The economic impact of salmon angling in the SW of Ireland

For further details contact the author below

Dr Patrick J Buck
Assistant CEO
South Western Regional Fisheries Board
1 Nevilles Terrace, Macroom
Co Cork, IRELAND

Telephone 00353 26 41221
Email buck@swrfb.ie

THE SALMON ATLANTIC RIVERS PROJECT - SALAR

The Salmon Atlantic Rivers Project (SALAR) aims to achieve sustainable development in participating regions, through appropriate management of the natural and economic resources related to the sport of salmon fishing, as well as tourist promotion of the Atlantic.

The project has been promoted by the lead partner “La Mancomunidad de las V Villas”, an administrative organisation located in the centre of Asturias, in the north of Spain. Within the Project are four other partners from four European Countries located in the Atlantic Area: the Municipality of Pont Scorff (France), the South West Regional Authority, SWRA (Ireland), the Rural Cantabrian Network (Spain) and the Westcountry Rivers Trust (England, United Kingdom).

The project was approved under the call for proposals of Interreg IIIB in 2003 and has a total budget of 1,269 968 euros – 58.39% co-financed by the EDRF funds.

The present project aims to achieve, through trans-regional co-operation among all the participating territories, the following objectives:

1) The exchange of knowledge and experiences on strategies of sustainable development and out of season tourism, with special emphasis on initiatives to promote fishing as a sport.

2) To train professionals who can take care of visitors and tourists, as well as fishermen and their families.

3) To promote private initiatives and the creation of integral tourist packages.

4) To promote sustainable tourist development:

5) To identify and evaluate comparatively the socio economic impact of game fishing in the different participant river basins, taking into consideration its respective natural, economic, tourist and cultural contexts.

6) To improve the management and operation of fluvial resources.

7) To collect and exchange comparable documents so as to improve management and secure complete and updated information.

8) To raise the awareness of local communities of the natural heritage of their regions, pointing out its economic and cultural value as a tourist attraction, whilst promoting an attitude of conservation and protection of the environment.

9) To promote the image of quality tourism in salmon areas of the Atlantic.

In order to accomplish these objectives the project will implement in 2004 and 2005 the following actions within the partner areas:

a) Study visits and exchange of experiences, the creation of management structures for the project, with the participation of local authorities, members of tourist associations, fishermen, and representatives from companies and youth organisations.

b) Training courses for Professional Fishing Guides as well as for Environmental River Monitors.

c) Assessment of the economic impact of game fishing within each area.

d) A comparative study of sustainable management models of salmon water fishing to identify a common model based on the best practices.

e) The design and preparation of a Geographic Information System (GIS) of the salmon areas.

f) The preparation and distribution of common materials which promote environmental awareness and tourism, including the creation of a web page for the project.

g) The development of pilot projects which explain and highlight the value of salmon resources (environmental and tourist signposting of salmon footpaths and the provision of materials for didactic lessons).

h) Workshops on the creation of integral tourist packages.

i) The distribution of results and Final Conference.

PROJECT PARTNERS

“This project has been co-financed by the European Regional Development Fund”

Lead Partner
Name of organisation: Mancomunidad V Villas
Address: Centro de Recursos, Polígono Salcedo, s/n
City: 33120 Pravia, Asturias
Country: Spain
Person in charge of the project management: Ms. Gloria Elena Fernández
Telephone**:** 985 82 23 84
Fax : 985 82 36 68
E -mail: adl.cincovillas@retemail.es

Partner 1
Name of organisation: Mairie de Pont-Scroff
Address: 4, Place de la Maison des Princes
City: 56620 Pont Scorff
Country: France
Person in charge of the project management: M. Emile Gaubert
Telephone: +33 (0) 2 97 32 60 37
Fax: +33 (0) 2 97 32 61 61
E-mail: dgs.pontscorff@wanadoo.fr

Partner 2
Name of organisation: South West Regional Authority (SWRA)
Address: Innishmore, Ballincollig
City: Co Cork,
Country: Ireland
Person in charge of the project management: Mr. Eoghan Allen
Telephone: +353 21 4876877
Fax: +353 21 4876872
E-mail: eallen@swra.ie

Partner 3
Name of organisation: Red Cántabra de Desarrollo Rural
Address: Urbanización Los Robles, Bloque nº 1 (bajo) Barrio 1º de Mayo
City: 39011 Peñacastillo (Cantabria)
Country: Spain
Person in charge of the project management: Ms. Ana Manrique
Telephone: + 34 942 32 12 83
Fax: + 34 942-709360
E-mail: info@redcantabrarural.com

Partner 4
Name of organisation: Westcountry Rivers Trust (WRT)
Address: 10 Exeter St, Launceston
City: Cornwall PL15 9EQ
Country: United Kingdom
Person in charge of the project management: Mr. Toby Russell
Telephone: +44 870 7740696
Fax: +44 1566 778666
E-mail: toby@wrt.org.uk

Table of contents

The economic impact of salmon angling in the SW of Ireland

1.0 Introduction

Socially, salmon have played a mythical role in Irish folklore and are widely regarded as the 'king of fish'. Children grow up listening to the exploits of Fion MacCumhail, a legendary Irish hero of the 3rd century AD. Fion is perhaps best known for eating the "salmon of knowledge" by which he gained the wisdom to challenge MacMorna, his father's murderer.

The economics of Ireland's wild salmon resource has been extensively studied over the last sixty years (INDECON 2003, Marine Institute 2000, Radford et al. 1991, Went 1947, Whelan and Curtis 2000). Internationally the situation is similar (Bird 1986, EIFAC 1990, Postle and Moore 1998). Catches have however, both in Ireland and internationally, declined significantly since 1985 (EIFAC 1990, NASWG 1996, O'Maoileidigh 2000). Over fishing, pollution, loss of spawning habitat and poor management are suggested as the main causes (Champ 2000b, INDECON 2003, Marine Institute 1996, SWRFB 1998).

Historically salmon angling played a significant role in Irelands tourism portfolio, however in recent years, due to several factors, its role has diminished to such an extent that the industry itself is undergoing restructuring in an attempt to reverse this trend(figure 1) (DCMNR, 2005). Since 2002 a small recovery has been noted in some regions including the SW.

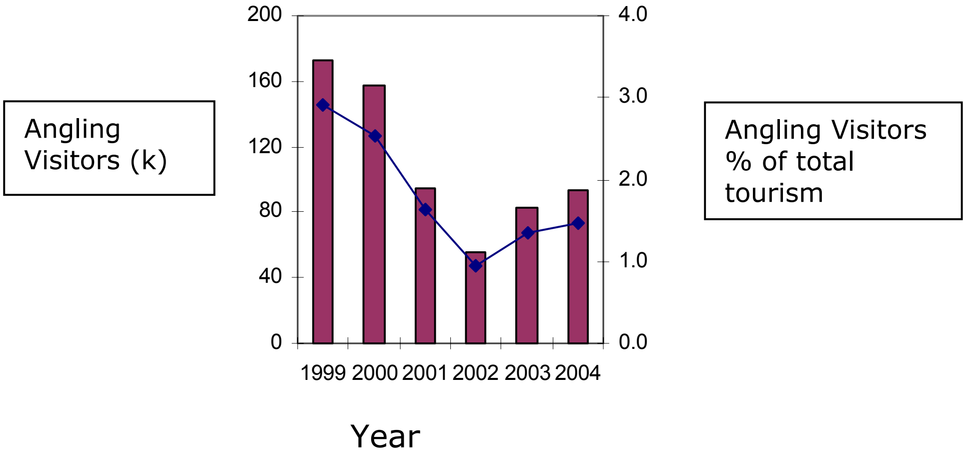

Figure 1. Irish angler numbers

Source – Fáilte Ireland – Activities by Market 1999 – 2004

2.0 Salmon fisheries in Ireland

The Atlantic wild salmon (*Salmo salar)* fishery in Ireland comprises a recreational and a commercial fishery. This SALAR report concentrates on recreational salmon angling but does overview the commercial fishery, where relevant, in the discussion.

2.1 The recreational salmon fishery

The recreational salmonid fishery is confined to Irelands river systems, of which one hundred and ninety two are recognised as salmon and sea trout fisheries.

Salmon angling in Ireland attracts large numbers of participants. For instance in 2001 approximately 33,000 game angling licences (salmon/sea trout) were sold to visiting and local anglers. Appendix 2 displays the angling catches for 2002 – 2004 based on log book returns.

Ireland's recreational salmon fishery today is valued in excess of Euro 100 million (CFB 2000a, INDECON 2003). It is important to recognize that this value figure has over the years fluctuated widely between authors. Whelan and Marsh in 1988 (ESRI 1988) estimated that the gross expenditure by both visiting and local anglers was in the region of IR£28 million. Radford in 1991 (Radford et al. 1991) estimated that the value added (gross revenue minus purchased inputs) for salmon angling in Ireland was approximately IR£1.1 million. Indeed most studies undertaken in Ireland on recreational angling have tended to focus on anglers' spending.

