



SEA AND INLAND  
**FISHERIES**

REPORT FOR

1967

AN ROINN TALMHAIOCHTA AGUS IASCAIGH

(Department of Agriculture and Fisheries)

FO-ROINN IASCAIGH.

(Fisheries Division)

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**REPORT**  
OF THE  
**MINISTER FOR AGRICULTURE AND FISHERIES**  
ON THE  
**SEA AND INLAND FISHERIES**  
FOR THE YEAR  
**1967**

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**PART I.**  
**SEA FISHERIES**

Landings of sea-fish in 1967 attained a record value of £2,152,772, which exceeded that for 1966 by £119,436. Demersal fish, valued at £1,079,794, showed an increase of £84,091; pelagic fish gained £97,883 to reach a value of £556,355; shellfish on the other hand, declined in value to £516,623, which was £62,538 less than in 1966.

The weights and values of annual landings of sea-fish (excluding shellfish) since 1958 are shown in the following table.

TABLE 1.

Year	Cwt.	£
1967	833,649	1,636,149
1966	626,316	1,454,175
1965	562,677	1,269,111
1964	487,871	1,084,442
1963	399,280	1,059,827
1962	441,149	1,169,201
1961	516,207	1,079,556
1960	688,421	1,271,980
1959	592,319	1,205,971
1958	547,377	1,025,505

Details of the quantities and values of the several varieties of sea-fish and shellfish landed in 1966 and in 1967 are given in Appendix No. 1. The average price per cwt. obtained for each variety of sea-fish (other than shellfish) from 1960 onwards is shown in Appendix No. 2.

As in previous years, imports of white fish, mainly plaice, were permitted at times when supplies from home landings were inadequate to meet demand on the home market.

The leading fishing ports in 1967, in order of value of fish landed were: Killybegs, Dunmore East, Howth, Castletownbere, Galway, Dingle and Kilmore Quay. This order was very much the same as that for 1966 except that as between the two years, Galway and Dingle exchanged places.

**DEMERSAL FISHERY.**—The quantity (313,438 cwt.) of demersal fish landed in 1967 was the greatest on record and was 40,947 cwt. more than the quantity landed in 1966. Apart from haddock and dabs, all of the main species contributed to the increase in landings. It is particularly noteworthy that landings of cod increased from 38,839 cwt. in 1966 to the record figure of 57,610 cwt. in 1967 and landings of whiting increased very substantially from 99,248 cwt. in 1966 to 120,981 cwt. in 1967. The quantity (28,938 cwt.) of plaice landed in 1967 also constituted a record. Whiting continued to be the variety caught in greatest quantity and it accounted for 39% of the total demersal catch; cod, plaice, haddock, ray and pollack followed in that order.

Although a good demand prevailed throughout the year, the increased volume of landings met with some price resistance and the prices generally obtained on first-hand sale, except for ray and haddock, were somewhat lower than in 1966. Despite this, however, the larger catch brought an increase of over £84,000 in the fishermen's earnings in 1967, as compared with 1966. Whiting, plaice and cod, in that order, contributed most to the fishermen's earnings; landings of those three species amounted in value to £669,583 or 62% of the total value of the demersal landings. Next in order of value of catch were: ray/skate, haddock, soles, pollack and hake.

The following table shows the quantity, total value and average value per cwt. of demersal fish in each of the past ten years.

TABLE 2.

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	s. d.
1967	313,438	1,079,794	68 11
1966	272,491	995,703	73 1
1965	282,192	959,362	68 0
1964	267,155	876,310	65 7
1963	210,318	829,367	78 10
1962	230,110	866,547	75 4
1961	212,703	820,911	77 2
1960	233,785	818,828	70 1
1959	258,178	800,698	62 0
1958	258,978	717,306	55 5

**PELAGIC FISHERY.**—*Herrings*:—The catch of herrings in 1967 was a record in terms of both quantity and total value. Landings increased from 293,300 cwt. in 1966 to 465,606 cwt. in 1967, to the

accompaniment of a value increase from £339,312 in 1966 to £499,280 in 1967. The great increase in the catch outdistanced the market demand for herrings intended for human consumption, and a substantial quantity, mainly from the Co. Donegal fishery, was disposed of for reduction to fishmeal. The average landed price per cwt. declined from 27s. 3d. in 1966 to 21s. 5d. in 1967. As in former years, the fishing was largely concentrated in two areas, namely—off the Co. Donegal coast and off Dunmore East, Co. Waterford.

The 1966/67 winter herring season off the Donegal coast came to a close in mid-February, 1967. Landings from the fishery in the few weeks from 1st January, 1967, up to that time amounted to 64,000 cwt., which was 11,000 cwt. more than the quantity landed in the months of January and February in 1966. Spring fishing for herring commenced in April and, as in the immediately preceding years, fishing continued throughout the summer and autumn months. Landings in the period from April to the end of October included 26,000 cwt. of herrings which were sold for human consumption and most of which were subsequently cured for export to France. The 1967/68 winter herring season opened at the beginning of November. In the months of November and December the total quantity landed from the fishery, including 4,150 cwt. landed at Sligo, amounted to 143,000 cwt. as compared with 52,000 cwt. in the corresponding period of 1966. Total landings in 1967 from the Donegal herring fishery amounted to 241,000 cwt. as compared with 150,000 cwt. in 1966 and 127,000 cwt. in 1965.

The Dunmore East winter herring season for 1966/67 came to an early close on 18th January, 1967. From 1st to 18th January, landings from this fishery amounted to 78,000 cwt., as compared with 37,000 cwt. in the period from 1st January to 11th February, 1966. The 1967/68 season, which opened on 23rd October, differed considerably from that of preceding years; the fish were located over a very large area extending from Kinsale to the Keeraghs in Baginbun Bay. Landings were made at Kinsale, Cobh, Passage West, Ballycotton and Helvick as well as at Dunmore East itself—which, however, continued to be the main landing centre. Fishing weather was good throughout and the total quantity landed by the end of the year was 106,000 cwt. (of which 84,000 cwt. was landed at Dunmore East), as compared with 91,000 cwt. in the corresponding period of 1966. The increase in landings is attributed to the greater abundance of herrings as a result of excellent stock recruitment during the 1965/66 and 1967/68 seasons and to the greater efficiency of boats using mid-water trawls. Total landings of herrings for the year 1967 from this fishery amounted to 184,000 cwt., as compared with 129,000 cwt. in 1966 and 76,000 cwt. in 1965.

Encouraged by good markings of herrings found in Bantry Bay in the 1966/67 winter months, four pairs of boats using paired mid-water gear commenced fishing for herrings in the Durseay Sound-Bantry Bay area in August, 1967, and continued until late October, by which time they had landed 13,000 cwt., all at Castletownbere. The fishing,

which was of an experimental nature, was reasonably successful— notwithstanding that bad weather was encountered in the earlier part of the period, that some of the catch was of a mixed nature, and that “blackgut” was present in some of the landings which rendered them unsuitable both for freshing and for processing.

As most of the herring catch is exported in fresh or processed forms, the increased landings in 1967 were reflected in an increased volume of exports in that year. While exports of fresh, chilled or frozen herrings decreased from 100,434 cwt., valued at £217,755, in 1966, to 79,421 cwt., valued at £155,476, in 1967, the quantity exported in cured and marinated forms increased substantially from 96,616 cwt. (£318,326) in 1966 to 170,016 cwt. (£324,957) in 1967. Great Britain, the Netherlands and the Federal Republic of Germany continued to provide the main market outlets for exports in fresh, chilled or frozen forms. France, the Netherlands and the Federal Republic of Germany maintained their positions as the leading importers of cured herrings from this country.

The following table shows the quantity, total value and unit value of herrings landed in each of the past ten years.

TABLE 3.

Year	Quantity	Value	Average Value per cwt.	
			s.	d.
1967 ... ..	cwt. 465,606	£ 499,280	21	5
1966 ... ..	293,300	399,312	27	3
1965 ... ..	210,555	251,521	23	11
1964 ... ..	160,929	155,440	19	4
1963 ... ..	165,696	193,068	23	4
1962 ... ..	187,534	260,463	27	9
1961 ... ..	250,078	209,710	16	9
1960 ... ..	417,414	394,945	18	11
1959 ... ..	308,064	364,130	23	8
1958 ... ..	252,759	268,579	21	3

*Sprats*:—As in preceding years, sprats were fished for reduction to fish meal and as feeding material for mink and ponded trout. The total catch was much reduced, however—from 30,520 cwt. in 1966 to 9,728 cwt. in 1967—as a result of a loss of interest in sprat fishing at Clogherhead, which has normally been the main fishing centre for this species. In addition to landings at Clogherhead, small quantities were landed at Killybegs and Inver in Co. Donegal and at Drogheda and Howth.

*Mackerel*:—Owing mainly to an increase in landings at south coast ports and at Killybegs, the mackerel catch increased from 29,645 cwt. valued at £46,389, in 1966 to 44,196 cwt. valued at £51,163 in 1967. As most of the catch was bought at relatively low prices for reduction to fishmeal, the average price received by the fishermen was appreciably less, at 23s. 2d. per cwt., than that (31s. 4d. per cwt.) received in

1966. The principal landing places for mackerel were: Killybegs, Schull, Dingle, Castletownbere, Valentia, Cahirciveen, and Kinsale.

Statistics of mackerel landings over the past ten years are given in the following table.

TABLE 4.

Year	Quantity	Value	Average Value per cwt.	
			s.	d.
	cwt.	£		
1967 ... ..	44,196	51,163	23	2
1966 ... ..	29,645	46,389	31	4
1965 ... ..	40,213	45,853	22	10
1964 ... ..	26,308	38,891	29	7
1963 ... ..	14,980	33,753	45	1
1962 ... ..	16,475	39,297	47	8
1961 ... ..	24,007	38,238	31	10
1960 ... ..	37,125	58,144	31	4
1959 ... ..	25,645	40,978	31	10
1958 ... ..	35,490	39,570	22	4

SHELLFISH.—At £516,623, the value of the shellfish catch in 1967 was substantially less than the record value of £579,161 attained in 1966 but was considerably greater than in any other year. While prices were well up to the levels reached in 1966, the catches of crawfish, particularly on the south-west coast, and of Dublin Bay prawns on the east coast were not so numerous as in 1966. A decrease also took place in the catch of periwinkles. The mussel harvest, on the other hand, reached its highest level since 1960, owing mainly to a substantial increase in the quantity taken at Castlemaine Harbour in the months of September to December, 1967.

Table 5 gives the value of shellfish landings in each of the past ten years.

TABLE 5.

	£
1967 ... ..	516,623
1966 ... ..	579,161
1965 ... ..	431,262
1964 ... ..	420,114
1963 ... ..	353,863
1962 ... ..	329,794
1961 ... ..	277,686
1960 ... ..	339,625
1959 ... ..	402,716
1958 ... ..	291,255

EXPORTS.—The fish-export trade continued to expand and in 1967 the total quantity of exports of fish and fishery products, including both sea-fish products and freshwater fish products (see Part II of this Report) was more than 20% greater than the quantity exported in 1966. Owing to the lower prices prevailing in export markets, how-



ever, the total value of the exports was, at £2,313,307, somewhat less than the record figure of £2,492,531 for 1966. Exports of sea-fish products were valued at £1,435,247, as compared with £1,521,546 in 1966. Details of the exports are given in Appendix No. 4.

**PERSONNEL AND VESSELS.**—The total number of men engaged full-time in sea fishing increased from 1,634 in 1966 to 1,721 in 1967, in line with the expansion of the fishing fleet by the addition of larger vessels. The trend towards decreasing numbers of part-time fishermen appears to have been arrested in 1967, when a small increase (from 3,627 to 3,655) was recorded in their number.

Motor vessels of 25 gross tons and over take much the greatest part of the catch of wet fish. The number of such vessels increased from 182 in 1966 to 192 in 1967 and consisted to a greater extent of large vessels, of 50 gross tons and over, the number of which in the fleet at the end of 1967 was 47 as compared with 32 in 1966, 26 in 1965, and 15 in 1962.

The number of motor vessels of less than 25 gross tons increased from 458 at the end of 1966 to 477 at the end of 1967. These vessels consisted very largely of shellfishing boats of less than 10 gross tons, the numbers of which have been increasing in recent years with the help of the Marine Credit Plan administered by An Bord Iascaigh Mhara.

Further details are given in Appendix No. 7.

**TRAINING OF FISHERMEN.**—Satisfactory results were achieved during 1967 under the schemes for training fishermen as skippers and boys as fishermen.

13 fishermen were selected to participate in the shore course provided in co-operation with the Galway Vocational Education Committee and all the fishermen concerned were subsequently successful in obtaining Certificates of Competency under the Merchant Shipping Acts. Since its inception in 1958 the scheme has assisted 80 fishermen in obtaining certificates. For fishermen who do not find the Galway course convenient An Bord Iascaigh Mhara continued in 1967 to provide port courses at selected centres and as a result certificates were awarded to a further 57 fishermen.

Plans were finalised during 1967 for the revision of the scheme for training boys as fishermen. The period of training has been reduced to ten months comprising five months on board selected fishing vessels during which the trainee acquires practical fishing experience and five months attending a residential shore course at Moville, County Donegal, during which instruction is given in such subjects as seamanship, navigation, net-mending and cookery. By the end of 1967, however, recruitment had not yet been effected under the revised scheme but there were 37 boys in training on board fishing vessels

under the previous arrangements. In addition 21 boys completed training during the year and became full crew-members.

**AN BORD IASCAIGH MHARA.**—The Board received from the Fisheries Vote, 1966/67, a grant of £386,000 in aid of administration and general development. Repayable advances totalling £110,000 were also made to the Board from the Central Fund mainly for the provision of boats and gear.

The Board's market development programme again recorded satisfactory progress during 1967 with a further increase of 11 per cent in home consumption of fish as compared with the previous year. This significant increase was achieved largely as a result of the various promotional activities of the Board and improved fish distribution throughout the country, regional wholesalers being assisted in developing distribution services on a regular basis to retail outlets over a wide area. While a drop of about seven per cent was recorded in the value of exports of fish and fishery products as compared with the previous year, due largely to a decrease in shellfish exports, a notable innovation in 1967 has been the export of fresh fish from Donegal to Great Britain by insulated container traffic. These direct marketing operations by fishermen's co-operatives ensure that the primary producer gets a greater share of the end price.

Demand for boats continued to be buoyant and during the year ended 31 March, 1967 the Board assisted Irish fishermen in acquiring 41 new and 4 second-hand vessels ranging in size from 26 to 75 feet in length. The development of the technical skills necessary for the efficient working of these vessels has been aided by expert fishery advisers and regular contacts with fishery operations in Northern European countries. Modernisation of the shellfish vessels also received attention during 1967 with a view particularly to providing the fishermen with more effective gear and mechanical hauling equipment.

**SEA FISHERIES PROTECTION.**—Protection of the exclusive fishery limits involving regular patrols by vessels of the Naval Service of the Department of Defence was maintained during 1967. Prosecutions were instituted against the skippers of three foreign vessels which had been observed fishing inside the limits and convictions were secured in all cases resulting in fines and forfeitures of fish and gear. Two other foreign vessels were arrested for unlawfully entering within the exclusive fishery limits. Following prosecution a conviction was secured in one case, when a fine was imposed, and the other case was dismissed. In the conduct of these cases and in the enforcement of fishery protection measures generally there was effective co-operation from the Garda Síochána.

