REPORT ON REDFISH ABUNDANCE

Bradford E. Brown and Richard C. Hennemuth

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Introduction

The United States landings of redfish have decreased steadily in recent years. In 1951, 258 million pounds were landed in New England while in 1964 the estimated landings were only 88 million pounds. Landings since 1957 are presented in Table 1. The fishery extends from the Gulf of Maine to the Grand Banks, but at present the fishery in the Gulf of Maine and on the Nova Scotian Banks is the more important.

Historical Trends

The long term trends (1938-61) in the Gulf of Maine and Nova Scotian Fisheries are illustrated in figures 5 and 6 respectively.

In the Gulf of Maine the peak of exploitation occurred during the period 1940-50. The level of exploitation caused a decrease in landings per day fished, which reached a low of about 8,000 pounds in the early 1950's. During this latter period, fishing effort, and landings, decreased quite rapidly. The effort and landings since 1955 have been relatively low, and the landings per day have increased to about 10,000 pounds.

The Nova Scotian Fishery reached a peak of exploitation during the period 1945-55. Landings per day and intensity have

shown trends similar to that for the Gulf of Maine, except that the landings per day have increased somewhat more in the recent low intensity period.

Current Status

Prior to 1962, landings-per-day-fished was calculated essentially from vessels which landed 70 percent or more of redfish. Since 1962, all landings which included any redfish, and which were caught in depths greater than 60 fathoms have been used. This latter index will be of lower magnitude than the former, and hence cannot be compared directly to it.

Landings-per-day-fished for the last three years are presented in Table 2. While the value for 1963 in the Gulf of Maine was somewhat lower than 1962, the preliminary value for 1964 is nearly the same. Off the Nova Scotian Shelf, landings-per-day have decreased in 1963 and 1964. No firm explanation of this decrease can be put forward at this time; but it may well be related to industry conditions, which may have eliminated some of the better vessels from this fishery.

Length Composition of the Catch

In figure 1 are presented the percentage length frequencies of landings since 1958 for the northern and southern sections of the Gulf of Maine. The percentage of smaller fish appears rather

higher than normal in 1961, 1962, and 1964. With the decrease in effort the past few years one would expect initially greater numbers of the smaller fish, and with the increased survival, a gradual increase in larger sizes. The average length of redfish in the catch from the Gulf of Maine is given in figure 2. The fluctuations in mean length in recent years are the result of variations in proportions mentioned above.

The percentage length frequencies for Division 4X are presented in figure 3 for the years 1958-64. The average lengths of landed redfish for these years are given in figure 4. Although the average lengths landed in 1964 are less than that in 1963, they are larger than those in 1958 and 1959. No downward trend in size is evident.

Conclusions

The stocks of redfish off New England and Nova Scotia have, for the most part, followed the expected course of reaction to exploitation. Abundance and, to some extent size of fish, declined as fishing intensity and landings increased. In the early 1950's, stock abundance had apparently reached the level at which it was becoming uneconomic to fish. The evidence indicates that somewhat greater catches could have been obtained, at least in the short run. Fishing effort declined thereafter, but since redfish are a slow growing stock, many years are required for the stocks to

rebuild. The continued decline in intensity over the past decade has resulted in a general recovery of stock levels.

To be sure, local, short term fluctuations in abundance and length can and will occur, but these are largely independent of man's exploitation.

2/18/65

Table 1

Redfish Landings in New England

in thousands of pounds

Year	3	4 RST	4-V-W-X	5Y-Z	Total U.S. landings
1957	10,575	40,531	46,519	36,306	133,931
1958	23,940	21,150	67,830	35,725	148,645
1959	37,194	10,647	54,448	34,414	136,703
1960	33,935	2,503	79,958	25,037	141,433
1961	36,830	440	63,838	30,954	132,062
1962	31,431	1,457	63,633	27,462	123,983
1963	26,668	10,894	51,172	19,553	108,287
1964*					87,588

* Preliminary

Table 2

Redfish Landings-per-day

ICNAF Subarea 5 (Gulf of Maine)

Year	Landings/Day Fished
1962	7.38
1963	5.07
1964*	7.35

ICNAF Divisions 4V, 4W, 4X

(Nova Scotian Shelf)

Year	Landings/Day Fished
1962	18.05
1963	13.60
1964*	12.56

*Based on first nine months of 1964.

