

The BSHC-HELCOM Revised Baltic Sea Harmonised Hydrographic Re-Survey Scheme (2002 – April 2020) Assessment Report

7.7.2020 (FINAL)

Summary

The Baltic Sea Hydrographic Commission has maintained the Revised Baltic Sea Harmonized Hydrographic Re-Survey Scheme (later Re-Survey Scheme) and reported the progress annually at HELCOM Maritime.

Since 2001 the progress of full-coverage / full seafloor search re-surveys to IHO S-44 hydrographic survey standard has been excellent, totalling at the end of August 2019 about 86% of the commercial shipping navigable sea areas in the Baltic Sea, defined as HELCOM routes cat I and Cat II in Re-Survey Scheme. As a result about 95% of the areas significant for commercial shipping defined within Cat I and II, are estimated to be covered at the end of 2020.

The entire first re-survey of Cat I & II areas is estimated to be done at the end of 2030, however due to environmental and sea bottom changes in some Baltic Sea shipping routes and areas require continuous re-surveying (say every 5-20 years).

This work has of course contributed significantly to the HELCOM Baltic Sea Action Plan. In return the Re-Survey Scheme being part of the BS Action Plan has given the good political support to be successful at EU grant programs.

BSHC24 has tasked MWG to prepare an update to the Re-Survey Scheme to cover the Cat III areas, which are typically the near coast shallow areas or deep open water areas, used for some shipping, pleasure boating, Search and Rescue, public authorities GIS data for flood prevention as well as for oil recovery contingency.

The estimated area of Cat III areas is about 135 000 km², of which is reported to be completed about 16 000 km² (on March 2020).

This updated Re-Survey Scheme will be presented to HELCOM Maritime 20 for approval.

1. Background and Targets

The **HELCOM Ministerial Declarations** in **2001** and **2010** requested the Baltic Sea countries jointly to develop a scheme for systematic re-surveying of the areas used by shipping in order "to ensure that safety of navigation is not endangered by inadequate source information". The Baltic Sea countries are to present their national re-survey plans by 2013 including time schedule estimations and plans for sufficient funding for re-surveys, target year being 2020 and first full coverage on 2035.

14 (M).RECALLING the HELCOM Copenhagen 2001, Krakow 2007 and Moscow 2010 commitments on hydrographic re-survey and COMMENDING WITH APPRECIATION the subsequent substantial progress made in systematic re-surveying of major shipping routes and ports in the region according to the HELCOM-BSHC Re-survey Scheme aimed at ensuring that safety of navigation in the Baltic Sea region is not endangered by inadequate source information;

15 (M).WE AGREE to take actions to ensure the completion of the re-surveys for areas used by navigation (CAT I and II) within the time schedules estimated in the 2013 Re-survey Scheme, to promote wider use of accurate and reliable depth information by e.g. developing existing and/or new products including an enhanced and freely accessible Baltic Sea Depth Model, and to foster CAT III re-surveys of other areas not primarily for safety of navigation purposes, e.g. for environmental protection;

Re-Survey Scheme has provided data and information in implementation of Maritime activities and Maritime Spatial Planning within the HELCOM Baltic Sea Action Plan

All Baltic Sea countries are committed to the Baltic Sea Harmonised Re-survey Scheme and have performed necessary hydrographic surveys based on their national needs, plans and resources. Hydrographic surveys are a long term task. Continuous re-surveying is needed in some routes and areas due to changing environmental and sea bottom conditions.

This work is coordinated by the Baltic Sea Hydrographic Commission (BSHC) of the International Hydrographic Organisation (IHO). Re-survey progress is monitored and reported annually by BSHC re-survey Monitoring Working Group (MWG).

2. Benefits of Re-surveys

The re-surveys have proved useful. The overall goal for the re-surveys is to increase safety of navigation, and more specifically for the following benefits:

- The re-surveys will cover areas used by shipping where old or otherwise inadequate depth information currently exists, and will thus allow safer sea areas for shipping and increase the protection of the marine environment as well as flood prevention and oil recovery contingency.
- Accurate and reliable full bottom coverage / full seafloor search of surveys allow for more flexible route planning, more precise navigation and more flexibility to utilise the increased loading of ships, and thus increasing the economic efficiency of shipping.
- During the re-surveys, critical new shallows or shoals not previously known have been found and appropriate actions have been launched.
- Well-planned re-surveys enable revisions of fairways or routes, and planning of modified or new Traffic Separation Schemes.