**MARINE WORKS.**—Work was continued on the major fishery harbour schemes at Killybegs, Castletownbere and Dunmore East, A

Second Reading was given in Dáil Éireann on 12th December, 1967 to the Fishery Harbour Centres Bill, 1967, which is designed to confer powers of compulsory acquisition of property required for the establishment of the proposed five fishery harbour centres at Killybegs, Castletownbere, Dunmore East, Galway and Howth and to provide, inter alia, for the future operation and management of those centres by the Minister. Arrangements were advanced for the carrying out of improvement works at Darby's Point, Co. Mayo, at Kilmore Quay, Co. Wexford, and at Skerries, Co. Dublin.

Other marine works were completed at Porturlin and Graughill, Co. Mayo, at Knock—Lettermullen and Inisbarra Island, Co. Galway, at Liscannor and Seafield (Quilty) Co. Clare, at Rinn na Ratha, Co. Kerry, and at Bank (Whiddy Island) and Hare Island, Co. Cork. Navigation lights were erected at Mullaghduff and Chapel Strand (Arranmore Island), Co. Donegal. Works in progress at the end of the year included the improvement of landing facilities at Dunaff (Ballinacarta) and Bunaninver, Co. Donegal, at Portacloy, Killedduff, Belderrig and Glenlara, Co. Mayo, at Loughanbeg and Killeany (Aran Islands), Co. Galway, at Ballydavid, Co. Kerry and at Garnish (Durse), Co. Cork. Work was also in hand on the erection of navigation lights at Burtonport (southern approach channel) and at Achill Sound and Tullaghan Bay (beacons), Co. Mayo.

The survey team which was set up by the Minister for Agriculture and Fisheries to examine and report on the landing facilities which are required to meet present and expected needs of the fishing industry in South Kerry completed their report. A similar survey of the Mayo-Galway coast began in April.

**EXPLORATORY VESSELS.**—During the year the exploratory fishing vessel *Cú Feasa* spent 10 weeks on fishery investigations relating to whiting, plaice, prawns and sprats. A further 17 weeks were devoted to assisting fishermen in locating herring shoals off the south-east and south coasts. During 1967 an effort was made to open up the herring fishery in these areas earlier than in previous years and to extend it westwards. The *Cú Feasa* also assisted in a survey of the sea-bed around Valentia and Blasket Islands and, preparatory to the introduction of Regulations for the handling of demersal fish, experiments in relation to the icing of fish were conducted for five weeks aboard the *Cú Feasa* when the vessel was engaged in commercial fishing.

The second exploratory fishing vessel *Cú na Mara*, was engaged for 23 weeks on research work relating to lobsters, crawfish, shrimps, scallops, plaice and sprats. It joined with the *Cú Feasa* for 16 weeks in the search for herrings and it also assisted in the experiments in regard to the icing of fish.

An account of the investigations in which the vessels are engaged is published separately in the Department's Sea Fisheries Bulletin.

SCIENTIFIC INVESTIGATIONS.—Fuller details of the investigations made during 1967 have been given in the issue of the *Sea Fisheries Bulletin* (No. 5), already published.

Investigations into the herring stocks at Dunmore East were continued throughout the year. A report issued to the trade during the year indicated that recruitment of three-year-old herrings was not as good in 1966/67 as in the previous year but the numbers of the faster growing two-year-old fish which entered the fishery were substantial.

Material was also obtained from the Castletownbere and Killybegs herring fisheries. An effort was made to ascertain the relationship between the stocks at Dunmore East and those at Castletownbere. A paper on the Dunmore East herring fishery was prepared by one of the Assistant Inspectors of Fisheries for the meeting in Hamburg in October, 1967, of the Northern Pelagic Committee of the International Council for the Exploration of the Sea.

The collection of material from whiting of the Irish Sea was limited to stock surveys, using the research vessel, *Cú Feasa*, in January, April and May and large scale sampling of the commercial catch in March, April and November. At the close of the period under review a report on the data collected from the commercial fishery in recent years was in the course of preparation.

Investigations into the blood proteins of plaice of a number of areas in the Irish Sea were made during the year. Punched card analysis of the recaptures of plaice tagged in earlier years was carried out, and considerable progress was made in the preparation of a report upon this item of the Department's research programme. The growth pattern of plaice in the Irish Sea was also investigated.

A study of the "industrial" fish landed in this country was conducted during the year.

Work was continued on the study of the lobster stocks around the Irish coasts. Further recoveries were made of lobsters tagged in 1965, and the information obtained was used to determine the ages of the lobsters concerned. The research vessel *Cú na Mara* was used during the year to test the relative efficiency of *American parlour traps* and *Scottish creels*, but the work was not brought to a final conclusion. Advice on storing and handling live lobsters was given to the public during the year.

During the summer of 1967, large numbers of crawfish were measured and sexed and their shells were examined for degrees of hardness and, in the case of females, sexual maturity. This information will be important in the more extensive work contemplated for the future.

During the year, a joint scheme of research was conducted into the stocks of Dublin Bay prawns in the Irish Sea, using the Department's

research vessel *Cú Feasa* and the *Platessa*, a research vessel owned and operated by the British Ministry of Agriculture, Fisheries and Food. Samples of prawns from the Irish Sea were obtained during the year, and the factors governing their growth rate were investigated.

In the summer of 1967, raft experiments, using unglazed pottery plates, were conducted on the Fenit oyster grounds to collect spat. The natural spatfall on these beds was also observed. In conjunction with officers of An Bord Iascaigh Mhara, an extensive survey of the Clarenbridge oyster beds was made in November. This survey was aimed at ascertaining the condition of the beds and the biological problems associated with them.

Surveys of mussel beds at Cromane, Co. Kerry, and in the Bannow, Waterford and Wexford Harbours were made with a view to formulating concrete proposals for further development of these areas. An aerial survey of the Cromane district was completed during the year. The "quality" of mussels from a number of areas was kept under review during the year. The occurrence of the parasite *Mytilicola intestinalis*, which affects mussels in many parts of Europe, was investigated during the year and a low intensity of infestation was found.

The fat content of herrings was investigated during the year, and the results were conveyed from time to time to persons interested in the herring export trade.

During the year, captures of a number of fish rare to Irish waters were recorded as follows:—

- a. *Oxynotus puradoxus* (No common name) from off Sybil Head, Co. Kerry.
- b. Rabbit fish (*Chimaera monstrosa*). A specimen taken off Tory Island.
- c. Short-finned tunny (*Sarda sarda*). Specimens taken off Streedagh, Co. Sligo, and Portrush, Co. Antrim.
- d. File or trigger-fish (*Balistes capriscus*). Specimen found dead in Waterford Harbour in August, 1967.
- e. Spanish mackerel (*Scomber colias*). Two specimens from Dingle Bay in August, 1967.

Early in the year one of the Department's officers collaborated with an official of the Irish Folklore Commission in preparing an account of the fishery for the basking shark in Irish waters. The Department's Inspector and Scientific Adviser collaborated with a biologist of the Inland Fisheries Trust Inc. in revising a *List of Irish Fishes* originally published in 1957.

## INTERNATIONAL AND OTHER CONFERENCES.

(1) INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA.—This Council, which was established in the year 1902, to co-ordinate fisheries research in western Europe, holds its annual meetings alternately in Copenhagen and in other cities. In 1967 the annual meeting was held in Hamburg from 9th to 18th October, at the invitation of the Government of the Federal Republic of Germany, under the chairmanship of the Department's Inspector and Scientific Adviser, who was elected President in 1966. This country was represented by the Inspectors of Fisheries on the marine and inland fisheries sides, the President being regarded as neutral and by the rules of procedure unable to act as a national representative. The Biologist to the Salmon Research Trust of Ireland, Inc., was also in attendance. A number of papers by the Department's staff were contributed to the meetings of various Committees. As stated elsewhere in this Report, the Inspector of Fisheries on the inland fisheries side took part in a Joint meeting of the Working Group on Atlantic Salmon. The Department's Inspector and Scientific Adviser, who was re-elected President, presided over meetings of the Bureau, the executive body of the Council, in May in Paris and again in October in Hamburg.

(2) NORTH-EAST ATLANTIC FISHERIES COMMISSION.—This Commission, established under the terms of the International Fisheries Convention of London of 1959, held its fifth meeting in Paris in May, 1967, preceded by a special meeting to discuss a programme of international control. Ireland was represented by the Assistant Secretary in charge of fisheries and the Department's Inspector and Scientific Adviser; the latter was re-elected Chairman of the Infractions Committee and Vice-Chairman of Regional Committee 2 in which this country is interested. At the Paris meeting, plans were finalised for a programme of international control and preliminary discussions took place on the subject of "effort control" as a means of regulating fisheries.

(3) CHALLENGER SOCIETY.—This Society, which was established early in this century to promote the study of oceanography in the widest sense, holds "Joint Meetings" with Marine Laboratories from time to time. An Assistant Inspector of Fisheries on the marine side attended the "Joint Meeting" at the Marine Laboratory, Torry, Aberdeen, of the Scottish Department of Agriculture and Fisheries in April, 1967.

(4) COMMITTEE ON FISHERIES OF FAO. (COFI).—This Committee was established in 1966 on the formation of the fisheries section of the Food and Agriculture Organisation into a separate Department. The Department's Inspector and Scientific Adviser, acting as an observer for the International Council for the Exploration of the Sea, attended a sub-committee of COFI concerned with the relationship of the Fisheries Department of FAO with other international organisations having similar or kindred objectives. This meeting was held in Rome in January, 1967. He also attended, as observer for Ireland, the main meeting of COFI in April, 1967.



(5) CONFERENCE ON POLICING OF SEA FISHERIES.—In March the Inspector and Engineer represented Ireland at this Conference, held in London, which adopted a Convention for the Regulation of Fisheries in the North Atlantic.

(6) CODEX ALIMENTARIUS COMMITTEE ON FISH AND FISHERY PRODUCTS.—The Inspector and Engineer attended a meeting of this Committee in Bergen in October as a delegate in connection with the preparation of draft standards for various fishery products.

(7) MARINE RESEARCH GROUP.—In 1966 an informal group was established to provide for annual discussions of problems of an Irish interest in the marine natural sciences. Its second meeting, under the chairmanship of the Department's Inspector and Scientific Adviser, was held in March in the premises of the Royal Zoological Society of Ireland, Phoenix Park, Dublin. Representatives of the universities, the Inland Fisheries Trust Inc. and the Department were present. The progress of research work in marine natural science field was discussed and it was decided to prepare a register of workers in this field. The register was completed at the end of the year by the Department's Inspector and Scientific Adviser.

ENGINEERING.—*Fishing Ports and Landing Places*:—The committee which had been set up in 1966 to examine and make recommendations on fishing ports and landing places in South Kerry completed that task. It was subsequently reconstituted by the Minister to undertake a similar assignment for Counties Galway, Mayo and Donegal. The report on a specific section of the Galway coast was completed and submitted to the Minister and the field work in County Mayo was completed.

*Exploratory Vessels*:—A survey of areas suitable for trawling off the Kerry coast from Kerry Head to the Blaskets, which was commenced in 1964 at the request of the Dingle Fishermen's Association, was extended southwards towards the Skelligs during June and July. During the months of September to December, exploratory experimental fishing for herring was carried out off the South Coast from Castletownbere to Hook Head, making use of the *Cú Feasa* and the *Cú na Mara* to operate a mid-water trawl. The boundaries of the mussel beds at Cromane were surveyed and the limits were marked with buoys. In addition, technical assistance was provided in the search for nephrops in the Irish Sea which was carried out in company with the Lowestoft Research Vessel *Platessa*.

*Bye-laws, Licences, Orders and Definitions*:—Maps were prepared in connection with various bye-laws, orders, licences and other statutory instruments to indicate areas or geographical features concerned, and definitions of the particular boundaries involved were drawn up.

TECHNOLOGY.—*Fish Quality Regulations*:—The Minister made

regulations under section eight of the Sea Fisheries Act, 1952, governing the handling of demersal fish from the time of catching until transfer to the consumer. The aim of the regulations is to ensure that the high standard of practice at present observed by many members of the sea fishing industry will in future be observed by all and the reputation for high quality fish landings safeguarded.

In furtherance of this objective, an Assistant Engineer made a study tour of the fish handling techniques and quality control inspection services employed in the U.S.A. and Canada. The tour included visits to Government fisheries laboratories, fish processors' factories and fish markets in Massachusetts and Nova Scotia; much information of value was obtained.

Arising out of discussions with Mr. J. B. Glude of the U.S. Bureau of Commercial Fisheries in which he described how improved catches of shrimps were achieved in the U.S.A. from the use of an electric field as an adjunct to the trawl, arrangements were made to investigate the application of a similar technique to the fishing of nephrops off the Irish coast. The results obtained so far have been encouraging but there is still some distance to go in the development work. Particular attention is at present being paid to the development of a self-contained energising unit capable of being mounted on the head rope or on the trawl door so as to eliminate the necessity for a cable running between the boat and the net, together with the corresponding elaborate ancillary fittings.

An aerial photographed mosaic map of Castlemaine Harbour was prepared in connection with the investigation being made of mussel beds in this area.

Survey facilities were provided in connection with the scallop investigation in the Kenmare River.

Officers of the Department collaborated with the Institute of Industrial Research and Standards in the preparation of a Draft Standard for Frozen Plaice, Lemon Sole, Dabs, Megrim, Brill and Turbot Fillets.

**LEGISLATION.**—The Fishery Harbour Centres Bill, 1967, was introduced in Dáil Éireann on 26th July, 1967, and the second stage of the Bill was taken on 12th December, 1967. The Long Title of the Bill as introduced was "An Act to provide for the establishment and operation at certain harbours of centres in which to promote, develop and carry on sea fishing, the processing, packing and selling of fish, the manufacture of products derived from fish and related activities and to provide for matters connected with the matters aforesaid."

No further stages of the Bill had been taken before the close of the year.

Particulars of Statutory Instruments relating to sea fisheries made during the year are included in Appendix No. 22.



## PART II.

## INLAND FISHERIES

In 1967 the catch of salmon by all methods amounted to 2,720,930 lb. valued at £665,242, compared with 2,326,422 lb. valued at £684,664 in 1966. Thus for the sixth year in succession the catch of salmon throughout the country was very high, due entirely to the excellent runs of grilse i.e. fish which have spent less than two full years feeding in the sea. Although the number of salmon taken by commercial methods is not known, it is estimated that a total of approximately 385,000 salmon and grilse was captured by all methods. Of these, some 35,341 fish or approximately 9.2% were taken on rod and line (the percentage by weight was 9.8%). The catch of sea trout, at 128,980 lb. valued at £21,075, was substantially higher than in either 1965 or 1966, when 113,630 and 86,350 fish valued at £18,342 and £16,522 were taken. Fuller details of the catches of salmon and sea trout taken in the years 1965 to 1967 inclusive, are given in Appendix No. 11, which does not, however, include the catches made in the former Merville Fishery District. Catches in that district, now incorporated in the Foyle Area, are dealt with in that part of this Report relating to the Foyle Fisheries Commission which administers the Area.

The runs of spring fish (i.e. those which had spent two or three years in the sea) were somewhat smaller than in the years 1965 and 1966 but there were fair numbers of large spring fish (three winters in the sea) which have been relatively scarce in most recent years. The numbers of small summer fish (which had spent just over two full years in the sea) were disappointing. This age group, which enters our rivers in May and June, has been declining for some years.

