

WORKING GROUP ON INTERNATIONAL DEEP PELAGIC ECOSYSTEM SURVEYS (WGIDEEPS)

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i Executive summary

The Working Group on International Deep Pelagic Ecosystem Surveys (WGIDEEPS) planned the redfish survey in the Irminger Sea and adjacent waters in June/July 2024. Due to a suspension of all Russian participation in ICES on 30 March 2022, Russia will not participate in IDEEPS in the Irminger Sea and adjacent waters in 2024.

The detailed planning of the international trawl/acoustic survey on pelagic redfish in the Irminger Sea and adjacent waters in June/July 2024 has been agreed by the two participating countries. Two vessels from Germany and Iceland will participate in the survey and operate within an area of around 280 000 square nautical miles (NM²) in the Irminger Sea to estimate the abundance and biomass of pelagic redfish (*Sebastes mentella*). In the depth zone that can be surveyed by hydro-acoustic measurements, shallower than the deep-scattering layer (DSL; down to about 350 m), hydro-acoustic measurements and identification trawls will be carried out. Within and below the DSL (down to about 950 m), redfish abundance will be estimated by trawls.

The trawl method applied is the same as in the 2009-2021 surveys and is line with the recommendation from ICES to study separately the stocks shallower and deeper than 500 m. As in past surveys, biological data will be collected from the redfish caught in the pelagic trawls, and hydrographical measurements will be taken on regular stations on the survey tracks.

During this year's survey, the international North Atlantic Sightings Surveys (NASS), a cetacean survey that has been conducted since 1987, will be carried out on the Icelandic research vessel in parallel to IDEEPS.

WGIDEEPS updated the survey manual of IDEEPS, with an incorporation of the Norwegian Sea survey with the aim of publishing the manual in ICES TIMES.

ii Expert group information

Expert group name	Working Group on International Deep Pelagic Ecosystem Surveys (WGIDEEPS)
Expert group cycle	Multiannual fixed term
Year cycle started	2023
Reporting year in cycle	2/3
Chair(s)	Hannes Höffle, Norway Matthias Bernreuther, Germany
Meeting venue(s) and dates	13-14 June 2023, online (5 participants) 13-15 February 2024, Copenhagen, Denmark (6 participants)

1 Participation in IDEEPS - Russian suspension

On 30th March 2022, all Russian participation in ICES was suspended. Therefore, Russia cannot participate in IDEEPS in the Irminger Sea and adjacent waters.

No alternatives that could be arranged for compensating the corresponding loss of survey coverage at the time being. For this reason, the group decided to focus mainly on surveying pelagic redfish in areas where in previous surveys it has been observed to be most abundant, which is in the north and south-eastern part of the research area (subareas A and B), but also to cover part of the south-western area (subarea E and partly subarea F), where in the past a relative high abundance of the pelagic *S. mentella* has been observed.

2 Planning of the international trawl/acoustic survey on redfish in the Irminger Sea and adjacent waters in June/July 2024

The survey manual for the survey conducted in the Irminger Sea and adjacent waters is published under the Series of ICES Survey Protocols (SISP) and describes in detail the planning of the survey (ICES, 2015). Specific issues that are revised before the survey are described in this section.

2.1 Vessels, timing, survey area and data exchange

The main objective of this survey is the trawl-acoustic assessment of the two pelagic redfish stocks in the Irminger Sea and adjacent waters in June/July 2024. The group agreed to continue to cover the area from 54°00'N to 65°30'N and from the 25°W in the east till western boundary to 50°30'W.

Below is the list of research vessels which will participate in the IDEEP survey in the Irminger Sea and adjacent waters in June/July 2024, time period engaged to the survey and approximate time and number of days in the field:

Name of the vessel	Country	Period	Approx. working period in the field	Days in field
Árni Friðriksson	Iceland	4 – 26 June	5 – 25 June	21
Walther Herwig III	Germany	6 June – 8 July	~13 June – 2 July	20

The vessels will communicate daily. Information on the communication between vessels is given in Annex 2. Daily reporting between the vessels is performed using the data sheet given in Annex 2 of the survey manual (ICES, 2015).

