

RACs  
Stakeholders

ICES  
CIEM



**Our Ref:** C24.g/CM/hgj

**Subject:** Invitation to Benchmark Workshop 2010

Dear Reader,

ICES invites stakeholders and NGOs (organizations under “ICES Observer Status”) to participate at 2010 Benchmarks Workshops.

Since no assessment can be better than the available data, ICES welcomes additional input from stakeholders, so we can assure that all relevant data are considered and reviewed. You are invited to contribute new datasets, including data from non-traditional sources.

ICES reformed its advice strategy in 2007 with a view to improve transparency and quality control. The annual advice on fishery management is based on 'update assessments' that are based on set methodology. This set methodology will be reviewed every 3–5 years at Benchmark Workshops. Benchmarking is a technical review of the assessments to assure that these are based on all relevant data and that the underlying population model and estimation procedure reflects best science. ICES benchmarking is a science process that aims for consensus among the scientists on how best to assess a specific fish stock taking into account the level of knowledge on the population dynamics, available data and estimation procedure.

ICES plans to hold three such benchmark workshops early in 2010<sup>1</sup>:

<b>Benchmark Workshop</b>	<b>Dates and venue</b>	<b>Stocks to be Benchmarked</b>	<b>ICES Coordinator</b>
WKROUND (Roundfish)	9–16 February 2010, Copenhagen	Faroe saithe (Division Vb) Icelandic saithe (Division Va) Northeast Arctic saithe (Subareas I and II) Northeast Arctic haddock (Subareas I and II) Northern stock of hake (Division IIIa, Subareas IV, VI and VII, and Divisions VIIIabd) Southern stock of hake (Divisions VIIc and IXa)	Einar Hjörleifsson [einarhj@hafro.is]

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Annex 1: Benchmark Terms of Reference and Benchmark Guidelines.

International Council for the  
Exploration of the Sea

Conseil International pour  
l'Exploration de la Mer

General Secretary  
Dr Gerd Hubold

H. C. Andersens Boulevard 44–46  
DK-1553 Copenhagen V  
Denmark

Telephone: (45) 33 38 67 00  
Telefax: (45) 33 93 42 15  
E-mail: Hinfo@ices.dk  
Hwww.ices.dkH

Direct Dialling:  
(45) 33 38 6 + ext.

Benchmark Workshop	Dates and venue	Stocks to be Benchmarked	ICES Coordinator
WKFLAT (Flatfish)	25 February– 4 March, Copenhagen	Sole in Division IIIa (Skagerrak and Kattegat) Plaice in VIIId Sole in Subarea IV Plaice in VIIe	David Miller [david.miller@wur.nl]
WKDEEP (Deep water species)	17–24 February 2010, Copenhagen	Roundnose grenadier in Division Vb and Sub-areas VI and VII Greater Silver smelt in all areas Tusk in Division Va Red (blackspot) seabream in Subarea X Deep-water squaliform sharks in all areas Greater forkbeard	Tom Blasdale [tom.blasdale@jnc.c.gov.uk] and Phil Large [phil.large@cefas.co.uk]

New, relevant time series of data can improve the perception of fish stocks. You are welcome to contact the ICES coordinator of the stocks involved if you have new dataserries. The ICES coordinator can inform you on the relevance of your dataset (based on length of data series for example) and forward it to the stock experts.

At benchmark meetings proposals for modifications of the assessment procedure shall be presented. To allow proper review of the data and, if appropriate, modification of the assessment procedure, it is important that the scientists can perform the analysis and model modification well in advance of the benchmark meeting. You are therefore asked to present proposals to the relevant Coordinator well in advance of the meeting.

The meeting will be chaired by an expert with relevant expertise. This expert is recruited from outside ICES circles. The workshop members will be experts from and outside the ICES community. ICES invites you to participate in these workshops to contribute to data preparation and evaluation of data quality.

