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International Council for  
the Exploration of the Sea

CM 1968/K: 20  
Shellfish and Benthos Committee

Crawfish (*Palinurus elephas*) investigations in Irish waters 1966 and 1967

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The fishery for crawfish (*Palinurus elephas*), previously referred to as *Palinurus vulgaris*, in Irish waters has been described by Gibson and O'Riordan (1965) and again by Gibson (1967). One of the more important aspects of this fishery is that both lobsters and crawfish are exploited simultaneously by boats which use the same type of pots and baits for both species. Neither the location or the extent of the fishery have shown any considerable change since the time it was first reviewed, and the annual landings still show considerable variations since they depend more on the duration of the season and weather conditions than on availability of crawfish. The annual landings, to the nearest thousand fish, since 1960 are as follows:-

1960	1961	1962	1963	1964	1965	1966	1967
202	134	87	83	110	164	161	130

Scientific investigations into stocks of crawfish were recommenced in 1966 and continued in 1967 from late June to early September. For the purpose of these investigations the fishery was divided into seven main areas which roughly embraced the regions in which the majority of crawfish were taken. These areas were Kinsale, Mizen, Berehaven Peninsula, Valentia, Dingle Peninsula, Galway and North Mayo. All sampling was done at three major storage ponds on the south and southwest coasts where the majority of crawfish are eventually stored prior to shipment. Samples, whenever possible, were composed of complete boat catches per weeks fishing, or if this proved too big, a random sample of the total catch. Each individual crawfish was sexed, measured, examined for the presence of eggs and the degree of hardness of the shell noted. Measurements were in the form of total carapace length (measured from the tip of the inter-orbital spine in a straight line to the posterior edge of the carapace to the nearest mm.) Eggs when present were divided into two categories, eyed and non-eyed. (1,675 individuals were examined in this manner in 1966 and 7,241 in 1967).

Total carapace lengths showed considerable variations for the different areas and ranged from 66 mm to 185 mm for males and 66 mm to 170 mm for females. Mean total carapace lengths were calculated per sex for each area and were as follows:-

Area	1966		1967	
	Male	Female	Male	Female
Kinsale	113.7	115.7	115.3	113.5
Mizen	116.2	108.7	114.8	110.3
Berehaven	131.2	107.1	121.0	114.1
Valentia	119.2	112.7	121.4	115.1
Dingle	130.4	114.7	128.5	115.0
Galway	---	---	131.4	117.6
Mayo	---	---	121.6	113.7
All areas	116.2	110.3	124.8	116.2

It would appear from these observations that the bigger crawfish come from Galway and the Dingle and Berehaven Peninsulas, while the smallest come from the south coast i.e. Kinsale and Mizzen areas. In all areas except Kinsale (1966) males were bigger than females by fairly appreciable amounts. There is no suggestion of an overall decrease in mean carapace over the two seasons and again it would appear that there is no decrease between this material and that obtained by Gibson during 1962.

The ratio of the sexes remained fairly constant during both years, males being outnumbered by females in the ratio of 1.00 : 1.14. The percentage distribution of ovigerous females and the eyed and non-eyed stages were as follows:-

Area	% distribution		Total ovigerous	
	Non eyed	Eyed	1967	1966
Kinsale	11.3	-	11.3	15.4
Mizen	7.9	1.0	8.9	13.1
Berehaven	7.4	-	7.4	5.7
Valentia	13.1	0.9	14.0	16.0
Dingle	8.9	0.5	9.4	34.4
Galway	8.3	1.2	9.5	-
Mayo	5.5	0.8	6.3	-

With the exception of Dingle 1966 when 34.4% of all females were ovigerous, the numbers of egg bearing females ranged from 5.7% to 16.0%. This would again suggest that the major portion of the yearly hatch takes place prior to June. There is no apparent reason for the high proportion of egg bearing females in Dingle catches in 1966.

The numbers of soft shelled or recently moulted individuals present in samples remained constantly low and never exceeded 1.0%.

#### References

- Gibson, F.A. and O'Riordan, C.E. (1965). Palinurus vulgaris (L) the Crawfish in Irish waters 1962. Rapp. Cons Explor. Mer. 156.1965.
- Gibson, F.A. (1967). Irish Investigations on the Lobster (Homarus vulgaris Edw.) Irish Fisheries Investigations. Series B. (Mar.) No. 1. 1967.