

CEMP Guideline

Combined guideline for the common indicators FC1, FC2, FC3 and FW3 for fish and food webs

(OSPAR Agreement 2018-05)¹

This OSPAR biodiversity indicator is still in the early stages of implementation and as a result of iteration and learning, it is anticipated that there will be evolution of the methods and approaches documented in the CEMP guidelines. Version updates will be clearly indicated and be managed in a phased approach via ICG-COBAM through its expert groups and with the oversight and steer of BDC.

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¹ This document is in English only

1 Introduction

The OSPAR indicators FC1-3 and FW3 require a common dataset derived from surveys of fish, which are processed to create an OSPAR Dataproduct. This guideline describes the origin of the data and links to the processing steps made that lead to the Dataproduct.

2 Monitoring

2.1 Purpose

The objective of the suite of indicators is to characterise fish communities in terms of their biomass, size structure and species composition (including demersal and pelagic communities) in order to link to pressure and food web functioning.

2.2 Monitoring Strategy

Data come from scientific fisheries surveys which ideally sample the entire fish community. The metric requires that surveys are conducted at regular intervals (e.g. annually) in the same area with a standard gear.

Currently, the most important data source is the ICES co-ordinated fisheries groundfish surveys which are conducted as part of the international bottom trawl survey programme in the North Sea, Celtic Seas, Bay of Biscay, Iberian coast and the eastern margin of the Atlantic region (see Figure 1). Beam trawl data is more suitable in some locations that are difficult to sample with the GOV or where the community is dominated by benthic species. For pelagic species, biomass data from acoustic surveys, with supporting length samples from trawls, can be particularly useful and will be investigated further in future as data become available.

The resources needed for this indicator are estimated to be high, but costs primarily met under the national programmes and the Data Collection Framework (DCF).

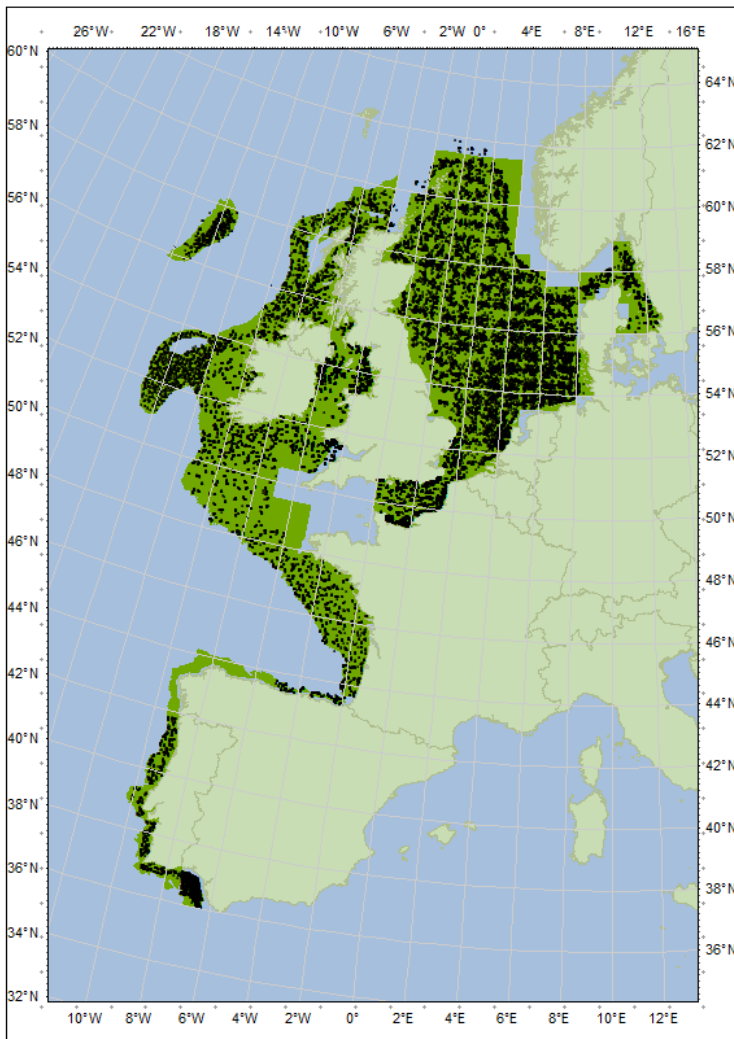


Figure 1. Haul locations (black points) with data available in OSPAR Dataproduct (Version 2). Green area highlights the sea area assessed for this indicator.

