



SEA AND INLAND
FISHERIES

REPORT FOR
1972

AN ROINN TALMHAIOCHTA AGUS IASCAIGH
(Department of Agriculture and Fisheries)

FO-ROINN IASCAIGH
(Fisheries Division)

DUBLIN:

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REPORT
 OF THE
MINISTER FOR AGRICULTURE AND FISHERIES
 ON THE
SEA AND INLAND FISHERIES
 FOR THE YEAR
1972

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PART I.

SEA FISHERIES.

In 1972 the total value of sea-fish landings reached the all time high figure of £5,316,443 exceeding that for 1971 by £1,078,069. The biggest increase occurred in landings of pelagic fish which rose in value from £1,340,415 in 1971 to £2,331,490, an increase of 74%. The value of demersal fish at £1,568,103 represented a decrease of £21,533 or 1.35%, while the value of shellfish at £1,416,850 was £108,527 or 8.3% above that for 1971.

The weights and values of annual landings of sea-fish (excluding shellfish) since 1963 are set out in the following table:—

TABLE 1

Year	Cwt.	£
1972	1,489,891	3,899,593
1971	1,191,822	2,930,051
1970	1,325,129	2,809,393
1969	1,074,922	2,105,002
1968	836,156	1,668,751
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

Details of quantities and values of the different varieties of sea-fish and shellfish landed in 1971 and 1972 are given in Appendix No. 1. The average price per cwt. obtained for each variety of sea-fish (other than shellfish) from 1965 onwards is shown in Appendix No. 2.

As in previous years, imports of small quantities of white fish, mainly plaice, were permitted when supplies from landings fell short of home market demand.

The leading fishing ports in 1972 in order of value of fish landed were: Killybegs, Dunmore East, Cobh, Howth, Skerries, Castletownbere, Kilmore Quay, Galway/Aran Islands, Dingle and Burtonport. As compared with the corresponding order of importance in 1971 there was no change in the first two places, Cobh moved into third place, replacing Howth in that position.

DEMERSAL FISHERY.—At 337,016 cwt. the total landings of demersal fish showed a decrease of 69,689 cwt. or 17%. The most significant decreases occurred in landings of haddock which fell by 25,181 cwt. and whiting which fell by 18,985 cwt. Haddock, as in 1971 was the variety caught in greatest quantity, and was followed by whiting, cod, plaice, and ray/skate in that order.

The total value of the demersal fish catch decreased by 1.35% from £1,589,636 in 1971 to £1,568,103 in 1972. Cod was first in terms of cash earnings, followed by haddock, plaice, and whiting. These four varieties contributed 69% of the total value of the demersal fish catch; ray/skate, soles and pollock were next. On the other hand a significant increase occurred in landings of Pollack which rose from 12,491 cwt. in 1971 to 19,987 in 1972. A worthwhile increase was recorded also in the landings of sole.

Increases in average prices were achieved in most varieties, exceptions being dabs, megrims, hake and mackerel.

The overall average price of all demersal fish landed in 1972 was £4.65 per cwt. as compared with £3.91 per cwt. in 1971. This increase was largely due to the high prices obtained for varieties such as sole, brill, and turbot.

The weights, total value and average value of landings of demersal fish over the past ten years are shown in the following table:

TABLE 2

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	£
1972	337,016	1,568,103	4.65
1971	406,705	1,589,636	3.91
1970	301,974	1,428,363	4.73
1969	314,470	1,253,885	3.99
1968	313,241	1,111,747	3.55
1967	313,438	1,079,794	3.45
1966	272,491	995,703	3.65
1965	282,192	959,362	3.40
1964	267,155	876,310	3.28
1963	210,318	829,367	3.94

PELAGIC FISHERY.—The total pelagic catch of 1,152,875 cwt. was 367,758 cwt. or 47% more than the figure for 1971. Landings of herring, mackerel and sprats showed increases of 53%, 48% and 60% respectively. The total value of the catch was £2,331,490 representing an increase of 74% on the 1971 figure of £1,340,415.

Herrings.—Landings of herring amounted to 941,840 cwt. valued at £2,116,157 compared with 615,124 cwt. valued at £1,162,826 in 1971.

The 1971/72 winter herring fishery off the south coast, based mainly at the ports of Dunmore East and Cobh, began in the week ended 30th October 1971 and ended 23rd February 1972. Eighty-three boats—three more than in the 1970/71 season—took part in the fishery at various times throughout the season and landed a total of 279,272 cwt. 28% less than the total landed in the record season of 1970/71. Landings from the fishery during January and February 1972 amounted to 181,905 cwt. The majority of herrings caught were again taken by boats using paired midwater trawls. The number of pairs engaged in this type of fishing was 34 compared with 29 during the 1970/71 season. Once again the landings made by boats using bottom trawls declined.

The 1972/73 winter herring fishery off the South Coast began in the week ended 4 November 1972. Landings during the period up to 31st December 1972 amounted to 229,824 cwt. as compared with 97,366 cwt. and 271,579 cwt. in the corresponding periods of 1971 and 1970 respectively.

The 1971/72 winter herring season off the north-west and west coasts continued until late February 1972. A total of 248,703 cwt. was landed during the season. This was a considerable improvement on previous years. Landings were made at Killybegs and Burtonport.

Although the main herring fishery off the North West Coast was during the period October 1971 to late February 1972 a substantial quantity of herrings, 64,715 cwt. was landed during the period March to September 1972. The 1972/73 Winter herring season off the North-west coast commenced in October 1972. Landings for the period October to 31st December, 1972 were 143,780 cwt. This represented a substantial increase over the previous year. Most of the landings were made at Killybegs, Burtonport and Kincasslagh.

Herrings continued to be landed at Galway and Rossaveal during 1971/72 season. Landings showed a substantial increase on previous seasons. This was due to the increased fishing effort and the use of paired mid-water trawls by boats from other ports. 47,065 cwt. were landed in the first three months of 1972. The winter herring fishery in Galway Bay commenced in December 1972.

The Autumn herring fishery off the South-west coast carried out by boats from Castletownbere and Dingle opened in the third week of

August and continued until early November. Herrings were more abundant than in the previous year, and this together with an excellent demand, resulted in a satisfactory season.

Catches of herring were also made in the Irish Sea. A high proportion of the catch was landed at Mornington for conversion to fishmeal and fish oil.

The greater part of the total landings of herring were frozen whole or rough packed and barrelled for export, while smaller quantities were exported fresh, or cured in more sophisticated ways. Herrings were exported to many countries including Netherlands, France, United Kingdom, Federal Republic of Germany, Belgium, Denmark, Poland, Sweden and Israel.

Exports of fresh, chilled or frozen herrings amounted to 380,418 cwt. valued at £1,890,008 as compared with 184,855 cwt. valued at £779,966 in 1971. The quantity exported in cured and marinated forms was 351,581 cwt. valued at £1,509,160 as compared with 300,952 cwt. valued at £974,176 in 1971.

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.
	cwt.	£	£
1972	941,840	2,116,157	2.24
1971	615,124	1,162,826	1.89
1970	894,677	1,275,442	1.43
1969	682,238	783,973	1.15
1968	452,160	496,753	1.10
1967	465,606	499,280	1.07
1966	293,300	399,312	1.36
1965	210,555	251,521	1.20
1964	160,929	155,440	0.97
1963	165,696	193,068	1.17

Sprats.—Landings of sprats increased from 108,867 cwt. in 1971 to 115,046 cwt. while the value of the catch increased by 9.2% from £59,825 in 1971 to £65,333 in 1972.

Mackerel.—Landings of mackerel amounted to 90,389 cwt. valued at £146,920 as compared with 61,126 cwt. valued at £117,764 in 1971. The average price was £1.63 per cwt. compared with £1.93 per cwt. in 1971.

The chief landing centres for mackerel were:—Killybegs, Castle-townbere, Valentia Harbour, Dingle, Galway, Schull, Howth, Castle-

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

TABLE 4

Year	Quantity	Value	Average Value per cwt.
	cwt.	£	£
1972	90,389	146,920	1.62
1971	61,126	117,764	1.93
1970	20,683	39,641	1.92
1969	31,801	45,352	1.43
1968	42,590	48,526	1.14
1967	44,196	51,163	1.16
1966	29,645	46,389	1.57
1965	40,213	45,853	1.14
1964	26,308	38,891	1.48
1963	14,980	33,753	2.25

SHELLFISH.—The value of the shellfish catch at £1,416,850 represented an increase of £108,527 over 1971. The principal increases were in Dublin Bay Prawns (+£109,147), lobsters (+£29,543), Crawfish (+£21,874).

Total landings for “Queen” scallops to 31st December 1972 were valued at £30,509.

Values of shellfish landings over the past ten years were:

TABLE 5.

Year	£
1972	1,416,850
1971	1,308,323
1970	1,102,071
1969	890,548
1968	735,030
1967	516,623
1966	579,161
1965	431,262
1964	420,114
1963	353,863

EXPORTS.—At £7,746,773 exports of fish and fishery products, including both sea fish products and freshwater fish products (see Part II of this Report) established a new record. Exports of sea fish products at £5,871,940 exceeded those of 1971 by £1,656,730 or 39%. Details of the exports are given in Appendix No. 4.

PERSONNEL AND VESSELS.—The overall number of men engaged in sea fishing continued to increase in 1972. The number engaged full time rose from 2,094 in 1971 to 2,174 in 1972 while the number of part-time fishermen increased from 3,707 to 3,968.

There was also an increase in the number of boats engaged in fishing in 1972 the total being 2,265 compared with 2,065 in 1971. The number of motor fishing vessels over 25 gross tons which are responsible for most of the wet fish catch rose from 275 in 1971 to 302 in 1972. There was also an increase in the number of motor vessels of 25 tons gross and under, which rose from 701 in 1971 to 763 in 1972.

Further details are given in Appendix No. 7.

TRAINING OF FISHERMEN.—The scheme for training boys as fishermen was continued in 1972. The period of training extends over twelve months, five months of which are spent at a shore course provided in temporary school premises at Merville, Co. Donegal, and for the remainder of the period practical fishing experience is acquired by the trainees working aboard selected fishing vessels. A group of 30 boys commenced training under the scheme on 1st February 1972 and at the end of the year were completing the practical side of the course. A second group of 23 boys commenced their training at Merville on 1st September 1972 and the course was still in progress at the end of the year.

13 fishermen were selected to participate in the shore course provided in co-operation with the Galway Vocational Education Committee towards equipping experienced fishermen to qualify as skippers and 11 of them were subsequently successful in obtaining Certificates of Competency under the Merchant Shipping Acts. Since its inception in 1958 the scheme has assisted 109 fishermen in obtaining their certificates. For fishermen who do not find the Galway course convenient, An Bord Iascaigh Mhara continued in 1972 to provide port courses at selected centres and, as a result, Certificates of Competency under the Merchant Shipping Acts were awarded to a further 31 fishermen.

AN BORD IASCAIGH MHARA.—The Board received from the Fisheries Vote 1972 a grant of £860,000 in aid of current and capital development and administration. Repayable advances totalling £580,000 were also made to the Board from the Central Fund mainly for the provision of boats and gear.

During 1972 there was a substantial growth in exports over 50% of which now go to EEC member countries. Working in close association with fishermen's trading co-operatives and individual exporters the Board carried out an extensive programme of market research and investigation work abroad aimed at the continued expansion of seafish and shellfish exports. Concentration of activity was on the

Continent where the marketing emphasis was on the diversification of Irish fish exports into the most remunerative outlets.

Work on the preparation of Irish Standard Specifications for fish and fish products in conjunction with the Institute for Industrial Research and Standards continued. A programme of inspection of fish processing factories was commenced in co-operation with the Institute for Industrial Research and Standards with a view to raising standards in the industry. Assistance was given to several firms to improve their production techniques and development work on items of new equipment for the industry was sponsored.

During the year ended 31st March 1972 the Board assisted Irish fishermen in acquiring 75 new and 22 second-hand boats. Financial assistance was also given to fishery co-operatives and coastal fish distributors for the provision of new or improved distribution centres at fishing ports. Grants were also made available to investors in pilot fish farming projects.

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 in 1972. Prosecutions were instituted against the skippers of six foreign vessels which had been arrested for illegally entering and fishing inside our exclusive fishery limits. Convictions on both counts were secured in five cases resulting in payment of fines and forfeiture of fish and gear. In the other case, the skipper was convicted on the first count only and a fine was imposed. In the conduct of these cases and in the enforcement of fishery protection measures generally, the co-operation of the Garda Síochána was readily available.

EXPLORATORY VESSELS.—During the year, the Department's exploratory fishing vessels, *Cú Feasa* and *Cú na Mara*, carried out a survey of the sea bed off the Clare coast with the object of identifying areas suitable for bottom trawling. Work of a similar nature was undertaken in Bantry, Dunmanus, and Kenmare Bays and, in addition, water samples were taken in Bantry Bay and current velocities investigated.

During the year, both vessels were made available to the Dublin Port and Docks Board in connection with an environmental survey of the River Liffey and Dublin Bay.

In addition the vessels assisted in research projects on nephrops, herrings, whiting, mussels, crawfish, and scallops.

The programme of work engaged in by these vessels received a serious set-back during the year by reason of an outbreak of fire on board the *Cú na Mara* which terminated its services as a research vessel.

MARINE WORKS.—At Killybegs Fishery Harbour Centre the construction of a new pier and servicing quay which will provide 630 feet of discharging and servicing space was commenced. The boring survey in connection with the provision of a new jetty at the Black Rock berthage Quay was completed and the preparation of the drawings and contract documents for the jetty was put in hands. At the Town Pier experimental modifications were made to some of the ladders; new kerbing was provided, and work on the provision of a new public lighting system was completed.

At Castletownbere Fishery Harbour Centre the building of the fish auction hall and port offices was completed. Development works on Danish Island, including the provision of a new wharf, a boat lifting system (syncrolift) and a boat storage and repair yard, were continued and the construction of a bridge to connect the eastern end of the island with the mainland was commenced.

In Dunmore East, apart from the laying of some underground cables, the completion of the boat lifting system (syncrolift) and the boat storage area, virtually all the development works, including the auction hall and port buildings, were finished.

Other fishery harbour improvement works were completed during the year at Portevlin (Fort Lenan), Co. Donegal; Emlaghmore and Moyrus, Co. Galway; Farraniarraigh (Bealtra) and The Glen (Ballinskelligs), Co. Kerry, and at Reen, Union Hall, County Cork. Minor works were carried out at Rossbeg, Ballysaggart, Burtonport and Killultán (Cassan Sound), Co. Donegal; Coney Island, Co. Sligo; Rosseroe, Sruffaun and Sruthán Bui (Lettermore), Co. Galway, and at Carrigaholt, Kilbaha and White Strand, Co. Clare.

A boring survey was carried out at Ballyglass, Co. Mayo, where a fishery harbour is to be provided.

Works in progress at the end of the year included the improvement of landing facilities at Burtonport, Innishboffin and Portaleen, Co. Donegal; Rinroe, Co. Mayo; Caladh Mór, Cleggan, Coolacloy, Furnais North, Roundstone and Sruthán Bui (Rosmuc), Co. Galway; Killee, Co. Clare and Moneycashen and Dingle, Co. Kerry.

Arrangements were being made at the end of the year to have improvements carried out at Benwee, Leabgarrow, Merville, Port (Inver) and Teelin, Co. Donegal; Ballyglass, Darby's Point, Doega, Kilcummin and Tullaghan Bay, Co. Mayo; Rossaveel, Killeany and Caladh O Dheas, Co. Galway and Cahirciveen, Knightstown, Renard Point, Dunquin and Cuas na h-Éige, Co. Kerry. Arrangements were also being made for the provision of lights and/or beacons in the Arranmore/Burtonport sea area, Co. Donegal and at Countra (Ventry), Co. Kerry.

The Survey Teams set up to make an appraisal of the landing facilities required to meet the present and expected needs of the fishing

industry on the coasts of County Cork and North Kerry completed their tasks early in the year. Field work on the survey of the coast of County Waterford was completed and arrangements were in hand at the end of the year to have a similar survey carried out on the coast of County Wexford.