If you would like to participate or have practical questions please direct such queries to Helle Gjeding Jørgensen ([hgj@ices.dk](mailto:hgj@ices.dk)).

Kind regards,



Hans Lassen

## Annex 1: Benchmark Terms of Reference and Benchmark Guidelines

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### WKROUND

2009/2/ACOM36 A **Benchmark Workshop on Roundfish [WKROUND]** (External Chair: Richard Methot, USA) and ICES coordinator: Einar Hjørleifsson (Iceland) and three invited external experts: Andrew Applegate (USA), Patrick Sullivan (USA), Daniel Howell (Norway) will be established and will meet in ICES HQ, Copenhagen, Denmark, 9–16 February 2010 to:

- a) Evaluate the appropriateness of data and methods to determine stock status and investigate methods for short term outlook taking agreed or proposed management plans into account for the stocks listed in the text table below. The evaluation shall include consideration of fishery-dependent, fishery independent, and life history data currently being collected for use in the current assessment work and the proposed assessment;
- b) Agree and document preferred method for evaluating stock status and (where applicable) short term outlook and update the assessment handbooks as appropriate;
- c) Develop recommendations for future improving assessment methodology and data collection;
- d) As part of the evaluation:
  - i) conduct a one day data compilation workshop. Stakeholders shall be invited to contribute data (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality. As part of the data compilation workshop consider the quality of data including discard and estimates of misreporting of landings;
  - ii) consider the possible inclusion of environmental drivers for stock dynamics in the assessments and outlook;
  - iii) evaluate the role of stock identity and migration;
  - iv) evaluate the role of multispecies interactions on the assessments.

Stock	Assessment Lead
Faroe saithe (Division Vb)	Luis Ridao Cruz
Icelandic saithe (Division Va)	Höskuldur Björnsson
Northeast Arctic saithe (Subareas I and II)	Sigbjorn Mehl
Northeast Arctic haddock (Subareas I and II)	Sondre Aanes
Northern stock of hake (Division IIIa, Subareas IV, VI and VII, and Divisions VIIIabd)	Michel Bertignac
Southern stock of hake (Divisions VIIc and IXa)	Santiago Cervino

The Benchmark Workshop will report for the attention of ACOM by 2 March 2010.

## WKFLAT

2009/2/ACOM37 A **Benchmark Workshop on Flatfish Species (WKFLAT)** (External Chair: William B. Brodie (Canada) and ICES coordinator: David Miller (Netherlands) and two invited external experts: Bill Clark (USA) and Darren Gillis (Canada)) will be established and will meet in ICES HQ, Copenhagen, Denmark, 25 February–4 March 2010 to:

- a) Evaluate the appropriateness of data and methods to determine stock status and investigate methods for short term outlook taking agreed or proposed management plans into account for the stocks listed in the text table below. The evaluation shall include consideration of fishery-dependent, fishery independent, and life history data currently being collected for use in the current assessment work and the proposed assessment;
- b) Agree and document preferred method for evaluating stock status and (where applicable) short term outlook and update the assessment handbooks as appropriate;
- c) Develop recommendations for future improving assessment methodology and data collection;
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  - ii) consider the possible inclusion of environmental drivers for stock dynamics in the assessments and outlook;
  - iii) evaluate the role of stock identity and migration;
  - iv) evaluate the role of multispecies interactions on the assessments.