The planned survey tracks are displayed for each participating vessel in Figure 1 and Table 1 in Annex 3.

“Árni Friðriksson” will cover the northeastern area (subarea A) completely and part of subarea B. “Walther Herwig III” will cover part of the southeastern area (subarea B and a small part of area C) and part of the southwestern area (subarea E and small parts of subareas D and F). The total length of the planned survey tracks is about 5,600 nautical miles (NM), divided between the vessels as follows: “Árni Friðriksson” 2,900 NM and “Walther Herwig III” 2,700 NM.

The cruise leaders of these vessels will apply for entry into the relevant EEZs by notifications to Canada, Greenland, and Iceland. The operations in the NAFO Convention Area will be notified to NAFO by the German cruise leader.

2.2 Further Issues

2.2.1 Participation of further countries

The Group is again facing the problem of covering the entire survey area with only two vessels, resulting in a large spacing of survey tracks and trawl hauls and the geographical area of redfish not being covered completely. To improve the precision of the survey by increasing the density of the tracks and trawl stations, additional vessels should take part in the survey. The Group recommended as in 2005 that “at least four vessels should participate to allow a sufficiently dense coverage of the survey area and to permit an improvement in the quality of the derived abundance and biomass estimates. Thus, the efforts directed at involving other nations in the survey should be continued.”

Notwithstanding the disappointing outcome of earlier attempts, the group will continue its efforts in involving further countries in the survey. The group also notes that other non-EU countries that have been or are involved in the fishery should consider their participation in the survey.

The group considered it appropriate to approach NEAFC to get nations involved in the commercial fishery to participate in the surveys. This should be done through the ICES Secretariat with an official letter to NEAFC.

2.2.2 Time schedule for the survey report

The final reporting will take place during the next WGIDEEPS meeting from 13–15 August 2024. To finalize the work for three days, the following plan will be followed:

As soon as the vessel has finished scrutinizing the acoustic data, after the survey tracks are finished, the data must be sent to the other participant. Not later than 1 August 2024, all data shall be sent to the cruise leaders and co-chairs. The data shall be sent in the format described in Annexes 3 and 4 in the SISP manual (ICES, 2015) and all participants shall have a copy in an electronic format.

Iceland will calculate the abundance estimation of the redfish within and deeper than the DSL, including writing of the material and methods, results and discussion.

Germany will work up the environmental data, including the drawing of graphs, writing of the material and methods, results and discussion.

Iceland will calculate and finalize the acoustic data, including writing of the material and methods, results and discussion. Iceland will also draw the cruise tracks and information on stations.

Germany will be responsible for writing about biological results, including writing of the material and methods, results and discussion.

All drafts must be sent to the WGIDEEPS co-chairs before 12 August 2024.

3 The North Atlantic Sightings Surveys (NASS)

During this year's survey, the international North Atlantic Sightings Surveys (NASS) will be carried out on the Icelandic research vessel in parallel to IDEEPS. The responsible scientist from Iceland, Gudjohn Mar Sigurdsson from the Marine and Freshwater Research Institute Hafnarfjörður, Iceland, joined the WGIDEEPS meeting to discuss the sampling strategy and the cruise tracks with the aim of achieving the objectives of both surveys.

The North Atlantic Sightings Surveys (NASS) are internationally coordinated cetacean surveys conducted in 1987, 1989, 1995, 2001, 2007, 2015 and 2024. Their primary objective is to obtain quantitative data on the distribution and abundance of all cetacean species across the survey area, spanning the northern North Atlantic from Norway to North America. These surveys are among the most extensive wildlife assessments ever done, covering up to 2 million square nautical miles (equivalent to the size of Western Europe) and involving up to 15 ships, 4 aircraft, and 100 observers in a single survey. The combined distance travelled by ships and planes during surveys has exceeded 40,000 nautical miles, equivalent to twice the distance around the world. Remarkably, a single survey has recorded sightings of up to 5,000 whales. The NASS's long-time span makes them ideal for monitoring abundance trends. Since 1995, the NAMMCO Scientific Committee has planned and coordinated the NASS.

