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Present Status of the Southwest Newfoundland Herring Stocks

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Introduction

Since its beginning in the winter of 1964-65 the southwest Newfoundland herring fishery has been based mainly on a very abundant 1958 year-class of autumn spawners and a smaller 1959 year-class of spring spawners. The lack of significant recruitment of new herring to the fishable stock (Hodder, 1971) together with dangerously high rates of exploitation (Winters, MS 1971) has precipitated concern over the future of the fishery and the imposition of certain restrictive measures looms a distinct possibility. Intensive sampling of the southwest Newfoundland fishery was therefore continued during 1971-72 with particular emphasis being placed on length, age and maturity data as indicators of probable recruitment patterns. This document reports on the current status of the southwest Newfoundland herring stocks and assesses the short-term fishery prospect.

Trends in mobile fleet landings

In 1970-71, for the first time since the herring fishery began, the mobile fleet landings at Newfoundland ports showed a marked decline. Landings dropped from a record yield of 199,000 tons in 1969-70 (Hodder, MS 1970) to just under 141,000 tons in 1970-71 representing a 30% decrease (Table 1). This decline was largely due to greatly decreased catches in the November-December period of 1970 when the usual fall fishery at Magdalen Islands (Area T) (Fig. 1) did not materialize due to a scarcity of herring in the area and the southwest Newfoundland fishery was 2 to 3 weeks later than usual in starting. Less than 20,000 tons were landed at the major reduction plants during November-December 1970 compared with about 50,000 tons in 1969.

As in previous years the bulk of the mobile fleet landings (107,465 tons) was from herring caught along the Newfoundland southwest coast (Area J) with the area west of Burgeo (Area J2) yielding the largest quantity of herring. Landings from the Fortune Bay stock of herring (Area I) increased from 9000 tons in 1969-70 to a record catch of 16,000 tons in 1970-71, most of which was landed at the Harbour Breton reduction plant. The closure of the Magdalen Islands spring fishery in 1971 prevented the mobile fleet from following the spring-spawning concentrations of herring inshore in late April and early May. Consequently, a portion of the southwest Newfoundland seiner fleet diverted their fishing effort to the St. George's Bay area (Area K) resulting in an increase in landings from that area from less than 50 tons in 1969-70 to 3700 tons in 1970-71. Area M (Bonne Bay-Hawke's Bay) landings were down 60% from the previous year whereas those from Area V (Sydney Bight) remained at the 1969-70 level.

Preliminary statistics for the 1971-72 mobile fleet landings (Table 2) indicate a dramatic decline from the previous year. Total landings decreased 66% to just over 48,000 m tons which is less than 1/4 of the peak landings in 1969-70. The bulk of the decrease in landings is accounted for by the southwest Newfoundland fishery (Area J) where landings dropped from 107,465 m tons in 1970-71 to 37,331 m tons in 1971-72. The extremely low landings from Area J in February and March of 1972 can be mainly attributed to very severe ice conditions and unfavourable weather which prevented fishing for extended time periods. Nevertheless, comparison of mobile fleet landings for the December-January period of 1971-72 with those for 1970-71 indicates a 35% decrease in landings. This is of the same order of magnitude as the drop in landings from the 1969-70 season to the 1970-71 season in this area. On this basis, assuming normal fishing operations, landings from Area J in 1971-72 would not have been expected to exceed 70,000 m tons.

Landings from the Fortune Bay (Area I) stock of herring also exhibited a sharp decline (60%) in 1971-72 as did those from the summer fishery in the southern Gulf of St. Lawrence and the spring fishery near St. Paul Island (Area T). Area M landings (Bonne Bay-Hawke's Bay, Nfld.) also continued to decline in 1971-72.

Prior to the 1970-71 season the herring landings of the mobile fleet were utilized almost entirely for reduction into meal and oil. However, during the 1970-71 season the high prices offered for food herring together with the relative scarcity of herring resulted in a significant proportion (20%) of the catch being diverted to the food processing plants. All the major reduction plants followed suit and established herring food processing facilities on their premises. In 1971-72 this trend towards food herring intensified and nearly 38% of the total landings were processed as food herring. This proportion is expected to increase during the 1972-73 season.

