G., Wehde, H., & Grimsbø, E.	HAVFORSKNINGSINSTITUTTE TS, Norway
01/2021	<i>Rapport</i>	Occurrences connues des espèces indicatrices d’Ecosystèmes Marins Vulnérables de Méditerranée.	Menot, L., Fabri, M. C., & Vaz, S.	Ifremer, France
01/2021	<i>ESSOAr</i>	Predicting dominance of sand transport by waves, tides and their interactions on sandy continental shelves. https://doi.org/10.1002/essoar.10505948.1	King, E. V., Conley, D. C., Masselink, G., & Leonardi, N.	University of Plymouth, UK
01/2021	<i>Journal of Marine Science and Engineering</i>	Towards Least-CO2 Ferry Routes in the Adriatic Sea. https://doi.org/10.3390/jmse9020115	Mannarini, G., Carelli, L., Orović, J., Martinkus, C. P., & Coppini, G.	Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy
01/2021	<i>Geosciences</i>	An object-based image analysis approach using bathymetry and bathymetric derivatives to classify the seafloor. https://doi.org/10.3390/geosciences11020045	Koop, L., Snellen, M., & Simons, D. G.	Delft University of Technology, The Netherlands
02/2021	<i>The Journal of the Acoustical Society of America</i>	<i>Noise of underwater explosions in the North Sea. A comparison of experimental data and model predictions.</i> https://doi.org/10.1121/10.0003754	Salomons, E. M., Binnerts, B., Betke, K., & von Benda-Beckmann, A. M.	TNO Acoustics and Sonar, The Netherlands
02/2021	<i>Earth System Science Data Discussions</i>	An Integrated Marine Data Collection for the German Bight—Part I: Subaqueous Geomorphology and Surface Sedimentology. Discussion paper in review	Sievers, J., Milbradt, P., Ihde, R., Valerius, J., Hagen, R., & Plüß, A.	Smile Gmbh, Germany
02/2021	<i>Engineering Geology</i>	A geotechnical stratigraphy for the shallow subsurface in the Southern Central Graben, North Sea. https://doi.org/10.1016/j.enggeo.2021.106089	Prins, L. T., & Andresen, K. J.	Aarhus University, Denmark
02/2021	<i>Frontiers in Marine Science</i>	A Relocatable Ocean Modeling Platform for Downscaling to Shelf-Coastal Areas to Support Disaster Risk Reduction https://doi.org/10.3389/fmars.2021.642815	Trotta, F., Federico, I., Pinardi, N., Coppini, G., Causio, S., Jansen, E., ... & Masina, S.	University of Bologna, Italy
02/2021	<i>Marine Policy</i>	Deep-sea trawling off the Portuguese continental coast—Spatial patterns, target species and impact of a prospective EU-level ban. https://doi.org/10.1016/j.marpol.2021.104466	Campos, A., Henriques, V., Erzini, K., & Castro, M.	IPMA, Portugal

02/2021	<i>Environmental Pollution.</i>	Preliminary results on the occurrence and anatomical distribution of microplastics in wild populations of <i>Nephrops norvegicus</i> from the Adriatic Sea. https://doi.org/10.1016/j.envpol.2021.116872	Martinelli, M., Gomiero, A., Guicciardi, S., Frapiccini, E., Strafella, P., Angelini, S., ... & Colella, S.	National Research Council – Institute of Marine Biological Resources and Biotechnologies, Italy
02/2021	<i>Marine and Petroleum Geology, 128, 104999.</i>	Oblique plate collision and orogenic translation of the Southern Apennines revealed by post-Messinian interregional unconformities in the Bradano Basin (Ionian Sea-Central Mediterranean). https://doi.org/10.1016/j.marpetgeo.2021.104999	Basso, J., Artoni, A., Torelli, L., Polonia, A., Carlini, M., Gasperini, L., & Mussoni, P.	University of Parma, Italy
02/2021	<i>Renewable and Sustainable Energy Reviews</i>	Prospects of renewable energy as a non-rivalry energy alternative in Libya https://doi.org/10.1016/j.rser.2021.110852	Almaktar, M., & Shaaban, M.	Karabuk University, Turkey
02/2021	<i>Geosciences</i>	Inverted Basins by Africa–Eurasia Convergence at the Southern Back-Arc Tyrrhenian Basin. https://doi.org/10.3390/geosciences11030117	Loreto, M. F., Palmiotto, C., Muccini, F., Ferrante, V., & Zitellini, N.	CNR, Marine Sciences Institute, Italy
02/2021	<i>Marine and Petroleum Geology</i>	Siliciclastic and bioclastic contouritic sands: Textural and geochemical characterisation. https://doi.org/10.1016/j.marpetgeo.2021.105002	de Castro, S., Miramontes, E., Dorador, J., Jouet, G., Cattaneo, A., Rodríguez-Tovar, F. J., & Hernández-Molina, F. J.	Royal Holloway Univ. London, UK
02/2021	<i>Морской гидрофизический журнал</i>	Сезонная и вертикальная изменчивость энергии течений в субмезомасштабном диапазоне на шельфе и в центральной части Черного моря. https://doi.org/10.22449/0233-7584-2021-1-41-56	Пузина, О. С., Кубряков, А. А., & Мизюк, А. И.	Marine Hydrophysical Institute, Russian Academy of Sciences Russian Federation, Russia
02/2021	<i>Science Advances.</i>	Deep-sea predator niche segregation revealed by combined cetacean biollogging and eDNA analysis of cephalopod prey DOI: 10.1126/sciadv.abf5908	Visser, F., Merten, V. J., Bayer, T., Oudejans, M. G., de Jonge, D. S. W., Puebla, O., ... & Hoving, H. J. T.	University of Amsterdam, The Netherlands
02/2021	<i>Future Science Brief 6 of the European Marine Board Report</i>	Reassessing Eastern Mediterranean tectonics and earthquake hazard from the AD 365 earthquake. https://doi.org/10.31223/X5H036	Ott, R. F., Wegmann, K. W., Gallen, S. F., Pazzaglia, F. J., Brandon, M. T., Ueda, K., & Fassoulas, C.	ETH Zurich, Switzerland
02/2021	<i>Sedimentary Geology</i>	Depositional mechanism of the upper Pliocene-Pleistocene shelf-slope system of the western Malta Plateau (Sicily Channel). https://doi.org/10.1016/j.sedgeo.2021.105882	Todaro, S., Sulli, A., Spatola, D., Micallef, A., Di Stefano, P., & Basilone, G.	University of Palermo, Italy

