

**Cruise Report**  
Cruise no. 06NG-06TG

**Exploratory investigations on Norwegian spring-spawning herring in the Norwegian Sea**

17 – 24 November 2006

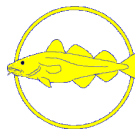
M/S Norðborg



M/S Tróndur í Gøtu



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## INTRODUCTION

During the discussions in the 2006 meeting of the “Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys” (PGNAPES, ICES CM 2006) it was suggested to charter commercial fishing vessels in late November to survey the areas north of the Iceland-Faroe Ridge and in the Norwegian Sea to look for overwintering Norwegian spring-spawning herring.

The Faroese Fisheries Laboratory chartered two commercial vessels, M/S *Norðborg* and M/S *Tróndur í Gøtu* for one week 17-24 November 2006. The aim of the survey was to look for a possible overwintering area in the southwest (i.e. in the “old” overwintering areas) or east of Jan Mayen. Planned areas to cover during the survey are shown in **Fig. 1**. Last winter the Norwegian R/V *G.O. Sars* surveyed the oceanic waters west of Troms and Lofoten, and in the fjords in the Ofoten area. The resulting biomass estimate was roughly two thirds of the total expected adult stock of Norwegian spring spawning herring, therefore it was suspected that part of the adult overwintering stock might have stayed further west, outside the investigated area last winter (ICES 2006).

This winter the Norwegian R/V *G.O. Sars* finished their two weeks survey on overwintering herring on 11 November 2006 in the oceanic waters west of Troms and Lofoten, and in the fjords in the Ofoten area (**Fig. 1**).

During the planning and at the beginning of the present survey it was not clear whether the whole adult stock of herring was covered during the Norwegian survey this winter, therefore the present survey was run. The main focus areas was north of the Faroes and east of Iceland, and in the Norwegian Sea (Jan Mayen and east of Jan Mayen) extending into the Norwegian zone west of the recent coverage with RV “G.O.Sars”, if time permitted.

## MATERIAL AND METHODS

Vessel specifications:

Vessel	M/S <i>Norðborg</i> - KG 0689	M/S <i>Tróndur í Gøtu</i> - FD 175
Length	75.85 m	67.35 m
Net tonnage	1134 t	792 t
Engine	4011 Hk	4586 Hk

Details of the acoustic equipment and trawls are shown in the text table below:

Vessel	M/S <i>Norðborg</i>	M/S <i>Tróndur í Gøtu</i>
<i>Acoustic equipment:</i>		
Echo sounder	ES60 (38 kHz), EK55 (50/120 kHz)	ES60 (38 kHz)
Sonar	SP70 (25 kHz) & SH90 (122 kHz)	SP27 (26 kHz)
Headline sonar	FS 900 MK II	FS
<i>Pelagic trawl:</i>		
	Vónin 1728	Vónin 1856
Circumference	1728 m	1856 m
Vertical opening	100 m	82 m
Horizontal spread	170 m	164 m
Mesh size in cod-end	40 mm inside knot-knot	40 mm inside knot-knot
Towing speed	3.5 knots	3.5 knots
Doors	Injector 14 m <sup>2</sup>	Thyborøn 15 m <sup>2</sup>

The acoustic recordings from both the sonar and echo sounder were monitored continuously during the survey to look for registrations that could be herring. The operation of the sonar was left to the experienced crew onboard the vessels.

Biological samples of the catch were frozen for further analysis at the Faroese Fisheries Laboratory.

## RESULTS

The cruise tracks by the two vessels in the surveyed area are shown in **Fig. 2**. Apart from the first and second day when we headed into a storm from northwest in the area north of the Iceland-Faroe Ridge, the weather was excellent. The plan was roughly adhered to, except the time did not permit coverage in the area west of the recent coverage by R/V *G.O. Sars* (**Fig. 1**).

### Norwegian spring spawning herring

No herring was found during the survey.