Angling conditions in most rivers were not as good as in the previous two years—one factor accounting in part for the reduction in the catch by rod and line, compared with 1965 and 1966. The U.D.N. (Ulcerative Dermal Necrosis) disease situation in some rivers also adversely affected angling and even though these were rivers only lightly or not at all affected by disease, some anglers were undoubtedly deterred from fishing. Conditions were on the other hand, somewhat favourable for nets. The spawning season in most rivers was also reported to be satisfactory. In many of the rivers adversely affected by disease, spawning appeared to be at a reasonably high level. There is evidence, therefore, that the runs of salmon as a whole were as good in 1967 as those of the previous three or four years.

Appendix No. 12 gives the catch of salmon and grilse in each Fishery District for the years 1965 to 1967, inclusive. In 1967 the catch of salmon (by weight) was distributed as follows:—

Draft nets	...	39.4%
Drift nets	...	37.3%
Stake nets, etc.	...	13.5%
Rod and line	...	9.8%

The most notable feature of the 1967 season was the high proportion (and high catch) of salmon and grilse taken by drift nets. There has, in fact, been a steady increase in the catch by drift nets over the past six years. In 1964, for example, drift nets took 25.3% of the total; in 1965, 27.7%; and in 1966, 32.0%.

The number of angling licences for salmon and sea trout (at 10,705) showed a marked drop in 1967 when compared with that (of 12,053) for 1966. This was due, to a great extent, to the reduction in interest in salmon angling in those rivers affected by disease. The average catch per licence was 3.3 fish weighing 25 lb. and valued at £7:17:7, compared with 3.0 fish of the same weight valued at £8:17:0 for the previous year. The average weight of the rod-caught fish was 7.6 lb., compared with 8.1 lb. for 1966. As usual the Drogheda Fishery District, which has a very high proportion of early running salmon in its rod catches, had the highest average weight for rod-caught salmon at 12.3 lb. For Fishery Districts in the west of Ireland the average weight of salmon taken on rod and line was small because of the high proportion of grilse in the catches.

The sea trout catch amounting to 128,980 lb. was distributed (by weight) as follows:—

Rod and line	...	52.8%
Draft nets	...	39.8%
Drift nets	...	6.5%
Stake nets, etc.	...	0.9%

Although there was a considerable reduction in the proportion taken on rod and line, the actual weight of the rod catch at 68,078 lb. was greater than that of 1966, when 63,274 lb. was taken. As explained in previous reports, the average catch of sea trout per licence gives a poor idea of the potentiality of this form of fishing because in many Fishery Districts sea trout are either taken infrequently or they are fished by relatively few anglers. In some of the western Fishery Districts, however, the average catch per licence does give some idea of the potentiality for sea trout. In the Connemara Fishery District, for example, an average of 16.1 sea trout weighing 15.3 lb. was landed per rod licence compared with 16.7 sea trout weighing 16.0 lb. for 1966.

In 1967 the catch, mainly of grilse, made in the open sea by drift nets, chiefly off the coasts of Donegal and Mayo, amounted to 147,742 fish, weighing 9,430 cwt. compared with 94,555 fish weighing 5,845 cwt. for 1966. The average weight of the fish landed in 1967 was 7.10 lb., compared with 6.98 lb. for 1966.

The Corporation of Dublin Wholesale Fish Market in 1967 handled 95,168 salmon and grilse weighing 708,130 lb., compared with 98,950 fish weighing 751,560 lb. in 1966.

During 1967 the salmon of a number of Irish rivers were affected by U.D.N., a disease which caused mortality to varying degrees. Investigations into the disease were continued by the staff of the Veterinary Research Laboratory at Abbotstown, Co. Dublin, and the Fisheries Division of the Department. The results obtained in infectivity experiments at Abbotstown indicate that the causative organism, which has not yet been identified, is filterable. The Salmon Research Trust of Ireland, Inc. continued to make available a bacteriological technician to assist in this research work. A Junior Research Fellow, appointed in 1966 as a result of a grant from the Electricity Supply Board, continued to work on the fungal aspects of the disease in the Botany Department of University College, Dublin, under the general supervision of a lecturer of that Department. Investigations into the blood cells and proteins of diseased and healthy fish were continued by a lecturer of the Department of Zoology in University College, Cork.

This disease appears to affect mainly salmon, only a few diseased brown and sea trout being reported. Smolts of salmon appear to be largely unaffected, as do also the so-called coarse fish. Further details of this disease have been given in the Department's *Inland Fisheries Bulletin* No. 5.

Reports from Boards of Conservators and others indicate that in most areas the runs of smolts to the sea were satisfactory even in rivers which have been adversely affected with U.D.N.

As already indicated in an earlier paragraph the spawning season was also reported to be good in most rivers and, even in rivers affected by U.D.N., substantial numbers of salmon appear to have spawned successfully.

A special restocking scheme to offset to some extent the effects of U.D.N. was operated during the year. Figures of distribution are included in those at Appendix No. 23.

Officers of the Department continued to visit salmon markets in Great Britain as part of a programme for improving the condition of salmon exported from this country. The help given in this work by the officials of the Fishmonger's Company, London, and of the market staffs elsewhere in Great Britain is very much appreciated.

**BOARDS OF CONSERVATORS.**—Details of receipts and expenditure of Boards of Conservators in the fishery year ended 30th September, 1967, are given in Appendix No. 18.

**EMPLOYMENT IN THE INDUSTRY.**—Exclusive of persons employed on the marketing and transport of fish, a total of some 5,734 persons found either whole-time or part-time employment in inland fisheries during the year. This figure includes 3,544 persons estimated as engaged in netting for salmon under common law right, 588 employed by Boards of Conservators on protection of fisheries over

the open and close seasons, 800 engaged in netting in the Foyle Area or employed in that area as ghillies or on protection work, and 110 engaged in development work on behalf of the Inland Fisheries Trust. The remainder were employed by proprietors of commercial salmon fisheries, by fishery owners or by angling associations.

**INSTRUMENTS OF CAPTURE.**—The total number of fishing licences of all kinds issued during the year was 12,626, representing a decrease of 1,183 on the figure for 1966. The totals in recent years were:—

1966	...	13,809
1965	...	14,647
1964	...	13,598
1963	...	11,343
1962	...	10,479
1961	...	9,980
1960	...	10,059

The numbers of the various classes of licences issued in each fishery district during the year and the rates of licence duty are given in Appendices Nos. 19 and 20 respectively.

**OFFENCES AGAINST THE FISHERY LAWS.**—Prosecutions during 1967 numbered 264, as compared with 202 in 1966. The Garda Síochána continued to co-operate with Boards of Conservators in the protection of inland fisheries during the year.

**SALMON EXPORTS.**—The increased catch of salmon in the 1967 season resulted in a greater volume of salmon exports. The total quantity of salmon exported in fresh, chilled, frozen and smoked forms was 20,553 cwt., as compared with 17,435 cwt. in 1966. The prices available on export markets were, however, appreciably lower than in 1966 and that was particularly the case in Britain, where substantial supplies of home-caught salmon were on offer in competition with supplies arriving from this country. In the circumstances, the total value of the salmon exports decreased from £813,612 in 1966 to £785,019 in 1967. The details for the two years are as follows:—

	1967		1966	
	cwt.	£	cwt.	£
Fresh, chilled and frozen salmon	20,228	752,123	17,159	782,334
Smoked salmon	325	32,896	276	31,278

Of the total quantity of fresh, chilled and frozen salmon exported in 1967, 16,260 cwt. went to Great Britain, 2,052 cwt. to France, 1,041 cwt. to the Six Counties, 320 cwt. to the Netherlands and 224 cwt. to the Federal Republic of Germany; smaller quantities went to Belgium, Switzerland, Sweden, the U.S.A., Denmark, the Bahamas, and Italy. The smoked salmon was exported mainly to Switzerland (136 cwt.) and Great Britain (88 cwt.). The average export price of fresh, chilled or frozen salmon was £37. 3. 8. per cwt., as compared with £45. 11. 10. per cwt. in 1966. The foregoing figures include landings of salmon in

County Donegal from waters in the area administered by the Foyle Fisheries Commission.

Ninety persons or firms were licensed as salmon exporters under the Agricultural and Fishery Products (Regulation of Export) Act, 1947 (Export of Salmon) Order, 1954 (S.I. No. 275 of 1954).

**DEVELOPMENT OF EEL FISHING.**—Work continued during the year on the investigations being conducted into eel stocks and methods of capture, as part of a programme for the development and rationalisation of the eel-fishing industry. The research studentship awarded in 1966 to a University graduate for this work was extended for a further year, and another student was granted a bursary during the summer.

Fifty-three temporary eel-fishery authorisations were issued during the year. Interested persons were given advice on the design and operation of eel-fishing engines, and a number of existing and proposed new sites were examined.

Exports of eels amounted to 2,839 cwt. valued at £62,606, compared with 6,075 cwt. valued at £106,218 in 1966.

**FISH CULTURE.**—Production of rainbow trout declined in 1967 due mainly to the large scale commercial fish farm at Waterville, Co. Kerry, having gone out of production. The large scale farm at Dingle, Co. Kerry, was extended.

Exports of rainbow trout in 1967 amounted to 1,561 cwt. valued at £29,850 compared with 2,453 cwt. valued at £51,155 in 1966.

**ARTIFICIAL PROPAGATION.**—Details of salmon, sea trout and brown trout ova produced at the various hatcheries are given in Appendix No. 23.

The distribution of the fry from the ova output is intended in the main to help river systems affected by disease or drainage operations.

The produce of Cong Hatchery was distributed as follows:—

100,000	unfed salmon fry	to re-stock the River Maigue,
100,000	salmon fingerlings	to re-stock River Moy and tributaries,
40,000	„ „	for the Corrib System,
20,000	„ „	for the River Deel and tributaries.

**REGULATION OF ERNE SALMON FISHERY.**—As a result of the progressive improvement recorded in the salmon stock position in the Erne fishery in the previous three years, restrictions on fishing

for salmon by commercial methods were lifted during 1967 and the normal fishing season was restored. The special local licence duty was fixed at £40, and 14 draft net licences were taken out.

The catch by nets was the highest recorded for twelve years, but the total run of fish was lower than in any of the three preceeding years.

	1965	1966	1967
Total run	13,756	15,522	10,910
Catch by nets	1,949	2,037	5,710
Catches by E.S.B. ...	1,705	2,547	834
Ecsapement	10,102	10,938	4,366

The salmon disease (U.D.N.) made its appearance in the River Erne during the year, and an estimated 796 diseased fish were removed from the river.

**REHABILITATION OF SALMON STOCKS IN THE RIVER LEE.**—Work continued on the rehabilitation of salmon stocks in the River Lee in co-operation with the Electricity Supply Board, the Inland Fisheries Trust and the Cork Board of Conservators. The work consisted mainly of measures designed to assist the passage of smolts and adult fish past the hydro-electric dams at Inniscarra and Carrigadrohid and the removal of pike from the reservoirs.

The extent of the rehabilitation works was affected by the presence of the U.D.N. disease in the river.

During 1967 approximately 449 smolts moved downstream past the dams. 92 adult fish were recorded as having passed upstream of Inniscarra Dam, and of these 28 made their way upstream past Carrigadrohid Dam. The low escapement figures are attributed to the presence of disease in the river.

The success of the efforts made over the past number of years to reduce pike stocks is reflected in the low number of pike (859) taken from the reservoirs. Two of the feeding pike had salmon smolts in their stomachs.

Steps were taken to have investigations carried out into the possibility of predation on salmon stocks by fish other than pike (e.g. brown trout).

62 salmon were taken from the river for hatchery purposes by the Electricity Supply Board, who stocked selected portions of the system with 129,000 fry, 281,400 fingerlings and 10,000 smolts.

Salmon fishing was restricted by bye-law to the periods 1st March to 15th August for nets and 1st February to 31st May and 1st August to 12th October for rods.



Catches of salmon on the River Lee during 1967 together with comparative figures for 1965 and 1966 are as follows:—

	1965	1966	1967
Nets	335	247	667
Rods	312	114	163
Total	647	361	830

SCIENTIFIC INVESTIGATIONS.—Fuller details of the scientific investigations in the inland fisheries field conducted by officers of the Department have been given in the *Inland Fisheries Bulletin*.

Material relating to the Rivers Erne, Shannon and Moy was collected and examined during the year. The stocks of the River Erne received special consideration in view of the rehabilitation measures which had been taken earlier to restore the river after it had been adversely affected by the erection of the hydro-electric plant. The late run of salmon into Waterford Harbour was also systematically investigated. Statistics relating to the catch of salmon and data on the catch per unit effort were compiled for presentation to the Joint ICES/ICNAF Working Group on Atlantic Salmon (see page 33). The stocks of salmon in Carrowmore Lake were investigated.

Tagging of clean salmon in the open sea at Dooneen Point, Killary Harbour, Co. Mayo, was carried out in June and July but both the number of fish tagged and the proportion of recaptures were disappointing. A total of 3,102 kelts was tagged at selected sites on the Rivers Owenea, Erne, Screebe, Corrib and Shannon and a total of 64 recoveries was made. Information was received of a further Irish tagged fish recaptured in Greenland.

Officers of the Department assisted the E.S.B. in tagging 10,000 salmon smolts at the salmon rearing station at Parteen, Birdhill, Co. Tipperary, on the River Shannon as part of a research programme connected with investigations of the composition of the salmon in the Greenlandic fishery.

Preliminary studies were made on the River Boyne with the object of ascertaining the effect of the proposed drainage scheme on that river.

Investigations were continued into the eel populations of a number of waters. During the summer, collections of eels were made by means of fyke nets from Lough Corrib and the holder of a Studentship in Fisheries Science made investigations into the eel populations of the Boyne system.

Investigations into the stocks of salmonid fishes in the Owenea system in Co. Donegal were continued during the year and a survey of Lough Ea at the headwaters of the river was made to determine its physical characteristics, relative abundance of the invertebrate fauna and the composition of the trout population.

The two Junior Fellows continued the water purity survey started in 1966 and produced during the year two interim reports of their results.

A lecturer at University College, Dublin, with assistance from the Department, undertook the identification of parasites from freshwater fishes from this country and preparations were made for examination of the parasites of both adult and young salmon in connection with the investigations in progress in relation to Greenlandic salmon.

The crayfish, the largest crustacean in fresh water in Ireland, was investigated in two of its habitats during the year. Attempts were made to mark crayfish with a felt tip pen.

Routine visits were paid to all fish farms during the year and a series of experiments was initiated into the feeding quality and conversion rates of fish offal and specially prepared pellets with or without liver or some such other fresh meat product. It is hoped by these experiments to provide comparative costings for the different types of food.

A report was prepared early in 1967 on the "Salmon and sea trout of the Foyle system" which was subsequently published as an Appendix to the 15th Report of the Foyle Fisheries Commission. Officers of the Department also contributed to the report on the symposium on salmon organised by the Commission in April. At the close of the year a report on the sea trout of the River Foyle by the Department's Inspector and Scientific Adviser was almost completed.

With the appointment of a holder of a Studentship in Fisheries Science to investigate pesticide residues in fish, etc., a considerable amount of time was spent by one of the Department's staff in obtaining specimens of fish for this purpose.

Investigations into pike were continued during the year. Data on young pike were examined to establish the lengths of the fish at the end of their first year of life and criteria for scale reading in older fish. Experiments were also conducted on pike in two small ponds to ascertain the survival rates under certain conditions up to three months and one year of life.

