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An Economic Evaluation of Irish Salmon Fishing

I: The Visiting Anglers

R. O'CONNOR and B. J. WHELAN



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An Economic Evaluation
of Irish Salmon Fishing

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*An Economic Evaluation of Irish
Salmon Fishing*

1: The Visiting Anglers

R. O'CONNOR and B. J. WHELAN

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*An Economic Evaluation of Irish Salmon Fishing**

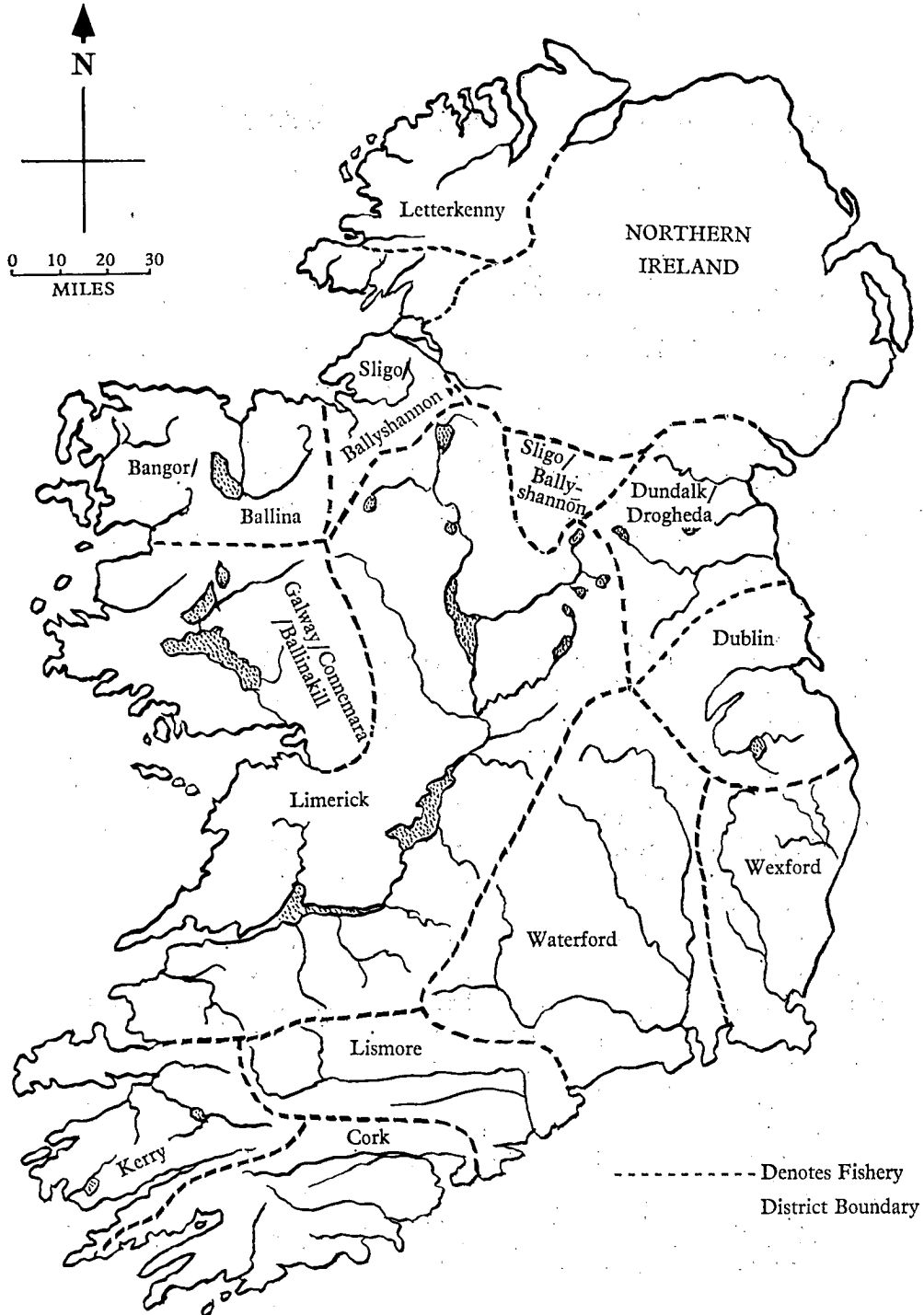
INTRODUCTION

THE rivers of Ireland still contain certain species of fish which have become extinct in many parts of Europe. Among these species, salmon and sea trout are probably the most sought-after, both for food and sport. Salmon enter all Irish rivers and most streams of any size flowing directly into the sea. In some rivers, the first run takes place in Spring, and these Spring fish average about 8–12 lb. in weight depending on the river. Spring fish have become less numerous in recent years, though the reason for this is not entirely clear. Other river-systems do not receive their first run of salmon until the Summer and these fish are usually smaller than the springers, averaging about 6 lb.

The sea trout (the migratory form of the European trout, *Salmo Trutta*) is plentiful in most short rivers running directly into the sea, and in coastal lakes. It is most abundant in the acidic river-systems of the west of Ireland and is seldom found far up the larger rivers. The fishery districts of Kerry, Galway/Connemara/Ballinakill, Bangor/Ballina and Letterkenny (see map facing p. 13) are sea-trout country *par excellence*.

Being highly prized as food-fish, and also extremely popular with anglers, salmon and sea trout are of considerable importance both to netmen and to Irish and visiting anglers. In order to give a picture of the Irish salmon fishing industry the number of licences issued and the catch returns for the years 1955 to 1970 are given in Appendix Table A.1. This table shows that in 1970 the total recorded weight of salmon caught by all methods in Ireland (Irish Republic) was 3.5 million lb., the market value of which was about £1.2 million. Of these, 3.4 million lb. were caught by commercial licence holders of whom there were 1,769 in the country. The remaining 0.1 million lb. (equivalent to 18,890 fish) were taken by rod anglers. In addition, these anglers caught 40,400 sea trout weighing 60,650 lb. Netmen caught about 40,000 lb. of

*A preliminary version of this paper was read at a Consultation on the "Economic Evaluation of Fisheries" organised by the European Inland Fisheries Advisory Commission (EIFAC) in the Hague, Netherlands, in January 1972 and later published by that body in the Proceedings of the Commission [1].



Ireland: Showing Fishery Districts as used in this study, and also main river systems.

sea trout, showing that the sea trout is more important to anglers than to netmen.

Total salmon licences of all kinds issued in 1970 were 12,979. This number is the fourth highest figure ever recorded, being less than the figure for 1964, 1965 and 1966. The decline in the number of salmon licences issued between 1966 and 1970 was probably due to a rather severe outbreak of salmon disease (Ulcerative Dermal Necrosis) which affected our rivers in recent years, but which now seems very much on the wane. The total number of licences issued to rod anglers in 1970 was 11,210. The average number of salmon and sea trout taken per licence* was therefore 1.7 and 3.6 respectively. This represents a considerable reduction on the previous year when the corresponding figures were 2.3 and 6.9 respectively.

An analysis of the 1970 rod licences showed that about 60 per cent were issued to Irish anglers and about 40 per cent to visiting anglers (i.e. those resident outside the Irish Republic). It is the task of the present study to sketch a statistical profile of these visiting anglers, and to assess the contribution their expenditure makes, both to the economy as a whole and to various regions within the country.

Background to Study

This paper forms part of a larger study entitled "Economic Evaluation of Irish Salmon and Sea Trout Fishing" which is being sponsored by the Fisheries Branch of the Department of Agriculture and Fisheries and carried out by the Economic and Social Research Institute (ESRI). Work on the project commenced in Autumn 1969, and was greatly facilitated by the close cooperation of the Fisheries Branch who made available to ESRI all background material and basic records required, and who helped in numerous other ways.† The terms of reference of the project as a whole were as follows:

- (1) Evaluation of the economic impact of salmon angling upon the districts concerned.
- (2) Cost benefit analyses of investment programmes related to salmon fishing.
- (3) Determination of the relationship between demand for and supply of resources.

*As some anglers take out more than one licence the number of anglers and licences do not exactly coincide.

†Special thanks are due to Messrs E. O'Kelly, M. Breathnach and J. Keohane of the Fisheries Branch who have been closely associated with this study and who have helped in every way possible.

- (4) Determination of the capacity for future development.
- (5) Provision of information to assist in more effective marketing of the various types of angling available and capable of being developed.

In order to comply with these terms of reference we have included in the investigation fishery owners and salmon fishermen of all kinds, namely, Irish anglers, visiting anglers and commercial fishermen. This paper deals with only one of these groups (the visiting foreign anglers) and with the impact of this group upon the districts concerned. In this context visiting anglers are defined to include all anglers coming from outside the State boundaries including those coming from Northern Ireland. The districts concerned are the statutory fishery districts into which the country is divided for administrative purposes. There are in all 17 such districts in the State but for the purposes of the study we have combined some districts so that results are given for 12 regions, some of which include up to three fishery districts (see map facing p. 13).

As in most countries the areas of Ireland where salmon fishing, both commercial and sporting, is most widely practised are generally those which are least developed economically. These are predominantly in the western regions, i.e. Kerry, Galway, Mayo and Donegal. It is believed that salmon fishing can be an important source of income and employment in these areas and for this reason the regional financial data in this and the forthcoming papers should be of special interest.

Method of Evaluation and Grossing Used

While the economic evaluation of recreational resources can raise very difficult conceptual problems, these mostly relate to the benefits conferred on residents of an area by their access to the resource in question [2], [3]. In the present study, however, we are concerned solely with the benefits conferred on Ireland as a whole and on its particular regions by visiting salmon anglers from outside the country. We are primarily interested in that part of these visitors' expenditure which is directly attributable to salmon fishing,* and in the effects of this expenditure on national and regional income in Ireland. We therefore first of all attempted to determine the expenditure of a sample of anglers who visited different regions of the State in 1970. Next, we grossed the sample results to regional and national totals and finally we expanded the total expenditure by a national multiplier in order to assess the full "value added" by visiting anglers.

The grossing up for each item was carried out initially on the basis of

*In making estimates of expenditure care should be taken to ensure that the expenditure included relates to visitors who come specifically to enjoy the recreation. Expenditure on a recreation by people who would visit the region even if this recreation were not there should be excluded.

country of residence of angler using as grossing factors the ratios of total licences of different types issued to the number of these licence types in the sample. This grossing gave control totals for each item and these totals were then distributed to different sub-classifications on the basis of sample proportions. Thus, in the case of expenditure by fishery district, we first estimated total expenditure on different items by country of residence of angler, and we then distributed these totals between districts on the basis of district distribution of sample expenditure—similarly for other items. The number of rod licences of different types issued by Boards of Conservators to home and visiting anglers for the year 1970 are given in Table A.2 of the Appendix.

THE SURVEY

Pilot Survey

In Spring 1970 a pilot postal survey in respect of the 1969 season was carried out on a small random sample of foreign salmon anglers who had visited Ireland the previous year. The purpose of this survey was to pre-test a questionnaire, test the response rate and determine whether or not a postal survey was feasible. The names and addresses of the anglers were available from licence counterfoils kindly supplied by the Department of Agriculture and Fisheries.* Questionnaires were sent out to 120 anglers, and after three reminders 94 of these questionnaires were returned. Of these, 81 were usable and 13 unusable. The remaining 26 questionnaires were not returned, or were returned by the Post Office as being insufficiently or wrongly addressed.

The most serious difficulty encountered during the pilot study was the problem of foreign anglers giving the address of an Irish hotel or guesthouse, and so being wrongly classified as Irish residents when the licence counterfoils were sorted. To deal with this problem an attempt was made to interview visiting anglers while they were in Ireland during the 1970 season. This procedure, however, did not prove feasible, as the anglers were very difficult to contact which made interviewing prohibitively expensive. About thirty interviews were obtained in all and these are included in the present study.

The Main Survey

Given the expense involved in interviewing, and also the generally satisfactory response in the pilot study, it was decided to use a postal survey for the foreign anglers in the main study, which related to the year 1970 and was carried out in 1971. A copy of the questionnaire used is given as Appendix B. The licence counterfoils were again used to provide a list of anglers but as

*A licence is legally required to fish for salmon and/or sea trout in Ireland.

a result of administrative action the addresses on the counterfoils were more complete than in the previous year.*

The Sample

The sample used was a stratified random sample picked from the 1970 salmon licences issued. The stratification was by fishery district in which the licence was issued and to ensure sufficient numbers of anglers in each district variable sampling fractions were used. The number of licences issued, the numbers picked in the sample and the number of usable returns received, classified by country of origin and by fishery district, are given in Table 1 and Table 2.

