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LOBSTER TRAP CENSUS 1971.

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This leaflet continues the information provided by Fisheries Leaflets 11, 23 and 26. There was little change in the types of lobster fishing gear in use in 1971 compared with previous years, fishermen preferring the following order of choice:-

- (a) French crawfish traps,
- (b) Scottish lobster traps,
- (c) U.S. parlour traps,
- (d) Kilmore Quay (wire traps),
- (e) Other types of trap (including for the first time a specially designed French lobster trap⁺).

In many areas, particularly off the coasts of Cork, Kerry, Galway and Mayo (where the potential for lobster fishing development is considerable), more French crawfish traps are used than all other gears (Table 1).

The distribution of boats, by size and county is given in Table 2. There were about 732 boats of all classes engaged in the fishery in 1971, compared with about 665 in 1970. However, a number of these boats was fishing specifically for crabs, though catching some lobsters also, so that the effective increase in the number of boats fishing for lobsters (or lobster/crawfish) was 47. There were only minor changes in the numbers of boats using outboard engines and those up to 30 feet in length in 1971 compared with 1970. (Table 2).

There was little change in the density of boats per coastal mile in 1971 compared with 1970 (Table 3). Lobster gear was dominant in counties Louth, Dublin, Wicklow, Wexford, Waterford, Clare, Sligo and Donegal, while in counties Cork, Kerry, Galway and Mayo, which probably constitute the best Irish areas for lobster fishing, crawfish gear was dominant (Table 4).

+ These traps have the trade name KAVEL

The average catch per trap (all varieties), is given in Table 5. In Cork, Kerry, Galway and Mayo, where crawfish gear dominates, the catch of lobsters per trap ranged from 7.5 to 13.6. In the remaining counties, where lobster gear is dominant, the catch per trap ranged from 12.5 (Sligo) to 34.2 (Dublin). The catch of lobster per trap in Clare and Sligo was 16.0 and 12.5 respectively which was well down on previous years.

Increases in catches per trap, compared with 1970, were recorded in the cases of Louth, Dublin, Wexford, Kerry and Mayo; Donegal catch remained the same as in 1970. The decreases in catch per trap were most marked in Wicklow, Waterford, Cork, Clare, Galway and Sligo, and this must give some cause for concern in those areas. (Tables 4 and 5). Size measurements for Wicklow, Clare, Galway and Sligo, are not available, but for Waterford and Cork considerable numbers of undersized lobsters were recorded in the catch. In 1968 as many as 20% of the females and 10% of the males examined were undersized (Gibson 1969). It may be that the practice of landing undersized lobsters was continued in those and other fishing areas; if so, it could have contributed to the drop in catch per effort in 1971 and would be a clear indication of the reaction of lobster stocks to abuse of the size limit regulation.

For all maritime counties and taking all varieties of gear into consideration, the national average trap catch by numbers and weight since 1968 has only dropped from 15.2 lobsters weighing 19.0 lbs per trap, to 14.6 lobsters weighing 18.3 lbs per trap in 1971 (Table 6). During the past four years the fishing effort has increased and the catch per effort has shown a decline. In most cases, if the fishing effort increases and at the same time the catch per unit of fishing effort declines, then one can only conclude that the stock of fish is not abundant enough to withstand the rate of fishing being exerted upon it. In the case of lobsters, however, that conclusion must be qualified. The lobster stock is not one homogeneous unit around our coast. Rather, it is made up