02/2021	<i>Journal of Maps</i>	Applying planetary mapping methods to submarine environments: onshore-offshore geomorphology of Christiana-Santorini-Kolumbo Volcanic Group, Greece. https://doi.org/10.1080/17445647.2021.1880980	Huff, A. E., Nomikou, P., Thompson, L. A., Hooft, E. E., & Walker, I. J.	Arizona State University, USA
02/2021	<i>Aquatic Conservation: Marine and Freshwater Ecosystems.</i>	Evaluating the distribution of priority benthic habitats through a remotely operated vehicle to support conservation measures off Linosa Island (Sicily Channel, Mediterranean Sea). https://doi.org/10.1002/aqc.3554	Romagnoli, B., Grasselli, F., Costantini, F., Abbiati, M., Romagnoli, C., Innangi, S., ... & Tonielli, R.	Università di Bologna, Italy
02/2021	<i>EarthArXiv</i>	A database of submarine landslides offshore West and Southwest Iberia.	Gamboa, D., Omira, R., & Terrinha, P.	IPMA, Portugal
02/2021	<i>Journal of Geophysical Research: Oceans</i>	Long-term observations reveal environmental conditions and food supply mechanisms at an Arctic deep-sea sponge ground. https://doi.org/10.1029/2020JC016776	Hanz, U., Roberts, E. M., Duineveld, G., Davies, A., van Haren, H., Rapp, H. T., ... & Mienis, F.	NIOZ Royal Netherlands Institute for Sea Research and Utrecht University, The Netherlands
02/2021	<i>Deep Sea Research Part I: Oceanographic Research Papers,</i>	Mediterranean seascape suitability for <i>Lophelia pertusa</i> : Living on the edge. https://doi.org/10.1016/j.dsr.2021.103496	Matos, F. L., Company, J. B., & Cunha, M. R.	University of Aveiro, Portugal
02/2021	<i>Marine Pollution Bulletin,</i>	Prediction of marine mammal auditory-impact risk from Acoustic Deterrent Devices used in Scottish aquaculture. https://doi.org/10.1016/j.marpolbul.2021.112171	Todd, V. L., Williamson, L. D., Jiang, J., Cox, S. E., Todd, I. B., & Ruffert, M.	Ocean Science Consulting Limited, UK
02/2021	<i>Journal of Quaternary Science.</i>	Pattern, style and timing of British-Irish Ice Sheet advance and retreat over the last 45 000 years: evidence from NW Scotland and the adjacent continental shelf. https://doi.org/10.1002/jqs.3296	Bradwell, T., Fabel, D., Clark, C. D., Chiverrell, R. C., Small, D., Smedley, R. K., ... & Cofaigh, C. Ó.	British Geological Survey, UK
03/2021	<i>Marine Policy</i>	The use of a spatial model of economic efficiency to predict the most likely outcomes under different fishing strategy scenarios. https://doi.org/10.1016/j.marpol.2021.104499	Vilela, R., Pennino, M. G., Rodriguez-Rodriguez, G., Ballesteros, H. M., & Bellido, J. M.	Instituto Español de Oceanografía, Spain
03/2021	<i>Marine Geophysical Research</i>	Oceanographic control of the submarine landslides of the northern Galicia Area (Bay of Biscay, NE Atlantic). https://doi.org/10.1007/s11001-021-09433-1	León, R., Martínez-Carreño, N., García-Gil, S., Rengel, J. A., Giménez-Moreno, C. J., & Reguera, I.	Instituto Geológico y Minero de España (IGME), Spain
03/2021	<i>Geosciences</i>	Dynamics of Stone Habitats in Coastal Waters of the Southwestern Baltic Sea (Hohwacht Bay). https://doi.org/10.3390/geosciences11040171	von Rönn, G. A., Krämer, K., Franz, M., Schwarzer, K., Reimers, H. C., & Winter, C.	Kiel University, Germany

03/2021	<i>Environmental Research Communications.</i>	Characterising industrial thermal plumes in coastal regions using 3-D numerical simulations. https://doi.org/10.1088/2515-7620/abf62e	Faulkner, A., Bulgin, C. E., & Merchant, C. J.	University of Reading, United Kingdom
03/2021	<i>Plos one</i>	Spatial heterogeneity of <i>Pelagia noctiluca</i> ephyrae linked to water masses in the Western Mediterranean. https://doi.org/10.1371/journal.pone.0249756	Pastor-Prieto, M., Bahamon, N., Sabatés, A., Canepa, A., Gili, J. M., Carreton, M., & Company, J. B	Institut de Ciències del Mar (ICM-CSIC), Spain
03/2021	<i>Mediterranean Marine Science</i>	New records of rare species in the Mediterranean Sea	SANTIN, A., AGUILAR, R., AKYOL, O., BEGBURS, C. R., BENOIT, L., CHIMIANTI, G., ... & TIRALONGO, F.	Institut de Ciències del Mar (ICM-CSIC), Spain
03/2021	<i>NAŠE MORE: znanstveni časopis za more i pomorstvo, 68(2), 110-119.</i>	Comparison and Analysis of Publicly Available Bathymetry Models in the East Adriatic Sea. https://doi.org/10.17818/NM/2021/2.7	Vrdoljak, L.	Hydrographic Institute of the Republic of Croatia
03/2021	<i>Marine Geophysical Research</i>	3D crustal-scale structure of the West Iberia margin: a novel approach to integrated structural characterization of passive margins. https://doi.org/10.1007/s11001-021-09432-2	Granado, C., Muñoz-Martín, A., Olaiz, A. J., Fernández, O., & Druet, M.	Complutense University, Spain
03/2021	<i>Master Thesis</i>	Rogue waves in the Dutch North Sea: An experimental study into the occurrence of extreme waves due to abrupt depth transitions at future offshore wind farm locations along the Dutch coast. https://doi.org/10.4121/14301455	Doeleman, M.	TU Delft, The Netherlands
03/2021	<i>Biogeosciences</i>	Organic carbon densities and accumulation rates in surface sediments of the North Sea and Skagerrak. https://doi.org/10.5194/bg-18-2139-2021	Diesing, M., Thorsnes, T., & Bjarnadóttir, L. R.	Geological Survey of Norway, Norway
03/2021	<i>European Journal of Taxonomy</i>	Two new tanaidaceans (Crustacea: Peracarida) from Portuguese submarine canyons (NE Atlantic, West Iberian Margin). https://doi.org/10.5852/ejt.2021.740.1281	García-Herrero, Á., Esquete, P., & Cunha, M. R.	Universidade de Aveiro, Portugal
03/2021	<i>Aquatic Conservation: Marine and Freshwater Ecosystems.</i>	Drivers for spatial modelling of a critically endangered seabird on a dynamic ocean area: Balearic shearwaters are non-vegetarian. https://doi.org/10.1002/aqc.3542	de la Cruz, A., Ramos, F., Navarro, G., Cózar, A., Bécares, J., & Arroyo, G. M.	Cádiz University, Spain
03/2021	<i>Pure and applied geophysics</i>	The 30 October 2020 Aegean Sea tsunami: post-event field survey along Turkish coast. https://doi.org/10.1007/s00024-021-02693-3	Dogan, G. G., Yalciner, A. C., Yuksel, Y., Ulutaş, E., Polat, O., Güler, I., ... & Kânoğlu, U.	Middle East Technical University, Ankara, Turkey
03/2021	<i>Physical Oceanography</i>	Seasonal and Vertical Variability of Currents Energy in the Sub-Mesoscale Range on the Black Sea Shelf and in Its Central Part. https://doi.org/10.22449/1573-160X-2021-1-37-51	Puzina, O. S., Kubryakov, A. A., & Mizyuk, A. I.	Marine Hydrophysical Institute of RAS, Sevastopol, Russian Federation

