

Herring Investigations at Dunmore East - 1962/63

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Fishing commenced on October 22, 1962 and finished on January 30, 1963. Forty-eight Irish based boats using four types of gear (vinge and larsen trawls, ring-nets and purse-seines) took part, and landings were made on 52 days out of a possible 68. Altogether, 25,370 crans were landed at Dunmore East, Passage East and Helvick by Irish based boats during the season, a decrease of 3,750 crans or approximately 12.9% on the figure for 1961/62. Whereas in previous seasons ring-netting produced the major portion of the landings before Christmas and thereafter trawling contributed most, during the 1962/63 season trawl catches were higher throughout the season as ring-netting was engaged in to a lesser extent and accounted for only 1,821 crans.

Samples of herrings were obtained from November 17 to the end of the season. These samples were examined for length, sex, maturity, vertebral count, age (both scales and otoliths) and racial type. Fish numbering 1,739 were examined in this way, and the monthly age distribution is shown in Table 1. The dominant age groups were found to be 5-year olds and 3-year olds. The 1957 year-class which entered the fishery as the main recruit brood during the 1960/61 season was a very strong one. This year-class was also dominant during the 1961/62 season and again during 1962/63 as 5-year olds. Recruitment was below normal during the 1962/63 season.

The maturity stages were similar to those of the previous two seasons. In November and December the gonads were developing (mainly Stage V) becoming full in January (Stage VI). A small percentage of spents was present in the catches throughout the season. The large fulls which occurred in October during the previous few seasons were not located during 1962/63 and the main fishing season was consequently later.

A summary of the mean length and mean vertebral count per maturity stage per age class is shown in Table 2. The mean vertebral count of the 2-, 3- and 4-year olds is typical of winter spawners.

With the decline in the number of ring-net vessels fishing the 1962/63 season in the Dunmore fishery most of the fish examined were trawl caught herrings and lacked scales. Otoliths were collected, therefore, from all samples and were used for age determinations and for typing. The occurrence of the two otolith types with "narrow" and "wide" first winter zones, respectively, amongst the age classes present in the Dunmore fishery for 1962/63 is given in Table 3. Also included are the otoliths which could not be classified under either of these major types, for a variety of reasons including broken and declassified otoliths.

The most important features of these data are as follows:-

- (1) The "narrow" type otoliths predominated in all age classes for the 1962/63 season.
- (2) In the 1-ring fish the vast majority (93%) had "narrow" type otoliths. These fish also have a high L₁ distribution and can be considered as fast-growing recruits (normal recruitment takes place when the fish are three years old).
- (3) Omitting the 1-ring fish, the "wide" type otoliths ranged from 19% to 36%.
- (4) The overall mean for the season was:

Narrow 63% Wide 28% Unclassified 9%.

The position and extent of the fishery in 1962/63 was much different from the pattern which had obtained since 1958. Prior to 1962/63 the shoals were generally first located in Baginbun Bay, close to the shore, in 10 fathoms. Estuarine fishing became prominent by mid-November and continued until mid-December. After Christmas, fishing was usually confined to Baginbun Bay. In the

1962/63 season, however, estuarine fishing lasted only two weeks. Fishing was later confined to an area S.W. of the Hook. In January the shoals had moved further offshore in a westerly direction and were taken in 30 to 36 fathoms off Mine Head.

The monthly landings from all ports (including Dunmore East, Passage East and Helvick) in the area were as follows:-

October	68
November	2,910
December	11,998
January	10,394
<u>Total</u>	<u>25,370 Crans</u>

Table 1. Monthly Age Distribution

No. of Winter rings	1	2	3	4	5	6	7	8	9	9+	Total
November	84	224	171	169	50	16	16	8	1	1	740
December	36	157	132	272	60	19	40	29	14	22	781
January	1	50	46	84	10	1	13	5	4	4	218
TOTALS	121	431	349	525	120	36	69	42	19	27	1,739

Table 2. Mean length, mean vertebral count per maturity stage per age class

MAT	NUMBER OF WINTER RINGS										TOTAL	
	1	2	3	4	5	6	7	8	9	9+		
I	1 21.3 58.00											1
II	92 23.67 56.69	3 26.43 57.00										95
III	1 23.20 56.00	1 23.50 57.00										2
IV	1 24.0 57.00		2 26.35 56.50									3
V	19 23.73 56.58	344 25.88 56.97	232 27.07 56.84	402 27.89 56.83	86 28.90 56.60	31 29.55 56.64	48 29.75 56.94	33 29.93 57.03	13 29.96 57.08	23 30.09 57.04		1,231
VI	2 23.65 56.00	63 26.02 57.08	84 27.11 56.80	98 27.98 56.82	16 28.79 56.69	4 29.6 56.75	20 30.08 57.15	8 30.1 57.0	5 30.02 57.4	4 30.5 56.75		304
VII	5 23.98 56.60	20 25.95 56.75	31 27.10 56.74	25 27.88 56.76	18 28.71 56.61	1 29.6 56.00	1 29.7 56.0	1 30.0 56.0	1 30.1 57.0			103
TOTALS	121	431	349	525	120	36	69	42	19	27		1,739