As can be seen from these tables, the response rate in the main study was not nearly as good as in the pilot survey a year earlier, even though care was taken to exclude from the main study any angler who had been included in the pilot. Two reasons may be put forward for the poorer results in 1971.

- (1) The British Postal Strike took place during the survey and it seems to have affected the response, even though new questionnaires were sent out to all non-respondents after the strike finished.
- (2) Difficulty was found in reading a high proportion of the addresses on the licence counterfoils, particularly those of the European anglers. For this reason it is likely that many of the letters sent out were wrongly addressed even though we excluded from the sample the most illegible of the counterfoils.

RESULTS OF SURVEY

The results of the Survey are given below. Most of these results are grossed up estimates for the total population of visiting salmon and sea-trout anglers and are thus subject to random sampling error. For convenience, results in the tables are given correct to several significant places but they are not to be deemed accurate to these places. Also columns of figures do not always add to given totals due to rounding errors.

Distribution of Licences and Responding Anglers

The total number of licences issued to visiting anglers in 1970, the number of questionnaires sent out and the number of usable returns received, classified by country of residence, are shown in Table 1. As can be seen from this table,

*Early in 1970 the Fisheries Branch instructed licence vendors to insist on home rather than hotel addresses being entered.

4,714 licences were issued, 790 questionnaires were sent out and 430 usable returns received. The overall response rate was therefore 54.4 per cent, while usable returns were 9.1 per cent of total licences issued. The majority (55 per cent) of licences were issued to anglers from Great Britain while about 20 per cent were issued to anglers from Northern Ireland, 17 per cent were issued to people from the rest of Europe and the remaining 8 per cent to people from

Table 1: *Number of Licences Issued in 1970 and Numbers and Percentages in Sample Classified by Country of Residence of Angler*

Country of Residence	Licences issued in 1970		Questionnaires sent out*		Usable returns*		Returns as percentage of	
	No.	%	No.	%	No.	%	Licences issued	Questionnaires sent out*
Northern Ireland	941	20.0	193	24.4	91	21.3	9.7	47.2
Great Britain	2,584	54.8	419	53.0	255	59.3	9.9	60.9
Rest of Europe	820	17.4	124	15.7	59	13.7	7.2	47.6
Rest of World	369	7.8	54	6.8	25	5.8	6.8	46.3
All Countries	4,714	100.0	790	100.0	430	100.0	9.1	54.4

*Includes anglers interviewed while in Ireland.

Table 2: *Number of Licences Issued in 1970 and Numbers and Percentages in Sample Classified by Fishery District*

Fishery district in which licence was issued	Licences Issued	Questionnaires sent out*	Usable Returns*	Returns as Percentage of	
				Licences Issued	Questionnaires sent out
	No.	No.	No.	%	%
Dublin	90	35	21	23.3	60.0
Wexford	62	38	24	25.8	63.2
Waterford	132	47	31	23.5	66.0
Lismore	155	43	28	18.1	65.1
Cork	231	62	35	15.2	56.5
Kerry	1,171	157	84	7.2	53.5
Limerick	194	54	22	11.3	40.7
Galway/Connemara/ Ballinakill	887	109	68	7.7	62.4
Bangor/Ballina	570	85	48	8.4	56.5
Sligo/Ballyshannon	336	55	24	7.1	43.6
Letterkenny	779	67	27	3.5	40.3
Drogheda/Dundalk	107	38	18	16.8	47.4
All Districts	4,714	790	430	9.1	54.4

*Includes anglers interviewed while in Ireland.

the rest of the world (mainly USA). Table 1 also shows that the usable returns reflect this breakdown fairly closely, with about 59 per cent of the returns coming from Great Britain, about 21 per cent from Northern Ireland and the remaining 20 per cent from the rest of Europe and the rest of the world. Table 2 gives similar data to Table 1 classified by the 12 fishery districts into which the country has been divided for the purpose of this study.

Age and Income Profile of Anglers

Table 3 shows the percentage distribution of the visiting anglers by age, income level, and country of residence. About 11 per cent of the sampled anglers refused to divulge their incomes but an examination of their occupations (results not published) revealed that they fell into one or two of the top income brackets. As can be seen from the table, salmon angling is a pastime enjoyed by the more elderly people. Over 40 per cent of the visiting anglers were over 50 years of age while only 14 per cent were under 30 years. Table 3 also shows that salmon angling is a sport mainly for the well-to-do visitor, a high proportion of those answering the income question being in the over £4,000 per annum income group. Anglers from Europe and the rest of the world tend to be mainly from the upper income groups, 63 and 76 per cent, respectively, having incomes of £3,000 or over. In contrast to this only 21 per cent of Northern Ireland and 49 per cent of British anglers fell into these income groups. The estimated total numbers in each income group classified by age and country of residence are given in Table A.3 of the Appendix.

Table 3: *Percentage Distribution of Visiting Anglers by Income, Age and Country of Residence. (Including Day Trippers)*

	Income level (£)							
	1,000 and under	1,001- 2,000	2,001- 3,000	3,001- 4,000	4,001- 5,000	Over 5,000	No answer	All incomes
<i>Age group (years)</i>								
20 or under	45.9	—	—	—	—	—	2.1	4.2
21-30	18.9	24.7	15.7	2.7	2.2	0.9	4.2	9.8
31-40	2.7	16.9	31.9	24.3	15.2	12.1	14.6	17.0
41-50	10.8	22.1	24.6	21.6	23.6	29.3	4.2	21.6
51-60	5.4	18.2	7.2	21.6	37.0	31.0	6.2	19.8
Over 60	16.2	15.5	20.3	29.7	17.4	25.0	22.9	21.1
Unknown	—	2.6	—	—	4.3	1.7	45.8	6.5
All ages	100—	100—	100—	100—	100—	100—	100—	100—
<i>Country of Residence</i>								
Northern Ireland	15.4	31.9	22.0	5.5	6.6	8.8	9.9	100—
Great Britain	7.1	18.4	13.3	8.6	12.2	27.8	12.5	100—
Rest of Europe	3.4	1.7	20.3	16.9	11.9	33.9	11.9	100—
Rest of World	12.0	—	12.0	—	8.0	68.0	—	100—
All countries	8.6	17.9	16.0	8.6	10.7	27.0	11.2	100—
Number in sample	37	77	69	37	46	116	48	430

Number and Duration of Visits

Table 3 shows the total number of anglers and visits, and of days stayed per angler, classified by country of residence. In preparing this table it was necessary to give special treatment to the Northern Ireland visitors since many of these (unlike other visitors) made day trips to the Republic for the purpose of salmon angling. Accordingly, visits by anglers from Northern Ireland were segregated into "day" and "other trips" the latter term meaning trips during which the angler spent at least one night in the Republic.

Table 4: *Estimated Total and Average Number of Visits and of Days Stayed per Angler, Classified by Country of Residence*

<i>Country of Residence</i>	<i>Number of Anglers</i>	<i>Total Number of Visits</i>	<i>Average Number of Visits per Angler</i>	<i>Total Number of Days Spent in State</i>	<i>Average Number of Days Spent in State</i>
Northern Ireland:					
Day Trips		8,112	9.4	8,112	9.4
Other Trips	860	2,193	2.6	10,313	12.0
All Trips		10,305	12.0	18,425	21.4
Great Britain	1,960	2,313	1.2	30,397	15.5
Rest of Europe	647	738	1.1	10,337	16.0
Rest of World	284	284	1.0	4,812	17.0
All Countries	3,751	13,640(a)	3.5(a)	63,971(a)	16.9(a)
		5,528(b)	1.5(b)	55,859(b)	14.9(b)

(a) Including day trips from Northern Ireland.

(b) Excluding day trips from Northern Ireland.

As can be seen from Table 4 the total number of salmon/sea-trout anglers who visited the Republic in 1970 is estimated at 3,800. Of these about one-quarter came from Northern Ireland, one-half came from Great Britain, one-sixth came from the rest of Europe and one-twelfth came from the rest of the world. In all, these anglers made about 14,000 visits to the country during the year, but over 8,000 of these visits were day trips by anglers from Northern Ireland, leaving about 6,000 visits during which the angler and his party spent at least one night in the country.

If day trips are included each angler made an average of 3.5 visits to the State but if day trips are excluded the average number of visits per angler

was 1.5. Northern Ireland anglers made an average of 9.4 day trips and 2.6 other trips, while anglers from Britain made about 1.2 trips per angler. European anglers made an average of 1.1 trips and those from the rest of the world visited the country only once during the year. Excluding day trips the average number of days spent in the State per visitor was 12 days by Northern Ireland anglers, 16 days by British and European anglers and 17 days by anglers from the rest of the world. If day trips are included each Northern Ireland angler spent an average of about 21 days in the country.

Purpose of Visits and Species Fished

As might be expected, not all visitors who take out salmon angling licences come specifically to fish for salmon. Many come for a family holiday, for a business trip, for brown-trout fishing or for some other purpose, and during the course of the visit take out a salmon licence. Licence holders in the sample were therefore asked to state the purpose of their visits and the answers given are summarised in Table 5. As can be seen from this table, 72 per cent of all

Table 5: *Purpose of Visits to Ireland in 1970 Classified by Country of Residence of Angler*

Country of residence	Purpose of Visit(s)					
	Salmon Fishing	General Family Holiday	Combination of (i) and (ii) (iii)	Other (iv)	No Answer (v)	All Purposes (vi)
	(i)	(ii)	(iii)	(iv)	(v)	(vi)
<i>Number of Visits</i>						
Northern Ireland:						
Day trips	6,750	104	123	1,135	—	8,112
Other trips	1,438	123	633	—	—	2,193
Great Britain	1,171	317	679	100	47	2,313
Rest of Europe	396	77	177	66	21	738
Rest of World	147	68	68	—	—	284
All countries	9,902 (a) 3,152 (b)	689 (a) 585 (b)	1,680 (a) 1,557 (b)	1,301 (a) 166 (b)	68 (a) 68 (b)	13,640 (a) 5,528 (b)
<i>Percentage</i>						
Northern Ireland:						
Day trips	83.2	1.3	1.5	14.0	—	100.0
Other trips	65.5	5.6	28.9	—	—	100.0
Great Britain	50.7	13.7	29.3	4.3	2.0	100.0
Rest of Europe	53.7	10.4	23.9	9.0	3.0	100.0
Rest of World	52.0	24.0	24.0	—	—	100.0
All countries	72.0 (a) 56.6 (b)	5.3 (a) 10.7 (b)	12.8 (a) 28.4 (b)	9.4 (a) 3.0 (b)	0.5 (a) 1.3 (b)	100.0 100.0
Number of visits in sample	1,067 (a) 353 (b)	78 (a) 67 (b)	190 (a) 177 (b)	139 (a) 19 (b)	8 (a) 8 (b)	1,482 (a) 624 (b)

(a) Including day trips from Northern Ireland.
(b) Excluding day trips from Northern Ireland.

visits including day trips were for the purpose of salmon fishing, while a further 13 per cent were for the purpose of salmon fishing combined with a family holiday. About 5 per cent of the visits were made for the purpose of having a general family holiday and about 9 per cent for other purposes.

If day trips are excluded, only 57 per cent of the remaining visits were for the purpose of salmon fishing alone, but a further 28 per cent were for the purpose of salmon fishing and family holidays combined. The remaining 15 per cent of visits were for general family holidays and for other purposes. Thus regardless of whether or not day trips are included some 85 per cent of all visits were for the purpose of salmon angling or for a combination of salmon angling and family holidays with 15 per cent mainly for family holidays and other purposes. When the visits (other than day trips) are classified by country of residence of the visitor, it can be seen that almost 95 per cent of Northern Ireland visitors came mainly for salmon fishing or for a combination of salmon fishing and family holidays. For other countries the corresponding proportions were:

Great Britain	80 per cent
Rest of Europe	78 „ „
Rest of World	76 „ „

The extent to which salmon licence holders fished for species other than salmon or sea trout is shown in Table 6. About 51 per cent of anglers in the sample said that they did not fish for species other than salmon or sea trout, while about 42 per cent said they did. Anglers from the rest of Europe fished for other species to a considerably greater extent than did anglers from other countries. It can be seen from the lower half of the table that the richer anglers tended to fish for salmon and/or sea trout to a greater extent than did the less well-off fishermen, though this is less likely to apply to continental Europeans than to anglers from other countries. However, the general tendency shown in the table would seem to be consistent with the image of salmon and sea trout as "rich men's fish".

