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SCIENTIFIC COUNCIL MEETING - JUNE 1996

Roundnose Grenadier (*Coryphaenoides rupestris*) and Roughhead Grenadier
(*Macrourus berglax*) in NAFO Subareas 2+3

by

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CORRECTION

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Introduction

After the first reported catch of about 17,000 t of roundnose grenadier in NAFO Subareas 2+3 in 1967, nominal catches were greater than 20,000 t in most years (Table 1, Fig. 1) from then until extension of jurisdiction by Canada in 1977. During this period, most of the annual catch was taken in Div. 3K with the exception of 1971 when over 50,000 t was reported from Div. 2G.

After declining to only about 2,000 t in 1980, catches increased somewhat during the 1980s to about 7,000 t in 1986 and 1987 due to increased catches by the USSR and to some extent, GDR (Table 2). Catches declined again since then as a result of declines in catches by 'traditional' countries in 'traditional' areas, and beginning in 1993 there have been no allocations to non-Canadian vessels inside the Canadian zone. The only remaining catches are restricted to by-catch associated with the Greenland halibut fishery primarily prosecuted by non-Canadian fleets outside 200 miles in Div. 3LMNO.

It has been recognized for a number of years that reported catches represented a mixture of both roundnose and roughhead grenadiers. Atkinson (MS 1995) revised the catch records based on information from Spain and Portugal on the species mix in the catches. Portugal reported that all of their catch was roughhead grenadier. Beginning in 1990, more roughhead grenadier have been caught than roundnose although the nominal statistics don't indicate this (Table 1, Table 2).

During the years of the directed fishery for roundnose grenadier, most of the catch was taken during the second half of the year. The distribution of actual roundnose grenadier catches by area and season in the Regulatory Area in recent years has not been confirmed, but based on reports to NAFO, catches of roundnose and roughhead combined have been taken primarily during the first half of the year corresponding with the period of the most effort for Greenland halibut (Table 3).

Although Canada requests the Scientific Council of NAFO to provide information on the resource inside the Canadian Zone, the absence of any fishery makes this increasingly difficult. Deepwater surveys were conducted by Canada (directed at Greenland halibut) in 1991, 1994 and 1995 in Div. 3K and south (Atkinson et al. MS 1994, Bowering et al. MS 1995), but there has been no similar survey work since. The preliminary estimate of catch in 1995 is only 59 t, with a 2,965 t catch of roughhead grenadier being reported.

Discussion

Roundnose Grenadier

Because of a cessation of fishing for roundnose grenadier within the Canadian Zone, the commercial database can no longer be used to evaluate the resource in this area. Deepwater surveys

in Div. 3K in 1991 and 1994 suggested no change in status in Div. 3K during this time period, but a decline of about 70% was noted in 1995 (Bowering et al. MS 1995). In 1995 it was concluded that based on the 1995 survey results, the TAC, at 3,000 t for the area inside the Canadian zone may be excessive (NAFO Sci. Coun. Rep., 1995, page 32).

Based on this comment, the Canadian Fisheries Resource Conservation Council recommended to the Canadian Minister of Fisheries and Oceans that the quota for 1996 be lowered to 1,000 t. This recommendation was accepted.

There are no recent data available to enable any re-evaluation of the status of this species in SA 2+3.

Roughhead Grenadier

While virtually no information was available for roundnose grenadier from most of 1995 (except the results of the Canadian survey in the early part of the year), information concerning roughhead grenadiers was available from a number of sources. Length frequencies of roughheads caught in the Spanish fishery (Godinho et al. MS 1996) were available from trawler catches in Divisions 3L, 3M and 3O. In 3LN, the percentage of females was greater than males, and females were larger than males, particularly in Div. 3L. In Div. 3M, both sexes were present in approximately equal proportions, and were about the same sizes in the catches. Overall, modal length (anal fin length) was about 16 cm for females, and 13-14 cm for males.