<b>Stock</b>	<b>Assessment Lead</b>
Sole in Division IIIa (Skagerrak and Kattegat)	Jesper Boje
Plaice in VIIId	Joel Vigneau
Sole in Subarea IV	Doug Beare
Plaice in VIIe	Sven Kupschus

The Benchmark Workshop will report for the attention of ACOM by 19 March 2010

## WKDEEP

2009/2/ACOM38 A **Benchmark Workshop on Deep Water Species (WKDEEP)** (Chaired by: Richard Hillary (Australia) and ICES coordinators: Tom Blasdale (UK) and Phil Large (UK) and two invited external experts) will be established and will meet in ICES HQ, Copenhagen, Denmark, 17–24 February 2010 to:

- a) Evaluate the appropriateness of data and methods to determine stock status and investigate methods for short term outlook taking agreed or proposed management plans into account for the stocks listed in the text table below. The evaluation shall include consideration of fishery-dependent, fishery independent, and life history data currently being collected for use in the current assessment work and the proposed assessment;
- b) Agree and document preferred method for evaluating stock status and (where applicable) short term outlook and update the assessment handbooks as appropriate;
- c) Develop recommendations for future improving assessment methodology and data collection;
- d) As part of the evaluation:
  - i) conduct a one day data compilation workshop. Stakeholders shall be invited to contribute data (including data from non-traditional sources) and to contribute to data preparation and evaluation of data quality. As part of the data compilation workshop consider the quality of data including discard and estimates of misreporting of landings;
  - ii) consider the possible inclusion of environmental drivers for stock dynamics in the assessments and outlook;
  - iii) evaluate the role of stock identity and migration;
  - iv) evaluate the role of multispecies interactions on the assessments.

<b>Stock</b>	<b>Assessment Lead</b>
Roundnose grenadier in Division Vb and Subareas VI and VII	Lionel Pawlowski
Greater Silver smelt in all areas	Gudmundur Thordarson
Tusk in Division Va	Kristin Helle
Red (blackspot) seabream in Sub-area X	Mario Rui Pinho
Deep-water squaliform sharks in all areas	
Greater forkbeard	Guzmán Díez

The Benchmark Workshop will report for the attention of ACOM by 8 March 2010

## Supporting Information:

<b>PRIORITY:</b>	
<b>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:</b>	<p><u>Roundnose grenadier in Division Vb and Sub-areas VI and VII:</u></p> <p>This species presents major assessment challenges largely driven by: life-history characteristics (long-lived (~60 years) and slow growing), changes in exploitation pattern resulting from changes in the geographical and depth distribution of trawl fisheries in relation to stock distribution, a lack of fisheries-independent survey data, and discontinuity in the availability of time-series discard data (fisheries on this stock generate high discards) and of age data. Abundance indices based on French trawl catch and effort data are available but their use in assessments is problematic because of changes in spatial and depth distribution of fishing and also changes fleet composition/fishing power. Time-series length distribution data are available for French trawl landings. Time series haul by haul data on catch and effort by French trawlers, collected in collaboration with the industry, is now available. Separable VPA was used for an exploratory assessment in 2009.</p> <p><u>Greater Silver smelt in all areas:</u></p> <p>This species is long-lived (~40 years) and slow growing but is benthic-pelagic and targeted largely by pelagic trawlers. Time-series length and age data are available for some areas. Exploratory assessment methodologies used include acoustic surveys (in IIa) and, in 2009, XSA (Vb).</p> <p><u>Tusk in Division Va:</u></p> <p>This is a gadoid species and as such is not particularly long-lived (20-30 years) or slow growing. It is caught largely as a by-catch in long-line fisheries for other species. Age data are sparse but there are survey data. Length distribution data are available from surveys and commercial landings. Gadget was used for an exploratory assessment in 2009.</p> <p><u>Red (blackspot) seabream in Sub-area X:</u></p> <p>This species is not particularly long-lived (15-20 years) or slow-growing but is a protandric hermaphrodite (changes sex as it grows). Fisheries are artisanal (long-lines and hand-lines) and are mostly prosecuted on seamounts. Survey data are available as are length and age data. Separable VPA and XSA have been previously trialled; however, an exploratory assessment was not attempted in 2009.</p> <p><u>Deep-water squaliform sharks in all areas:</u></p> <p>These include the Portuguese dogfish and the leafscale gulper shark, and are mostly long-lived (up to 60 years). Length and age data are not available and historical landings data are not available by species (although in recent years the quality of landings data has improved). Haul by haul data from French trawlers fishing in Vb, VI and VII by species back to the mid-1990s were made available in 2008. Directed fisheries for these species are currently not permitted but they are still taken as a small by-catch in other fisheries.</p> <p><u>Greater forkbeard:</u></p> <p>This is a gadoid species and is considered likely to exhibit typical gadoid life history characteristics, although these are not known with any accuracy. Commercial landings are significant but this is almost entirely a bycatch species taken in other fisheries. Exploratory assessments have not yet been attempted.</p>
<b>RESOURCE REQUIREMENTS:</b>	

