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REPORT ON THE JOINT NAFO/ICES STUDY GROUP ON
BIOLOGICAL RELATIONSHIPS OF THE WEST GREENLAND
AND IRMINGER SEA REDFISH STOCKS

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REPORT ON THE JOINT NAFO/ICES STUDY GROUP ON BIOLOGICAL RELATIONSHIPS OF
THE WEST GREENLAND AND IRMINGER SEA REDFISH STOCKS

1. PARTICIPANTS AND TERMS OF REFERENCE

1.1 Participants

L Hauman	Denmark
K Kosswig	Federal Republic of Germany
E G Luckmanov	USSR
J Magnússon (Chairman)	Iceland
J Møller Jensen	Denmark
N Prusova	USSR
A Schumacher	Federal Republic of Germany

K Hoydal attended the meeting as ICES Statistician.

1.2 Terms of Reference

At the 71st Statutory Meeting of ICES it was adopted that the NAFO/ICES Study Group on Biological Relationships of the West Greenland and Irminger Sea Redfish Stocks should meet at ICES headquarters on 21 February 1984, prior to the meeting of the Working Group on Redfish and Greenland Halibut in Region I (C.Res.1983/3:2). The terms of reference are:

- (i) to review and evaluate additional information relevant to stock identification from historic data series,
- (ii) to report on the feasibility of tagging Sebastes marinus in the Godthåb Fjord,
- (iii) to report on the availability of research vessels for a multiship programme for direct observations of drift of larvae of redfish from the Irminger Sea to West Greenland.

2. INTRODUCTION

Most of the old data on redfish available in the various laboratories are of no relevance to the objectives of the Study Group. Although a considerable amount of information exists, these data are of only limited value since in most cases they refer simply to 'redfish' without any further species identification.

3. HISTORIC DATA SUBMITTED TO THE STUDY GROUP

Historic data submitted to the present meeting of the Study Group refer to one of the main questions associated with the biological relationship between the West Greenland and the Irminger Sea redfish stocks, i.e.:

Where are the 'spawning' grounds of the West Greenland
Redfish Stocks? 1)

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- 1) The expression 'spawning' in relation to redfish is used for the extrusion of the larvae and, consequently, 'spawning' concentrations consist primarily of females.

The conclusion at the previous meeting of the Study Group was:
 "There are no direct observations of spawning redfish in the West Greenland area. The slow southward migration of young S. mentella, as indicated by an increase in length from north to south in the shrimp fishing area, as well as the presence of adult S. mentella in the southern divisions, lead to the conclusion that the adult females of this species leave the West Greenland area to release the larvae.

Similar observations from the commercial fishery for S. marinus, together with information from tagging experiments, indicate that the same conclusion might be valid for S. marinus."

Information from France was available at the present meeting on length composition data from research vessel catches from July-August 1970 and from June 1962. These show that in NAFO Divisions 1A, 1B and 1C, S. mentella smaller than 20 cm and in Division 1D S. marinus of 20-30 cm are predominant. In Division 1D the length groups of 30-40 cm of both species dominated the research catches. Larger individuals were present in all Divisions although in only minor quantities. This information confirms the previous conclusions quoted above concerning an increase in size from north to south for both S. mentella and S. marinus.

Icelandic observations on maturity stages of S. marinus by month obtained from the commercial fishery in the years 1957 and 1960 to 1962 are given in the text table below for males and females. Only in April was a very small proportion (1.1%) of 'spawning' S. marinus females (stage III) observed at West Greenland. The absence of stage III and IV females in May, the main season for the extrusion of larvae, does not change the previous conclusion that no 'spawning' has been observed so far. No additional information about the location of the 'spawning' grounds of the West Greenland redfish population was available at this meeting.

However, the high proportion of stage II (ripening) females in April and of stage IV (spent) females in July indicates that a spawning stock might exist at West Greenland.

Redfish (Sebastes marinus) at West Greenland. Stage of maturity in % per month based on 27 samples from the Icelandic commercial fishery in 1957, 1960, 1961 and 1962.

Maturity stage	Feb.	Apr.	May	Jul.	Aug.	Sep.	Oct.
M A L E S							
I	13.7	5.6	4.2	31.8	21.3	38.1	8.2
II	68.6	83.2	89.6	69.2	74.7	35.6	-
III	-	0.9	-	-	2.0	8.2	18.0
IV	17.7	10.3	6.2	-	2.0	18.1	72.8
F E M A L E S							
I	42.9	3.2	100.0	34.3	28.7	39.9	14.1
II	57.1	94.6	-	22.9	63.4	56.3	85.9
III	-	1.1	-	-	-	-	-
IV	-	1.1	-	42.8	7.9	3.8	-

4. THE FEASIBILITY OF TAGGING SEBASTES MARINUS IN THE GODTHÅB FJORD (NAFO DIV. 1D)

The results of the tagging experiment in the Godthåb Fjord as reported in the previous report of the Study Group show only few recaptures of S. marinus. Since the main population in the fjord available to the gear which could catch redfish in good condition for tagging (pound net) consists of S. mentella, the probability of catching S. marinus for the purpose of tagging is fairly small. Therefore, it seems to be unlikely to obtain S. marinus in sufficient quantities for a successful tagging experiment.

The Study Group, therefore, does not recommend a new series of tagging experiments to be carried out in the Godthåb Fjord.

Information should be obtained as to whether other locations at the West Greenland coast could provide better opportunities for a tagging experiment on S. marinus.

5. AVAILABILITY OF RESEARCH VESSELS FOR A MULTISHIP PROGRAMME

(Terms of reference (iii))

The members of the Study Group expressed interest on behalf of their respective laboratories in such a programme, but most of them were not in a position to make commitments regarding research vessel time. However, the USER representative expressed willingness to participate with one or two vessels, if an agreed programme is put into progress.

A programme should be worked out in some detail in order to enable interested institutes to better evaluate the need for research vessel time on a more realistic basis with a view to reconsidering their position on that matter.

The main objective of such a NAFO/ICES programme would be to trace the drift of redfish larvae and fry to the West Greenland region from 'spawning' area or areas outside the West Greenland waters. Broadly, the survey would probably have to cover the following:

Area: the southern Irminger Sea or part of it; the area south of Cape Farewell and the SW-Greenland area.

Surveys: 1. In May.
2. In June-July.
3. In August-September.

Vessels: 2 or 3 for each survey.

Duration: approx. 2-3 weeks in the field, depending on the number of vessels participating and the extension of the area to be surveyed.

Observations: larval and fry distribution, hydrography and other environmental observations.

Others: possibly pelagic trawling for adult fish (for identification purposes).

The Study Group suggests that a detailed programme should be worked out defining more precisely the above-mentioned objectives.

The Group, therefore, intends to do some preparatory work by correspondence during 1984 with the intention of meeting for a few days in 1985 to - hopefully - finalise the outline and planning of such a programme.