Durán et al. (MS 1996) reported on by-catches in the Spanish Greenland halibut fishery. Both roughhead and roundnose grenadiers have been taken, but general, roughheads have dominated.

Results of the annual survey to Flemish Cap by the European Union indicate that the trawlable biomass for Macrouridae (species not indicated) ranged between 1,223 - 6,183 t from 1988 to 1995 without trend. Sainza (MS 1996) indicated that of these catches, between about 50-90% of these annual totals were roughheads. They were caught between 200-1,400 m, and anal fin lengths ranged between 5-28 cm. Modal age in 1995 was estimated to be 5.

Two other deepwater surveys were conducted in the NAFO Regulatory Area during 1995 and early 1996. A longline survey, conducted by the European Union in depths of 562 - 3,028 m in Div. 3LMN, caught roughhead grenadiers in depths to 2,039 m (de Cárdenas et al. MS 1996), with the highest catches taken in 1,900 - 2,199 m. Fish size increased with depth. Catches appeared to be better using squid as bait compared to mackerel. No roundnose grenadier catches were recorded.

The second survey was conducted by the Russian Federation in the Flemish Pass area using bottom trawl. Gorchinsky and Savvatimsky (MS 1996) reported that while catches of roundnose grenadier were small, roughhead grenadiers made up about 25% of the catch (dominated by Greenland halibut) in depths of 1,201 - 1,440 m.

At present the fishery for roughhead grenadiers is unregulated. Data are limited, but are available from a number of sources and should be examined in detail to determine if any impacts of recent fishing levels can be detected.

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Table 1: Summary of nominal catches (t) of roundnose grenadier by Subarea and Division.

a) Pre 1997

Year	2G	2H	2J	3K	Other	Total	TAC
1966							
1967	-	868	217	16,009	210	17,304	
1968	2,536	4,089	479	23,553	606	31,263	
1969	387	-	264	11,682	-	12,333	
1970	-	-	468	22,267	129	22,864	
1971	54,179	2,738	81	18,392	55	75,445	
1972	2,161	655	293	21,122	155	24,386	
1973	5,880	232	632	10,655	165	17,564	
1974	3,220	2,007	333	22,816	40	28,416	32,000
1975	6,489	3,536	1,754	15,388	258	27,425	32,000
1976	3,841	1,460	1,381	13,636	275	20,593	32,000

b) Final Nominal Estimates

Sum of total	area									TAC	Roughhead Grenadier
year	2G	2H	2J	3K	3L	3M	3N	3O	Grand Total		
77	2,597	525	206	11,935	48	0	75	0	15,386	35,000	
78	3,112	1,412	913	15,250	12	0	3	0	20,702	35,000	
79	1,035	3,090	438	3,200	16	0	2	0	7,781	35,000	
80	279	493	726	451	68	32	4	0	2,053	30,000	
81	967	1,693	463	3,920	24	0	18	0	7,085	27,000	
82	719	734	182	2,709	0	0	0	0	4,344	27,000	
83	140	1,390	36	1,916	85	2	0	0	3,569	11,000	
84	107	289	3	3,362	89	23	0	0	3,873	11,000	
85	0	80	13	4,642	181	18	0	14	4,948	11,000	
86	0	117	56	7,222	23	8	0	1	7,427	11,000	3
87	80	254	213	6,682	963	8	98	0	8,298	11,000	1,001
88	329	226	9	4,658	976	39	56	0	6,293	11,000	911
89	32	202	47	4,361	253	37	13	11	4,956	11,000	290
90	86	52	2	606	2,252	714	312	6	4,030	11,000	3,211
91	178	84	45	94	2,512	503	1,093	10	4,519	11,000	4,486
92	72	11	20	253	2,674	3,542	806	129	7,507	11,000	4,585 a

a includes estimated roughhead catches of 2,585 t by Spain and 2,000 t by Portugal.

c) Provisional Nominal Data

Sum of total	area									TAC	Roughhead Grenadier
year	2G	2H	2J	3K	3L	3M	3N	3O	Grand Total		
93	128	8	14	145	2,213	819	1,109	16	4,452	11,000	6,347
94	7	10	5	23	539	2,279	949	181	3,993	3,000	4,835
95										3,000	
96										3,000	

1991 catch could not be well estimated; based on revised data is estimated to be 5,000-10,000 t.
 1994, 1995 and 1996 TACs for Canadian zone only
 Reported catches from 3L, 3M, 3N and 3O since 1987 contain a mix of roundnose and roughhead grenadiers.