The scientific staff of the Fisheries Division continued to give advice on fishery management to the general public, to identify fish and to read scales for the Irish Specimen Fish Committee and the public at large. A report on the "specimen" brown and sea trout taken in Irish waters over the past twenty years or so was prepared by the Inspector and Scientific Adviser for publication in *Irish Fisheries Investigations: Series A (Freshwater)*.

Four students holding Studentships in Fisheries Science during the year conducted investigations into—

- (a) the Chironomid fauna of Irish rivers and lakes;
- (b) The lactic dehydrogenase isoenzymes in fish;
- (c) freshwater eels; and
- (d) pesticide residues in freshwater fishes.



**ENGINEERING.—*Salmon Disease Investigation Installations.***—During the year there was continuous consultation with the Veterinary Research Officers charged with the task of investigating fish diseases, particularly the salmon disease, to ensure that all the facilities needed for their work would be provided. Existing installations at Abbotstown were serviced and maintained to ensure that there would be no hold-up because of lack of necessary equipment; the tank unit comprising sixteen 200 gallon tanks was enclosed and roofed over and thereby improved working conditions were provided during inclement weather. A contract was placed for the construction of the fish tank unit consisting of six 200 gallon tanks, each of which is being equipped with a temperature control arrangement to allow experiments to be carried out under controlled temperature conditions. By the end of the year this unit was nearing completion.

***Hydro-Electric Development.***—The various hydro-electric installations were kept under observation and the effects of their operation on fish life were observed. The arrangements made in 1966 to expedite the safe passage downstream of smolts past Inniscarra Dam on the River Lee, were once more implemented in the 1967 season but the run of smolts was even more disappointing than it was in 1966. Only 500 smolts were counted as passing the dam in 1967 as compared with 1,179 in 1966 and 17,000 in 1965.

The Electricity Supply Board constructed a model of the submerged orifice-type fish pass such as has been constructed at the power dams on the River Erne. This was built at the Board's Hydraulic Laboratory in Dublin, where investigations were made into the possibility of providing a low kerb adjacent to the upstream entry of the submerged orifice pipe in order to retain sufficient water in each pool of the pass to safeguard fish life in the event of an accidental emptying of the pass at night time. The Department's engineers collaborated with the Board's engineers in these investigations.

It has not yet proved possible to install a fish counter in the fish pass at Cliff Dam on the River Erne, but the Electricity Supply Board is continuing investigations with a view to overcoming the difficulties experienced to date. It is hoped that a solution will be worked out in the near future.

***Thermal Power Stations.***—Due attention continued to be paid to the construction of Thermal Power Stations at Great Island, Pigeon House and Tarbert, to ensure that when they come into operation, their impact on fishery interests will be the minimum possible. During the year the Great Island plant was brought into partial production and immediately there were reports of fish being drawn into the intakes and injured on the band screens which screen the cooling water before entering the station. Preliminary site investigations disclosed that it was principally the smaller sized sea fish that were affected but the numbers of dead fish observed to date were small. A full investigation of the problem has been put in hand.

*Arterial Drainage.*—Work continued on the major schemes on the Rivers Moy, Inny, Killimor and Deel. Work commenced on the Corrib/Headford Drainage Scheme, which is an extension of the Corrib/Clare/Galway Scheme completed a number of years ago. There were consultations with the appropriate bodies to ensure that the fishery interests would be safeguarded in the course of the execution of this scheme. There were consultations with the Office of Public Works about the scheme of drainage proposed for the River Maigue and the River Boyne. In the case of the River Boyne, information of value was collected for presentation to the Office of Public Works to ensure the protection of the fishery interest.

An investigation was made of the fishery interests of the Kilcoo River, a tributary of Lough Melvin, which is scheduled for drainage by the Drainage and Fisheries Division of the Northern Ireland Ministry of Agriculture in collaboration with the Office of Public Works in Dublin. Advice was given on the nature of the fishery interest involved. A detailed study was made of the coarse fishing interest in the lakes situated in the upper catchment of the River Erne. This survey was made possible through the co-operation of the Inland Fisheries Trust, who provided the necessary staff to carry it out.

There were further preliminary discussions with the Office of Public Works about drainage schemes projected.

Maintenance operation of existing drainage schemes, especially those maintained by some local authorities, continued to give cause for concern to angling interests. Furthermore, in some rivers which had been drained, some difficulty was experienced by existing fishing engines which were subjected to unusual high flows and, it was claimed, affected thereby. The matter was kept under review.

Following representations from angling associations requesting special works on rivers fished by their members, and which had been drained in recent years, appropriate suggestions were made to the Office of Public Works and in every case they were promptly implemented.

*Investigation of Fish Movement.*—During the period from 26th March to 30th June, 89,767 smolts were captured in the smolt trap at the Galway Sluice Barrage. The maximum number of smolts taken from the trap in one day was 11,300 taken on 26th April. This was a marked improvement in the catch from that obtained in 1966 and was attributable in part to somewhat smaller river flows during the time of operation of the smolt trap. As a result of the lower flows the sluice barrage gates were more often in the vertical position than in 1966 and large numbers of fish were thus diverted to the bye-pass where the smolt trap is located. Other fish taken in the trap were: 72 salmon kelts, 28 sea trout, 5 brown trout, 250 eels, and 4 perch. Lamprey eels or pike were not caught. Six kelts which had been tagged on release from the holding ponds at Cong Hatchery were recaptured in this trap also and were released again. Sixty fish were released

from Cong on 17th January, five of them were recaptured at the Sluice Barrage trap on 24th January and a further one on 25th January. These fish had travelled 23 miles from the point of release to the point of recapture, most of the journey being through Lough Corrib. The minimum possible speed of travel, therefore, was 3.3 and 2.9 miles per day, which was greater than that recorded in 1966 when the minimum speed ranged from 1.0 to 2.87 miles per day.

In 1967, it was found possible to carry out the necessary modifications to the smolt trap at Glenties to lessen the possibility of its being over-topped by increased river flows. In consequence, better results were achieved but it is clear that there is still room for further improvement.

A new electronic fish counter was installed in the Denil fish pass which had been built to this Department's design by the Lismore Estate Company at Clondulane Weir in 1965. This came into operation on 27th August and by 31st December, 2,105 fish were recorded as having passed through the counter.

Fish were recorded passing upstream through the electronic counters for adult salmon provided by the Department at the following sites:

Galway Sluice Barrage	...	20,481 fish
Bunree Weir	...	420 "
Islandbridge Weir	...	1,750 "
Ennistymon Falls	...	259 "

The number of fish passing through the fish pass at Galway became so great on 20th June that the counter tube became blocked with fish and the fish jumped over the barrier used for funnelling the fish to the counter tube.

Investigations continued on the correlation of fish movement with variations in water level. A time-of-event recorder was incorporated in the counter for adult salmon at Clondulane and a start was made in the collection of data for this site. Further data were collected in respect of the Bunree site with a view to detailed analysis when sufficient has been accumulated.

*Fish Culture Installations.*—The salmon hatchery and rearing station at Cong, Co. Mayo, was operated successfully during the season. Particulars of the fish distributed from it appear in Appendix No. 23. During the year the Curator of the hatchery initiated the practice of transferring the hatching trays to the concrete rearing ponds when the salmon eggs had hatched out. There they were placed under cover and allowed to develop naturally. As the young fish hatched out they eventually left the basket but remained under the shades provided until the stage was reached that they ventured out into the rearing pond proper. There were indications that the fish

produced by this method were somewhat superior to those reared in the conventional manner in the hatching troughs.

The gravel hatching box arrangement was made use of again at Cong hatchery and the results, once again, were found to be very beneficial. In these experiments the boxes are placed temporarily in the fish rearing ponds and water is passed through the gravel until the young fish emerge from the gravel and escape into the fry ponds, whereupon the boxes are removed and the rearing of the fish continued in the normal way. As before, the superior condition of the young fish obtained in this way, compared with those produced in the conventional hatching tray arrangement, was very evident. The application of this method for general massive re-stocking purposes is now to be tried out in the field.

*Rainbow Trout Farming.*—Following consultations with the officers in charge of the Pilot Farm Areas Project about possible sites in these areas warranting further investigation as to suitability for fish farming operations, detailed inspections were made of all but three of the sites recommended and reports were furnished on the prospects of each. Proposals for the setting up of two fish farm projects were submitted, and these were investigated and the sponsors advised on their suitability. Existing fish farm units were kept under observation and advice given on proposals by the owner for the extension of one of the major units. An emergency hatching arrangement was devised for one of the pilot fish farm units to permit hatching operations to be undertaken at the site.

*River Improvement Schemes.*—Once again, it has to be reported that the interest being displayed in this work by the Boards of Conservators generally is not very great, despite the beneficial results being derived in those areas in which work is being carried out under these schemes, in particular through development of spawning areas for salmon. A limited scheme was drawn up for the Dungloe Lakes following on a survey of the prospects in this area. Surveys were also made of the Drumcliffe River in Sligo and the Palmerstown River in Mayo and a scheme for development prepared for each. The works carried out by the Boards of Conservators were examined and advice on the execution of further works supplied.

*Eel Fishery Development.*—A number of existing eel fishing installations were inspected to ensure compliance with the fishery laws in connection with the issue of temporary authorisations. A number of proposals for eel fishery development, submitted by Continental interests were investigated, and the sponsors advised on the prospects. A number of applications was received for advice on methods of capturing and processing eels and drawings depicting suitable methods were supplied to those requesting them.

*Fish Passes.*—Construction work on the major Denil-type fish pass

at the Falls at Clifden, Co. Galway, was completed in accordance with this Department's design and was brought into operation. Large numbers of salmon and sea trout were observed to make use of the pass without any apparent difficulty. Local observers have commented that fish are willing and able to use this pass even when there is a comparatively small volume of water flowing through. A design was prepared for a fish pass at Bangor Bridge on the Glenamoy River and a further design was prepared and arrangements were made for the installation of a fish pass on a weir at Muine Bheag on the River Barrow. The alterations suggested to the existing fish pass at Baltin-glass Weir were carried out and it was reported that there was an improvement in the movement of fish across the weir.

*Application of Electricity to Inland Fisheries.*—Applied research with this object in view continued at the State Salmon Hatchery at Glenties in Co. Donegal, as a result of which proposals are drawn up for testing at sites elsewhere. The electric barrier for adult salmon erected at Cork Waterworks Weir was modified in the light of the previous year's experience and it was put in operation again from 15th July to 29th September except for one short period in August when it failed due to electrical over-loading during a flood in the river. Energising was at 35 volts initially, reduced to 30 volts in the light of operational experience with 400 cycle a.c. from accumulators trickle-fed from the mains supply. Observations by officers of the Cork Board of Fishery Conservators indicated that the barrier was successful in preventing the accumulation of fish in the pumping station turbine draft tubes.

*Electronic Salmon Counters.*—Further tests were made on the efficiency of the solid state automatic gain control arrangement already developed and the results obtained were considered very satisfactory. This, together with the solid state automatic balance arrangement which has also been developed, is giving increased efficiency and reliability as well as lessening the need for daily adjustment while also ensuring automatic adaptation to sudden conductivity changes in the river water for whatever reason. There have been further refinements of the circuit design of the unit made possible by these improvements which have resulted in improved size discrimination in three weight categories and at a greater speed of count than was possible heretofore.

A number of requests for advice on suitable methods of installing electronic fish counters was received from other countries and this was provided to the extent possible by means of correspondence only.

*Electro-fishers.*—The latest model developed is a solid state unit with pulse repetition frequency variable from 10 to 150 per second. Longer life and less maintenance problems are expected, as past experience showed that most breakdowns were due to switching problems—arcing of contact breakers. The risk of injury to fish should also be less because of the elimination of voltage spikes and the facility of selecting the p.r.f. most suitable for the species being collected.

*Smolt diversion.*—Experiments were repeated with the same energising gear as last year but with a more sophisticated trapping arrangement which made it possible to assess exactly how efficient the electric screen was. The outcome was disappointing in that it established that the barrier was failing to divert smolts. It is hoped to repeat the experiment during the 1968 smolt run with a modified barrier layout and new forms of energising.

*Eels and electricity.*—A considerable amount of work was done in this field. A method was devised for using a horizontal grid trap to catch eels by incorporating electrodes to prevent escape from flumes and holding boxes. Tank experiments were made to establish the best form of energising to use on a barrier for blocking and guiding eels and full scale trials with released eels suggested that the smolt barrier at Glenties may work well as an eel barrier.

Work on fishing for eels with portable electro-fishing gear in daylight suggested that this may be a way of collecting eels in commercial quantities. The solid state electro-fisher was found to be particularly suitable for this work. It was discovered that the pulse repetition frequency most suitable for eel fishing has minimal effects on salmonids.

*Industrial Effluents.*—Seven proposals for the discharge of effluent into fishery rivers were investigated and the likely effects on the river assessed for the information of the sponsors. Four complaints were received about existing discharges and these were investigated and reports furnished to the Boards of Conservators concerned. Increased building activity in some areas gave cause for concern in connection with the effluent discharged from gravel pit workings. The situation is being kept under observation.

*Bye-laws and other legal requirements.*—The tidal and freshwater boundary was investigated for purposes of statutory definitions for the Palmerstown River in County Mayo. Boundaries were defined and appropriate maps prepared in connection with an oyster order for the Ilen River and Baltimore Harbour. The half-mile limits for certain rivers in the Letterkenny area were marked on the site at the request of the Board of Conservators. This was also done in the Bangor district for the Board of Conservators. A request for the rescinding of the definition of the mouth of a river in one case to take account of significant changes which occurred in the area since the definition was first prepared was investigated and commented on.

*Water Abstraction.*—Proposals for the abstraction of water from the River Smearlagh to supply the North-West Kerry Water Supply Scheme which was objected to by local angling interests and which were the subject of a Public Inquiry by the Department of Local Government, were investigated and advice was supplied on what

would be necessary to safeguard the fishery interest in the proposal under consideration.

*Water Purity Investigations.*—These investigations in the catchments of the Blackwater and Martin having reached the stage when data are required on the flow of water from various sources into the two rivers at any given time, gauging sites were selected for the necessary long term programme of water flow investigations.

*Miscellaneous.*—The Engineer continued to act as Fishery Engineering Consultant to the Salmon Research Trust of Ireland Incorporated and to the Foyle Fisheries Commission. He also continued to act as a Council Member of the Inland Fisheries Trust and as an associate member of the Supervisory Group on Methods of Excluding Fish from Water Intakes and attended the various meetings of this Body held in London.

In October, he was invited by Denmark's Sportsfiskforbund with the concurrence of the Danish Ministry of Fisheries to advise on the fishery problems in the River Guden and he travelled to Denmark for this purpose.

In September/October, the Engineer visited the U.S.A. and Canada as part of the Ireland/U.S.A. Co-operative Fishery Programme and made a study tour of fishery installations in the North-West U.S.A. and the Province of British Columbia, Canada, to examine in detail methods employed there in dealing with fishery problems arising from hydro-electric, industrial and other developments similar in nature to those being experienced in Ireland. The opportunity was availed of to include attendance at the American Fishery Society Conference in Toronto at which many matters of interest were discussed with fishery experts from Canada and the U.S.A.

**FOYLE FISHERIES COMMISSION.**—The annual report of the Foyle Fisheries Commission for the year ended 30th September, 1967, contains details of the Commission's activities during the year.