03/2021	<i>Rudarsko-geološko-naftni zbornik</i>	BATIMETRIJSKA I GEOLOŠKA SVOJSTVA JADRANSKOGA MORA. https://doi.org/10.17794/rgn.2021.2.9	Vrdoljak, L., Režić, M., & Petričević, I.	Hydrographic Institute of the Republic of Croatia, Croatia
03/2021	<i>Estuarine, Coastal and Shelf Science</i>	A comprehensive study of the tides around the Welsh coastal waters. https://doi.org/10.1016/j.ecss.2021.107326	Horrillo-Caraballo, J. M., Yin, Y., Fairley, I., Karunaratna, H., Masters, I., & Reeve, D. E.	Swansea University, UK

6. Monitoring indicators

Comments on the progress indicators in the excel template		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	Matomo/ other (Please state which monitoring tool was used to collate the information in each case)	For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of new regional DTMs and new EMODnet DTM which was released in January 2021. The increase is part of completing source references for the new released DTM. The new project has started and data providers are tasked with populating new data sets in the coming 6 months. This should become visible in the next quarterly reports.
B) Usage of data in this quarter		Considerable increase in number of downloaded CDIs compared to previous quarter. Possibly due to release of new EMODnet DTM. Also number of users increased to 52 from 33 in previous quarter.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		Early 2021 the new EMODnet DTM 2020 has been released, which is made available for downloading in DTM tiles and with 8 different formats. Moreover, 45+ HR-DTMs have been released on top of the existing 200+ as part of the 2020 release.
B) Usage of data products in this quarter		A major increase in downloading, and very large volume, altogether nearly 2 TerraBytes, which must be due to the new releases of the EMODnet DTM and HR-DTMs. Also the number of WMS request doubled compared to the previous quarter.
3. Organisations supplying/approached to supply data and data products within this quarter		For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of new regional DTMs and new EMODnet DTM which was released in January 2021. The increase is part of completing source references for the new released DTM. The new project has started and data providers are tasked with populating

		new data sets in the coming 6 months. This should become visible in the next quarterly reports.
4. Online 'Web' interfaces to access or view data		No changes
5. Statistics on information volunteered through download forms		Bathymetry is used by all sectors and for many applications as it provides basis information. A lot of users do not give details about themselves, unless they use Marine-ID in the download forms.
6. Published use cases		EMODnet Bathymetry has a steady number of use cases which all receive attention from users
8.1. Technical monitoring		The portal has a very good and stable response time and overall a very good up time (100%).
8.2. Portal user-friendliness (Visual harmonization score)		Nearly 100% score; only a minor remark
9. Visibility & Analytics for web pages		As expected and targeted, the pages related to the "EMODnet bathymetry viewing and Download Service" have the highest score and this traffic is very stable, like also other sections and services. This means that users spent the most time browsing and interacting with the viewing service which as many functions and overall is the most interesting product and service that EMODnet Bathymetry has to offer. From there, users also undertake downloading of DTM tiles which has a continuous high score of circa 8000 – 10000 downloaded DTM files per quarter. Latest quarter even 15.000 downloads.
10. Visibility & Analytics for web sections		This indicator shows the interest of users for specific sections of the website, excluding the Bathymetry Viewing and Download service. Strangely enough, it seems that the helpdesk receives most attention, which could be an error in the colour used as it is more to expect that the CDI pages receive that attention. Although many feedback forms are received through the helpdesk, their numbers are far lower than the reported page views here, which needs to be validated.

<p>11. Average visit duration for web pages</p>		<p>Average visit duration is erratic, ranging from few seconds to 2:30 minutes. The interpretation of this diagram is complex as it might be interpreted in terms of user's interest but also as difficulty to understand the concept described on the web page.</p>
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The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo. In some cases, numbers from other monitoring systems may also be reported (e.g. Awstats, Google Analytics), and if so, must be reported in the table above. Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken when interpreting absolute numbers or comparing results from different tools. It is often more sensible to consider trends over time collected by the same monitoring tool.

7. Annex: Other documentation attached

Feedback Questions and Answers

Subject: Re: EMODnet Bathymetry Feedback form

Date: Tue, 12 Jan 2021 12:04:57 +0100

From:

To: Dick M.A. Schaap <dick@maris.nl>

Dear Dick,

Thanks for your answer. The data release of December 2020 that I've downloaded does the job, great !

Best regards.