Length and age composition of Area J herring

The gradual increase in the average size of herring taken along southwest Newfoundland (Hodder, 1971) did not materialize during the 1971-72 season (Fig. 2) partly because of the slow growth rate of the > 10 year-old fish which formed the bulk of the catch and partly because of the influx of young immature herring less than 30 cm in length. Age composition data (Fig. 2) reveal that fish greater than 10 years of age accounted for more than 54% of the herring sampled during the 1970-71 season and 65% of those sampled during the 1971-72 season. The 1968 year-class has been the strongest to appear in the spring-spawning component of the southwest Newfoundland fishery since the large 1959 year-class. This year-class was present for the first time in the 1970-71 fishery and was nearly as strong as the 1961+ year-classes during the 1971-72 fishery. Since this year-class is still only partially recruited (over 50% immatures) it can be expected to form an even larger proportion of the spring-spawners next year. Nevertheless, when one considers that spring-spawners comprise less than one-third of the total population being fished, the contribution of the 1968 year-class of spring-spawners to the total fishery in Area J cannot be expected to increase the catch significantly in 1972-73.

For the fall-spawners the 1963 year-class has probably been the strongest to appear since the very large 1958 year-class, with virtually no recruitment whatsoever from the 1964-67 year-classes. Although now fully recruited, the 1963 year-class still forms only a small proportion of the fall-spawners, despite the fact that the pre-1960 age-classes which have supported the fishery since its inception in 1965 are now greatly reduced in abundance.

On the basis of age composition data for the 1971-72 season it is evident that up to the 1969 year-class at least, no substantial recruitment has occurred to bolster the diminishing stocks of herring along southwest Newfoundland. Since full recruitment does not occur until ages 5 and 6, and assuming that stock composition remains unchanged, herring landings from Area J will, in all probability, continue to decline during the 1972-73 fishery.

References

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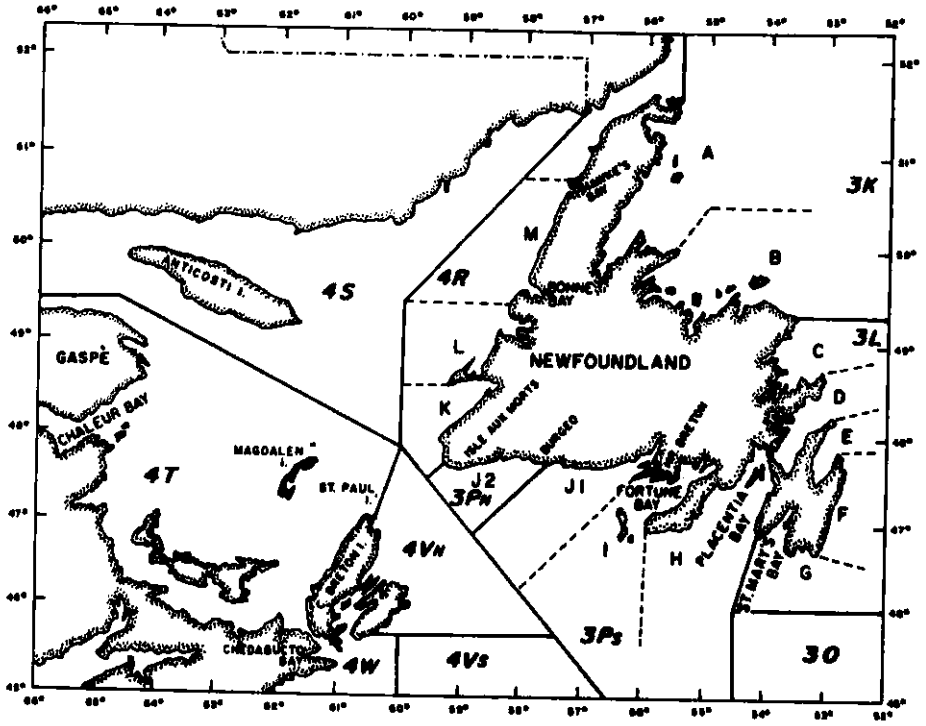

Fig. 1. Map of the Gulf of St. Lawrence-Newfoundland area with place names and statistical areas mentioned in the text.