Runs of fish in the Foyle River System were considerably less than in the previous year. The presence of U.D.N. in the Foyle River System did not appear to affect to any great extent the spawning stock, which was the best observed for a number of years.

Weather conditions were suitable for commercial fishing and, in spite of the reduced run of fish, the overall catch by commercial engines was the second highest since the Commission was set up in 1952. Angling returns were, however, poor.

	Salmon		Sea Trout		Total	
	No.	lb.	No.	lb.	No.	lb.
Nets ...	127,643	991,932	866*	1,279*	128,509	993,211
Rods ...	2,371	18,538	7,451	6,753	9,822	25,291
Total	130,014	1,010,470	8,317	8,032	138,331	1,018,502

\*Figure represents the Commission's catch only.

The Commission made the following regulations during the year:—

- (i) Foyle Area (Licensing of Fishing Engines) Regulations, 1966, prescribing new licence duties for nets and rods;
- (ii) Foyle area (Weekly Close Time) Regulations, 1967, extending for a further year the regulations made in 1962, which prescribed a 72-hour staggered weekly close time for netting in the river and Lough Foyle;
- (iii) Foyle Area (Close Season for Angling) Regulations, 1967, continuing the provisions of similar regulations made in 1964;
- (iv) Foyle Area (Elections to Advisory Council) Regulations, 1967, revising the arrangements for the nomination of members for an election to the Foyle Area Advisory Council;
- (v) Foyle Area (Stocking of Rivers) Regulations, 1967, prohibiting, except under the authority of the Commission, the introduction into rivers of any live fish or ova other than the ova and fry of salmon and trout.

Engineering works carried out by the Commission included the alteration of the Cranny Burn smolt trap with a view to rendering it efficient for the trapping of smolts during all normal flood conditions and the provision of a fish pass at Ballyarton Weir on the River Faughan.

The Commission co-operated with the Veterinary Research Laboratories in Dublin and Belfast in investigations into the salmon disease (U.D.N.). A number of diseased fish taken from the River Foyle were sent alive to the two Laboratories for examination. The Commission also conducted its own field experiments during the year into the salmon disease.

The Commission's hatcheries produced 223,000 salmon fry, which were planted out in various rivers.

During the year, 69 prosecutions were taken for a total of 148 offences. Convictions were obtained in respect of 142 of the offences.



**INLAND FISHERIES TRUST, INCORPORATED.**—The annual report of the Inland Fisheries Trust, Inc. for 1967 set out the progress made by the Trust during the year in their programme for the development of brown trout, coarse fish and sea angling.

Efforts to control predators (pike and perch) in waters being developed for brown trout were continued, and the results show an apparent reduction in numbers of pike in these waters. The catch of pike weighing 26.2 tons was the lowest but one in ten years. 244,497 perch weighing 26.5 tons were removed from brown trout waters. The remarkable growth of stocks of trout in the Western and Midland lakes in recent years was reflected in the sustained standard of fishing and large runs of spawning trout. A record output of over two million brown trout fingerlings and fry was achieved at the Trust's fish rearing stations and released into waters under development by the Trust.

Development of coarse fishing waters was intensified during the year, and improvement works designed to provide improved facilities for anglers were carried out at ten centres. Surveys were carried out at fifteen other centres.

Sea angling was surveyed at eight centres with a view to ascertaining their potential for shore and/or deep sea angling. Advice was given to various local angling associations promoting sea angling.

The Trust intensified its biological and ecological research and investigation into the lives and habits of many species of fish—freshwater and marine—as a basis for its programme of angling development.

Members of the Trust decreased from 6,398 in 1966 to 5,124 in 1967. The annual membership subscription was increased to £1 during the year.

Approval in principle was accorded to the Trust's outline development plan, which aims at the intensification and expansion of their development work over the next ten years.

**SALMON RESEARCH TRUST OF IRELAND INCORPORATED.**—A full account of the work of the Salmon Research Trust for 1967 is given in the Trust's report for that year. The programme of investigations into the rearing of salmon of known ancestry and of salmon and sea trout hybrids was continued during the year. A total of 194 fish was recovered in 1967 from salmon smolts reared artificially and finclipped in previous years. Feeding and rearing experiments were conducted, using different types of food. Preliminary investigations were made into two new tagging techniques for smolts, using an internal tag and an external tag attached by means of a nylon thread. The movements of salmon both upstream and downstream were also observed at the Trust's installations during the year.

Biological work on the effects of improvement works on a tributary of the Burrishoole River was undertaken in continuation of that of 1966.

A report on the salmon hatchery and rearing techniques by the Trust's Biologist was prepared indicating the results of over ten year's experience of this work at the Trust's installations.

The Trust continued its study on the effects of peat silt on fish life in the Boyne system. The first part of a report of a study of the physical properties of the sediment produced by the discharge of peat silt and its behaviour under various hydro-dynamic conditions was received by the Peat Silt Research Group from the Laboratoire Central d'Hydraulique de France, which had been engaged to investigate this aspect of the problem.

In connection with the investigation of U.D.N. in salmon, the Trust continued to employ a bacteriological technician who has been seconded to the Veterinary Research Laboratory to assist in these investigations.

**MANAGEMENT OF STATE FISHERIES.**—One hundred and thirty-four State-owned fisheries were managed by the Fisheries Division in 1967 and the amount received in rents during the year was £3,830 compared with £4,156 in 1966.

Thirty-eight of these fisheries were advertised for letting.

Improvement works were carried out on a number of the fisheries.

#### INTERNATIONAL AND OTHER CONFERENCES.

(1) **INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA.**—As mentioned in the Sea Fisheries section of the Report, the annual conference of this body was held in Hamburg from 9th to 18th October, 1967. The Anadromous and Catadromous Fish Committee formerly the Salmon and Trout Committee, had an important programme of meetings, which were attended by the Department's Inspector and Scientific Adviser, who had been elected President of the Council in 1966, the Inspector of Fisheries on the inland fisheries side and the Biologist to the Salmon Research Trust of Ireland, Inc. Papers were contributed by these officers to the meeting and the Department's representatives also attended a meeting, before the main conference, of the Joint Working Group on Atlantic Salmon set up by the Council and the International Commission for the North-West Atlantic Fisheries (ICNAF). The Department's Inspector also toured fishery installations in Denmark and Germany in connection with this meeting.

(2) **THIRD COARSE FISH CONFERENCE.**—This conference, held in the University of Liverpool from 22nd to 24th March, 1967, was attended

by the Inspector of Fisheries and an Assistant Inspector of Fisheries on the inland fisheries side. A number of papers dealing with various species of coarse fishes were discussed. Apart from the information obtained from the reading of papers this conference afforded an opportunity to the Departmental officers to meet many persons from Great Britain and elsewhere engaged in research and management of stocks of coarse fish, whom it would have been difficult to contact in any other way.

(3) ANNUAL CONFERENCE OF THE SALMON AND TROUT ASSOCIATION.—This Association holds an annual conference in London to provide a forum for discussion of problems relating to the development, management, and protection of stocks of salmonid fishes. The 1967 conference was attended by the Department's Inspector and Scientific Adviser and a representative of the Salmon Research Trust of Ireland, Inc.

(4) INLAND FISHERIES RESEARCH GROUP.—This informal group was established in 1966 to provide an annual meeting of those persons actively engaged in inland fisheries research in Ireland. In April, 1967, a meeting of the Group (the third of its kind) was held at Newport, Co. Mayo, under the chairmanship of Dr. D. J. Piggins, Biologist to the Salmon Research Trust of Ireland Inc. Representatives of the Universities, the Inland Fisheries Trust Inc., the Electricity Supply Board, the Salmon Research Trust of Ireland, Inc. and of the Department (both the Fisheries Division and the Veterinary Research Laboratory) were present.

(5) WATER POLLUTION SEMINAR.—The National Water Committee of the Institution of Civil Engineers organised this Seminar which was sponsored by the Department of Local Government. It was held at University College, Belfield, Dublin, from 2nd to 6th October, 1967.

The objectives of the Seminar were:—

- (1) to define the problem of water pollution, its relevance to Ireland and its effects on people and environment;
- (2) to emphasise the necessity of having adequate means of control of water quality and to create a public awareness of the problem.
- (3) to assess the present and future extent of water pollution in Ireland and to discuss and correlate legal, administrative and technical requirements for its control.

The Seminar was attended by a number of officers from this Department who contributed to the various discussions which were held.

(6) SYMPOSIUM ON SALMON.—This symposium on salmon was organised by the Foyle Fisheries Commission on 1st April, 1967, and contributions were made by the Department's Inspector and Scientific

Adviser and the Engineer. Officers of the Department collaborated with officers of the Commission and of the Ministry of Agriculture, Belfast, in staging an exhibition of fisheries interest for the public at Magee University, Londonderry, where the symposium took place.

LEGISLATION.—Particulars of Statutory Instruments relating to inland fisheries made during the year are included in Appendix No. 22.

NEIL. T. BLANEY,

*Minister for Agriculture and Fisheries.*

5 March, 1969.

**APPENDICES TO THE REPORT ON SEA AND INLAND  
FISHERIES FOR THE YEAR 1967.**

Appendix No.	PAGE
1. Quantity and Value of Sea Fish (excluding Salmon) returned as landed in 1966 and 1967 ... ..	38
2. Comparison of the Average Prices per cwt. of various kinds of Sea Fish for years 1960 to 1967 ... ..	39
3. Value of Landings of Sea Fish (excluding Salmon) at ports at which the value of such landings exceeded £20,000 in 1967 ... ..	40
4. Imports and Exports of Fish and Fishery Products in 1967 (as compared with 1966) ... ..	41
5. Herring Fishing, 1967 ... ..	42
6. Mackerel Fishing, 1967 ... ..	43
7. Regional Distribution and Classification of Fishing Craft and of personnel engaged in Fishing in 1967 ... ..	44
8. Trawling and Seining, 1967 ... ..	45
9. Statement of Account in respect of Repayable Advances	46
10. Coastal extent of Fishery Districts and names of the Principal Rivers in each District ... ..	47
11. Quantity and Value of all Salmon and Sea Trout taken in 1965, 1966 and 1967, by Instruments of Capture ... ..	49
12. Quantity and Value of Salmon taken in 1965, 1966 and 1967 by Fishery Districts ... ..	50
13. Quantity and Value of Sea Trout taken in 1965, 1966 and 1967 by Fishery Districts ... ..	51
14. Quantity and Value of Eels taken in 1965, 1966 and 1967 by Fishery Districts ... ..	52
15. Total Quantity and Value of Salmon, Sea Trout and Eels taken by all engines in 1965, 1966 and 1967 by Fishery Districts ... ..	53
16. Number, Quantity and Value of Salmon taken by Single Rod and Line in 1965, 1966 and 1967 by Fishery Districts ... ..	54

Appendix No.	PAGE
17. Number, Quantity and Value of Sea Trout taken by Single Rod and Line in 1965, 1966 and 1967 by Fishery Districts ... ..	55
18. Particulars of Receipts and Expenditure by Boards of Conservators for the year ended 30th September, 1967 ... ..	56
19. Particulars of Licences issued by Boards of Conservators for the year 1967 ... ..	57
20. Licence duties payable on fishing engines ... ..	58
21. Particulars of Public Inquiries held during 1967 ... ..	59
22. Abstract of Statutory Instruments made in 1967 ... ..	60
23. Output of Ova in 1966/67 ... ..	63
24. List of Scientific and other Papers, by Officers of Fisheries Division, published during 1967 ... ..	64

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Appendices 11 to 17 are compiled from returns furnished by licence holders in pursuance of the Statistics (Salmon, Sea Trout and Eels) (No. 2) Order, 1945.

## APPENDIX No. 1

Quantity and Value of Sea Fish (excluding Salmon) returned as landed in 1966 and 1967.

Kinds of Fish	QUANTITY		VALUE	
	1967	1966	1967	1966
	cwt.	cwt.	£	£
Soles ... ..	3,266	3,057	70,945	71,060
Brill ... ..	1,663	1,264	16,767	13,733
Turbot ... ..	1,885	1,491	18,464	15,936
Plaice ... ..	28,938	28,117	224,524	222,668
Dabs ... ..	3,617	3,827	9,502	10,053
Megrim ... ..	4,536	4,295	14,249	16,316
Other Flat Fish ... ..	4,271	2,635	13,937	11,245
Ray/Skate ... ..	23,124	22,418	96,073	90,164
Cod ... ..	57,610	38,839	208,492	153,238
Haddock ... ..	23,968	29,087	89,469	106,222
Hake ... ..	2,548	1,551	23,232	15,827
Whiting ... ..	120,981	99,248	236,567	215,634
Pollack ... ..	13,199	11,423	31,104	30,532
Other Round Fish ... ..	23,832	25,239	26,469	23,075
<b>Total Demersal ... ..</b>	<b>313,438</b>	<b>272,491</b>	<b>1,079,794</b>	<b>995,703</b>
Herrings ... ..	465,606	293,300	499,280	399,312
Pilchards ... ..	681	360	293	198
Mackerel ... ..	44,196	29,645	51,163	46,389
Sprats ... ..	9,728	30,520	5,619	12,573
<b>Total Pelagic ... ..</b>	<b>520,211</b>	<b>353,825</b>	<b>556,355</b>	<b>458,472</b>
<b>TOTAL WET FISH ... ..</b>	<b>833,649</b>	<b>626,316</b>	<b>1,636,149</b>	<b>1,454,175</b>
	Nos.	Nos.		
Lobsters ... ..	495,017	491,668	224,257	231,482
Crawfish ... ..	129,653	160,693	87,592	117,553
Crabs ... ..	75,816	49,582	1,804	1,336
Escallops ... ..	199,839	309,454	7,808	9,584
Oysters ... ..	1,371,825	1,387,201	29,852	29,871
	cwt.	cwt.		
Dublin Bay Prawns ... ..	17,289	24,735	70,613	83,275
Mussels ... ..	23,272	15,134	12,571	7,617
Periwinkles ... ..	39,629	45,179	73,860	84,584
Other Shellfish ... ..	3,767	3,666	8,266	13,859
<b>Total Value Shellfish ... ..</b>	<b>—</b>	<b>—</b>	<b>516,623</b>	<b>579,161</b>
<b>TOTAL VALUE ALL FISH ... ..</b>	<b>—</b>	<b>—</b>	<b>2,152,772</b>	<b>2,033,336</b>

APPENDIX No. 2

Comparison of the Average Price per cwt. of various kinds of Sea Fish for the years 1960—1967

	1960	1961	1962	1963	1964	1965	1966	1967
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Soles	14 4 2	15 6 5	16 9 2	17 15 4	18 14 7	22 11 1	23 4 11	21 10 3
Brill	9 6 9	10 2 3	10 4 4	11 0 11	10 15 10	10 13 10	10 17 4	10 1 8
Turbot	10 2 2	10 0 0	10 0 8	10 13 11	10 0 11	10 7 3	10 13 9	9 15 11
Plaice	8 2 8	8 5 1	8 18 11	7 14 10	7 7 2	7 12 5	7 18 4	7 15 1
Dabs	—	*2 15 3	2 13 3	2 13 11	2 10 4	2 14 3	2 12 6	2 12 3
Megrims	—	*3 8 3	3 6 6	2 17 4	2 10 11	3 8 0	3 16 0	3 2 10
Ray/Skate	3 6 4	3 7 5	3 11 10	3 13 7	3 13 2	4 1 7	4 0 5	4 3 2
Cod	5 7 6	6 1 6	6 12 1	5 13 3	3 17 4	4 1 8	3 18 11	3 12 5
Haddock	3 16 3	5 5 8	6 7 1	3 13 4	2 9 3	3 1 11	3 13 0	3 14 9
Hake	7 12 7	6 0 9	7 17 11	7 8 2	5 19 4	6 12 1	10 4 1	9 2 4
Whiting	1 14 8	1 19 11	1 19 4	2 1 1	1 17 1	1 19 1	2 3 5	1 19 1
Pollack	—	*2 15 1	3 3 2	3 10 5	3 4 4	2 11 10	2 13 5	2 7 2
Herrings	0 18 11	0 16 9	1 7 9	1 3 4	0 19 4	1 3 11	1 7 3	1 1 5
Pilchards	—	*0 7 8	0 8 7	3 12 10	2 14 3	4 0 6	0 11 0	0 8 7
Mackerel	1 11 4	1 11 10	2 7 8	2 5 1	1 9 7	1 2 10	1 11 4	1 3 2
Sprats	0 13 0	0 7 3	0 7 2	0 8 8	0 8 3	0 8 3	0 8 3	0 11 7

N.B.—“Average price” as shown in this table represents total value divided by total weight for each kind of fish, year by year. It does not purport to take direct cognizance of any abnormal rise or fall in price attributable to a seasonal glut or shortage of a particular kind of fish.