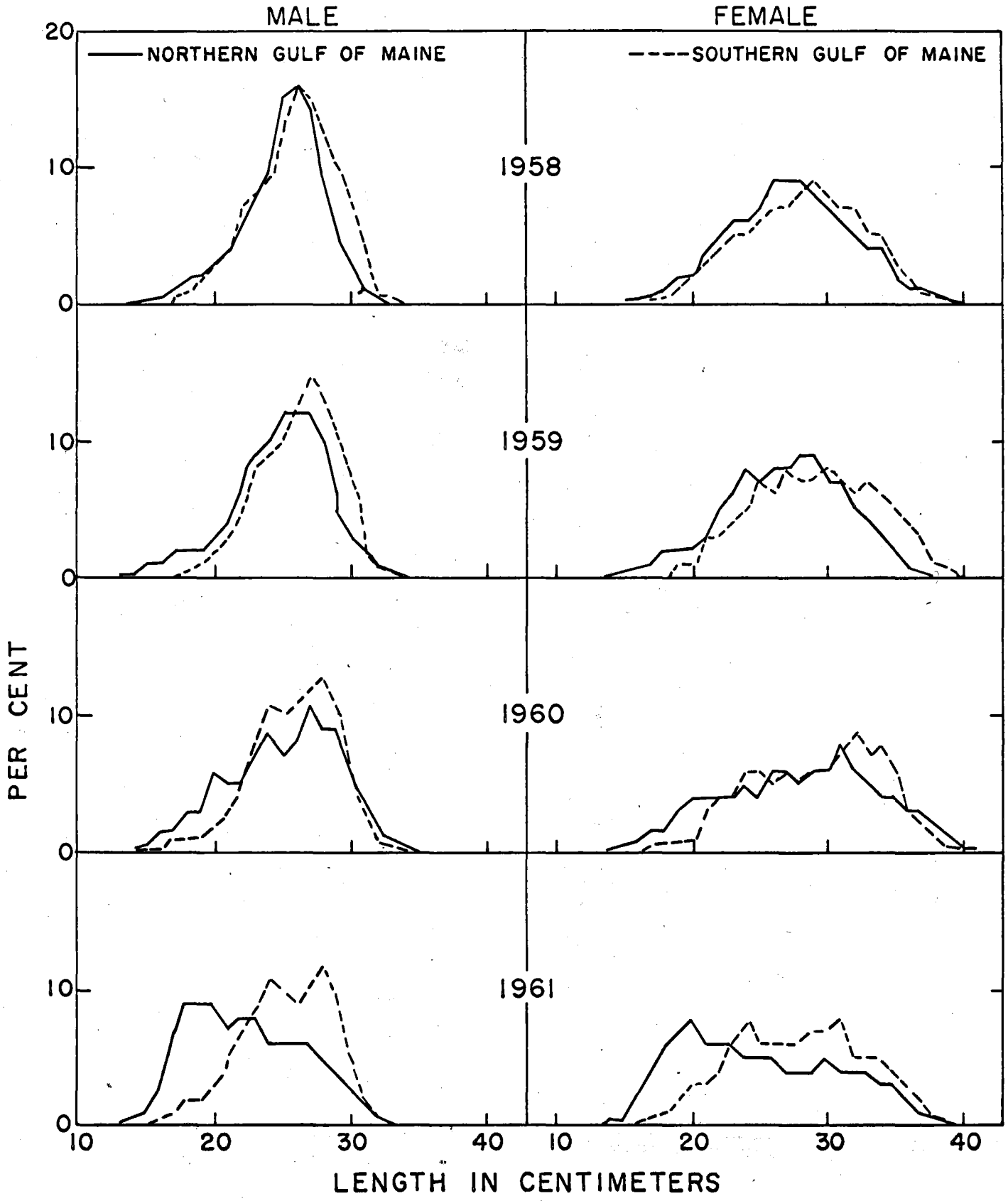

Figure 1. --Redfish length frequencies, Gulf of Maine

