Department of Culture, Arts and Leisure, The Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board.

The Social and Economic Impact to Northern Ireland, and areas within the Loughs Agency, of Recreational Fisheries, Angling and Angling Resources

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Final Report

PRICEWATERHOUSECOOPERS

Indecon
INTERNATIONAL ECONOMIC CONSULTANTS

Contents

Glossary

Margin of error. The margin of error is a statistic expressing the amount of random sampling error in a survey's results. The larger the margin of error, the less confidence one should have that the reported results are close to reflecting the whole population.

Mean. The mean is the average of the scores in the population. Numerically, it equals the sum of the scores divided by the number of scores. The mean average is, however, subject to greater influence by relatively high or low values ('outliers') in the sample.

Median. The median of a population is the point that divides the distribution of scores in half. Numerically, half of the scores in a population will have values that are equal to or larger than the median and half will have values that are equal to or smaller than the median. This statistical measure is less influenced by extreme low or high values in a sample than is the mean average (defined above).

Multiplier. The multiplier is concerned with how national income changes as a result of a change in an injection, for example, investment. The multiplier was a concept developed by the economist, John Maynard Keynes, which stated that any increase in injections into the economy (investment, government expenditure or exports) would lead to a proportionally bigger increase in National Income. This is because the extra spending would have knock-on effects creating in turn even greater spending. The size of the multiplier would depend on the level of leakages. It can be measured by the formula 1/(1-MPC-MPM) where the MPC is the marginal propensity to consume and the MPM is the marginal propensity to import.

Net Benefit. The net overall economic benefit derived from an activity (such as recreational angling). They differ from gross benefits in that they represent the net contribution to Irish economic activity after subtracting expenditure on imported inputs and the opportunity cost of labour and other resources used in supplying such services.

Opportunity Cost. The value of the best foregone alternative use for a resource. In the case of the recreational angling sector, the net benefit of the sector to the economy must take account of opportunity cost of labour and other resources used in supplying products and services (e.g. hotels and catering services) purchased by overseas anglers where these resource may be put to use elsewhere in the economy.

Present Value. The present value is a mathematical formula used to determine how much money should be invested today to result in a certain sum at a future point in time. It is the discounted value of a future stream of payments or receipts calculated by applying an appropriate discount rate to each future payment of receipt.

Revenue. The total value of receipts during a specified period. In the case of salmon fishing, revenue represents the value of sales of salmon landed.

Standard deviation. The standard deviation is a measure of the variability or spread present in a data sample. It represents the squared root of the average squared deviation of each observation from the mean. A high standard deviation points to a high degree of variance within a sample.

Value-added. The value of output minus the value of all intermediate inputs used in production, representing therefore the contribution of, and payments to, primary factors of production.

Displacement. A situation where the effects of an intervention (on a particular individual, group or area) are only realised at the expense of others. In relation to determining the economic value of angling, this relates to the proportion of expenditures that would have been incurred in any case on other goods and services in the NI economy in the absence of recreational angling.

Executive summary

Introduction

1. This report examines the social and economic impact of recreational fishing (coarse, game and sea angling) in Northern Ireland (NI) and areas within the Loughs Agency which are in the Republic of Ireland[1]. From considering the range of angling resources and undertaking both primary and secondary research, the report seeks to estimate and evaluate the current and potential social and economic impacts of recreational angling and provide recommendations for future development.

Background and terms of reference

2. Northern Ireland is well endowed with angling waters and while there are a number of factors that have pressurised the local water resource, an inquiry in 2001 by the Northern Ireland Culture, Arts and Leisure Committee into inland fisheries outlined the potential for development in the sector. In particular, the report of the inquiry emphasised the capability of angling to support the expansion of tourism in Northern Ireland and stated that *'it is beyond doubt that thriving recreational inland fisheries, particularly on rivers for salmon and on some Loughs for coarse fish, have a major role to play in this development'.*[2]

3. Set within this context, the Department of Culture, Arts and Leisure (DCAL), the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board (NITB) commissioned a study to examine the social and economic impact of recreational fishing in Northern Ireland.

4. The main objective of this study is to identify the current and potential social and economic contribution of fisheries, angling, angling resources and angling tourism to Northern Ireland. More specifically, the study is divided into two parts (Part A and Part B) that have the following aims:

   - Part A: Initial mapping of angling infrastructure and in-depth analysis of participation. This involves:

     - Analysing existing data and developing a comprehensive database of all angling facilities and services available in Northern Ireland and in the cross-border Foyle and Carlingford areas by type and in GIS format;

     - Establishing contact with key agencies, angling groups and stakeholders to map existing data;

     - Developing a comprehensive database of key stakeholders, including owners and lessees of their fisheries;

     - Conducting a statistically robust survey (in collaboration with the Partners i.e., Department of Culture, Arts and Leisure, the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board) of local (within NI), visiting (Republic of Ireland), and tourist (outside island of Ireland) anglers in order to estimate the value of recreational angling to Northern Ireland.

   - Part B: Estimate, Analyse and Evaluate the Current and Potential Social and Economic Impacts (Net). This involves:

[1] There are a small number of fisheries within the Loughs Agency jurisdiction which are situated in the Republic of Ireland. It was not possible to omit these from the study but they will have a negligible impact on the findings of this report.
[2] http://www.niassembly.gov.uk/culture/reports/report2-00r1.htm

- Estimating the current and potential impact of angling to Northern Ireland including the potential impact if the Partners continue to develop angling/fisheries;

- Estimating the monetary/economic impact and social impact to include those such as the work of angling clubs in protecting and enhancing the environment, healthy life style, cross community benefits, etc;

- Producing a report with recommendations to the Partners.

5. For the purposes of this study, recreational fisheries are those providing angling opportunities for game, coarse and sea fish species but not including inland commercial fisheries or commercial sea fisheries.

Methodology

6. The research strategy for this study was centred around a number of key stages, as detailed below

- **Document review:** this involved an analysis of all key documentation in relation to recreational angling to analyse the value of recreational angling, identify gaps in the research and outline key issues to be addressed. The documentation review also entailed sourcing other relevant information available on angling facilities and resources in Northern Ireland. This included any available information on the owner and lessee arrangements of fisheries, and the numbers of licences sold, angling clubs and ghillies;

- **In-depth semi-structured interviews:** in-depth interviews were held with key stakeholders in the angling sector that included, *inter alia*, DCAL; The Loughs Agency; NITB; the Fisheries Conservancy Board (FCB); Chairmen or secretaries of each of the three main fishing organisations in Northern Ireland (Ulster Angling Federation, Ulster Coarse Fishing Federation and the Ulster Council of the Irish Federation of Sea Anglers); Bann Systems Ltd; Fáilte Ireland; and, the Department of Communications Marine and Natural Resources;

- **Survey:** to gain a more detailed understanding of the current social and economic impact of recreational angling, a postal and telephone survey was administered to local and visiting anglers in mid-2006 and in early 2007. The sample of recreational anglers was drawn from a number of sources that included the database of licence holders (held by the Loughs Agency); the database of permit holders (held by DCAL) and databases of angler representative bodies, where available. Given that anglers are not required to hold a licence to undertake sea angling (expect when fishing for salmon or sea trout in the sea), databases of sea angling clubs and those held by owners of sea angling boats were also sourced. To supplement the postal questionnaire, a number of telephone surveys were also conducted with visitor anglers whose contact details were held by local ghillies.