Le 11/01/2021 à 17:37, Dick M.A. Schaap a écrit :

Dear ...,

Following your earlier feedback, I have discussed it with one of my colleagues. It appears that the land mask is the issue: somehow, we applied an incorrect masking of the land. However, the bathymetry is correct and at the right locations, while the DTM tiles also only contain the bathymetry data. We just released a new December 2020 version of the EMODnet DTM in which the land mask issue should have been solved. Please have a look at the new release and download the 2020 DTM tiles.

Kind regards

Dick

On 1/6/2021 10:49 AM, Roger GALLOU wrote:

Hi Dick,

Here attached some screenshots in PDF format. Please let me know if you need another format or more informations.

Le 06/01/2021 à 10:42, Dick M.A. Schaap a écrit :

Dear ...,

Thanks for your interest in EMODnet Bathymetry. Please provide some screenshots to illustrate your issue. I can then involve my colleagues for analysing the reported issue.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 1/6/2021

10:35 AM,

wrote:

Name

Email

Feedback /
Question

Hello, We are very interested in the remarkable work on Emodnet bathymetry. By directly displaying a tile (eg: D6_2018 or E4_2018) on QGIS mapping software, we wonder about the following observation : it seems that the information is shifted in latitude from the coastline (at least one cellule on south). It doesn't seem to be a projection problem. I have screenshots or more information available if needed. Can you answer us on this point? Thanking you in advance, very cordially.

Subject: Re: EMODnet Bathymetry Feedback form

Date: Wed, 6 Jan 2021 10:44:45 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ..,

The only way is to go through the shopping - download mechanism as we also keep track of downloads, users, and their motivations. There is no alternative FTP facility.

Kind regards
Dick

On 1/6/2021 10:38 AM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

Hello, Is there a way to download the 64 tiles of the Emodnet 2018 dataset all at once or from a single address, for example an FTP site (by declaring yourself if necessary)? Thank you. Best regards.

Subject: Re: EMODnet Bathymetry Feedback form

Date: Mon, 11 Jan 2021 17:33:10 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear,

Thank you for your interest in EMODnet Bathymetry. I have asked around about your question to one of my colleagues who has produced the Quality Index layers. His answer: The combined QI is the result of the average of the other individual QIs without any ponderation. This provides a value (no meaning other than a percentage of quality, I would say), indicating the relative quality of each of the sources (between themselves).

I would suggest to have a look at the individual QI indicators, derived from a physical classification. It might be that depending on the targeted use of the information one of the QI has more meaning than an other (for example in a dynamic environment, eg sand dunes field, the QI relative to the Date of the survey has a very important meaning). While designing the QI values, we also wanted to provide a "one value synthesis" (combined QI) without preempting the type of use that the user was about to do with our data product and the associated QI.

BTW: We have just released the latest December 2020 version of the DTM which also includes new QI layers as a lot of new surveys and composite DTMs have been incorporated in the latest version. Compared to the previous 2018 version we used 16.361 data sets versus circa 9.400 for the previous. The QI is derived from the metadata of the data sets as you can read in the QI methodology document at:

https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/emodnet_bathymetry_quality-index_application_version12022019.pdf

Kind regards
Dick M.A. Schaap
Technical Coordinator

Your feedback:

Name:

Emailaddress:

Feedback:

Good morning, I don't understand what means the legend of the Quality Index for combined. The value are 0-46.1/46.1-61.5 etc...I couldn't find anywhere what these values corresponded to thank you for your help.

Subject: EMODnet Bathymetry Feedback form

Date: Mon, 18 Jan 2021 08:22:45 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear,

Thank you for your interest in EMODnet Bathymetry. Concerning your remarks about the quality of the DTM for the Azores, I have consulted my colleagues in order to investigate the matter. First of all, in general terms, in case of

data quality issues, we advise users to make use of the Source Reference layer to actually check and give us the id's of the data sets that they believe are not good enough. Also, if the artifacts they refer to, are within the areas covered by GEBCO, then there is very little we can do about it as we have no actual survey data available to us. Our policy so far has not been to digitize nautical charts, but to make use of surveys and derived composite DTMs, while using GEBCO in case of no data coverage. Unfortunately, GEBCO is generally poor in coastal waters and also its resolution is low. We smooth the transition of GEBCO into survey derived grid cells, but if the difference is too big this may look somewhat unnaturally but from a modelling point of view it is better than having vertical walls in the data. Zooming in on the Azores case: analyzing the source data sets, we can see that the areas along the coast in the Azores islands are covered by data from GEBCO, with the exception of some hydrographic survey data sets. The following images show this.

Even if we had considered depths extracted from nautical charts, in the case of the Azores and as we can see in the following image, the data source in referred areas is very old and comes from leadline surveys. We believe that it would not be a significant improvement. Having a representation of the seabed near the coastline with less accuracy does not happen only in the Azores but also in other regions, which is why we have been making an effort to fill these areas with high resolution data. Unfortunately, we have not yet achieved greater coverage of this data. However, IHPT (Hydrographic Institute of Portugal) expects to be able to provide more multibeam data sets in some coastal areas in Azores so that in the next version of the EMODnet DTM (2022), the GEBCO data will be replaced by data sets with better resolution. It is also important to note that the resolution of the EMODnet DTM allows to represent the seabed of European regions in a way that has never been achieved before, but it is not an appropriate resolution for any purpose.

Finally, we appreciate very much your feedback as a user and with possible local knowledge, as we are committed to providing any improvements that can be implemented. Moreover, if you are aware or in possession of additional data sets, please make an effort to submit these for use in EMODnet Bathymetry. This can be done, following the instructions at:

<https://www.emodnet-bathymetry.eu/data-products/how-can-i-contribute>

Kind regards,

Dick M.A. Schaap

Technical Coordinator

On 1/7/2021 4:55 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

The bathymetry presented in this EMODNET version for various Azores island shelves is very poor. Non-negligible artefacts are present notably around the islands of Graciosa (NW and W sector), São Jorge (northern sector), Faial (western sector), Pico (northern and southern sectors) and São Miguel (northern sector). The non-inclusion of (too) recent multibeam surveys in the data compilation does not explain the artefacts. In fact the mere utilisation of older nautical chart information would have been sufficient to more truthfully represent these areas. This renders the current version inadequate to derive any trustworthy geomorphological information for the areas mentioned. I would suggest a correction request be made in preparation of future versions and a warning be issued in the meantime.