of a large number of individual stocks which neither migrate nor mix with each other, because lobsters are almost sedentary animals with a highly developed territorial sense; they are not gregarious and are rarely, if ever, found to be living in communities. In captivity lobsters cannibalise each other and this may well hold in Nature also, even if evidence is not available at present to support that contention. Their almost sedentary habit combined with their individualistic anti-social tendencies suggests that the density of lobsters per given area is relatively low. Estimates of 10 full grown lobsters per acre have been made, and, if correct, it would not be difficult to overfish an area of 1,000 acres which might only have 10,000 adult lobsters living in it, bearing in mind that a lobster of good commercial size, i.e. about $1\frac{1}{2}$ lbs, is about 8 years of age. This means that if the recruiting lobsters (from $\frac{1}{2}$ to 1 lb in wt.) are taken out of a particular area, that area could be denuded of both adult and maturing stock in a short time, requiring about 3 to 4 years to recover its stock strength. It is, therefore, of vital importance that sub-legal sized lobsters taken in traps, i.e. recruits of 83 mm carapace length and less, be returned to the sea; and that fishing grounds be rotated in such a way as to rest them for a year, or two, if necessary. A further factor, the effects of which are equally important, but which is difficult to determine, is the success of year classes. For example, in the years 1962 and 1963 the two lowest annual lobster catches for the period 1961 to 1971 were recorded, being 296,800 and 271,761 respectively, compared with 319,000 in 1961 and 490,300 in 1971. It could be argued that the spawners in the 1962 and 1963 stocks were below average in number and that, therefore, the adults arising from them would be reduced in number. The progeny of the 1962 and 1963 year classes would have entered the fisheries as 1 lb to $1\frac{1}{2}$ lb lobsters in 1970 and 1971. However, as can be seen from Table 6, the weight of lobsters caught per trap fell by 6.3 lbs from 1969 to 1971. This is not an irrefutable argument that the present decline in catch per unit of fishing effort has been caused

by poor spawning years. However, it is quite certain that a combination of poor year classes and the taking of undersized lobster will have a disastrous effect on local lobster stocks. Because of behaviour patterns and density distributions, which are peculiar to lobsters, fishermen must in their own interest and for the better management of the lobster resource be prepared to -

- (a) return to the sea all lobsters under 83 mm carapace length;
- (b) rotate fishing grounds which will entail the opening up of new fishing areas for which purpose boats ought to be equipped with electronic fishing aids.

If the present reducing trend in yield per trap continues it may well become necessary to introduce measures to restrict the freedom of fishing which fishermen enjoy at present.

SUMMARY.- (i) The fall in the catch of lobsters per trap gives some cause for concern, but because of the nature of lobster stocks it is felt that fishing restrictions are not required immediately. For example, in 1971 fishermen, off county Waterford, reported that lobsters had become extremely scarce in the normal fishing grounds. Later in the season, some of these fishermen sought out and fished on ground never previously fished which resulted in sustained catches of above average weight lobsters of 2½ lbs and over. Most areas cannot withstand continuous intensive fishing over a period of years, and yet within reach of boats there may be a number of untapped lobster resources.

(ii) The number of traps per boat, now averaging 60, is as high as it has been for many years. In the present state of fishing little purpose seems to be served by increasing the average number of

traps per catch for the effort, even though the overall catch per boat might be increased in some cases. The latter increase, however, may be more than offset by the higher fuel, bait and trap costs. Fishermen are advised to give thought to the cash returns for lobster fishing in relationship to the cost of traps, bait and fuel.

- (iii) Lobster traps catch, on average, larger individual lobsters than those caught by crawfish traps. Therefore, the use of lobster traps in lobster fisheries, is advocated.
- (iv) A total of 732 boats, ranging from row boats to vessels exceeding 45' in length (though some 20 of these were almost exclusively engaged in crab fishing) took part in the 1971 lobster fishery.
- (v) A total of 41,911 traps was used, of which 56% was designed for crawfish fishing and 44% for lobster fishing.
- (vi) The total catch of lobsters in 1971 was 490,300 a reduction of 4,657 on 1970.
- (vii) The national average yield of lobsters per trap per season was 11.7 (14.6 lb) compared with 12.4 (15.5 lb) in 1970.

REFERENCES

- Gibson, F.A. (1969) Catch, effort and size distribution of the catch in the Irish lobster fishery (1968). Fish. Leaf. 14.
- _____ (1969) Lobster trap census 1968. Fish. Leaf. 11.
- _____ (1970) Lobster trap census 1969. Fish. Leaf. 23.
- _____ (1971) Lobster trap census 1970. Fish. Leaf. 26.

Table 1. Distribution in numbers of types of trap used in 1971, by county.

County	Types of trap used.						Totals
	Scottish Lobster	French Crawfish	Kilmore Quay	US parlour	Norwegian	Others	
Louth	580	-	-	-	-	-	580
Dublin	320	-	-	72	-	270	662
Wicklow	112	-	-	-	-	-	112
Wexford	-	380	2,418	-	-	125	2,923
Waterford	41	683	-	50	50	1,121	1,945
Cork ⁺	-	5,410	-	-	-	170	5,580
Kerry	40	3,884	480	130	-	300	4,834
Clare	-	290	230	100	1,130	140	1,890
Galway	50	9,185	-	2,300	-	800	12,335
Mayo	360	3,135	-	220	-	415	4,130
Sligo	1,030	70	-	50	250	400	1,800
Donegal	4,400	390	-	260	-	70	5,120
Totals	6,933	23,427	3,128	3,182	1,430	3,811	41,911

+ Approximately 20 of the boats included crab fishermen using 1,740 crab traps which have not been included in this total.