Mode of Transport Used Entering Country

Table 7 gives the mode of transport used to visit Ireland by anglers from various countries. If we exclude day trips about 25 per cent of the trips made by anglers in the sample were by air, about 30 per cent were by car ferry (i.e. ship+car), and about 38 per cent by car only. This latter figure is composed almost entirely of visits by anglers from Northern Ireland practically all of whom entered the Republic by car. The visitors from Great Britain who entered the State by car, bus or train had been in Northern Ireland immediately prior to their visit to the Republic.

Table 6: *Percentage of Anglers who gave certain answers to the question "Did you fish for species other than salmon or sea trout?" classified by Country of Residence and by Income Group*

	<i>Response</i>			
	<i>Yes</i>	<i>No</i>	<i>No Answer</i>	<i>Total</i>
	<i>Percentage</i>			
<i>Country of Residence</i>				
Northern Ireland	36.3	56.0	7.7	100.0
Great Britain	41.6	49.0	9.4	100.0
Rest of Europe	57.6	39.0	3.4	100.0
Rest of World	24.0	76.0	—	100.0
<i>Income Group (£)</i>				
1,000 and under	48.6	43.2	8.1	100.0
1,001-2,000	55.8	40.3	3.9	100.0
2,001-3,000	49.3	46.4	4.3	100.0
3,001-4,000	54.0	43.2	2.7	100.0
4,001-5,000	41.3	52.1	6.5	100.0
5,001+	32.7	62.1	5.2	100.0
Unknown	14.6	56.2	29.2	100.0
All Groups	41.6	50.7	7.7	100.0
Number in Sample	179	218	33	430

Type of Party

Anglers were asked to specify the type of party, if any, with which they came to Ireland, and the results of this question are shown in Table 8. The vast majority (over 80 per cent) of day trips from Northern Ireland were with a party of fishermen, while only about 30 per cent of "other" trips from Northern Ireland were with this type of party. Anglers from Great Britain tended to come with a family party to a greater extent than anglers from other countries. Anglers from continental Europe came more frequently with parties of fishermen than with any other type of party. Considering the figures for all visits (excluding day trips), it can be seen that 2,876 visits (53 per cent) were made with family parties, 1,466 visits (26 per cent) with parties of fishermen and 1,186 (21 per cent) with other types of party, including those who came alone.

Table 8 also shows the average size of the different types of party. Parties of fishermen tended to be slightly larger than any other type of party, while parties classified as "other" tended to be smallest, mainly due to the inclusion in this category of those who came alone. The average size of party was 3.7 for day trips from Northern Ireland and 2.7 for other parties from the North.

Table 7: *Estimated Number and Percentage of Visits Classified by Mode of Transport and Country of Residence*

<i>Mode of Transport</i>	<i>Country of Residence</i>						
	<i>Northern Ireland</i>		<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	<i>All Countries</i>	
	<i>Day Trips</i>	<i>Other Trips</i>				<i>Including Day Trips</i>	<i>Excluding Day Trips</i>
<i>Total Number of Visits</i>							
Air	—	—	747	441	239	1,427	1,427
Ship with Car	—	—	1,268	210	34	1,512	1,512
Ship without Car	—	—	169	11	11	191	191
Own Boat	348	—	—	—	—	348	—
Train/Bus	—	9	7	—	—	16	16
Car only	7,764	2,184	53	—	—	10,001	2,237
No Answer	—	—	69	76	—	145	145
Total	8,112	2,193	2,313	738	284	13,640	5,528
<i>Percentage</i>							
Air	—	—	32.3	59.7	84.0	10.7	25.3
Ship with Car	—	—	54.8	28.4	12.0	12.6	29.8
Ship without Car	—	—	7.3	1.5	4.0	1.6	3.8
Own Boat	4.3	—	—	—	—	2.5	—
Train/Bus	—	0.4	0.3	—	—	0.1	0.3
Car only	95.7	99.5	2.3	—	—	71.4	38.2
No Answer	—	—	3.0	10.4	—	1.1	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of Visits in Sample	858	232	300	67	25	1,482	624

Table 8: *Estimated Number of Visits by All Visiting Anglers with Different Types of Party, Classified by Country of Residence*

Country of Residence	Type of Party			
	Family Party	Party of Fishermen	Other (including "alone")	All Types (including no answer)
<i>Total Number of Visits</i>				
Northern Ireland:				
Day Trips	756	6,760	596	8,112
Other Trips	1,096	672	426	2,193
Great Britain	1,353	480	480	2,313
Rest of Europe	245	280	212	738
Rest of World	182	34	68	284
All Countries	3,632(a) 2,876(b)	8,226(a) 1,466(b)	1,782(a) 1,186(b)	13,640(a) 5,528(b)
<i>Average Size of Party</i>				
Northern Ireland:				
Day Trips	2.0	4.1	1.1	3.7
Other Trips	2.7	3.0	2.4	2.7
Great Britain	3.0	2.7	2.4	2.8
Rest of Europe	2.8	2.8	1.9	2.5
Rest of World	2.1	3.3	2.5	2.3
All Countries	2.6(a) 2.8(b)	3.9(a) 2.9(b)	1.9(a) 2.3(b)	3.3(a) 2.7(b)
Number of visits in Sample	409(a) 329(b)	876(a) 161(b)	195(a) 132(b)	1,482(a) 624(b)

(a) Including day trips from Northern Ireland.
(b) Excluding day trips from Northern Ireland.

The average size of party from other countries was 2.8 for British parties, 2.5 for continental European parties and 2.3 for parties from the rest of the world.

Distribution of Bednights

The estimated number of bednights spent by all anglers and their dependants in different seasons of the year, classified by district in which they stayed, are given in Table A 4. This table shows that anglers and their dependants spent about 103,000 bednights in the State, or an average of 27 bednights per angler.

Table 9: *Percentage Distribution of Bednights Spent by Anglers and their Dependants in Different Seasons of the Year, Classified by Districts in which Stayed*

<i>Fishery District</i>	<i>January-March</i>	<i>April-June</i>	<i>July-September</i>	<i>October-December</i>	<i>All Months</i>
Dublin	*	*	*	*	*
Wexford	34.4	34.2	31.5	0.0	100.0
Waterford	0.0	50.6	49.4	0.0	100.0
Lismore	8.6	45.4	46.0	0.0	100.0
Cork	1.0	12.3	86.7	0.0	100.0
Kerry	4.0	21.1	74.7	0.2	100.0
Limerick	3.4	26.6	70.0	0.0	100.0
Galway/Connemara/ Ballinakill	0.3	16.4	82.8	0.5	100.0
Bangor/Ballina	3.0	17.8	79.2	0.0	100.0
Sligo/Ballyshannon	13.2	14.3	72.5	0.0	100.0
Letterkenny	2.6	18.6	77.4	1.4	100.0
Drogheda/Dundalk	7.6	24.1	68.3	0.0	100.0
Unknown	6.1	2.0	91.8	0.0	100.0
All Types/All Districts	4.4	22.1	73.1	0.4	100.0
Number of Bednights Recorded in Sample	590	2,961	9,795	54	13,400

*Very small numbers in sample.

The figures in Table A.4 are given in percentage form in Table 9 and this table shows that the vast majority of visits took place in the July-September period, there being fewer visits in January-March and very few in the October-December period. Naturally, the time of the year at which anglers visit the various districts is influenced by the type of fishing available. Thus Wexford, where the salmon fishing is at its best in Spring, had about one-third of its bednights in the January-March period, whereas none of the other districts had anything like as high a proportion as this in the Spring months. Districts which had very few bednights or none at all during this period were Waterford, Galway/Connemara/Ballinakill and Cork.

Table A.5 of the Appendix shows the number of bednights spent by all visiting anglers and their dependants in the different districts classified by type of accommodation. These figures are given in percentage form in Table 10. Hotels are by far the most popular type of accommodation and this is particularly true of the bednights spent in Lismore, Kerry, Galway/Connemara/Ballinakill, Bangor/Ballina and Sligo/Ballyshannon. Guesthouses were fairly popular in Wexford, Waterford, Cork and Limerick while farmhouse accommodation was very popular in Cork. Rented houses or chalets were the most popular form of accommodation in Letterkenny. This may be explained by

Table 10: *Percentage of Bednights Spent by Anglers in the Sample and their Dependants in Different Types of Accommodation in the Different Districts*

District	Type of Accommodation							All Types	Number of Bednights Reported in Sample	
	Hotel	Guesthouse	Farm-house	Caravan	Camping	Rented House/Chalet	With Relatives/Friends			Other
	Percentage									
Dublin	*	*	*	*	*	*	*	*	*	29
Wexford	41.2	30.7	4.2	1.3	0.0	0.0	22.5	0.0	100-	521
Waterford	20.9	16.1	11.1	0.0	0.0	20.4	31.5	0.0	100-	800
Lismore	66.6	5.9	2.2	3.8	0.0	16.0	5.5	0.0	100-	742
Cork	11.6	17.4	48.1	0.0	1.7	9.7	5.4	6.0	100-	700
Kerry	51.4	6.2	5.7	5.7	5.7	17.7	6.9	2.0	100-	3,574
Limerick	27.3	20.8	4.0	6.0	9.4	6.3	26.2	0.0	100-	447
Galway/Connemara/ Ballinakill	49.4	5.4	0.1	9.0	3.4	30.9	1.8	0.0	100-	2,774
Bangor/Ballina	80.7	5.6	0.0	2.6	0.0	9.2	1.9	0.0	100-	1,624
Sligo/Ballyshannon	50.3	9.6	4.3	4.3	4.9	22.5	4.1	0.0	100-	690
Letterkenny	12.0	8.1	3.4	21.8	0.0	39.3	9.5	5.9	100-	1,103
Drogheda/Dundalk	32.5	8.0	0.0	2.4	0.0	0.0	45.8	11.2	100-	249
Unknown	29.9	12.9	1.4	18.4	32.6	4.8	0.0	0.0	100-	147
All districts	42.2	9.1	5.4	8.3	2.6	21.9	8.6	2.1	100-	13,400
Number of bednights reported in sample	5,645	1,217	723	1,110	342	2,932	1,150	281	13,400	—

*Very small numbers in sample.

the tendency for Northern Ireland anglers, many of whom live within easy motoring distance of Letterkenny, to rent houses there for use at week-ends throughout the fishing season. As might be expected, the percentage of bed-nights spent with relatives or friends seems to be related to the population of the districts. In other words, anglers have more relatives and/or friends in the more populous regions of the country (generally speaking, the East and South). Thus, 23 per cent of those visiting Wexford, 32 per cent of those visiting Waterford, 26 per cent of those visiting Limerick, and 46 per cent of those visiting Drogheda/Dundalk stayed with relatives or friends. On the other hand, the sparsely populated regions of the West and North had relatively few anglers staying with relatives or friends. For instance, practically none of those visiting Galway/Connemara/Ballinakill stayed with relatives or friends.

The popularity of hotels is again evident from Tables A.6 and A.7 of the Appendix which classify bednights by income group and country of residence. Hotels were especially popular with anglers from the higher income groups, and with those from Europe and America.

Days Fished

The total number of days fished by salmon and sea-trout anglers in different types of water classified by fishery district are given in Table A.10, while the

Table 11: *Average Number of Days Fished per Angler in Different Types of Water Classified by Fishery District*

District	Type of Water					All Types	Number of Days Reported in Sample
	Private	Club	Hotel	Free	Other†		
	<i>Number of Days</i>						
Dublin	—	6.5	*	—	—	4.7	14
Wexford	9.8	2.0	—	5.0	—	8.5	187
Waterford	7.8	9.2	2.9	8.1	—	9.6	163
Lismore	9.9	4.5	6.4	1.0	—	8.2	239
Cork	11.0	6.5	11.0	7.5	—	7.0	148
Kerry	8.5	10.9	9.8	13.4	5.5	10.0	948
Limerick	*	6.6	5.0	6.0	4.8	5.9	102
Galway/Connemara/Ballinakill	7.4	13.5	9.2	10.9	4.0	8.8	692
Bangor/Ballina	13.3	5.5	9.9	13.4	11.2	10.8	526
Sligo/Ballyshannon	9.9	*	6.0	21.7	—	12.3	282
Letterkenny	33.7	15.1	9.0	20.2	10.0	19.3	796
Drogheda/Dundalk	15.8	21.1	—	—	—	20.1	463
Number of days reported in sample	1,201	951	1,062	1,173	173	4,560	—

*Numbers of anglers in these cells were too small to permit the calculation of valid averages.