Preliminary statistics from 2004 indicate that 93K anglers visited Ireland in that year generating €65.8 million. It is hoped that by 2009 this figure will grow to 110K anglers generating in excess €100 million. The methodologies of how this growth is to be achieved are discussed later.

2.2 The commercial salmon fishery

The commercial fishery comprises a number of different sectors i.e. engine types. The largest sector by far, in terms of total salmon catch is the drift net sector. This fishery extends 6 miles offshore and in 2002 accounted for almost 87% of the total commercial salmon catch. There were 876 commercial drift net licence holders that year.

This fishery is relatively young and became established in 1996 when 400 drift net licenses were issued.   A significant increase on previous years. The fishery peaked in 1975 with the issuing of 1200 licenses . The driftnet fishery is estimated to take 66% of the returning salmon stock (O'Farrell et al. 1990). Landings of salmon by Irish drift nets in 1997 was valued at around Euro 2,000,000 (600MT live/landed weight) (Bord Iascaigh Mhara 1999). It is likely that the annual commercial salmon catch was at this time considerably higher than that reported (SWRFB 1998). In 2001 national wild salmon tagging legislation was passed in an attempt to monitor catches (O'Maoileidigh 2000).

The draft net fishery, the second largest sector, is made up of both public and private licences and operates in the estuaries and inland stretches of Irish river systems. In 2002 it accounted for just over 11% of the commercial salmon catch. In that year there were 544 draft net licence holders.

Other methods employed in the commercial sector include snap nets, loop nets and bag nets and traps. Collectively these engines in 2002 accounted for only 2.3% of the total commercial salmon catch. Overall this collective group has a total of 161 licence holders.

All sectors that exploit the Atlantic wild salmon are governed by a tags and quota system, a system designed to accurately record and track commercially caught salmon.

In 2005 there were 240 commercial salmon licences issued in the south western region which extends from Ballycotton in county Cork to

Kerry Head in county Kerry.

The commercial price of wild salmon in Ireland has exhibited little fluctuation over the last number of years. The price (quay side) per kg in 1996 was £3.16 (Gargan et al. 1998), in 2000 it was £3.10 and in 2005 it was €9-€12. The principle reason for this poor price performance is the rapid growth in salmon farming that has occurred in Ireland and elsewhere over the last 20 years. In Ireland the 1980 annual production was 20 tonnes, in 1999 that figure had risen to 18,076 tonnes (CFB 2000b) and in 2002 the figure was 23,000 tonnes. However production has decreased over the last two years as a result of cheaper imports of wild salmon from third countries.

3.0 Salmon management

Salmon management in Ireland has a long, complex and diverse history. In all sectors it is politically charged and generates considerable debate, especially the operations of its drift net fishery.

Historically stakeholders were excluded and often ignored in salmon management in Ireland. Although the realization now exists that a sustainable society is dependent on satisfying the social objectives, as well as the economic and environmental ones, this has been a relatively new development and slow to be adopted.

The situation is different on the biological and economic sides where considerable resources have been invested in optimising stocks and economic return.

3.1 Salmon stocks

Like other Northern Hemisphere countries Ireland's salmon stocks have declined significantly in recent years (O'Maoileidigh 2000). This is graphically displayed in figures 1, 2 and 3. Figure 1 displays the SW total catch from 1990 – 1999. Figure 2 displays the national catch from 1970 – 1999. Figure 3 displays the World, NE Atlantic and Irish salmon catches from 1996 – 1999. In 1994 and 1995 nominal catches were approximately 50% of the nominal catches taken in 1985 and 1986. The five-year running average overall catch for 1991-1995 was 733 tonnes, the lowest value since 1964. The drift net five-year running average (1991-1995) was 513 tonnes and the draft net average was 149 tonnes, compared to values of 1,047 tonnes and 144 tonnes respectively in 1986 (SMTF 1996).

Since 2001 a strict quota system has been applied to commercial salmon fishing. Quotas are set each year based on scientific advice.

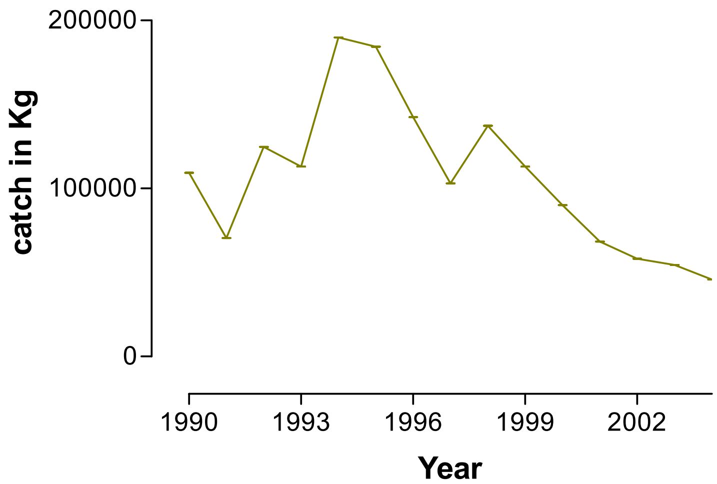

Figure 2. Commercial salmon catch in the SW of Ireland.
Source Buck 2001

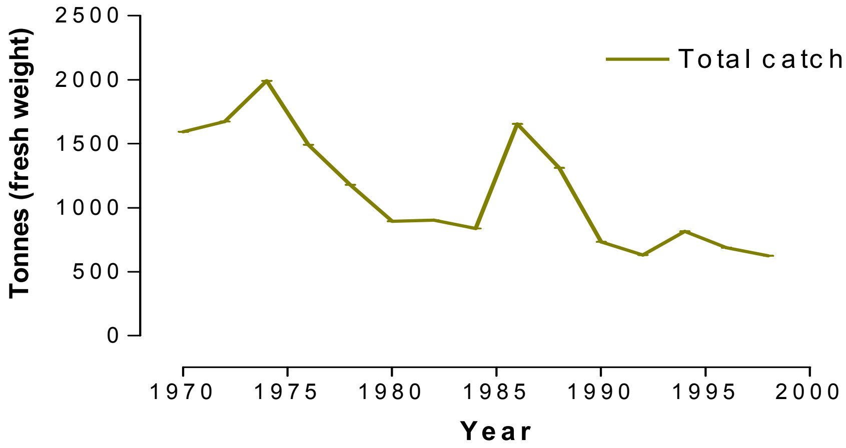

Figure 3 Irish salmon catches 1970 – 1999. Source Buck 2001

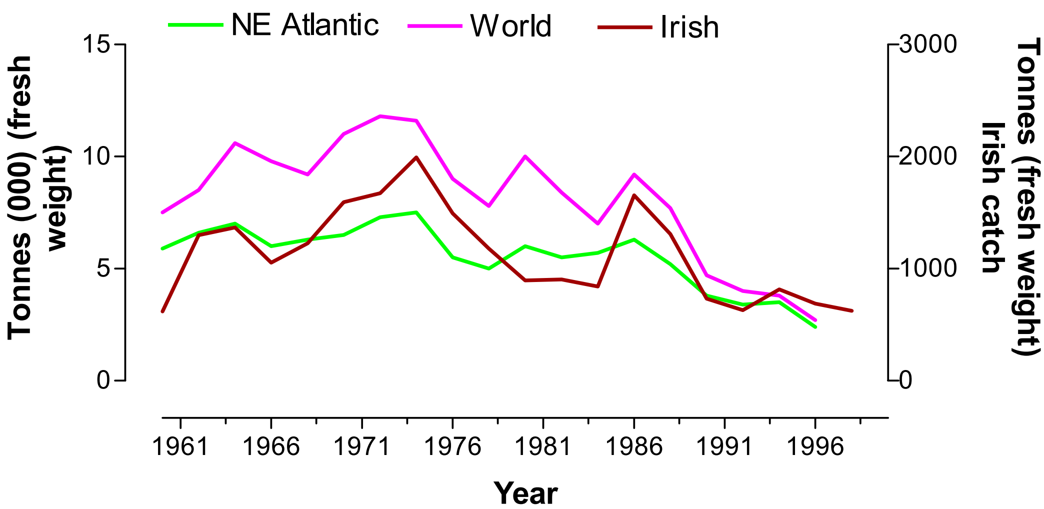

Figure 4. World, NE Atlantic and Irish salmon catches 1996 – 1999. Source Buck 2001

4.0 Discussion

4.1 Irelands salmon fishery – achieving a balance

Ireland is well endowed with salmon fisheries and most areas, especially along the west and south west coasts have healthy salmon stocks. The country has a total of 192 salmon bearing waters and 135 main stem salmon rivers. These support approximately 200 to 300 discrete salmon populations and it is estimated that these systems are capable of producing annually over seven million wild salmon smolts (Marine Institute 2001). As a consequence of Irelands salmon wealth, extensive research has been, and continues to be, undertaken in this field.