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 12 Jan 2021 20:08:32 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear

Thank you for your interest in EMODnet Bathymetry

Can you be more precise how and what you downloaded? Is it a DTM tile from a specific year and format or a WCS clip or did you use the CDI service to download a survey file? Please explain so that we can make a better check what might went wrong

Kind regards
Dick M.A. Schaap
Technical Coordinator

Op 12 jan. 2021 om 19:21 heeft noreply@maris.nl het volgende geschreven:

Name

Email

Feedback / Question Good evening, I have tried to download from my Mac and Window laptop a bathymetry from the beach of Badalona (Spain) and when I download the ASCII archive says in TextEdit program: "format ArcGrid is not supported for this coverage" and has no data at all. Also in windows says there is an error. What's the problem? Thank you!

Subject:Re: EMODnet Bathymetry Feedback form

Date: Wed, 13 Jan 2021 15:01:06 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ...

I have tried myself to download several HR-DTMs and new DTM 2020 tiles and in all cases the download URLs work very well. Can you please try again. Maybe it was a temporary glitch.

If it continues, please tell us which files you are trying to download.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 1/13/2021 2:30 PM, noreply@maris.nl wrote:

Name

Email

Feedback / Question Good afternoon, I am attempting to download high resolution areas, I request them and receive the email link with 'download now' but then get: 'This site can't be reached The webpage at <https://rest.emodnet-bathymetry.eu/file/S58MLr6AXtXfZSpeosRkMnFP> might be temporarily down or it may have moved permanently to a new web address. ERR_INVALID_RESPONSE' Am I doing something wrong or is there an issue with these downloads please? Many thanks,

Subject:Re: EMODnet Bathymetry Feedback form

Date: Tue, 19 Jan 2021 13:49:55 +0000

From:

To: Dick M.A. Schaap <dick@maris.nl>

Great news! Thank you.

Regards,

On Jan 19, 2021, at 09:32, Dick M.A. Schaap <dick@maris.nl> wrote:

Dear ,

The depth profile is 'normal' again as you would expect. Please do delete your history in your browser to empty your cache, before trying.

Kind regards

Dick

On 1/18/2021 1:08 PM, Tanya Silveira wrote:
Thank you for the explanation Dick.
I hope you are able to correct it soon.
Regards,

De: Dick M.A. Schaap <dick@maris.nl>
Enviado: 18 de janeiro de 2021 11:51:38
Para:
Assunto: Re: EMODnet Bathymetry Feedback form

Dear ,
This year we published the 2020 DTM and with this changed our convention. This had implications for the depth profile, which we will correct asap, so that the depthline wil go down if deeper instead of up.
Kind regards
Dick

On 1/18/2021 10:08 AM, .. wrote:
Dear Dick Schaap,

Thank you for your feedback and explanation.
Then I have another question regarding the profile depth display. I have used the tool many times over the last years with my students and the depth has always been displayed in negative values, providing a more intuitive way of viewing the ocean floor. Somehow, in the past 2 months, the display changed to portray depths in positive values. Is there a reason for this? Can it be changed?

Thank you again.
Kind regards,

On Jan 18, 2021, at 07:00, Dick M.A. Schaap <dick@maris.nl> wrote:

Dear ..,
Thank you for your interest in EMODnet Bathymetry. Concerning your question: the setting only affects the "select depth" option, not the depth profile.

Kind regards,
Dick M.A. Schaap
Technical Coordinator
Kind regards

On 1/14/2021 8:07 PM, noreply@maris.nl wrote:

Name
Email

Feedback / Question Hi, I am having difficulty in changing the depth representation from positive to negative in the "configure map" box under the Settings option on the "viewing and download service". After selecting the "negative" option, the depth profile tool still displays depths as positive. I appreciate your help.

Subject:RE: EMODnet Bathymetry Feedback form
Date: Mon, 18 Jan 2021 15:11:53 +0000
From:
To: Dick M.A. Schaap <dick@maris.nl>

Dear Dick,
Thank you very much for your reply. I can download data over the area of interest now. It's really appreciated!

Best regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 18 January 2021 14:21
To: ...
Subject: Re: EMODnet Bathymetry Feedback form

Dear ,
Can you try again. The ESRI ASCII option for Area of Interest (WCS service) should work again as required.
Will hear from you.

Kind regards
Dick

On 1/18/2021 1:35 PM, Dick M.A. Schaap wrote:

Dear ,
We also get your error and will look into this. We will keep informed.
Kind regards

Dick

On 1/18/2021 11:03 AM, Lian Wang wrote:

Dear Dick,
Thanks for your help.

The area I selected was small, so there was no warning. The format I selected was ESRI ASCII. The attached file from the download shows the following message:

```
<?xml version="1.0" encoding="UTF-8"?><ServiceExceptionReport version="1.2.0" > <ServiceException  
code="InvalidParameterValue" locator="format">  
    format ArcGrid is not supported for this coverage  
</ServiceException></ServiceExceptionReport>
```

Kind regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 18 January 2021 09:13
To: ...
Subject: Re: EMODnet Bathymetry Feedback form

Dear ,
Thanks for this information. The areas of interest can only have a limited coverage as it otherwise takes too much capacity for the WCS service to generate the data file. Therefore, try to make smaller areas and then it should work. In the download option, when making an area of interest, you see a message: Area of interest too large! OR Select product format. The latter means you will be able to download after specifying your format.

Kind regards
Dick

On 1/18/2021 9:44 AM, Lian Wang wrote:

Dear Dick,
Thank you very much for your reply.
I did not use the DTM tile since the size of the file is too large. I was able to select an Area of interest to download successfully in the past, but not this time. I downloaded D4 over the weekend (about 7-8 hours).
Kind regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 15 January 2021 17:23
To: ...
Subject: EMODnet Bathymetry Feedback form

Dear

Can you inform me which DTM tiles you were trying to download? We just updated the system with DTM 2020 tiles. Maybe something is not functioning properly. Will hear from you and possibly a screenshot?

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 1/15/2021 6:01 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

I had downloaded bathymetric data before, but was not able to download again this time with a number of attempts

Subject:Re: EMODnet Bathymetry Feedback form

Date: Wed, 10 Feb 2021 07:40:09 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ...,

All should be ok now. Thanks again for your early warning which allowed us to correct the situation on short term after the launch of the new release.