†Including no answer.

—means that none of the sampled anglers fished in this type of water in this district.

average number of days fished per angler classified in a similar way is given in Table 11. As can be seen from this table there was a considerable amount of free fishing particularly in some of the western and north-western districts. This was due to several factors.

- (a) There are a number of small, low-quality fishing sites in the State, ownership of whose fishing rights have never been fully determined in law, and to which access is allowed free of charge as long as no damage is done to property. Anglers in the sample who fished in such waters labelled them as "public" or "open access". These descriptions are, however, not entirely correct.
- (b) A number of popular fishing sites in western districts (such as Lough Corrib and Lough Conn) are free of rental fees.
- (c) A small number of anglers who stayed in anglers' hotels in Kerry and Connemara did not list rental payments separately, as they paid an all-inclusive hotel charge for an angling holiday. We did not attempt a re-classification of this expenditure.

Table 12: *Average Fishery Rental per Rod/Day for Various Types of Water in Different Districts*

District	Types of Water				
	Private	Club	Hotel	Other	All Types*
£					
Dublin	—	0.2	—	—	0.3
Wexford	1.9	0.3	—	—	1.8
Waterford	0.1	0.5	0.2	—	0.2
Lismore	4.0	0.2	0.6	—	2.9
Cork	0.9	0.6	0.2	—	0.5
Kerry	1.4	0.5	1.3	0.0	0.8
Limerick	—	0.4	0.4	1.4	0.7
Galway/Connemara/ Ballinakill	2.4	0.0	2.7	1.1	1.9
Bangor/Ballina	1.2	1.0	1.8	1.8	1.3
Sligo/Ballyshannon	1.0	—	2.7	—	0.7
Letterkenny	0.2	0.5	1.4	0.0	0.2
Drogheda/Dundalk	0.3	0.3	—	—	0.3

*Number of days spent fishing on rental-free waters included in the computation of the overall averages but "no answer" excluded.

— means that none of the sampled anglers fished in this type of water in this district.

0.0 means that the average was less than 0.05.

Fishery Rental

The average fishery rental paid for various types of water is given in Table 12 and shows that on average this rental varied from about £3 per rod/day in Lismore to some 20 pence in Letterkenny. As might be expected private water owners tended to charge the highest fees, the very highest being an average of £4 per day in Lismore. In most cases the rental for club waters was less than £1 per rod/day. Hotel waters in a few districts averaged less than £1 per day also, but in western hotels the average rental was almost £2 per day.

Catch

The average weight of catch taken per rod/day is given in Table 13. As can be seen the largest weights of salmon (5.0 lb. per rod/day) was taken in private waters in Wexford. The greatest weight of sea trout (3.8 lb. per rod/day) was taken in other waters in Galway/Connemara/Ballinakill and there were also good catches in hotel waters in Letterkenny. The total weight of fish taken by all visiting anglers classified by district is given in Table A.11 of the Appendix. It can be seen from the latter table that the total catch of salmon was estimated at 46,000 lb. (roughly equivalent to 5,900 fish) and the total catch of sea trout at 30,800 lb. (roughly equivalent to 20,600 fish). We are dealing here with visiting anglers, who constitute only 37 per cent of all salmon anglers who fish in Ireland. Our estimates of their total catch appear, therefore, to be somewhat above what might have been expected on the basis of the official figures for all anglers published by the Department of Agriculture and Fisheries. We hope to present in a subsequent paper full estimates of catch by all anglers, both Irish and visiting, and to compare these estimates with the Department's figures.

Opinion Questions

As can be seen from the Questionnaire in Appendix B, the visiting anglers were asked to comment on the fishing and fishing facilities. In general there was not a very good rate of response to these questions and even when answers were given they were on the whole not very enlightening. We refrain, therefore, from giving the results of these questions.

Average Expenditure per Angler

Table 14 shows the average expenditure per visiting salmon angler on behalf of himself and his dependants classified by income level and country of residence. As can be seen from this table, the average total expenditure is estimated at about £190 per angler. Of this, £43 was spent on travelling to and from the Republic and £26 on travel within the State. The remaining £121

Table 13: *Average Weight of Catch of Salmon and Sea Trout taken per Rod/Day in Different Types of Water Classified by Fishery District*

Fishery District	Type of Water					All Types
	Private	Club	Hotel	Free	Other*	
(a) Average weight of salmon taken per rod/day (lb.)						
Dublin	—	0.0	0.0	—	—	0.0
Wexford	5.0	0.0	—	2.6	—	4.8
Waterford	0.6	0.0	0.9	0.6	—	0.4
Lismore	1.8	1.0	0.2	0.0	—	1.5
Cork	0.0	0.7	0.0	0.0	—	0.5
Kerry	1.2	0.2	0.6	0.9	0.4	0.8
Limerick	0.0	0.8	0.0	1.0	3.2	1.5
Galway/Connemara/ Ballinakill	1.3	0.2	1.3	1.3	4.0	1.3
Bangor/Ballina	2.0	0.0	0.9	0.2	1.2	1.0
Sligo/Ballyshannon	1.9	0.0	0.0	2.5	—	1.8
Letterkenny	1.7	1.2	0.7	0.6	0.0	0.9
Drogheda/Dundalk	1.0	0.8	—	—	—	0.8
(b) Average weight of sea trout taken per rod/day (lb.)						
Dublin	—	0.0	0.0	—	—	0.0
Wexford	0.1	0.0	—	0.0	—	0.1
Waterford	0.0	0.0	0.0	0.6	—	0.2
Lismore	0.0	0.0	0.0	0.0	—	0.0
Cork	0.0	0.6	0.6	0.0	—	0.5
Kerry	0.4	0.2	0.8	1.9	1.4	1.1
Limerick	0.0	0.4	0.2	0.7	0.0	0.3
Galway/Connemara/ Ballinakill	2.2	0.7	2.3	0.0	3.8	1.8
Bangor/Ballina	0.9	0.2	1.7	0.6	0.1	1.1
Sligo/Ballyshannon	0.0	1.2	0.0	0.3	—	0.2
Letterkenny	0.8	0.6	3.6	0.2	0.0	0.4
Drogheda/Dundalk	0.0	0.4	—	—	—	0.4

*Including no answer.

— means that none of the sampled anglers fished in this type of water in this district.

0.0 means that average catch was less than 0.05 lb.

was spent on various non-travel items as follows: accommodation and meals £74; tackle and lures £3; boats, boatmen and gillies £8; fishery rental £10; gifts £8; licence fees £2 and other £15. The latter item which includes drink and tobacco is likely (as is all expenditure surveys) to be understated, though of course some of the drink bill may be included with accommodation and meals.

Table 14: Average Expenditure per Angler, Classified by Income Level and Country of Residence*

Item of Expenditure	Income Level (£)							Country of Residence					
	1,000 and under	1,001- 2,000	2,001- 3,000	3,001- 4,000	4,001- 5,000	Over 5,000	Unknown	Northern Ireland	Great Britain	Rest of Europe	Rest of World	All Anglers	
	£												
Accommodation and Meals	47.4	43.8	54.2	73.0	81.5	113.0	71.6	32.5	84.6	83.7	110.1	74.4	
Tackle and Lures	1.9	3.7	3.6	1.8	3.8	4.1	1.5	3.4	2.9	3.2	5.0	3.2	
Boats, Boatmen, Gillies	5.3	2.3	6.1	6.3	13.3	12.2	3.9	2.8	8.8	10.3	7.7	7.6	
Fishery Rental	3.6	3.9	9.6	8.3	14.4	16.4	6.6	5.1	10.5	12.5	16.1	10.0	
Gifts	3.7	6.5	5.8	9.5	12.3	12.8	3.6	4.8	8.2	8.0	21.9	8.4	
Licence fees	2.1	2.3	2.3	2.2	2.9	2.4	2.3	2.8	2.2	2.2	2.1	2.4	
Other	5.5	11.8	14.5	14.7	23.9	18.5	6.6	13.0	14.9	14.6	16.2	14.5	
Total (a)	69.4	74.2	96.1	115.8	152.1	179.4	96.0	64.5	132.1	134.5	179.0	120.6	
Travel within Republic (b)	18.6	18.9	18.2	32.2	28.8	35.7	19.7	21.4	20.7	35.2	51.4	25.7	
Total Expenditure in State (a + b)	88.0	93.1	114.3	148.0	181.0	215.1	115.7	85.9	152.8	169.7	230.4	146.2	
Return Ticket to Republic (c)	18.0	16.7	28.8	37.5	47.0	80.7	34.8	0.6	42.2	64.5	133.1	43.4	
Total Expenditure (a + b + c)	105.9	109.8	143.2	185.5	228.0	295.8	150.5	86.4	195.1	234.2	363.5	189.6	

*For Northern Ireland visitors the figure for travel within the Republic includes cost of travelling in Northern Ireland en route to the Republic.

Table 14 also shows that average expenditure per angler increased with size of income, total expenditure being about £106 for anglers with income less than £1,000 per annum and £296 for anglers with incomes over £5,000 per annum. Expenditure per angler was also related to country of residence varying from about £86 per angler for Northern Ireland anglers to £363 per angler for visitors from the rest of the world (mainly USA). As might be expected a high proportion of the expenditure of anglers from the rest of the world was for travelling to and from the country (i.e. £133 per angler) compared with a similar expenditure of only £0.60 per angler for visitors from Northern Ireland. Most of the latter visitors, however, particularly those coming by car, did not segregate their travelling expenses as between travel within the Republic and outside, so that the breakdown between these two categories for Northern Ireland visitors is not valid.

Total figures for travelling expenses both within and coming to the country classified by income level and country of residence are given in Table A.9, while average figures per angler for the same items are given in Table 15. This table shows that for internal travel the highest expenditure per angler was on petrol, oil and car repairs. The next highest expenditure was on other travel expenditure which was mainly car rental. The lowest expenditure of all was for bus and train fares and for conducted tours.

Average Expenditure per Day and per Bednight

In order to eliminate the effects of length of stay and size of party, figures were calculated showing average expenditure per angler per day and per bednight (angler plus dependants). These figures which are given in Table 16 show that total expenditure and expenditure within the state both per angler per day and per bednight was higher for the "rest of the world" visitors than for any other group. Contrary to popular opinion the "rest of the world" (i.e. USA) visitors did not allocate an inordinately high proportion of their "within the country" spending to accommodation and meals. Actually, this proportion was only 48 per cent compared with over 60 per cent for both British and European anglers. Table 16 also shows that average expenditure per angler on "other" items was only about £1 per day, further suggesting that spending on drink and tobacco was understated.