- The efficiency of the re-survey work has increased. These activities have enhanced systematic planning and co-operation between neighbouring HOs regarding surveys along border areas and allowing surveys in each other's areas of responsibility, and thus enabled more feasible re-survey tasks and more efficient survey operations.
- Modern full coverage depth information enables changed practices in navigation with ECDIS functionality (e.g. 3D navigation with real time dynamic water level information, precise warnings, utilising full Under Keel Clearance).
- It is often more feasible and productive to completely re-survey the sea areas where old survey data exists than try to use old data and estimate where it will be useful. Old dataset are in many cases inhomogeneous and partial re-surveys are inevitable. New re-surveys have given homogenous data across national borders.
- New surveys are a basis for a high density Baltic Sea Depth Model, see Fig 2.

3. Re-surveys accomplished

The BSHC has developed the revised Re-survey Scheme maintained by Swedish Maritime Administration. The Scheme is available on the internet <https://helcomresurvey.sjofartsverket.se/> . See Figure below (status 10.9.2019)

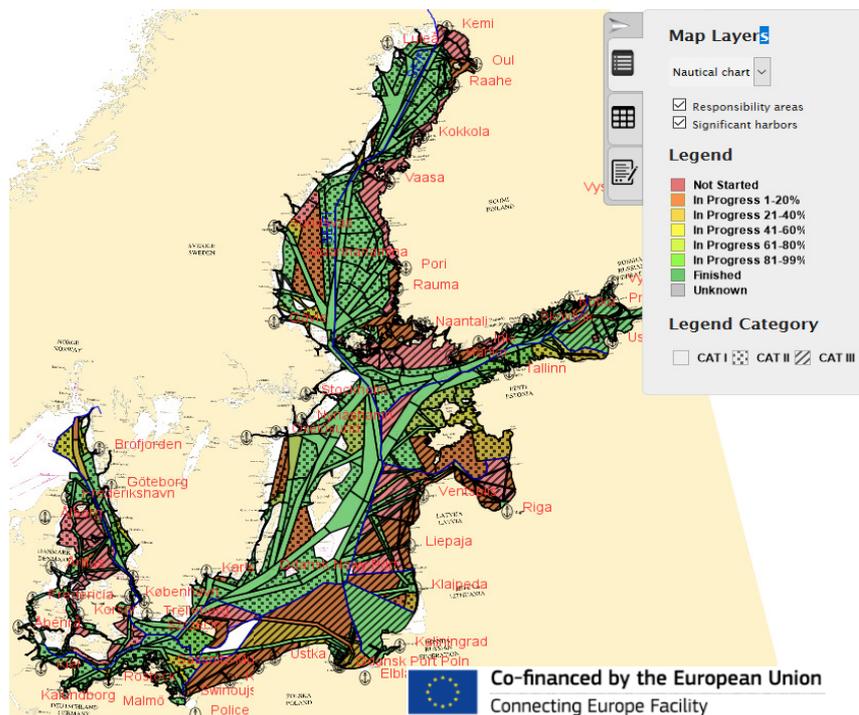


Fig. 1. Image of the BSHC HELCOM Re-Survey database (Cat I & II areas)

The Hydrographic Offices of Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russian Federation and Sweden have developed this Scheme during 2002 - 2013.



The BSHC has also developed the Baltic Sea Bathymetric Database to provide averaged depth data. The Baltic Sea Bathymetric Database is available on the internet <http://data.bshc.pro/#2/58.6/16.2> as public data under a Creative Commons Attribution 3.0 Unported License.

