



Document title	ICES contribution to the draft Roadmap on fisheries data in order to assess incidental bycatches and fisheries impact on benthic biotopes in the Baltic Sea
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Background

This overview of ICES ongoing work within the assessment of bycatch as well as sea bottom integrity, was submitted by ICES to the EG FISHDATA on 23rd of April 2019. This was done, upon the request of the EG FISHDATA, in order to provide the Roadmap with relevant information on ICES work regarding incidental bycatches of protected species of sea mammals and water birds and fisheries impact on benthic biotopes in the Baltic Sea. Contribution provided by ICES was used in chapter 3 of the draft Roadmap “Meeting data needs with currently available fisheries data” and especially under subtitle 3b “Pre-core indicator on cumulative impacts on benthic biotopes”.

Action requested

The Meeting is invited to take note of the information provided by ICES.

The meeting is invited to consider if the document should be included as annex to the draft Roadmap or whether a reference to the document in the Roadmap is sufficient.

ICES contribution to the draft Roadmap on fisheries data in order to assess incidental bycatches and fisheries impact on benthic biotopes in the Baltic Sea

ICES notes that the data requirements may be very different in order to operationalize the respective indicators being put forward by HELCOM-FISH, 1) bycatch of mammals/birds and, 2) sea bottom integrity. We note that the FISHDATA draft roadmap is well developed with regard bycatch of mammals/birds, and provide some further input as to ongoing work within ICES. For sea bottom integrity the roadmap is underdeveloped, and we thus provide some more substantive input on the ongoing ICES work.

Bycatch assessment data and methods

The basis for the ICES advice on “Bycatch of cetaceans and small marine mammals” is available online:

[http://ices.dk/sites/pub/Publication%20Reports/Guidelines%20and%20Policies/16.3.3.2 Basis for the advice on Bycatch of small cetaceans and other marine animals.pdf](http://ices.dk/sites/pub/Publication%20Reports/Guidelines%20and%20Policies/16.3.3.2%20Basis%20for%20the%20advice%20on%20Bycatch%20of%20small%20cetaceans%20and%20other%20marine%20animals.pdf)

Since 2018, the ICES Working Group on bycatch of protected species (WGBYC) issues an annual data call on total fishing effort, monitoring/sampling effort and protected species bycatch incidents. The data supports ICES annual advice on the impact bycatch on small cetaceans and other marine animals to answer a standing request from the European Commission for advice on the impacts of fisheries on the marine environment. Data are requested from 18 ICES countries and six additional Mediterranean non-ICES countries. The majority of the countries submitted data but the quality and quantity of the data provided varied widely among nations.

It is important to note that to assess the conservation threat posed by fishery bycatch to a particular protected species three bits of information are required, these are:

1. the susceptibility of that population to bycatch in particular fisheries (based on observer effort data and number of bycatch incidents recorded by fishing gear);
2. the scale of the fisheries concerned (based on total fishing effort by fishing gear);
3. the resilience of the population to bycatch (based on population abundance and recovery potential).

The WGBYC data call gathers information to estimate 1) and 2). The WGBYC data call does not provide data to estimate 3), since resilience depends on the population abundance and its ability to grow and recover. Data to assess 3) may originate from national and international scientific surveys to estimate bird and mammal population abundances.

Sea floor assessment data and methods

The basis for ICES assessment on “sea bottom integrity” - is available within the WGFBIT report as “*Annex 4 Technical guidelines document for assessing fishing impact from mobile bottom-contacting fishing gears*”.

<http://ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/HAPISG/2018/01%20WGFBIT%20-%20Report%20of%20the%20Working%20Group%20on%20Fisheries%20Benthic%20Impact%20and%20Trade-offs.pdf>

The described methods are based on ICES (2016, 2017) advice that has established a set of indicators to assess seafloor integrity, in terms of the spatial extent and distribution of pressures classed under both assessment criteria (physical loss D6C1 and physical disturbance D6C2) and their impact for each broad habitat type, within each ecoregion and subdivision. This work builds on from the old DCF Annex XII indicators 5, 6, and 7 (see 2015 ICES advice), but now also includes benthic impact estimate (biomass relative to carrying capacity)

indicators. The suggested seafloor assessment framework by ICES (Figure 1, next page) also allows for evaluation of trade-offs between catch/value of landings per unit area and the environmental impact and recovery potential of the seafloor (see e.g. [2017 ICES workshop WKTRADE](#)). Such information will be required in the exploration of management scenarios under different policy requirements (e.g. MSFD, CFP, and the deep-sea access regulation EU 2016/2336).

Based on this ongoing (2018-2020) work, ICES is working to operationalize the suggested seafloor assessment framework (see [WGFBIT three-year work plan](#)), with respective indicators becoming operational across the whole EU and ICES areas (also the Baltic). The indicators and data collected need to be appropriate to the assessment of benthic habitats (D1) and seafloor integrity (D6) as set out in the Commission Decision 2017/848/EU. The Marine Strategy Framework Directive (MSFD) sets the broad requirement under Descriptor 6 that sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected (Directive 2008/56/EU), and the indicators will also need to serve this purpose.

Assessing the seafloor?

A newly established ICES working group WGFBIT, who met in November 2018, will be taking forward (2018-2020) the operationalizing of the ICES seafloor assessment framework (see [WGFBIT three-year work plan](#)) - with respective indicators across the whole EU, ICES areas, including the Baltic.