### Blue whiting

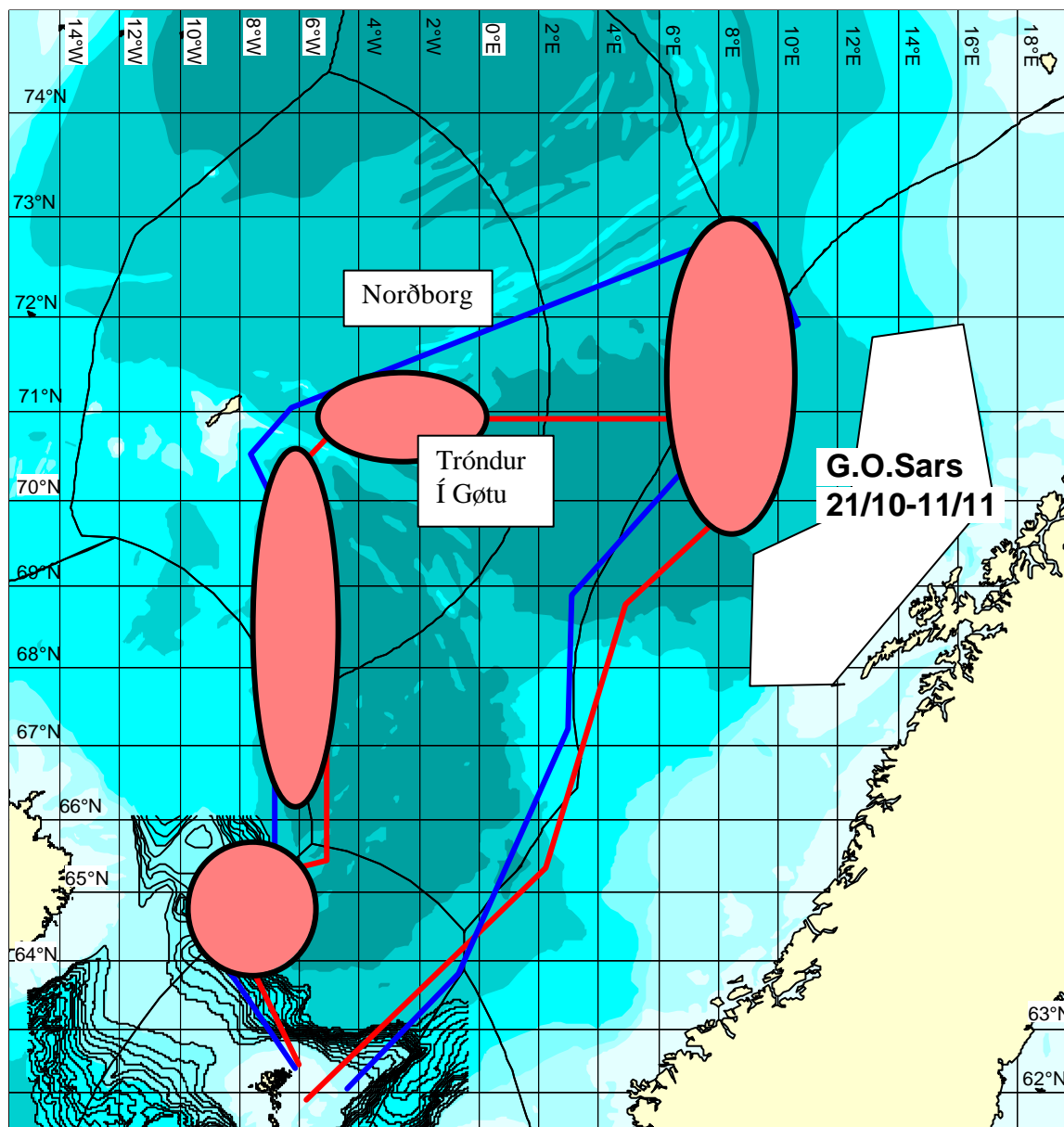
Blue whiting was distributed off the Faroese shelf, and scattered northwards. However, the concentrations were very low compared to the usual picture, when surveying this area. In the open ocean practically no blue whiting were found, except some weak recordings in the area east towards the border between the Jan Mayen and International waters. The only pelagic trawl haul was taken in this area (**Fig. 2**). The trawl was towed at 200 m depth with a towing speed of 3.5 knots for one hour, resulting in a catch of 500 kg of blue whiting. The blue whiting was rather small, with average length of 27 cm (**Fig. 3**) and average weight around 120 g. Most of the blue whiting was 3 years old with some age 4 and 5 (**Fig. 4**).

The sea-surface temperature in the surveyed area ranged from 9°C in the area north of the Faroes decreasing to 2-3°C in the northern part of the Norwegian Sea (**Fig. 5**). The cruise tracks were planned such that the frontal areas were covered as efficiently as possible considering the waste area to cover with only two vessels during one week.