\*Comparable figures for 1960 are not available for these varieties.



## APPENDIX No. 3

Value of Landings of Sea Fish (excluding Salmon) at ports at which the value of such landings exceeded £20,000 in 1967.

Port	Total Value	Demersal	Pelagic	Shellfish
	£	£	£	£
1. Killybegs ...	328,064	165,425	162,267	372
2. Dunmore East ...	242,821	5,674	226,161	10,986
3. Howth ...	200,853	195,509	2,254	3,090
4. Castletownbere ...	112,696	71,656	23,987	17,053
5. Galway ...	96,492	77,103	1,182	18,207
6. Dingle ...	80,438	58,638	10,781	11,019
7. Kilmore Quay ...	68,987	51,242	611	17,134
8. Skerries ...	59,487	30,711	107	28,669
9. Dun Laoghaire ...	54,913	53,464	—	1,449
10. Burtonport ...	47,346	17,296	20,443	9,607
11. Schull ...	47,079	31,623	9,952	5,504
12. Greencastle ...	45,307	44,836	—	471
13. Union Hall ...	40,143	32,368	1,543	6,232
14. Arklow ...	38,838	38,628	210	—
15. Carna ...	36,709	3	68	36,638
16. Clogherhead ...	32,686	19,765	2,093	10,828
17. Balbriggan ...	31,672	15,079	64	16,529
18. Ballinagoul ...	29,436	18,674	8,834	1,928
19. Valentia and Cahirciveen ...	28,072	12,335	2,836	12,901
20. Kinsale ...	27,602	19,974	7,032	596
21. Teelin ...	25,321	—	24,505	816
22. Fenit ...	22,931	—	—	22,931
23. Clifden and Cleggan ...	22,323	1,548	—	20,775
24. Passage West ...	20,028	—	20,028	—

## APPENDIX No. 4

Imports and Exports of Fish and Fishery Products in 1967 (as compared with 1966).

	Quantity		Value	
	1967	1966	1967	1966
	cwt.	cwt.	£	£
<b>I.—IMPORTS :</b>				
Fish, fresh, chilled or frozen	9,414	20,307	70,056	85,212
Fish, cured, not in airtight containers	27,338	28,395	194,173	205,275
Fish and fish preparations in airtight containers	25,434	32,757	617,902	688,808
Other fish and fish preparations	15,548	11,867	306,539	266,707
<b>TOTALS</b>	<b>77,734</b>	<b>93,326</b>	<b>1,188,670</b>	<b>1,246,002</b>
<b>II.—EXPORTS :</b>				
Fish, fresh, chilled or frozen:				
Salmon	20,228	17,159	752,123	782,334
Herrings	79,421	100,434	155,476	217,755
Freshwater Eels	2,856	6,075	63,191	106,218
Other Fish	24,108	15,338	236,835	217,710
Fish dried, salted or smoked not in airtight containers	170,536	97,089	359,720	351,948
Shellfish, fresh, chilled, frozen, salted or dried	69,073	68,489	642,231	703,012
Other fish and fish preparations	5,387	2,441	103,731	113,554
<b>TOTALS</b>	<b>371,609</b>	<b>307,025</b>	<b>2,313,307</b>	<b>2,492,531</b>

## APPENDIX No. 5

## HERRING FISHING 1967

County	Ports at which more than 500 cwt. were landed	Total Quantity cwt.	Value £
Louth	—	—	—
Dublin	—	537	1,351
Wicklow	—	189	250
Wexford	Rosslare Harbour, Duncannon	4,059	5,595
Waterford	Dunmore East, Helvick	168,689	233,526
Cork	Castletownbere, Passage West, Cobh, Kinsale, Schull	36,034	47,692
Kerry	Dingle	4,395	5,359
Clare	—	—	—
Galway	Galway	740	656
Mayo	Achill	1,381	951
Sligo	Sligo	4,250	2,380
Donegal	Killybegs, Burtonport, Teelin, Kincasslagh	245,332	201,520
	<b>TOTALS</b>	465,606	499,280

## APPENDIX No. 6

## MACKEREL FISHING 1967

County	Ports at which more than 250 cwt. were landed	Total Quantity cwt.	Value £
Louth	—	—	—
Dublin	Howth	348	720
Wicklow	—	—	—
Wexford	Kilmore Quay	290	580
Waterford	Dunmore East	792	2,039
Cork	Castletownbere, Kinsale, Union Hall, Schull	11,545	17,841
Kerry	Dingle, Cahirciveen	6,397	8,559
Clare	—	496	1,042
Galway	Costello Bay	547	1,510
Mayo	Portacloy, Porturlin and Bel- derrig, Lacken	1,294	2,416
Sligo	—	—	—
Donegal	Killybegs	22,487	16,456
TOTALS		44,196	51,163

APPENDIX No. 7

REGIONAL DISTRIBUTION AND CLASSIFICATION OF FISHING CRAFT AND OF PERSONNEL  
ENGAGED IN FISHING IN 1967

Coast	How Engaged	Men	Total Vessels	MOTOR VESSELS						Boats propelled by outboard engines, sails or oars	
				Gross Tons						18' Keel and upwards	Less than 18' Keel
				75 & over	50—74	25—49	15—24	10—14	under 10		
EAST (Omeath to Carnsore Point)	Solely	452	119	7	9	54	7	—	13	29	—
	Partially	252	97	—	—	—	—	—	8	68	21
	Laid-up	—	3	—	—	2	1	—	—	—	—
	TOTALS	704	219	7	9	56	8	—	21	97	21
SOUTH (Carnsore Point to Loop Head)	Solely	534	150	2	13	53	7	4	62	9	—
	Partially	808	343	—	—	—	1	3	52	219	68
	Laid-up	—	8	—	—	—	—	—	1	—	7
	TOTALS	1,342	501	2	13	53	8	7	115	228	75
WEST (Loop Head to Erris Head)	Solely	241	241	—	2	13	5	1	102	86	32
	Partially	1,344	283	—	—	—	—	—	29	131	123
	Laid-up	—	2	—	—	—	—	—	2	—	—
	TOTALS	1,585	526	—	2	13	5	1	133	217	155
NORTH (Erris Head to Moville)	Solely	494	284	6	8	25	8	3	129	101	4
	Partially	1,251	235	—	—	—	1	1	41	138	54
	Laid-up	—	1	—	—	—	—	—	1	—	—
	TOTALS	1,745	520	6	8	25	9	4	171	239	58
TOTALS (All Coasts)	Solely	1,721	794	15	32	145	27	8	306	225	36
	Partially	3,655	958	—	—	—	2	4	130	556	266
	Laid-up	—	14	—	—	2	1	—	4	—	7
	TOTALS	5,376	1,766	15	32	147	30	12	440	781	309

## APPENDIX No. 8

## TRAWLING AND SEINING, 1967

Port or Locality	Number of men engaged	Number of boats engaged	Tonnage of Motor Boats			Fishing Period
			Not exceeding 10 tons	Over 10 tons	Over 15 tons	
Clogherhead ...	30	8	—	—	8	All year.
Balbriggan ...	20	6	—	—	6	All year.
Skerries ...	45	9	—	—	9	All year.
Howth ...	145	28	—	—	28	All year.
Dun Laoghaire ...	76	16	2	—	14	All year.
Arklow ...	45	9	—	—	9	All year.
Wexford ...	15	3	—	—	3	All year.
Kilmore Quay ...	60	13	3	—	10	All year.
Rosslare ...	3	1	1	—	—	All year.
Duncannon ...	5	1	—	—	1	All year.
Dunmore East ...	55	11	—	—	11	All year.
Helvick ...	15	3	—	—	3	All year.
Youghal ...	3	1	—	1	—	All year.
Ballycotton ...	20	7	6	—	1	All year.
Cobh ...	8	4	4	—	—	All year.
Kinsale ...	6	1	—	—	1	All year.
Union Hall and Raheen ...	35	7	—	—	7	All year.
Baltimore ...	20	4	—	—	4	All year.
Schull ...	25	4	—	—	4	All year.
Castletownbere ...	46	8	—	—	8	All year.
Ballinskelligs ...	6	1	—	—	1	All year.
Valentia Harbour, Cahirciveen and Portmagee ...	35	7	—	—	7	All year.
Dingle ...	66	13	—	—	13	All year.
Liscannor ...	2	1	1	—	—	Summer and Autumn
Galway and Aran Islands ...	60	14	—	—	14	All year.
Cleggan and Inisboffin ...	6	2	1	1	—	All year.
Achill ...	20	5	—	—	5	All year.
Enniscrone ...	8	4	4	—	—	Spring, Summer and Autumn
Sligo ...	4	1	—	—	1	All year.
Killybegs ...	155	26	—	—	26	All year.
Burtonport ...	36	6	—	—	6	All year.
Dunfanaghy ...	4	1	—	—	1	All year.
Buncrana ...	6	2	—	—	2	All year.
Glengad ...	20	8	6	2	—	Spring, Summer and Autumn
Greencastle ...	66	14	—	2	12	All year.
<b>TOTALS</b> ...	<b>1,171</b>	<b>249</b>	<b>28</b>	<b>6</b>	<b>215</b>	

## APPENDIX No. 9

STATEMENT OF ACCOUNT IN RESPECT OF REPAYABLE  
ADVANCES

I. Advances of £408,500 made to the Irish Sea Fisheries Association Ltd. during the period of twenty-one years to 23 April, 1952, for the provision of boats and gear:—		
		£
Advances and interest thereon up to 31 March, 1960		566,255
Repayments made to 31 March, 1960	... ..	248,281
Amount written off in 1961-62	... ..	186,000
Balance of advances to be repaid by a new annuity ...		131,974
		<hr/> 566,255
Instalments of new annuity to accrue up to 1972	... ..	160,433
Repayments of new annuity:		
made to 31 March, 1966	... ..	73,530
made during year ended 31 March, 1967	... ..	13,369
not accrued at 31 March, 1967	... ..	73,534
		<hr/> 160,433
II. Advances of £63,215 made to Irish Sea Fisheries Association Ltd. during the period of five years to 23 April, 1952 for purposes other than boats and gear:—		
Total repayments to be made including interest	... ..	£ 85,973
Repayments:		
made to 31 March, 1966	... ..	62,926
made during year ended 31 March, 1967	... ..	4,278
not accrued at 31 March, 1967	... ..	18,769
		<hr/> 85,973
III. Advances of £2,257,563 made to An Bord Iascaigh Mhara during the period of fifteen years to 31 March, 1967, for the provision of boats and gear and other purposes:—		
		£
Repayments of principal:		
made to 31 March, 1966	... ..	367,052
made during year ended 31 March, 1967	... ..	62,646
Principal written off to 31 March, 1967	... ..	217,584
		<hr/> 647,282
Total repaid or written off at 31 March, 1967	... ..	647,282
Balance of principal outstanding at 31 March, 1967		<hr/> <hr/> 1,610,281

## APPENDIX No. 10

COASTAL EXTENT OF FISHERY DISTRICTS AND NAMES  
OF THE PRINCIPAL RIVERS IN EACH DISTRICT

District	Coastal Extent of District	Principal Rivers
No. 1 Dublin	Most easterly point on Red Island, Skerries, to Wicklow Head.	Liffey Vartry.
No. 2 Wexford	Wicklow Head to Kiln Bay, east of Bannow Bay, Co. Wexford.	Slaney Avoca.
No. 3 Waterford	Kiln Bay, east of Bannow Bay, to Helvick Head, Co. Waterford.	Suir Barrow Nore.
No. 4 Lismore	Helvick Head to Ballycotton Pier, Co. Cork.	Blackwater, Funshion, Bride, Awbeg.
No. 5 Cork	Ballycotton Pier to Crow Head, Co. Cork.	Lee, Owenboy, Bandon, Argideen, Ilen, Mealagh, Owvane, Coomhola, Glengarrieff, Ardrigole.
No. 7 Kerry	Crow Head, Co. Cork, to Kerry Head, Co. Kerry.	Roughy, Sheen, Finnihy, Blackwater, Sneem, Laune, Flesk, Maine, Caragh, Currane, Cummeragh, Inny.
No. 8 Limerick	Kerry Head, Co. Kerry, to Hag's Head, Co. Clare.	Shannon, Deel, Fergus, Mulcair, Little and Upper Brosna, Inny, Maigue, Feale.
No. 9 <sup>1</sup> Galway	Hag's Head to the sea point of the boundary between the townlands of Keeraunagark South and Banraghbaun South, Co. Galway.	Corrib, Claregalway.
No. 9 <sup>2</sup> Connemara	The sea point of the boundary between the townlands of Keeraunagark South, and Banraghbaun South, Co. Galway, to Slyne Head, Co. Galway.	Ballinahinch, Recess, Cashla, Owengowla, Invermore, Inverbeg, Sreebe, Furnace.
No. 10 <sup>1</sup> Ballinakill	Slyne Head to Pigeon Point, Westport Bay, Co. Mayo.	Culfin, Errif, Bundo- orragha, Dawson, Carrowniskey, Bun- owen (Louisburgh).
No. 10 <sup>2</sup> Bangor	Pigeon Point to Benwee Head, Co. Mayo.	Newport, Burrishoole, Owenduff, Owengarve, Owenmore, Glenamoy.
No. 11 Ballina	Benwee Head to Coonamore Point, Co. Sligo.	Moy, Cloonaghmore (Palmerston), Easkey.



District	Coastal Extent of District	Principal Rivers
No. 12 Sligo	Coonamore Point to Carrickgarve, Co. Sligo.	Ballisodare, Garavogue (Sligo), Bonet, Drumcliff.
No. 13 Ballyshannon	Carrickgarve to Rossan Point, Co. Donegal.	Erne, Bundrowes, Bunduff, Eske, Eaney Water, Oily, Glen.
No. 14 <sup>1</sup> Letterkenny	Rossan Point to Malin Head, Co. Donegal.	Owenea, Gweebarra, Gweedore (Croilly), Clady, Lackagh, Lennon, Crana.
No. 17 <sup>2</sup> Dundalk	Carlingford Lough to Clogherhead, Co. Louth.	Fane, Dec, Glyde.
No. 17 <sup>1</sup> Drogheda	Clogherhead to the most easterly point on Red Island, Skerries, Co. Dublin.	Boyne, Blackwater, Decl.