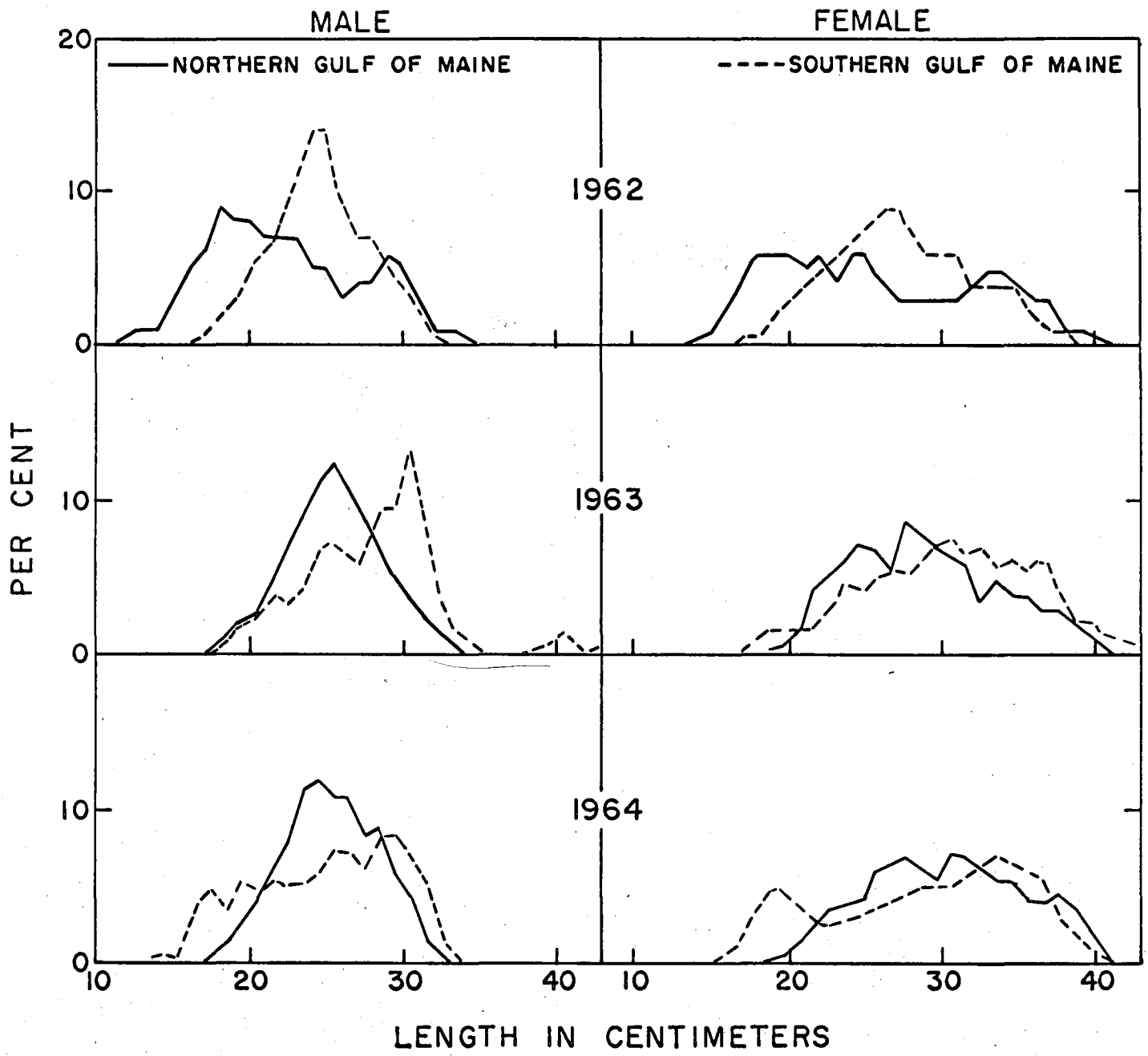

Figure 1. -- Cont'd

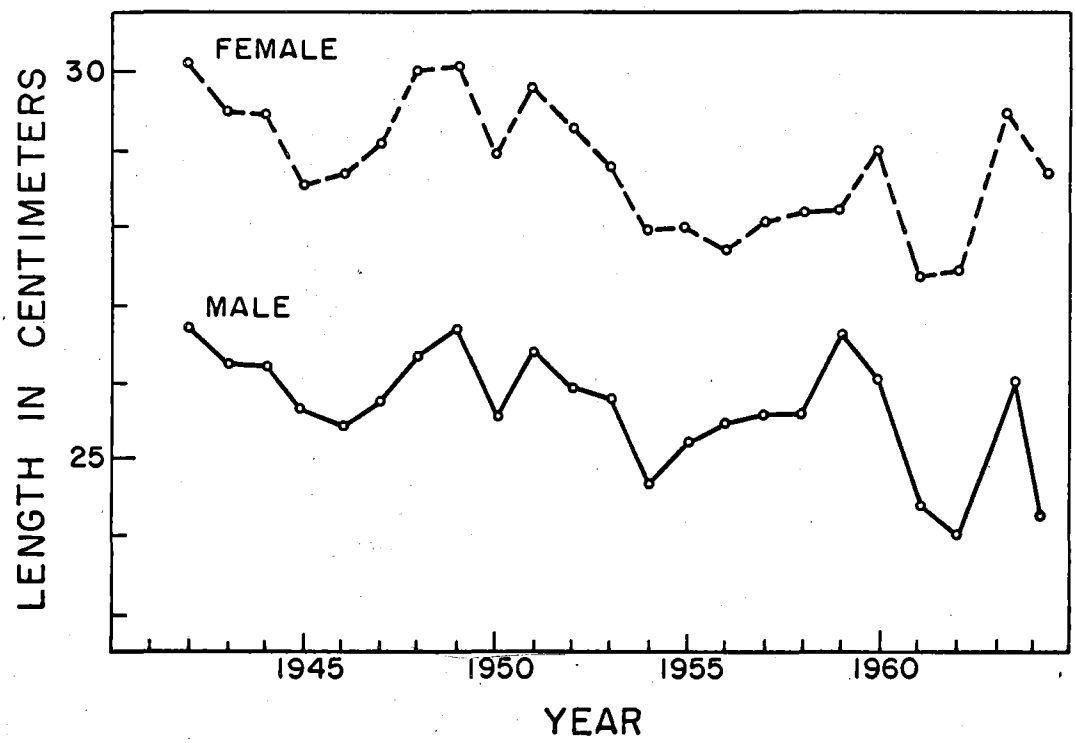

Figure 2. Average