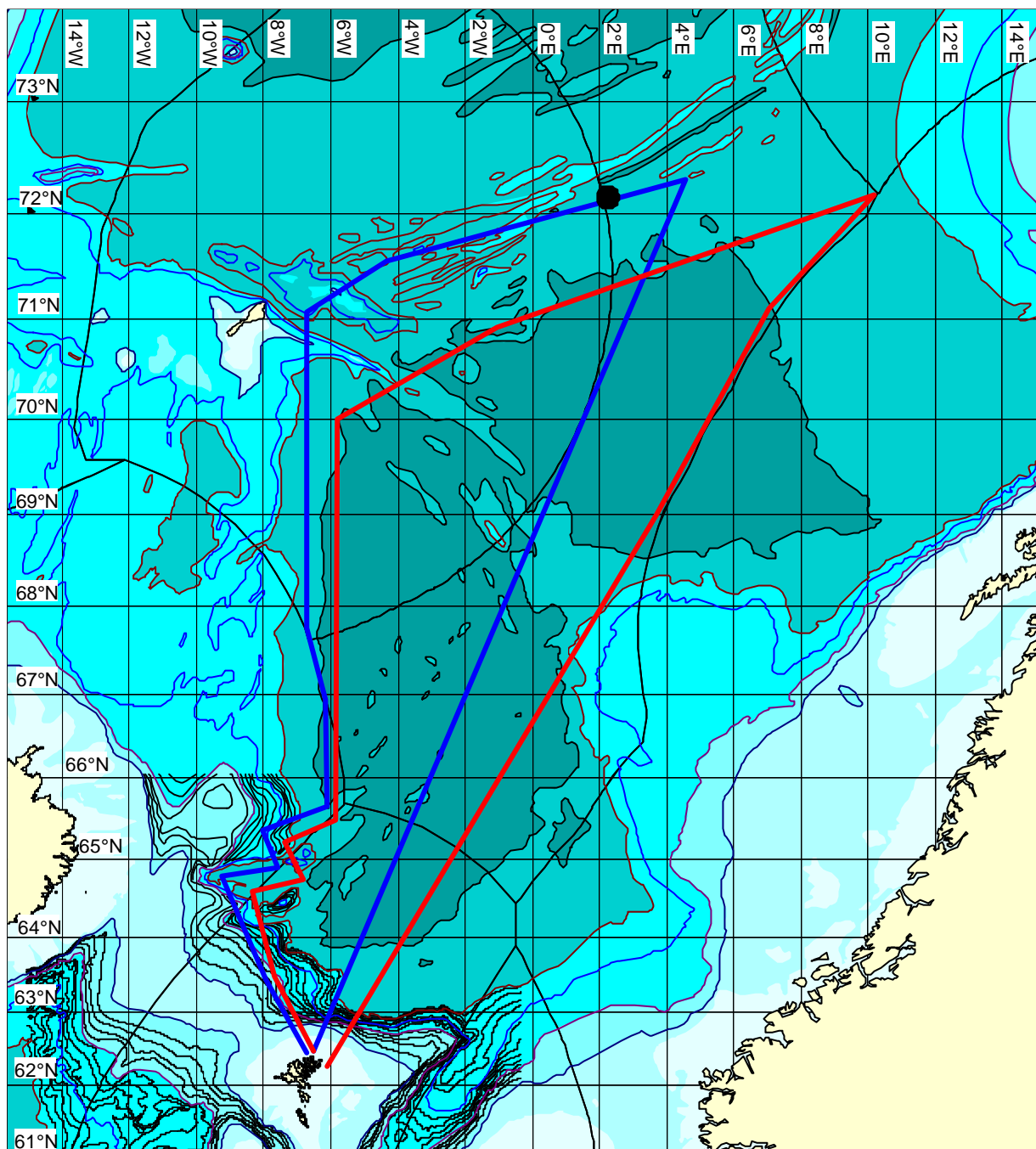
The results of this survey will be reported to the PGNAPES and to the ICES Northern Pelagic and Blue Whiting Fisheries Working Group (WGNPBW) in late August 2007.