Note—The area comprised in the former No. 14<sup>2</sup> or Merville District was, by the Foyle Fisheries Act, 1952, incorporated in the Foyle Area which is administered by the Foyle Fisheries Commission.

## APPENDIX No. 11

Quantity and Value of all Salmon and Sea Trout taken in 1965, 1966 and 1967 by Instruments of Capture.

**SALMON**

	1967	1966	1965	1967	1966	1965
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	2,720,930	2,326,422	2,869,251	665,242	684,825	712,495
Total for rod and line	267,809	301,575	416,289	83,929	106,698	123,587
Total for drift nets	1,015,738	744,023	794,961	207,694	192,997	167,963
Total for draft nets	1,071,341	961,428	1,250,171	266,224	279,645	307,509
Total for stake nets, weirs, etc.	366,042	319,396	407,830	107,395	105,485	113,436

**SEA TROUT**

	1967	1966	1965	1967	1966	1965
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	128,980	86,350	113,630	21,075	16,522	18,342
Total for rod and line	68,078	63,274	83,746	11,497	12,175	12,936
Total for drift nets	8,484	1,975	4,656	1,577	354	889
Total for draft nets	51,295	20,202	24,965	7,835	3,806	4,474
Total for stake nets, weirs, etc.	1,123	899	363	166	187	43

This Appendix does not include returns from the former Merville District.

## APPENDIX No. 12

Quantity and Value of Salmon taken in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin	R	4,399	5,033	3,636	1,920	2,479	1,310
	N	15,981	12,017	13,217	4,039	4,217	3,086
Wexford	R	6,854	23,980	28,883	2,746	9,619	10,052
	N	27,752	31,633	30,242	10,479	12,145	11,792
Waterford	R	41,284	53,168	58,107	13,298	17,708	15,703
	N	303,342	275,709	282,898	69,612	77,334	66,859
Lismore	R	8,920	9,887	32,311	2,399	3,238	9,686
	N	169,564	189,680	226,094	48,541	62,412	61,059
Cork	R	15,742	11,668	30,873	5,166	4,393	9,956
	N	71,030	85,454	82,669	19,293	25,696	19,571
Kerry	R	30,056	39,188	47,453	9,119	13,702	13,775
	N	192,726	220,569	291,151	38,746	55,839	62,871
Limerick	R	34,094	40,590	58,902	10,195	14,629	18,797
	N	312,546	242,633	344,538	80,651	73,474	97,278
Galway	R	14,787	8,143	13,702	3,926	2,761	3,741
	N	94,916	65,569	70,580	30,169	25,901	20,716
Connemara	R	5,974	2,790	9,189	1,484	886	2,421
	N	—	—	—	—	—	—
Ballinakill	R	5,603	2,869	7,546	1,435	1,009	2,066
	N	26,190	7,680	43,623	4,415	1,802	7,137
Bangor	R	7,859	12,031	13,866	2,290	4,408	3,921
	N	52,240	43,096	90,678	10,637	9,789	16,983
Ballina	R	25,182	14,969	24,991	7,185	4,512	6,544
	N	372,889	276,110	357,197	78,249	68,880	80,625
Sligo	R	8,849	8,600	11,241	2,928	2,945	3,362
	N	47,188	42,119	62,216	10,385	10,726	11,362
Ballyshannon	R	8,715	7,246	9,064	3,044	2,695	2,766
	N	156,559	95,453	100,055	35,630	24,129	20,722
Letterkenny	R	15,627	29,633	44,276	4,136	9,789	11,424
	N	430,375	264,018	297,044	85,886	65,342	54,607
Dundalk	R	10,564	8,033	6,030	3,269	2,654	1,935
	N	66,319	63,281	42,966	18,273	16,673	12,167
Drogheda	R	23,300	23,747	16,219	9,389	9,271	6,128
	N	113,504	109,826	117,794	36,308	43,768	42,073
TOTALS		2,720,930	2,326,422	2,869,251	665,242	684,825	712,495

\* R indicates capture by means of single rod and line;  
N by means of nets, weirs, etc.

## APPENDIX No. 13

Quantity and Value of Sea Trout taken in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin	R	529	601	805	77	138	155
	N	4,792	3,729	6,051	1,009	926	1,287
Wexford	R	1,754	561	1,881	258	113	353
	N	7,687	4,842	9,255	923	779	1,673
Waterford	R	870	1,251	1,617	147	213	236
	N	1,077	591	291	179	84	43
Lismore	R	319	268	1,223	59	59	196
	N	10,846	2,313	1,080	2,046	352	148
Cork	R	8,712	7,658	9,188	1,363	1,362	1,445
	N	788	765	562	154	156	96
Kerry	R	11,364	11,435	11,009	2,423	2,235	1,678
	N	513	1,507	2,041	128	270	296
Limerick	R	3,774	3,721	3,973	596	694	595
	N	29,335	3,858	4,909	4,165	788	964
Galway	R	1,315	1,880	2,819	224	409	447
	N	65	55	35	12	13	17
Connemara	R	8,905	9,559	11,834	1,360	1,879	1,796
	N						
Ballinakill	R	6,017	4,580	8,518	960	842	1,310
	N	222	73	301	33	11	43
Bangor	R	6,346	6,818	10,017	991	1,337	1,534
	N	19	512	1,059	3	78	144
Ballina	R	5,361	2,970	4,569	945	585	673
	N	1,225	57	86	191	9	13
Sligo	R	513	386	800	86	70	129
	N	165	322	138	29	70	23
Ballysannon	R	1,902	1,300	2,311	293	349	349
	N	58	200	340	5	35	45
Letterkenny	R	3,928	5,427	8,320	588	1,019	1,217
	N	1,805	1,903	1,751	268	287	259
Dundalk	R	2,546	2,466	2,268	420	492	386
	N	989	1,703	1,485	210	359	269
Drogheda	R	3,923	2,393	2,594	707	479	437
	N	1,316	646	500	223	130	86
TOTALS		128,980	86,350	113,630	21,075	16,522	18,342

\* R indicates capture by means of single rod and line;  
N by means of nets, weirs, etc.

## APPENDIX No. 14

Quantity and Value of Eels taken in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	Quantity			Value		
	1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin ...	2,853	112	—	430	14	—
Wexford ...	11,354	2,840	123,764	1,720	469	13,398
Waterford ...	5,876	5,074	7,460	822	681	1,220
Lismore ...	—	29	—	—	3	—
Cork ...	937	840	—	160	64	—
Kerry ...	1,523	—	—	253	—	—
Limerick ...	192,176	119,453	136,074	47,859	26,363	30,612
Galway ...	24,190	13,711	45,485	3,956	2,488	8,695
Bangor ...	—	169	—	—	37	—
Ballina ...	6,092	11,589	541	937	1,802	109
Sligo ...	8,730	—	8,400	1,489	—	1,557
Ballyshannon	16,876	23,717	37,684	3,041	3,073	5,221
Letterkenny ...	1,700	—	—	170	—	—
Dundalk ...	4,885	1,074	12,470	642	108	1,790
Drogheda ...	19,213	6,442	15,970	3,168	878	1,978
TOTALS ...	296,405	185,050	387,848	64,647	35,980	66,580

Note—The catch figures set out above are based on returns which are not complete. This explains any apparent inconsistency between the figures and the official export figures in any particular year.

## APPENDIX No. 15

Total Quantity and Value of Salmon, Sea Trout and Eels taken by all Engines in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	Total Weight for District			Total Value for District		
	1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin ...	28,554	21,492	23,709	7,475	7,774	5,838
Wexford ...	55,401	63,856	194,025	16,126	23,125	39,268
Waterford ...	352,449	335,793	350,373	84,058	96,020	84,061
Lismore ...	189,649	202,177	260,708	53,045	66,064	71,089
Cork ...	97,209	106,385	123,292	26,136	31,671	31,068
Kerry ...	436,182	272,699	351,654	50,669	72,046	78,620
Limerick ...	571,925	410,255	548,396	143,446	115,948	148,246
Galway ...	135,273	89,358	132,621	38,287	31,572	33,616
Connemara ...	14,879	12,349	21,023	2,844	2,765	4,217
Ballinakill ...	38,032	15,202	59,988	6,843	3,664	10,556
Bangor ...	66,464	62,626	115,620	13,921	15,649	22,582
Ballina ...	410,749	305,695	387,384	87,507	75,788	87,964
Sligo ...	65,445	51,427	82,795	14,917	13,811	16,433
Ballyshannon	184,110	127,916	149,454	42,013	30,181	29,103
Letterkenny ...	453,435	300,981	351,391	91,048	76,437	67,507
Dundaik ...	85,303	76,557	65,219	22,814	20,286	16,547
Drogheda ...	161,256	143,054	153,077	49,795	54,526	50,702
<b>TOTALS ...</b>	<b>3,146,315</b>	<b>2,597,822</b>	<b>3,370,729</b>	<b>750,964</b>	<b>737,327</b>	<b>797,417</b>

## APPENDIX No. 16

Number, Quantity and Value of Salmon taken by single Rod and Line  
in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value		
	1967	1966	1965	1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin ...	494	550	470	4,399	5,033	3,636	1,920	2,479	1,310
Wexford ...	585	2,355	2,804	6,854	23,980	28,883	2,746	9,619	10,052
Waterford ...	5,332	5,970	8,040	41,284	53,168	58,107	13,298	17,708	15,703
Lismore ...	1,033	1,171	4,124	8,920	9,887	32,311	2,399	3,238	9,686
Cork ...	1,992	1,494	3,889	15,742	11,668	30,873	5,166	4,393	9,956
Kerry ...	4,301	5,102	6,739	30,056	39,188	47,453	9,119	13,702	13,775
Limerick ...	4,982	5,044	7,927	34,094	40,590	58,902	10,195	14,629	18,797
Galway ...	2,333	1,083	2,091	14,787	8,143	13,702	3,926	2,761	3,741
Connemara ...	905	430	1,393	5,974	2,790	9,189	1,484	886	2,421
Ballinakill ...	856	386	1,066	5,603	2,869	7,546	1,435	1,009	2,066
Bangor ...	1,116	1,469	1,987	7,859	12,031	13,866	2,290	4,408	3,921
Ballina ...	3,859	2,125	3,858	25,182	14,969	24,991	7,185	4,512	6,544
Sligo ...	1,168	1,086	1,401	8,849	8,600	11,241	2,928	2,945	3,362
Ballyshannon	1,117	849	1,206	8,715	7,246	9,064	3,044	2,695	2,766
Letterkenny ...	2,167	3,704	5,849	15,627	29,633	44,276	4,136	9,789	11,424
Dundalk ...	1,210	974	623	10,564	8,033	6,030	3,269	2,654	1,935
Drogheda ...	1,891	1,940	1,398	23,300	23,747	16,219	9,389	9,271	6,128
TOTALS ...	35,341	35,732	54,865	267,809	301,575	416,289	83,929	106,698	123,587

## APPENDIX No. 17

Number, Quantity and Value of Sea Trout taken by single Rod and Line in 1965, 1966 and 1967 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value		
	1967	1966	1965	1967 lb.	1966 lb.	1965 lb.	1967 £	1966 £	1965 £
Dublin ...	462	555	831	529	601	805	77	138	155
Wexford ...	2,600	873	2,261	1,754	561	1,881	258	113	353
Waterford ...	1,090	1,190	1,615	870	1,251	1,617	147	213	236
Lismore ...	453	298	1,090	319	268	1,223	59	59	196
Cork ...	10,867	9,654	12,136	8,712	7,658	9,188	1,363	1,362	1,445
Kerry ...	9,436	9,545	9,531	11,364	11,435	11,009	2,423	2,235	1,678
Limerick ...	4,680	4,347	4,616	3,774	3,721	3,973	596	694	595
Galway ...	1,210	2,117	2,607	1,315	1,880	2,819	224	409	447
Connemara ...	9,348	9,961	11,355	8,905	9,559	11,834	1,360	1,879	1,796
Ballinakill ...	5,709	4,078	7,644	6,017	4,580	8,518	960	842	1,310
Bangor ...	6,634	7,329	10,445	6,346	6,818	10,017	991	1,337	1,534
Ballina ...	5,144	2,700	4,020	5,361	2,970	4,569	945	585	673
Sligo ...	654	345	609	513	386	800	86	70	129
Ballyshannon	1,842	1,300	2,240	1,902	1,300	2,311	293	249	349
Letterkenny ...	3,722	5,890	7,556	3,928	5,427	8,320	588	1,019	1,217
Dundalk ...	2,383	2,503	2,159	2,546	2,466	2,268	420	492	386
Drogheda ...	3,743	2,124	2,307	3,923	2,393	2,594	707	479	437
TOTALS ...	69,977	64,809	83,022	68,078	83,274	83,746	11,497	12,175	12,936



## APPENDIX No. 18

PARTICULARS OF RECEIPTS AND EXPENDITURE OF BOARDS OF CONSERVATORS  
FOR THE YEAR ENDED 30th SEPTEMBER, 1967

Fishery District	Opening Balance	RECEIPTS					EXPENDITURE					Closing Balance
		Licence Duty	Fishery Rate	Grant from Dept.	Misc. Receipts	Total Receipts	Salaries	Water Keepers	Law Costs	Traveling and Misc.	Total Expenditure	
	£	£	£	£	£	£	£	£	£	£	£	£
Dublin	+ 199	2,345	377	1,000	798	4,520	1,642	895	33	2,180	4,750	- 31
Wexford	+ 353	1,327	2,118	1,000	192	4,637	950	2,241	147	1,711	5,049	- 59
Waterford	+ 2,667	3,598	2,837	7,500	452	14,387	1,859	8,955	16	5,337	16,167	+ 887
Lismore	+ 1,747	934	6,462	5,000	246	12,642	1,232	9,110	570	2,487	13,399	+ 990
Cork	+ 1,035	1,832	956	6,500	370	9,658	920	6,127	34	1,994	9,075	+ 1,618
Kerry	+ 1,951	2,825	4,118	2,400	442	9,785	1,371	6,675	256	2,366	10,668	+ 1,068
Limerick	+ 1,749	4,030	4,882	11,400	1,364	21,676	2,704	13,007	892	8,765	25,368	- 1,943
Galway	+ 4,010	1,358	3,251	1,200	2,862	8,671	3,017	1,549	—	3,366	7,932	+ 4,749
Connemara	+ 140	784	3,088	—	46	3,918	704	2,361	—	504	3,569	+ 489
Ballinakill	+ 616	823	1,195	800	70	2,888	503	1,994	—	582	3,079	+ 425
Bangor	+ 339	1,573	2,198	1,800	282	5,853	2,532	1,528	153	1,076	5,289	+ 903
Ballina	+ 576	1,737	5,069	500	364	7,670	906	4,888	12	2,165	7,971	+ 275
Sligo	+ 781	739	1,516	400	155	2,810	582	1,253	4	835	2,674	+ 917
Ballyshannon	+ 1,124	2,020	675	1,500	2,503	6,698	891	4,222	—	1,833	6,946	+ 876
Letterkenny	+ 1,309	3,084	3,341	800	583	7,808	1,343	6,243	99	1,333	9,018	+ 99
Drogheda	+ 2,541	2,219	2,252	2,400	192	7,063	949	4,585	11	1,912	7,457	+ 2,147
Dundalk	- 1,295	1,315	351	3,800	170	5,636	630	1,692	595	1,505	4,422	- 81
<b>TOTALS</b>	<b>+ 19,842</b>	<b>32,543</b>	<b>44,686</b>	<b>48,000</b>	<b>11,091</b>	<b>136,320</b>	<b>22,735</b>	<b>77,325</b>	<b>2,822</b>	<b>39,951</b>	<b>142,833</b>	<b>+ 13,329</b>

APPENDIX No. 19

PARTICULARS OF LICENCES ISSUED BY BOARDS OF CONSERVATORS FOR THE YEAR 1967.