Table 2. Distribution of the number of boats by size category by county comparing 1970 with 1971.

Boat classes

County	1970					1971				
	Outboard engines	Up to 30'	31-45'	More than 45'	Total	Outboard engines	Up to 30'	31-45'	More than 45'	Total
Louth	1	4	-	-	5	2	4	-	-	6
Dublin	13	3	-	-	16	14	3	-	-	17
Wicklow	5	-	-	-	5	4	1	-	-	5
Wexford	7	10	7	1	25	5	14	7	1	27
Waterford	14	8	3	2	27	14	3	3	5	25
Cork	29	14	5	1	49	34	22	16	5	97
Kerry	36	17	7	7	67	42	17	7	8	74
Clare	14	11	3	-	28	8	13	3	-	24
Galway	121	55	36	4	216	120	50	38	4	212
Mayo	19	27	10	2	58	15	31	24	1	71
Sligo	12	11	7	-	30	8	11	5	-	24
Donegal	86	34	18	1	139	86	41	22	1	150
Totals	357	194	96	18	665	372	210	125	25	732

Table 3. Approximate comparison of the effective ratio of boats to mileage as between 1970 and 1971

County	No. all boats in 1970	No. all boats in 1971	Effective coastal mileage	Ratio of boats to coastal mile	
				1970	1971
Louth	5	6	40	8.0	6.7
Dublin	16	17	45	2.8	2.6
Wicklow	5	5	40	8.0	8.0
Wexford	25	27	84	3.4	3.1
Waterford	27	25	54	2.0	2.2
Cork	49	97	108	2.2	1.0
Kerry	67	74	198	3.0	2.7
Clare	28	24	104	3.7	4.3
Galway	216	212	207	0.9	1.0
Mayo	58	71	220	3.8	3.0
Sligo	30	24	68	2.3	2.8
Donegal	139	150	120	0.9	0.8
TOTALS	665	732	1,288		

Table 4. Number of traps per county and the average catch of lobsters per trap in 1971 compared with 1970.

County	No. of traps 1970	No. of traps 1971	Lobster traps in 1971 as % of total traps	Av. catch per trap 1970	Av. catch per trap 1971
Louth	495	580	100%	7.8	13.4
Dublin	653	662	100%	21.9	34.2
Wicklow	104	112	100%	16.1	14.4
Wexford	3,480	2,923	87%	11.1	13.8
Waterford	1,246	1,945	65%	22.0	13.4
Cork	4,858	5,580	3%	13.7	9.7
Kerry	4,376	4,834	20%	13.2	13.6
Clare	1,640	1,890	85%	21.4	16.0
Galway	12,283	12,335	26%	8.9	7.5
Mayo	3,749	4,130	24%	9.3	11.9
Sligo	1,970	1,800	96%	14.8	12.5
Donegal	4,980	5,120	92%	15.2	15.2
Totals	39,834	41,911		12.4	11.7

Table 5. Total number of traps per county and catch of lobsters in 1971, together with the average catch per trap.

County	Total number of traps(all types)	Total catch of lobsters	Average catch of lobsters for season
Louth	580	7,788	13.3
Dublin	662	22,632	34.2
Wicklow	112	1,608	14.4
Wexford	2,923	40,516	13.9
Waterford	1,945	26,053	13.4
Cork	5,580	54,228	9.7
Kerry	4,834	65,766	13.6
Clare	1,890	30,179	16.0
Galway	12,335	92,080	7.5
Mayo	4,130	49,200	11.9
Sligo	1,800	22,440	12.5
Donegal	5,120	77,810	15.2
Totals	41,911	490,300	11.7

Table 6. Average National catch of lobsters per trap
(all types) in numbers and weight, 1968 to 1971.

Year	National average	Numbers of lobsters	Wt. of lobster (lb.)
1968	do	15.2	19.0
1969	do	16.7	20.9
1970	do	12.4	15.5
1971	do	11.7	14.6