Kind regards

Dick

----- Forwarded Message -----

Subject:Re: EMODnet Bathymetry Feedback form

Date: Wed, 27 Jan 2021 08:45:37 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

Well noticed. However, we are still correcting a few items in the downloadable tiles, so please wait with downloading. Once settled, I am going to write to all users that have downloaded DTM tiles from the Central Mediterranean since its launch. Thanks again for your timely feedback, because that really triggered this corrective measures.

Kind regards,

Dick

PS: For not looking possible cache, please delete your browser history, if needed.

On 1/27/2021 8:27 AM, wrote:

Dear Dick,

thank you for your clarifying reply. I have just checked the bathymetry online and the issue seems to be fixed. I can see meaningful bathymetric values even inside small bays in Western Sardinia. Have you already corrected the bathymetry?

All the best,

Il giorno lun 18 gen 2021 alle ore 13:26 Dick M.A. Schaap <dick@maris.nl> ha scritto:

Dear ..,

Thank you for your interest in EMODnet Bathymetry and also for your email, which triggered an analysis at our side. It appears that a number of surveys as delivered by one of our data providers in coastal areas, were inverted depths and as such in combination with interpolations between these and GEBCO have resulted in creating new land. This not only happened West Sardinia, but also West Sicily and some parts along the Ligurian coast. For that purpose, we

are working on correcting the data sets and the further steps for the Central Med areas, which will take a few weeks overall. We will keep you informed, once we republish the corrected 2020 DTM with layers and downloadable tiles. Thanks to your message, this error has been found on short term after the new release. Overall, we apologise for the error and its results, because this should have been found earlier in our workflow. Although, humans can make mistakes, and we can learn from this.

Kind regards

Dick M.A. Schaap

Technical Coordinator EMODnet Bathymetry

On 1/16/2021 8:54 AM, noreply@maris.nl wrote:

Name

Email

Feedback / Question Hi, I see that in Western Sardinia the coastal bathymetry is really bad in accuracy. I mean, I have land (negative depths) few hundred of meters from the shoreline... Why?

Subject:EMODnet Bathymetry Feedback form

Date: Wed, 3 Feb 2021 08:27:12 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

Thank you for your interest in EMODnet Bathymetry.

I have forwarded your question to the IBCAO coordinator, who is a member of our EMODnet Bathymetry team: Martin Jakobsson of Stockholm University. His answer is as follows:

1: Kongsfjorden: There are data available at 50x50 m resolution, which are used in IBCAO from:

<https://dybdedata.kartverket.no/>

However, from where the coordinate was on the north east Kong Karls Foreland, there are not data, likely because it is very shallow.

2: Isfjorden: New data has come in at 50x50 m resolution from where the coordinate is at:

<https://dybdedata.kartverket.no/>

3. Inglefieldbukta: I cannot find any new data other than the single beam we used in IBCAO Version 4.0.

We are updating IBCAO now and hence also the next EMODnet DTM (end 2022) so all new data will come in. There will also be several improvements around Svalbard,

--

I hope this helps.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 1/28/2021 6:17 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

Hi: As part of the FACE-IT project, we are working on Arctic fjords. I have explored the EMODNET bathymetry but it seems that there are no high-res (better than IBCAO) data for the 3 fjords of interest (coordinates below). Do you confirm that? Many thanks in advance. Best regards, "Kongsfjorden", "Isfjorden", "Inglefieldbukta" lon1 = c(11, 12.95, 18.04) lon2 = c(12.69, 15.78, 18.58) lat1 = c(78.86, 78.04, 77.92) lat2 = c(79.1, 78.43, 77.82)

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 4 Mar 2021 14:25:05 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

Thanks for your interest in EMODnet Bathymetry.

The DTM is available as DTM tiles in different formats by means of the Bathymetry Viewing and Download service:

<https://portal.emodnet-bathymetry.eu/>

The way to operate the shopping service is explained in the HELP file:

<https://portal.emodnet-bathymetry.eu/help/help.html>

For the NCP you need to select the relevant DTM tiles and their format type and then submit your download request. This is the only way as the area is too large for the OGC WCS service.

You will receive then an email with download link by which you can download the DTM files of your selected data format and later load these in a standard GIS system for your further processing.

Hope this helps.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 2/23/2021 4:06 PM, noreply@maris.nl wrote:

Name

Email

Feedback / Question I would like to download the latest EMODnet bathymetry data for the dutch continental flat + a buffer of 15km but this area is too large for the downloader. Is there any other way to obtain this?

Subject:Re: EMODnet Bathymetry Feedback form

Date: Thu, 4 Mar 2021 12:58:47 +0100

From:

To: Dick M.A. Schaap <dick@maris.nl>

Thank you for your quick reply.

My best regards,

Le jeu. 4 mars 2021 à 12:54, Dick M.A. Schaap <dick@maris.nl> a écrit :

Dear ,

Thank you for your interest and appreciation of EMODnet Bathymetry.

Unfortunately we cannot provide you the wrecks data for download as the wrecks layer is provided to us by an external party: OceanWise. If you are interested, you might contact them: mike.osborne@oceanwise.eu

Kind regards

Dick M.A Schaap

Technical Coordinator

On 3/3/2021 8:31 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback: Thank you very much for this excellent work and sharing data. Please just one question can I access to Wrecks data. I need it for fisheries management.

Subject:EMODnet Bathymetry Feedback form

Date: Thu, 4 Mar 2021 12:46:49 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

Thanks for your interest in EMODnet Bathymetry.

The DTM is available as DTM tiles in different formats by means of the Bathymetry Viewing and Download service:

<https://portal.emodnet-bathymetry.eu/>

The way to operate the shopping service is explained in the HELP file:

<https://portal.emodnet-bathymetry.eu/help/help.html>

For the Eastern Mediterranean you need to select the relevant DTM tiles and their format type and then submit your download request. This is the only way as the area is too large for the OGC WCS service.

The DTM tiles should be sufficient if you are using standard GIS packages. The tiles are downloaded by thousands of users and without having issues with loading and analysing, so it should also work for you.