length of landed Redfish from the Gulf of Maine, 1942-1964

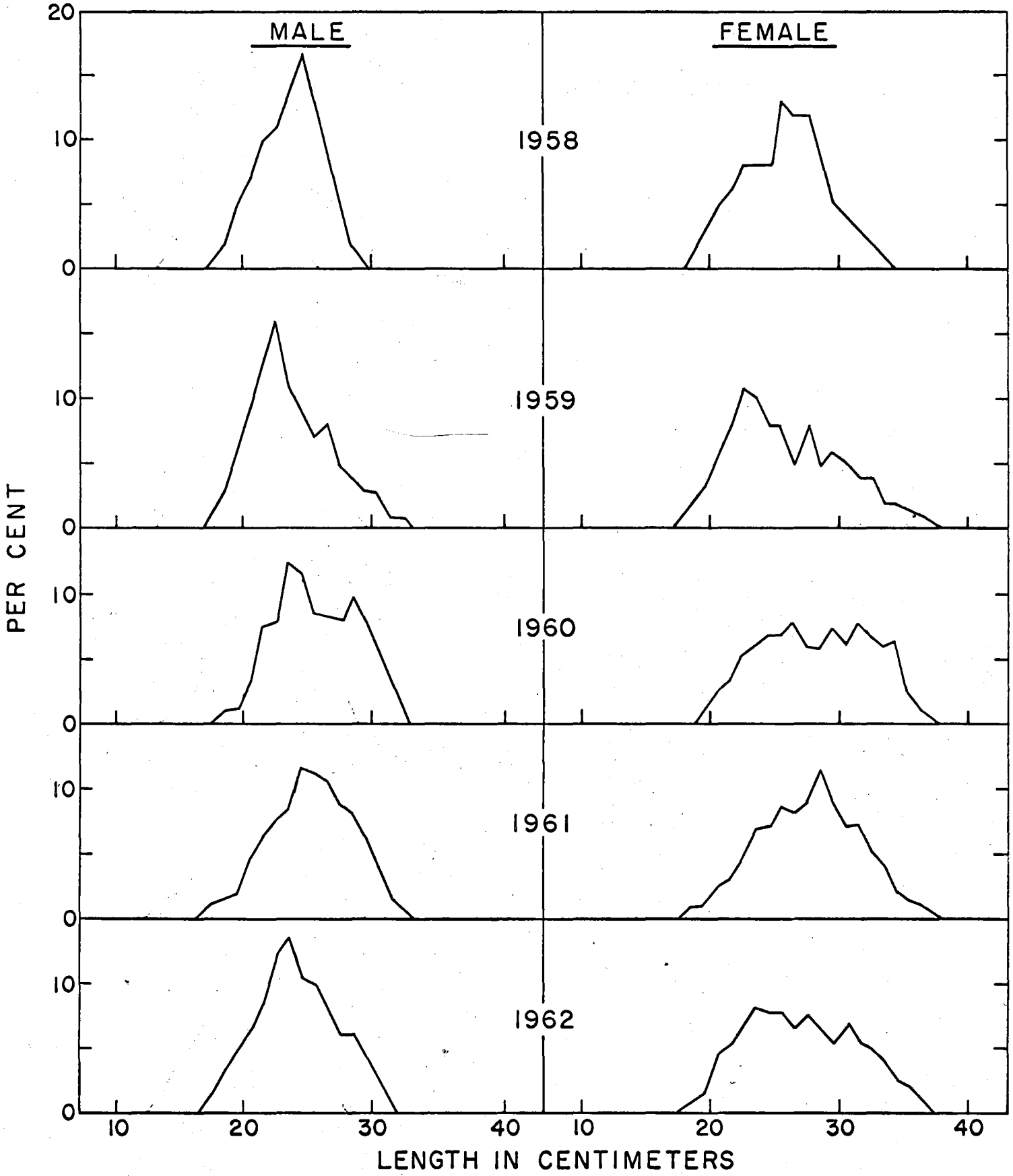