In addition to the established and suggested pressure data flows (see below section), WGFBIT has in their draft report recommended the integration of benthic datasets that are linked to specific functional traits (longevity/biomass) of the species. These data are required not only for a wider range of taxa, but also across a specific range of habitats within for example Barents Sea, Celtic Sea, Baltic Sea, Norwegian Shelf and the Mediterranean Sea (and others). Where data does not exist, targeted gradient studies – rather than traditional monitoring - will be required. Some data does exist via EMODnet biology data portal, but this needs to be greatly expanded. With this in mind there may be a need in the near future to establish new initiatives and/or project to target some of the identified gaps.

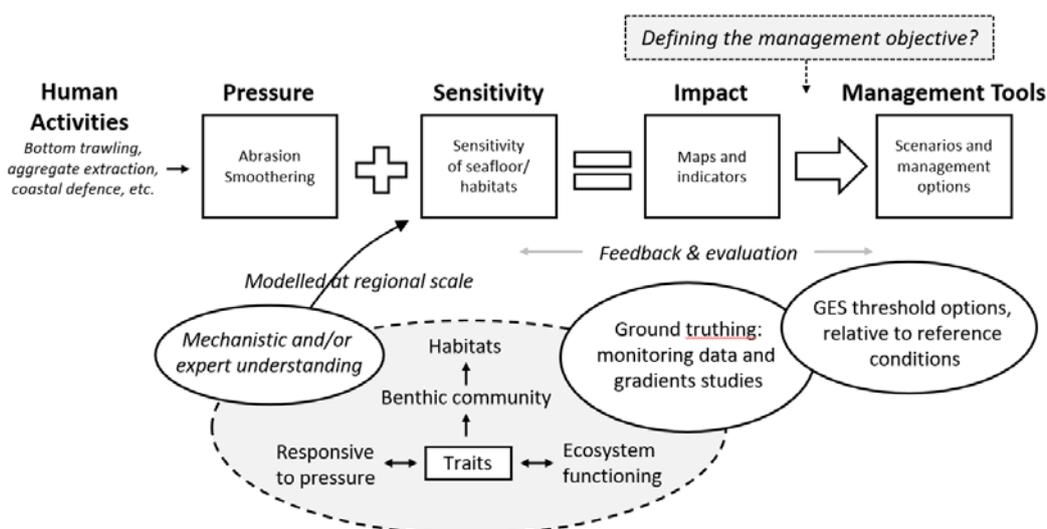


Figure 1. Conceptual diagram of the steps taken in developing management tools for assessing pressure and impact on the seafloor.

Activities to pressure data, service seafloor assessment indicators?

Pressure data gaps and requirements

Parallel to the process of indicator development, ICES has received a number of EU advice requests to map out the data needs necessary to the service seafloor assessment framework and to demonstrate its operationality. This work has already highlighted some specific data needs to service the underlying methods of the indicators. If these data needs are met, this would ensure the overall assessment of the seafloor (impact and pressure) can be featured in the future iterations of, for example, the ICES Fisheries Overviews and Ecosystem Overviews for each ecoregion (e.g. in 2020).

A recent ICES workshop ([WKBEDPRES1](#), October 2018) has identified the benthic physical disturbance (D6C2) pressure layers available within ICES and the European and wider marine community across four EU regions – including the mapping of pertinent data flows and the establishment of criteria needed to ensure the practical use of the data in assessing benthic impact. See conclusions and recommendations [page 44-46](#) of the WKBEDPRES1 workshop report.

Preliminary analysis indicated that the key human activities that resulted in physical disturbance on the seabed are very similar for the 4 EU regions examined (Baltic Sea, North East Atlantic, Mediterranean and Black Sea). Here fishing was found to be the most extensive cause of physical abrasion, with aggregate extraction and dredging also of relevance in most regions, but much less extensive.

Data flows and quantitative methodologies for the processing of physical disturbance from bottom fishing currently exist within ICES and were deemed appropriate for EU e.g. MSFD purposes for assessing the seafloor. These methodologies are in line with previous ICES advice on indicators (ICES 2016, 2017). However, similar data flows are yet to be established for the Mediterranean and Black Sea. Future calls should also take into account other sources of data reflecting activity causing seabed abrasion to allow for better coverage (e.g. AIS). Relevant data from HELCOM, OSPAR and the EMODnet human activities data portal may also be of use in the assessment and should be explored. Similar to the ICES VMS/logbook data call, data flows for other pressure (e.g. aggregate extraction and dredging) need to be better established to ensure consistent collation at the regional scale from national level. This needs to be done using data management practices, for which ICES's TAF ([transparent assessment framework](#)) is an integral part of.

In addition to physical disturbance pressures data, ICES has in 11-13 March 2019 run a similar workshop ([WKBEDLOSS](#)) to identify data flows for activities resulting in physical loss (D6C1/C4) pressures, i.e. permanent alteration of the habitat from which recovery is impossible, such as construction activities (e.g. offshore windfarms).

What about the trade-offs? To ensure more realistic scenarios will be developed under the assessment framework, a series of workshops are planned to bring together experts from ICES working groups WGFBIT, WGMARS, and WGECON. These management scenarios will have cross policy relevance (e.g. MSFD, CFP, and the deep-sea access regulation (EU) 2016/2336). Data improvements will also be at the heart of these workshops: for example, where countries might agree on standard methods in assigning landings values when answering the ICES VMS/logbook data calls.