Kind regards,

Dick M.A. Schaap

Technical Coordinator

/2021 9:30 AM, noreply@maris.nl wrote:

Name

Email

Feedback / Question Dear Sir or Madam, Thanks for make the bathymetry data open access. I am interested in the eastern Mediterranean basin (long min 20 max 37, lat min 30 max 37), I have tried to download it directly but it seems there is a limit for data downloading. Then i have tried to download part by part but it is time consuming and does not give an accurate map in the end. I is it possible to ask for a link that cover the whole area in one time?

Subject:Re: FW: EMODnet Bathymetry Feedback form

Date: Mon, 8 Mar 2021 10:32:39 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

CC:

Dear ,

Good to meet you. I have asked my technical team what might be the issue. Their feedback:

It could be that at some moment there was heavy traffic at one of the geoserver-nodes. The message is a Java error message that the installation goes out of memory. Normally, that server should be taken automatically out of rotation, however it seems this did not happen. Thebn it can happen that one request is processed by a healthy server and next by an erroneous server, which implicates that one request gets OK-response and next an error message.

We will restart the servers and check the logs.Can you inform us at what date and time you found the server to be unresponsive? That will ease our trouble shooting.

I include our technician in charge in CC.

Will hear from you.

Kind regards

Dick

On 3/8/2021 9:49 AM, wrote:

On Mon, Mar 8, 2021 at 8:14 AM Alexandre Neto <alex.f.neto@gmail.com> wrote:

De: **Dick M.A. Schaap** <dick@maris.nl>

Date: segunda, 8/03/2021, 07:06

Subject: Re: FW: EMODnet Bathymetry Feedback form (number 440)

To:

Dear ,

When you enter, <https://ows.emodnet-bathymetry.eu/wms?request=GetCapabilities&service=WMS> you get an XML file which simply works ok. Indeed there is a message on top, but the machine-to-machine ignores that. Have a look at the following page where you see how you can use the web services in interfaces, eg made with OpenLayers:

<https://portal.emodnet-bathymetry.eu/services/>

Note that there are thousands of users of the WMS and they are ok with it.

Indeed the GetCapabilities of the service work, but curiously enough your service does not work if we use QGIS as a WMS client.

What we get is

#####

Could not get WMS capabilities in the expected format (DTD): no WMS_Capabilities or WMT_MS_Capabilities found. This might be due to an incorrect WMS Server URL.

Tag: ServiceExceptionReport

Response was:

```
<?xml version="1.0" encoding="UTF-8"?><ServiceExceptionReport version="1.3.0"
xmlns="http://www.opengis.net/ogc" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.opengis.net/ogc http://ows.emodnet-
bathymetry.eu/schemas/wms/1.3.0/exceptions_1_3_0.xsd"> <ServiceException>
```

```
java.lang.OutOfMemoryError: Java heap space
```

```
Java heap space
```

```
</ServiceException></ServiceExceptionReport>
```

#####

What we have noticed is that we could use your service (in QGIS as client) without issues, then at some point in the past days the service seemed to have stopped to work in fact we were getting the error

```
java.lang.OutOfMemoryError: Java heap space
```

```
Java heap space
```

even when checking the Capabilities from a browser. Then the service started to return the Capabilities again when checking with a browser, but QGIS now still gets the Java error (that is of course sent by the server).

Do you have an idea about what could be happening here? Any chance you could give a try in QGIS too?

with best regards,

keep safe

Subject: Re: EMODnet Bathymetry Feedback form

Date: Mon, 8 Mar 2021 09:40:46 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

Thanks for your interest in EMODnet Bathymetry.

You have used the WCS service. However, that is only for smaller areas. If you really want the bathymetry, then there are 2 options:

1) use the WMs or WMTS services => see:

<https://www.emodnet-bathymetry.eu/data-products/web-services-and-standards>

<https://portal.emodnet-bathymetry.eu/services/>

2) Download the DTM in tiles and then load these into a local GIS system

For this, go to the Bathymetry Viewer and Download service:

<https://portal.emodnet-bathymetry.eu/>

and follow the download instructions in: <https://portal.emodnet-bathymetry.eu/help/help.html>

There are 64 tiles, covering European seas. Each tile is ca 1 GB.

Hope this helps.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 3/8/2021 9:26 AM, noreply@maris.nl wrote:

Name

Email

Hello, Hopefully you are able to help with the following question. Based on:
https://www.emodnet.eu/conference/opensealab/sites/opensealab.eu/files/public/2019/data/OSLII_R_Tutorial_EMODnet.html managed to download bathymetry up to this weekend. The connection used was: <https://ows.emodnet-bathymetry.eu/wcs?service=wcs&version=1.0.0&request=getcoverage&coverage=emodnet:mean&crs=EPSG:4326&BBOX=2,51,7,55.5&format=image/tiff&interpolation=nearest&resx=0.00208333&resy=0.00208333> Today the report in the wcs file gives the following: `<?xml version="1.0" encoding="UTF-8"?><ServiceExceptionReport version="1.2.0" ><ServiceException> java.lang.OutOfMemoryError: Java heap space Java heap space </ServiceException></ServiceExceptionReport>` Admittedly I'm not an expert in this. Do you have any idea what is happening and how to solve this? Thanks in advance. All the best,

Feedback /
Question

Subject: Re: EMODnet Bathymetry Feedback form

Date: Thu, 11 Mar 2021 18:59:32 +0000

From:

To: Dick M.A. Schaap <dick@maris.nl>

Hi Dick,

Thank you so much--this is exactly what I needed to know, I have figured it out now!

Have a great day!

Colleen

--

Colleen Peters | **Marine Technician**

OceanX - RV OceanXplorer 1

Mobile: + 1.203.209.3825

Email: colleen.peters@oceanexplorer.org

<https://oceanx.org/oceanexplorer>

From: Dick M.A. Schaap <dick@maris.nl>

Sent: Thursday, March 11, 2021 11:57 AM

To:

Subject: Re: EMODnet Bathymetry Feedback form (number 442)

Dear ,

EMO is a generic CSV format. All GIS Software allows you to import this and specify the meaning of the different columns. A description of the format is available on the website at:

https://www.emodnet-bathymetry.eu/media/emodnet_bathymetry/org/documents/euco-0901-002_dtm_exchange_format_specification_v1.5.pdf

The EMO format is a regular grid (without GEBCO is however not a complete coverage). It depends a bit on the GIS software used but easiest way is to import the points and grid them in the GIS using 1/16 of an arc minute as resolution. The points represent the center of the grid cell.