A substantial proportion of this research has concentrated on the economics of the Atlantic wild salmon. Historically emphasis was placed on maximizing the resources economic potential. The debate on how best to achieve a commercial balance between the netting sector and the rod and line sector was, and indeed still is, a hotly contested subject. Fundamentally the debate centres on the profitability of the commercial sector versus the earning potential of the tourism angling salmon sector.

From a tourism angling perspective Irelands salmon fisheries are of high value. GENISIS (2005) estimated that in 2004 salmon angling nationally generated €65.8 million.

Tourism angling is regarded as one of Irelands premium tourism products. For instance a salmon caught by rod and line in Ireland was valued by Connolly (1998) at between IR£800.00 - IR£1000.00 (combination of direct and indirect expenditure), whereas the same salmon, as highlighted by the SWRFB (1998), if caught by drift net, would generate only around IR£10.00 (€12.70). This estimate varies widely between researchers and the importance of its social impacts are rarely considered.

INDECON (2003) valued the Irish salmon rod fishery (domestic and overseas anglers) at Euro 11 million.

One of the key factors that obviously influence the overall economic value of wild salmon angling is the number of salmon caught over time. Table 1 and appendix 2 detail salmon catches from 1999 - 2004

Year	Salmon catch rod & line
1996	5114
1997	4500
1998	3571
1999	3722
2000	3900
2001	4133
2002	2751
2003	2657
2004	3157

Table 1. SW salmon catch 1996 – 2004. Note figures from 1996 – 2000 are based on SWRFB estimates and figures from 2001 on angler log book returns data. It should also be noted that there may well be an element of underreporting in these figures also these figures do not include released salmon (catch and release).

While the numbers of salmon caught by rod and line nationally has decreased significantly in recent years the SW rod catch is remaining steady.

4.2 Tourism angling

4.2.1 Introduction

The SW region takes approximately 16% of the national salmon rod catch each year. This is the second highest salmon rod catch in the country after the NW region which takes around 39% annually.

The SW region is regarded as a premium salmon, sea trout and sea angling destination and attracts more anglers than any other region.

4.2.2 Tourism angling data acquisition and recent findings

One of the principal products in Irelands tourism portfolio has historically been salmon angling. In recent years, considerable time and effort has been applied to product development, primarily in response to a drop in the number of overseas game anglers visiting Ireland.

Currently six different groups are involved in marketing angling in Ireland. They are:

- Tourism Ireland
- Failte Ireland
- Central and Regional Fisheries Boards (8 bodies)
- Seven Regional Tourism Authorities
- Northern Irish Tourist Board
- The Marine Institute (tourism angling publications)

It should be noted that data are not routinely collected by some organizations on an annual basis nor is the acquisition process necessarily similar between organizations. Currently an initiative is underway to standardize tourism angling data acquisition.

In order to analyses market trends the following data sets are considered the most appropriate by the relevant tourism organizations in Ireland;

- Visitor nationality
- Purpose of visit (business/pleasure)
- Entry point and type of transport
- Length of stay and time of year;
- Experience of Ireland;
- Social class;
- Spend;
- Party composition;
- Age profile;
- Region visited;
- Accommodation type
- Travel arrangements (independent or package).

Reviewing recent data sets, both national and regional, it becomes apparent that a changing dynamic in Irelands tourism angling marketplace is evolving. There is evidence to suggest that Irelands angling product is not as attractive as it once was (Failte Ireland 2005). Certainly on analysis it becomes evident that rebranding maybe necessary to combat and address a marked downward trend that is the result of a number of impacting components. This downward trend is also being noted in other European countries (The Salmon Tour 2005).

In a recent survey undertaken by Failte Ireland (2005) many respondents stated that they felt:

- Ireland was becoming more expensive, in terms of accommodation and everyday living expenses.
- That accommodation standards varied widely in terms of levels of service, cleanliness, value for money, etc.
- That as most anglers flew to Ireland that luggage weight restrictions and extra charges for angling equipment was negatively affecting the product.
- That as the weather was unreliable it detracted from the experience.
- That fishing quality had declined in recent years.
- That the lack of language skills (French, German) amongst Irish people was working against the tourism industry

In addition such areas as:

- The detrimental impact of 9/11 in 2001 and 2002 as well as general security concerns
- Precautions in the Irish countryside as a result of the Foot & Mouth scare in 2001
- Issues of eroding quality of fishing and associated negative publicity
- Competition from other angling destinations

were also impacting negatively on tourist angler numbers and having 'down the road' consequences for repeat visits.

This and other studies carried out by Failte Ireland (2005) and INDECON (2003) clearly demonstrated that if Ireland wished to retain and grow its tourism angling industry that an overall refocusing of its marketing strategy and product development was necessary.

When one views the trend in visiting or overseas anglers from 1997 – 2004 in all three disciplines (game, coarse, sea) it is immediately apparent that the decline is significant although there appears to be a slight recovery from the 2002 low.

Table 2 charts the decline in visiting angler numbers in Ireland per category from 1997 to 2001. Figure 5 plots this fluctuation for the years 1999 – 2004.

	1997	**1998**	**1999**	**2000**	**2001**
Game	51	52	47	46	42
Coarse	68	54	51	45	43
Sea	39	33	28	31	30

Note : all figures in 000's

Table 2. Visiting overseas angler numbers for game, coarse and sea angling years 1997 - 2001 *Source CFB/SWRFB reports*

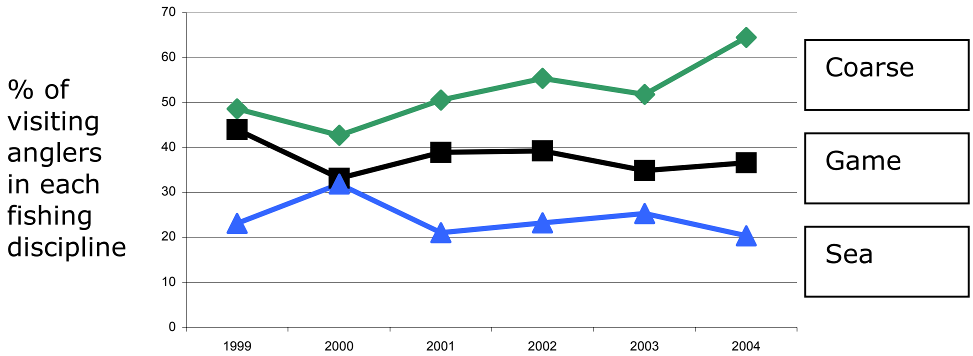

Figure 5. Fluctuation in angler numbers from 1999 – 2004. Note that some anglers engage in two or more angling disciplines. (Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

The breakdown and fluctuation of visitor nationalities for the years 1999 – 2004 is also displayed in table 3 which allows for trend analysis per market.

Table 3. Breakdown per contry for years 1999 - 2004						
	1999	2000	2001	2002	2003	2004
Britain	108	105	57	19	48	58
France	12	9	7	8	8	7
Germany	22	18	13	4	5	7
Netherlands	3	6	1	4	4	5
USA	12	11	10	11	5	8
Total	173	157	95	56	83	93

Table 3. Breakdown per country for years 1999 – 2004. Source Tourism Ireland, CFB. SWRFB.

Recent tourism angling data acquired and compiled by Failte Ireland (2005) reveal a number of interesting trends that have developed over the last 5 years. Failte Ireland conclude from this research that;

- angling tourism is in a period of slow recovery, having hit a low of 56k visitors, representing 1% of total visitor traffic to Ireland, in 2002.
- the potential for growth remains material – angling in Ireland is a well regarded product and effective in meeting the needs of identifiable tourist segments.
- the experience for angling tourists visiting Ireland is broadly satisfactory.
- the challenges for delivering growth are material also - the supply side of angling in Ireland is fragmented and variable in quality.
- promotion of angling tourism in Ireland is a shared accountability resulting in overlap in respective roles and responsibilities of the agencies involved.
- there are "best practice" marketing lessons to be learned from study of competing angling tourism destinations

These findings concur with a smaller study undertaken by the South Western Regional Fisheries Board (SWRFB) in 2004 and 2005. The SWRFB study was undertaken on the Kerry Blackwater river and poled overseas anglers visiting the fishery. Further a number of these findings were noted in previous studies undertaken by the CFB (2000) and Marine Institute (2001).