EUROPEAN ECONOMIC COMMUNITY.—The Treaty relating to the accession of Ireland to the EEC was signed on 22 January 1972, with membership to become effective on 1st January 1973. The arrangements referred to in the 1971 Report in relation to the derogation negotiated by Ireland from the common access provision of the Community's fishery policy were incorporated in the Treaty. As provided in the Treaty, the acceding States, including Ireland, were supplied by the EEC with draft Regulations, Directives, etc. and given the opportunity of submitting their views thereon during 1972 in advance of membership. Four Regulations of particular interest to Ireland were made during the year:—

- (1) *EEC 2709/72* fixing the guide prices for certain varieties of fish in the Community;
- (2) *EEC 2850/72* fixing withdrawal prices for market intervention;
- (3) *EEC 2518/72* providing for the appointment of representative markets and ports in the new member States;
- (4) *EEC 2825/72* fixing a special guide price for plaice in Ireland.

The Community fixes guide and withdrawal prices each year for a number of varieties of fish, including herring, cod, black pollock, haddock, whiting, mackerel and plaice. The main purpose of the guide price is to determine price levels for intervention on the Community market. Prices at these levels are known as withdrawal prices and constitute the prices at which fish may be withdrawn from market in order to qualify for financial compensation from Community funds.

As indicated in the 1971 Report special arrangements apply to Irish fish prices in the five-year transitional period ending on 1 January 1978 during which these prices would be gradually aligned to the common EEC prices. Following consultations between representatives of the Department and of the EEC Commission it was agreed that the common guide prices for all of the varieties mentioned above, except plaice, would apply to Ireland despite the fact that market prices for these varieties were lower than in the Six. In the case of plaice Irish market prices were higher than in the Six and at Ireland's request it was agreed at a meeting of the Council of Ministers that a guide price higher than the common guide price would apply to plaice landed in Ireland. This resulted in the fixing of a higher withdrawal price for Irish plaice and the operation of a system under which levies would be charged on plaice imports into Ireland and subsidies granted to exporters on plaice exports from Ireland. It was agreed that for cod,

haddock and black pollock, the common withdrawal prices could apply in Ireland from the outset but as Irish market prices for herring, whiting and mackerel were considerably less than those of the Six, lower withdrawal prices would be necessary for these varieties. The relevant regulations fixing the withdrawal prices for plaice, herring, whiting and mackerel and the rates of levy and subsidy on plaice were not made until after the end of the year under review.

Member States are required to notify the EEC Commission of the prices of certain varieties of fish sold at representative markets and ports where a significant proportion of Community output is marketed. The figures thus supplied are taken into account in fixing guide prices for the varieties concerned. Dunmore East, Cobh and Killybegs were designated as representative ports in the case of herring and Killybegs in the case of haddock.

Several meetings took place during the year between representatives of the Department and the Commission to clarify aspects of existing regulations and proposals.

Ireland was represented by observers at meetings of the EEC Management Committee on Fishery Products as from October 1972.

Preparations for the operation of the Community fishery regulations in this country from 1st February, 1973 were put in hands during the year. Meetings to explain the provisions of the regulations were held with representatives of the different sectors of the Irish fishing industry. As producer organisations have a very important role to play in the operation of certain of these regulations, steps were taken by the Department during the year to encourage the early formation of such organisations. These included the holding of meetings with fishermen at a number of centres around the coast.

SCIENTIFIC INVESTIGATIONS.—Full details of the scientific investigations made in 1972 are published in *Sea Fisheries Bulletin* (No. 10) 1973. Seventeen *Fishery Leaflets* were also published during the year together with one issue of *Irish Fisheries Investigations*, Series B (Marine) the details of which are given on page 74.

Investigations into the herring stocks on various coasts were continued during the year and information on them were circulated to the persons interested by means of *Fishery Leaflets*, Nos. 36 and 37. As usual the fat content of herrings was determined from time to time and the results communicated to interested parties in the trade. Young herrings landed from the Irish Sea for reduction to fish meal and those taken on research cruises by the *Cú Feasa*, also from the Irish Sea, were examined in an effort to determine the adult stock to which they belonged. Exploratory cruises using the *Cú Feasa* were made during the summer off the south, south-west and west coasts to determine the density of young herrings in particular areas.

Because of the renewed interest in sprats, samples landed from the Irish Sea for reduction to fish meal were examined from time to time. With a renewed interest in mackerel, fat contents of this species were determined during the year and the results conveyed to the trade.

Work on plaice was continued at a low level during the year and a report on the plaice of the Irish Sea was in preparation at the close of the period under review. During the last quarter of 1972 a programme of port sampling and a research cruise by the *Cú Feasa* were undertaken with a view to collecting data on Irish Sea Whiting for submission to the appropriate Working Group of the International Council for the Exploration of the Sea.

Samples of fish landed for industrial purposes on the east coast were examined during the year to determine the proportion of white fish.

Work on the lobster and the lobster fisheries was continued during the year. An analysis of the catch and effort in the Irish lobster fishery was made for the fourth year running and the results were published in *Fishery Leaflet* No. 41. The annual lobster trap census was also continued and the results for 1971 were published in *Fishery Leaflet* No. 39. The catch, effort and size distribution in the lobster and lobster/crawfish fisheries from 1951 to 1970 were also analysed and the results were published in *Fishery Leaflet* No. 42. During the year advice was given to the public on the subject of the establishment of lobster storage pounds, the general principles of which were set out in *Fishery Leaflet* No. 33.

Investigations were continued on the crawfish (*Palinurus elephas*) and routine measurements with total serum protein levels at various times of the year were investigated. Observations were also made on the tangle-net fishery off the south-east and south-west coasts and some experimental tangle netting trials were undertaken. Crawfish were tagged off the south-west coast using dart and toggle tags. Preliminary work was undertaken on the collection of catch/effort statistics at sea with a view to determining the factors responsible for short term fluctuations in catch. Laboratory investigations into the conditions for storage of crawfish were resumed in the autumn of 1972. A holder of a studentship in fisheries science from the Department began an investigation in University College Cork into the sexual development of crawfish.

During 1972, 500 crabs (*Cancer pagurus*) were tagged at Schull, Co. Cork and a further 750 near Malin Head, Co. Donegal using a suture tag.

Sampling of Dublin Bay Prawns (*Nephrops norvegicus*) was continued on a small scale during the year but the material obtained in previous years was analysed and preparation of a report thereon was in an advanced stage at the close of the year.

Work on the oyster stocks in Tralee Bay was continued in 1972. The settlement of oyster spat was monitored and their subsequent growth observed. The movements of the tidal waters within Tralee Bay were investigated by means of drift buoys. Advice was given on oyster farming problems to members of the public and surveys were made of a number of potential oyster farming areas.

Surveys were made of the mussel stocks in Wexford, Waterford, Dungarvan, Youghal, Cork and Castlemaine Harbours and a *Fishery Leaflet* was prepared describing their potentials.

Investigations continued on scallops (*Pecten maximus*) and queens (*Clamys opercularis*) during the year. Samples of scallops from a number of areas were examined for size, age, maturity and growth rates. Similar information was also collected as regards queens from the west coast of Ireland.

Preliminary investigations were made of the cockle stocks in the Dundalk Bay area. The experiments on the introduction of the American Hard Shelled Clam (*Mercenaria mercenaria*), started in 1969, were completed during 1972 and a review of the potential for the species in Irish conditions was in an advanced stage of preparation at the close of the year.

One of the Assistant Inspectors of Fisheries has devoted a considerable amount of time to the study of oil pollution and has provided technical advice to the Limerick, Clare and North Tipperary Regional Development Team which had set up a working group to draw up contingency plans against such pollution in their area.

The research programme on the intertidal fauna in the inner part of Bantry Bay was extended by the appointment in November of a graduate research assistant, financed under a grant from Gulf Oil Terminals (Ireland) Ltd., which is administered by this Department. The Bantry Bay and adjacent offshore area was the subject of a temperature and salinity survey carried out in May and June with the aid of the *Cú Feasa*.

Work was continued on coastal and estuarine pollution problems and samples of water and of shore dwelling animals, mainly mussels, limpets and cockles, were analysed in the months from April to September for their content of "heavy metals" lead, copper, zinc, mercury and cadmium.

During the summer further steps were taken to investigate the littoral and sub-littoral flora and fauna of selected parts of Cork Harbour with the assistance of student bursars.

Members of the scientific staff continue to give advice to the public on a wide range of subjects connected with marine fishes and to identify unusual and interesting species of fishes taken in our waters.

During 1972 the interesting and rare species of fishes taken on various parts of the coast of Ireland included the following:—

- a. Six-gilled shark (*Hexanchus griseus*);
- b. Undulate ray (*Raiu undulata*);*
- c. White skate (*Raia alba*);*
- d. Sting ray (*Dasyatis pastinaca*);
- e. Rabbit fish (*Chimaera monstrosa*);
- f. Ocean pipe-fish (*Eutelurus aequoreus*);
- g. Greater fork-beard (*Phycis blennoides*);
- h. Shore rockling (*Gaidrophysarus mediterraneus*);
- i. Boar-fish (*Capros aper*);
- j. Ray's bream (*Brama brama*);
- k. Red mullet (*Mullus surmuletus*);
- l. Black bream (*Spondyliosoma cantharus*);
- m. Gilthead (*Sparus aurata*);*
- n. Red band-fish or snake-fish (*Cepola rubescens*);
- o. Greater weever (*Trachinus draco*);
- p. Oceanic bonito (*Katsuwonus pelamis*);
- q. Leopard spotted goby (*Thorogobius eppihiatius*);
- r. Streaked gurnard (*Trigloporous lastoviza*);*
- s. Norway top knot (*Phrynorhombus norvegicus*) and
- t. Trigger or file-fish (*Balistes carolinensis*).

Some specimens of these species, indicated by an asterisk, were taken on rod and line.

During the year a supplement to the *List of Irish Fishes* by A. E. J. Went and M. Kennedy (1969), published by the National Museum, Dublin was prepared for publication in the *Fishery Leaflet* series.

Two members of the Department's scientific staff continue to act as members of the Irish Specimen Fish Committee and they and other members of the staff identified, on behalf of the Committee, fish submitted as specimens.

ENGINEERING

Fishing Ports and Landing Places.—In continuation of the arrangements made in previous years to appraise the existing landing facilities and to make recommendations for works desirable to meet the present and expected needs of the fishing industry, survey teams were appointed to examine and make recommendations on fishing ports

and landing places in Waterford and Wexford and reports on the survey of North Kerry and Co. Cork completed in 1972 were submitted to the Minister. By the end of the year, the field work on the Waterford and Wexford surveys had been completed and work on the preparation of the final report for submission to the Minister was well in hands. As in former years, the teams engaged in these surveys acted under the Chairmanship of Mr. S. O Mealláin, Consultant to the Department. Membership consisted of representatives of the Department of Agriculture and Fisheries, Office of Public Works, Roinn na Gaeltachta (for Co. Cork and Co. Waterford), An Bord Iascaigh Mhara, An Bord Fáilte and from each of the County Councils for the area being dealt with. The Senior Surveyor (Hydrographic) of Fisheries Division continued to act as Secretary to these survey teams. Work continued on the implementation of recommendations made by survey teams in former years. These recommendations were reviewed and brought up to date where necessary, to take account of developments since the recommendations were originally made. Work was commenced on the provision of improved landing facilities at Burtonport and Portaleen, Glengad, Co. Donegal; work continued on providing improved facilities at Killala Harbour, Co. Mayo and final arrangements were made to commence development work at Rosaveel, Co. Galway. This particular project is being sponsored and financed by Roinn na Gaeltachta. In all these cases, responsibility for the design and the execution of the work rests with the Office of Public Works.

Positive steps were taken to press forward with the provision of improved landing facilities at the landing places listed under, following a review of the original recommendations to take account of developments at each site since they were made: Doonbeg, Seafield, Lisconnor, Co. Clare; Magheraroarty, Co. Donegal; Moneycashin, Co. Kerry; Portmagee, Co. Kerry; Teelin, Co. Donegal; Ard Thoir, Co. Galway; Carton, Blacksod Bay, Co. Mayo; Caherciveen, Co. Kerry; Curransport, Co. Donegal; Bunbeg, Co. Donegal; Kilkee, Co. Clare.

Work continued on the development of the Major Fishery Harbour Centres at Dunmore East, Castletownbere and Killybegs, where work commenced on a new landing pier and servicing quay and arrangements made to provide additional landing facilities at the Black Rock berthage area.

Marine Pollution.—The Water Quality Monitoring Survey of Cork Harbour area was continued during the year in collaboration with Cork Corporation, the Pfizer Chemical Corporation and University College, Cork. A survey of conditions at neap tide and spring tide every two months commenced in January and continued to September.

As in previous years, actual and prospective discharges of large quantities of effluent into tidal estuaries were investigated and recommendations made where necessary in the fishery interest.

Bye-Laws, Licences, Orders and Definitions.—Maps were prepared to

illustrate various bye-laws, orders, licences and other Statutory Instruments.

TECHNOLOGY

Fish Quality Regulations.—The Fish Quality Officers continue to supervise fish landings to ensure compliance with the Demersal Fish (Handling, Storage and Transport) Regulations, 1967. In 27 cases, it was found necessary to institute legal proceedings for contraventions of the Regulations. Convictions were secured in all of these cases plus the remaining four which had not been heard by the end of the previous year. The Ad Hoc Committee set up by the Department under the Chairmanship of the Inspector and Engineer continued to operate during the year with the assistance of representatives of the Department of Agriculture and Fisheries, An Bord Iascaigh Mhara and the Dublin Fish Market Wholesalers Association as a result of which a programme of works for the construction of a series of ice plants was agreed and put in hands.

Fishery Products—Export Control.—The control of the export of certain fishery products under licence in compliance with the order made in November 1971 by the Parliamentary Secretary to the Minister for Agriculture and Fisheries under the Agriculture and Fishery Products (Regulation of Export) Act, 1947, operated satisfactorily during the year in respect of those products for which the Institute for Industrial Research and Standards had formulated standard specifications. Export licences were granted for those products for which applicants were licensed by the Institute to use its standard mark.

Standard Specifications for Fishery Products. — The Inspector and Engineer continued to act as Chairman of the Working Group comprising representatives of the Department of Agriculture and Fisheries, An Bord Iascaigh Mhara, The Institute for Industrial Research and Standards and members of the fish trade to advise the Institute for Industrial Research and Standards on the formulation of standards for fishery products.

National Codex Alimentarius Committee.—The Sub-Committee on Fish and Fishery Products continued to advise the National Codex Committee on Codex matters of importance to Ireland arising in the formulation of the International Codex Standard for Fish and Fishery Products. The Sub-Committee under the Chairmanship of the Inspector and Engineer, consisted of representatives of the Department of Agriculture and Fisheries, The Institute for Industrial Research and Standards, An Bord Iascaigh Mhara, The State Laboratory and the Confederation of Irish Industries.

Electrified Nephrops Trawl.—Work on the development of an electrified nephrops trawl was resumed and tests were made with full-scale electrode array and live fish at the sea water pool at the Division's

field laboratory at Glenties, Co. Donegal. Two new energising units were tested on nephrops and on certain species of flat fish and encouraging results were obtained with all species. Sea trials will be initiated when certain problems regarding the design of a pressurised energiser housing have been overcome.