Percentage distribution of expenditure

The percentage distribution of expenditure on different items in each district is shown in Table 17. It can be seen from this table that for all districts combined, accommodation and meals accounted for about 60 per cent of total expenditure. This proportion was fairly constant for the different regions with

Table 15: *Average Expenditure per Angler on Travel, Classified by Income Level and Country of Residence*

<i>Item of Expenditure</i>	<i>Income Level (£)</i>							<i>Country of Residence</i>				
	1,000 <i>and under</i>	1,001- 2,000	2,001- 3,000	3,001- 4,000	4,001- 5,000	Over 5,000	Unknown	<i>Northern Ireland</i>	<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	<i>All Countries</i>
	<i>£ per Angler</i>							<i>£ per Angler</i>				
Amount of Return Ticket to First Destination in the Republic (a)	18.0	16.7	28.8	37.5	47.0	80.7	34.8	0.6	42.2	64.5	133.1	43.4
<i>Travel Expenditure within Ireland</i>												
Bus/Train	0.3	0.6	0.0	0.5	0.9	0.4	0.3	0.0	0.5	0.3	1.3	0.4
Petrol, Oil and Repairs	15.0	15.0	12.7	20.2	15.3	16.0	11.6	21.3	12.4	13.9	16.5	15.0
Conducted Tours	0.0	0.1	0.0	1.5	0.0	0.2	0.0	0.0	0.3	0.0	0.3	0.2
Other Travel Expenditure	3.3	3.3	5.5	10.0	12.6	19.2	7.9	0.1	7.6	20.9	33.3	10.1
Total Travel within Ireland (b)	18.6	18.9	18.2	32.2	28.8	35.7	19.7	21.4	20.7	35.2	51.4	25.7
All Travel Items (a + b)	36.6	35.6	47.0	69.7	75.9	116.4	54.5	22.0	62.9	99.7	184.4	69.1

Table 16: *Average Expenditure Per Angler, per Day and per Bednight (including dependants), Classified by Type of Expenditure and Country of Residence*

<i>Item of Expenditure</i>	<i>Country of Residence</i>									
	<i>Northern Ireland</i>	<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	<i>All Countries</i>	<i>Northern Ireland</i>	<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	<i>All Countries</i>
	<i>Per Angler Per Day (£)</i>					<i>Per Angler Per Bednight (£)</i>				
Accommodation and Meals	1.5	5.6	5.2	6.5	4.4	1.4	2.8	3.5	4.4	2.7
Tackle and Lures	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.1
Boats, Boatmen and Gillies	0.1	0.6	0.6	0.5	0.5	0.1	0.3	0.4	0.3	0.3
Fishery Rental	0.2	0.7	0.8	1.0	0.6	0.2	0.3	0.5	0.6	0.4
Gifts	0.2	0.5	0.5	1.3	0.5	0.2	0.3	0.3	0.9	0.3
Licence Fees	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.6	1.0	0.9	1.0	0.9	0.6	0.5	0.6	0.7	0.5
Total (a)	3.0	8.5	8.4	10.6	7.1	2.8	4.3	5.6	7.2	4.4
Travel within State (b)	1.0	1.3	2.2	3.0	0.2	0.9	0.7	1.5	2.1	0.9
Total Expenditure in State (a + b)	4.0	9.8	10.6	13.6	7.2	3.8	5.0	7.1	9.3	5.4
Return Ticket to Republic (c)	0.0	2.7	4.0	7.9	2.5	0.0	1.4	2.7	5.3	1.6
Total Expenditure (a + b + c)	4.0	12.5	14.6	21.5	9.7	3.8	6.4	9.8	14.6	7.0

the exception of Drogheda/Dundalk where only 26 per cent of expenditure was on this item due to a high concentration of Northern Ireland day trippers among the visiting anglers. In this case a very high proportion of the expenditure (34 per cent) was classed as other.

The proportion spent on gifts tended to be highest in the districts having large towns, i.e., Dublin, Waterford, Cork and Limerick. The proportion spent on this item in Dublin (15.5 per cent) was much higher than that in any other region. The lowest proportion spent on gifts was 3.8 per cent in the Bangor/Ballina district. Fishery rental as a proportion of total expenditure also showed noticeable differences as between districts. In Wexford and Lismore the percentage accruing to rental was 16 per cent and 15 per cent respectively whereas in Cork and Waterford it only accounted for 2.4 and 1.3 per cent respectively.

Grossed up Figures for Total Expenditure

Table A.8 shows the estimated total expenditure of visiting salmon anglers on behalf of themselves and their dependants classified by income level and country of residence. The figures in brackets at the bottom of this table are the confidence intervals about the estimates at the 95 per cent level of significance. As can be seen these intervals are fairly wide, indicating the imprecision of the estimates and the necessity for caution when interpreting them. A summary of some of the more important totals in Table A.8 is given in Table 18. This table shows that the total expenditure of all visiting anglers (in £000) is estimated at 696, ± 45 or between 651 and 741. Of this 163 ± 15 was spent travelling to and from the Republic and 97 ± 8 on travel within the State. The remaining 436 ± 35 was spent on various non-travel items. These estimates appear reasonably precise as the confidence intervals are less than 10 per cent of their values. Of the total expenditure on all items, Northern Ireland anglers spent about £73,000, British anglers spent about £373,000, anglers from the rest of Europe spent £149,000, while those from the rest of the world spent about £101,000. The confidence intervals about the latter figures are given in Table A.8 which also shows that expenditure on non-travel items was as follows: accommodation and meals £269,000; tackle and lures £13,000; boats boatmen and gillies £27,000; fishing rental £35,000; gifts £30,000; licence fees £9,000 and other items £53,000. As stated above the magnitude of the "other" items is likely to be too low due to the understatement of the spending on drink.

Details of the travel expenditure of the anglers classified by income level and country of residence are given in Table A.9. As can be seen from this table the biggest item of "within state travel" was petrol, oil and repairs on which

Table 17: *Percentage Distribution of all Expenditure in each Fishery District by Item of Expenditure*

Fishery District	Non-Travel Expenditure								Internal Travel	Total within State	Sample Totals
	Accommodation/ Meals	Tackle and Lures	Boats, Gillies	Fishery Rental	Gifts	Licence Fees	Other	All Non- Travel			
	Percentage										£000
Dublin	43.1	2.8	0.1	3.6	15.5	0.7	14.8	80.6	19.4	100.0	2.3
Wexford	48.6	2.5	3.0	16.2	6.7	0.9	7.5	85.4	14.6	100.0	2.2
Waterford	56.3	1.4	1.5	1.3	9.0	1.2	12.1	82.7	17.3	100.0	2.4
Lismore	44.8	3.5	3.7	14.8	4.8	1.0	9.6	82.3	17.7	100.0	3.6
Cork	60.0	3.0	1.7	2.4	8.7	2.2	7.2	85.2	14.8	100.0	3.0
Kerry	52.5	1.6	6.4	4.1	5.5	1.6	11.7	83.4	16.6	100.0	18.2
Limerick	51.4	2.0	1.2	3.3	10.2	2.6	10.3	81.0	19.0	100.0	1.7
Galway/Connemara/Ballinakill	53.0	1.5	7.2	9.3	5.0	1.5	5.7	83.2	16.8	100.0	15.7
Bangor/Ballina	52.5	2.2	6.7	7.4	3.5	1.6	8.1	82.0	18.0	100.0	9.4
Sligo/Ballyshannon	47.2	2.0	3.2	8.6	3.8	2.5	13.7	81.0	19.0	100.0	2.5
Letterkenny	43.4	6.0	3.1	3.9	5.3	2.1	10.8	74.6	25.4	100.0	3.1
Drogheda/Dundalk	26.4	5.1	1.0	10.2	4.0	1.8	33.8	82.3	17.7	100.0	1.1
All Districts	50.9	2.2	5.2	6.9	5.8	1.6	9.9	82.5	17.5	100.0	65.4
Sample Totals (£000)	34.0	1.5	3.5	4.4	3.7	0.9	6.5	54.4	10.9	65.4	—

TABLE 18: *Total Expenditure on Certain Items Classified by Country of Residence of Angler*

<i>Item of Expenditure</i>	<i>Northern Ireland</i>	<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	<i>All Countries</i>
	(£000)				
Non-Travel Items	53·8	249·8	83·7	48·9	436·2 ± (34·9)
Travelling within the State	18·5	40·9	23·1	14·6	97·1 ± (8·3)
Total expenditure within State	72·3	290·7	106·8	63·5	533·4 ± (38·7)
Return ticket to Republic	0·5	82·7	41·7	37·8	162·7 ± (15·1)
Total	72·8	373·4	148·5	101·3	696·1 ± (44·9)

Note: Figures in brackets are the confidence intervals about the estimates at the 95 per cent level of significance.

an estimated £57,000 was spent. The next highest item was £38,000 for other travel which was mainly car or taxi hire and car rental. Expenditure on buses, trains and conducted tours was insignificant.

Expenditure in the Different Fishery Districts

Expenditure in the different fishery districts classified by type of expenditure is given in Table 19. Before going on to discuss this expenditure a word is necessary about the validity of the figures. Unfortunately, the distribution of expenditure by district does not follow very closely the pattern of purchase of licence. Many of the anglers and their dependants travelled around a good deal and spent money in different districts, particularly on meals and refreshments. The Dublin district benefited considerably from this travel. A high proportion of the visitors entered and left the country through Dublin, or on their journeys stopped off in the city for meals and to do some shopping. This mobility of anglers makes for difficulty in calculating grossed up totals for regional expenditure and for this reason the figures given in Table 19 should be taken with caution. This applies in particular to the figures for internal travel. The confidence intervals given in brackets along the borders of the tables give an idea as to the range within which the true population totals lie. The confidence intervals for the individual fishery districts are based on fairly small subsets of the total sample and as a result are relatively wider than those for the country as a whole.

As can be seen from Table 19 total expenditure including internal travel costs by visiting anglers was estimated at about £533,000. Of this the largest

Table 19: *Estimated Total Expenditure within the State of all Visiting Anglers, Classified by Type of Expenditure and Fishery District*

Fishery District	Non Travel Expenditure							All non Travel	Internal Travel	Total within State
	Accommodation and Meals	Tackle and Lures	Boat-hire Boatmen, Gillies	Fishery Rental	Gifts	Licence fees	Other			
	£000									
Dublin	8.5	0.6	0.0	0.7	3.1	0.1	2.9	15.9	3.8	19.7± (7.6)
Wexford	7.0	0.4	0.4	2.3	1.0	0.1	1.1	12.3	2.1	14.4± (7.2)
Waterford	10.1	0.2	0.3	0.2	1.6	0.2	2.1	14.7	3.1	17.8± (7.9)
Lismore	12.3	1.0	1.0	4.1	1.3	0.3	2.6	22.6	4.9	27.5± (12.3)
Cork	12.0	0.6	0.3	0.5	1.7	0.4	1.4	16.9	3.0	19.9± (7.4)
Kerry	70.3	2.1	8.6	5.5	7.3	2.1	15.7	111.6	22.2	133.8± (22.3)
Limerick	7.4	0.3	0.2	0.5	1.4	0.4	1.6	11.8	2.7	14.5± (7.6)
Galway/Connemara/ Ballinakill	61.8	1.7	8.5	10.9	5.8	1.7	6.6	97.0	19.7	116.7± (32.4)
Bangor/Ballina	37.6	1.5	4.8	5.3	2.5	1.2	5.8	58.7	12.8	71.5± (16.4)
Sligo/Ballyshannon	9.4	0.4	0.6	1.7	0.7	0.5	2.7	16.1	3.8	20.0± (8.3)
Letterkenny	29.5	4.0	2.1	2.7	3.5	1.3	7.3	50.4	17.2	67.6± (8.9)
Drogheda/Dundalk	2.6	0.5	0.1	1.0	0.4	0.2	3.4	8.2	1.8	10.0± (6.6)
All Districts	268.5 ±(25.4)	13.3 ±(1.8)	26.9 ±(4.0)	35.4 ±(6.8)	30.3 ±(5.0)	8.6 ±(0.3)	53.2 ±(6.7)	436.2 ±(34.9)	97.1 ±(8.3)	533.4 ±(38.7)

Note: Figures in brackets are the confidence intervals about the estimates at the 95 per cent level of significance.

amount, (£132,000) was spent in Kerry followed by Galway/Connemara/Ballinakill where expenditure was £117,000 and by Bangor/Ballina with expenditure of £72,000. The lowest expenditure of £10,000 was in the Drogheda/Dundalk district with Wexford and Limerick next highest on the list, receiving expenditures of about £14,000 each. Though very little salmon fishing took place in the district, salmon anglers spent about £20,000 in Dublin mainly on their way to and from the country.

Value Added

The total expenditure of the visiting anglers is one measure of the benefits conferred by these people on the State and more particularly on the different regions within the State. Expenditure figures, however, do not give the complete picture and they require adjustment to allow for certain secondary factors. It is often argued that the benefits conferred on a particular region by a recreational site are not as great as the value of the expenditure incurred by the people who come specifically to enjoy the recreation [4], [5]. The commodities purchased by the tourists in the region could possibly be sold elsewhere (though perhaps at a lower price) or they may contain a very large import content which should be deducted. For this reason it has often been suggested that an estimate of the "value added" by tourists is a better measure of the value of the recreational facility than is their total expenditure. The value added approach recognises that part of what a business receives for its products must be spent on raw materials and other production items. When the costs of these are deducted from gross output the difference is the value added by the business.

In measuring the value added in a region by out-door recreation, it has been customary to deduct from total expenditure the amounts spent outside the region on raw materials by suppliers of recreational services.* For example, from the total expenditure by recreationists at filling stations is deducted the wholesale cost of petrol and oil which comes from outside the area. Similarly the wholesale value of groceries from outside areas is deducted from the tourists' total grocery bill and so on. The remaining figure is then supposed to be the amount of tourist expenditure used to support business and payrolls within a region. This, however, is not necessarily so. The value added calculated in this way from total expenditure by a recreationist is only a first round figure and may be an under-statement of the true value added. It ignores the fact that spending in a region may generate further economic activity through the process known as the "multiplier effect", which may lead to increases in value added by bringing hitherto unemployed resources into productive use.