For 2024, Iceland, Norway, Faroe Islands, and Greenland are participating in the survey, covering an area from the southern tip of Greenland to northern Norway. In all regions, standard "line transect" methods are used, and total abundance is estimated using the density of animals on the transects surveyed by the ships.

4 Update of the survey manual (SISP to TIMES)

During the meeting, work on the update of the survey manual and the incorporation of the Norwegian Sea survey part was conducted. The goal is to submit to TIMES the first complete draft combining the Irminger Sea survey part with the Norwegian Sea survey part in one survey manual in April 2024.

Reference list

ICES (2015). Manual for the International Deep Pelagic Ecosystem Survey in the Irminger Sea and Adjacent Waters. Series of ICES Survey Protocols SISP 11 – IDEEPS VI. 49 pp.

Annex 1: List of participants

Name	Institute	Country (of institute)	Email
Magnus Aune	Institute of Marine Research	Norway	magnus.aune@hi.no
Matthias Bernreuther (co-chair)	Thünen Institute of Sea Fisheries	Germany	matthias.bernreuther@thuenen.de
Lea Hartkens	Thünen Institute of Sea Fisheries	Germany	lea.hartkens@thuenen.de
Hannes Höffle (co-chair)	Institute of Marine Research	Norway	hannes.hoffle@hi.no
Kristján Kristinsson	Marine and Freshwater Research Institute	Iceland	kristjan.kristinsson@hafogvatn.is
Gudjon Mar Sigurdsson	Marine and Freshwater Research Institute	Iceland	gudjon.mar.sigurdsson@hafogvatn.is

Annex 2: Resolution

WGIDEEPS - Working Group on International Deep Pelagic Ecosystem Survey

2022/FT/EOSG03 A Working Group on International Deep Pelagic Ecosystem Surveys (WGIDEEPS), chaired by Hannes Höffle, Norway, and Matthias Bernreuther, Germany, will work on ToRs and generate deliverables as listed in the Table below.

	MEETING DATES	VENUE	REPORTING DETAILS	COMMENTS (CHANGE IN CHAIR, ETC.)
Year 2023	13-14 June 2023	Online meeting	Interim report by 12 th July to ACOM-SCICOM	Hannes Höffle and Matthias Bernreuther will continue as chairs (Hannes Höffle until Summer 2023).
Year 2024	TBD January/February	<i>To be decided</i>	Interim report by 1 March 2024 to ACOM-SCICOM	
Year 2024	TBD August	<i>To be decided</i>	Interim report by 10 September 2024 to ACOM-SCICOM	
Year 2025	TBD January/February	<i>To be decided</i>	Interim report by 1 March 2025 to ACOM-SCICOM	
Year 2025	By correspondence		Final report by 15 September 2025 to ACOM-SCICOM	

ToR descriptors¹

ToR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
a	Update former SISP 11, incorporating the Norwegian Sea survey, and publish in TIMES	So far, the Norwegian Sea survey on pelagic <i>Sebastes mentella</i> has not been incorporated into the IDEEPS SISP 11.	3.2	Year 1 (2023)	Updated TIMES survey protocol ¹

¹ Avoid generic terms such as "Discuss" or "Consider". Aim at drafting specific and clear ToR, the delivery of which can be assessed