INTERNATIONAL AND OTHER CONFERENCES

a. *The International Council for the Exploration of the Sea*.—The Inspector of Fisheries and Scientific Adviser and the Inspector of Fisheries on the sea fisheries side of the Division represented Ireland at the annual meeting of the Council held in Copenhagen from 25th September until 4th October 1972. The Inspector of Fisheries who had been Chairman of the Shellfish and Benthos Committee from 1969 vacated the position on completion of his term of office and was elected a Vice President of the Council. This country's representatives took part in the discussions at the Shellfish and Benthos, Fisheries Improvement, Pelagic Fish Northern, Demersal Fish Northern, Statistics and Hydrographic Committees. Members of the staff contributed papers on lobsters, Dublin Bay Prawns (*Nephrops*) and the parasites of mussels to the appropriate committees. The Inspector of Fisheries and Scientific Adviser gave the *Open Lecture* on the subject of the history of the Council which he was invited to write when President from 1966 to 1969. His book on the history of the Council *Seventy years growing* was in an advanced state of printing at the close of the year. In his capacity as Chairman of the Shellfish and Benthos Committee the Inspector of Fisheries attended a meeting of the Liaison Committee, established to provide scientific information to the North East Atlantic Fisheries Commission. Two officers of the Department attended the symposium organised by the Council in the University of Aarhus, Denmark from 4th to 7th July on the subject of the dispersal of pollutants in the near shore zone.

b. *North East Atlantic Fisheries Commission (NEAFC)*.—This Commission was established under the International Fisheries Convention of London of 1959. The Assistant Secretary in charge of fisheries and the Inspector of Fisheries and Scientific Adviser represented Ireland at its annual meeting held in London from 8th to 13th May 1972. The Department's Inspector of Fisheries and Scientific Adviser, who had been Chairman of Regional Committee 2 and of the Infractions Committee was elected Vice President of the Commission. Amongst the subjects relating to marine fishes discussed were whiting in the Irish Sea and the Celtic Sea (Dunmore East) Herring Fishery.

c. *Second International Congress on the History of Oceanography*.—This Congress was held in Edinburgh from 12th to 20th September in conjunction with the Centenary celebrations of the voyage of H.M.S. Challenger. The Inspector of Fisheries and Scientific Adviser, who had earlier been invited to write a history of the International Council for the Exploration of the Sea contributed a summary paper on the history of the Council and also two other papers describing four nineteenth century expeditions organised by the Royal Irish Academy and the early role of the Royal Dublin Society in fisheries research and

development in Ireland. His papers were subsequently published in the two volumes comprising the *Proceedings of the Congress*.

d. *Challenger Society*.—This Society, which was established to promote an interest in oceanography, each year holds joint meetings with marine laboratories. One of the Assistant Inspectors of Fisheries attended a meeting of the Society in London on 20th and 21st January 1972 at which problems of interest to the Department were discussed.

e. *Oceanology International Exhibition*.—One of the Assistant Inspectors attended the conference held in conjunction with this exhibition in Brighton from 19th to 24th March when matters of interest to the Department were discussed.

f. *Visits to Marine Laboratories*.—During the year a number of Assistant Inspectors of Fisheries visited various laboratories in Great Britain, including the Burnham-on-Crouch, Conway and Lowestoft Laboratories of the British Ministry of Agriculture, Fisheries and Food, and laboratories of the British Museum (Natural History) and of Portsmouth Polytechnic.

g. *UN Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor Beyond the Limits of National Jurisdiction*.—The Inspector and Engineer attended the meeting of this Body held in Geneva in July and August. This Committee has been charged with the necessary preparations for the UN CONFERENCE ON THE LAW OF THE SEA to be held in 1974. The Inspector and Engineer furnished appropriate technical advice in relation to fishery matters arising in the preparation for the Conference for which a Preparatory Working Group has been set up by the Department of Foreign Affairs.

h. *Codex Alimentarius Committee on Fish and Fishery Products*. — The Department's Inspector and Engineer attended as a delegate at the annual meeting of the Committee on Fish and Fishery Products of the Codex Alimentarius Commission which was held at Bergen, Norway, in October in connection with the preparation of draft international standards for various fishery products.

i. *National Committee for Geodesy and Geophysics*.—The Inspector and Engineer continued to act as the departmental representative of this Committee.

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

PART II.

INLAND FISHERIES

Details of the catches of salmon, trout and eels in the various Fishery Districts during the year under review are given in Appendices 11 to 17 of this Report. As customary, the catches made in the Foyle Fisheries Commission area, formerly the Moville Fishery District, are not included but are given in a special section of this Report.

In 1972 the total catch of salmon and grilse, was 499,068 fish with a weight of 3,690,111 lb. and valued at £2,140,266, compared with 466,361 fish, weighing 3,292,819 lb. and valued at £1,317,124 in 1971. The overall average weight at 7.40 lb. was considerably in excess of that for 1971 (7.06 lb.), which was accounted for by, firstly a slight increase, which is referred to below, in the numbers of early running salmon, but mainly because of the relatively high average weight of the main, grilse, component of the catches.

Weather conditions favoured netting during the main run of grilse for the fourth year in succession. Angling was adversely affected in some areas by low water at that time but catches, 23,748 fish, weighing 187,739 lb. and valued at £108,889, were considerably up on the corresponding figures for 1971 (16,963 fish weighing 133,568 lb., valued at £53,427) (see Appendix 16).

Comparable salmon catch figures for nets and rods for the years 1970, 1971, and 1972 are given in Appendix 12. In 1972 the catch of salmon and grilse (by weight) was distributed as follows:—

Drift nets	...	63.6%
Draft nets	...	24.4%
Stake nets, snap nets, weirs and other commercial methods	...	6.9%
Rod and line	...	5.1%

The proportion of fish taken by drift nets showed a marked increase in 1972 on the previous two years.

The total number of licences of all kinds for angling for salmon and sea trout was 9,727 compared with 10,769 for 1971. The average catch of salmon and grilse per licence in 1972 was 2.44 fish weighing 19.31 lb. and valued at £11.19 compared with 1.58 fish weighing 12.4 lb. and valued at £4.96. The average weight of the rod caught fish in 1972 was 7.9 lb. or almost exactly the same as in 1971. The highest average weight for rod caught fish (11.6 lb.) was, as for a number of previous years, obtained in the Drogheda Fishery District. Slightly lower average weights were obtained in the Dundalk (10.5 lb.) and Wexford (10.0 lb.) Fishery Districts. In these three districts the rod

catch is made up largely of salmon which have spent two or more years feeding in the sea, rather than of grilse which spend less than two years feeding in the sea. On the other hand the average weight in most of the western fishery districts tends to be much lower because the catch is made up almost entirely of grilse.

During 1972 the runs of small spring fish (two years feeding in the sea) and to a lesser extent the large spring fish (three years feeding in the sea) appear to have been greater than for the previous four years. Consequently catches early in the season on both rods and by commercial methods were somewhat better than have been experienced for a few years prior to 1972.

The Corporation of Dublin Wholesale Fish Market in 1972 handled 124,332 salmon and grilse weighing 943,420 lb. compared with 135,967 fish weighing 984,647 lb. in 1971. In 1972 this market handled about 23% by number and 24% by weight of all fish taken in the country, outside the Foyle area.

Details of the catch of sea trout in 1972 in the various Fishery Districts are given in Appendix 13. The total catch in 1972 amounting to 71,684 lb. was lower than in 1971 (87,872 lb.), whereas the value £35,842 was slightly up on that of 1971. As explained in earlier reports very little specific commercial fishing for sea trout is undertaken in this country and most sea trout are obtained on rod and line or as a bye product of commercial salmon fishing. Because of the small size of some catches it is thought that many anglers and commercial fishermen do not record their catches accurately so the figures given in Appendix 13 probably represent a minimum catch rather than the true figures. The catch of sea trout, as returned, was distributed by weight as follows:—

Rod and line	...	56.6%
Draft nets	...	34.5%
Drift nets and other commercial methods	...	8.9%

The catch of sea trout on rod and line was 40,559 lb. or a considerable reduction on that of 1971 when the catch by this method was 54,379 lb. Unlike salmon the average catch of sea trout per licence gives a poor indication of the abundance of this species for many of the Fishery Districts where sea trout are to be found, because few anglers specifically fish for sea trout. In some districts, however, such as the Connemara Fishery District, which is an important sea trout area, the average catch per licence at 17 fish weighing 23.4 lb. does give some indication of the potentiality for sea trout fishing there.

As mentioned earlier drought conditions prevailed in many rivers around the peak of the grilse runs and escapement into fresh water was thereby adversely affected at that time. Consequently angling was also adversely affected. In some of the spring fish rivers, however, because of satisfactory water levels and somewhat improved

runs of salmon the catches on rod and line were a marked improvement on those of 1971 and previous years.

Most rivers had reasonably good runs of smolts to the sea during 1972 and whilst water conditions made observation of the spawning stocks difficult in some areas many rivers had fairly good stocks of spawning fish.

Ulcerative Dermal Necrosis (UDN) continued to affect salmon and to a lesser extent, sea trout and brown trout stocks during 1972 but all indications were that the incidence of the disease was generally much lower than in previous years. Outbreaks of disease were still somewhat serious in the Rivers Lee and Bandon, and to a lesser extent the Blackwater. Some other smaller rivers were affected by disease. Despite the presence of diseased fish in the rivers mentioned fairly substantial numbers of healthy or clean fish were obtained on rod and line and fish taken commercially were virtually free of disease. The effect of the disease on brown trout during the year was small and, as in previous years, disease was not reported from species of freshwater fishes other than the salmonids. In general UDN only appeared to be serious in the less warm months of the year, the incidence of the disease, except in a few areas, declining rapidly with the summer rise in temperature.

In the 1971/72 season salmon ova were imported for restocking purposes to offset UDN as follows:—

Norway	...	410,000 ova
Scotland	...	150,000 ova
Sweden	...	30,000 ova

Sea trout ova, numbering 250,000 were also imported from Scotland.

As in previous years the returns for the catch of eels (Appendix 16) are incomplete. The quantity returned amounts to 110,293 lb. of eels valued at £44,116. However, from other evidence it is clear that the catch of eels was much larger amounting to approximately 180,000 lb. with a value of approximately £72,000. The catch of eels would appear to have been less in 1972 than for some years past.

INLAND FISHERIES COMMISSION. — The Commission issued two further interim reports during 1972. One was concerned with the regulation of commercial salmon fishing in estuarine and coastal waters other than drift netting at sea, which was covered in the first report. The other dealt with pollution and suggested measures to prevent the situation from deteriorating further. Action taken on the two reports on salmon netting is as indicated (see also page 38).

EMPLOYMENT IN THE INDUSTRY.—Exclusive of persons employed on the marketing and transport of fish a total of some 6,507 persons found either whole-time or part-time employment in inland

fisheries during the year. The figure includes 4,559 persons estimated as engaged in netting for salmon under common law right, 414 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 on protection work, 150 engaged in development work on behalf of the Inland Fisheries Trust Inc. and the remainder employed by proprietors of commercial salmon fisheries, by sport fishery owners or by angling associations.

INSTRUMENTS OF CAPTURE.—The total number of fishing licences of all kinds issued during the year was 12,134.

The totals in recent years were:—

1971	...	12,975
1970	...	13,666
1969	...	12,808
1968	...	11,796
1967	...	12,626
1966	...	13,809
1965	...	14,647
1964	...	13,598
1963	...	11,343
1962	...	10,479

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.

EXPORTS OF FRESHWATER FISH.—Salmon:—The total quantity of salmon exported in fresh, chilled, frozen and smoked forms was 22,326 cwt. compared with 21,571 cwt. in 1971. Total value of these exports rose from £1,361,685 in 1971 to a record figure of £1,762,052.

Details for the two years are as follows:—

	1972		1971	
	cwt.	£	cwt.	£
Fresh, chilled and frozen salmon ...	21,813	1,693,145	20,831	1,282,851
Smoked salmon ...	513	68,907	740	78,834

Of the total quantity of fresh, chilled and frozen salmon exported in 1972, 15,756 cwt. went to Great Britain, 2,498 cwt. to France, 1,684 cwt. to the Six Counties, 1,333 cwt. to Spain, 163 cwt. to Belgium. The smoked salmon was exported mainly to Great Britain (215 cwt.), U.S.A. (94 cwt.), Federal Republic of Germany (45 cwt.), Switzerland (41 cwt.), Netherlands (28 cwt.) and Austria (26 cwt.). The average

export price of fresh, chilled or frozen salmon was £77.62 per cwt. as compared with £61.58 in 1971. The foregoing figures include landings of salmon in County Donegal from waters in the area administered by the Foyle Fisheries Commission.

99 licences to export salmon under the Agricultural and Fishery (Regulation of Export) Act, 1947 (Export of Salmon) Order, 1954 (S.I. No. 275 of 1954) were issued during the year.

Rainbow Trout.—Exports of rainbow trout in 1972 amounted to 1,810 cwt. valued at £50,881 as compared with 1,882 cwt. valued at £55,198 in 1971.

Eels.—Exports of eels in 1972 amounted to 1,749 cwt. valued at £61,900 as compared with 2,297 cwt. valued at £76,610 in 1971.

EEL FISHING — DEVELOPMENT. — As indicated in the paragraphs dealing with scientific investigations and engineering, work continued during the year on the investigation of eel stocks and eel fishing techniques and advice and information on eel fishing was given to interested persons. A report on the stock investigations carried out in the period 1965-1971 was published.

Thirteen eel fishery authorisations were issued during the year, bringing the number of eel fishing engines operated under such authorisations to 47.

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

The output of salmon ova in the 1971/72 spawning season amounted to 2,859,000. 200,000 salmon ova/fry were distributed from the Department's hatchery at Glenties, Co. Donegal.

Nearly 3 million brown trout ova were handled at Inland Fisheries Trust hatcheries and production for the year was nearly 2½ million consisting of eyed ova, fry, summerlings, fingerlings, yearlings and adult trout. Two million of these were released into trout waters being developed by the Trust and about a ½ million were sold to Angling Clubs and other fishery interests.

55,000 rainbow trout ova were handled and production for the year was 45,430 including summerlings, fingerlings, yearlings and adult fish. Of these 42,320 fingerlings and adult fish were stocked in Trust rainbow trout waters, and 500 fingerlings were sold by the Trust.

SCIENTIFIC INVESTIGATIONS.—During 1972 further investigations were made into the fluctuations and composition of the salmon runs based on scale samples and monthly catch figures from representative major salmon fisheries with a view, *inter alia*, of assessing the relative numbers of salmon (two or more years feeding in the sea)

and grilse (less than two years feeding in the sea), particularly in relation to the Greenlandic and other high sea fisheries.

The available evidence, based on the scientific work of officers of the Department, indicates that there was an improvement in spring fish runs in 1972 compared with those for 1971. The grilse runs were maintained at a high level. There was also evidence of a slight increase in the number of previous spawners, compared with that for 1971. The drastic reduction in fish of this group was, no doubt, due in earlier years to the adverse effect of UDN on spent salmon and grilse, an effect which seems to be declining more recently.

Only a small number (209) of salmon kelts were tagged in 1972 and only three recaptures were made. A single recapture of a smolt tagged on the River Shannon in January 1971 was also made. During 1972 four fish tagged as feeding fish off the Faroe Islands were recaptured as grilse along the Irish coast and a fish tagged in the Labrador Sea as an adult was recaptured off Tory Island in July. This is the first instance of a fish tagged on the North American side of the Atlantic being recaptured in Europe. Eleven fish tagged as smolts in foreign countries were recaptured along the Irish coasts during 1972. One of these had been originally tagged in Norway and the remainder in Scottish rivers. Four of the Scottish tagged fish were recaptured off the Donegal coast and the remainder along the south coast of Ireland from the River Maine in County Kerry to Waterford Harbour.

Two members of this Department's staff who act as Ireland's representatives on the Joint Working Party on North Atlantic salmon established by the International Council for the Exploration of the Sea and the International Commission for the North-West Atlantic Fisheries provided information on the fluctuations in the runs of salmon etc. in Irish rivers at a meeting of the Joint Working Party held in Dublin.

During the year investigations were continued on the River Boyne into the effect of drainage operations on the stocks of fish and the productivity generally of the various tributaries. Investigations into the productivity of certain parts of the River Owenea system were continued during 1972. The fecundity of salmon in the River Owenea was also investigated.

A detailed report of the scientific work done on the freshwater eel from 1965 to 1971 was prepared during 1972 for publication in *Irish Fisheries Investigations Series A (Freshwater)*. It was concluded that the poor catch of eels resulted more from poor stocks than from inefficient methods of fishing, that because of the poor growth rate stocks could easily be depleted by intensive fishing of yellow (feeding) eels and that stocks and, therefore, catches could be improved by transplantation of elvers. It was also concluded that transplantations could be done without damage to the stocks of fish sought by the angler.

In the summer of 1972 the national surveys of eel stocks was con-

tinued and eel stocks in the Cork Blackwater, Loughs Conn and Gill, the Shannon estuary, the Cloonee Lakes near Kenmare, the Claregalway River and certain lakes in the Erne system were investigated.

Surveys of the River Roughty and Sheen were made during the year in order to assess their productivity from the salmon point of view. A survey of part of the Claregalway River, which had been adversely affected by a "fish kill" caused by pollution, was also undertaken to ascertain whether the pollution had had a permanent effect on the capacity of the river to carry populations of salmon and trout.

A preliminary survey was also made of the rainbow trout populations in Lough Shure on Aranmore off the coast of County Donegal, in relation to the lowering of the lake level.