## REFERENCES

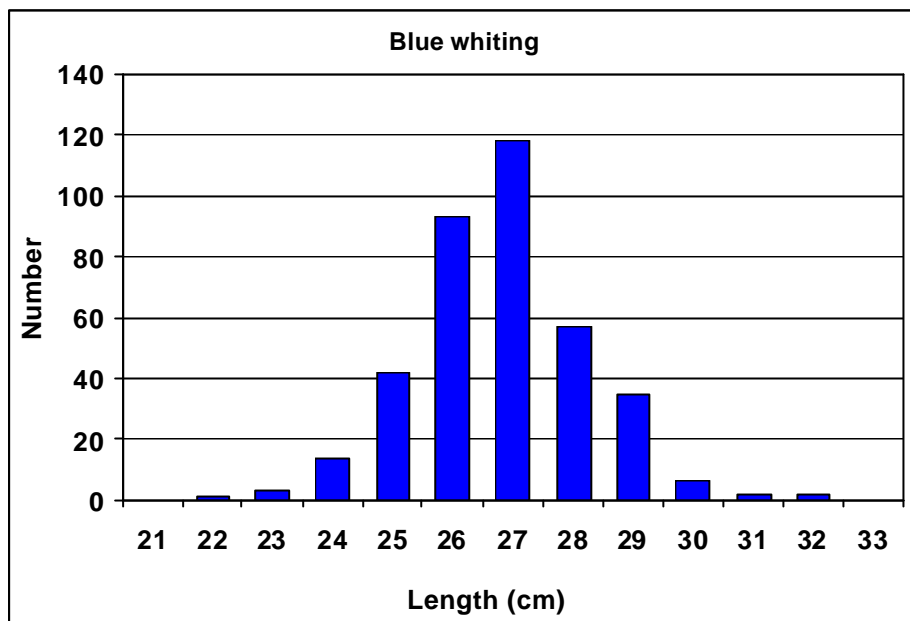
ICES 2006. Report of the Planning Group on Northeast Atlantic Pelagic Ecosystem Surveys (PGNAPES). ICES CM 2006/RMC:08.



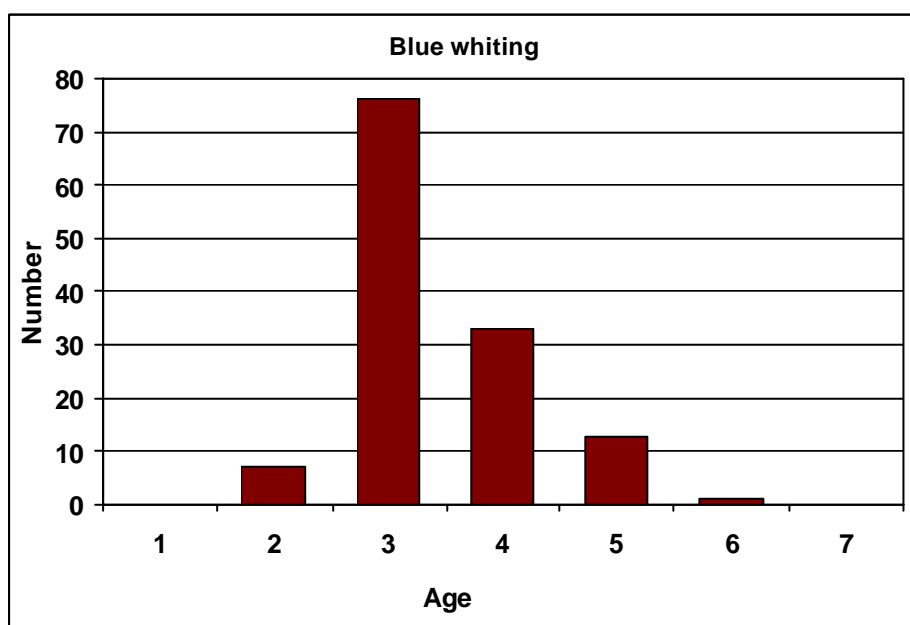
**Figure 1.** Initial survey plans and areas to cover to look for overwintering Norwegian spring-spawning herring with two chartered commercial vessels, M/S *Norðborg* and M/S *Tróndur í Gøtu*. The area off the northern Norwegian coast recently covered with R/V *G.O. Sars* is shown for comparison.



**Figure 2.** Cruise tracks (red lines, *Norðborg* and blue line, *Tróndur í Gøtu*) and one trawl station (dark circle, *Norðborg*) in the Norwegian Sea, cruise 06NB-06TG, 17-24/11 2006.