4.3 Key findings from recent studies

The South Western region has outperformed all other areas in Ireland with regard to game angling over the last number of years and continues to grow (figure 6). This is due to several reasons that include:

- good spread of game fisheries throughout Cork and Kerry
- availability of good quality angling
- established accommodation infrastructure
- established and mature tourism industry
- renowned beauty spot
- well known internationally
- heavily marketed overseas

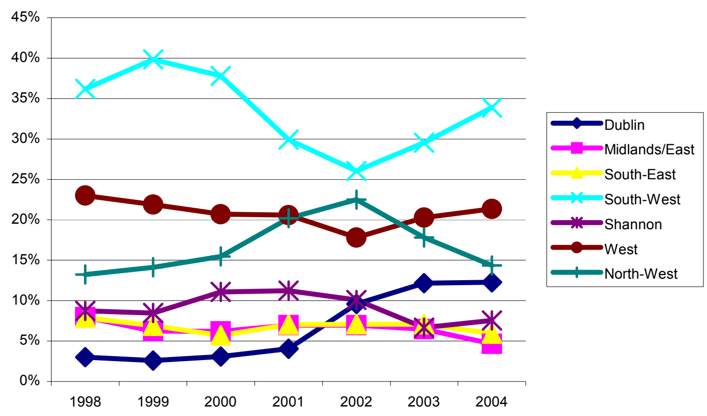

Figure 6. Regional performance – game angling. (Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

The principal age profile of the visiting game angler ranges from 35 – 55 (figure 7) with their social class being defined clearly in the AB and C1 categories (figure 8).

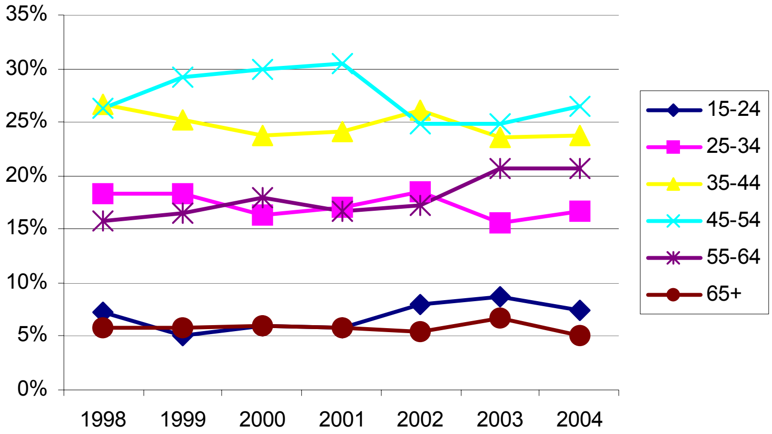

Figure 7. Age profile for visiting game anglers 1998 – 2004 (nat.fig) .
(Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

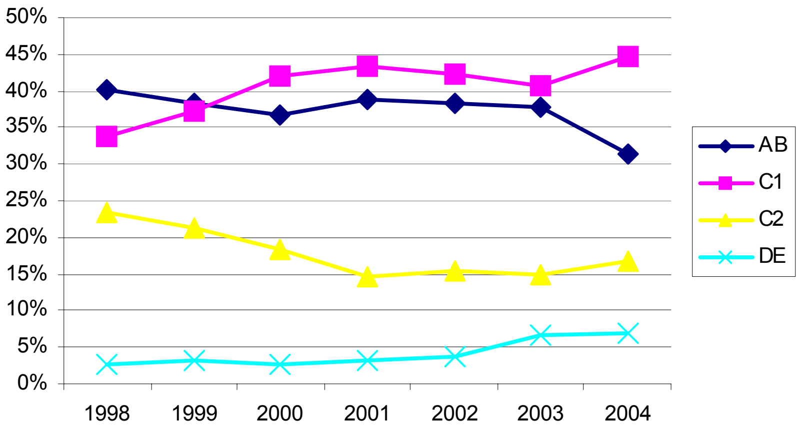

Figure 8. Social class of visiting game anglers 1998 – 2004 (nat.fig) .
(Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

.

An interesting development in recent years is that the group structure of visiting anglers appears to be changing. Figure 9 demonstrates this graphically. The larger groups (> 4 dedicated anglers) have declined significantly since 2000. While couples and individual anglers have shown growth. The decline in group numbers may be attributable to;

- an increase in more affordable exotic game angling destinations such as Chile, New Zealand and Patagonia coming on the market.
- a decrease in available leisure time where anglers now appear to favour a couple of epic days game fishing rather than a week or ten days of more sedate angling.
- a belief among some that Ireland no longer is rugged and wild. An image sold heavily in the 80’s and 90’s.
- increase in the price of angling in Ireland relative to other destinations. Certainly ‘value for money’ is a key determinant.

The rise in couples and singles would appear to be the result of;

- high level of luxury accommodation
- ease of access to destination
- affordable short stay destination
- quality angling.

The drop in family numbers would appear to be closely related to price in that Ireland has become a more expensive place to visit and is unreliable with regards to its weather.

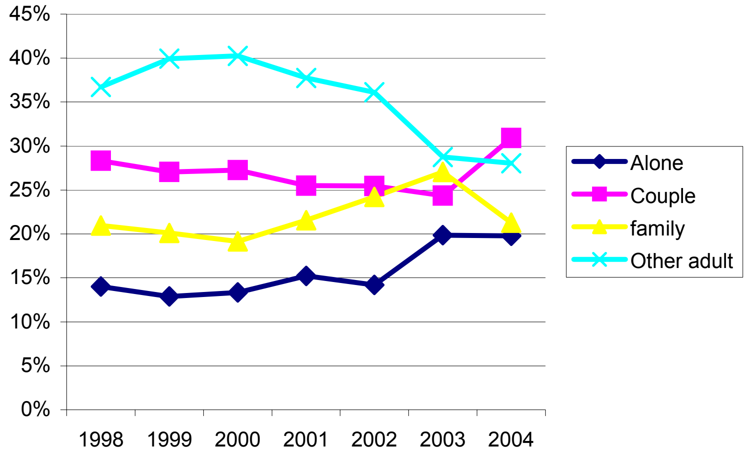

Figure 9. Party composition (1998 – 2004), (nat.fig). (Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

While Ireland was at one time an inexpensive holiday destination, there have been notable changes. Ireland is now widely regarded as being one of the more expensive European holiday destinations. This is perhaps borne out by figure 10 that clearly indicates a rise in short duration stays (1 – 3 nights) and a drop in longer stays (>15 nights). the greater than 15 nights. Overall there has been a drop in length of stay from 9.8 days in 1999 to 9.1 in 2004, although 1 week remains the "normal" holiday duration. Interestingly it was noted by Failte Ireland (2005) that Germans are the regions long stay anglers with 23% of those staying 15 nights or more. It is difficult to explain the apparent rise in 6 – 14 night stays since 2002 but this maybe attributable to anglers engaging enjoying other aspects of Ireland rather than just angling.

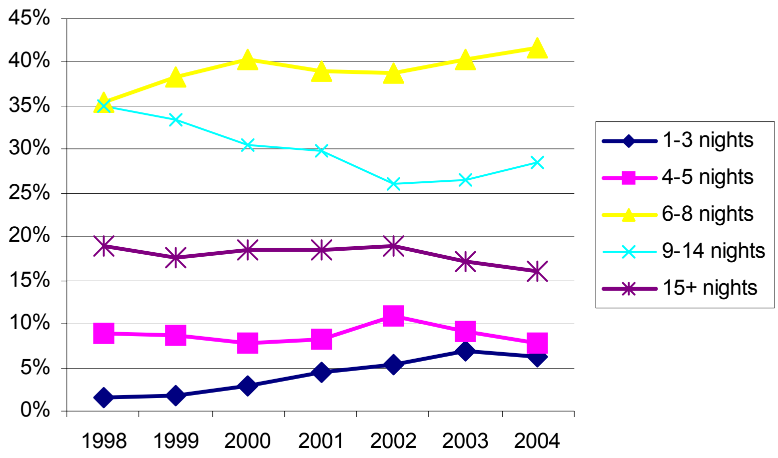

Figure 10. Average length of angler stay 1998 – 2004 (nat.fig) . (Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)

.

Also interesting and an area that has significant ramifications for travel agents in Ireland and elsewhere are the booking arrangements of anglers. There has been a very marked increase in independent travel to Ireland across many different sectors including angling. It would appear that anglers prefer flexible travel arrangements as highlighted in figure 11 . (Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004*)*

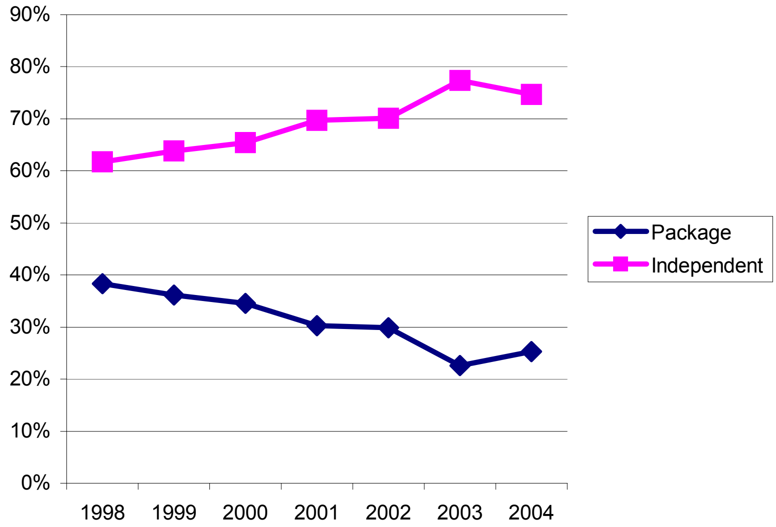

Figure 11. Holiday arrangements 1998 – 2004 (nat.fig).