2.3 Sampling Strategy

Species population characteristics are sampled by the surveys including: numbers of individuals by size class (length). Bottom trawls of various gears (including GOV and Beam) are made and to determine the area swept by the trawl the following parameters are recorded: tow duration, net opening (headline height), wingspread, doorspread, depth and distance towed.

Fish and elasmobranch mass at length values are estimated from numbers by size class using length-weight relationships for each species (currently extracted from www.fishbase.org).

2.4 Quality assurance/ Quality Control

ICES Data Centre host the database of trawl surveys for groundfish and beam trawl data (DATRAS). DATRAS has an integrated quality check utility. All data, before entering the database, have to pass an extensive quality check. Despite this errors and missing data arise, which are subsequently dealt with by the data submitters from the contributing countries as required. However, this screening process was implemented in 2009 for data from 2004 onwards. Since some survey time-series extend back to the 1960s, historic data (unless re-evaluated and re-submitted by contributing countries) may not have been subject to the same level of quality control as these more recent data. Furthermore, the type of information collected, the level

of detail and resolution in the data, has gradually evolved over time. In order to derive a single format, quality assured monitoring programme data product covering the entire Northeast Atlantic region inconsistencies in the datasets required resolution. In many instances, particularly in the more historic data, key information is either absent or incorrect, and these missing or erroneous values need replacement by modelled estimates. Moriarty et al. (2017) describes the process by which these issues were all resolved (in some instances with data being sent directly to them by contracting parties) to derive 19 separate consistent and fully quality assured survey data products.

Moriarty M., Greenstreet S. P. R. and J. Rasmussen (2017) Derivation of Groundfish Survey Monitoring and Assessment Data Products for the Northeast Atlantic Area. Scottish Marine and Freshwater Science Vol 8 No 16. Published by Marine Scotland Science ISSN:2043-7722. DOI: 10.7489/1984-1. Available online: <http://data.marine.gov.scot/sites/default/files//SMFS%200816.pdf>

Note: since the IA2017 further issues with the Version 2 data product were identified by some national Data Providers and by the indicator leads responsible for carrying out the assessments. It was not possible to deal with these issues in time for the IA2017, but they have since been addressed to derive a third version of data product (see Greenstreet and Moriarty (2017)).

Greenstreet S. P. R. and Moriarty M. (2017) Manual for Version 3 of the Groundfish Survey Monitoring and Assessment Data Product. Scottish Marine and Freshwater Science Vol 8 No 18. Published by Marine Scotland ISSN: 2043-7722. DOI: 10.7489/1986-1.

Available online: http://data.marine.gov.scot/sites/default/files//SMFS%200818_0.pdf

2.5 Data reporting, handling and management

Groundfish and beam trawl survey data are submitted to the Database of Trawl Surveys (DATRAS):

<http://www.ices.dk/marine-data/data-portals/Pages/DATRAS.aspx>

The DATRAS reporting format is detailed online:

https://datras.ices.dk/Data_products/ReportingFormat.aspx

The metadata relating to the ICES co-ordinated surveys are available here:

<http://www.ices.dk/marine-data/data-portals/Pages/DATRAS-Docs.aspx>

Data management of the OSPAR Dataproduct is discussed in Moriarty et al. (2017).

Available online: <http://data.marine.gov.scot/sites/default/files//SMFS%200816.pdf>

3 Assessment

3.1 Data acquisition

Groundfish and beam trawl survey data are currently downloaded directly from DATRAS in raw exchange format.

https://datras.ices.dk/Data_products/Download/Download_Data_public.aspx

3.2 Preparation of data

The raw data are processed in the OSPAR dataproduct to provide numbers and biomass of individuals by size class standardised to unit swept area for each haul (Moriarty et al. 2017).

3.3 Assessment criteria, analysis, presentation of assessment results

Assessment criteria, analyses and presentation of results are explained and shown for each indicator in the IA2017 (in particular section: Assessment Method):

<https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/fish-and-food-webs/>

4 Change Management

Responsibility for follow up of the assessments is with the Biodiversity Committee though the ICG-COBAM in particular the expert groups on Fish and Food webs.