As usual regular visits were paid to fish farms during 1972. Particular attention was paid to the collection of economic data from the smaller farms covering a number of years. The data collected formed the basis of a study of the cost/benefit results in smaller units under the prevailing Irish conditions. Production in 1972 showed an overall increase over that for 1971, but there was a drop in production by one large unit because of heavy losses of fry from the 1971 hatch, reflecting a poor return of fingerlings for the 1972 fattening season. An outbreak of Infectious Pancreatic Necrosis (IPN) occurred at one farm but losses were small and it appears that the strain of IPN had a low virulence.

Excellent results were obtained both as regards survival and growth rate of young fish during 1972 and some of the 1972 hatch were ready for sale in October, well before the normal time expected. The change over to concrete or asbestos tanks for early rearing to combat whirling disease has had an important effect in this regard.

A programme of selective breeding of brood stock was started on two small farms by selecting parents of known high fecundity, apparent resistance to disease and fast growth rate.

During the year attention was paid to UDN disease which generally showed a decline compared with earlier years. Generally the disease has not had a marked detrimental effect on returning adults and some rivers have now had substantial runs of fish derived from spawning stocks which had been badly affected by UDN. Work on the aetiology of the disease was in progress at the Department's Veterinary Research Laboratory at Abbotstown, Co. Dublin. By special techniques it was found possible to infect adult salmon, brown trout and sexually active rainbow trout as well as immature salmon, brown trout and rainbow trout.

During the year the Inspector of Fisheries on the Inland Fisheries side acted as liaison officer between this Department and the Galway Board of Conservators in the operation of the Cong salmon rearing station. Owing to low rates of water flows in 1971 the growth rate of

the young salmon was poor and the fingerlings had to be retained over the winter before being planted out. Similar low water flows were experienced in 1972 but in this case the fingerlings were released in the autumn. Brood stock for the artificial propagation of salmon was obtained from *inter alia*, the Glencullen River flowing into Carrowmore Lake. These fish were stripped and the ova were laid down for hatching at the close of the year.

Investigations were continued into the crayfish of the White Lake on the Meath/Westmeath border and a paper on the crayfish of Ireland was prepared for the First European Symposium on Freshwater Crayfish (see page 42). A single specimen only of char was sent for identification in 1972 from Lough Leane (Killarney).

The scientific staff of the Fisheries Division continued to examine sets of scales and to identify specimens of freshwater fish on behalf of the Irish Specimen Fish Committee and for the general public. The staff also advised members of the public on the management of freshwater fisheries generally. Members of the staff also contributed papers and took part in a number of scientific meetings, etc. as indicated elsewhere (page 41).

A member of the scientific staff acts as Director of Research for the Salmon Research Trust of Ireland and also as scientific adviser to the Foyle Fisheries Commission. In collaboration with the staff of the Commission research work on the salmon of the River Foyle and its tributaries was continued and in conjunction with officers of the Belfast Ministry of Agriculture a report on the comparison of the salmon and grilse of the Rivers Foyle and Bann was prepared.

Holders of Departmental studentships undertook research on freshwater fisheries or associated subjects as follows:—

- a. A comparative study of the fauna and the physico/chemical characteristics of the Irish lakes and the Trichoptera in some small lakes in Counties Cavan, Clare, Kerry and Wicklow.
- b. The haemoglobin and eye proteins of hybrids of fish.
- c. An ecological survey of the zoobenthos of Lough Corrib, with particular reference to the dominant food organisms of eels.
- d. A study of protein polymorphism in Atlantic salmon.
- e. The distribution, substrate preferences, history, growth rates and sex ratios in *Asellus aquaticus* and *M. meridianus* and
- f. Investigation of phytoplankton in Lough Garadice and St. John's Lake in County Leitrim.

ENGINEERING

Arterial Drainage.—Work continued on the major arterial drainage schemes for the catchments of the Rivers Moy, Corrib-Headford and Boyne, and this was kept under observations. There were regular

consultations with the officers of the Office of Public Works to ensure that all practicable steps were taken to safeguard fishery interests in accordance with the plans drawn up by Fisheries Division prior to the implementation of these schemes. Drainage operations on the River Moy catchment and in that of the Corrib-Headford reached the concluding stages but in view of the proposal to expand the Corrib-Headford scheme to include the catchment of the Cornamona River, this was surveyed and a programme of rehabilitation works designed for it which were accepted by the Office of Public Works and will be implemented at the appropriate time.

It is the intention of the Office of Public Works to undertake drainage work in the catchment of Lough Mask and Lough Carra and at the request of the Department, the Inland Fisheries Trust collaborated with the Department in the carrying out of a comprehensive pre-drainage survey of the fishery interests in both these lakes and of their tributary streams. This included a hydrographic survey of the lakes which was undertaken by the Inland Fisheries Trust. This work was necessary as part of the investigation into likely effects on the fishery interest of any lowering of the water level of the lakes likely to occur following the completion of the drainage work. Particular attention was paid to post-drainage conditions on Lough Carra about which local anglers have expressed considerable concern.

An investigation was carried out by the Department to identify the fissured limestone areas in the bed of Lough Mask through which water seeps underground to resurface at the Mill Pond supplying Cong Salmon Hatchery. It was desirable to establish whether or not the execution of the drainage works would affect the flow of water by this route to ensure that there would be no diminution of the water supply for the hatchery.

Rehabilitation works which were designed by this Department in collaboration with the Inland Fisheries Trust were carried out in the Cross River by the staff of the Inland Fisheries Trust, the cost of the work being borne by the Office of Public Works. Similar type works designed by this Department for the Rivers Clady, Skane, Knightsbrook and Boycetown which are sub-catchments of the River Boyne catchment area were undertaken by the Office of Public Works. Arrangements were also made with the Office of Public Works to rehabilitate spawning areas on the completion of drainage work in each sub-catchment.

The Bunree River in the Moy catchment which was a cause for concern because of the maintenance work carried out in the previous year, was kept under observation but as, apart from some bank protection work, there was no maintenance work undertaken this year it was noted that the river quickly settled down into a natural regime. Final arrangements were made for the rehabilitation work necessary for the Gweestion, Pollagh, Glóre and Trimoge Rivers, tributaries of the River Moy, for execution the following year.

As part of the work of the Boyne Drainage Scheme, the installation

of an automatic electronic salmon counter at Blackcastle Weir on the main River channel near Navan, was completed by the Office of Public Works in accordance with the design prepared by the Department. This counting unit will be employed in monitoring salmon runs during the duration of the drainage scheme and thereafter and the data acquired utilised in assessing the effects of the drainage work on salmon stocks.

There were consultations with the Office of Public Works about a number of drainage schemes in the course of design. In particular, there were discussions about the coarse fishing interests in the River Erne catchment and the steps necessary to preserve these. The likely effects of the Kilcolgan River drainage scheme on the oyster beds at Clarinbridge in the estuary of the river were investigated. The Department's officers collaborated with the Office of Public Works in the Cost Benefit Analysis of the proposed river Maigue catchment drainage scheme which was undertaken during the year. The Department also collaborated with the Office of Public Works by supplying information on various matters of fishery interests and the impact of drainage work on these in the past or expected in the future.

Hydro-Electric Installations.—The various hydro-electric installations continued to be kept under observation as necessary and the effects of their operation on fish life observed.

Investigation of Fish Movements.—The counting of smolts migrating downstream on the River Corrib as indicated by those caught in the fish trap at Galway Sluice Barrage commenced on 26 March and continued until 26 May when the main run ended. 45,000 smolts were trapped and released this year compared with 77,560 in 1971; 14,700 in 1970 and 85,947 in 1969. The trap was out of commission due to the heavy floods for the period April 10-17 inclusive when very large numbers of smolts were observed moving downstream through the sluice gates of the barrage and so by-passing the fish trap. The maximum number of smolts taken from the trap in one day was 10,000 on 24 April which was the same as that noted on 3 May, 1971.

96 salmon kelts, 4 brown trout, 7 eels, 6 perch and 2 pike were also trapped in this installation and released.

The smolt trap on the Glen River adjoining the salmon hatchery at Glenties, Co. Donegal, was damaged by floods early in the year but was repaired in time for the trap to be operational during the smolt run. A design was prepared for a new smolt trap to replace the existing one and arrangements were made with the Office of Public Works to undertake its construction and to have it operational for the 1973 smolt run.

Electronic Fish Counters.—The major fish counting installation at the Salmon Leap, Furnace, constructed by the Salmon Research Trust in accordance with the design prepared by this Department,

continued to operate successfully during the year. The minor alterations to the adult trapping installation which were designed and carried out in the light of operating experience proved successful under operating conditions. The Salmon Research Trust of Ireland Incorporated reports the following numbers of fish to have been trapped and counted in this installation during the year :

Salmon and grilse	...	450
Sea trout	...	420
Smolts (salmon)	...	10,397
Smolts (sea trout)	...	4,397
Kelts (salmon)	...	86
Kelts (sea trout)	...	966

The adult salmon electronic counting installations installed on the Rivers Corrib, Bunree, Liffey, Inagh, Blackwater, Bandon and Boyne were maintained in operation during the year. The numbers of fish recorded by these instruments are summarised as follows:—

River	Location	Total Count	Daily Maximum	Date
*Corrib	Galway	3085	218	12 June, 1972
Bunree	Downhill	758	89	8 Nov., 1972
*Liffey	Islandbridge	420	23	13 Jan., 1972
Inagh	Ennistymon	3785	741	27 Nov., 1972
Blackwater	Clondulane	2995	236	30 Oct., 1972
Bandon	Bandon Weir	1940	222	30 Oct., 1972
*Boyne	Blackcastle Weir	4084	251	3 Sept., 1972

Fish Culture Installations.—The salmon hatchery and rearing station at Cong, Co. Mayo, continued to operate under the control of the Galway Board of Fishery Conservators. Once again, the recurrence of drought conditions in 1971, similar to those experienced in 1970, gave rise to difficulties due to lack of water for the rearing operation. Nevertheless, the following numbers of salmon were produced in this installation and distributed as follows:

100,000 yearlings to the River Moy

50,000 yearlings to the River Erne

*Faults developed in the underwater gear at Galway and Islandbridge during the year and the recorded count may be lower than actual. New underwater gear has been designed and will be installed as soon as river conditions allow.

*The Boyne unit came into operation on 1st April 1972. Operational difficulties were experienced from 29 November to 31 December but a visual count of 83 fish was recorded.

50,000 1+ fish to the Rivers Clare, Abbert and Grange in the Corrib System

100,000 underyearlings to the River Moy

30,000 underyearlings to the Rivers Clare, Abbert and Grange

50,000 underyearlings to Lough Corrib and Cong River.

A sounding survey of the Mill Pond supplying the hatchery was carried out in order to design remedial works which will succeed in staunching the weir and thereby preventing the escape of water and ensuring that it will be available at times of drought flow to operate the hatchery installation.

A new salmon trap and salmon ova incubation unit of novel design was built on the Glencullin River, a tributary of Carrowmore Lake, Co. Mayo, by the Bangor Board of Fishery Conservators in accordance with the design prepared by this Department. 250,000 ova were obtained and laid down in the incubation unit.

Trapping of the adult fish is effected by stopping their passage upstream by an electric barrier. Two horizontal electrodes have been fastened to the paved invert of a road bridge and they extend across the full width of the river channel. These electrodes are energised and the passage upstream of fish is thereby impeded.

By means of nets, fish held up below the barrier are removed and placed in holding ponds which have been provided as part of the incubation unit.

When the fish have been stripped, the ova are laid down in circular plastic incubation trays which are stacked one above the other in units through which the water flow proceeds from top to bottom; the arrangement of each tray being such that an upward flow of water is provided through the mesh which supports the ova in each tray before passing down to the tray beneath.

The salmon hatchery and rearing station which is being built at Virginia, Co. Cavan, by the Office of Public Works in accordance with the plans prepared by Fisheries Division, was commenced and the hatchery unit was completed by the end of the year by which time 250,000 ova had been laid down in the new hatchery.

Work was commenced on the construction of the rearing ponds and substantial progress had been achieved by the end of the year.

This unit is being built by the Office of Public Works at the request of Fisheries Division, as part of the rehabilitation works being undertaken by that office to make good any deficiencies arising from the execution of the Boyne drainage scheme.

The programme of works requested by Fisheries Division included

the re-design and renovation of the salmon trapping installation at Blackcastle Weir on the River Boyne. This work was likewise carried out by the Office of Public Works in accordance with the design prepared by Fisheries Division.

The trapping unit was completed in time only to trap the end of the spawning run but sufficient salmon were obtained to provide the 250,000 ova which were laid down in the Virginia Hatchery.

Close collaboration was maintained between the Engineers of the Office of Public Works in charge of the project and the Engineers from Fisheries Division who advised on all points of difficulty arising insofar as fishery interests were concerned.

Rainbow Trout Fish Farming.—Existing fish farm units were kept under observation and engineering advice provided where requested on improvements and on the suitability of sites being considered for development for fish farming purposes. One new fish farm unit was constructed and put into commission during the year at Knockrath, Rathdrum, Co. Wicklow, following an examination and approval of the proposal submitted.

Early rearing facilities in accordance with the design of Fisheries Division were constructed at the fish farm of Mr. Kirwan, Goatsbridge, Co. Kilkenny. Prospective fish farm sites at Cork, Midleton, Rathpeakin and Skibbereen were investigated and designs prepared for applicants where suitable conditions were found.

Eel Fishery Development.—As in former years, a number of eel fishery installations in existence or projected were investigated and the owners advised on desirable improvements to increase their efficacy or otherwise to ensure that the structures complied with the Fisheries Acts.

The experimental eel fishing operation undertaken at the sluice flap on the Shannon embankments at Clenagh, Newmarket-on-Fergus, Co. Clare, were conducted nightly from November on. Considerable operational difficulties were experienced arising from the peculiar features of this site and these were largely overcome. The arrangement provided here is a conventional eel fishing net which has been mounted on a portal frame so designed and erected in position to house the flap valve outlet located in the embankment through which the water passes to the main river channel. The results of this year's operation are at present being evaluated and the results to date indicate that such eel fishing operations are worthy of further study and experimentation.

Application of Electricity to Inland Fisheries.—Research and development work on the application of electricity to inland fisheries was continued by the Department's consultant at the field laboratory at

the State Salmon Hatchery at Glenties, Co. Donegal, in association with the Inspector and Engineer.

Electric Barriers.—The electric barrier which was installed at the mouth of the Trimblestown River in 1971 proved successful in almost completely eliminating salmon spawning in this tributary during drainage operations. This was confirmed by redd counting which showed virtual elimination of redds in this stream and a compensating increase in neighbouring streams.

On completion of drainage work on the Trimblestown River, the barrier was transferred to the mouth of the Stoneyford River which is the next spawning tributary scheduled for drainage. At this site, the energising unit had to be powered from a portable diesel generator as a mains supply was not available locally. Difficulties posed by this form of operation were overcome with experience, but only after some spawning fish had already escaped past the barrier.

The electric barrier on the Glencullin River at Glencullin Bridge, Co. Mayo, was again operated successfully as an adjunct to trapping brood stock salmon for the Carrowmore salmon incubation unit.

A barrier of the same type was installed on the apron of Kelly's Weir on the River Lennon at Ramelton, Co. Donegal, to direct fish to the electronic fish counting unit which has been installed at the head of the fish pass. This utilisation of electric barriers in conjunction with fish counting units provided in weirs as part of fish pass installations greatly extends the scope for use on large weirs of resistivity water bridge automatic counters.

Preliminary experiments carried out in the sea water pool at the field laboratory in Glenties Hatchery indicate that the pulse generator developed for the electrified prawn trawl will be suitable for energising electric barriers in salt water. This offers a prospect of solving a long-standing problem of preventing salmon from entering cooling water and turbine outlets in estuaries.

Electronic Salmon Counter. — Two new fish counting installations were completed during the year—one at Kelly's Weir on the River Lennon, Co. Donegal, and one at Blackcastle Weir on the River Boyne, Co. Meath.

During the year, the existing resistivity water bridge counting unit was modified to permit its use in conjunction with a multi-channel print-out data-logger.

Further work has been done on the development of a wide-gap counter operated by the muscle-action potential of ascending fish. More sophisticated amplifiers were designed and built for this unit and tested under laboratory conditions. These will be subjected to full scale river trials on the completion of a new underwater electrode

system which is being installed at a test weir where special arrangements are being provided to eliminate background "noise".