- From a total sample of 4880, 854 questionnaires were returned. This represents a response rate of 19% which can generally be considered as a relatively high return for postal questionnaires[3]. The following table details the population, sample and response rate for local and visitor anglers and also includes the margin of error which needs to be factored into the findings.

[3] May, T. (1997) *Social Research: Issues, Methods and Process*, Open University Press, Buckingham.

Table 1: Survey response rates and margin of error

Local or visitor anglers	Population	Sample	Completed returns	Response rate	Approximate margin of error at 95% level of confidence
Local	29,951	3200	667	21%	+/- 4%
Visitors	4,913	1280	187	15%	+/- 7%
Total	34,864	4480	854	19%	+/- 3%

- **Structured interviews:** to assist in sourcing other relevant information available on angling facilities and resources in Northern Ireland, structured interviews were conducted with the secretaries or chairmen from each of the clubs in the Ulster Angling Federation and the Ulster Coarse Fishing Federation. These interviews were focused on locating the main areas for fishing and in each case, identifying the owner and lessee arrangements, the type of fish that can be caught and the type of facilities that are available. This database has been provided to the Department of Culture, Arts and Leisure, The Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board in a separate report.

Scope and limitations

7. Examining the economic and social impact of recreational angling in Northern Ireland is a complex task. The following issues reflect on a number of methodological considerations and examine the scope and limitations of the study:

- **Accompanying anglers:** this study examines the contribution of individual anglers and the expenditure undertaken by anglers on behalf of others. Therefore if an angler is paying for a spouse or offspring this is included. However, the study does not include other accompanying anglers as it would have produced unwieldy questionnaires. As a consequence, the economic and social impact of angling may, in some cases, be greater than those estimated in this study;

- **Sea angling population:** as no licence or permit is required to participate in sea angling, there is no definitive understanding of the population of sea anglers. This makes it difficult to contact sea anglers, identify a sample and examine the economic and social impact of this sector in Northern Ireland. To address this issue, the study team sourced the databases of each sea angling club and sea angling boats in Northern Ireland to identify individual anglers for survey. Identifying visitor sea anglers, however, did prove difficult and it is also understood that not all sea anglers are members of clubs. The findings from the survey were analysed and compared with other research conducted in the rest of the UK and the Republic of Ireland for validation but it is likely that this study potentially underestimates the contribution from sea angling;

- **Accessing contact details for anglers in the FCB area:** while the population of game and coarse anglers in Northern Ireland is known, no contact database of anglers in the FCB area exists which created difficulties in identifying a sample and administrating the survey. The study team, however, were able to access a database of permit holders in the DCAL public angling estate and, where available, source the databases of angling clubs which contributed towards developing a sample for the survey;

- **Accessing contact details for tourist anglers:** as no contact database of anglers in the FCB area exists, this reduced the potential size of the population from which to sample tourist anglers. However, the study team was able to access the databases held by DCAL, the Loughs Agency and, where available, angling clubs;

- **Demographic bias:** due to variations in some age groups to respond to surveys, postal questionnaires inherently have a bias in terms of demographic representation;

- **The import content of expenditure:** in examining economic impact it is important to reflect on the import content of expenditure, i.e. the proportion of expenditures accounted for by imported goods and services, which constitute a net leakage from the Northern Ireland economy. Based on the import content of GDP at market prices for the UK as a whole, this study assumes that imports account for, on average, 30% of domestic expenditures;

- **Displacement:** in any analysis of economic impacts it is important to take account of displacement effects, i.e. the proportion of expenditures that would have incurred in any case on other goods and services in the Northern Ireland economy in the absence of recreational angling. The displacement factor used in this report is 59.5%. This figure was based on the findings from the survey of local and visiting anglers and on existing research which examined the economic impact of salmon angling in Ireland;

- **Multiplier impacts:** in assessing the overall economic impacts of visiting/tourism angling, account must be taken of the fact that associated expenditures (adjusted for the import component) constitute a net addition to the overall Gross Domestic Product and Balance of Payments of an economy. This important feature means that it is important to consider the indirect and multiplier impacts arising out of second and subsequent round impacts of expenditures on the NI economy. These effects can be estimated using a so-called multiplier. For the purposes of estimating the economy-wide economic impacts of expenditures undertaken by visiting anglers to NI, we apply a multiplier of 1.29. This reflects research undertaken on the tourism sector of the NI economy.[4]

The economic impact of recreational angling

Levels of participation

8. In examining the economic impact of recreational angling in Northern Ireland, one of the key factors to consider is the level of participation. From analysis of the number of licence holders in the FCB and Loughs Agency area, it is estimated that, in 2005, there were 24,890 resident and 4,463 tourist or visiting coarse and game anglers in Northern Ireland. This represents an increase of 10% and 2%, respectively, on the number of resident and visiting anglers in 2003.

9. As a licence is not required to engage in sea or shore angling in Northern Ireland (expect when fishing for salmon or sea trout by the shore), it is more difficult to estimate the number of anglers engaging in sea/shore angling. Our approach to estimating the number of sea/shore anglers was based on our own survey analysis and the surveys provided by NITB and concluded that there were 5,601 resident and 450 sea/shore anglers in 2005.

Amount of time engaged in angling

10. In relation to the amount of time spent angling in Northern Ireland, the survey identified that local anglers spent on average a total of 57 days engaged in angling in the 2005 season. Of these 57 days, an average of 43 days were spent angling in their own county and an average of 14 days were spent away from home.

11. The majority (81.8%) of visitors that participated in angling in Northern Ireland stated that angling was the primary reason for their visit. The survey evidence shows that the mean number of trips made by visiting anglers totalled 1.4 during 2005 and on average, visitors spent a total of 4.9 days per trip to Northern Ireland.

[4] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

Annual expenditure of anglers

12. The findings from our survey research indicate that among Northern Ireland resident anglers as a whole (i.e. across all types of angling), respondents typically spent an overall total of £1,313 on angling related expenditures during the 2005 season.