*See Clawson, M. *op. cit.*, p. 8.

Multiplier Effects

Multiplier analysis has been widely used to take account of these secondary effects. However, the use of this type of analysis raises several problems. First, the total activity generated by an injection of demand is often naïvely assumed to be a net benefit in some welfare sense, so implying certain (quite restrictive) assumptions about the relative values of work and leisure to the inhabitants of the region. Secondly, it is possible that other expenditure could create similar multiplier effects, so that the multiplier benefits cannot be regarded as peculiar to the activity under consideration. Thirdly, resources in a region must be less than fully employed for multiplier analysis to be applicable. If resources in a region are fully employed, then the expenditure in question will not stimulate further economic activity, but will only serve to change the allocation of the given resources as between one type of activity and another.

However, since we wish to calculate the multiplier effects of the expenditure of visiting salmon anglers in Ireland, these problems are not serious, particularly if we confine our attention to expenditure which is directly induced by salmon angling. It is therefore attempted below (Table 20) to determine what proportion of the anglers' total expenditure is entirely attributable to salmon angling, in the sense that it would not have occurred in the absence of this activity. Secondly, it is reasonable to assume that resources are underemployed in the western regions of the country where most salmon angling takes place [6], [7] and that other opportunities for stimulating demand for these resources are extremely limited. Finally, we confine our attention to measuring the total activity generated by salmon angling, and do not attempt to interpret our figures as measures of net welfare benefits.

When we turn to estimating an appropriate multiplier, we find that studies carried out for Bord Fáilte [8] indicate that the value added to the national economy by tourists is even greater than their total expenditure. It is estimated that for every £1 spent by visitors in this country the value added in the State as a whole is between 1.6 and 1.8.

In other words, to obtain the full value added by tourists, their gross first round spending should be multiplied by approximately 1.7. Alternatively, a similar result could be obtained by multiplying the first round of value added or "income arising" by 2.0.

Regional multipliers are much more difficult to calculate than national figures, and Bord Fáilte did not attempt such a calculation. It can be taken, however, that regional multipliers are likely to vary a good deal for the different districts, being smallest for the more remote areas which must import a high proportion of the tourists' purchases. Figures from Scotland [9], [10] show that income multipliers for fishery boat earnings in some of the more remote areas are about 1.35 compared with about 2.0 for the Highlands as a whole,

i.e. for every £1 of income directly attributable to boats a further £0.35 will be added in the immediate local area and a further £0.65 in the remainder of the Highlands.

Application of Multiplier to Salmon Anglers' Expenditure in Ireland

At the commencement of this study it was hoped that by the time of its completion reliable data would be available for the calculation of regional multipliers. Unfortunately, this data is still not available and therefore we are not yet in a position to calculate the necessary figures. We have, however, succeeded in calculating a suitable multiplier for the State as a whole which when applied to anglers' expenditure gives the total value added by the spending. This multiplier which works out at 1.6 is based on the following assumptions.*

- (1) The marginal import content of the first round of anglers' expenditure is 25 per cent.
- (2) The marginal import content of general consumption expenditure is 40 per cent and
- (3) Direct taxes plus savings are 11 per cent of personal income.

The formula for calculating the multiplier (M) is:

$$M = \frac{75}{100} \times \frac{1}{0.11 + (0.4 \times 0.89)} = 1.6$$

Now if the expenditure of the salmon anglers is to be expanded by the use of this multiplier it is necessary to be precise as to the figures which should be expanded. The figures in Table 15 and elsewhere are rather crude since they include expenditure within the State on non-fishery items† by people who did not come to Ireland specifically for salmon angling,‡ and also expenditure on travel to the Republic paid to firms outside the State. Accordingly, the estimates of total expenditure must be adjusted to allow for these items before the

*Derived from a paper by E. W. Henry [11] and from the 1969 issue of National Income and Expenditure [12].

†It is presumed that expenditure on fishery items (i.e. tackle and lures, boats, boat-hire and gillies, fishery rental and licence fees) should be fully included regardless of the intentions of the visitors.

‡Table 9 shows that about 15 per cent of visits were for a general family holiday or other non-fishing purposes.

application of the multiplier. The method of making these adjustments is shown in Table 20.

As can be seen from this table the total amount paid by all the visitors who came specifically to fish for salmon was £518,000. Applying a multiplier of 1.6

TABLE 20: *Adjustment of Total Expenditure for Non-Angling Visits and for Amounts Paid to Foreign Travel Firms*

	<i>Fishery Items</i>	<i>Other expenditure within State</i>	<i>Travelling to and from State</i>	<i>Total</i>
	£000			
Total paid by all visitors	84.2	449.2	162.7	696.1
<i>Deductions:</i>				
Paid to foreign travel firms*	—	—	99.1	99.1
Paid in Ireland on non-angling visits	—	69.2	9.5	78.7
Total deductions	—	69.2	108.6	177.8
Amount due to salmon angling	84.2	380.0	54.1	518.3

*Based on information received from Aer Lingus and Bord Fáilte Eireann.

to this amount gives a figure of £829,000 which is the estimated benefits accruing to the State from the expenditure of the visiting salmon anglers.*

It is impossible to distribute this sum between the regions with any degree of accuracy, but crude calculations suggest that about one-quarter of this amount might have gone to the Kerry district, one-fifth to Galway/Connemara/Ballinakill and one-eighth to Bangor/Ballina. The remainder was distributed in an unknown way over the other districts with Dublin receiving a high spin-off from all the other regions in addition to its own share of direct expenditure by anglers. It should be kept in mind, however, that in this paper we are dealing only with expenditure in 1970. Potential expenditure in future years by foreign anglers (which is likely to be much higher in real terms) is not taken into account.

*It could be argued that the angling is worth the total amount paid for it by the people who came specifically to fish for salmon and that for this reason the amount paid to foreign travel companies should not be deducted. This is true if the matter is looked at from the demand side but not if looked at from the supply side, since the supplier (i.e. the State) does not benefit from the outside spending.

SUMMARY AND CONCLUSIONS

Summary

This paper forms part of a larger study entitled "An Economic Evaluation of Irish Salmon and Sea-Trout Fishing" which is being sponsored by the Fisheries Branch of the Department of Agriculture and Fisheries and carried out by the ESRI. In the full investigation we have included salmon fishermen of all kinds namely, Irish anglers, visiting anglers and commercial fishermen. This paper deals with only one of these groups (the visiting anglers) and with the economic impact of these anglers on the districts which they visited.

Method of Evaluation Used

Though the economic evaluation of recreational resources can raise very difficult conceptual problems, these mostly relate to the benefits conferred on the residents of an area by their access to the resource in question. In the present study, however, we are concerned solely with the benefits conferred on Ireland by salmon anglers from outside the country and therefore we are interested primarily in the expenditure of these visitors which can be directly related to salmon fishing and to the effect of this expenditure on national and regional income. To this end we have attempted to determine the expenditure of a sample of visiting anglers in different regions of the State and have grossed the sample results to regional and national totals. Finally, we have expanded the total expenditure by a national multiplier in order to assess the full value added by the visiting anglers.

The Survey

The sample used was a stratified random sample picked from the 1970 salmon licences issued. The stratification was by fishery district in which licences were issued. Variable sampling fractions were used to ensure sufficient numbers of anglers in each district. A total of 790 postal questionnaires were sent out and from these 430 usable questionnaires were returned (this latter figure includes a small number of anglers who were interviewed while in Ireland). Thus the overall response rate was 54.4 per cent. This low figure is due largely to the intervention of the British Postal Strike while the survey was being conducted.

Results of Survey

Characteristics of anglers: The total number of salmon/sea-trout anglers who visited the Republic in 1970 is estimated at 3,800. Of these about 860 (23 per

cent) came from Northern Ireland; 1,960 (52 per cent) came from Great Britain; 650 (17 per cent) came from the rest of Europe and 280 (8 per cent) came from the rest of the world (mainly USA).

The survey shows that salmon angling is a sport mainly for well-to-do visitors, about 40 per cent of the visiting anglers being in the over £4,000 per annum income group. Also, it is a pastime enjoyed by the more elderly people. More than 40 per cent of the visiting anglers were over 50 years of age while only 14 per cent were under 30 years.

Number, Duration and Purpose of Visits: In all, salmon anglers made about 14,000 visits to the country during the year, but over 8,000 of these visits were day trips by anglers from Northern Ireland, leaving about 6,000 visits during which the angler and his party spent at least one night in the country. If day trips are included each angler made an average of 3.45 visits to the State and if these trips are excluded the average number of visits per angler was 1.45. Excluding day trips the average number of days spent in the State per visitor was 12 days by Northern Ireland anglers, 16 days by British and European anglers and 17 days by anglers from the rest of the world.

Not all visitors who take out salmon angling licences come specifically to fish for salmon. About 72 per cent of all visits including day trips were for the purpose of salmon fishing while a further 13 per cent were for the purpose of salmon fishing combined with a family holiday. About 5 per cent of visits were for the purpose of a general family holiday and about 9 per cent were for other purposes. Thus some 85 per cent of all visits were for the purpose of salmon angling or for a combination of salmon angling and general family holidays, with 15 per cent for family holidays and other purposes.

Of the 5,500 over-night visits about 2,900 were with family parties, 1,400 were with parties of fishermen and the remaining 1,200 were with other types of party including fishermen who came alone. British anglers were more inclined to travel with their families, and European anglers with parties of fishermen than were anglers from other countries. The average size of party was 3.7 for day trippers from Northern Ireland and 2.7 for other parties from the North. The average party size from other countries was 2.8 for British anglers, 2.5 for anglers from the rest of Europe and 2.3 for anglers from the rest of the world.

Salmon anglers and their dependants spent about 103,000 bednights in the State or an average of 27 bednights per angler. Some 46 per cent of the bednights were spent in hotels, 20 per cent in rented houses or chalets, and the remainder were spread fairly evenly between guesthouses, relatives/friends, caravans and farmhouses. The vast majority of visits took place in the July/September period, there being fewer visits in January/March and very few in the October/December period.

Expenditure of Anglers: Expenditure per angler was £86 for Northern Ireland anglers, £195 for British anglers, £234 for continental Europeans and £363 for anglers from the rest of the world. The overall average was £190 per angler. Of these amounts anglers from the rest of the world spent an average of £133 travelling to and from the Republic; continental Europeans spent £64 per angler on this item and British anglers about £42.

The total expenditure of all salmon anglers visiting Ireland in 1970 has been estimated at £696,000. Of this £163,000 was spent in travelling to and from the Republic, £97,000 on travel within the State and the remaining £436,000 on other items. Of the latter items the largest amount (£269,000) was spent on accommodation and meals; £13,000 was spent on tackle and lures; £27,000 on boats, boat-men and gillies; £35,000 on fishing rental; £30,000 on gifts; £9,000 on licence fees and £53,000 on "other expenses" which includes among other things drink and tobacco, clothing and shoes, and non-fishing recreation. It is believed that the drink element in the latter item is understated. Of the total for all items including travel, Northern Ireland anglers spent about £73,000, British anglers £373,000, continental Europeans £149,000 while anglers from the rest of the world spent £101,000.

Of the total expenditure in the State including internal travel costs, £134,000 was spent in the Kerry fishery district, £117,000 in Galway/Connemara/Ballinakill and £72,000 in Bangor/Ballina. Only £10,000 was spent in Drogheda/Dundalk and £14,000 in the Wexford and Limerick districts. Expenditure in Dublin was estimated at about £20,000.

Multiplier Effects: The total expenditure of the visiting anglers within the State is a minimum figure for the economic benefits which they contribute to the country. This figure should be expanded by a multiplier to obtain the full benefit. Similarly the district expenditure should be expanded by regional multipliers to obtain the correct regional values. Unfortunately, regional multipliers are not available for Ireland and therefore we cannot produce firm multiplied figures for expenditure on different items. The authors have, however, adopted a single multiplier of 1.6 for the State as a whole and have tentatively concluded that for regions like Donegal or Connemara which have to "import" a high proportion of the tourists' requirements from outside areas, the multiplier may be as low as 1.4.