In this regard it is interesting to note the significant rise in the use of air transport from the UK for UK anglers. Historically the majority of anglers would have traveled to Ireland by ferry however today it is more or less evenly split between air and sea (table 4)

Route of Entry	%
Sea from Britain	33
Sea from Mainland Europe	10
Air from Britain	31
Air from M Europe	19
Transatlantic Air	7
Total	**100**

Table 4. Route of entry to Ireland based on data from 1998-2000.
Source Bord Failte 2001

This is also reflected in their selected transport option during their stay (table 5).

Use of Car	%
Car Brought	39
Car Hire	41
Car Not Used	20
Total	**100**

Table 5. Anglers internal transport option. Based on data from 1998-2000. Source Bord Failte 2001

Angling in Ireland is highly seasonal with 72% of anglers arriving between May and August each year (table 6)

Month of Arrival	%
January-March	15
April	8
May	16
June	27
July	13
August	16
September	4
October-December	1
Total	**100**

Table 6. Month of arrival (av. 1998-2000).
Source Bord Failte2001

Guesthouses and B&B's are the preferred accommodation options for visiting salmon anglers, however hotels and staying with friends and relatives also rates highly (table 7).

Accommodation Used	%
Hotels	23
Guesthouse / B&Bs	37
Caravan / Camping	1
Rented	18
Friends / Relatives	27
Hostels	1

Table 7. Accommodation options 1998 – 2000. *Source Bord Failte 2001*

Irish salmon angling relies heavily on repeat business and is the mainstay of many private game fisheries. Figure 12 demonstrates the significance of this.

Experience in Ireland

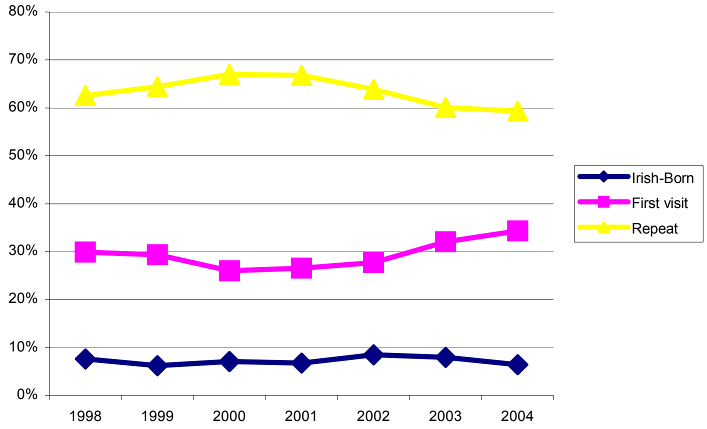

Figure 12. Experience in Ireland 1998 – 2004 (nat.fig). *(Source United Kingdom Tourism Survey, Fáilte Ireland - Activities by Market 1999 – 2004)*

5.0 Conclusions

Since the low of 2002 Irish game angling has demonstrated growth and certainly the 2005 South West game angling data (to be validated) shows that this trend is continuing.

While the supply side and quality of salmon angling in the SW and nationally is good, in order to improve competitiveness it is fundamental that the following key areas are addressed;

- a coordinated effort by all agencies is initiated to develop Irelands peak game angling products
- all agencies empowered with marketing Irish angling work together, with predefined responsibilities and transparent budgets, to market Irish angling overseas. These programmes must be strategy led and based on joint agency agreements
- an agreed 'customer focused' data acquisition programme be launched
- to agree and ensure that there is understanding across the sector (with all stakeholders) a set of operational guidelines for the development of game angling.

Generally it is agreed by the relevant agencies that these developments are necessary if Irelands game angling sector is to grow.

6.0 Bibliography

During the SALAR programme the following list of references was used in the development of the various programmes. While the list includes more references than cited in this paper it is hoped that the additional information will be of benefit to the reader.

Anon. (1980). *National Angling Survey*. , National Environmental Research Council - National Opinion Polls, London.

Anon. (1993). Scientists' Warning to humanity. *cited in 'Sustainable Development for Local Authorities': Environmental issue series no 5. European Environment Agency: October 1997. ISBN 92 9167 073 1*.

Anon. (1996). *A guide to Environmental Indicators in New Jersey*. , New Jersey State Department, New Jersey.

Anon. (1996). LCREP (Lower Columbia River Estuary Program). Comprehensive Conservation and Management Plan. *http://www.lcrep.org/ccmpsummary.htm*, 1-7.

Anon. (1996). *Sustainable Communities. Task Force Report. The Presidents Council on Sustainable Development*, US Government Printing Office, Washington.

Anon. (1997). Using our natural resources more effectively. *http://www.britanica.com/ bcom/magazine/article/print/0,5746,239648,00.html*, 8.

Anon. (1998). Decision No 2179/98/EC of the Council of the European Parliament and of the Council. On the review of the European Community Programme of policy and action in relation to the environment and sustainable development 'Towards

Sustainability'. *Official Journal of the European Communities*, L 275, 1-13.

Arneson, R. (1990). Liberalism, Distributive Subjectivism, and Equal Opportunity for Welfare. *Philosophy and Public Affairs*, 19, 158-194.

Bailey, R. (1997). *An introduction to sustainable development*, The Chartered Institution of Water and Environmental Management, London*. ISBN 1 870752 31 7.*

Bantry Bay Coastal Zone Charter. (2000). *Bantry Bay Coastal Zone Charter*. , Bantry Bay Charter, Bantry, Ireland.

Barbier, E. B. (1998). Environment Project Evaluation in Developing Countries: Valuing the Environment as input. *World Conference of Environmental Resource Economists*, Venice, 1-17.

Barry, A. (2000). Fisheries Catchment Management - A Contextual Analysis of the Laune Pilot Programme. *Institute of Fisheries Management. 31st Annual Study Course.*, Dublin.

Barton, H., and Bruder, N. (1995). *A guide to local environmental auditing*, Earthscan, London. *ISBN* 1 85383 234 0

Baxter,B.H.(1996).Environmental Values. *Environmental values*, 5, 205-219.

Bilsby, M. A., Cragg-Hine, D., and Hendry, K. (1996). *Cost Benefit analysis: its role in recreational fisheries development and management*. , European Inland Fisheries Advisory Commission, ed., 279-286. *ISBN 0 85238-248-0.*

Bird, P. (1986). Economic estimation of world salmon demand. *Marine Resource Economics*, 3(2), 169-82.

Bord Failte. (1999). *Angling in Ireland, The Official Anglers Guide to Ireland 1999*. , Bord Failte Ireland, Dublin.

Bord Iascaigh Mhara. (1999). *Irish Inshore Fisheries Sector*. , Bord Iascaigh Mhara, Dublin.

Bowers, J. (1997). *Sustainability and Environmental Economics*, Addison, Wesley Longman, New York. *ISBN 0-582-27656-X.*

Bowman, J., Clabby, K. J., Lucey, J., McGarrigle, M. L., and Toner, P. F. (1996). *Water quality in Ireland 1991-1994*. , Environmental Protection Agency, Wexford, Ireland.

Buck, P. (1998). Tourism Angling - Observations and Future Strategies. , South Western Regional Fisheries Board, Macroom, County Cork, Ireland.

Buck, P. (2000). A Holistic Approach To Fisheries Development: Preliminary results from the Kerry Blackwater Development Initiative, Ireland. *Symposium on Fisheries and the Society: Social, economic and cultural perspectives of Inland fisheries*, Budapest.

Buck, P. (2001). The formulation of a holistic approach for the sustainable development of inland fisheries: A case study of the Kerry Blackwater Salmon fishery, Ireland. *Ph.D Thesis, University of Limerick, Ireland.*

Buckley, J. (2000). Regionalisation in Ireland under C.S.F. 2000-2006: The European Commission Perspective. *Irelands First Regional Assembly Conference*, Waterford.

C&AG (Comptroller and Auditor General). (1997). *Management of Inland Fisheries*. , Comptroller and Auditor General, Dublin.

Cairns, J. (1997). Sustainability, ecosystem services, and health. *International Journal of Sustainable Development and World Ecology*, 4, 153-65.

Carleton, C. (1998). Informed decision-making in biodiversity. *Sustainable use of Aquatic Biodiversity:Data, Tools and Cooperation*, Expo 98, Lisbon, Portugal.