13. Visiting anglers to Northern Ireland, on the other hand, typically spent a total of £707 during the 2005 season. Taking into account the average number of trips made by visiting anglers and the average duration of such trips, we estimate that the average overall spend per trip per visiting angler came to just over £508.6, while the average spend per trip per day/night was £103.8.

Expenditure patterns

14. In terms of typical annual expenditures incurred by local anglers, the largest average levels of expenditure were incurred on fishing tackle and equipment (16%), followed by expenditures on accommodation (14%), other non-angling items (14%), other angling items (12%), travel costs (12%) and food and beverages (8%).

15. For visiting anglers, as expected, the highest proportion of annual expenditure incurred was related to accommodation (28%). The was followed by food and beverages (27%), fishing tackle and equipment (15%), other non-angling items (10%) and other angling items (7.4%).

Estimated gross expenditure contribution

16. From considering the levels of participation, engagement in angling and annual expenditures, it is estimated that the aggregate gross expenditure contribution of NI resident anglers was £39.3 million in 2005. From this total figure for recreational angling, the gross expenditure contribution from game anglers amounts to £25.7 million (64%), coarse anglers to £6.2 million (18%) and sea anglers to £7.4 million (18%). This is similar to other studies which have also found that game anglers contribute a higher proportion of total expenditure.

17. Analysis of the number of visiting anglers, the number of trips and days / nights per trip and average expenditure, shows that the gross expenditure contribution arising from visitor/tourist anglers to Northern Ireland totaled approximately £3.5 million during 2005. Compared to other studies, as noted above, the contribution of tourist anglers to the overall expenditure in Northern Ireland (8%) is a significantly lower than the proportion of expenditure provided by tourist anglers in Ireland and Scotland (52%).

Net economic impacts

18. Taking displacement impacts and the import content of expenditure into account, it is estimated that the overall net economic impact or net benefit arising from the presence of recreational angling in Northern Ireland is £20.5 million in 2005. Of this figure, £13.4 million relates to game angling, £3.2 million in respect of coarse angling and £3.9 million generated through sea/ shore angling.

19. In addition, from reflecting on the import component of the expenditure and considering indirect and multiplier impacts, we estimate the overall net economic impact of visitor/tourist game, coarse and sea/shore angling at just under £1.8 million during 2005. This is equivalent to an average impact of £369.4 per visiting angler for the 2005 year.

The social / environmental impact of recreational angling

20. Drawing on evidence from the survey, other published research and interviews with key stakeholders, it is clear that angling can provide a range of benefits beyond economic contributions. These wider benefits can make a significant contribution to environmental and social goals in Northern Ireland. The main findings from the study are outlined below:

    - By monitoring the waterways, contributing funding through the sale of licences and investing in nursery areas, anglers have made a positive impact on the environment

in Northern Ireland through protection and development. Anglers, for example, regularly highlight areas of pollution to watchdog organisations such as the FCB and private fisheries and angling clubs have also been proactively involved in developing nursery areas that nurture fish and other wildlife. Concerns, however, have been raised by some environmental groups over the need to ensure conservation measures such as catch and release are fully implemented and that the fishing resource is protected;

- In relation to social benefits, one of the main outcomes from angling in Northern Ireland is its ability to encourage and facilitate participation and interaction among a diverse range of individuals and groups. In 2005, for example, it is estimated there were just under 30,000 game, coarse and sea anglers in Northern Ireland with the survey showing that the levels of participation encompass a broad range of ages and social classes / levels of income. Angling, however, is predominately a male sport;

- Through broader social interaction among a range of ages and social classes, evidence suggests that angling can contribute towards helping to divert young people away from anti-social behaviour;

- By not being associated with any particular flags or emblems, angling has strong levels of participation across the political divide in Northern Ireland, including cross-community memberships within individual angling clubs. Through this inclusive membership, angling has helped to develop contacts and relationships which have contributed towards enhancing social cohesion between the two main communities;

- Angling can be used as tool to enable learning. This specially relates to using angling as a way of promoting learning about wildlife and the environment;

- By being a relaxing outdoor activity, angling can improve a healthy living lifestyle that can contribute health benefits. While most anglers felt that catching a fish contributed most to their fishing experience, the health benefits from angling are also appreciated with a significant number of anglers highlighting that relaxing, undertaking a healthy outdoor activity and releasing stress were factors that contributed most to their fishing experience;

- Further to this, evidence suggests that by promoting a number of benefits, significant savings in other departments and agencies can be realised. This is particularly relevant in the cases of health and crime reduction.

Projected economic impacts

21. In examining the projected economic impact of recreational angling, a number of different scenarios on the future potential value of angling were considered. For both the domestic and visitor tourist angling, four scenarios were examined including:

    - **Scenario 1 – Base Case Scenario.** For domestic angling, this scenario assumes continued market growth without any change in government policy in relation to the development of the domestic recreational angling sector. For tourism/visitor angling, this scenario assumes the number of angling visitors grows in line with the projected overall number of holiday visitors to Northern Ireland over the 10-year period 2005-2015, thereby maintaining the share of anglers in total visitors constant at current levels;

    - **Scenario 2 – Medium Growth Scenario.** For domestic angling, this scenario assumes continued market growth combined with policy changes to target an increase of 50% in the angling participation rate relative to the overall Northern Ireland population over a 10-year period. For tourism/visitor angling, this scenario assumes that government policy interventions target an increase in the proportion

of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% over a 10-year period;

- **Scenario 3 – High Growth Scenario.** For domestic angling, this scenario assumes continued market growth combined with policy changes designed to achieve a doubling of the current angling participation rate relative to the overall Northern Ireland population over a 10-year period. For tourism/visitor angling, this scenario assumes that government policy / market stimulation interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland over a 10-year period to 2015;

- **Scenario 4 - High Participation/High Expenditure Scenario.** For domestic angling, this scenario takes forward the same assumptions as per Scenario 3 in relation to angling participation, in addition to assumption that average daily expenditures among local anglers increases by 50% by 2015. For tourism/visitor angling, the same assumptions are employed as per Scenario 3, combined with assumption that average daily expenditures among visiting anglers converges towards current levels in Scotland over the period to 2015.

22. Taking the above alternative scenarios for the potential future growth in domestic and visitor angling in Northern Ireland into account, the following table provides a summary of the estimated current (in 2005) and projected potential future net economic impacts and associated employment supported by 2015 of angling in Northern Ireland.

