

## Working Group on Fisheries Benthic Impact and Trade-offs (WGFBIT)

**2017/MA2/HAPISG04** A Working Group on Fisheries Benthic Impact and Trade-offs (WGFBIT), chaired by Tobias van Kooten, Netherlands; Ole Ritzau Eigaard, Denmark; and Gert van Hoey, Belgium, will be established and will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2018	12–16 November	ICES HQ, Copenhagen, Denmark	Interim report by 14 December	
Year 2019	7–11 October (tbc)	Ancona, Italy (tbc)	Interim report by 1 December	
Year 2020	November	TBC	Final report by December	

## ToR descriptors

TO R	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Building from 2017 ICES work (WKTRADE, WKBENTH, and WKSTAKE) produce a framework for MSFD D6/D1 assessment related to bottom abrasion of fishing activity at the regional / subregional scale and identify key ecological processes input requirements.	Provide a worked example on how science can operationalize EBM (ecosystem based management) and contribute towards IEAs (intergrated ecosystem assessment) as ICES advice products. Links (avoiding overlaps) will be established with key experts also attending WGECO, WGDEC, WGSFD, BEWG, WGMHM, WGIMM, WGM BRED, and WGMPCZM	2.1; 2.4; 2.7	Year 1, reviewed in year 3	A worked example with guiding principles, that can be reviewed by ACOM leadership and SCICOM chair/SSGs for feedback.  Specific action points, to ensure year 2 assessments can be conducted by appropriate sub region for the N. Sea, Celtic, Baltic and Barrents Seas
b	Apply the framework to make a regional assessment for the North Sea, Celtic, Baltic and Barents Seas	EU MSFD D6/D1 assessment and providing management options that can be applied also by non-EU ICES countries.	2.7; 6.3	Year 2	Regional assessments of the impact of bottom abrasing fisheries

## Summary of the Work Plan

Year 1	For an EU MSFD D6/D1 assessment related to bottom abrasion of fishing activity at the regional / subregional scale identify key ecological processes required as input. Priority should be given to decide on a quantitative framework based on biological processes, and to improve the parameterisation of framework components. The framework should allow for an overall assessment of benthic status and for the exploration of alternative management options to improve GES. Worked-out examples (and findings from WKTRADE 2017) should be used to ensure that a framework for addressing the above is established. The framework should be generic enough that it allows cross regional comparison and specific enough that it addresses regional-specific trade-offs (i.e. incorporating other pressures than fisheries). The framework should take into account complementarity to the ICES Fisheries Overviews (FOs) and Ecosystems Overviews (EOs), and provide input to overviews. The group will work between sessions to ensure required information is worked up to conduct assessments using the suggested framework (in preparation for year 2 meeting and advisory products).
Year 2	Using the framework, produce assessment (draft advice) for the Celtic Seas, Greater North Sea, Barents Sea and Baltic Sea by subregion. Consider how other ecoregions can be incorporated (e.g. Mediterranean, Black Sea, Bay of Biscay and Iberian Coast). Assessments should be conducted using the guiding principles of TAF (transparent assessment framework).
Year 3	Update advice from previous year, and produce new (draft) assessments for 3 other ecoregions (and associated sub-regions). Review framework produced in year 1, and produce technical guidelines for “a standard” ICES advice product for MSFD D6/D1 and alternative management options to improve GES. Technical guidelines for the assessment will be produced to support TAF (transparent assessment framework).

## Supporting information

Priority	The activities of this Group will lead ICES into issues related to the ecosystem effects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Resource requirements	Experts that provide the main input to this group have been involved in successful EU funded projects (BENTHIS). It is envisioned that future funding will be available and that this ICES working group experts can also provide an international platform to establish a consortium. This would allow to commit future resources to the group's work.
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	Meeting room facilities, as well as Assisting Secretariat help, Data Centre support, and Professional Officer shadowing and attendance of working group meeting.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	Advice products and working groups (e.g. WGECO and WGDEC).
Linkages to other committees or groups	There is a very close working relationship with all the groups under the Ecosystem Pressures and Impacts Steering Group. It is also very relevant to the Working Groups WGECO, WGDEC, WGSFD, BEWG, WGMHM, WGIMM, WGMBRED, WGMPCZM.
Linkages to other organization	EU (DG-ENV, DG-MARE), RSCs (Baltic's HELCOM, North Atlantic's OSPAR, Mediterranean's Barcelona Convention and Black Sea's Bucharest Convention), JRC, STCEF

## Background to establishing a new ICES working group:

ICES now plays a central role as a facilitator for the setting of methodological standards for assessing EU's MSFD D1 habitat/D6 benthic, as well as in providing further guidance to Member States (MS) for the setting of threshold values to operationalize indicators.