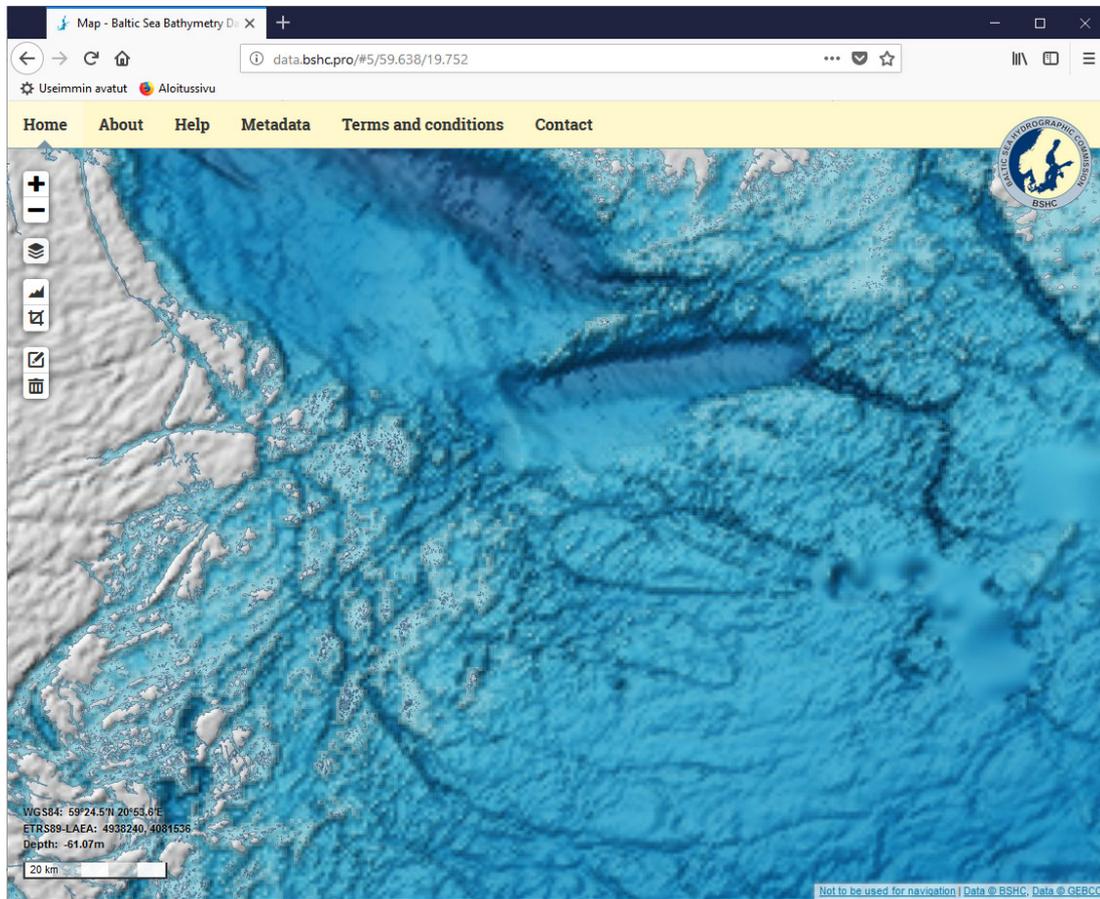


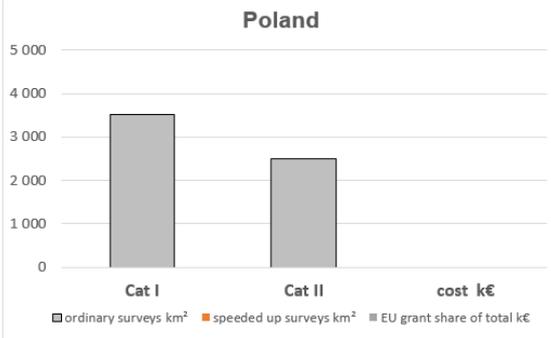
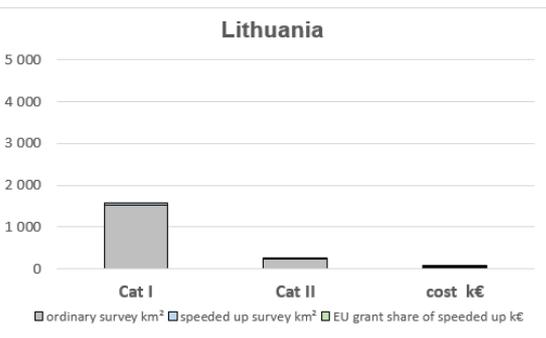
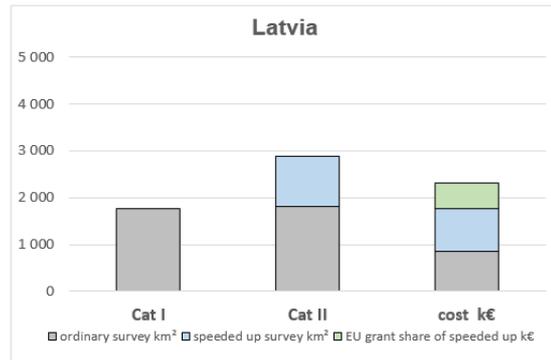
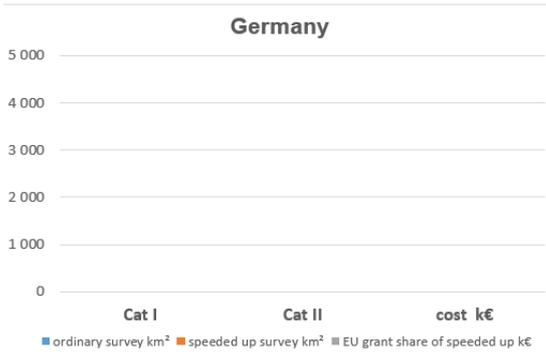
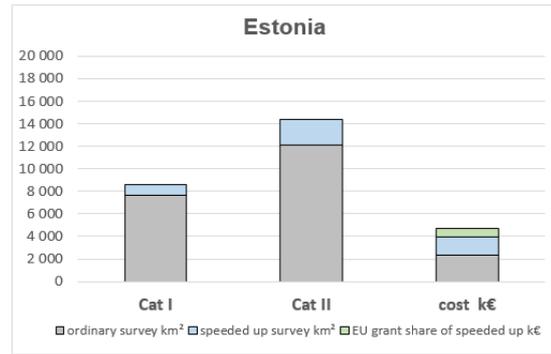
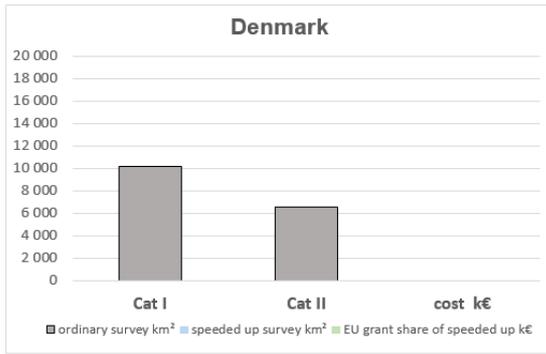
Fig. 2. Image of the BSHC Bathymetric Database