Table 7.1: Summary of Estimated Annual Net Economic Impacts and Employment Supported through Domestic and Tourism Recreational Angling in Northern Ireland – 2005-2015

Impact Components	Base Case		Medium Participation		High Participation		High Participation/ High Expenditure	
	2005	2015	2005	2015	2005	2015	2005	2015
Domestic angling - estimated net economic impact - £ Million	20.7	28.9	20.7	39.7	20.7	52.9	20.7	64.8
Tourism angling - estimated net economic impact - £ Million	1.8	2.6	1.8	3.9	1.8	5.2	1.8	6.6
Overall Net Economic Impact - £ Million	**22.5**	**31.5**	**22.5**	**43.6**	**22.5**	**58.1**	**22.5**	**71.4**
Employment Supported – Estimated FTEs	**778**	**1,089**	**778**	**1,506**	**778**	**2,007**	**778**	**2,464**
Domestic angling	715	998	715	1,369	715	1,825	715	2,235
Tourism angling	63	91	63	137	63	182	63	229

23. The analysis shows that significant net economic impacts can be projected for domestic and tourism expenditure across each of the four scenarios. We estimate that the overall net economic impact of recreational angling (including domestic and visitor angling) on the Northern Ireland economy at £22.5 million (based on 2005 participation and expenditure figures). This could rise to between £31.3 million and up to £71.4 million by 2015, depending on market conditions and the impact of policy interventions designed to

boost the number of local and visiting anglers, and the typical expenditures of these anglers. We also estimate that the expenditure impacts of domestic and visitor angling support a total of approximately 778 full-time equivalent jobs in the Northern Ireland economy. This employment impact could increase to between 1,089 FTEs and 2,464 FTEs, depending upon the assumptions made in relation to angler numbers and participation, and the expenditure characteristics of these anglers.

Recommendations

24. This report has highlighted that recreational angling provides significant economic and social benefits to Northern Ireland. The study shows that with appropriate policy changes or initiatives there is scope to increase the economic impact of the sector even further. It was not within the remit of this study to review existing policy in relation to the sector or to examine the case for public sector intervention. Indeed, DCAL has acknowledged that an assessment of existing policy is to be included as part of a future study on angling. In this context, we have made a number of recommendations for the way forward.

- **Recommendation 1:** In the light of the current and projected potential value of the angling sector in Northern Ireland, it is recommended that DCAL, in association with its partners (Loughs Agency and the NITB), undertake a review of public policy in relation to the sector, including one that focuses on domestic and visiting anglers. This review might be carried out in line with standard DFP/HM Treasury guidelines on evaluation and should cover the full range of interventions to examine the efficiency and effectiveness of different approaches, building on the groundwork undertaken in this report. This review would provide the basis for recommendations for options for a future strategy that could include a focus on promoting Northern Ireland as a destination for visiting anglers;

- **Recommendation 2:** Following full consideration of the opportunities and constraints and costs and benefits of the future development of angling, it is recommended that DCAL establish a Working Group to develop a strategy for angling in Northern Ireland and areas of the Loughs Agency. While involving representatives of key stakeholders in the angling sector, it is recommended that the Working Group also include stakeholders from the environment and social sectors given the broad range of benefits and potential savings that can be realised through angling;

- **Recommendation 3:** Given the benefits provided by tourist anglers, outlined in this report, it is recommended that NITB give consideration to developing a strategy that increases the promotion of Northern Ireland and as tourist destination for anglers;

- **Recommendation 4:** It is recommended that issues related to the quality of the angling experience are periodically reviewed and monitored. In light of recent investment in the sector, it will be particularly important to examine the impact of this support and to determine over time whether the shortfalls in experience, identified in this report, have been met.

- **Recommendation 5:** It is recommended that consideration be given to establishing a computerised and co-ordinated database that will hold information on licence holders and compile market information on an annual basis.

- **Recommendation 6:** It is recommended that DCAL, in association with its partners (Loughs Agency and the NITB), undertake a study visit to other countries in which tourist angling is well developed. With a view to developing tourist angling in Northern Ireland, this study visit will be used to outline lessons and identify best practice.

I Introduction and terms of reference

Introduction

1.1 This report examines the social and economic impact of recreational fishing (coarse, game and sea angling) in Northern Ireland (NI) and areas within the Loughs Agency. From considering the range of angling resources and undertaking both primary and secondary research, the report seeks to estimate and evaluate the current and potential social and economic impacts of recreational angling and provide recommendations for future development.

Background and context

1.2 Northern Ireland is well endowed with angling waters. Its high rainfall combined with numerous lakes and rivers have provided an environment in which different inland fish species have thrived. The varied coastline and waters supplied by the Gulf Stream also provide an ideal aquatic environment for a variety of sea fish. Indeed, Northern Ireland's rivers and lakes have sustained fisheries for centuries and fish stocks continue to support recreational fisheries of considerable significance.

1.3 There are a number of factors, however, that have pressurised the local water resource leading to a decline in some fish stocks and frustrating the development of angling. These pressures include, *inter alia*, infrastructural development, drainage systems, pollution, over exploitation of the fish, access issues and legacy of the conflict in Northern Ireland.

1.4 Despite this, an inquiry by the Northern Ireland Culture, Arts and Leisure Committee into inland fisheries in 2001 outlined the potential for development in the sector. In particular, the report of the inquiry emphasised the capability of angling to support the expansion of tourism in Northern Ireland and stated that *'it is beyond doubt that thriving recreational inland fisheries, particularly on rivers for salmon and on some Loughs for coarse fish, have a major role to play in this development'.*[5]

1.5 Set within this context, the Department of Culture, Arts and Leisure, the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board have commissioned a study to examine the social and economic impact of recreational fishing in Northern Ireland.

1.6 For the purposes of this study, recreational fisheries are those providing angling opportunities for game, coarse and sea fish species but not including inland commercial fisheries or commercial sea fisheries. The types of fisheries/angling can be defined as, salmon/sea trout, brown trout (either river or lake), pike fisheries, other coarse fisheries, carp fisheries, put-and-take fisheries and sea fisheries (shore and offshore). The method of angling is defined as fly, spinning, worming, pole fishing, and ground baiting or dead bait.

1.7 In Northern Ireland, there are a number of public bodies that have responsibility for fisheries. The functions and roles of these bodies are set out below:

- **Department of Culture, Arts and Leisure (DCAL)**: DCAL is responsible for the salmon and inland fisheries of Northern Ireland (except for the majority but not all of the conservation and protection functions in the Foyle and Carlingford catchments which are carried out by the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission). DCAL's general responsibilities cover the promotion of angling

[5] http://www.niassembly.gov.uk/culture/reports/report2-00r1.htm

and the development and improvement of fisheries. The department is also responsible for the Fisheries Conservancy Board for Northern Ireland (FCB).