NOTE: Portugal has indicated that catches from 1988 onwards reported as roundnose grenadier were actually roughhead grenadier.
 Spain has estimated that their 1992 reported roundnose grenadier catch was actually about 52% roughhead grenadier (about 2,585 t).

b includes estimated roughhead catches of 4,378 t by Spain and 1,969 t by Portugal.

1995 catch estimates available to date.

	3L	3M	3N	3O	Total
Roundnose	32	27			59
Roughhead	1,149	695	1,122	0	2,965

Table 2: Nominal catches (t) of roundnose grenadier in Subarea 2+3 by country and year.

a) Final nominal data

Sum of total	year									
country	84	85	86	87	88	89	90	91	92	
Germany	23	178	13	0	8	0	0	2	35	
GDR	3,650	3,740	4,571	4,469	3,380	2,352	1	0	0	
USSR	147	1,018	2,801	2,725	1,890	2,230	538	132	0	
Poland	51	12	17	1	17	17	0	0	0	
Japan	2	0	13	79	85	46	125	156	80	
Norway	0	0	0	0	0	1	0	24	0	
Russia	0	0	0	0	0	0	0	0	4	
EU-Port	0	0	3	1,001	911	290	3,211	4,053	2,004	
Can (M)	0	0	9	10	1	19	34	2	12	
EU-Spain	0	0	0	0	0	0	0	0	4,970	
Can (N)	0	0	0	0	1	1	121	150	397	
Faroese	0	0	0	9	0	0	0	0	3	
Den (Gr)	0	0	0	0	0	0	0	0	2	
Cuba	0	0	0	4	0	0	0	0	0	
Grand Total	3,873	4,948	7,427	8,298	6,293	4,956	4,030	4,519	7,507	

b) Provisional nominal data

Sum of total	year	
country	93	94
Can (N)	264	49
Japan	134	0
Can (M)	4	0
EU-Port	1,996	2,224
EU-ESP	2,054	1,720
Grand Total	4,452	3,993

Note: Totals reflect nominal catches and have not been corrected for roughhead estimates

Table 3: Nominal catches (t) of roundnose grenadier in Subarea 2+3 by month and year.

a) Final nominal data

	year								
Data	84	85	86	87	88	89	90	91	92
Sum of uk	0	0	0	0	0	0	121	0	0
Sum of january	31	44	9	71	415	76	108	84	292
Sum of february	13	7	5	111	33	23	322	326	846
Sum of march	6	1	0	45	38	25	598	517	909
Sum of december	153	33	336	628	251	88	130	46	523
Sum of november	123	537	494	1319	1608	946	212	76	257
Sum of october	3018	1361	1555	1561	1485	902	119	824	334
Sum of september	460	1869	2093	1633	690	704	77	388	621
Sum of august	45	873	2818	2732	837	1497	393	399	383
Sum of july	0	54	117	22	841	579	139	251	307
Sum of june	5	0	0	5	87	54	152	428	799
Sum of may	0	73	0	75	8	39	488	346	1190
Sum of april	19	96	0	96	0	23	1171	834	1046
Grand Total	3,873	4,948	7,427	8,298	6,293	4,956	4,030	4,519	7,507

b) Provisional nominal data

	year	
Data	93	94
Sum of uk	0	0
Sum of january	400	279
Sum of february	736	562
Sum of march	555	306
Sum of december	258	372
Sum of november	229	170
Sum of october	250	385
Sum of september	351	531
Sum of august	310	365
Sum of july	247	195
Sum of june	265	225
Sum of may	391	294
Sum of april	460	309
Grand Total	4,452	3,993

