

## Working Group on Integrated Assessment of the Norwegian Sea (WGINOR)

**2018/MA2/IEASG13** The Working Group on Integrated Assessment of the Norwegian Sea (WGINOR), chaired by Per Arneberg, Norway and Anna H. Ólafsdóttir\*, Iceland, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CAIR , ETC.)
Year 2019	25-29 November	Bergen, Norway	Interim report by 15 January 2020 to IEASG	New incoming Co-Chair, Anna . Ólafsdóttir, Iceland
Year 2020	23-27 November	Tórshavn, Faroe Island	Interim report by 15 January 2021 to IEASG	
Year 2021	22-26 November	Reykjavík Iceland	Final report by 15 January 2022 to IEASG	

### Terms of Reference a) – f):

TOR	DESCRIPTION	BACKGROUND	<a href="#">SCIENCE PLAN CODES</a>	DURATION	EXPECTED DELIVERABLES
A	Perform integrated assessment of the pelagic ecosystem in the Norwegian Sea and develop a framework for identifying warning signals for management.	Addresses needs in the Science Plan for developing understanding of the ecosystem and its responses to human impact and other challenges. In addition, start developing a framework for ecosystem-based advice that can be used by WGWIDE, OSPAR and similar recipients.	6.5	years 1-3	WG report to SCICOM and ACOM January following each year
b	Utilize multispecies and ecosystem models to evaluate effects of single and multispecies harvest control rules on fishing yield and ecosystem state of the pelagic ecosystem in the Norwegian Sea.	Addresses needs in the Science Plan for developing ecosystem-based advice for sustainable use of marine ecosystems resources.	5.3	years 2-3	WG report to SCICOM and ACOM January following year 2 and 3
c	Initiate development of forecast products (1-5 years) for key indices of ocean climate in the Norwegian Sea.	Aims at providing better understanding of links between the physical environment and productivity of the pelagic ecosystem in support of integrated ecosystem assessment.	1.2	years 1-3	WG report to SCICOM and ACOM January following each year

d	Develop a food-web assessment of the pelagic ecosystem in the Norwegian Sea, including hindcasts and conditional forecasts of the main species or trophic groups.	Aims at providing better understanding of energy flow in the food-web of the pelagic ecosystem in support of integrated ecosystem assessment.	5.2	years 1-3	WG report to SCICOM and ACOM January following each year
e	Establish a dialogue between WGINOR and relevant pelagic fisheries stakeholders and managers in Norway, Faroe Island and Iceland.	Aims at steering the work of the group so that it addresses management needs.	6.4	years 1-3	WG report to SCICOM and ACOM January following each year
f	Update the ecosystem overview based on the ICES guidelines.	Summarizes key achievements in developing an understanding of the ecosystem and its responses to human impact and other challenges.	6.5	year 3	WG report to SCICOM and ACOM January following year 3

**Summary of the Work Plan:**

<b>YEAR 1</b>	<b>INITIATE WORK WITH TORs C,D AND E AND FRAMEWORK FOR WARNING SIGNALS IN TOR A. DO INTERIM IEA AS PART OF TOR A.</b>
<b>Year 2</b>	Continue work on ToRs c,d and e. Start work with the climate change part of ToR f. Start work with ToR b. Do interim IEA and assess warning signals as a part of ToR a.
<b>Year 3</b>	Do full IEA with assessment of warning signals as part of ToRa. Update the ecosystem overview. Continue work on ToRs b, c, d, and e.

**Supporting information**

<b>PRIORITY</b>	<b>WGINOR AIMS TO CONDUCT AND FURTHER DEVELOP INTEGRATED ECOSYSTEM ASSESSMENT FOR THE NORWEGIAN SEA, AS A STEP TOWARDS IMPLEMENTING THE ECOSYSTEM APPROACH, ADDRESSING CORE PRIORITIES IN THE ICES STRATEGIC PLAN.</b>
<b>Resource requirements</b>	<p>Term of Reference a) The two international fish-plankton surveys in the Norwegian Sea have in recent years been developed in the direction of ecosystem surveys that capture several key components of the ecosystem. This provides a firm foundation for performing an integrated assessment of the Norwegian Sea pelagic ecosystem. A framework for assessing warning signals will be developed with input from relevant projects at the involved institutions.</p> <p>Term of Reference b) This will build on model approaches developed for this ToR during several years within WGINOR.</p> <p>Term of Reference c) This will be based on ongoing research projects and oceanographic information collected during cruises in the Norwegian Sea and surrounding waters and supplied by satellite-based monitoring. Resources must be found in the participating institutions to complete development of the forecast system.</p> <p>Term of Reference d) The basis for developing the model-based foodweb assessment is the data from the ecosystem cruises and model work done in the involved institutions. The work will draw</p>

on ongoing projects with a similar scope. Some resources must also be found in the involved institutions to complete the work.

Term of Reference e)

This will be based on experiences made during fishing industry scoping exercise at IMR, Bergen, Norway in 2018 and will not require additional resources.

Term of Reference f)

Update of the elements of the ecosystem overview established before 2019 will be done based on existing projects and management initiatives, such as the Norwegian ecosystem-based management plan for the Norwegian Sea. The new elements focusing on climate change will be developed with a basis in ongoing projects and other assessment processes, such as IPCC. Additional resources will be required in the participating institutions to complete the latter work, in particular related to projections and assessments of anticipated effects of climate change in future.

**Participants**

The Group is normally attended by some 15-20 members and guests.

**Secretariat facilities**

None.

**Financial**

No financial implications.

**Linkages to ACOM and groups under ACOM**

WGINOR has provided text to the section on "Ecosystem considerations for widely distributed and migratory pelagic fish species" in the WGWIDE report.

**Linkages to other committees or groups**

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**Linkages to other organizations**

The work done in the group is highly relevant to other assessment initiatives, in particular the Norwegian ecosystem-based management plan for the Norwegian Sea and OSPAR.

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