- **The Loughs Agency**: The Loughs Agency is an agency of the Foyle, Carlingford and Irish Lights Commission (FCILC), established under the 1998 Agreement between the UK and Irish Governments. The functions of the Loughs Agency include:

  - Promoting the development of Lough Foyle and Carlingford Lough for commercial and recreational purposes in respect of marine, fishery and aquaculture matters;
  - Managing, conserving, protecting, improving and developing the inland fisheries of the Foyle and Carlingford Areas;
  - Developing and licensing aquaculture; and
  - Developing marine tourism.

- **Fisheries Conservancy Board (FCB)**: The FCB is a non-departmental public body under DCAL which is responsible for the conservation and protection of the salmon and inland fisheries of Northern Ireland, other than those under the remit of Loughs Agency. The Board exercises the functions conferred on it by the Act to meet its responsibilities. The Board also investigates pollution incidents that have resulted in a fish kill or fish in distress irrespective of the suspected source of the pollution. In addition, the Board enforces byelaws on certain waters in the Public Angling Estate, on behalf of DCAL, and monitors and investigates pollution incidents where the source is suspected to be agricultural, on behalf of The Environment and Heritage Service of the Department of the Environment;

- **Northern Ireland Tourist Board (NITB).** The NITB, an agency within DETI, is responsible for the development, promotion and marketing of Northern Ireland as a tourist destination. The NITB's overall aim is to ensure tourism contributes to the creation of a dynamic competitive economy. The Strategic Framework for Action 2004-07 charts the way forward for tourism, identifying five signature projects and winning themes. Activity tourism is one of the five winning themes and within that tourism angling represents a key product to deliver growth and competitiveness for Northern Ireland tourism. The delivery will be through both domestic and overseas marketing and co-operative partnerships in both public and private sectors;

- **Environment and Heritage Service (EHS) of the Department of the Environment**. EHS takes the lead in advising on, and in implementing, the Government's environmental policy and strategy in Northern Ireland. Many of the activities of EHS have a direct influence on fish and fisheries, and indeed overlap with the fishery conservation functions of other bodies as detailed above. For example, it is clear that the control and regulation of pollution affects the health of fisheries. Likewise, the assignment of conservation status to habitats and species by EHS, to include salmon, has direct read across to the fishery conservation activities of DCAL, FCB and Loughs Agency.

Terms of reference

1.8 The main objective of this study is to identify the current and potential social and economic contribution of fisheries, angling, angling resources and angling tourism to Northern Ireland. More specifically, the study is divided into two parts (Part A and Part B) that have the following aims:

- Part A: Initial mapping of angling infrastructure and in-depth analysis of participation. This involves:

- Analysing existing data and developing a comprehensive database of all angling facilities and services available in Northern Ireland and in the cross-border Foyle and Carlingford areas by type and in GIS format;

- Establishing contact with key agencies, angling groups and stakeholders to map existing data;

- Developing a comprehensive database of key stakeholders, including owners and lessees of their fisheries;

- Conducting a statistically robust survey (in collaboration with the Partners i.e., Department of Culture, Arts and Leisure, the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board) of local (within NI), visiting (Republic of Ireland), and tourist (outside island of Ireland) anglers in order to estimate the value of recreational angling to Northern Ireland.

- Part B: Estimate, Analyse and Evaluate the Current and Potential Social and Economic Impacts (Net). This involves:

  - Estimating the current and potential impact of angling to Northern Ireland including the potential impact if the Partners continue to develop angling/fisheries;

  - Estimating the monetary/economic impact and social impact to include those such as the work of angling clubs in protecting and enhancing the environment, healthy life style, cross community benefits, etc;

  - Producing a report with recommendations to the Partners.

Methodology

1.9 The research strategy for this study was centred around a number of key stages, as detailed below:

Document review

1.10 This involved an analysis of all key documentation in relation to recreational angling. More specifically, national and international documents and reports analysing the value of recreational angling were assessed to provide a context for the study, identify gaps in the research and outline key issues to be addressed. The documentation review also entailed sourcing other relevant information available on angling facilities and resources in Northern Ireland. This included any available information on the owner and lessee arrangements of fisheries, and the numbers of licences sold, angling clubs and ghillies. A bibliography for this study is included in Appendix B.

In-depth semi-structured interviews

1.11 To supplement the documentation review, in-depth interviews were held with key stakeholders in the angling sector that included, *inter alia*,

- DCAL;
- The Loughs Agency;
- NITB;
- the Fisheries Conservancy Board (FCB);
- Chairmen or secretaries of each of the three main fishing clubs in Northern Ireland (Ulster Angling Federation, Ulster Coarse Fishing Federation and the Ulster Council of the Irish Federation of Sea Anglers);
- Bann Systems Ltd;

- Fáilte Ireland; and,
- The Department of Communications Marine and Natural Resources.

1.12 These interviews were used to examine stakeholder views on the existing provision for angling, and the current and potential social and economic impact of recreational angling in Northern Ireland. The interviews also provided an opportunity to source further documentation and information to assist in developing a database of angling facilities and resources.

1.13 In addition, as the social benefits from angling are more intangible and difficult to identify through quantitative survey analysis, in-depth interviews were held with representatives of social stakeholder organisations that had participated in initiatives designed to encourage angling. These included representatives from an interface group in Belfast and organisations that support disabled persons, victims of the conflict in Northern Ireland, and children with social, emotional or behavioural problems.

Survey

1.14 To gain a more detailed understanding of the current social and economic impact of recreational angling, a postal survey was administered to anglers in mid-2006. The sample of recreational anglers was drawn from a number of sources. While a database of FCB licence holders was not available, the key sources for coarse and game anglers included the database of licence holders (held by the Loughs Agency) and the database of permit holders (held by DCAL). These databases had contact details for both local and visiting anglers. Furthermore, to compensate for the absence of a database for FCB licence holders, the databases of angler representative bodies, where available, were also sourced by the evaluation team. This helped to ensure that the sample reflected the population of anglers throughout Northern Ireland more closely (i.e., the anglers that fish outside the DCAL public angling estate and the waters administered by the Loughs Agency).

1.15 However, given that anglers are not required to hold a licence to undertake sea angling (expect when fishing for salmon or sea trout by the shore), identifying a sample of shore and sea anglers was more complex as the population is unknown. In this regard, the evaluation team sourced the databases of sea angling clubs and those held by owners of sea angling boats to develop the sample. In addition, questionnaires were administered to the club secretaries of sea angling clubs to distribute to their members.

1.16 With a view to encouraging the response rate, all returned questionnaires were entered into a draw for prizes that included fishing licences and overnight accommodation packages. However, while the response rate was high for the domestic anglers (21%), the number of responses from the visitor anglers was disappointing at only 48. On this basis, additional postal questionnaires were sent out to visitor anglers and telephone surveys were also conducted with visitor anglers whose contact details were held by local ghillies. These surveys were conducted in early 2007. From this, an additional 139 completed visitor surveys were returned given a response rate of 15%.