CEC (Council of the European Communities). (1997). *Treaty of Amsterdam Amending the Treaty On the European Union, the Treaties Establishing the European Communities and certain related acts.* Office for Official Publications of the European Communities, Luxembourg.

CEC (Council of the European Communities). (1998a). Communication from the Commission to the European Council, on Partnership for Integration: A strategy for integrating Environment into EU policies. *COM (98) 333*, Council of European Communities. Office for Official Publications of the European Communities, Luxembourg.

CFB (Central Fisheries Board). (1986). Inland Fisheries. *Strategies for management and development*. , Central Fisheries Board, Dublin.

CFB (Central Fisheries Board). (1996). *A preliminary investigation into the decline of salmon stocks in Kenmare Bay in 1994*. , Central Fisheries Board, Dublin.

CFB (Central Fisheries Board). (1997). *Achieving Sustainable Growth: Strategic Development Plan for Inland Fisheries 1998 - 2002*. , Central Fisheries Board, Dublin.

CFB (Central Fisheries Board). (1999). Electrofishing data - Kerry Blackwater. , Central Fisheries Board, Dublin.

CFB (Central Fisheries Board). (2000a). Central and Regional Fisheries Boards: Annual Report 1999. , Central Fisheries Board, Dublin.

CFB (Central Fisheries Board). (2000b). *Sustainable Development and Management of Irelands Inland Fisheries and sea angling Resources*. , Central Fisheries Board, Dublin.

Champ, W. S. T. (2000). Habitat Quality For Fisheries. *Water - Is its quality deteriorating*, Central Fisheries Board, Dublin.

Champ, W. S. T. (2000). Habitat Quality and Fisheries. , Central Fisheries Board, Dublin.

Charles, A. T. (1995). Fishery Science: the study of fishery systems. *Aquatic Living Resources*, 8, 233-239.

Connolly, A. (1998). *Marketing of Angling in Ireland: Proposal For Development Of Marketing Strategy For Angling In Ireland*. , Anne Connolly Consulting, Dublin.

Connolly, N., Hegarty, A., and Phil, M. (1999). Review of ICZM Methodologies - Bantry Bay Charter. *Work Package 2*, University College Cork, Cork, Ireland.

Conway, A. (1991). A Role for Economic Instruments in Reconciling Agricultural and Environmental Policy in Accordance with the Polluter Pays Principle. *European Review Of Agricultural Economics*, 18(3/4).

Cook, B. A., and McGaw, R. L. (1996). Sport and Commercial Fishing Allocations for the Atlantic Salmon Fisheries on the Miramichi River. *Canadian Journal of Agricultural Economics*, 44, 165-71.

Cork Kerry Tourism. (1999). *Cork Kerry Tourism : Regional Tourism Plan 1999-2006*. , Cork Kerry Tourism, Cork.

Costanza, R., d'Arge, R., Groot, R. d., Farber, S., Grasso, M., and Hannon, B. (1997). The value of the World's ecosystem services and natural capital. *Nature*, 387(15 May), 253-59.

Cowx, I. G. (1994). Stocking Strategies. *Fisheries Management and Ecology*, 1, 15-30.

Cowx, I. G. (1998). *Aquatic Resource Planning for Resolution of Fisheries Management Issues*. Recreational Fisheries : Social, Economic and Management Aspects, P. Hickley and H. Tompkins, eds., Fishing News Books, London, 97-106.

Crozier, W. W., and Kennedy, G. L. A. (2000). River Bush Research and the Northern Ireland Salmon Management Plan. *31st Annual Study Course Institute of Fisheries Management*, Dublin.

Crozier, W. W., Moffett, I. J. J., and Kennedy, G. L. A. (1997). Comparative performance of native and non-native strains of Atlantic salmon (*Salmo salar* L.) ranched from the river Bush, Northern Ireland. *Fisheries Research*, 32(1), 81-88.

Davis, A., and Bailey, C. (1996). Common in Custom, Uncommon in Advantage:Common property, Local Elites, and Alternative Approaches to Fisheries Management. *Society & Natural Resources*, 9, 251-265.

DCMNR (Department of Communications, the Marine and Natural Resources). (2005*). Review of the Inland Fisheries Sector, Press Release.* DCMNR Dublin.

DELG (Department of the Environment and Local Government). (1991*). An Environment Action Plan: 1st Progress Report.* , Department of the Environment and Local Government, Dublin.

DELG (Department of the Environment and Local Government). (1995). *Moving Towards Sustainability: A review of Recent Environmental Policy and Developments*. , Department of the Environment and Local Government, Dublin.

DELG (Department of the Environment and Local Government). (1997). *Sustainable Development: A Strategy for Ireland*, Department of the Environment and Local Government, Dublin.

DELG (Department of the Environment and Local Government). (1998). *Managing Irelands Rivers and Lakes: A catchment based strategy against eutrophication*. , Department of the Environment and Local Government, Dublin.

DELG (Department of the Environment and Local Government). (1998). *Protecting our Freshwaters : Nutrient Management Planning, guidelines for local authorities*. , Department of the Environment and Local Government, Dublin.

DELG (Department of the Environment and Local Government). (2000*). Landscape and Landscape Assessment: Consultation Draft Of Guidelines For Planning Authorities*. , Department of the Environment and Local Government, Dublin.

DOM (Department of the Marine and Natural Resources). (1994). *Operational Programme For Tourism 1994 - 1999, Tourism Angling Measure (Measure 2 of Sub Measure 3)*. , Department of The Marine and Natural Resources, Dublin.

DOM (Department of the Marine and Natural Resources). (1999). Annual Report 1999. , Department of the Marine and Natural Resources, Dublin.

DUCHAS. (1997). *A visitors guide to Killarney National Park*, Government of Ireland - Stationary Office, Dublin. *ISBN 0-7076-0277-7.*

Dwer, C. L., and McGoodwin, J. R. (1994)*. Folk Management in the World's Fisheries: Lessons for Modern Fisheries Management*. , University Press of Colorado, Niwot. *ISBN 0-87081-325-0.*

EEA (European Environment Agency). (1997). *Environmental issues series no:5. Sustainable Development for local Authorities. Approaches, Experiences and sources.*, Office for Official Publications of the European Communities, Luxembourg.

EIFAC (European Inland Fisheries Advisory Commission). (1990). *Inland Fisheries of Europe*. *52*, Food and Agriculture Organization of the United Nations, Rome.

EIFAC (European Inland Fisheries Advisory Commission). (1998). Forward. *Recreational Fisheries Social Economic and Management Aspects*, P. Hickey and H. Tompkins, eds., FAO, Oxford, ix-xv.

Endres, A., and Radke, V. (1998). Land use, biodiversity and the theoretical structure of a sustainability indicator. *World Conference of the Environmental and Resource Economists of AERE and EAERE in collaboration with FEEM*, Venice, 1-20.

ENDS. (1998). Slow Progress on Local Agenda 21. ENDS, 277, 9.

ENDS. (1998). Sustainable Development Panel seeks greening of Whitehall. ENDS, 277, 10-11.

EPA (Environmental Protection Agency). (1996). *State of the environment in Ireland*, Environmental Protection Agency, Wexford, Ireland.

EPA (Environmental Protection Agency). (2000a). *Guidelines for the Establishment of River Basin Management Systems*. , Environmental Protection Agency, Wexford, Ireland.

EPA (Environmental Protection Agency). (2000b). *Irelands Environment*, Environmental Protection Agency, Wexford.

EPA (Environmental Protection Agency). (2004). *Irelands Environment*, Environmental Protection Agency, Wexford.

ESRI (Economic and Social Research Institute). (1988). *An Economic Evaluation of Irish Angling*. , The Economic and Social Research Institute, Dublin.

ESRI (Economic and Social Research Institute). (1996). *Formulating Environmental and Social Indicators for Sustainable*

Development, The Economic and Social Research Institute, Dublin.

EU (European Union). (1999). *Lessons from the European Commission's Demonstration Programme on Integrated Coastal Zone Management (ICZM)*, Office for Official Publications of the European Communities, Luxembourg. *ISBN 92-828-6471-5.*

Europa. (2000). Towards Sustainability. http://europa.eu.int/comm/environment/ actionpr.htm, 5.

European Center for Nature Conservation and the Netherlands Ministry of Agriculture, Nature Management and Fisheries. (1999). Overview Inventory of Ongoing International Activities. *http://www.ecnc.nl/doc/europe/activities/activlst.html*, 15.

Failte Ireland (2005). Strategy development for angling tourism (internal report), Dublin.

Fieser, J. (1993). Callicott and Metaphysical Basis of Eco-Centric Morality. *Environmental Ethics*, 15.

Fingleton, P. F., and Whelan, B. J. (1994). *The economic consequences of phasing out the Irish drift net salmon fishery*. , Bord Failte Eireann, Dublin.

