

## Working Group on the Ecosystem Effects of Fishing Activities (WGECO)

*Only experts appointed by national Delegates or appointed in consultation with the national Delegates of the expert's country can attend this Expert Group.*

**2020/OT/HAPISG03 The Working Group on the Ecosystem Effects of Fishing Activities (WGECO)**, chaired by Tobias van Kooten, NL and Brian Smith, USA, will meet in 2021 to:

- a) Investigate the ecological consequences of stock rebuilding, with particular emphasis on benthivorous fish and invertebrates:
  - 1) Make first-order estimates of predation pressure on benthos;
  - 2) Examine evidence of food limitation and density-dependent growth;
  - 3) Compare the footprints of trawling to the footprints of predation pressure on benthos.
- b) As potential input for the Ecosystem overviews, WGECO will develop spatial distribution indicators for survey data (fish and benthos) across marine ecosystems and analyse trends in these indicators in relation to climate change, abundance change and large-scale fisheries closures.
- c) Conduct a “reality check” and horizon scanning survey within WGECO. The aim is to develop a consensus view of the major emerging issues in relation to fisheries and ecosystems, and on which WGECO could focus future work. WGECO members will provide a list of emerging issues (horizon scanning), that would benefit from scrutiny by WGECO. This list will be collated and used as material for a plenary discussion, and with the aim of producing a perspectives paper in the ICES JMS or Fish and Fisheries.
- d) Prioritize indicators (one or more than one) from a set of indicators from current and earlier work by WGECO or its participants (including particularly those from ToR d of WGECO 2018), which can be estimated on a routine basis and are applicable across several ecoregions. For each prioritized indicator, supply a short explanatory text for justification of the prioritization, identify the required steps to operationalize their use in the ICES fisheries and/or ecosystem overviews, and outline how WGECO or ICES can support their implementation over the next three years.

WGECO will report by DATE (tbc) 2021 for the attention of ACOM.

### Supporting Information

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Priority	The current activities of this Group will enable ICES to respond to advice requests from member countries. Consequently these activities are considered to have a very high priority.  It will also lead ICES into issues related to the ecosystem affects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently, these activities are considered to have a very high priority.
Scientific justification	Term of Reference a)  Many stocks are rebuilding and will likely have higher abundance and biomass than we have seen in recent times. This in turn will likely have effects through trophic interactions both up and down the foodweb. At ICES, WGECO and WGSAM have been tasked previously with similar ToRs. WGECO will investigate the potential consequences of stock recovery of benthivorous fish and invertebrates, their ensuing risks for fish stock management and the use of MSFD indicators. It is hypothesized that a large increase in benthivorous fish will have an impact on benthic productivity and biodiversity. This ToR requires data on the spatial distribution of benthivorous predators, their prey consumption rates and diet composition. It also requires data on the abundance and production of benthic faunal. This ToR links to ToR c.

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Term of Reference b)

WGECO has traditionally had a leading role in developing and testing indicators, and their use for provision of advice. The work of this ToR facilitates operationalization of these indicators, by identifying data sources, refining, evaluating their strengths and weaknesses and gaps in indicator availability. Indicators that are evaluated to be promising will be applied to fish and benthic invertebrates species in the ICES region.

Term of Reference c)

The ICES Strategic Plan seeks to incorporate a wider range of scientific knowledge into advice to inform decision-makers and society about the state of our seas and oceans, the consequences of human use, and option for conservatoin and mangement. This ToR will allow WGECO to contribute strongly to the development of future ICES strategy. We intend to seek input across the national and disciplinary range of WGECO members, many of whom are operating at a high level in the field and in the home institutes. We aim to publish the results of this initiative as a perspective paper in one of the key journals, and this will be available to inform future progress for this important and centrally positioned Expert Group.

Term of Reference d)

WGECO has over consecutive years (e.g. 2016, 2017 and 2018) proposed and reviewed indicators. For ICES producing a set of quantative indicators linked to exsiting data, that can be estimated on a routine basis and are applicable across several ecoregions is of high priority. Given the overarching role of the group, WGECO is in a good position to provide steer in term of a priority set of indicators using criteria (see e.g. Rice and Rochet 2005 or WGBIODIV 2015 on OSPAR indicators). This TOR also offers WGECO or ICES the opportunity to work in a structured fashion over a 3 year period towards operationalizing a set of prioritized indicators for use in ICES advice products, namely for the ICES fisheries and/or ecosystem overviews.

Term of Reference e)

During their previous meeting at ICES HQ (8–16 April 2019) WGECO provided initial input on an EU DGMARE request to ICES relating to the EU’s Deep Sea Access Regulations. The suggested ACOM approved process (phase 1 and phase 2) is designed to ensure ICES’s scientific integrity while at the same time ensuring required dialogue with the managers so that what ICES can offer (in terms of data, VMEs and VMS) can contribute towards the deep sea access regulation for regulatory purposes. WGECO offered to provide further scientific input during their 2020 meeting as a review of the workflow and the set of criteria to propose a set of regulatory area options to managers. More specifically to provide scientific input on the associated trade-offs between different areas selected (an integral part of Phase 2). As such, WGECO is tasked to review a working document describing a workflow to be used by WKEUVME to come up with a set of regulatory area options using available ICES data. Specifically, WGECO is tasked to:

- review the working document to provide input on whether the suggested workflow to identify regulatory areas options is suited for management purposes, and, in line with previous ICES work related to the deep-sea access regulation;
- suggest alternative options (if relevant) and/or improvements to the proposed workflow supported by relevant scientific literature
- provide scientific input on how to best estimate for each of the regulatory area options, how area closures will ensure VME protection and how the closures will affect fisheries (e.g. spatial footprint and intensity of bottom fishing).
- consider how the workflow can accommodate future updates of the assessment based on ICES VME and VMS data and data calls;
- consider whether the workflow can best conform to the ICES FAIR principles that data is fully documented.

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Resource requirements

The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional

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	activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	None.
Financial	No financial implications.
Linkages to advisory committees	There are no current direct linkages with the advisory committees.
Linkages to other committees or groups	There is a very close working relationship with the groups of the Fisheries Technology Committee, JWGBIRD, BEWG, WGBIODIV, WGBYC, WGFBIT and WGSAM.
Linkages to other organizations	OSPAR, HELCOM