Hope this helps.

You can also make use of the OGC Web services in most GIS packages to get a base map. See:

<https://www.emodnet-bathymetry.eu/data-products/web-services-and-standards>

We have OGC services for both EMODnet DTM (European seas) and a World Base Layer (EBWBL) as a composite of EMODnet DTM, GEBCO 2019, and land Satellite derived DTM, worldwide. Demo of EBWBL, see:

<https://tiles.emodnet-bathymetry.eu/preview.html>

I have also a request to you. We are always interested in additional survey data sets and in particular high resolution multibeam surveys. We invite data providers to make use of the EMODnet Ingestion portal (www.emodnet-ingestion.eu) and its Submission service for submitting of open data and metadata, so we can assign these to an expert data centre for elaboration into European marine data infrastructures, in contact with the data provider. This would be a nice way for OceanX to contribute to EMODnet and we will acknowledge this with references in the next EMODnet DTM of EMODnet Bathymetry and use cases at EMODnet Ingestion.

We are in particular interested in additional survey data for data gaps where we currently make use of GEBCO which has its limitations OR areas where we rely on very old data. You can see this at the Source Reference layer and Quality Index layer at the Bathymetry Viewing and Download service.

Hoping to hear from you.

Kind regards,
Dick M.A. Schaap
Technical Coordinator EMODnet Bathymetry
Coordinator EMODnet Ingestion

On 3/10/2021 10:51 PM, Colleen Peters wrote:

Hi Dick,

Thank you so much for your response. I see what you mean--I can download the DTM Tile as an EMO format with no GEBCO data. Can you point me to any resources that explain how to utilize the *.emo format in GIS or Fledermaus or other similar program? I am not sure what to do with this particular format, I have never used it before.

From: Dick M.A. Schaap <dick@maris.nl>
Sent: Wednesday, March 10, 2021 7:12 PM
To:
Subject: Re: EMODnet Bathymetry Feedback form

Dear ..,

Thank you for your interest in EMODnet Bathymetry. The EMODnet DTM is available for downloading in 64 DTM tiles in a range of formats. This can be arranged using the Bathymetry Viewer and Download service at:

<https://portal.emodnet-bathymetry.eu/>

The DTM tiles are generated each 2 years by our bathymetry experts from available data sets from a variety of observation techniques and time frames, such as single and multibeam surveys, LIDAR, others, and nowadays also SDB for several coastal stretches. The used data are indicated in the source reference layer of the DTM product. We are not able to generate other grids on the fly for delivery as you request. We only deliver the composite DTM products as a stable product, fully supported by the source references and their metadata.

Kind regards
Dick M.A. Schaap
Technical Coordinator

On 3/9/2021 11:57 PM, noreply@maris.nl wrote:

Name

Email

Feedback / Question Hello, I would like to download a grid of only multibeam data, no satellite data. Is there a way to do that? I can do that for GEBCO and GMRT, but cannot figure out how to do this for EMOD. Thank you!

Subject:EMODnet Bathymetry Feedback form

Date: Tue, 23 Mar 2021 19:46:16 +0100
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear Simon,

Thank you for your interest in EMODnet Bathymetry. I have forwarded your question to one of our developers and he writes the following: I assume Simon is referring to the WMS services that display RGB images. There is a legend associated with the services. This explains the colours. Because of the hillshade there is no direct relationship between exact RGB colours and depth. The WCS services will give the depth so I advise Simon to use the WCS instead.

The WMS service does have a getfeature info function that should provide depths as well but may be less efficient. If he is referring to the downloadable RGB images (the producttiles), he can also use the legend from the portal. The downloadable GeoTiff files use the rainbow colour scheme but as mentioned, because of the hillshading there is no one to one match between colour and depth. For the downloadable products I advise to use one of the other formats for the actual depths.

Hope this is clear.

Kind regards

Dick M.A. Schaap

Technical Coordinator

On 3/17/2021 3:17 PM, noreply@maris.nl wrote:

Name:

Emailaddress:

Feedback:

Hi - is there any information mapping the RGB colours from the GeoTIFF to depths, please? I can't see anything in the Help pages of the portal or contained within the download. Many thanks for your help! Simon

Subject:Re: EMODnet Bathymetry Feedback form

Date: Wed, 24 Mar 2021 08:13:47 +0100

From: Dick M.A. Schaap <dick@maris.nl>

To:

Dear ,

A lot of success with adopting your numerical model. Keep us posted if you have good results because that might be good input for a use case interview.

Will hear from you.

Kind regards

Dick

On 3/23/2021 10:09 PM, wrote:

Dear Dick,

Thank you this helps a lot, I'm wondering now how I could miss this, it's written so clearly. I also hope to improve the results a lot, let's se.

Kind regards,

From: Dick M.A. Schaap <dick@maris.nl>

Sent: 23 March 2021 19:55

To:

Subject: EMODnet Bathymetry Feedback form

Dear ,

Thank you for your interest in EMODnet Bathymetry and in particular in using the DTM for your hydrodynamic model. This is done by many modellers, for instance at UK Met Office, Deltares (NL), and others and their results are very positive compared to earlier bathymetries used and derived from nautical charts or GEBCO.

We provide the EMODnet DTM as tiles through the Bathymetry Viewing and Download service in several formats. These are mostly with reference to LAT, but we also are providing one format with reference to MSL: namely the ESRI ASCII (Mean Sea Level) format.

The LAT - MSL correction is derived from the Global Tide Surge Model (GTSM) of Deltares. This model has successfully adopted the EMODnet DTM 2018 and soon will adopt the EMODnet DTM 2020.

Hope this helps you.

Kind regards,

Dick M.A. Schaap

Technical Coordinator

On 3/22/2021 10:46 AM, noreply@maris.nl wrote:

Name

Email

Feedback /
Question

change chart datum to Mean sea level Hi, I would like to use the bathymetry you are providing in a hydrodynamic model, however my tidal forcing has MSL as chart datum. Is there a way to convert the north sea bathymetry from LAT to MSL? I browsed a bit through some of the meeting reports and I noticed that data providers can submit data in MSL, so I guess it must exist. Apologies if I overlooked, help highly appreciated :-)