When the expenditure figures are adjusted for expenditure by anglers who did not come specifically to fish, and for payments to non-Irish carriers, and the adjusted results multiplied by 1.6, a total figure of £829,000 is obtained, which is the estimated benefits accruing to the State from the expenditure of visiting salmon anglers. It is also estimated, though very crudely, that about one-quarter of this amount went to the Kerry district, one-fifth to Galway/

Connemara/Ballinakill and one-eighth to Bangor/Ballina. The remainder was distributed over the other regions in an unknown way with Dublin receiving in addition to its own share of direct expenditure a high spin-off from all the other regions.

Conclusions

Though the total income generated by visiting salmon and sea-trout anglers in 1970 may, on the surface, appear to be small, nevertheless this angling is an important industry for the areas concerned, particularly for many of the western regions where there is little other economic activity. Since fishery districts do not coincide with any of the usual administrative units it is impossible to compare regional incomes from other sources with those from angling. However, it can be taken that in districts like south-west Kerry, Connemara, west Mayo and west Donegal the income from visiting salmon anglers is probably greater than that from most agricultural enterprises in these areas.

It is likely also that income from salmon angling will tend to increase in real terms in future years if we can maintain our present level of stocks. Ireland is now one of the few European countries with any salmon left and for this reason we can expect increasing numbers of visiting anglers in the years ahead. The British National Angling Survey [13] estimates that there are about half a million game fishermen in Britain and it states that "Though only 3 per cent of game fishermen caught salmon on their last ordinary outing, and only one in ten (10 per cent) describe salmon as a usual catch at their usual site, nearly half (46 per cent) of those preferring to game fish would most like to catch salmon . . . On the satisfaction and preference criteria, salmon is clearly the most significant species of game fish." In addition, our joining the EEC is likely to bring us more visiting anglers from other European countries due to the increase in communication between Ireland and the European mainland. We should try therefore to exploit these developments in every way possible (particularly by the prevention of pollution and the elimination of other hazards to the angling stocks) keeping in mind that value estimated for 1970 is probably only a fraction of the potential value of this amenity.

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APPENDICES

APPENDIX A

Table A1: Licences Issued and Catch Returns 1955-70†

Year	Licences Issued		Catch													
			Salmon						Sea Trout							
	Commercial	Rod and Line	Commercial			Anglers		Total Salmon	Commercial			Anglers		Total Sea Trout		
			Drift Net	Draft Net	Other	Weight	Number		Drift Net	Draft Net	Other	Weight	Number			
ooo lb.			ooo lb.	ooo	ooo lb.	ooo lb.			ooo lb.	ooo	ooo lb.					
1955	1,244	6,604	234.6	606.4	173.8	1,014.8	246.5	28.6	1,261.4	1.4	27.5	2.0	30.9	42.3	46.6	73.2
1956	1,229	7,495	250.7	720.8	207.8	1,279.0	264.2	35.8	1,443.2	1.2	33.6	2.1	36.9	56.2	57.7	93.2
1957	1,246	7,785	298.4	1,003.4	188.3	1,490.1	309.5	39.6	1,799.5	3.6	37.4	3.0	41.0	56.6	56.5	100.5
1958	1,146	8,294	286.1	772.4	220.0	1,278.5	375.4	49.7	1,654.0	1.4	23.6	1.1	26.1	40.3	38.3*	66.4
1959	1,230	7,567	352.5	865.8	146.2	1,364.5	259.9	31.6*	1,624.4	5.6	24.5	6.1	36.2	41.5	45.4*	77.7
1960	1,195	8,477	263.5	701.2	169.2	1,133.9	230.4	27.2	1,364.3	1.3	16.2	1.1	18.6	43.4	45.1	61.9
1961	1,121	8,322	218.2	741.3	192.7	1,152.2	193.4	25.3	1,345.6	1.2	23.0	1.8	26.0	64.1	64.9	90.1
1962	1,180	8,780	606.8	1,622.6	376.8	2,606.2	257.6	34.3	2,836.9	1.4	23.4	2.5	27.3	63.0	59.9	90.4
1963	1,289	9,435	687.2	1,395.9	412.0	2,495.1	341.5	40.3	2,836.6	0.8	21.9	4.1	26.8	64.8	65.7	91.7
1964	1,523	11,353	761.6	1,496.0	365.0	2,622.6	390.1	52.5	3,012.7	1.2	29.7	2.9	33.6	71.9	74.6	105.7
1965	1,435	12,378	795.0	1,250.2	407.8	2,453.0	416.3	54.9	2,869.3	4.6	25.0	0.3	29.9	83.7	83.0	113.6
1966	1,492	11,621	744.0	961.4	319.4	2,024.8	301.6	35.7	2,326.4	2.0	20.2	0.9	23.1	63.3	64.8	86.4
1967	1,531	10,502	1,015.7	1,071.3	366.0	2,453.0	267.8	35.3	2,720.8	8.5	51.3	1.1	60.9	68.1	70.0	129.0
1968	1,451	9,676	1,040.4	1,059.0	351.2	2,450.6	251.4	33.7	2,702.0	8.1	45.9	1.0	55.0	69.6	70.2	127.3
1969	1,608	10,506	1,678.5	1,206.8	336.3	3,221.6	182.2	23.8	3,403.8	7.9	46.8	1.0	55.7	71.6	72.0	127.3
1970	1,769	11,210	1,730.9	1,261.0	381.7	3,373.6	136.8	17.9	3,520.4	5.1	40.3	0.9	46.3	40.4	40.6	86.7

*Estimates by authors.

†Due to rounding errors the figures in each row do not necessarily add to the totals shown.

Sources: Sea and Inland Fisheries Reports, 1955-1969; unpublished figures for 1970 were supplied by Fisheries Division of Department of Agriculture and Fisheries.

Table A.2: *Number of Rod Licences Issued by Boards of Conservators to all Anglers for the year 1970**

<i>District of Issue of Licence</i>	<i>Type of Licence</i>							<i>Total</i>
	<i>All District Licences</i>				<i>Single District Licences</i>		<i>Special Licences</i>	
	<i>Annual (£4)</i>	<i>Late Season (£3)</i>	<i>Twenty-one Day (£3)</i>	<i>Seven Day (£1)</i>	<i>Annual (£3)</i>	<i>Late Season (£2)</i>	<i>Tidal Waters (£3)</i>	
<i>Number of Licences</i>								
Dublin	331	37		78	18	3		467
Wexford	95	—		82	112	75		364
Waterford	147	6	1	131	661	46		992
Lismore	73	10		168	118	—		369
Cork	170	21		227	264	100		782
Kerry	190	13		1,000	245	234		1,682
Limerick	237	15		290	751	272		1,565
Galway/Connemara/ Ballinakill	94	48		865	98	287		1,392
Bangor/Ballina	100	25		468	207	215	1	1,016
Sligo/Ballyshannon	95	20		350	135	42	28	670
Letterkenny	104	12		496	450	204		1,266
Drogheda/Dundalk	261	16		63	172	133		645
All Districts	1,897	223	1	4,218	3,231	1,611	29	11,210

*Foyle Area Extension licences are omitted. The cost per licence is in parentheses.
Source: Department of Agriculture and Fisheries.

Table A.3: *Estimated Distribution of all Visiting Anglers Classified by Income, Age and Country of Residence*

	<i>Income Level (£)</i>						<i>All Incomes</i>	<i>Number in Sample</i>
	<i>1,000 and under</i>	<i>1,001-2,000</i>	<i>2,001-3,000</i>	<i>3,001-4,000</i>	<i>4,001-5,000</i>	<i>Over 5,000</i>		
	<i>Number</i>							
<i>Age Group (years)</i>								
20 or under	167	—	—	—	—	—	167	37
21-30	70	185	108	10	11	10	394	77
31-40	10	126	222	90	71	141	660	69
41-50	39	166	172	80	111	343	911	37
51-60	19	137	50	80	172	362	820	46
Over 60	58	116	140	110	82	293	799	116
All Ages	363	730	692	370	447	1,149	3,751	430*
<i>Country of Residence</i>								
Northern Ireland	145	305	210	53	63	84	860	91
Great Britain	160	412	298	193	274	623	1,960	255
Rest of Europe	24	13	150	124	87	249	647	59
Rest of World	34	—	34	—	23	193	284	25
All Countries	363	730	692	370	447	1,149	3,751	430
Number in Sample	37	77	69	37	46	116	430†	—

*Includes 48 respondents who did not reveal their ages.

†Includes 48 respondents who did not reveal their incomes.

Table A.4: *Estimated Distribution of Bednights Spent by Anglers and their Dependants in Different Seasons of the Year, Classified by Fishery District in which Stayed.*

<i>Fishery District</i>	<i>January- March</i>	<i>April- June</i>	<i>July- September</i>	<i>October- December</i>	<i>All Months</i>
<i>Number of Bednights (to nearest hundred)</i>					
Dublin	0	100	100	0	200
Wexford	1,200	1,200	1,100	0	3,600
Waterford	0	2,800	2,700	0	5,500
Lismore	400	2,300	2,300	0	5,100
Cork	0	600	4,200	0	4,800
Kerry	1,000	5,200	17,600	0	23,800
Limerick	100	800	2,100	0	3,100
Galway/Connemara/ Ballinakill	100	3,100	15,700	100	19,000
Bangor/Ballina	300	2,000	8,800	0	11,100
Sligo/Ballyshannon	600	700	3,400	0	4,700
Letterkenny	500	3,700	15,400	300	19,900
Drogheda/Dundalk	100	400	1,200	0	1,700
Unknown	100	0	900	0	1,000
All Types/All Districts	4,600	22,800	75,600	400	103,400*

*Due to rounding errors the figures in each cell do not necessarily add to the row totals and column totals shown.

Table A.5: *Estimated Number of Bednights Spent by all Visiting Anglers and their Dependants in Different Types of Accommodation in the Different Fishery Districts*

Fishery District	Type of Accommodation								All Types
	Hotel	Guesthouse	Farmhouse	Caravan	Camping	Rented house/ chalet	With relatives/ friends	Other	
Number of Bednights (to nearest hundred)									
Dublin	0	200	0	0	0	0	0	0	200
Wexford	1,500	1,100	200	0	0	0	800	0	3,600
Waterford	1,100	900	600	0	0	1,100	1,200	0	5,500
Lismore	3,400	300	100	200	0	800	300	0	5,100
Cork	600	800	2,300	0	0	500	300	300	4,800
Kerry	12,200	1,500	1,400	1,400	1,100	4,200	1,600	500	23,800
Limerick	800	600	100	200	300	200	800	0	3,100
Galway/Connemara/ Ballinakill	9,400	1,000	0	1,700	600	5,900	300	0	19,000
Bangor/Ballina	9,000	600	0	300	0	1,000	200	0	11,100
Sligo/Ballyshannon	2,400	500	200	200	200	1,100	200	0	4,700
Letterkenny	2,400	1,600	700	4,300	0	7,800	1,900	1,200	19,900
Drogheda/Dundalk	600	100	0	0	0	0	800	200	1,700
Unknown	300	100	0	200	300	0	0	0	1,000
All Districts	43,600	9,400	5,600	8,500	2,600	22,600	8,900	2,200	103,400*

*Due to rounding errors the figures in each cell do not necessarily add to the row totals and column totals shown.

Table A.6: *Estimated Number of Bednights Spent by all Visiting Anglers and their Dependants in Different Types of Accommodation, Classified by Income Level and Country of Residence of Angler.*

<i>Type of Accommodation</i>	<i>Income Level (£)</i>							<i>Country of Residence</i>				<i>All Anglers</i>
	<i>1,000 and under</i>	<i>1,001-2,000</i>	<i>2,001-3,000</i>	<i>3,001-4,000</i>	<i>4,001-5,000</i>	<i>Over 5,000</i>	<i>Unknown</i>	<i>Northern Ireland</i>	<i>Great Britain</i>	<i>Rest of Europe</i>	<i>Rest of World</i>	
	<i>Number (to nearest hundred)</i>											
Hotel	1,400	3,000	5,200	3,600	5,600	19,500	5,200	3,900	28,000	7,500	100	43,600
Guesthouse	1,100	2,700	1,700	700	900	1,400	900	1,000	4,800	2,700	900	9,400
Farmhouse	200	1,800	1,000	2,100	0	400	100	1,100	2,900	1,200	300	5,600
Caravan	1,300	1,500	3,200	0	700	700	1,200	4,100	3,700	600	100	8,500
Camping	100	100	400	600	100	300	1,100	0	1,200	1,400	100	2,600
Rented house/chalet	1,100	4,100	3,500	1,100	3,600	6,400	2,800	8,100	13,100	800	700	22,600
With relations/friends	300	2,000	1,300	800	2,300	1,800	400	2,900	5,600	400	100	8,900
Other	500	0	300	400	700	0	200	0	1,200	300	700	2,200
All types	6,000	15,000	16,600	9,300	14,000	30,500	11,800	21,200	60,400	14,800	7,000	103,400*

*Due to rounding errors the figures in each cell do not necessarily add to the row totals and column totals shown.