Work has begun on the development of a new type of fish counter in which a tuned inductive loop will be used in conjunction with an absorption type grid dip oscillator. This type of counter would be suitable for "wide gap" counting at swim-weirs and one of its merits would be that the signal pick-up cable which forms the inductive loop would be contained within the weir apron and no surface electrode which would be subject to damage would be required.

The electronic trap for downstream migrant fish, code-named PET, was further tested and the performance was evaluated still further. An improved type trap was constructed at a new site and existing guiding equipment was used during the smolt migration and the silver eels migration. Proper evaluation of performance was made difficult by adverse river conditions and dispersed migration patterns and no conclusions could be drawn from the trials. A new approach to this project may have to be devised.

River Improvement Schemes.—A programme for the rehabilitation of the runs of spring fish on the Rivers Owenmore, Feale and Slaney was initiated with the undertaking of comprehensive surveys of these rivers. The location and extent of spawning grounds and nursery areas are being recorded and calculated as a basis for determining the stock potential and for improving spawning and survival of juvenile fish. Factors such as obstructions to migrations, availability of holding pools and sources of pollution and other factors, all of which may effect productivity and well being of juvenile and adult salmon, are being examined, recorded and evaluated and a study is being made of existing patterns of exploitation of stocks.

The works outlined above have been commenced on all 3 rivers and were substantially completed on the Owenmore River and the River Feale.

A rehabilitation scheme of spawning beds was carried out under the direction of one of the Division's supervisors on the spawning grounds of the Owenea River, Co. Donegal.

Fish Passes.—Investigations and preliminary surveys were carried out at a number of sites where fish passes may have to be provided to facilitate salmon movements.

The Department of Defence completed the construction of a fish pass in a weir being erected by that Department on the Little Slaney at Coolmoney Army Camp in accordance with the design of this Department. The fish pass is working satisfactorily.

A preliminary fish pass design was prepared for Roscrea water works intake. Designs of fish passes were completed for Kilkenny

Woollen Mills Weir; for a sand-trap weir on the Dolla River; and for proposed amenity scheme weirs at Ballydehob and Mountrath.

Discussions were held with the Office of Public Works for the provision of a new fish pass at Willistown Weir on the River Dee. Further discussions with local interests will be necessary.

Some further consideration was given to the design of a fish pass and fish counting installation for the Foyle Fisheries Commission at Sion Mills Weir on the River Mourne at Sion Mills, Co. Tyrone.

Polluting Effluents.—The unusual drought conditions of 1971 and 1970 were repeated in 1972 and, once again, aggravated problems arising from the discharge of effluents from domestic, industrial and agricultural sources. The conditions had undoubtedly contributed to the eutrophication of the larger inland lakes which is now becoming a matter of serious concern. Once again, many applications for licences authorising the discharge of deleterious effluent in accordance with Section 171 of the Fisheries (Consolidation) Act, 1959, were received during the year and were dealt with. The processing of such applications has come to form a major item in the workload and many applications for advice from outside bodies have to be dealt with, in particular, from Planning Authorities dealing with proposals which will involve major discharges of polluting effluents.

Water Abstraction.—Running parallel with the increase in the discharge of polluting effluents is the ever growing demand for the abstraction of water to supply domestic and industrial needs which aggravates the problem in some cases by reducing the volume of water available for the dilution of the effluents. Once again, there was a marked increase during the year in the number of cases notified of proposals to abstract water from rivers with corresponding requests for advice on measures necessary to prevent injury to fishery interests.

The increase in number and scale of water abstraction schemes, especially those for development areas and growth centres, is posing a major challenge to the development and conservation of inland fisheries and an increasing amount of the time of the engineering section is being devoted to the study of measures to mitigate the effects of water abstraction. Planning Authorities and their consultants are becoming increasingly aware of the desirability of early consultation with the Division's Engineer at the design stage of schemes.

Bye-Laws, Licences, Orders and Definitions.—Maps were prepared in connection with various bye-laws, orders and licences and other Statutory Instruments and specialist advice was supplied to various Boards of Conservators in connection with the setting out of defined mouths and half mile sanctuary limits for a number of river systems.

Miscellaneous.—The Inspector and Engineer continued to act as an

as an adviser to the Inland Fisheries Commission and also as Fisheries Engineering Consultant to the Salmon Research Trust of Ireland Incorporated and to the Foyle Fisheries Commission. He also continued to act as Council Member of the Inland Fisheries Trust Incorporated and as departmental representative of the UNESCO Hydrological Decade National Committee for Ireland.

One of the Department's Fisheries Engineers participated in a study tour of fish farm installations in Northern Ireland in the company of other officers from the Department and from the Inland Fisheries Commission. This tour was arranged and conducted by officers of the Northern Ireland Ministry.

Regulation of Salmon Net Fishing. — A large increase in drift net fishing for salmon in the sea adjacent to our coasts—particularly on the western and southern sea-boards — has occurred in recent years. This has resulted in a significant annual increase in salmon landings by drift nets which, taken in conjunction with continued cropping by inshore and estuarine fishery operators of drift nets, draft nets, stake nets and other commercial fishing engines in public and privately owned fisheries, has led to significant decreases in the escape-ment of salmon in sea and estuarine fisheries and consequently in the numbers of salmon entering Irish rivers for spawning purposes.

In support of the foregoing general contention the Inland Fisheries Commission issued two interim reports in 1971 and 1972 which dealt respectively with

- (a) Drift netting for salmon at sea, and
- (b) Regulation of commercial salmon fishing in estuarine and coastal waters other than drift netting at sea.

Both reports express the Commission's great concern at the prospective depletion of our salmon stocks arising from over fishing, amongst other things, and make recommendations for conserving them.

Following consideration of the two interim reports of the Inland Fisheries Commission the Parliamentary Secretary made an Order under Section 29 of the Fisheries (Amendment) Act, 1962, entitled Control of Fishing for Salmon Order, 1972. The Order—

- (i) limited the number of salmon fishing licences for fishing engines for use in public fisheries in tidal waters, other than rod and line, which a Board of Conservators might issue as from the 1973 fishing season, and
- (ii) prescribed that fishing for salmon in a privately owned fishery in tidal waters should be carried on as from the 1973 fishing season only in accordance with a scheme of controlled fishing made by the Board of Conservators concerned in respect of that fishery, with the approval of the Parliamentary Secretary.

The main objectives of the Order was to curtail salmon fishing

effort in both public and private fisheries in tidal waters and so secure an increased escapement of fish into our rivers for the purpose of conserving our salmon stocks. The Order was designed also to provide that the fishing licences available as from the 1973 salmon fishing season in respect of public fisheries would be issued to bona fide salmon fishermen who depended to a substantial extent on salmon fishing for their livelihood.

FOYLE FISHERIES COMMISSION

The Annual Report of the Foyle Fisheries Commission for the year ended 30th September 1972 gives detailed information on the Commission's activities during the year.

Figures showed spawning down on last year. However, because of heavy floods during November and December reliable counting was not possible until December and by that time considerable spawning was already completed.

Catches were considerably smaller than in 1971. The catch of salmon and grilse by commercial engines was 69,530 compared with 83,911 in 1971 and the rod catch of both salmon and sea trout was 6,290 compared with 2,021 in 1971.

The total catch of salmon and grilse in the commercial fishery operated by the Commission on its own account (the Londonderry stretch) was 6,724 compared with 10,347 in 1971.

The commercial fishery yielded the Commission a profit of £14,720 (compared with £18,251 in 1971). An increased deficiency of £34,425 occurred on conservancy operations (compared with £26,255 in 1971). The Commission had an overall deficit of £13,705 on its year's workings. Subventions of £3,000 each were made to the Commission by the Department and the Ministry.

The Accounts for the year and particulars of the Regulations made by the Commission during the year are included as appendices to the Annual Report of the Commission.

INLAND FISHERIES TRUST INCORPORATED

The Annual Report of the Inland Fisheries Trust for 1972 gives a review of the work carried out by the Trust during the year. The grant-in-aid paid to the Trust in the financial year 1972/73 was £300,000.

Work was continued during the year on development, improvement and maintenance of trout fisheries on rivers and lakes. 2½ million fry, fingerling and yearling trout were released to waters to supplement natural production. To control predators, 20 tons of pike, 37 tons of

perch and 7 tons of perch spawn were removed from trout lakes. Surveys were made of 29 new waters to assess their suitability for future development as trout or coarse fisheries.

Much time was devoted during the year to surveying prospective pike fisheries and to obtaining supplies of live bait to meet the very heavy demand from the pike anglers.

With regard to sea angling, investigation into the presence, movement and habits of stocks were continued, with the emphasis on Blue Sharks. Surveys to find new angling grounds at Kinsale and Dungarvan were carried out.

The continuing problem of pollution which is causing such harm to many of the Trust waters is dealt with in the Report. The urgency of getting a speedy solution to this problem is emphasised with reference to Lough Sheelin where costly development and trout restocking carried out over many years is being nullified because of pollution, particularly from piggeries. Detailed tables show phosphate and nitrate content of a number of lakes and rivers studied during the year.

SALMON RESEARCH TRUST OF IRELAND INCORPORATED

The Annual Report of the Salmon Research Trust gives a detailed account of the work carried out by the Trust in 1972.

Improvements were carried out at the site of the newly constructed fish trapping installation at the Salmon Leap to facilitate greater ease in movement of fish.

The runs of spring fish, grilse and sea trout improved by comparison with 1971. The survival of wild salmon smolts to the grilse stage was 10.9% compared with 5.5% in 1971 while the return of reared smolts as grilse improved markedly to the highest level so far attained numbering a total of 6,820 giving a return rate of 7% for 2 year old smolts released in 1971 and 4% for 1 year olds. The trend towards lateness of the grilse run continued.

For the first time a number of smolts of grilse parentage returned as spring fish, the experience in the past being that smolts whose parents were springers tended to return as grilse.

The warmed water apparatus installed at the Hatchery under the sponsorship of the Atlantic Salmon Research Trust in 1971 was tried out during the year but teething troubles prevented its commissioning before the end of the year.

The first two members of the course in general salmon culture techniques organised by the Trust and sponsored by the Atlantic Salmon Research Trust completed their training during the year.

Work on an investigation of *Neomysis integer* in Lough Furnace

was started, a preliminary report of which is presented as an appendix to the Report.

Two research students were employed during the summer months on a study of plankton of Lough Feeagh. Their results are also presented as appendices to the Report.

MANAGEMENT OF STATE FISHERIES

131 State owned fisheries—in the main vested in the Land Commission—were managed by Fisheries Division in 1972. Rents received during the year amounted to £4,091 compared with £3,866 in 1971.

Twenty-five of these fisheries which fell due for re-letting were advertised during the year.

INTERNATIONAL AND OTHER CONFERENCES

a. *The International Council for the Exploration of the Sea (ICES)*

The Department's Inspector of Fisheries and Scientific Adviser and the Inspector of Fisheries on the sea fisheries side represented Ireland at the annual meeting of the Council held in Copenhagen from 25th September until 4th October 1972. Our representatives took part in the discussions of the Anadromous and Catadromous Fish Committee at which a paper by one of the Assistant Inspectors of Fisheries on Irish eels was read. They also took part in the work of the Working Party on North Atlantic Salmon established by the Council and the International Commission for the North West Atlantic Fisheries (ICNAF). The Inspector of Fisheries and Scientific Adviser delivered the Council's *Open Lecture* on the history of the Council which he had been invited to write when he was President from 1966 to 1969. Officers of the Department also took part in the ICES/ICNAF Working Party on North Atlantic Salmon which held a special meeting in Dublin from 21st to 24th March, 1972.

b. *North East Atlantic Fisheries Commission.*

This Commission was established under the International Fisheries Convention of London of 1959. The Assistant Secretary in charge of Fisheries and the Inspector of Fisheries and Scientific Adviser represented Ireland at its annual meeting held in London from 8th to 13th May, 1972. The Department's Inspector of Fisheries and Scientific Adviser who had been chairman of Regional Committee 2 and of the Infractions Committee was elected Vice-President of the Commission. Amongst the subjects discussed at the Commission was the question of the need for conservation of the salmon in international waters in the North Atlantic.

c. *European Inland Fishery Advisory Commission (EIFAC).*

Ireland was represented at the plenary sessions of the Commission in Amsterdam from 24th to 29th April 1972 by four officers of the

Fisheries Division of the Department and one of the Assistant Inspectors of Fisheries and a Principal Officer, together with the Director of the Department's Veterinary Research Laboratory attended the symposium on the major communicable fish diseases in Europe and their control organised jointly by the Commission and the Office International des Epizooties held before the plenary sessions on 20th and 22nd April.

d. *Salmon Research Group.*

Officers of the Department attended two meetings of the Salmon Research Group, sponsored by the Natural Environmental Research Council. The first meeting was held in Weymouth on 17th April 1972 where the Fish Diseases Laboratory operated by the Ministry of Agriculture, Fisheries and Food was inspected and on the following day the question of "Nutrition of salmonids reared in fresh and salt water" was discussed at the East Stoke (Wareham) Laboratory of the Freshwater Biological Association of the United Kingdom, the installations of which were also inspected by the visitors. Officers of the Department also attended a meeting in London on 23 November 1972 when the question of "Fish Counting" was discussed. These officers contributed to the discussions and gave some of the results obtained in Ireland.

e. *First International Crayfish Symposium.*

One of the Assistant Inspectors of Fisheries attended this symposium which was held at Hinterthal, Austria from 12 to 15 September 1972 and contributed a paper on his work on Irish Crayfish.

f. *Institute of Fisheries Management.*

The Inspector of Fisheries and Scientific Adviser read a paper on "Fisheries research and development in the inland fisheries field in Ireland" to the annual conference of the Institute in the University of York from 17th to 19th July 1972 and took part in the subsequent discussions.

g. *Meeting of experts on the Ecological effects of water pollutants organised by the Directorate General III (Environmental Program Research) of the Commission of the European Communities.*

One of the Assistant Inspectors of Fisheries attended the first or preliminary meeting of this group of experts in Brussels on 19th December 1972 when the question of the toxicity of pollutants to various organisms was discussed.

h. *Annual conference of the Salmon and Trout Association.*

The Inspector of Fisheries and Scientific Advisor attended the annual conference of this Association in London on 21st and 22nd November 1972 and contributed to the discussions on many problems.

i. *Informal Freshwater Research Group.*

This group, established some years ago to provide a forum for discussion of problems by workers in the freshwater research field, held a meeting in the New University of Ulster in Coleraine on 6th and 7th April 1972. The Inspector of Fisheries on the inland side of the Division attended as representative of the Department.

j. *International Symposium on the Atlantic Salmon, St. Andrews N.B. Canada.*

This symposium which was organised jointly by the International Atlantic Salmon Foundation and the Atlantic Salmon Research Trust took place in St. Andrews, N.B. Canada from 20th to 22nd September 1972. The Inspector of Fisheries and Scientific Adviser took the chair for the session dealing with "Ecology" and took part in discussions on matters raised in other sessions. He also took part in the meeting of the International Advisory Group of the International Atlantic Salmon Foundation held in conjunction with the symposium.

k. *Irish Specimen Fish Committee.*

The Inspector of Fisheries and Scientific Advisor, in his capacity as Chairman of the Committee presided at presentations of record medals, badges and certificates awarded for notable fish taken by fair angling in Irish waters in 1971 at ceremonies in London and Manchester in January 1972 and at the VISMA Exhibition in Rotterdam in March 1972.

LEGISLATION

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

MICHAEL PAT MURPHY,
Parliamentary Secretary to the
Minister for Agriculture and Fisheries.