Fisher, A. C., Hanemann, W. M., and Keeler, A. G. (1991). Integrating Fishery and Water Resource Management: A biological Model of a California Salmon Fishery. *Journal of Environmental Economics and Management*, 20, 234-61.

FOA (Food and Agricultural Organisation). (1999). Code of Conduct for Responsible Fisheries. *http://www.fao.org/fi/agreem/codecond/codecon.asp*.

Fraley, J. (1996). Co-operation and controversy in wilderness fisheries management. *Management-Perspective*, 21(5), 16-21.

Frangialli, F. (1997). Tourism and the Challenge of sustainability. *Naturopa*, 84, 4-5.

Fry, J. (1998). Can EIA Deliver Sustainable Development. *Irish Planning and Environmental Journal*, 6(1), 17-21.

Gargan, P. G., Whelan, K. F., and Whelan, B. J. (1998). *An illustrative grilse survival model for an Irish salmon fishery*, Food and Agriculture Organisation of the United Nations - Fishing News Books, London. *ISBN 0-85238-248-0.*

GENISIS Consulting (2005). Internal marketing report. Dublin.

Giller, P. S. (1998). Studies in Irish Limnology. *Essays on the occasion of the XXVII congress of Societas Internationalis Limnologiae (SIL)*, Dublin.

Glen, J. J. (1995). Sustainable Yield Analysis in a Multicohort Single-Species Fishery: a Mathematical Programming Approach. *Journal of the Operational Research Society*, 46, 1052-62.

Gore, A. (1992). Earth in the balance: Ecology and the human spirit. *http://www.booknotes.org/transcripts/50154.htm*, 19.

Govan, H., and Hambrey, J. B. (1995). Integrated coastal zone management: Participatory Management, the way forward? Nautical Technical Series No. 3. *http://www.nautilus-consultants.co.uk/pdfs/czm.pdf*.

Graham, G. (2000). Behaviorism. *Stanford Encyclopedia of Philosophy*, http://plato.stanford.edu/entries/behaviorism/, 12.

Green, C. (1903). Drawings and descriptions of apparatus used in salmon and trout culture. *Rep. Sea. Inld. Fish.* Part II. Ireland.

Hanna, S., and Munasinghe, M. (1995). An introduction to property rights and the environment. Property Rights and the Environment, S. Hanna and M. Munasinghe, eds., The World Bank, Washington DC, 3-11.

Hanna, S. (1995). User participation and fishery management performance within the Pacific Fishery Management Council. *Ocean & Coastal Management*,
28(1-3), 23-44.

Hannigan, K. (2000). The Use of Cost Benefit Analysis in the Evaluation of Marine Leisure Development. *Marine Institute Seminar*, Inchydoney, County Cork, Ireland, 9.

Heffernan, T. (2000). Overview of the National Development Plan and the Regionalisation Proposals contained therein. *Irelands First Regional Assembly Conference*, Waterford.

Hewetson, A. (1957). *Tagging experiments in the River Shannon in 1954, 1955 and 1956*. , Department of Sea and Inland Fisheries Ireland, Dublin, 86-92.

Holt, E. W. L. (1901). The artificial propagation of Salmonidae for the season of 1901-1902. *ii*, Sea and Inland Fisheries. Ireland, Dublin.

Hughes, E. (1999). Community participation in landscape planning and management. *Policies and Priorities for Ireland's Landscape: The Heritage Council*, Tullamore, Ireland, 49-52.

Huhtala, A. (1998). *Green Accounting and Environmental Efficiency Indexes*. , Finnish Forest Research Institute, Unioninkatu., Helsinki.

Hunter Catchment Management Trust. (2000). Total Catchment Management. *http://hcmt.org.au/what.php3*, 2.

Hunter Catchment Management Trust. (2000). Total Catchment Management. *http://hcmt.org.au/what.php3*, 2.

INDECON (2003). An economic/socio economic evaluation of wild salmon in Ireland, Dublin.

Irish Government. (1993). *National Development Plan 1994 - 1999*, Government Stationary Office, Dublin.

Irish Government. (1994). *Operational Programme for Tourism*, Government Stationary Office, Dublin.

ITIC (Irish Tourist Industry Federation). (1998). *Strategy for Growth Beyond 2000: A strategic framework for Irish Tourism*, Irish Tourist Industry Confederation, Dublin.

IUCN (The World Conservation Union). (1991). *Caring for the Earth. A strategy for sustainable living*, IUCN, Gland. *ISBN 2 83170074 4.*

Jentoft, S., and McCay, B. (1995). User participation in Fisheries Management : lessons drawn from international experience. *Marine Policy*, 19(3), 227-246.

Jojik, M., (2005). No Net Loss. *Conference proceedings, Killarney no net loss conference, hosted by the SWRFB, Ireland.*

Keating, M. (1993). *The Earths Summits. Agenda for change. A plain language version of Agenda 21 and the other Rio Agreements.*, Centre For Our Common Future, Geneva. *ISBN 2 940070 00 8.*

Kendrick, M., and Moore, L. (1995). *Re-Inventing Our Common Future: An Exploration into community sustainability*, Sheldon Printing Ltd., Ontario. *ISBN 0 9699501 0 1.*

Kerry County Council. (1996). *Kerry County Development Plan*. , Kerry County Council, Tralee, Ireland.

Kerry County Council. (1998). *Kerry -Tourism 2000: A consultation paper on the future of tourism in Ireland*. , Kerry County Council, Tralee, Ireland.

Kerry County Council. (2000). *Kerry Initiative on tourism and the environment : Inception Report.* , Kerry County Council, Tralee, Ireland.

Kymlicka, W. (1991). *Contemporary Political Philosophy- an introduction*, Clarendon Press, Oxford. *ISBN: 0198277237.*

Lansdowne Market Research. (2000). Overseas Angling Tourism. Overview Report - UK, France and Germany. *CK/UP/974-L9/019-L0*, The Marine Institute, Dublin.

Lee Valley Enterprise Board, (1987). *Lee Valley Eco Label Project*. , Lee Valley Enterprise Board, Macroom, County Cork, Ireland.

Lucey, J., Bowman, J., Clabby, K. J., Cunningham, P., Lehane, M., MacCarthaigh, M., McGarrigle, M. L., and Toner, P. F. (1999). *Water quality in Ireland 1995-1997*. , Environmental Protection Agency, Wexford.

Lund, P. J. (1981). The economic and social value of salmon fishing to the UK economy in 1978. *Symposium on the economic evaluation of salmon fisheries*, London, 11.

MAFF (Ministry of Agriculture, Fisheries and Food). (2000). *Salmon and Freshwater Fisheries Review*. , Ministry of Agriculture, Fisheries and Food, London.

Mansergh, N. (1998). Capacity, Diversity, Resources and Controls. *Learning Sustainability by Doing - Regional Integration by the Social Partners*, 12-16. *EC/DG XI 95/1019/3060/TS/AB/MM.*

McGarrigle, M. L., and Champ, W. S. T. (1999). Keeping pristine lakes clean: Loughs Conn and Mask, Western Ireland. *Hyrobiologia*, 395/396, 455-69.

Mehra, M. (1997). *Towards sustainable development for local authorities, Approaches, Experiences and Sources*. , European Environment Agency, 17. *ISBN 92-9167-073-1.*

Meldon, J. (1998). *Learning Sustainability by Doing - Regional Integration by the Social Partners* . *EC/DG XI 95/1019/3060/TS/AB/MM,* 111.

Merkel, A. (1997). Sustainable Tourism Development. *Naturopa*, 84, 3.

Moriarty, C. (1962). Movement of Salmon. *Nature, London*, 196(595).

Moriarty, C. (1998). Studies of Irish rivers and lakes. *Essays on the occasion of the XXVII congress of Societas Internationalis Limnologiae (SIL)*, Dublin.

NASWG (North Atlantic Salmon Working Group). (1996). *National Report for Ireland - The 1996 Salmon Season*. *Working paper 97/6*, North Atlantic Salmon Working Group, Dublin. 9.

N. J. D. E. P. (New Jersey Department of Environmental Protection). (1998). *Environmental Indicators Technical Report*. , New Jersey Department of Environmental Protection, New Jersey, USA.

NRA (National Rivers Authority). (1994). National Angling Survey. *Fisheries Technical Report 5*, National Rivers Authority, Bristol. 31.

O'Connell, M. F., and Dempson, J. B. (1995). Target spawning requirements for Atlantic salmon (*Salmo salar* L.) in Newfoundland rivers. *Fisheries Management and Ecology*, 2, 161 - 70.

OECD (Organisation for Economic Co-Operation and Development). (1993). OECD core set of indicators for environmental performance reviews. *OECD/GD(93)179*, Organisation for Economic Co-Operation and Development, Paris.

O'Farrell, M. M., Whelan, K. F., Joyce, T., and Whelan, B. J. (1990). The performance of the river Erriff salmon fisheries. *Institute of Fisheries Management 20th Annual Study Course*, Galway, 129-148.