4. Progress and current status

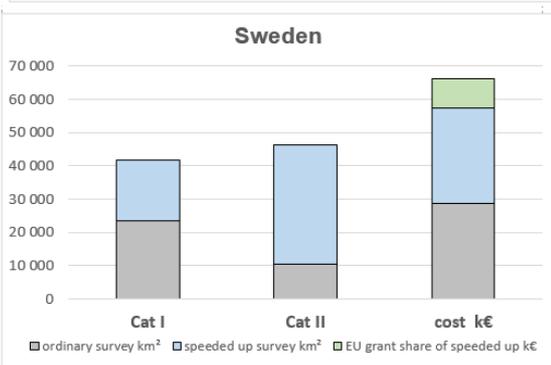
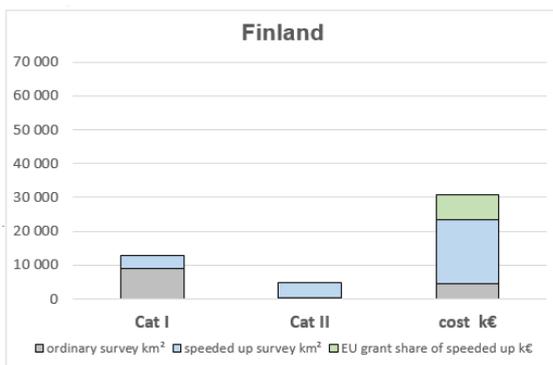
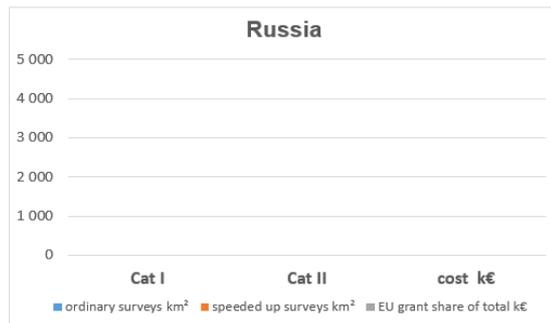
The Baltic Sea Hydrographic Committee Member States have progressed well with the full coverage up-to-date hydrographic surveys in the mentioned HELCOM cat I and II areas re-survey scheme during 2002-2020.

The EU grants from TEN-T and CEF programs as well as for INTERREG Central Baltic programs have been in significant role in Member States ability to speed up these Re-Surveys, with the help of Re-Survey Scheme being part of the HELCOM Action Plan and also a Flagship project in EU Strategy of the Baltic Sea Region.

Some Baltic Sea countries have experienced shortcomings in resources or political guidance to focus in other areas and therefore changes and delays have occurred.