Figure 3. --Redfish length frequencies, Division 4X

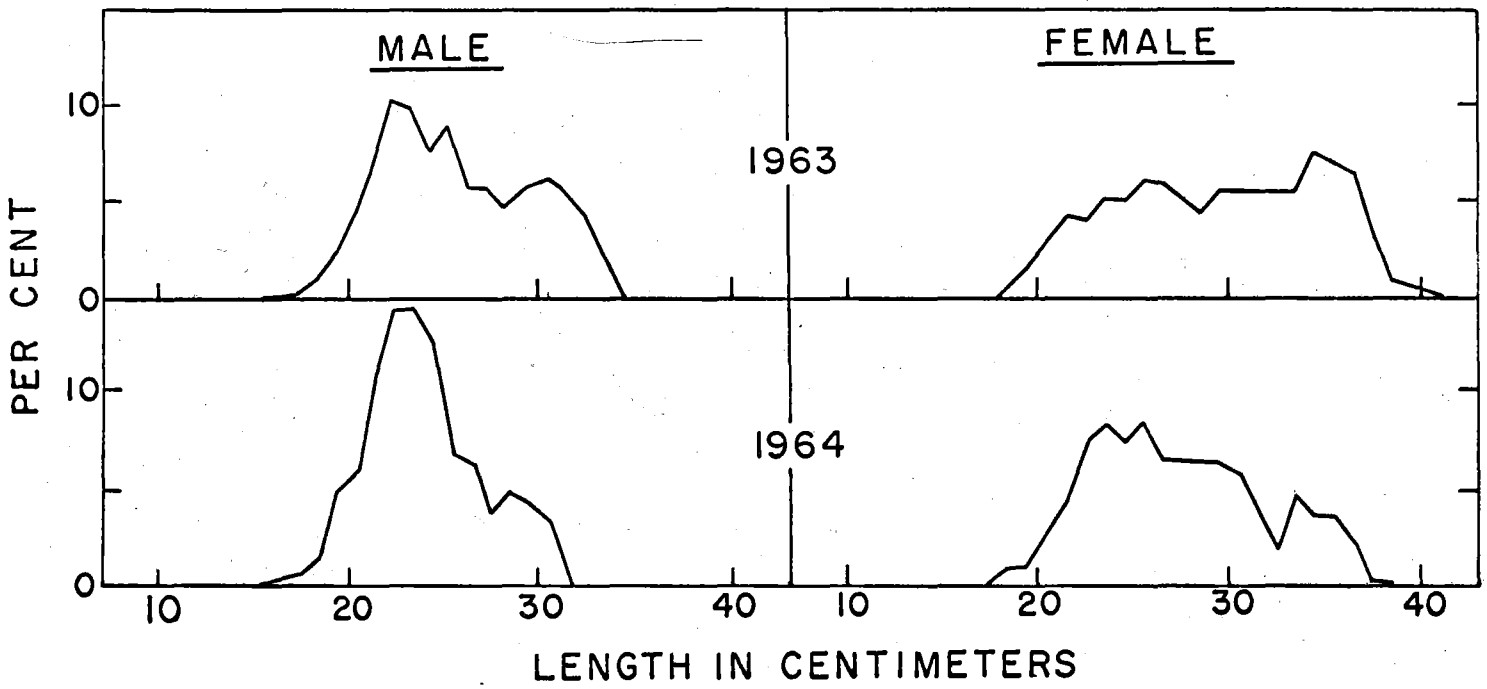

Figure 3.--Continued