<b>PARTICIPANTS:</b>	WGDEEP and WGEF members, ecosystem integration experts, data quality experts, stakeholders
<b>SECRETARIAT FACILITIES:</b>	None
<b>FINANCIAL:</b>	None required
<b>LINKAGES TO ADVISORY COMMITTEES:</b>	ACOM
<b>LINKAGES TO OTHER COMMITTEES OR GROUPS:</b>	WGDEEP, WGEF
<b>LINKAGES TO OTHER ORGANIZATIONS:</b>	

## **Guidelines for Benchmark and Data Compilation Workshops**

### **Introduction**

In October 2007 the Council established ACOM and implemented an advisory structure that employs

- Benchmark Workshops to assemble data and lay down a reviewed or new assessment methodology in a stock annex,
- Expert Groups
- Review Groups to provide an independent review of the technical text, and
- Advice Drafting Groups to draft the advice for consideration by the ACOM and communication to the client.

This document provides details on the constitution and operation of the Benchmark and Data Compilation Workshops in the ICES framework.

From 2008 onwards, regional fish stock assessment Expert Groups will only do update assessments. Dedicated benchmark workshops are established to review and where needed update assessment methodology under supervision of external peer reviewers. When new methods are adopted as the standard tools for particular analyses, these will be passed on to the regional assessment Expert Groups in the form of stock annexes.

### **Task**

Benchmark WKs are tasked to provide reviewed benchmark assessments of stocks listed in the WK ToRs, to produce stocks annexes and a WK report.

### **Chair**

The chairing of the Benchmark and Data Compilation WK will be done by an expert from outside the ICES area who has experience with the type of assessments involved. This Chair is responsible for the procedure during the meeting and the producing of the stock annexes and WK report.

The preparatory process within ICES will be coordinated by ICES coordinators who are experts responsible for a number or all of the relevant stocks. ICES coordinators will function as co-chairs during the meeting.

### **Members**

The members will be experts in the given stocks (stock coordinators and stock assessors), experts in general fish stock assessment methods and experts in environmental and multispecies issues. Additionally, external experts will be invited who are responsible for reviewing the proposed methods during the WK.

The meeting is open to relevant stakeholders and client commissions as members. The Chair of the meeting may decide on acceptance of members. In case of disputes on who is to participate ACOM will decide. Stakeholders are welcome to present factual information, datasets and outline ideas for future data collection, give input on the available data and get clarifications on matters. The Chair may limit the members speaking time in case it is felt that the presentation exceeds the immediate scientific scope of the discussion.

## **Working Procedure**

A Benchmark workshop will be preceded or encompass a Data compilation workshop as given in Annex 1.

The Benchmark WK will largely work on benchmark analyses done before the workshop and presented as working document. The review of working documents is a vital part of the workshop.

Suggestions on how to deal with in a benchmark assessment are given Annex 2.

### **The quality criteria for acceptance of new methodology will be:**

- improved data(-sources)
- low bias
- low uncertainty
- improved diagnostics

When new standard analyses methods are agreed by the workshop, the workshop should also evaluate the possible implications for biological reference points. **Guiding information on revision of biological reference points and regime shifts will be developed.**

The workshop will produce a report that is similar to other ICES EG reports.

The workshop should produce updated Stock Annexes on the basis of Annex 3.