The underlying basis for the recent ICES advice provided to EU (DG-ENV) has come from work that started in 2016 ([WKFBI](#), 2016) and 2017 ([WKBENTH](#), [WKSTAKE](#) and [WKTRADE](#)). These workshops have involved several ICES working group experts (WGSFD, BEWG, WGMHM, WGDEC), experts working closely with RSCs (HELCOM and OSPAR), as well as experts from European funded projects ([BENTHIS](#)). Given the success of these workshops, it has been the wish of expert participants to carry on this collaborative work by establishing a new ICES working group, WGFBIT (working group on fisheries benthic impact and trade-offs).

Given the foreseen increase in ICES advisory work with regard to EU's MSFD D1 habitat/D6 benthic and given the recent international scientific advances, establishing a group would ensure continuity and avoiding having to establish each year an *ad hoc* group. Such a group with targeted 3 year TORs would attract participation/collaboration from WGECO, WGDEC, WGSFD, BEWG, MHWG, WGIMM, WGMPCZM members. In addition to advisory products (D6/D1 MSFD), scientific collaboration and research papers would ensure a stronger basis for working group reports and ICES advice. Such a group would also allow for participation by key experts also involved in RSCs, STCEF, JRC work – and encourage access to data.

#### *Envisioned work on standardised methodologies and criteria*

Parameterization of a sensitivity model for different habitats and ecoregions, will require targeted studies on benthic community longevity composition and habitat relationship. Emphasis: other regions than the N Sea, broad range of environmental conditions (grain size, depth, salinity, bed shear stress, etc.), also include epifauna (at present box/grab sampling of infauna).

Targeted studies and modelling to incorporate regional scale heterogeneity: including habitat heterogeneity, as well as heterogeneity in successional state relative to connectivity (i.e. oceanography or distance between source and sink populations, in a multi species context).

Despite [ICES 2017 advice](#), there is still no agreed upon method to determine where status is “good” in relation to fishing pressure. There is also limited ecological basis for setting good environmental status (GES) threshold levels for habitats that may span across different spatial scales, across an interconnected seafloor. If non-linear relationships exist between pressure and state of a habitat at a specific scale, the inflection point in these relationships (i.e. when a significant change in the relationship occurs) could be used to help define thresholds. However, at the current time, such thresholds have not been identified. The spatial heterogeneity in ‘good status’ locations across a region may also affect recovery rates (e.g. habitat fragmentation, relative to dispersal and connectivity across the seabed).

ICES also noted in the 2017 advice that the outcome of the impact assessment (fraction of habitat unimpacted / fraction of habitat at a certain state) is dependent on the assessment method used and the spatial resolution of the fishing pressure data layer (now 0.05 x 0.05 degrees). A change in spatial resolution will result in an overall change in the assessed habitat state. This means that the setting of threshold values is method dependent.

Some of the tasks that WGFBIT would contribute towards in the next years 2018-2020 will ensure that ICES can continue to play a pivotal role in fully operationalizing an assessment of D6/D1. Some of the key milestones will include:

- 1) *TAF framework* – underlying assessment methods need to be understandable, transparent and accessible ([TAF](#), [link](#)). This requires work to clean code used to run assessments and the production of a technical guidance document that describes the indicators for assessing pressure and impact on the seafloor from mobile bottom-contacting fishing, based on their ability to produce impact estimates on a continuous scale that can be used in trade-off evaluations.
- 2) *Benchmarking process* – the proposed pressure and impact indicators need to be reviewed and evaluated in an open workshop in terms of their MSFD assessment suitability. This needs to be done in dialogue with RSC with agreed upon guiding principles against which the benchmarking process can be run.
- 3) *GES thresholds* – As part of a complete technical guideline document for the operationalization of the indicators, threshold values will need to be specified. This will require scientific input in order to operationalize 1) quality thresholds for benthic impact, and 2) spatial extent of habitat that should achieve those values. Using available methods, the workshop will explore safe biological limits of impact that can be used to explore spatial up-scaling and down-scaling of GES thresholds.

- 4) *RSCs acceptance* – there needs to be dialogue with those management bodies and member country experts that are “end-users” of the indicators. This is an iterative process and may require training.
- 5) *Ecoregion calibration* – targeted project and/or working group work will need to re-calibrate the proposed impact indicators in terms of regional specific conditions.