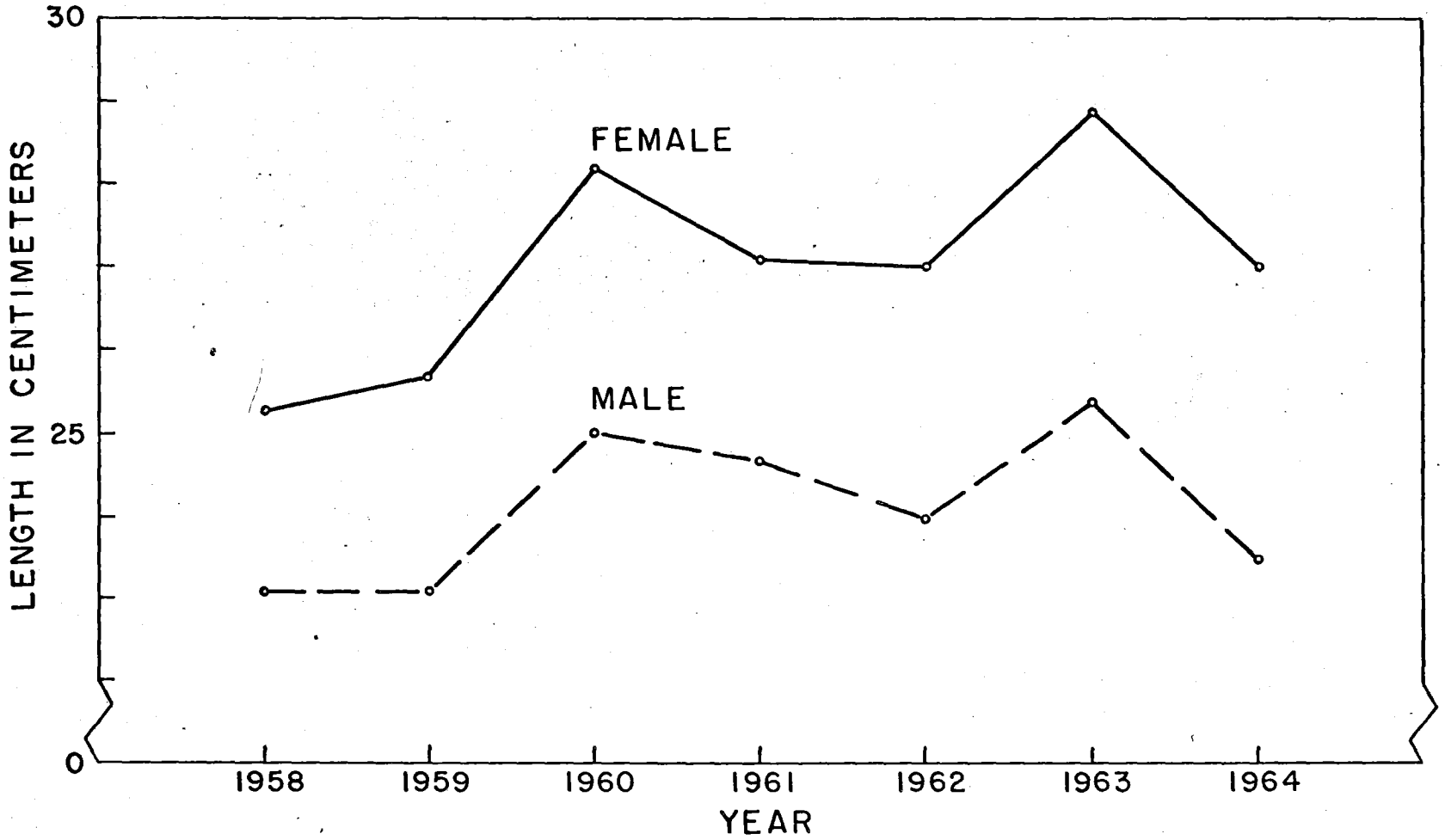

Figure 4. --Average length of landed redfish from Division 4X, 1958-64.