Table A.8: *Estimated Total Expenditure of all Visiting Anglers, Classified by Income Level and Country of Residence of Angler.*

Item of Expenditure	Income Level (£)							Country of Residence				All Anglers
	1,000 and under	1,001-2,000	2,001-3,000	3,001-4,000	4,001-5,000	Over 5,000	Unknown	Northern Ireland	Great Britain	Rest of Europe	Rest of World	
	£000											
Accommodation and Meals	14.8	27.3	32.1	22.9	31.0	112.3	28.1	28.1	159.4	52.1	30.0	268.5
Tackle and Lures	0.6	2.6	2.6	0.6	1.6	4.7	0.6	3.2	6.3	2.2	1.6	13.3
Boats, Boatmen, Gillies	1.6	1.4	3.5	1.9	4.9	12.0	1.5	2.4	16.2	6.3	2.0	26.9
Fishery Rental	1.1	2.3	5.5	2.6	5.3	15.9	2.6	4.0	19.4	7.6	4.3	35.4
Gifts	1.2	4.0	3.4	2.9	4.7	12.6	1.4	3.9	15.5	4.9	6.0	30.3
Licence Fees	0.7	1.4	1.3	0.7	1.1	2.4	0.9	2.3	4.3	1.3	0.6	8.6
Other	1.8	7.4	8.8	4.8	9.1	18.6	2.7	10.9	28.6	9.2	4.4	53.2
Total (a)	21.8	46.5	57.3	36.4	57.8	178.5	37.9	53.8	249.8	83.7	48.9	436.2
Travel within State (b)	6.1	12.4	11.3	10.5	11.6	37.2	8.1	18.5	40.9	23.1	14.6	97.1
Total Expenditure in State (a + b)	27.9	58.9	68.6	46.9	69.4	215.7	46.0	72.3	290.7	106.8	63.5	533.4
Return Ticket to Republic (c)	5.9	10.8	17.7	12.3	18.6	83.3	14.2	0.5	82.7	41.7	37.8	162.7
Total Expenditure (a + b + c)	33.8	69.7	86.3	59.2	88.0	298.9	60.2	72.8	373.4	148.5	101.3	696.1
	±(15.2)	±(14.6)	±(19.8)	±(19.1)	±(20.3)	±(44.2)	±(14.8)	±(14.1)	±(29.0)	±(25.0)	±(18.6)	±(44.9)

Note: Figures in brackets are the confidence intervals about the estimates at the 95 per cent level of significance.

Table A.9: *Estimated Total Travel Expenditure of all Visiting Anglers, Classified by Income Level and Country of Residence of Angler*

Item of Expenditure	Income Level (£)						Unknown	Country of Residence				All Anglers	
	1,000 and under	1,001-2,000	2,001-3,000	3,001-4,000	4,001-5,000	Over 5,000		Northern Ireland	Great Britain	Rest of Europe	Rest of World		
	£000												
Amount of Return Ticket to First Destination in the Republic (a)	5.9	10.8	17.7	12.3	18.6	83.3	14.2	0.5	82.7	41.7	37.8	162.7	
Travel Expenditure within State:													
Bus/Train	0.1	0.4	0.0	0.2	0.3	0.4	0.1	0.0	0.9	0.2	0.4	1.5	
Petrol, Oil and Repairs	4.9	9.7	7.9	6.6	6.2	16.7	4.7	18.4	24.5	9.1	4.7	56.7	
Conducted Tours	0.0	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.6	0.0	0.1	0.7	
Other Travel Expenditure	1.0	2.2	3.4	3.3	5.0	20.0	3.2	0.1	14.9	13.6	9.5	38.1	
Total Travel within State (b)	6.1	12.4	11.3	10.5	11.6	37.2	8.1	18.5	40.9	23.0	14.6	97.1	
All Travel Items (a+b)	12.0 ±(4.3)	23.2 ±(4.5)	29.0 ±(6.3)	22.8 ±(7.8)	30.2 ±(7.4)	120.5 ±(19.0)	22.3 ±(6.2)	19.0 ±(3.8)	123.6 ±(9.8)	64.8 ±(9.4)	52.4 ±(12.4)	259.8 ±(18.9)	

Note: Figures in brackets are the confidence intervals about the estimates at the 95 per cent level of significance.

Table A.10: *Estimated Total Number of Days Fished by all Visiting Anglers in Different Types of Water Classified by Fishery District.*

<i>Fishery District</i>	<i>Type of Water</i>					<i>All Types</i>	
	<i>Private</i>	<i>Club</i>	<i>Hotel</i>	<i>Free</i>	<i>Other*</i>		
	<i>Number of Days (to nearest hundred)</i>						
Dublin	†	2,100	200	†	†	2,300	
Wexford	1,600	‡	†	‡	†	1,600	
Waterford	300	500	300	600	†	1,700	
Lismore	1,600	200	400	‡	†	2,100	
Cork	100	900	100	100	†	1,200	
Kerry	900	700	3,600	2,600	300	8,100	
Limerick	‡	300	‡	200	400	900	
Galway/Connemara/Ballinakill	2,100	200	2,500	1,100	‡	5,900	
Bangor/Ballina	900	200	2,000	800	500	4,400	
Sligo/Ballyshannon	1,500	200	100	500	†	2,400	
Letterkenny	2,900	1,500	100	4,100	100	6,700	
Drogheda/Dundalk	500	3,800	†	†	†	4,300	
All Districts	Number	10,400	10,600	9,300	10,000	1,300	41,600
	Percentage	25.0	25.5	22.4	24.0	3.1	100.0

*Includes no answer.

†Means that none of the sampled anglers fished in this type of water in this district.

‡Means that the number of days was less than 50.

Table A.11: *Estimated Number and Weight of Salmon and Sea Trout taken by all Visiting Anglers in the Different Fishery Districts.*

<i>Fishery District</i>	<i>Salmon Taken</i>		<i>Sea Trout Taken</i>	
	<i>Number (to nearest hundred)</i>	<i>Weight (to nearest hundred lb.)</i>	<i>Number (to nearest hundred)</i>	<i>Weight (to nearest hundred lb.)</i>
Dublin	0	0	0	0
Wexford	1,000	7,800	100	200
Waterford	100	700	200	300
Lismore	400	3,200	100	100
Cork	100	600	400	600
Kerry	800	6,500	5,800	8,700
Limerick	200	1,300	200	300
Galway/Connemara/ Ballinakill	1,000	7,700	7,200	10,800
Bangor/Ballina	600	4,400	3,300	5,000
Sligo/Ballyshannon	500	4,400	300	500
Letterkenny	800	6,000	1,800	2,700
Drogheda/Dundalk	400	3,400	1,100	1,500
All Districts	5,900	46,000	20,600	30,800

APPENDIX B

Code No.

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SALMON AND SEA-TROUT FISHING

QUESTIONNAIRE FOR VISITING SALMON/SEA-TROUT ANGLERS

1. How many trips during which you did some salmon/sea-trout fishing, did you make to the Republic of Ireland in 1970?

Insert number in box

--

2. If you came with a party, with what kind of party did you come? Please write number in party, including yourself, opposite type of party.

<i>Type of Party</i>	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
Family Party (i.e. wife and/or members of family)			
Party of Fishermen			
Other (specify)			

3. What mode of transport did you use to enter the Republic of Ireland?

<i>Transport Used</i>	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
Air			
Ship accompanied by car			
Ship unaccompanied by car			
Own Boat			
Train			
Car only			

4. For each trip please give the month(s) in which you came and the duration of your stay for each trip.

	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
Month(s) →			
Length of stay (in days)			

5. How many nights did you spend in each of the following types of accommodation in the Republic of Ireland?

<i>Type of Accommodation</i>	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
	<i>No. of nights</i>		
Hotel			
Guesthouse			
Farmhouse accommodation			
Caravan			
Camping			
Rented house/chalet			
With relatives/friends			
Other (specify)			

6. Was salmon and sea-trout fishing the main purpose of your trip(s) or was it only incidental to your trip(s) to Ireland? (Place X in appropriate box opposite purpose of trip.)

<i>Purpose of Trip</i>	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
(i) Salmon Fishing			
(ii) General Family Holiday			
(iii) Combination of (i) and (ii)			
(iv) Other (business etc.)			

7. How many salmon angling licences did you take out in the Republic of Ireland in 1970? Number

<i>Description of each licence</i>	<i>Cost (£)</i>
1.	
2.	
3.	
4.	

8. Can you give some information on your travel expenses to and within the Republic of Ireland? Include payments made by you on your own behalf and on behalf of other members of your party.

<i>Travel Expenses</i>	<i>1st Trip</i>	<i>2nd Trip</i>	<i>3rd Trip</i>
	<i>£</i>		
Cost of travel ticket to 1st destination in the Republic of Ireland			
Bus or train			
Car rental and taxi fares			
Petrol and oil			
Repairs to own car or boat			
Conducted tours			
Other			

9. (a) For each visit indicate the addresses at which you stayed overnight and the names of the towns at which you made purchases greater than £1 in value while travelling between these addresses.
- (b) Please give the expenditure incurred by you on the items listed in the table opposite the appropriate addresses or town. Include payments made by you on your behalf and on behalf of other members of your party.

Visit	Addresses stayed at and towns at which purchases greater than £1 in value were made	Expenditure in £'s				
		Accommodation and meals	Tackle, lures and bait	Boatmen, boat-hire, gillies	Gifts, souvenirs	Other*
1st						
2nd						
3rd						

*Include drink, tobacco, clothes, shoes, recreation other than fishing. Exclude travel expenses—covered in a previous question.

Information on Fishing

10. Can you give some information on your salmon and sea-trout fishing in Irish waters in 1970?

(i) Information on salmon fishing

Name and location of waters fished	Type of water (See footnote*)	Number of days fished	Total fishery rental paid (£)	Approximate weight of salmon taken (lb.)

(ii) Information on *sea-trout fishing*

<i>Name and location of waters fished</i>	<i>Type of water (See footnote*)</i>	<i>Number of days fished</i>	<i>Total fishery rental paid (£)</i>	<i>Approximate weight of sea trout taken (lbs.)</i>

*Please state whether (1) privately owned (e.g. by riparian owner or an individual other than a hotel proprietor, etc.); (2) club waters; (3) owned by hotel proprietor; (4) other—please specify.

11. (i) Are there any adverse comments you would like to make on the facilities available at the centres where you fished in 1970?
 (ii) (For those who came to Ireland without their families or dependants) Would you have taken your family or dependants with you if the facilities were better? (Put X in appropriate box.)

YES	NO	POSSIBLY	NOT APPLICABLE*
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*e.g. no dependants/family, etc.

12. For how many years have you been coming to Ireland for salmon and/or sea-trout fishing?
years.

13. Has salmon and sea-trout fishing changed much in the waters you have fished since you started salmon/sea-trout fishing in Ireland* (Please place X opposite waters under the appropriate answer.)

<i>Name and location of waters</i>	<i>(a) Declined</i>		<i>(b) Much the same</i>	<i>(c) Improved</i>	
	<i>Seriously</i>	<i>Moderately</i>		<i>Moderately</i>	<i>A good deal</i>
1.					
2.					
3.					
4.					
5.					

*Omit waters which you have fished for only one year.

14. If your answer to 13 is either (a) or (c), give your opinion as to why change has taken place.

<i>Waters</i>	<i>Opinion as to reason for change</i>
1.	
2.	
3.	
4.	
5.	

15. Did you fish for any species other than salmon or sea trout during your trip(s) to Ireland in 1970? (Put X in appropriate box.)

YES

NO

For Classification Purposes

16. What is your occupation?

17. In which of the following age and income brackets do you fit? (Please ring the appropriate number.)

<i>Age (years)</i>		<i>Income per annum</i>	
Under 20	1	Less than £1,000	1
21-30	2	£1,001-£2,000	2
31-40	3	£2,001-£3,000	3
41-50	4	£3,001-£4,000	4
51-60	5	£4,001-£5,000	5
Over 60	6	More than £5,000	6



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