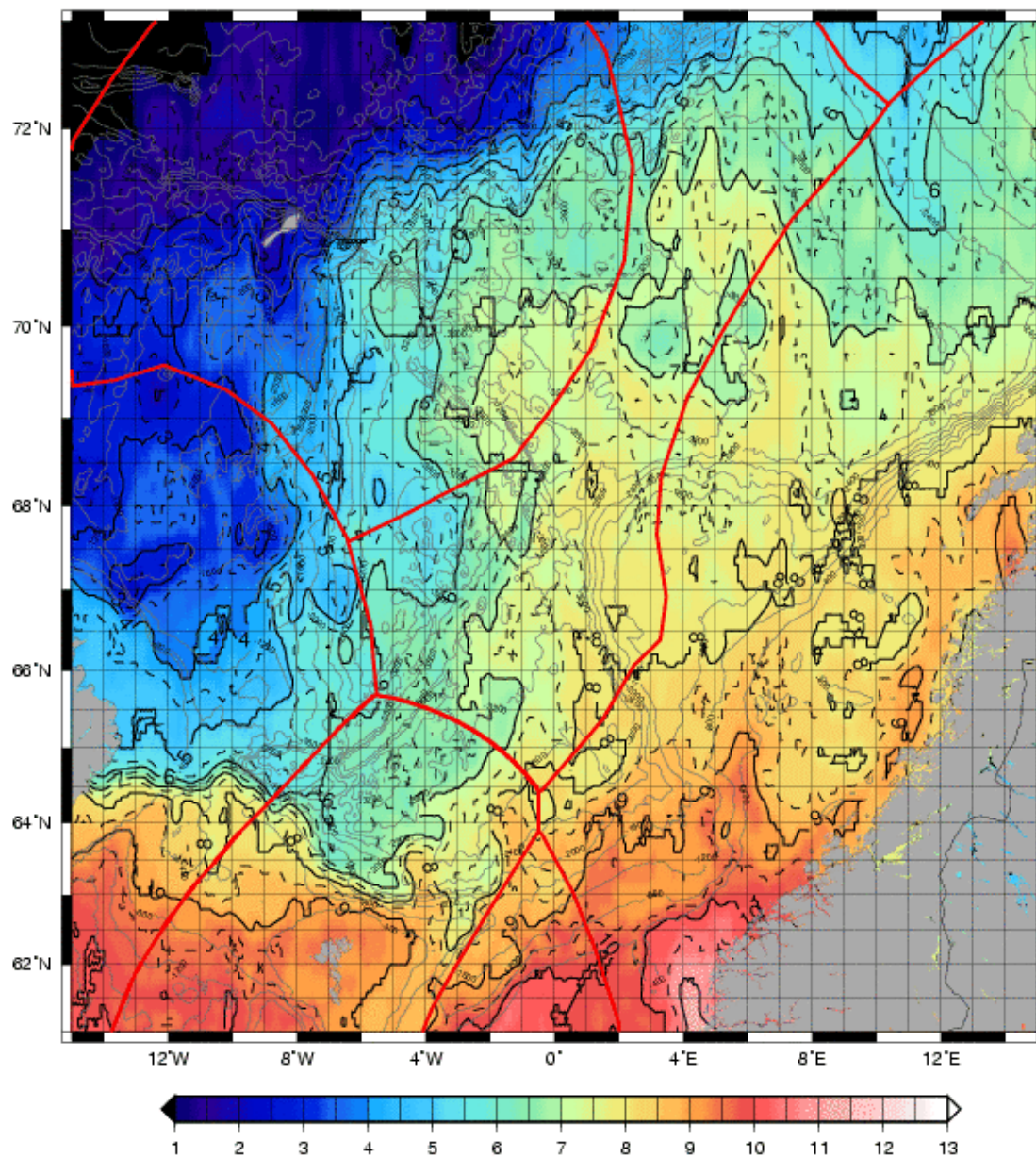


**Figure 3.** Length distribution of blue whiting north of the Faroes, M/S *Norðborg* and *Tróndur í Gøtu* cruise 06NB-06TG, 17-24/11 2006.



**Figure 4.** Age distribution of blue whiting north of the Faroes, M/S *Norðborg* and *Tróndur í Gøtu* cruise 06NB-06TG, 17-24/11 2006.

## TEMPERATURE K10 - 17.11.2006



**Figure 5.** Sea-surface temperature in the Northeast Atlantic on 17/11 2006.