Oglethorpe, D. R., and Sanderson, R. A. (1996*). An Ecological-Economic Model For Environmental Policy Analysis*. , Natural

Resource Economics Department, Scottish Agricultural College, Edinburgh. 1-19.

Oliver, D. (1902). Report on salmon hatchery at Lismore. *II*, Sea and Inland Fisheries Ireland, Dublin.

O'Maoileidigh, N. (2000). Carcass Tagging and Logbooks for use in management of Irish Salmon Stocks. *31st Annual Study Course: Institute of Fisheries Management*, Dublin.

O'Reilly, P. (1995). *Trout & Salmon Rivers of Ireland. An anglers guide*, Merlin Unwin Books, Ludlow. *ISBN 1-873674-21-X.*

O'Riordan, T. (2000). Catchment Management - Angling River and Lake. Kerryman Newspaper, Killarney. 24 March 2000.

Oxford University Press. (1997). Oxford Interactive Encyclopedia. CDROM Version 1.0. , Oxford University Press.

Pearce, D. W., and Turner, R. K. (1990). *Economics of Natural Resources and the Environment*, The John Hopkins University Press, Baltimore, USA.

Pinkerton, E. (1989). *Co-operative management of local fisheries: new directions for improved management and community development*, University of British Colombia Press , Vancouver, Canada.

Postle, M., and Moore, L. (1998). Economic Valuation of Recreational Fisheries in the UK. Recreational Fisheries. Social, economic and management aspects, F. a. UN, ed., Fishing News Books, Paris, 184-199. *ISBN 0-85238-248-0.*

Preston, C. D., and Croft, J. M. (1997). *Aquatic Plants in Britain and Ireland*, Harley Books, Colchester. *ISBN 0 946589 55 0.*

Radford, A. F., Hatcher, A. C., and Whitmarsh, D. J. (1991*). An economic evaluation of salmon fisheries in Great Britain.* , Centre for Marine Resource Economics, Portsmounth, UK.

Ridler, N. B. (1997). Rural Development in the Context of Conflictual Resource usage. *Journal of Rural Studies*, 13(1), 65-73.

Roche, W. (1996). Kerry Blackwater Catchment Survey and Management Recommendations. , Central Fisheries Board, Dublin.

Saker, E. (1999). The Public and Sustainable Development - Vital Partnerships. *Naturopa*(89), 10-12.

Salmi, P., and Muje, K. (2000). Local owner-based management of Finnish lake fisheries: social dimensions and power relations. *Symposium on Fisheries and Society: Social, Economic and Cultural Perspectives of Inland Fisheries*, Budapest, Hungary.

Sandra, A., and Zbigniew, B. (1998). Environmental Outcomes Assessment: Using Sustainability Indicators for Central and Eastern European to Estimate Effects of Transition on the Environment. *World Congress of Resource and Environmental Economists*, Venice, 1-28.

Savory, A. (1999). The Theory of Holism. *http://www.holisticmanagement.org/ oll_theory.cfm?*

Scott, S., Nolan, B., and Fahey, T. (1996*). Formulating Environmental and Social Indicators for sustainable development*. *27*, The Economic and Social Research Institute, Dublin.

Southern and Eastern Regional Assembly. (2000). *Southern and Eastern Regional Operation Programme.* , Southern and Eastern Regional Assembly, Waterford. 69.

Southern and Eastern Regional Assembly (2000*). Operational Programme for the Southern and Eastern region.* , Southern and Eastern Regional Assembly, Waterford.

SMTF (Salmon Management Task Force). (1996). *Making a new beginning in salmon management - Report to the Minister*., Salmon Management Task Force, Dublin. *ISBN 0-7076-2442-8.*

SRG (Salmon Review Group). (1987). *Report of The Salmon Review Group*. *PL. 5292*, Salmon Review Group for The Minister of the Marine, Dublin. 103.

Swiss Agency for the environment, forestry and landscape. (1999). *The environment in Switzerland: Biodiversity and landscape diversity*. , Swiss Federal Statistics Office, Geneva. 95-114.

SWRFB (South Western Regional Fisheries Board). (1994*). Kerry Blackwater Development Programme.* , South Western Regional Fisheries Board, Macroom, County Cork, Ireland.

SWRFB (South Western Regional Fisheries Board). (1998*). Five Year Development Plan*. , South Western Regional Fisheries Board, Macroom, County Cork, Ireland.

Tisdell, J. (1998). Integration of Biological and Economic Processes: A Game Theory Approach. *World Environmental Economics Conference*, Venice, 17.

The Marine Institute. (1996). *Towards a Marine Policy for Ireland*. The Marine Institute, Dublin. *ISBN 0 9529191 09.*

The Marine Institute. (2000). *Investment Programme 2000-2006 for the Water-based tourism and Leisure Sector in Ireland*. , The Marine Institute, Dublin.

The Marine Institute. (2000). Promoting Irish Angling Holidays in the International Marketplace. *Promoting Irish Angling Holidays in the International Marketplace*, Galway, Ireland, 36.

The World Commission on Environment and Development. (1987). *Our Common Future*, Oxford University Press. *ISBN: 019282080X.*

Tromans, S. (1999). Environmental mediation. *J.CIWEM*, 13, 112-14.

UNCED (1993*). AGENDA 21. Programme of action for sustainable development - The final text of agreements negotiated by Governments at the United Nations Conference on Environment and Development (UNCED), 13 - 14 June 1992*, United Nations Publications, 1993, New York.

Wallstrom, M. (2000a). The European Environmental Policy: The Next Steps ERM / Green Alliance.*http://europa.eu.int/rapid/start/cgi/guesten.ksh?p_action.g... ./59|0| AGED&Ig=E*, 4.

Wallstrom, M. (2000b). The participation of society towards sustainable development, mobilising business, municipalities and the public. *http://europa.eu.int/rapid/start/cgi/guesten.ksh?_paction..../206|0|RAPID&Ig=E*.

Went, A. E. J. (1946). Salmon of the river Shannon in 1944 and 1945. *Journal of Animal Ecology*, 15(2), 155-69.

Went, A. E. J. (1976). The recapture of British Salmon in Irish Waters. *Journal of Fisheries Biology*, 8, 311-16.

Went, E. J. (1947). Salmon of the Kerry Blackwater. *Scientific Proceedings, Royal Dublin Society*, 24.

Whelan, B., and Curtis, J. (2000). The economics of Catchment Management. *31st Annual Study Course. Institute of Fisheries Management*, Dublin.

Whilde, A. (1993). *Threatened mammals, birds, amphibians and fish in Ireland: Irish Red Data Book 2: Vertebrates*. , HMSO, Belfast.

Wilkinson, A. (2000). Introduction : Promoting Irish Angling Holidays in the International Marketplace. *Promoting Irish Angling Holidays in the International Marketplace*, Galway, Ireland.

WWF (World Wildlife Fund). (1998). Living Planet Report. World Wildlife Fund. *http://takeaction. worldwildlife.org/pac_search.htm*

Yeats, W. B. (1990). *Fairy Tales of Ireland*, Harpercollins Publishers Ltd., London. *ISBN 0 261 66790 4.*

Young, M. (1991). Conserving the Freshwater Pearl Mussel (*Margaritifera margaritifera* L.) in the British Isles and Continental Europe. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 7, 73-77.

Zander, P., and Kachele, H. (1999). Modelling multiple objectives of land use for sustainable development. *Agricultural Systems*, 59, 311-25.

7.0 **Appendices**

Appendix 1. Nationality of salmon anglers 2001 – 2004

Appendix 2. SW salmon angling catches 2002-2004

Nationality recorded on sold Licenses

	2002	2003	2004
Australia	1	7	6
Austria	8	8	10
Belgium	28	22	22
Canada	1	16	8
Channel Islands	1		
Denmark	9	8	8
England	701	41	104
Finland		4	5
France	126	96	113
Germany	182	122	130
Ireland	4292	3429	3185
Isle of Man	14	2	3
Italy	13	10	6
Luxembourg		3	4
Netherlands	42	39	29
New Zealand		1	
Northern Ireland	32	51	32
Norway		2	1
Scotland	32	37	36
South Africa	6	5	4
Spain	3	1	3
Sweden	1	6	1
Switzerland	32	28	25
United Arab Emeritus	2		
United Kingdom	1	686	572
Unknown	146	177	130
U.S.A.	51	197	259
Wales	81	44	40
West Indies		1	
Total	**5805**	**5043**	**4736**

Appendix 1. Nationality of salmon anglers 2001 – 2004. *Source CFB 2001.*

Angling catches 2002/2004

Logbook reported figures

	salmon	sea-trout	Total	Raised Total
2002	2004	383	2387	3134
2003	2198	301	2499	2958
2004	2740	164	2904	3321

Appendix 2. SW salmon angling catches 2002-2004. *Source SWRFB 2005*