HELCOM Cat I & II surveys during 2002-2018 in each Member State. The significance in **speeding up** re-surveys and **EU grant** financing. ¶



There are still extensive areas to be resurveyed, as can be seen below.

Country	CAT I [~year compl]	Cat I area total / remaining [~km ²]	CAT II [~year compl]	Cat II area total / remaining [~km ²]	CAT I & II total [~km ²]	CAT III [~year compl]	Cat III area remaining [~km ²]	Cat III area total [~km ²]
Denmark	2013	7 631 / 0	2030	13 372 / 5 099	21 003	2033	11 221	11 363
Estonia	2015	8 413 / 0	2035	23 168 / 7 926	31 581	2026	3 766	4 321
Finland	2016	22 321 / 0	2016	28 678 / 0	51 000	2040	20 100	31 042
Germany	2019	3 273 / 0	2025	12 127 / 0	15 400	not applic	0	0
Latvia	2015	2 500 / 0	2022	6109 / 1376	8 609	2045	20 500	20 500
Lithuania	2019	1 569 / 1	2026	1 823 / 1071	3 400	2042	2 736	3 041
Poland	2021	3 787 / 1 102	2020	906 / 104	4 693	2039	20 826	25 128
Russia	2018		2018		1 200	2017		
Sweden	2022	48 568 / 1 491	2022	69 538 / 15 421	118 106	not specif	39 000	39 000

Table 1: Summary of time schedules and re-survey areas of National Re-survey Schemes.

The BSHC Members have a clear goal to complete the re-surveys of areas for safety of navigation (CAT I and II) by 2035. BSHC24 has decided that the Re-Survey Scheme will be updated with timetable of Cat III areas during year 2020. The re-surveys are mainly funded by national budgets, but EU funding programs have provided a significant contribution.

Contracting Parties agree to take actions to ensure that there will be sufficient funding and resources available for completing the re-surveys of areas for safety of navigation, environmental and GIS data purposes in estimated time schedules.

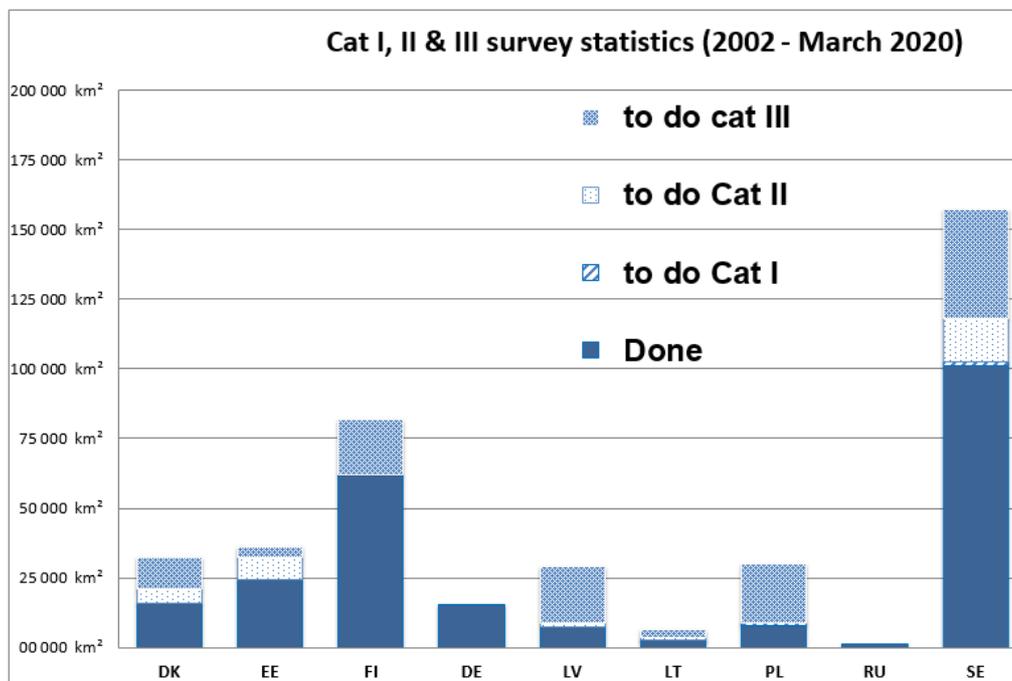


Fig. 3. Re-survey areas remaining (Cat I & II ~13% and Cat III ~88%) by Categories in March 2020.