1.17 From a total sample of 4880, 854 questionnaires were returned (35 of 4% of which were conducted by telephone). This represents a response rate of 19% which can generally be considered a good return for postal questionnaires[6]. The following table details the population, sample and response rate for local and visitor anglers and also includes the margin of error which needs to be factored into the findings. A copy of the questionnaires for local and visiting anglers is included in Appendix A.

[6] May, T. (1997) *Social Research: Issues, Methods and Process*, Open University Press, Buckingham.

Table 1.1: Survey response rates and margin of error

Local or visitor anglers	Population	Sample	Completed returns	Response rate	Margin of error
Local	29,951	3200	667	21%	+/- 4%
Visitors	4,913	1280	187	15%	+/- 7%
Total	34,864	4480	854	19%	+/- 3%

Structured interviews

1.18 To assist in sourcing other relevant information available on angling facilities and resources in Northern Ireland, structured interviews were conducted with the secretaries or chairmen from each of the clubs in the Ulster Angling Federation and the Ulster Coarse Fishing Federation. These interviews were focused on locating the main areas for fishing and in each case, identifying the owner and lessee arrangements, the type of fish that can be caught and the type of facilities that are available. From the structured interviews, a database of angling facilities and resources was developed which was supplemented and cross-checked with the information made available from the document review. This database has been provided to the Department of Culture, Arts and Leisure, The Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board in a separate report.

Report structure

1.19 The structure of the report is as follows:

- **Section II: Review of existing research on the social and economic impact of recreational angling.** This section provides a review of existing research on the economic and social value of recreational angling. Drawing on national and international studies, the section provides a context for the evaluation by outlining the main findings, identifying gaps in the research and outlining key issues to be addressed in the current study;

- **Section III: Economic impact of recreational angling - local/NI anglers**. This section assesses the economic impacts of recreational angling undertaken by local anglers resident in Northern Ireland. Reflecting on the level of participation in angling, and the characteristics of local anglers, the section estimates the gross expenditure and overall economic impacts of local angling;

- **Section IV: Economic impact of recreational angling - visiting/tourist anglers.** This section examined the economic impacts of recreational angling undertaken by visiting/tourist anglers. Reflecting on the level of participation in angling, and the characteristics of visiting anglers, the section estimates the gross expenditure contribution and the net economic impacts of tourism angling on the Northern Ireland economy;

- **Section V: Current social and environmental impact.** This section examines the social and environmental impact of recreational angling in Northern Ireland. The section examines the impact provided by angling in Northern Ireland in relation to the environment, education, crime reduction, social inclusion, peace and reconciliation, and health benefits;

- **Section VI: Projected economic impacts of recreational angling**. This section develops a set of scenarios for the projected economic impact of recreational angling. The section provides an analysis of the potential future value of

recreational angling in Northern Ireland under a range of assumptions regarding market growth and policy actions on the part of the government;

- **Section VII: Conclusions and recommendations**. Bringing together the evidence presented in the previous sections, this section summarises the main findings and outlines recommendations for future development of recreational angling in Northern Ireland.

1.20 Reflecting on the terms of reference, the following table outlines the relevant sections in the report that specifically relate to key elements of the terms of reference.

Table 1.2: Cross-referencing sections of the report with key elements in the terms of reference

Part of study	Terms of reference	Relevant section in the report
Part A: Initial mapping of angling infrastructure and in-depth analysis of participation	▪ Analysing existing data and developing a comprehensive database of all angling facilities and services available in Northern Ireland and in the cross-border Foyle and Carlingford areas by type and in GIS format;	Annex B, C and D
	▪ Establishing contact with key agencies, angling groups and stakeholders to map existing data;	See Section I for description of methodology and, sections I – VI Database of angling facilitates has been provided in a separate report
	▪ Developing a comprehensive database of key stakeholders, including owners and lessees of their fisheries;	This database has been provided in a separate report
	▪ Conducting a statistically robust survey (in collaboration with the Partners i.e., Department of Culture, Arts and Leisure, the Loughs Agency of the Foyle, Carlingford and Irish Lights Commission and the Northern Ireland Tourist Board) of local (within NI), visiting (Republic of Ireland), and tourist (outside island of Ireland) anglers in order to estimate the value of recreational angling to Northern Ireland.	See Section I for description of methodology and Annex A for questionnaires for local and tourist anglers
Part B: Estimate, Analyse and Evaluate the Current and Potential Social and Economic Impacts (Net)	▪ Estimating the current and potential impact of angling to Northern Ireland including the potential impact if the Partners continue to develop angling/fisheries;	Sections III, IV and VI
	▪ Estimating the monetary/economic impact and social impact to include those such as the work of angling clubs in protecting and enhancing the environment, healthy life style, cross community benefits, etc;	Sections III-V
	▪ Producing a report with recommendations to	Section VII

	the Partners.	

II Review of existing research on the social and economic impact of recreational angling

Introduction

2.1 This section provides a review of existing research on the economic and social value of recreational angling. Drawing on national and international studies, the section sets the context for the evaluation by outlining the main findings, identifying gaps in the research and outlining key issues to be addressed in the current study. The section first reviews the research on economic impact and then focuses on studies that have examined social impacts.

The economic impact of recreational angling

2.2 A review of national and international research has identified a wealth of studies that assess the economic impact of recreational angling. This subsection draws out the key findings from a selection of this more recent research and groups the studies under the following headings:

- International;
- Great Britain;
- Republic of Ireland; and
- Northern Ireland.

International

2.3 While many international studies have adopted different methodological approaches and focused on different types of evidence such as spend per angler, overall expenditure or contribution of employment, it is evident that recreational angling has a significant economic impact. This is clearly shown in studies that have examined the economic value of recreational angling in the Nordic countries, New Zealand, Germany and areas of the United States.

2.4 A study on the economic value of recreational fisheries in the Nordic countries in 2000, for example, found that fishermen incurred large expenditure on recreational angling on an annual basis. Indeed, across Denmark, Finland, Iceland, Norway and Sweden, Fishermen spent a total of £547.69[7] on recreational angling in 1999[8]. Differences in expenditure, of course, existed between the countries with Sweden, Norway and Finland recording the highest levels of annual spend (£198.95m and £150.01m and £137.17m, respectively) and Denmark and Iceland the lowest levels (£146.37m and £15.9m, respectively).