31 January, 1974.

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FISHERIES FOR THE YEAR 1972**

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APPENDIX No. 1

Quantity and Value of Sea Fish (excluding Salmon) returned as landed in 1971 and 1972

Kinds of Fish	QUANTITY		VALUE	
	1972	1971	1972	1971
	cwt.	cwt.	£	£
Soles	4,038	3,240	128,026	87,122
Brill	1,609	2,251	22,646	27,461
Turbot	2,069	2,771	28,944	32,124
Plaice	27,625	32,454	269,133	302,760
Dabs	2,859	3,225	9,895	11,681
Megrims	2,926	1,892	9,177	6,347
Other Flat Fish	2,968	3,499	10,341	14,248
Ray/Skate	26,302	28,787	184,065	176,534
Cod	54,682	67,313	322,533	335,117
Haddock	93,660	118,841	297,436	322,959
Hake	987	729	6,277	4,813
Whiting	77,912	96,897	194,829	195,290
Pollack	19,987	12,491	64,905	38,470
Other Round Fish	19,392	32,315	19,896	34,710
Total Demersal	337,016	406,705	1,568,103	1,589,636
Herrings	941,840	615,124	2,116,157	1,162,826
Pilchard	5,600	—	3,080	—
Mackerel	90,389	61,126	146,920	117,764
Sprats	115,046	108,867	65,333	59,825
Total Pelagic	1,152,875	785,117	2,331,490	1,340,415
TOTAL WET FISH	1,489,891	1,191,822	3,899,593	2,930,051
	Nos.	Nos.		
Lobsters	426,407	503,700	374,310	344,767
Crawfish	163,180	189,740	256,983	235,109
Crabs	1,908,996	1,940,948	67,157	64,000
Escallops	1,806,988	2,392,449	79,628	111,001
Oysters	2,409,000	2,939,620	59,325	74,835
	cwt.	cwt.		
Dublin Bay Prawns	35,892	34,924	340,311	231,164
Mussels	78,664	90,430	47,600	60,709
Periwinkles	42,827	35,258	125,718	112,934
Other Shellfish	11,255	27,361	65,818	73,804
Total Value Shellfish	—	—	1,416,850	1,308,323
TOTAL VALUE ALL FISH	—	—	5,316,443	4,238,374

Total landings for Queen Escallops to 31/12/72. 6,555 cwt. value £30,509.

APPENDIX No. 2

Comparison of the Average Price per cwt. of various kinds of Sea Fish for the years 1965—1972

	1965	1966	1967	1968	1969	1970	1971	1972
Soles	£ 22.55	£ 23.25	£ 21.51	£ 21.88	£ 22.89	£ 25.86	£ 26.89	£ 31.71
Brill	10.69	10.87	10.08	9.73	9.74	11.22	12.20	14.07
Turbot	10.36	10.69	9.80	10.00	9.98	10.73	11.59	13.99
Plaice	7.62	7.92	7.75	7.22	7.94	9.35	9.33	9.74
Dabs	2.71	2.63	2.61	2.50	2.90	3.48	3.62	3.46
Megrims	3.40	3.80	3.14	2.83	3.17	3.93	3.35	3.14
Ray/Skate	4.08	4.02	4.16	4.36	4.55	5.65	6.13	7.00
Cod	4.08	3.95	3.62	3.36	4.36	4.95	4.98	5.90
Haddock	3.10	3.65	3.74	3.63	3.55	3.76	2.72	3.18
Hake	6.60	10.20	9.12	6.94	6.97	6.41	6.60	6.36
Whiting	1.95	2.17	1.95	1.86	2.18	2.55	2.02	2.50
Pollack	2.59	2.67	2.36	2.38	2.34	2.71	3.08	3.25
Herrings	1.20	1.36	1.07	1.10	1.15	1.43	1.89	2.25
Pilchards	4.03	0.55	0.43	0.65	—	—	—	0.55
Mackerel	1.14	1.57	1.16	1.14	—	—	—	1.63
Sprats	0.41	0.41	0.58	0.42	0.47	0.61	0.55	0.57

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.

APPENDIX No. 3

Value of Landings of Sea Fish (excluding Salmon) at ports at which the value of such landings exceeded £25,000 in 1972.

Port	Total Value	Demersal	Pelagic	Shellfish
	£	£	£	£
1. Killybegs ...	891,289	240,161	648,205	2,923
2. Dunmore East ...	709,104	44,343	652,078	12,683
3. Cobh ...	443,830	13,383	428,447	2,000
4. Howth ...	349,173	298,853	7,849	42,471
5. Skerries ...	263,345	79,183	1,300	182,862
6. Castletownbere ...	221,720	67,241	119,282	35,197
7. Kilmore Quay ...	212,090	117,188	12,389	82,513
8. Galway /Aran Islands ...	203,336	72,619	91,117	39,600
9. Dingle ...	182,502	108,123	36,319	38,060
10. Burtonport ...	161,072	66,895	76,017	18,160
11. Clogherhead ...	104,263	38,165	8,544	57,554
12. Fenit ...	102,685	370	300	102,015
13. Greencastle ...	101,157	94,904	—	6,253
14. Bantry ...	89,741	3,802	67,120	18,819
15. Mornington ...	85,284	3,279	73,914	8,091
16. Schull ...	68,545	37,241	6,307	24,997
17. Valentia Hbr. ...	65,064	30,955	16,424	17,685
18. Blacksod ...	59,099	—	500	58,599
19. Dun Laoghaire ...	51,734	39,890	1,454	10,390
20. Achill ...	51,294	25,212	—	26,082
21. Helvick ...	43,317	33,056	573	9,688
22. Rossmore/ Rosahill ...	38,775	—	—	38,775
23. Castlegregory ...	37,770	—	3,750	34,020
24. Arklow ...	33,458	32,720	738	—
25. Union Hall ...	32,210	15,608	1,283	15,319
26. Clifden/Cleggan ...	28,963	170	—	28,793
27. Ballinskelligs ...	25,466	18,894	2,667	3,905

APPENDIX No. 4

Imports and Exports of Fish and Fishery Products in 1972 (as compared with 1971)

	Quantity		Value	
	1972	1971	1972	1971
	cwt.	cwt.	£	£
I.—IMPORTS :				
Fish, fresh, chilled or frozen:	23,465	76,829	608,000	547,000
Fish, cured, not in airtight containers	27,472	24,375	396,000	293,000
Fish and fish preparations in airtight containers	25,833	22,065	901,000	704,000
Other fish and fish preparations	11,730	11,655	419,000	291,000
TOTALS	88,500	134,924	2,324,000	1,835,000
II.—EXPORTS :				
Fish, fresh, chilled or frozen:				
Salmon	21,813	20,839	1,693,000	1,283,000
Herrings	380,418	184,855	1,890,000	780,000
Freshwater Eels	1,749	2,297	62,000	77,000
Other Fish	52,641	53,294	498,000	463,000
Fish, dried, salted or smoked not in airtight containers	359,010	297,081	1,628,000	1,065,000
Shellfish, fresh, chilled, frozen, salted or dried	86,578	98,312	1,201,000	1,094,000
Other fish and fish preparations	21,171	36,321	780,000	877,000
TOTALS	923,380	692,999	7,752,000	5,639,000

APPENDIX NO. 5

HERRING FISHING, 1972

Ports at which more than 1,000 cwt. were landed	Total Quantity cwt.	Value £
Clogherhead	3,887	8,389
Mornington	35,317	19,637
Howth	1,572	3,429
Wicklow	1,001	2,307
Kilmore Quay	5,299	12,081
Dunmore East	244,952	651,581
Cobh	165,259	427,578
Bantry	29,650	67,120
Castletownbere	30,460	80,311
Dingle	8,369	21,469
Galway	55,976	84,343
Sligo	1,576	2,514
Killybegs	302,285	601,956
Teelin	4,026	7,013
Burtonport	30,663	75,853
Kincasslagh	6,950	17,412
Magheraroarty	1,027	2,393
TOTALS ...	928,289	2,085,386

APPENDIX No. 6

MACKEREL FISHING, 1972

Ports at which more than 1,000 cwt. were landed	Total Quantity cwt.	Value £
Howth	2,146	4,420
Schull	2,186	5,963
Castletownbere	19,747	38,641
Valentia Harbour	5,490	13,812
Dingle	4,262	14,850
Castlegregory	1,500	3,750
Galway	3,706	6,254
Killybegs	41,508	33,653
TOTALS ...	80,545	121,343

APPENDIX No. 7

REGIONAL DISTRIBUTION AND CLASSIFICATION OF FISHING CRAFT AND OF PERSONNEL ENGAGED IN FISHING IN 1972.

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	
				Over 75	51-75	26-50	16-25	11-15			10 and under
EAST (Onearth to Carnsore Point)	Solely	556	157	6	28	61	3	—	28	29	2
	Partially Laid-up	248	80	—	—	—	—	—	10	52	18
	TOTALS	804	244	8	28	64	5	—	38	81	20
SOUTH (Carnsore Point to Loop Head)	Solely	582	287	8	35	30	7	12	141	54	—
	Partially Laid-up	988	373	1	4	1	2	3	41	249	82
	TOTALS	1,570	682	9	39	39	9	15	186	303	82
WEST (Loop Head to Erris Head)	Solely	280	370	—	4	19	2	7	169	145	24
	Partially Laid-up	1,246	235	—	—	—	—	—	19	80	136
	TOTALS	1,526	608	—	4	19	2	7	191	225	160
NORTH (Erris Head to Moville)	Solely	756	443	17	13	56	4	14	206	128	5
	Partially Laid-up	1,486	273	3	—	3	3	—	79	116	78
	TOTALS	2,242	731	20	13	59	7	14	289	246	83
TOTALS (All Coasts)	Solely	2,174	1,257	31	80	166	16	33	544	356	31
	Partially Laid-up	3,968	961	6	4	14	7	3	149	497	314
	TOTALS	6,142	2,265	37	84	181	23	36	704	855	345

APPENDIX No. 8

TRAWLING AND SEINING, 1972

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 ...	35	8	—	—	8	All year.
Balbriggan ...	18	4	—	—	4	All year.
Skerries ...	100	20	—	—	20	All year.
Howth ...	212	39	—	—	39	All year.
Dun Laoghaire ...	55	11	—	—	11	All year.
Wicklow ...	10	2	—	—	2	All year.
Arklow ...	52	11	—	—	11	All year.
Wexford ...	10	2	—	—	2	All year.
Rosslare ...	4	1	—	—	1	All year.
Kilmore Quay ...	65	13	—	—	13	All year.
Duncannon ...	25	5	—	—	5	All year.
Passage East ...	6	2	2	—	—	Autumn and Winter
Dunmore East ...	55	11	—	—	11	All year.
Helvick ...	10	2	—	—	2	All year.
Youghal ...	6	3	3	—	—	All year.
Ballycotton ...	16	8	8	—	—	All year.
Cobh ...	9	4	2	1	1	Spring and Autumn
Kinsale ...	8	3	2	—	1	All year.
Union Hall and Raheen ...	20	5	—	—	5	All year.
Cape Clear ...	5	1	—	—	1	All year.
Schull ...	39	7	—	1	6	All year.
Castletownbere ...	64	10	—	—	10	All year.
Ballinskelligs ...	5	1	—	—	1	All year.
Valentia ...	29	5	—	—	5	All year.
Cahiriveen and Portmagee ...						
Dingle ...	60	10	—	—	10	All year.
Fenit ...	14	2	—	—	2	Winter
Galway and Aran Islands ...	70	15	—	—	15	All year.
Rossaveal ...	5	1	—	—	1	All year.
Cleggan and Inisboffin ...	7	2	—	2	—	All year.
Achill ...	28	7	—	—	7	All year.
Killala ...	17	4	—	1	3	Spring, Summer and Autumn
Inver ...	4	1	—	1	—	All year.
Sligo ...	10	2	—	—	2	All year.
Killybegs ...	250	42	—	1	41	All year.
Burtonport ...	92	16	—	—	16	All year.
Buncrana ...	8	2	—	—	2	All year.
Greencastle ...	132	31	—	6	25	All year
TOTALS ...	1,555	313	17	13	283	

APPENDIX No. 9A.

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 March 1971	140,379
made during year ended 31 March, 1972	13,369
not accrued at 31 March, 1972	6,685
		<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, 1971	82,099
made during year ended 31 March, 1972	2,798
not accrued at 31 March, 1972	1,076
		<hr/> 85,973
III. Advances of £4,209,563 made to An Bord Iascaigh Mhara during the period of twenty years to 31 March, 1972 for provision of boats and gear and other purposes:—		
Repayments of principal :		£
made to 31 March 1971	731,581
made during year ended 31 March 1972	70,796
Principal written off to 31 March 1972	543,876
		<hr/> 1,346,253
Balance of principal outstanding at 31 March 1972		<hr/> 2,863,310

APPENDIX No. 9B

EXPENDITURE ON FISHERIES FOR THE YEAR 1 APRIL
1971 TO 31 MARCH 1972.

(all figures rounded to nearest £100).

1. SEA FISHERIES

By (a) Department of Agriculture and Fisheries (Fisheries Division)

	£	£
(i) Development	114,100	
(ii) Fishery School	80,000	
(iii) Fishery Harbours and other Marine Works	225,600	
		419,700
(b) An Bord Iascaigh Mhara		
(i) Administration and Current Development (grant in aid) ...	460,000	
(ii) Capital Development (grant in aid)	400,000	
(iii) Repayable Advances* (mainly for boats and gear) ...	580,000	
		1,440,000
(c) Roinn na Gaeltachta Grants for marine works		119,600

2. INLAND FISHERIES

By (a) Department of Agriculture and Fisheries (Fish- eries Division) Development	243,000
(b) The Inland Fisheries Trust Incorporated (grant in aid)	220,000
(c) The Salmon Research Trust of Ireland Incor- porated (grant in aid)	8,000

3. DEPARTMENT OF AGRICULTURE AND FISHERIES

Salaries, Wages and other administrative Expenses for Fisheries Division	222,000
Total	2,672,300

*A Statement of Account in respect of Repayable Advances is given in
Appendix 9A.

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, Funcheon, Bride, Awbeg.
No. 5 Cork	Ballycotton Pier to Crow Head, Co. Cork.	Lee, Owenboy, Bandon, Argideen, Ilen, Mealagh, Owvane, Coomhola, Glengarraf, Adrigole.
No. 7 Kerry	Crow Head, Co. Cork, to Kerry Head, Co. Kerry.	Roughty, 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. 91 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. 92 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, Screebe, Furnace.
No. 10 ¹ Ballinakill	Slyne Head to Pigeon Point, Westport Bay, Co. Mayo.	Culfn. Errif, Bundooragha, Dawros, Carrowniskey, Bundo-owen (Louisburgh).
No. 10 ² 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 ¹ Letterkenny	Rossan Point to Malin Head, Co. Donegal.	Owenea, Gweebarra, Gweedore (Croilly), Clady, Lackagh, Lennon, Crana.
No. 17 ² Dundalk	Carlingford Lough to Clogherhead, Co. Louth.	Fane, Dee, Glyde.
No. 17 ¹ Drogheda	Clogherhead to the most easterly point on Red Island, Skerries, Co. Dublin.	Boyne, Blackwater, Deel.

Note—The area comprised in the former No. 14² 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 1970, 1971 and 1972 by Instruments of Capture.

