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The 1984 Inshore Capelin Fishery in Div. 3K

by

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Abstract

Preliminary landings in Div. 3K in 1984 were 7086 t which were higher than the 3764 t landed in 1983. Samples collected from the inshore commercial fishery indicated that the catch was dominated by the 1980 year-class. Analysis of research logbook data indicated that discarding in 1984 was slightly higher for purse seiners and lower for beach seines and capelin traps than estimated in 1983. Discarding was primarily due to low percentages of females in the catch for all gear types. Redfeed was not a problem in 1984.

Résumé

Les débarquements préliminaires dans la division 3K en 1984 ont été de 7 086 t, ce qui est supérieur aux 3 764 t débarquées en 1983. Les échantillons recueillis, provenant de la pêche côtière commerciale, ont montré que les prises comprenaient surtout la classe d'âge de 1980. L'analyse des données de recherche consignées indique que les rejets ont été légèrement plus élevés en 1984 pour les bateaux de pêche à la senne coulissante et plus faibles pour les sennes de rivage et les trappes à capelan que les estimations faites en 1983. Les rejets étaient surtout attribuables aux faibles pourcentages de femelles dans les prises pour tous les types d'engins. Le zooplancton ne constituait pas un problème en 1984.

Introduction

Landings in Div. 3K by the inshore capelin fishery have increased since 1979, peaking in 1984 at 7086 t (Table 1). Aspects of the fishery and its management history are detailed in Carscadden et al. (1984). This report presents age-composition data from samples collected during the 1984 commercial inshore capelin fishery in Div. 3K and an analysis of research logbook data from the inshore fishery.

Materials and Methods

A total of 31 samples was collected and 974 otolith pairs were aged (Table 2). Age compositions were derived from length-sex-maturity measurements and accompanying stratified samples.

In 1984 logbooks were given to 16 purse seiners, 14 beach seiners, and seven capelin trap fishermen who resided in Div. 3K. Of these, seven purse seine, ten beach seine, and five capelin trap logbooks were completed and used in this analysis. The remainder either did not fish capelin in 1984 or did not fill out the logbooks. In addition, three purse seiners who reside in Div. 3L fished a portion of the season in Div. 3K and their records were included in this report. The information from the logbooks regarding discarding, catch/effort, and bycatches is reported here.

Results

Age-Composition of the Fishery

The catch in 1984 was dominated by the 1980 year-class as four-year-olds (Table 3).

Research Logbook Survey

An analysis of purse seine (Table 4) and fixed gear (Table 5) logbooks indicated that the principal reason for discarding capelin in 1984 was due to low percentage of females in the catch. This differed from 1983 when the presence of redfeed in capelin stomachs was the most important factor for not landing capelin (Table 4 and 5). Discarding problems for purse seiners in 1984 were of a similar nature to those experienced in 1981 and very different from 1982 and 1983 (Table 4). As in previous reports (eg. Carscadden et al. 1984) discarding refers to all capelin which are caught and not landed regardless of their being released alive or let down dead. The latter situation is often referred to as 'dumping'.

The reported discards from purse seiners has increased from 13% in 1981 to 32% of reported logbook landings in 1984 (Table 6). Discarding from fixed gears has declined from 28% in 1983 to 14% in 1984 for beach seines (Table 7) and from 60% in 1983 to 51% in 1984 for capelin traps (Table 8).

Catch/effort data were available from 1981-84 for purse seines and from 1983-84 for beach seines and capelin traps. The catch/effort estimates for purse seines has increased from 1981 to 1982, declined in 1983, and then increased in 1984 (Table 6). All purse seine indices estimated in 1984 are higher than in 1983 (Table 6). All catch/effort indices for beach seines (Table 7) and capelin traps (Table 8) were higher in 1984 than in 1983.

By-catches of cod and herring in capelin traps were considerably lower in 1984 than in 1983 (Table 8). By-catches in traps are considered to be relatively small (Nakashima 1984).

Discussion

Sampling of catches in Div. 3K continues to be above the NAFO minimum sampling requirements of one sample of 200 fish for length-frequency analysis per 1000 t of catch per NAFO division per gear type per quarter. Sampling procedure in 1985 in Div. 3K will proceed along the 1984 effort which had fishermen and plant workers collecting samples at the rate of two per gear type per week.

Logbook collections have increased from 1983 to 1984 for fixed gear fishermen which corresponds to an increase in catch and to more capelin traps being utilized in the area. The purse seine logbooks will be limited to those fishermen who have been filling out logbooks since the survey began in 1981. The logbook survey of fixed gear fishermen will be expanded in 1985 to reflect the growing change from beach seines to capelin traps as the preferred method of fixed gear fishing for capelin.