b	Finalise transfer of trawl survey data from international deep pelagic ecosystem surveys coordinated by the group to ICES DATRAS or Acoustic Trawl Survey databases	Data is now stored by individual nations/participants. ICES has committed to a fully transparent and documented quality assurance framework for all data products and assessment results derived from data collated within the ICES working groups, this underpins agreements with all the recipients of ICES advice.	3.2	Year 1 (2023)	Inclusion of data in DATRAS or Acoustic Trawl Survey database
c	Coordinate the international deep pelagic ecosystem survey with special emphasis on redfish to be carried out in the Irminger Sea and adjacent waters in June/July 2024	The WG has been responsible for the planning of the international trawl/acoustic surveys on pelagic redfish (<i>Sebastes mentella</i>) in the Irminger Sea and adjacent waters since 1994 and producing reports on the survey results and outcomes.	3.1, 3.2	Year 2 (January/February meeting)	WGIDEEPS 2024 – 1 report chapter 1 March 2024 SCICOM
d	Report on the outcome of the Irminger Sea survey	a) Provide sound, credible, timely, peer-reviewed, and integrated scientific advice on fishery management and the protection of the marine environment. b) Redfish indices are being used by assessment working groups.	3.1, 3.2	Year 2 (August meeting)	WGIDEEPS 2024 – 2 report chapter 1 September 2024 SCICOM
e	Coordinate the international deep pelagic ecosystem survey with special emphasis on redfish to be carried out in the Norwegian Sea and adjacent waters in August 2025	The WG has been responsible for the planning of the international trawl/acoustic surveys on pelagic redfish (<i>Sebastes mentella</i>) in the Norwegian Sea since 2008 and corresponding reports on the survey results.	3.1, 3.2	Year 3 (January/February meeting)	WGIDEEPS 2025 – 1 report 1 March 2025 SCICOM

f	Report on the outcome of the 2025 Norwegian Sea survey	a) Provide sound, credible, timely, peer-reviewed, and integrated scientific advice on fishery management and the protection of the marine environment. b) Redfish indices are being used by assessment working groups.	3.1, 3.2	Year 3 (September meeting)	WGIDEEPS 2025 – 2 report chapter 15 September 2022 SCICOM
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Summary of the Work Plan

YEAR 1	CARRY OUT TOR A-B
Year 2	Carry out ToR c-d
Year 3	Carry out ToR e-f

Supporting information

Priority	Essential, primary basis for the advice on the stock status of pelagic redfish in the Irminger Sea and adjacent waters and in the Norwegian Sea.
Resource requirements	N/A
Participants	Less than 12 participants (incl. the cruise leaders of each vessel and the principle experts involved in abundance and biomass calculations and deep sea ecology).
Secretariat facilities	N/A
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	NWWG, AFWG, WGDEC
Linkages to other committees or groups	SCICOM, WGOH, WGBIODIV, WKFAST, WGISDAA, ICES data centre
Linkages to other organization:	NAFO, NEAFC

Annex 3: Information on communication between vessels for the Irminger Sea survey

RV "Árni Friðriksson" RE 200 (Iceland)

Call sign: TFNA

Telephone: +354 8540535

Telefax: +354 8540532

Inmarsat C (Telex): +581 425150710

Inmarsat B (Tel.): 00874 325150710

Telefax: 00874 325150711

Data: 00874 325150712

Iridium (Tel.): 881-631426272

Email: krik@hafro.is

RV "Walther Herwig III" (Germany)

Call sign: DBFR

Inmarsat Fleet Broadband

CS Telephone, Voice Mail/SMS, Mobile GPRS: +870 773 160 176

Fax: +870 783 160 499

ISDN 56: +870 783 160 728

ISDN 64: +870 783 160 729

Email: matthias.bernreuther@thuener.de

Annex 4: Cruise tracks

Table 1. Agreed preliminary cruise tracks for the international survey on redfish in June/July 2024 (Decimal positions).

RV Árni Friðriksson			RV Walther Herwig III		
Latitude (North)	Longitude (West)	Distance	Latitude (North)	Longitude (West)	Distance
64.75	28.50	Start	58.50	33.50	Start
64.75	34.00	141	58.50	50.50	532
63.75	36.00	79	57.75	50.50	45
63.75	27.20	232	57.75	35.50	479
63.00	26.20	52	57.00	36.50	55
63.00	39.50	360	57.00	50.50	457
62.25	40.00	47	56.25	49.50	56
62.25	27.40	351	56.25	38.50	366
61.50	28.40	53	55.50	39.50	56
61.50	40.75	353	55.50	48.50	306
60.75	41.25	47	54.75	47.50	57
60.75	29.25	351	54.75	38.00	329
60.00	30.25	54			
60.00	41.50	337			
59.25	42.00	47			
59.25	32.50	291			
Total sailing (NM):		2858			2737
Days in the field:		21			20
Average sailing per day (NM/day):		140			137