2.5 In a similar vein, evaluations of recreational fishing in New Zealand and Germany have identified important economic benefits. A study in 1999 in New Zealand, for instance, found that the average recreational anglers spent £13.58 per fishing trip and an average of £332 per year on recurrent expenditure[9]. The economic impacts associated with angling in Germany are also significant. In 2002, the economic contribution of

[7] These figures are in 1999 prices and the GBP conversion rates are as follows: £1 = 11.15 DKK; £1 = 12.33 NOK; £1 = 129 ISK; £1 = 8.89 FIM; and, £1 = 13.72 SEK.
[8] Toivonen, A.L., Appelblad, H., Bengtsson, B., Geertz-Hansen, P., Guðbergsson, G., Kristofersson, D., Kyrkjebo, H., Navrud, S., Roth., E., Tuunainen., P. and Gosta Weissglas (2000) *Economic value of recreational fisheries in the Nordic countries*, Nordic Council of Ministers.
[9] Williamson, S. (2000) *The Economic Value of New Zealand Marine Recreational Fishing and its Use as a Policy Tool, Ministry of Fisheries*, New Zealand. £1 = 2.83 NZD

recreational fishing was estimated at £4.28 billion per year, with about 52,000 employees being directly or indirectly dependent on the expenditure of anglers[10].

2.6 Studies in the United States have also highlighted the valuable economic benefits from recreational fishing. In separate studies in Minnesota and Idaho, for example, recreational fishing made significant contributions to the local and regional economy in terms of financial expenditure and the creation of jobs. More specifically, in Minnesota, research conducted in 2002 identified that the total economic impact of cold water angling accounted for between £73.71m to £82.78m in direct sales and £45m to £50.12m in income. Together this expenditure supported between 3,128 and 3,482 full and part time jobs[11]. In Idaho, research focusing on recreational fishing for salmon found that 2001 salmon season was responsible for nearly £47.38m in expenditure[12]. While this level of economic support was considered to have the greatest impact in the smaller river towns compared to the larger cities, the research found that recreational salmon angling complements traditional sectors and makes an important contribution to the State's economy.

2.7 Analysis of the breakdown of expenditure by anglers in the international research studies also draws out interesting findings on the economic importance of recreational angling. The study on the economic value of recreational fisheries in the Nordic countries, for example, found that one of the greatest proportions of spend was for car transportation. In Iceland, however, the major cost is attributed to licences. Boating, food and drink, and lodging were the other factors that incurred the next greatest proportion of expenditure, as shown in the following table[13].

Table 2.1: Percentage distribution of expenditure by anglers across the Nordic countries

	Denmark	Finland	Iceland	Norway	Sweden
Car transportation	27	35	25	30	39
Boating	17	19	3	22	17
Other transportation	13	3	1	4	6
Lodging	8	8	8	8	13
Licences	20	15	43	12	13
Journals, books, films	4	3	2	4	3
Extra food and drinks	8	13	15	16	5
Other (tackle, clothes etc).	3	3	3	3	4
Total	100	100	100	100	100

Source: Nordic Council of Ministers 2000

2.8 Similarly, in Minnesota in the United States, research in angler expenditure in different fishing areas shows that transportation / fuel incurs a significant proportion of spend[14]. Outside of transport, food and lodging generally had the greatest proportions of spend with equipment also having important expenditure, as shown in the following table.

[10] Arlinghaus, R. (2004) Recreational Fisheries in Germany: A Social and Economic Analysis, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin. £1 = €1.49
[11] William C. Gartner, W., Love, L.13, Erkkila, D. and Fulton, D. (2002) *Economic impacts and social benefits study on Coldwater angling in Minnesota*, June 2002, Final report, Minnesota Department of Natural Resources.
[12] Idaho Fish and Wildlife Foundation (2001) The Economic Impact of the 2001 Salmon Season in Idaho. £1 = $1.90
[13] Toivonen, A.L., Appelblad, H., Bengtsson, B., Geertz-Hansen, P., Guðbergsson, G., Kristofersson, D., Kyrkjebo, H., Navrud, S., Roth., E., Tuunainen., P. and Gosta Weissglas (2000) *Economic value of recreational fisheries in the Nordic countries*, Nordic Council of Ministers.
[14] William C. Gartner, W., Love, L.13, Erkkila, D. and Fulton, D. (2002) *Economic impacts and social benefits study on Coldwater angling in Minnesota*, June 2002, Final report, Minnesota Department of Natural Resources.

Table 2.2: Percentage distribution of expenditure by anglers in different fishing areas in Minnesota

	Fishing streams	Fishing lake Superior's shores / streams	Fishing lake Superior boat	Fishing inland lakes in spring and summer	Fishing inland lakes in winter
Transportation / fuel	21	16	8	20	26
Equipment	15	14	4	10	9
Food	19	19	17	19	17
Lodging	13	20	14	14	15
Boating	-	-	19	-	-
Other	32	31	38	37	33
Total	100	100	100	100	100

Source: Minnesota Department of Natural Resources 2002

Great Britain

2.9 In Great Britain, a range of studies have highlighted the economic importance of recreational angling. While these studies have again adopted different methodological approaches focusing on different types of angling across different areas, it is important to draw out the key findings from this research to understand the economic value of angling.

2.10 Recent reports have identified that overall, freshwater and sea-angling have made a significant contribution to the British economy, particularly in terms of tourism and employment. Indeed, in England and Wales, it is estimated that with regular anglers each spending on average £1,000 per year on tackle, travel, accommodation and meals during their fishing trips, freshwater angling is worth over £3 billion a year and supports many thousands of jobs mainly in rural economies where the job opportunities are limited[15].

2.11 Studies on different types of angling also support these findings and highlight the important economic contribution of recreational angling. Research on sea angling, for example, found that the total expenditure by sea anglers in the UK on their sport (e.g. on fishing equipment, travel, food and accommodation, etc.) is estimated to be at least £1 billion annually[16]. More recently, a study on sea fishing in England and Wales showed that members of over 1m households go sea angling (but only half for more than 3 days per year), and that their direct spending is over £530m per annum which translates into 18,889 jobs and £71m in suppliers' income[17]. In addition, while understanding that comparisons between sectors can prove difficult and complex, the study concluded that, in broad terms, the economic scale of sea angling is similar to that of commercial fishing.

2.12 Research on game and coarse angling in Scotland has provided further evidence on the economic importance of recreational angling. A study in 2004, for example, estimated that recreational anglers spent a total of £112.5 million on angling in Scotland with salmon and sea trout anglers accounting for over 65% (£73 million) of this total[18].

[15] Environment Agency (2004) *Our Nations' Fisheries: The Migratory and Freshwater Fisheries of England and Wales – A Shapshot*, Environment Agency.
[16] Prime Minister's Strategy Unit (2004) Net Benefits: A sustainable and profitable future for UK fishing, March 2004, Prime Minister's Strategy Unit, Cabinet Office.
[17] Drew Associates Limited (2004) Research into the Economic Contribution of Sea Angling, March 2004, Department for Environment, Food and Rural Affairs.
[18] Scottish Executive (2004) The Economic Impact of Game and Coarse Angling in Scotland, 2004, Scottish Executive, Edinburgh.