SALMON						
	1972	1971	1970	1972	1971	1970
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	3,690,111	3,292,819	3,510,748	2,140,266	1,317,127	1,228,762
Total for rod and line	187,739	133,568	136,849	108,889	53,427	47,895
Total for drift nets	2,347,055	1,651,140	1,730,918	1,361,292	660,456	605,821
Total for draft nets	899,911	1,178,829	1,260,986	521,949	471,531	441,345
Total for stake nets, weirs, etc.	255,406	329,282	381,995	148,136	131,713	133,701

SEA TROUT						
	1972	1971	1970	1972	1971	1970
Instruments	lb.	lb.	lb.	£	£	£
Total for all engines	71,684	87,872	106,951	35,842	33,390	26,738
Total for rod and line	40,559	54,379	60,650	20,280	20,663	15,164
Total for drift nets	5,123	3,515	5,119	2,561	1,336	1,279
Total for draft nets	24,738	29,771	40,308	12,369	11,312	10,077
Total for stake nets, weirs, etc.	1,264	207	874	632	79	218

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

APPENDIX No. 12

Quantity and Value of Salmon taken in 1970, 1971 and 1972 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1972 lb.	1971 lb.	1970 lb.	1972 £	1971 £	1970 £
Dublin	R	3,987	2,773	1,957	2,313	1,109	685
	N	3,550	7,193	5,637	2,059	2,877	1,973
Wexford	R	4,027	2,247	3,880	2,336	899	1,358
	N	17,374	16,755	26,158	10,077	6,702	9,155
Waterford	R	26,425	11,283	12,243	15,327	4,513	4,285
	N	590,833	349,710	593,294	342,683	139,884	207,653
Lismore	R	7,899	5,693	5,739	4,581	2,277	2,009
	N	351,822	264,515	336,234	204,057	105,806	117,682
Cork	R	9,478	9,198	10,859	5,497	3,679	3,801
	N	356,784	187,380	144,422	206,935	74,952	50,548
Kerry	R	14,418	13,088	9,996	8,363	5,235	3,499
	N	216,576	318,091	308,825	125,614	127,237	108,089
Limerick	R	28,631	24,416	24,512	16,606	9,767	8,579
	N	292,861	473,741	374,065	169,859	189,497	130,923
Galway	R	8,270	2,400	2,935	4,797	960	1,024
	N	71,894	87,939	51,554	41,699	35,175	18,044
Connemara	R	3,978	3,492	4,573	2,307	1,397	1,601
	N	30,012	8,718	11,187	17,407	3,487	3,915
Ballinakill	R	3,828	6,008	3,031	2,220	2,403	1,061
	N	35,105	22,030	26,070	20,361	8,812	9,125
Bangor	R	11,864	9,608	10,860	6,881	3,843	3,801
	N	101,484	103,558	74,050	58,861	41,423	25,918
Ballina	R	33,709	14,800	11,241	19,551	5,920	3,934
	N	563,746	356,082	398,540	326,973	142,433	139,489
Sligo	R	4,572	4,624	4,980	2,652	1,850	1,743
	N	33,245	52,869	53,656	19,282	21,148	18,780
Ballyshannon	R	2,873	3,273	3,660	1,666	1,309	1,281
	N	154,345	256,182	278,549	89,520	102,472	97,492
Letterkenny	R	12,928	15,292	19,145	7,498	6,117	6,701
	N	562,313	567,038	583,550	326,142	226,815	204,243
Dundalk	R	2,133	1,680	5,249	1,237	672	1,837
	N	47,810	28,279	48,719	27,730	11,312	17,052
Drogheda	R	8,719	3,693	1,989	5,057	1,477	696
	N	72,618	59,171	59,389	42,118	23,668	20,786
TOTALS		3,690,111	3,292,819	3,510,748	2,140,266	1,317,127	1,228,762

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

1973

60,276

27,591

137,055

377,373

91.2

333.6

43.48

APPENDIX No. 13

Quantity and Value of Sea Trout taken in 1970, 1971 and 1972 by Fishery Districts.

Fishery District	*	Quantity			Value		
		1972 lb.	1971 lb.	1970 lb.	1972 £	1971 £	1970 £
Dublin	R	1,854	1,665	1,265	927	633	316
	N	6,289	5,605	2,637	3,144	2,130	659
Wexford	R	1,206	1,957	1,977	603	744	494
	N	3,658	2,247	4,710	1,829	854	1,176
Waterford	R	624	1,547	1,703	312	588	426
	N	241	181	2,815	121	69	704
Lismore	R	875	1,179	2,204	438	448	551
	N	880	1,888	4,416	440	717	1,104
Cork	R	3,518	3,466	2,913	1,759	1,317	728
	N	888	1,250	3,589	444	475	897
Kerry	R	3,885	8,072	10,378	1,943	3,067	2,594
	N	1,185	1,185	687	592	450	172
Limerick	R	3,923	7,082	7,634	1,961	2,691	1,909
	N	7,419	11,998	6,997	3,709	4,559	1,749
Galway	R	636	909	2,894	318	345	724
	N	1,045	72	650	523	27	163
Connemara	R	7,204	8,555	5,671	3,602	3,251	1,418
	N	—	—	—	—	—	—
Ballinakill	R	1,401	3,945	2,929	700	1,499	732
	N	141	214	1,998	71	81	500
Bangor	R	6,188	1,948	3,901	3,094	740	975
	N	2,833	400	2,199	1,416	152	550
Ballina	R	2,053	1,976	3,671	1,026	751	918
	N	61	500	605	31	190	151
Sligo	R	319	600	800	160	228	200
	N	121	300	618	61	114	155
Ballyshannon	R	338	995	1,734	169	378	433
	N	847	633	7,003	423	241	1,750
Letterkenny	R	2,036	3,724	6,429	1,018	1,415	1,607
	N	2,142	3,400	2,817	1,071	1,292	704
Dundalk	R	2,876	3,638	2,183	1,438	1,382	546
	N	750	1,500	2,663	375	570	666
Drogheda	R	1,623	3,121	2,364	812	1,186	593
	N	2,625	2,120	1,897	1,312	806	474
TOTALS	...	71,684	87,872	106,951	35,842	33,390	26,738

* 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 1970, 1971 and 1972 by Fishery Districts.

Fishery District	Quantity			Value		
	1972 lb.	1971 lb.	1970 lb.	1972 £	1971 £	1970 £
Dublin	—	—	4,217	—	—	1,054
Wexford	29,181	17,902	12,174	11,672	5,013	3,043
Waterford	1,486	3,378	4,404	594	946	1,101
Cork	—	—	3,867	—	—	967
Kerry	—	—	900	—	—	225
Limerick	17,721	68,631	77,280	7,088	19,217	34,000
Galway	53,217	60,759	61,409	21,287	17,013	15,352
Bangor	1,282	—	—	513	—	—
Ballina	2,350	21,226	18,721	940	5,943	4,680
Sligo	450	4,789	16,894	180	1,341	4,224
Ballyshannon	3,371	12,291	17,174	1,348	3,441	4,294
Dundalk	112	3,238	12,680	45	907	3,170
Drogheda	1,123	13,214	28,653	449	3,700	7,163
TOTALS	110,293	205,428	258,373	44,116	57,521	79,273

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 1970, 1971 and 1972 by Fishery Districts.

Fishery District	Total Weight for District			Total Value for District		
	1972 lb.	1971 lb.	1970 lb.	1972 £	1971 £	1970 £
Dublin ...	15,680	17,236	15,713	8,443	6,749	4,687
Wexford ...	55,446	41,108	48,899	26,517	14,212	15,226
Waterford ...	619,609	366,099	614,459	359,037	146,000	214,169
Lismore ...	361,476	273,275	348,593	209,516	109,248	121,346
Cork ...	370,668	201,294	165,650	214,635	80,423	56,941
Kerry ...	236,064	340,436	330,786	136,512	135,989	114,579
Limerick ...	350,555	585,868	490,488	199,223	225,731	177,160
Galway ...	135,062	152,079	119,442	68,624	53,520	35,307
Connemara ...	41,194	20,765	21,431	23,316	8,135	6,934
Ballinakill ...	40,475	32,197	34,028	23,352	12,795	11,418
Bangor ...	123,651	115,514	91,010	70,765	46,158	31,244
Ballina ...	601,919	394,584	432,778	348,521	155,237	149,172
Sligo ...	38,707	63,182	76,948	22,335	24,681	25,102
Ballyshannon	161,774	273,374	308,120	93,126	107,841	105,250
Letterkenny ...	579,419	589,454	611,941	335,729	235,639	213,255
Dundalk ...	53,681	38,335	71,494	30,825	14,843	23,271
Drogheda ...	86,708	81,319	94,292	49,748	30,837	29,712
TOTALS ...	3,872,088	3,586,119	3,876,072	2,220,224	1,408,038	1,334,773

APPENDIX No. 16

Number, Quantity and Value of Salmon taken by Single Rod and Line
in 1970, 1971 and 1972 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value		
	1972	1971	1970	1972 lb.	1971 lb.	1970 lb.	1972 £	1971 £	1970 £
Dublin ...	409	427	200	3,987	2,773	1,957	2,313	1,109	685
Wexford ...	401	327	485	4,027	2,247	3,880	2,336	899	1,358
Waterford ...	3,154	1,472	1,512	26,425	11,283	12,243	15,327	4,513	4,285
Lismore ...	991	784	704	7,899	5,693	5,739	4,581	2,277	2,009
Cork ...	1,081	1,305	1,364	9,478	9,198	10,859	5,497	3,679	3,801
Kerry ...	1,670	1,636	1,277	14,418	13,088	9,996	8,363	5,235	3,499
Limerick ...	3,770	2,724	3,268	28,631	24,416	24,512	16,606	9,767	8,579
Galway ...	1,034	300	387	8,270	2,400	2,935	4,797	960	1,024
Connemara ...	550	566	618	3,978	3,492	4,573	2,307	1,397	1,601
Ballinakill ...	638	751	433	3,828	6,008	3,031	2,220	2,403	1,061
Bangor ...	1,662	1,201	1,511	11,864	9,608	10,860	6,881	3,843	3,801
Ballina ...	4,362	1,850	1,541	33,709	14,800	11,241	19,551	5,920	3,934
Sligo ...	618	537	600	4,572	4,624	4,980	2,552	1,850	1,743
Ballyshannon ...	346	462	475	2,873	3,273	3,660	1,666	1,309	1,281
Letterkenny ...	1,607	2,121	2,580	12,928	15,292	19,145	7,498	6,117	6,701
Dundalk ...	203	154	729	2,133	1,680	5,249	1,237	672	1,837
Drogheda ...	752	346	206	8,719	3,693	1,989	5,057	1,477	696
TOTALS ...	23,748	16,963	17,890	187,739	133,568	136,849	108,889	53,427	47,895

APPENDIX No. 17

Number, Quantity and Value of Sea Trout taken by Single Rod and Line in 1970, 1971 and 1972 by Fishery Districts.

Fishery District	No. of Fish			Quantity			Value	
	1972	1971	1970	1972 lb.	1971 lb.	1970 lb.	1972 £	1970 £
Dublin ...	2,020	1,510	843	1,854	1,665	1,265	927	633
Westford ...	1,629	2,446	1,318	1,206	1,957	1,977	603	744
Waterford ...	560	1,031	1,135	624	1,547	1,703	312	588
Lismore ...	765	935	1,469	875	1,179	2,204	438	448
Cork ...	4,409	3,018	1,945	3,518	3,466	2,913	1,759	1,317
Kerry ...	3,158	5,956	6,912	3,835	8,072	10,378	1,943	3,067
Limerick ...	4,022	6,438	5,090	3,923	7,082	7,634	1,961	2,691
Galway ...	704	758	1,929	636	909	2,894	318	345
Connemara ...	5,232	8,559	3,784	7,204	8,555	5,671	3,602	3,251
Ballinakill ...	1,868	4,455	1,953	1,401	3,945	2,929	700	1,499
Bangor ...	3,571	2,048	2,600	6,188	1,948	3,901	3,094	740
Ballina ...	1,631	1,529	2,447	2,053	1,976	3,671	1,026	751
Sligo ...	189	307	533	319	600	800	160	228
Ballyshannon ...	283	814	1,158	338	995	1,734	169	378
Letterkenny ...	2,310	2,483	4,286	2,036	3,724	6,429	1,018	1,415
Dundalk ...	2,586	2,425	1,455	2,876	3,638	2,183	1,438	1,382
Drogheda ...	1,750	2,726	1,576	1,623	3,121	2,364	812	1,186
TOTALS ...	36,687	47,438	40,433	40,559	54,379	60,650	20,280	20,663
								15,164

APPENDIX No. 18

PARTICULARS OF RECEIPTS AND EXPENDITURE BY BOARDS OF CONSERVATORS
FOR THE YEAR ENDED 30th SEPTEMBER, 1972

Fishery District	Opening Balance	RECEIPTS					EXPENDITURE					Closing Balance
		Licence Duty	Fishery Rate	Grant from Department	Misc. Receipts	Total Receipts	Salaries	Water Keepers	Law Costs	Traveling and Misc.	Total Expenditure	
	£	£	£	£	£	£	£	£	£	£	£	
Dundalk	+ 633	744	764	7,000	100	8,608	1,537	4,346	163	3,034	9,080	+ 161
Drogheda	- 19	1,746	2,964	8,500	332	13,542	1,649	6,662	133	5,580	14,024	- 501
Dublin	252	1,532	504	6,500	800	9,336	3,297	1,986	-	3,633	8,916	+ 168
Wexford	+ 351	1,118	2,553	3,900	54	7,625	1,656	4,053	36	1,820	7,565	+ 411
Waterford	+ 2,121	3,498	4,848	16,500	824	25,670	3,595	16,306	558	5,777	26,236	+ 1,555
Lismore	- 1,640	1,280	8,255	11,000	267	20,802	2,237	12,550	-	4,480	19,267	- 505
Cork	+ 2,175	3,107	1,791	15,500	189	20,587	1,419	13,643	-	4,726	19,788	- 1,376
Kerry	+ 878	3,857	4,945	10,500	1,649	20,951	3,590	12,062	1,033	4,822	21,507	+ 322
Limerick	- 665	5,496	7,771	18,500	954	32,721	3,986	16,622	475	10,639	31,722	+ 334
Galway	+ 4,817	1,212	5,494	3,500	5,534	15,740	5,260	2,977	1,247	5,689	15,173	+ 5,384
Connemara	+ 2,474	729	4,188	1,600	247	6,764	2,498	1,398	-	1,242	5,138	- 848
Ballinakill	+ 1,444	966	1,771	2,500	37	5,274	1,935	2,007	-	1,527	5,469	+ 1,249
Bangor	+ 364	1,512	1,846	5,800	2,954	12,112	2,377	6,427	4	4,039	12,847	- 371
Ballina	+ 515	1,957	6,631	2,500	649	11,737	1,625	7,969	-	2,277	11,871	- 649
Sligo	+ 592	678	2,649	2,800	54	6,181	1,438	3,599	13	1,439	6,489	+ 284
Ballyshannon	+ 47	1,071	960	5,700	4,343	12,074	1,785	7,409	-	2,478	11,672	+ 449
Letterkenny	- 6,658	5,550	1,872	10,500	625	18,547	3,240	9,613	-	4,653	17,506	- 5,617
TOTALS	- 3,351	36,053	59,806	132,800	19,612	248,271	44,179	128,574	3,662	67,855	244,270	+ 650

APPENDIX No. 19

PARTICULARS OF LICENCES ISSUED BY BOARDS OF CONSERVATORS FOR THE YEAR 1972

Fishery District	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)	Special Local Licences (Tidal Waters)		Draft net	Drift net	Pole net	Bag net	Stake net	Head Weir	Box or Crib	Loop net	Snap net	Gap, Eye or Basket for eels	Long line for eels	Oyster Dredge	Eel Trap	
									Ro.	Net														
Dublin	276	24	45	—	47	7	—	13	—	—	15	21	—	—	—	—	—	—	—	—	—	—	—	—
Wexford	85	92	—	—	38	80	—	—	—	—	66	—	—	—	—	—	—	—	—	—	—	—	—	—
Waterford	136	540	3	—	71	62	—	—	—	—	12	233	—	1	3	1	—	111	10	—	—	—	—	—
Lismore	76	128	11	—	53	—	—	—	—	—	9	120	—	—	2	1	—	16	—	—	—	—	—	—
Cork	216	226	16	—	121	164	—	—	—	—	62	244	—	—	—	—	—	—	—	—	—	—	—	—
Kerry	205	254	23	2	673	153	—	—	—	—	68	5	—	2	—	—	3	—	—	—	—	95	—	—
Limerick	213	869	27	—	183	331	—	—	—	—	116	76	—	4	—	5	—	—	73	3	—	—	—	—
Galway	78	67	18	—	95	26	—	—	—	—	8	33	—	—	—	5	—	—	—	—	—	—	—	—
Connemara	11	11	3	—	185	98	—	—	—	—	—	18	—	—	—	—	—	—	—	—	—	—	—	—
Ballinakill	28	16	3	1	200	73	—	—	—	—	13	35	—	—	—	—	—	—	—	—	—	1	—	—
Bangor	54	43	13	—	228	72	—	—	—	—	15	23	—	1	—	—	—	—	—	—	—	—	2	—
Ballina	67	253	17	—	336	80	—	—	—	—	12	97	—	—	—	7	—	—	—	7	6	—	—	—
Sligo	60	92	8	—	46	11	—	—	—	—	6	10	—	1	—	—	—	—	—	2	4	—	—	—
Ballyshannon	32	44	10	—	80	24	7	3	—	7	94	33	—	—	—	—	1	—	—	10	9	—	—	—
Letterkenny	77	526	22	—	306	115	46	11	33	15	68	208	—	—	—	2	24	—	—	—	—	—	—	—
Drogheda	171	135	26	—	24	87	—	—	—	—	70	—	—	—	—	6	—	—	—	1	1	—	13	—
Dundalk	58	59	8	—	20	45	—	2	—	—	44	—	—	—	—	—	—	—	5	—	—	—	—	—
TOTALS	1,843	3,379	253	3	2,706	1,428	53	29	33	46	678	1156	—	5	9	1	31	24	127	140	27	147	16	—

APPENDIX No. 20

Licence Duties Payable on Fishing Engines.