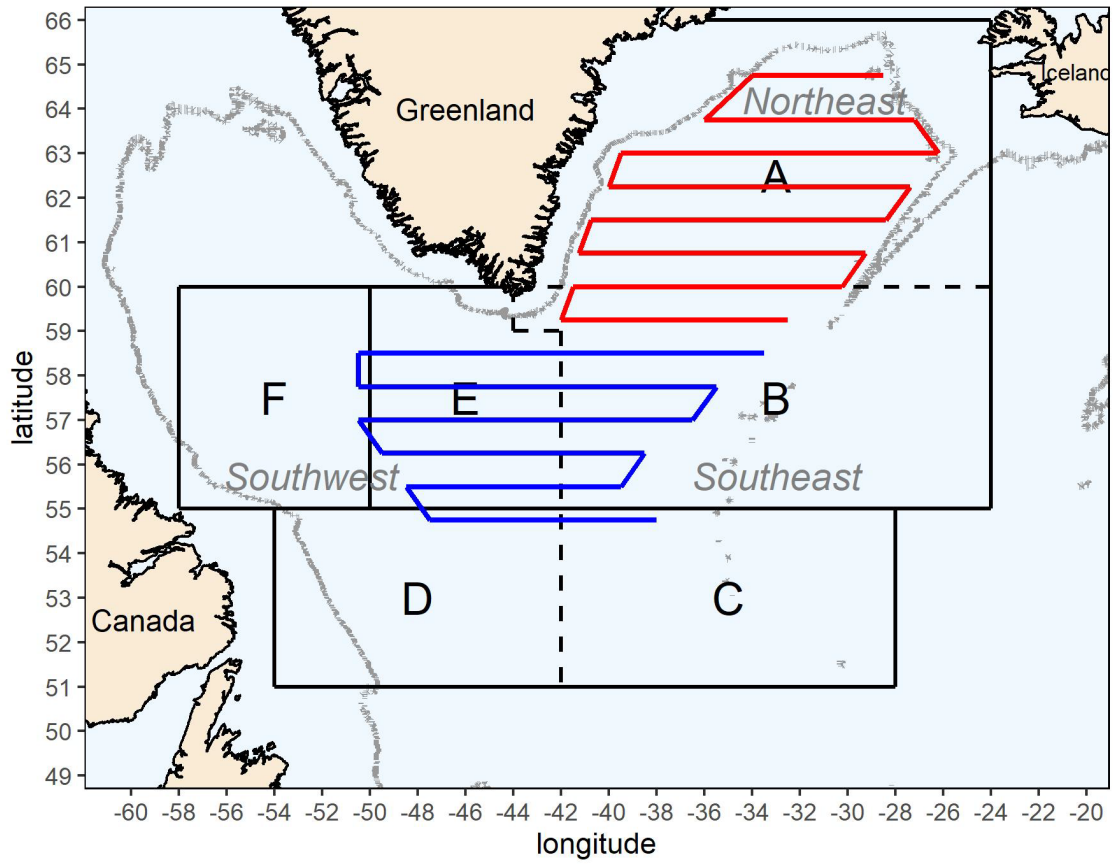


Figure 1. Preliminary cruise tracks of the international survey on redfish in June/July 2024. Red: RV "Árni Friðriksson". Blue: RV "Walther Herwig III".

Annex 5: Terms of Reference for next meeting.

The next meeting of the group will be in Hafnarfjörður, Iceland, from **13-15 August 2024**.

ToR	DESCRIPTION	BACKGROUND	SCIENCE PLAN CODES	DURATION	EXPECTED DELIVERABLES
e	Report on the outcome of the Irminger Sea survey	<p>a) Provide sound, credible, timely, peer-reviewed, and integrated scientific advice on fishery management and the protection of the marine environment.</p> <p>b) Redfish indices are being used by assessment working groups.</p>	3.1, 3.2	Year 2 (August meeting)	WGIDEEPS 2024 – 2 report chapter 1 September 2024 SCICOM