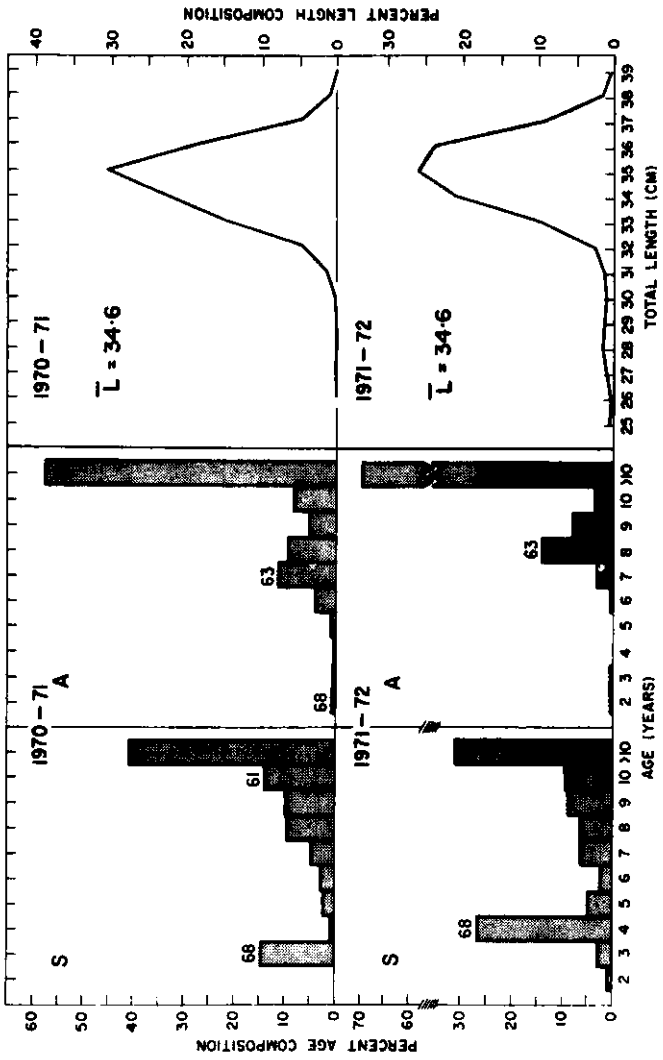

Fig. 2. Length and age composition of herring sampled from the southwest Newfoundland (Area J) fishery 1970-71 and 1971-72.

Table 1. Mobile fleet herring landings (tons) at Newfoundland ports by month and catch area 1970-71

Month \ Area	GH	I	J1	J2	K	L	M	T	V	W	Total
July	...	...	...	...	...	...		526			526
Aug	...	...	...	...	...	...		366			366
Sept	...	...	...	...	...	...		34			34
Oct	...	...	...	...	...	...		242			242
Nov	...	...	...	639	...	...	927	498			2,064
Dec	...	...	11,915	3,768	...	...	843	241	...	...	16,767
Jan	...	5,798	15,762	22,781	...	...	...	...	1,130	923	46,394
Feb	...	3,791	1,679	26,193	...	...	...	...	...	1,486	33,149
March	...	5,559	2,580	18,446	...	...	...	...	...	7	26,592
April	...	889	...	3,702	3,698	80	...	3,759	...	...	12,128
May	...	...	...	...	19	2,383	...	193	...	...	2,595
June	...	...	...	...	...	...	...	...	...	...	...
Total	...	16,037	31,936	75,529	3,717	2,463	1,770	5,859	1,130	2,416	140,857

Note: Bar-seine catches not included.

Table 2. Mobile fleet landings (tons) at Newfoundland ports by month and catch area, 1971-72

Month \ Area	H	I	J1	J2	K	M	T	V	Total
July	...	...	...	...		...	360	...	360
Nov	...	...	...	126		588	...	49	763
Dec	...	...	10,705	1,852		523	...	434	13,514
Jan	...	3,305	5,319	16,542		...	...	...	25,166
Feb	1,241	439	433	2,038		...	...	...	4,151
Mar	1,063	2,794	300	16		...	...	...	4,173
Total	2,304	6,538	16,757	20,574	...	1,111	360	483	48,127