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The seasonal and area distribution of herring spawning off the southwest Nova Scotia coast as indicated by logbook records

by

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Log book records from individual boats in the purse seine fleet operating off the S.W. coast of Nova Scotia in the summer and fall include many references to "spawn" and "spawny" herring. It is believed that for the most part these refer to herring which exude milk and eggs on capture and handling, i.e. to herring in very late stage V or in stage VI of the Heincke scale. Reference to "hard spawn" or "full" herring is also made indicating that a distinction is made between stage V and VI.

A proportion of the records include location identified in terms of distance and bearing from a specific reference point. Others give a general location only.

Figure 1 deals with both types of location reference. The grid system is the same used in the analysis of catch and effort data for this fishery (Iles, this meeting). The upper left figure refers to the number of observations of "spawn" herring recorded over the period 1966-1971 inclusive in which point location is given. The lower right figure refers to the number of observations with the more general reference which has been allocated to the square on the basis of the criteria used for the catch/effort data (Iles, this meeting).

Very nearly two thirds of all records are located in an area 15' latitude x 10' longitude between Trinity Ledge and Luroher Shoal. No records of spawning herring occur to the west of Lurcher Shoal. Records of spawning herring to the southeast of Yarmouth (squares 129, 130, 139 and 140 in section C) were made in 1968 only. These may refer to a distinct "local" spawning group.

Because records refer to the immediate pre-spawning rather than the spawning stage itself and because of the imprecision in the location of reports, it is likely that the spawning area is less extensive than indicated in Figure 1.

The frequency of individual reports (i.e. the number of separate references to spawning herring each day and throughout the season) is shown in Figure 2, for each year from 1966 to 1971. Records for 1966 and 1967 are available from very few boats and are unlikely to give a full picture. The earliest date on which spawning herring were noted was July 26, 1968, the latest on October 6, 1970. For the years 1968, 1969 and 1970 there are indications of three distinct waves of spawning at approximately three week intervals which become progressively later each year.

## Reference

Iles, T.D. and D.S. Miller. This meeting, 1972. "Catch and Effort Data for the S.W. Nova Scotia (4X) Purse Seine Fishery, 1966-1971".

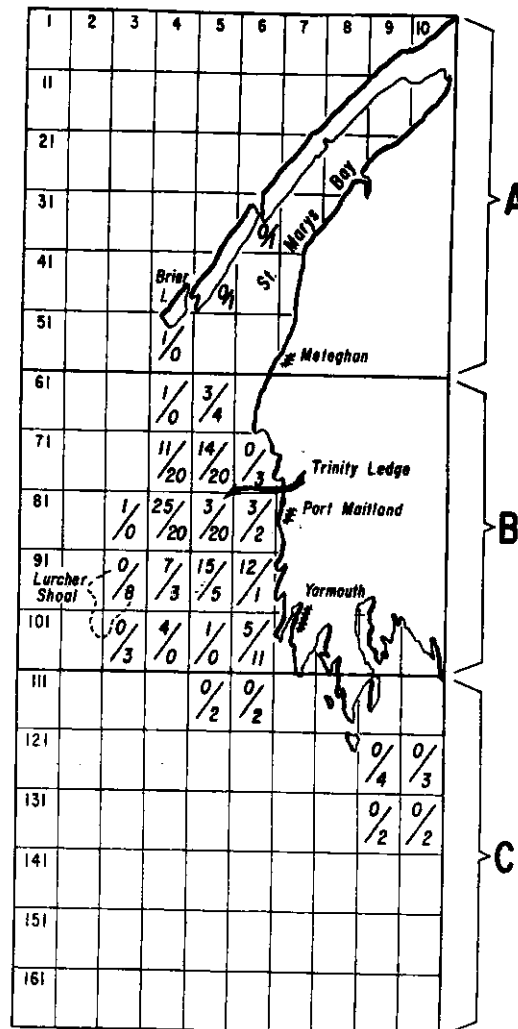


Fig. 1. The area distribution of records of spawning herring in the S.W. Nova Scotia herring fishery, 1966-1971 combined.

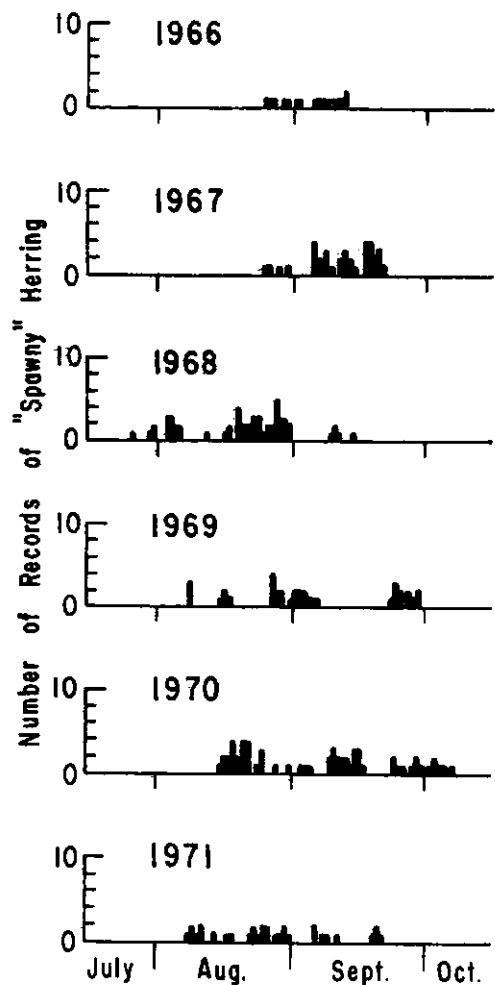


Fig.2. The seasonal distribution of records of spawn herring in the S.W. Nova Scotia fishery for each of the years 1966-1971.