		£
On each	Salmon Rod—Annual (valid all districts) ...	4.00
Do.	Salmon Rod—Late Season (valid all districts) ...	3.00
Do.	Salmon Rod—Twenty-one day (valid all districts) ...	3.00
Do.	Salmon Rod—Seven day (valid all districts) ...	1.00
Do.	Salmon Rod—Annual (valid district of issue only) ...	3.00
Do.	Salmon Rod—Late Season (valid district of issue only) ...	2.00
Do.	Salmon Rod—Foyle area extension (valid all districts) ...	2.50
Do.	Salmon Rod—Foyle area extension (valid district of issue only) ...	1.50
On each	Draft net ...	4.00
Do.	Drift net ...	3.00
Do.	Snap net ...	2.50
Do.	Bag net ...	10.00
Do.	Stake net ...	30.00
Do.	Head Weir ...	6.00
Do.	Box or Crib ...	10.00
Do.	Pole net ...	2.00
Do.	Loop net ...	0.50
Do.	Gap, Eye, Basket or Coghill Net for Eels ...	2.00
Do.	Long line for Eels ...	2.00
Do.	Oyster fishing engine ...	2.00

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

Fishery District	Fyke Net (provisional rates)	Eel Trap	Special Local Licences	
			Rod	Draft Net
	£	£	£	£
1. Dublin ...	0.25	—	—	—
2. Wexford ...	0.25	2.00	—	—
3. Waterford ...	0.25	—	—	—
4. Lismore ...	—	—	—	—
5. Cork ...	—	—	—	—
7. Kerry ...	0.25	—	—	—
8. Limerick ...	—	—	—	—
9 ¹ . Galway ...	2.00	2.00	—	—
9 ² . Connemara ...	—	—	—	—
10 ¹ . Ballinakill ...	—	—	—	—
10 ² . Bangor ...	—	—	£3.00	£25.00
11. Ballina ...	—	—	—	—
12. Sligo ...	—	—	—	—
13. Ballyshannon ...	—	—	—	*40.00
14 ¹ . Letterkenny ...	—	—	—	†20.00
17 ¹ . Drogheda ...	—	2.00	‡3.00	†12.50
17 ² . Dundalk ...	—	2.00	—	—

† River Lackagh Tidal Waters.

* River Erne Tidal Waters.

† River Owenea Tidal Waters.

§ Owenmore/Owenduff Tidal Waters.

APPENDIX No. 21

PARTICULARS OF PUBLIC INQUIRIES HELD DURING 1972

Date of Inquiry	Where held	Subject Matter	Decision on Report of Inquiry
5th January, 1972	Waterford	The making of a bye-law restricting the length of drift nets used for the capture of salmon in Waterford harbour outside the Spit of Passage.	No change made. Matter to be reviewed again.
30th August, 1972	Donegal	Application by Donegal Shellfish Co. Ltd., The Cannons, Ballintra, Co. Donegal for mussel fishery order.	Under consideration.
7th November, 1972	Killorglin, Co. Kerry	Application by Castlemaine Harbour Co-operative Society Ltd., Cromane, Co. Kerry for mussel fishery order.	Under consideration.
14th November, 1972	Tralee, Co. Kerry	Application by Tralee Bay Shellfish Co-operative, The Spa, Fenit, Co. Kerry for oyster fishery order.	Under consideration.
20th November, 1972	Clarinbridge, Co. Galway	Application by Clarinbridge Oyster Co-operative Society, Clarinbridge, Co. Galway for oyster fishery order.	Under consideration.

APPENDIX No. 22

ABSTRACT OF STATUTORY INSTRUMENTS MADE IN 1972**GENERAL**

Live Fish (Restriction on Import) Order, 1972 (S.I. No. 4 of 1972) dated 12th January 1972.

Prohibiting, except under licence, the import of live fish and the eggs and young of such fish.

Revoking the Live Fish (Restriction on Import) Order 1962 (S.I. No. 39 of 1962).

Control of Fishing for Salmon at Sea (Amendment) Order 1972, (S.I. No. 296 of 1972) dated 30th November 1972.

Substituting a new paragraph 2(a) in lieu of that contained in the Control of Fishing for Salmon at Sea Order 1970 to establish an additional "sanctuary area" around Iceland in which all fishing for salmon is prohibited.

Revoking the Control of Fishing for Salmon at Sea (Amendment) Order 1971 (S.I. No. 331 of 1971).

Control of Fishing for Salmon Order 1972 (S.I. No. 298 of 1972) dated 5th December 1972.

Limiting the number of salmon fishing licences for fishing engines other than rod and line, for use in public fisheries in tidal waters.

Prohibiting salmon fishing in privately owned fisheries in tidal waters except in accordance with an approved scheme of controlling such fishing.

LOCAL

Ballinakill District Bye-Law No. 554, 1972 dated 12 January 1972.

Prohibiting fishing by any means whatsoever from or off the Weir Bridge across Salt Lake at Clifden.

Ballyshannon District Bye-Law No. 555 dated 23rd March 1972.

Prohibiting fishing for salmon or trout with any engine other than rod and line in the tidal waters of the River Erne and its tributary the Abbey River upstream of the mouth of the River Erne during the period from 31st March 1972 to the commencement of the annual close season.

Letterkenny District Bye-Law No. 556 dated 23rd March 1972.

Prescribing the weekly close time in respect of Lough Swilly (as

defined in Article 3 of this Bye-Law) to be the period commencing mencing at 6 a.m. on Saturday and ending at 6 a.m. on the next following Tuesday.

Prescribing the weekly close time in respect of the River Ramelton for fishing by engines other than rod and line to be the period commencing at 6 a.m. on Saturday and ending at 6 a.m. on the next following Tuesday.

Prohibiting fishing for salmon with rod and line in the area defined in Article 3 of this bye-law and in any of the fresh water systems flowing into Lough Swilly in the period from 6 a.m. on Monday to 6 a.m. on Tuesday in any week.

Control of Fishing for Salmon (Lough Swilly) Order 1972 (S.I. No. 82 of 1972) dated 23rd March 1972.

Limiting to eighteen the number of licences that may be issued for drift netting for salmon in Lough Swilly and prescribing the method of allocating the licences.

Tralee Bay Oysters Bye-Law No. 557 dated 5th July 1972.

Substituting new paragraphs (h) and (i) in lieu of those contained in Article 4 of the Tralee Bay Oysters Bye-Laws No. 534 1966.

Prescribing the hours during which oysters shall not be removed or taken from Tralee Bay Oyster beds.

Revoking Tralee Bay Oysters Bye-Laws No. 544 of 1968.

Ballyshannon District Bye-law No. 558 1972 dated 4th August 1972.

Revoking the Ballyshannon District Bye-law No. 555 1972.

River Erne (Special Local Licences) (Amendment) Order 1972 (S.I. No. 193 of 1972) dated 4th August 1972.

Prescribing the rate of special local licence duty payable in respect of a draft net for use in the tidal waters of the River Erne.

River Erne (Special Local Licence Duty) (Method of Payment) (Amendment) Order 1972 (S.I. No. 194 of 1972) dated 4th August 1972.

Suspending the operation of the 1938 Order of the same title while the River Erne (Special Local Licence) (Amendment) Order 1972 remains in force.

Mussel Fisheries (Clonakilty Harbour and Glandore Harbour) Order, 1972 dated 1st September, 1972.

Granting Ring Fisheries Limited of Clonakilty the exclusive rights of operating a mussel fishery in the waters described in the Schedule to the Order.

Oyster Fishery (Crook Haven) Order 1972 dated 1st September 1972.

Granting Celtic Fisheries Limited, Rock Island Pond, Goleen, certain exclusive rights within the limits of the oyster fishery described in the Schedule to the Order.

Galway Bay Oysters Close Season Bye-law No. C.S. 118 1972 dated 18th October 1972.

Prescribing the close season for the taking of oysters in Galway Bay.

Revoking the Galway Bay Oyster Close Season Decision dated 13th August 1877, and the Galway Bay (Part of) Oyster Close Season Bye-law dated 26th January 1910.

Galway Bay Oysters Bye-laws No. 559 1972 dated 18th October 1972.

Prescribing that all oysters taken in the natural oyster beds in Galway Bay shall be culled; that any oyster less than 3" at its greatest dimension and all gravel and fragments of shell taken or raised shall immediately be thrown back into the sea; that not more than one dredge shall be used from a boat at a particular time; that the mouth of such dredge shall not exceed 4' measured along its longest side; that no boat shall have on board during the close season for oysters in Galway Bay any dredge or other instrument for taking oysters; that no oysters may be taken, by any means, between sunset and sunrise; that oysters may not be taken, by any means other than the use of a dredge, in those areas of Galway Bay described in Article 5; that a person shall not sell, expose for sale, give, transfer, purchase, receive, carry or have in his possession any oyster taken from the natural oyster beds in Galway Bay which measures less than 3" at its greatest dimension.

Revoking (a) Galway Bay, etc. Oyster Fisheries Bye-law, Rule and Regulation dated 21st June 1905; (b) Galway Bay, etc. Oyster Fisheries Bye-laws dated 22nd June 1905; (c) Galway Bay, etc. Oyster Fisheries Bye-laws dated 7th May 1908; (d) Clarinbridge Oyster Bye-law No. 454 1944; and (e) Clarinbridge Oysters Bye-laws No. 553 1971.

FOYLE AREA

Regulations made by the Foyle Fisheries Commission with the approval of the Minister for Agriculture and Fisheries and the Ministry of Agriculture of Northern Ireland.

Foyle Area (Suspension of Fishing) Regulations 1972 dated 16th May 1972.

Suspending netting during certain periods to ensure a specified escapement of fish into freshwater.

Foyle Area (Angling) Regulations 1972 dated 16th May 1972.

Regulating angling on certain specified waters in the Foyle area.

APPENDIX No. 23

OUTPUT AND DISPOSAL OF FISH HATCHERY PRODUCE 1971/72

Hatchery	Output (Ova)			Disposal (,000)	River System Stocked
	Salmon (,000)	Sea Trout (,000)	Brown Trout (,000)		
Parteen ...	1,206	—	—	* { 447 unfed fry 522 fingerlings 160 smolts	River Shannon and Tributaries
Carrig- adrohid	274	—	—	213 { fry fingerlings smolts	Rivers Lee, Bride and Shournagh
Fanure ...			1,000	390 Fry 180 Summerlings 194 Fingerlings Some retained for rearing to yearling and Adult stages.	Various Trust waters in Co.'s Longford, Monaghan, Meath, Westmeath, Sligo, Offaly, Cork, Kerry and Clare and sales to angling interests.
Mullingar			1,500	180 Ova 780 Fry 228 Fingerlings Some retained for rearing to yearling stages.	Sold to E.S.B. Various Trust waters in Co.'s Westmeath, Cavan and Long- ford and sales to angling interests.
Clooncrim			400	34 Fingerlings.	Various Trust waters in Co.'s Westmeath, Roscommon and Sligo and sales to angling interests.
Mallow	600				River Blackwater and Tributaries.

Hatchery	Output (Ova)			Disposal (,000)	River System Stocked
	Salmon (,000)	Sea Trout (,000)	Brown Trout (,000)		
Screebe	237	20		36 Salmon 25 " 50 " 20 " 16 " 20 " 70 " 6 Sea Trout 10 " 4 "	Roughy Ballisodare To Galway Board Kylemore Lake Comeragh Glencar Retained for Screebe Ballynabinch Crumlin Retained for Screebe
Cong ...	150				Corrib System
Glenties ...	272			100 25 25 50 72	Foyle Laune Gweebarra Waters of Ballyshan- non Board Owenea
Burrishoole Fishery No. I. (operated by Salmon Research Trust)	60			For Research Purposes.	
Burrishoole Fishery No. II.	60			10 50	To Galway Board Owenmore

*These figures include fish reared from 188,400. ova of Norwegian origin.

APPENDIX No. 24

SCIENTIFIC AND OTHER PAPERS, 1972

1. DEPARTMENTAL

A. IRISH FISHERIES INVESTIGATIONS

a. *Series A* (Freshwater)

No. 9. D. T. McCarthy. The ecology of brown trout and juvenile salmon in the River Owenea, Co. Donegal.

No. 10. C. Moriarty. Studies of the eel *Anguilla anguilla* in Ireland. 1. In the lakes of the Corrib System.

b. *Series B* (Marine)

No. 7. (Dated 1971 but published in 1972) containing

i. J. P. Hillis. The whiting fisheries off counties Dublin and Louth on the east coast of Ireland and

ii. M. Kennedy and T. Champ. Occurrence of eggs of *Echiodon drummondi*, Thompson on the coast of County Kerry.

No. 8. P. F. Toner and Clodagh O'Connell. Water quality investigations in the River Blackwater and River Martin, Co. Cork. 1966-1969. (Dated 1971 but published in 1972).

B. FISHERY LEAFLETS

No. 25. Anon. A list of scientific and engineering papers by members of the staff of the Fisheries Division of the Department of Agriculture and Fisheries.

No. 26. F. A. Gibson. Lobster trap census, 1970.

No. 30. J. P. Hillis. Some problems and methods in Dublin Bay prawns (*Nephrops norvegicus*) research.

No. 31. Anon. European Conservation Year, 1970. Synopsis of talks given at meetings organised by the Fisheries Division of the Department of Agriculture and Fisheries.

No. 32. K. M. Bhatnagar. East coast queen fishery, 1970.

No. 33. F. A. Gibson. General methods for storage of lobsters.

- No. 34. F. A. Gibson. Seasonal and annual catches of lobsters, crawfish and crabs (Years 1961-1970).
- No. 35. M. Crowley. Parasitology of Irish mussels.
- No. 36. T. D. Kennedy. Herring investigations of the north-west and west coasts 1971-72.
- No. 37. J. P. Molloy. Herring fisheries on the south and south-west coasts, 1971-72.
- No. 38. F. A. Gibson. Imports and exports of shellfish, 1961-70.
- No. 39. F. A. Gibson. Lobster trap census, 1971.
- No. 40. M. Crowley. The Irish mussel fishery, 1971-72.
- No. 41. F. A. Gibson. Catch effort and size distribution in the Irish lobster fishing industry in 1969 and 1970.
- No. 42. F. A. Gibson. Catch effort and size distribution in the Irish lobster and lobster/crawfish fisheries, 1951-1970.
- No. 43. C. Moriarty. Eel research, 1965-1971.
- No. 44. M. Crowley. Shellfish survey of estuaries and bays of West Cork.
- No. 45. F. A. Gibson. Value of fish and shellfish landings into leading Irish ports, 1962-1971.

2. OTHER PUBLICATIONS

- J. P. Hillis. Juvenile *Nephrops* caught in the Irish Sea. *Nature* 238 pp. 280-281.
- J. P. Hillis, with Michael Long. Abnormal flatfish from the Dingle area. *Irish Naturalists' Journal* 17, pp 204-205.
- C. Moriarty. Caddis Larvae (Trichoptera). Prey and predation. *Irish Naturalists' Journal* 17 p 206.
- Arthur E. J. Went. Interesting fishes in Irish waters in 1971. *Irish Naturalists' Journal* 17, pp 210-215.

Four interesting nineteenth century expeditions organised by the Royal Irish Academy. *Proceedings of the Royal Society of Edinburgh* B. 72, 29. pp 305-309.

————— The role of the Royal Dublin Society (established in 1731) in fisheries research and development. *Proceedings of the Royal Society of Edinburgh B.* 73, 34, pp 345-350.

————— The history of the International Council for the Exploration of the Sea. *Ibid.* 73. 35 pp 351-360.

————— Salmon of the Foyle system (1971). *20 Rep. Foyle Fisheries Commission, 1970-1971.*

————— "Sweeper" nets for salmon in County Kerry. *Journal Royal Society of Antiquaries of Ireland.*

Arthur E. J. Went, with K. U. Vickers. A comparison between the salmon and grilse of the Foyle and Bann systems (1971). *20 Rep. Foyle Fisheries Commission 1970-1971.*