Fishery District	Salmon Rod								Special Local Licences (Tidal Waters)	Draft net	Drift net	Pole net	Bag net	Snake net	Head Weir	Box or Crib	Loop net	Snap net	Gap, Eye, Basket or Coghill net for eels	Long line for eels	Oyster Dredge	Eel Trap	Fyke net for eels
	Annual (all districts)	Annual (district of issue)	Late Season (all districts)	Twenty-one day (all districts)	Seven day (all districts)	Late season (district of issue)	Foyle Area Extension (one district)	Foyle Area Extension (all districts)															
Dublin	457	56	23		85	11		4	11	35													55
Wexford	111	95			76				95														79
Waterford	147	655			68	33			12	128		3	3	1			134	9				1	
Lismore	56	97	5		83				9	59			2		1		15						
Cork	148	205	10		212	108			41	12								1					
Kerry	150	181	3	3	743	181			66	3		2			3					39			
Limerick	179	647	17		159	106			104	77			4		4			42	17				
Galway	55	115	35		260	59		2	9						5			23	4	71	2		
Connemara	8	11	2		409	152																	
Ballinakill	14	19	18		360	112			15														
Bangor	76	38	13		371	100			12	10		1						2					
									18 Nets 2 Rods														
Ballina	70	212	16		273	58	2		11	77					7			14	4				
Sligo	56	122	1		60	3		1	8	9		1						1	3				
Ballyshannon	77	67	10		419	33	9	18	68	15					2			10	10				
Letterkenny	107	327	8		309	98	84	51	42	106					2	27							
									14 Nets 13 Nets 51 Rods														
Drogheda	184	163	4		44	19			191						6			1	3		14	20	
Dundalk	93	172	9		44	62	10	14	38									13	2				
TOTALS	1,988	3,182	174	3	3,975	1,135	105	90	45 Nets 53 Rods	732	531	—	7	9	1	30	27	149	116	44	112	17	154

## APPENDIX No. 20

## Licence Duties Payable on Fishing Engines.

	£	s.	d.
On each Salmon Rod—Annual (valid all districts) ...	4	0	0
Do. Salmon Rod—Late Season (valid all districts) ...	3	0	0
Do. Salmon Rod—Twenty-one day (valid all districts)	3	0	0
Do. Salmon Rod—Seven day (valid all districts) ...	1	0	0
Do. Salmon Rod—Annual (valid district of issue only)	3	0	0
Do. Salmon Rod—Late Season (valid district of issue only) ...	2	0	0
Do. Salmon Rod—Foyle area extension (valid all districts) ...	2	10	0
Do. Salmon Rod—Foyle area extension (valid district of issue only) ...	1	10	0
On each—Draft net ...	4	0	0
Do. —Drift net ...	3	0	0
Do. —Snap net ...	2	10	0
Do. —Bag net ...	10	0	0
Do. —Stake net ...	30	0	0
Do. —Head Weir ...	6	0	0
Do. —Box or Crib ...	10	0	0
Do. —Pole Net ...	2	0	0
Do. —Loop Net ...	0	10	0
Do. —Gap, Eye, Basket or Coghill Net for Eels ...	2	0	0
Do. —Long line for Eels ...	2	0	0
Do. —Oyster fishing engine ...	2	0	0

## LICENCE DUTIES PAYABLE ON FISHING ENGINES OTHER THAN THOSE MENTIONED ABOVE.

Fishery District	Fyke Net	Eel Trap	Special Local Licences	
			Rod	Draft Net
	£ s.	£ s.	£ s.	£ s.
1. Dublin ...	0 5	—	—	—
2. Wexford ...	0 5	2 0	—	—
3. Waterford ...	—	—	—	—
4. Lismore ...	—	—	—	—
5. Cork ...	—	—	—	—
7. Kerry ...	—	—	—	—
8. Limerick ...	—	—	—	—
9 <sup>1</sup> . Galway ...	—	2 0	—	—
9 <sup>2</sup> . Connemara ...	—	—	—	—
10 <sup>1</sup> . Ballinakill ...	—	—	—	—
10 <sup>2</sup> . Bangor ...	—	—	§3 0	§25 0
11. Ballina ...	—	—	—	—
12. Sligo ...	—	—	—	—
13. Ballyshannon ...	—	—	—	*40 0
14 <sup>1</sup> . Letterkenny ...	—	—	‡3 0	‡12 10
				‡20 0
17 <sup>1</sup> . Drogheda ...	2 0	2 0	—	—
17 <sup>2</sup> . Dundalk ...	—	—	—	—

‡ River Lackagh Tidal Waters.

† River Owenea Tidal Waters.

\* River Erne Tidal Waters.

§ Owenmore/Owenduff Tidal Waters.

## APPENDIX No. 21

## PARTICULARS OF PUBLIC INQUIRIES HELD DURING 1967

Date of Inquiry	Where held	Subject Matter	Decision on Report of Inquiry
11th January, 1967	Courthouse, Kenmare, Co. Kerry.	Application of Shellfish (Ireland) Ltd., 69/71 St. Stephen's Green, Dublin, for an oyster fishery order.	Order not granted.
12th January, 1967	Courthouse, Skibbereen, Co. Cork.	do.	Order granted.
9th February, 1967	The Courthouse, Letterkenny, Co. Donegal.	Regulations relating to Drift Net fishing in Lough Swilly, Co. Donegal.	Under consideration.
16th February, 1967	The Courthouse, Nenagh.	Fishing on the Nenagh River in the vicinity of Ballyartella Weir.	Bye-law made.
2nd March, 1967	Courthouse, Cahiriveen, Co. Kerry.	Application of Shellfish (Ireland) Ltd., 69/71 St. Stephen's Green, Dublin, for an oyster fishery order.	Under consideration.
3rd March, 1967	Courthouse, Sneem, Co. Kerry.	Application of Lucey & Sons, Ltd., Waterville, Co. Kerry, for an oyster fishery order.	Under consideration.
17th August, 1967	Courthouse, Collooney, Co. Sligo.	Application of Mr. J. W. Prins, Ballinlig House, Beltra, Co. Sligo, for an oyster fishery licence.	Under consideration.
2nd November, 1967	The Courthouse, Sligo.	Restrictions on fishing in the Drumcliffe River and regulation of the type of gear used.	Under consideration.
6th December, 1967	The Parochial Hall, Clarinbridge, Co. Galway.	Restrictions on fishing in the Kilcolgan River.	Under consideration.

## APPENDIX No. 22

**ABSTRACT OF STATUTORY INSTRUMENTS MADE IN 1967  
GENERAL****Demersal Fish (Handling, Storage and Transport) Regulations, 1967,  
dated 25th October, 1967, (S.I. No. 223 of 1967).**

These Regulations relate to whole demersal fish (whether gutted or ungutted) or pieces of such fish intended for sale for human consumption and set out the procedure and requirements relating to the handling, storage and transport of such fish from the time the fish is landed aboard the fishing vessel until the fish reaches the consumer.

**LOCAL****Cork District Bye-Law No. 535, 1967, dated 27th January, 1967.**

1. **PROHIBITING** during specified periods in the waters of the River Lee its lakes and tributaries and Cork Harbour:—

- (a) fishing or attempting to fish with nets for salmon;
- (b) angling for salmon.

2. **PROHIBITING** the use, for angling in a specified part of the waters, of any lure other than artificial fly as used for angling for brown trout.

**Rivers Owenmore and Owenduff (Tidal Waters) Order, 1967, dated  
15th February, 1967 (S.I. No. 33 of 1967).**

**DECLARING** that the tidal waters of the rivers Owenmore and Owenduff as specified and defined in the Order shall be special tidal waters for the purposes of the Fisheries Acts, 1959 to 1964.

**Rivers Owenmore and Owenduff (Special Local Licences) Order,  
1967, dated 15th February, 1967 (S.I. No. 34 of 1967).**

**AUTHORISING** the Bangor Board of Conservators to issue special local licences to fish for salmon in the special tidal waters of the rivers Owenmore and Owenduff and prescribing the rates of licence duty payable.

**Bangor District Bye-Law No. 536, 1967, dated 15th February, 1967.**

1. **PROHIBITING** in the tidal waters of the Rivers Owenmore and Owenduff:—

- (a) the use or attempted use in fishing for salmon of any drift net;
- (b) having in possession in or on any boat or on or near the waters any drift net for the capture of salmon.

2. **PROHIBITING** fishing or attempting to fish for salmon with any fishing engine other than rod and line in a specified portion of the special tidal waters of the rivers Owenmore and Owenduff.

**Limerick District Bye-Law No. 537, 1967, dated 30th March, 1967.**

REVOKING the 4th Clause of the Bye-laws, Rules and Regulations made by the Inspectors of Irish Fisheries on 10th November, 1892, and approved on 13th July, 1893, which prohibited the use of drift nets in a specified portion of the Shannon estuary.

**River Erne (Special Local Licences) (Amendment) Order, 1967, dated 26th April, 1967 (S.I. No. 88 of 1967).**

This order provides that the special local licence duty payable in respect of a draft net for use in the tidal waters of the River Erne shall be £40.

Article three brings back into force the Order of 1938 which permitted payment of the licence duty by instalments.

**Ballyshannon District Bye-Law No. 538, 1967, dated 26th April, 1967.**

PRESCRIBES the weekly close time for the River Erne and the Abbey River to be the period commencing at 6 o'clock a.m. on Saturday and ending at 6 o'clock a.m. on the next following Monday.

**Dublin District Bye-Law No. 539, 1967, dated 12th May, 1967.**

(1) PROHIBITING taking, killing or having in possession any fish of the salmon or trout kind of less than eight inches in length in specified waters of the Dublin District;

(2) REVOKING Bye-Law No. 444, 1942, which applied the size-limit to different waters of the District.

**Dublin District Close Season Bye-Law No. C.S.113, 1967, dated 12th May, 1967.**

FIXING the annual close season for angling for trout in the River Dodder and its tributaries except Bohernabreena Reservoir and the streams flowing thereinto to be the period from the 1st October to the following 16th March.

**Connemara District Close Season Bye-Law No. C.S. 114, 1967, dated 13th June, 1967.**

FIXING the annual close season for angling for salmon and trout in the rivers Screebe, Furnace and Inver and their lakes and tributaries to be the period from the 13th October to the following 31st January.

**Oyster Fishery (River Shannon) Order, 1961 (Determination) Order, 1967, dated 22nd June, 1967.**

DETERMINING the Oyster Fishery (River Shannon) Order, 1961.

**River Palmerstown (Definition of Tidal and Freshwater Boundary) Order, 1967, dated 26th day of October, 1967.**

DEFINING the boundary between the tidal and freshwater portions of the River Palmerstown or Cloonaghmore in the Ballina District.

**Oyster Fishery (Baltimore Harbour and River Ilen) Order, 1967,  
dated 14th November, 1967.**

GRANTING to Shellfish (Ireland) Ltd., the exclusive right of operating an oyster fishery in the waters described in the Schedule to the Order.

**Limerick District Bye-Law No. 540, 1967, dated 20th December,  
1967.**

PROHIBITING in a specified portion of the River Nenagh fishing or attempting to fish by any means whatsoever, or to have in possession on or near the waters, or on or near the banks thereof any mounted fishing rod with line attached thereto.

## APPENDIX No. 23

## Distribution of Fish Hatchery Produce, 1966/67

Source	River system stocked	Salmon ('000)	Sea Trout ('000)	Brown Trout ('000)
Parteen ...	Rivers Mulcaire, Newport, Nenagh, Suck, Shiven, Silver, Brosna and tributaries and River Lee and tributaries.	406 unfed fry 711 fry	—	—
Fanure ...	Various Trust waters in Cos. Cork, Clare, Kerry, Offaly, Westmeath, Monaghan and Cavan.	—	—	287 fingerlings
—	Sold to angling associations.	—	—	24 fingerlings
Ballyshannon	River Erne System.	683 fry	—	—
Mullingar	Various Trust Waters in Cos. Westmeath, Offaly and Cavan.	—	—	310 unfed fry 256 summerlings 538 fingerlings
—	Sold to angling associations.	—	—	40 ova 80 unfed fry
Cloncrim ...	Loughs Mask, Carra and Arrow and various Trust waters in Cos. Mayo, Sligo, Longford and Galway.	—	—	140 summerlings 33 fingerlings
—	Sold to angling associations.	—	—	10 summerlings
Castlebar ...	Castlebar Lakes.	—	—	384 unfed fry
Mallow ...	River Blackwater and Tributaries.	300 ova	—	—
Oughterard	Lough Corrib and tributaries.	—	—	75 fry
Screebe ...	Screebe System.	170 unfed fry	—	—
Ballisodare	Ballisodare River and tributaries.	30 ova	—	—
Cong ...	River Moy and tributaries, Corrib System River Maigue River Deel.	100 fingerlings 40 fingerlings 100 unfed fry 20 fingerlings	—	—
Blackcastle	River Slaney.	90 ova	—	—
Glenties ...	270,000 salmon ova distributed for restocking of Shannon, Ilan and Kenmare Rivers. 50,000 distributed as salmon fry to angling associations. Remainder to River Owenea. All the sea trout ova was supplied to an angling association.	913 ova	33 ova	—
Imported ...	Rivers Liffey, Slaney, Nore, Blackwater, Lee, Bandon and Owenmore.	1,905 ova	—	—



## APPENDIX No. 24

PAPERS PREPARED AND PUBLISHED BY THE DEPARTMENT'S STAFF.

## A. DEPARTMENTAL.

IRISH FISHERIES INVESTIGATIONS. Series B (Marine). No. 1 containing:—

I. F. A. GIBSON. Stocks of *Nephrops norvegicus* off the south coast of Ireland andII. F. A. GIBSON. Irish investigations on the lobster (*Homarus vulgaris* Edw) and No. 2 containing:—

JOHN MOLLOY. Irish sprats and sand eels.

IRISH FISHERIES INVESTIGATIONS. Series A (Freshwater). No. 2 containing P. A. Jackson and D. I. D. Howie. The movement of salmon (*Salmo salar*) through an estuary and fish pass.

## B. OTHERS.

ARTHUR E. J. WENT. Rare fishes in Irish waters in 1966. *Irish Nat. J.* XV. 280-283.————— Salmon and sea trout in the Foyle system  
*15 Rep. Foyle Fish. Com.* Appendix V.————— Salmon research in Ireland. *Rep. Symposium on Salmon.* Foyle Fisheries Com. (1967).ARTHUR E. J. WENT and SEÁN Ó SÚILLEABHÁIN. Fishing for the sun-fish or basking shark in Irish waters. *Proc. Roy. Irish Acad.* 65. c.5.MCGRATH, C. J. Development Projects for Salmon Fisheries. *Rep. Symposium on Salmon.* Foyle Fisheries Com. (1967).