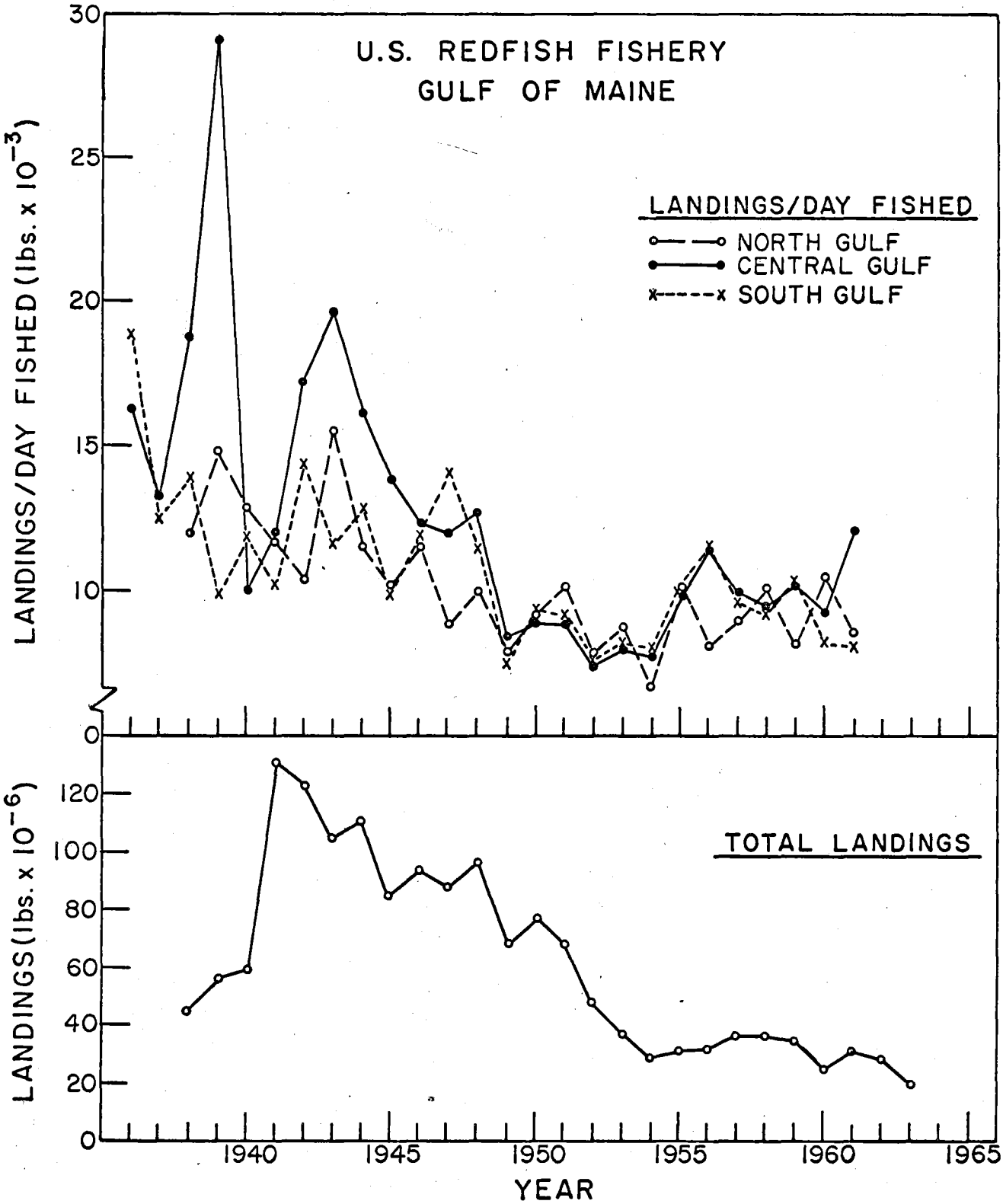

Figure 5. --U. S. Redfish Fishery Gulf of Maine