## **Annex 1. Data Compilation tasks**

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Data Compilation will involve the following tasks:

- List and compile available datasets and advise corresponding groups on the use of the datasets
- Judge new datasets or proposed data collection programs presented at the DCWK for the possibility of future use on the basis of the data quality criteria below
- Justify the choices made
- Format the appropriate data to the standards required for scientific use in corresponding groups
- Present the available information for scrutiny by participants attending the meeting

### **Working procedure**

When new data are presented these will be considered on the basis of the following quality criteria

- relevance;
- appropriate coverage of space and time;
- objectivity;
- quality assurance procedures;
- transparency in the collection process;
- description of collection methods and manuals;

The WK will advise on the use of new data. In case of a negative advice, an attempt will be made to outline how the dataset can be improved for future use.

## **Annex 2. Suggested details to deal with in benchmark assessments.**

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- a) What have been the key areas of focus for the benchmark?
- b) Have comments in previous technical minutes been addressed?
- c) Have environmental issues and species interactions been taken into account?
- d) Are the catch statistics representative of the removals from the stocks (discards, underreporting, misreporting)?
- e) Has the quality of the survey data been evaluated and presented in the report?
- f) Has the quality of fishery dependent data (catch, effort, cpue) been evaluated and presented in the report?
- g) Has the sampling level (commercial catch, discards, surveys) been presented and evaluated?
- h) Stock assessment modelling:
  - Has the sensitivity to model assumptions (different model formulations) been explored?
  - Has the sensitivity of parameter estimates to data been evaluated and presented (e.g. bootstrap analysis)?
  - Has retrospective analysis been carried out and presented?
  - Is the final assessment acceptable to:
    - 1) show the historical stock development
    - 2) show the present status, and
    - 3) be used for a short term forecast?
- i) Are the recruitment estimates presented and credible?
- j) If a short term forecast is presented:
  - Is the short term forecast consistent with the stock assessment output?
  - Has the sensitivity of the short term forecast been discussed (including the current year assumption)?

### Annex 3. Stock Annex template

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Stock specific documentation of standard assessment procedures used by ICES.

Stock .....

Date: day.month.year of last revision

Revised by .....

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#### A. General

A.1. Stock definition

A.2. Fishery

A.3. Ecosystem aspects

#### B. Data

B.1. Commercial catch

B.2. Biological

B.3. Surveys

B.4. Commercial CPUE

B.5. Other relevant data

#### C. Historical Stock Development

Model used:

Software used:

Model Options chosen:

Input data types and characteristics:

Type	Name	Year range	Age range	Variable from year to year Yes/No
Caton	Catch in tonnes			
Canum	Catch at age in numbers			
Weca	Weight at age in the commercial catch			
West	Weight at age of the spawning stock at spawning time.			
Mprop	Proportion of natural mortality before spawning			
Fprop	Proportion of fishing mortality before spawning			
Matprop	Proportion mature at age			
Natmor	Natural mortality			

Tuning data:

Type	Name	Year range	Age range
Tuning fleet 1			
Tuning fleet 2			
Tuning fleet 3			
....			

#### **D. Short-Term Projection**

Model used:

Software used:

Initial stock size:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Intermediate year assumptions:

Stock recruitment model used:

Procedures used for splitting projected catches:

#### **E. Medium-Term Projections**

Model used:

Software used:

Initial stock size:

Natural mortality:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Intermediate year assumptions:

Stock recruitment model used:

Uncertainty models used:

1. Initial stock size:
2. Natural mortality:
3. Maturity:
4. F and M before spawning:
5. Weight at age in the stock:
6. Weight at age in the catch:
7. Exploitation pattern:
8. Intermediate year assumptions:
9. Stock recruitment model used:

## **F. Long-Term Projections**

Model used:

Software used:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Procedures used for splitting projected catches:

## **G. Biological Reference Points**

## **H. Other Issues**

## **I. References**