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References

- Carscadden, J., B. S. Nakashima, and D. S. Miller. 1984. Observations on the Capelin Stock in Div. 2J3K. CAFSAC Res. Doc. 84/49, 42 p.
- Nakashima, B. S. 1984. Collection and Interpretation of Catch and Effort Data from the Division 3L Inshore Capelin Fishery. CAFSAC Res. Doc. 84/24, 17 p.

Table 1. Inshore capelin landings (t), 1974-84.

Year	Div. 3K
1974	1089
1975	695
1976	1685
1977	2136
1978	2420
1979	671
1980	1354
1981	1803
1982	3860
1983	3764
1984	7086*

* preliminary

Table 2. Summary of the commercial samples collected from the 1984 inshore capelin fishery in Div. 3K.

Gear type	No. of LSM/Strat samples	No. otoliths aged (N)	No. otoliths \pm SD per sample
Purse seine	4	135	34.0 \pm 4.6
Beach seine	18	546	30.3 \pm 6.4
Capelin trap	9	292	32.4 \pm 3.2
TOTAL	31	974	

Table 3. Age-compositions (%) of capelin from the inshore commercial capelin fishery, Div. 3K, 1982-84.

	Age				
	2	3	4	5	6
Males					
1982	1.1	90.2	8.5	0.2	0.1
1983	0.2	65.0	34.8	0	0
1984	0	26.1	72.5	1.3	0
Females					
1982	0.8	79.4	10.7	7.4	1.7
1983	0	44.0	52.6	3.4	0
1984	1.0	33.2	58.2	7.4	0.3
Sexes combined					
1982	0.9	84.1	9.7	4.3	1.0
1983	0.1	62.4	37.1	0.4	0
1984	0.3	28.4	67.9	3.3	0.1

Table 4. Reasons (expressed as % by weight) reported in logbooks for discarding capelin in purse seines in Div. 3K, 1981-84.

Year	Low % females	Redfeed	Not mature enough	Small females	Females spawned out	No market	Over ripe	Unknown
1981	90	6	4	0	0	0	0	0
1982	32	52	0	10	6	0	0	0
1983	5	48	0	4	0	42	0	1
1984	81	4	0	2	8	3	2	0

Table 5. Reasons (expressed as % by weight) reported in logbooks for discarding capelin from beach seines and traps in Div. 3K in 1983-84.

	Redfeed	Females over ripe	No. market	Low % females	Males picked out	Females spawned out	Misc.
<u>Beach seine</u>							
1983	47	3	37	6	7	0	0
1984	12	0	0	70	11	0	7
<u>Trap</u>							
1983	81	0	0	4	1	15	0
1984	1	0	17	51	19	4	8

Table 6. Capelin landings (t), discards (t), and catch/effort for purse seines in Div. 3K, 1981-84.

Year	No. fishermen	Landings		Discards logbook	No. days fished (D)	No. sets made (S)	Landings		Landings & discards	
		Economics	Logbook				L/D	L/S	C/D	C/S
1981	10	533.9	725.0	92.9	89	118	8.2	6.1	9.2	6.9
1982	8	713.1	849.9	188.0	67	109	12.7	7.8	15.5	9.5
1983	14	808.2	1097.0	253.2	113	161	9.7	6.8	12.0	8.4
1984	10	854.1	928.0	297.1	87	127	10.7	7.3	14.1	9.7

L/D - Landings per day
 L/S - Landings per set
 C/D - Catch per day
 C/S - Catch per set

Table 7. Capelin landings (t), discards (t), and catch/effort for beach seines in Div. 3K, 1983-84.

Year	No. Fishermen	Landings		Discards logbook	No. days fished (D)	No. sets made (S)	Landings		Landings & discards	
		Economics	Logbook				L/D	L/S	C/D	C/S
1983	6	118.6	139.4	39.5	44	79	3.2	1.8	4.1	2.3
1984	10	409.6	408.6	59.2	74	126	5.5	3.2	6.3	3.7

Table 8. Capelin landings (t), discards (t), and catch/effort for capelin traps in Div. 3K, 1983-84.

Year	No. fishermen	No. traps	Landings		Discards logbook	Bycatch		No. days fished (D)	No. times hauled (H)	Landings		Landings & Discards	
			Economics	Logbook		Cod	Herring			L/D	L/H	C/D	C/H
1983	3	3	87.3	85.8	51.3	6.0	24.9	41	48	2.1	1.8	3.3	2.9
1984	6	6	156.0	217.0	111.3	2.6	0.1	80	101	2.7	2.1	4.1	3.3