Note: Totals reflect nominal catches and have not been corrected for roughhead estimates

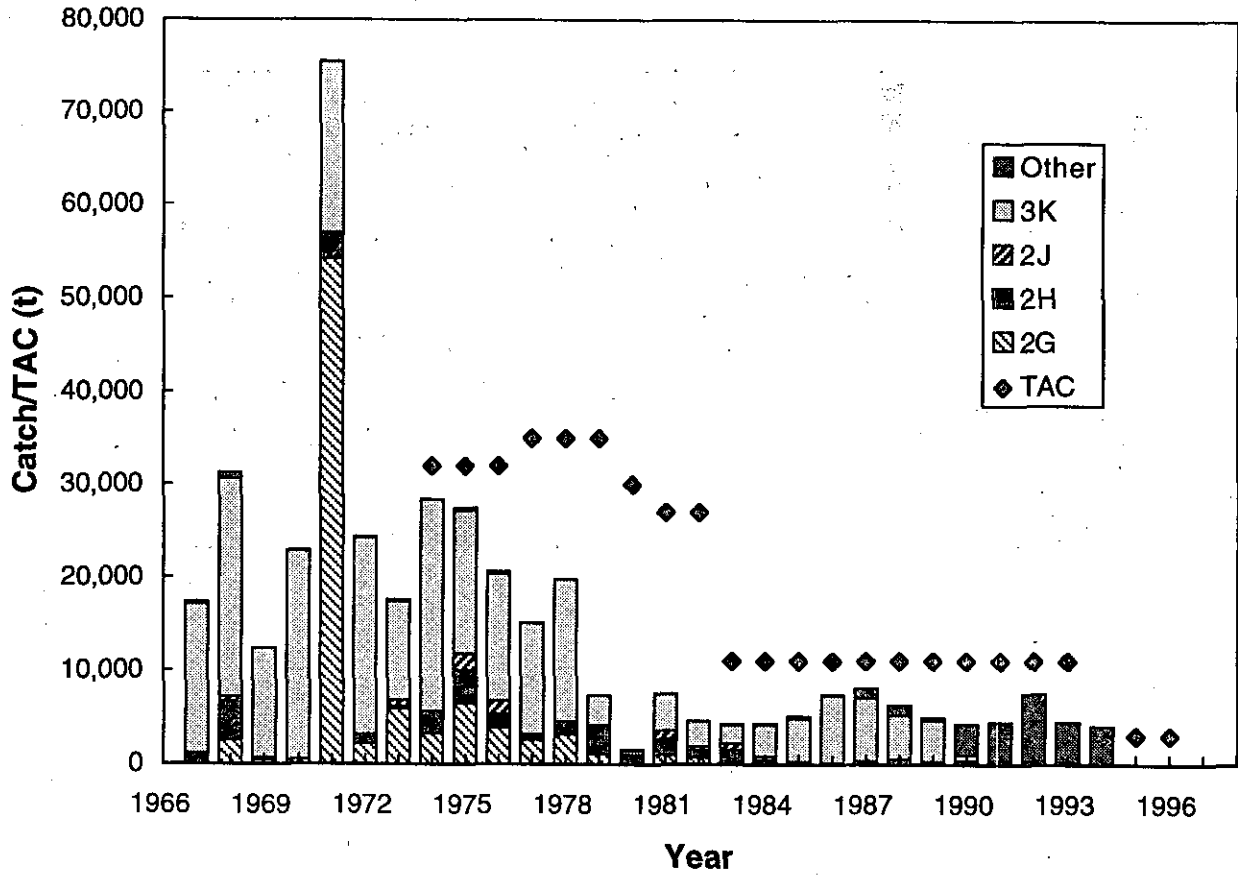


Figure 1: Catches of roundnose grenadier in SA 2+3 without adjustment for estimates of roughhead grenadier catch.