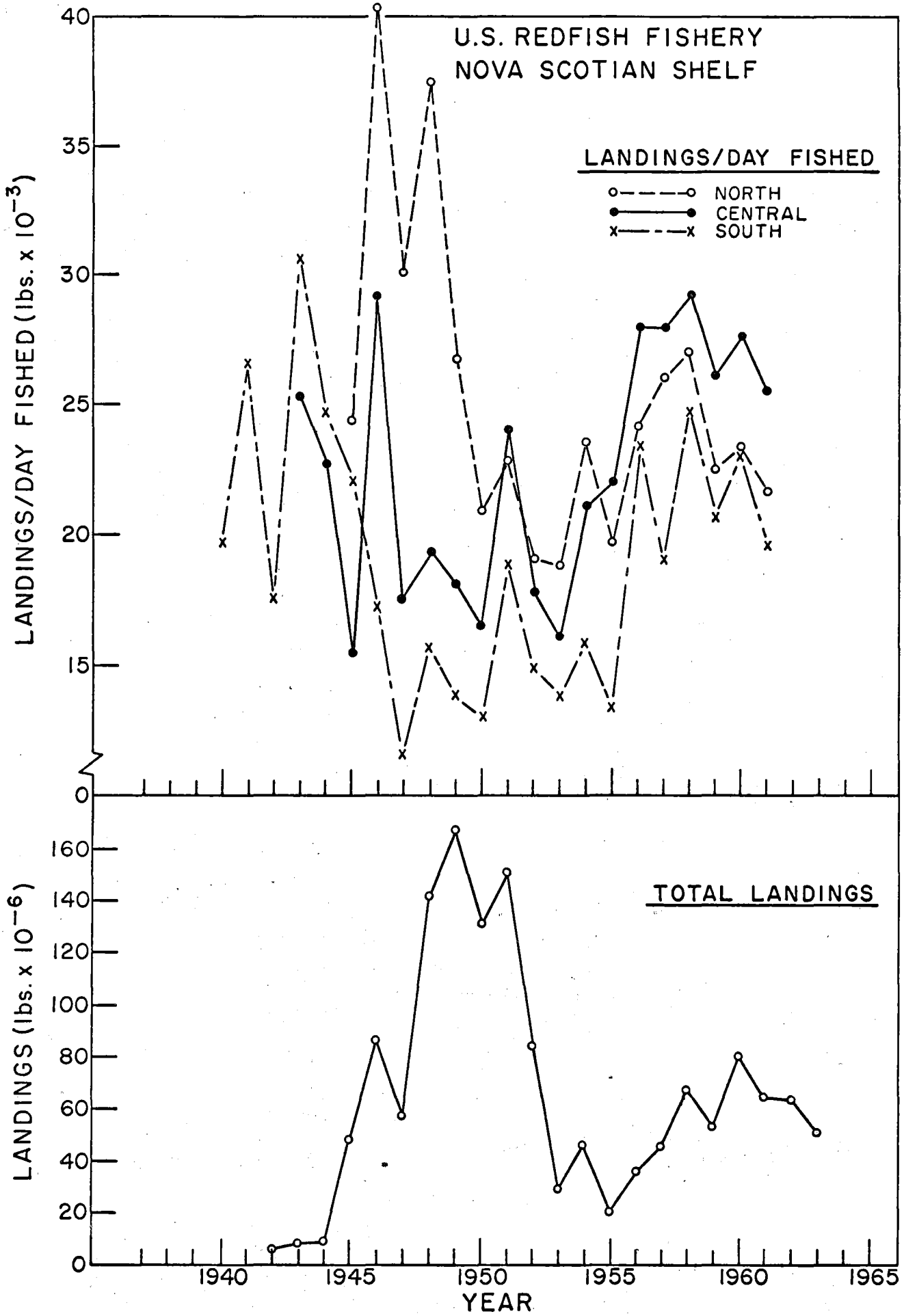

Figure 6. --U.S. Redfish Fishery Nova Scotian Shelf