By contrast, the level of expenditure on coarse fishing is much lower at £4.9m, as shown in the following table:

Table 2.3: Angler expenditure by origin (£ million)

	Salmon and sea trout	Brown trout	Rainbow trout	Coarse fish	Total
Local	£17	£6.8	£10.9	£2.2	£36.6
Scottish visiting	£7.7	£3.7	£4.5	£0.8	£16.8
Non Scottish visiting	£48.8	£4.2	£4.1	£1.8	£58.9
All anglers	£73.5	£14.7	£19.4	£4.9	£112.5

Source: Scottish Executive 2004

2.13 Interestingly, the table above also shows that a significant degree of expenditure (£58.9m) on game and coarse angling and salmon and sea trout in particular is incurred by non-Scottish or tourist anglers. This further outlines the economic importance of the angling sector. On the basis of this expenditure, the research also identified wider economic benefits. It was concluded that angling supports around 2,800 jobs and generates almost £50m in wages and self-employment income to Scottish households.

2.14 Other research in England and Wales has identified the economic value of salmon fishing. One study on commercial and recreational salmon angling conducted in 2002, for example, concluded that the loss of salmon fisheries would represent an estimated net economic loss of around £250 million and that most of this loss would be associated with recreational angling[19]. The study also noted that salmon fishers have particular significance to the local rural economies.

Republic of Ireland

2.15 In the Republic of Ireland, the last research which examined the economic benefits of all types of recreational angling (coarse, game and sea angling) across the country as a whole was undertaken in 1988. On the basis of survey research, this study concluded that angling expenditure totalled £48.56 million which was evenly divided between Irish anglers (£24.79) and visiting specialist anglers (£25.47). On a similar basis to the study in Scotland, commissioned by the Scottish Executive, game angling contributed most expenditure (£24.03 or 49%), but with coarse (£13.50 or 28%) and sea (£11.04 or 23%) also making significant contributions[20], as shown in the following table:

Table 2.4: Total estimated expenditure on recreational fishing in Ireland

	Game	Coarse	Sea	All anglers
Irish anglers	£13.16	£2.63	£9.00	£24.79
Visiting specialist anglers	£10.78	£10.95	£2.04	£25.47
All angling expenditure	£24.03	£13.50	£11.04	£48.56

Source: ESRI 1988

2.16 Given this level of expenditure, the research also found that angling generates 1,900 full time job equivalent and yields tax revenues of £12.74 million.

[19] Mawle, G. (2002) The Value of the Atlantic Salmon and its Fisheries in England and Wales, prepared for the technical workshop on social and economic values of Atlantic salmon, NASCO.
[20] Whelan, B.J. and March, G. (1988) An Economic Evaluation of Irish Angling, December 1988, Economic and Social Research Institute, Dublin. £1 = £IR1.17

2.17 While focusing solely on salmon fishing, a more recent study on the economic value of recreational angling was conducted in 2003 by Indecon Consultants. As well as assessing commercial salmon fishing, this study examined the economic impact of recreational salmon fishing in regard to tourist and domestic anglers. The study estimated the total net benefit of domestic salmon angling to the Irish economy in 2001 to be £3.07 million. Again, expenditure from tourist anglers was also found to be significant and the report concluded that overseas salmon anglers coming to Ireland principally for salmon angling contributed an estimated £12.90 million to the economy over the 1998-2000 period, or an average of £4.30 million per annum[21].

Northern Ireland

2.18 In Northern Ireland, there is an absence of recent research which has examined the economic value of recreational angling across the whole region. Indeed, the last comprehensive study of the benefits of angling in Northern Ireland dates back to 1990. This study estimated the contribution of angling to the Northern Ireland economy at around £10 million. It was concluded that total contribution of domestic anglers ranged between £8-£10 million and expenditure by non-residents was between £1-£2 million. In addition, the study found that visitors from outside the island of Ireland spent almost 17 times more than visitors from the Republic of Ireland[22].

2.19 In more recent years, studies have been conducted on the economic importance of recreational angling in specific areas of Northern Ireland. Research, conducted in 2002 on the Foyle and Carlingford areas, for example, estimated the value of these waters for recreation angling to be £3.0 million annually, with a capital value of £30 million[23].

The social impact of recreational angling

2.20 In comparison to the economic value, the basis of research on the social impact of recreational angling is more limited. A number of key national and international studies in this area, however, have been conducted that have outlined a range of social outcomes from angling. These include benefits in regard to education, crime reduction, social cohesion, heath and the environment. Drawing on a selection of this research, this sub-section discusses the social impact of recreational angling.

Health benefits

2.21 One of the most important social impacts from angling identified by current studies is the benefits to personal health that can be provided. Angling is a source of outdoor recreation which can provide health benefits in relieving stress and helping people to relax and unwind. Indeed, research has found that seeking relaxation and undertaking outdoor activity is considered one of the main reasons for people participating in angling and, in some cases, this actually supersedes catching fish. This was highlighted by research conducted in Australia that examined the motivations behind angling. The study concluded that 'relaxation' received the highest score in regard to the level of importance (3.53 out of 5). 'Catching fish' received a lower score of 3.14 out of 5[24].

2.22 In support of this assessment, research in England and Wales on sea angling has also outlined the health benefits that can be gained from participation in the sport. When asked whether sea angling trips had any effect on their health, the research found that the responses were strongly positive. 83% of the respondents indicated that they felt

[21] Indecon (2003) An Economic / Socio-Economic Evaluation of Wild Salmon in Ireland, Central Fisheries. £1 = €1.49
[22] C.E. O'Neil (1990) *An Economic Analysis of the contribution of freshwater angling and aquaculture to the Northern Ireland Economy*, unpublished PhD Thesis, Queen's Unviersity Belfast.
[23] Cited in Loughs Agency (2002) *A Five Year Development Plan for the Fisheries Based Recreation and Leisure Resource of the Foyle and Carlingford Areas*, November 2003, Loughs Agency.
24 Sutton, S. (2005) An Assessment of the Social Characteristics of Queensland's Recreational Fishers, CRC Reef Research Centre, School of Tropical Environment Studies and Geography, James Cook University.

some or significant positive effects and of these, 44.6% indicated a significant positive effect on health. Overall, only 1.9% indicated a negative effect[25].

Social cohesion benefits

2.23 Recreational angling is a very popular participation sport. A survey in 2001 in England and Wales, for example, showed that with some 3.9 million people – 9% of the population aged 12 years or over – undertaking angling (freshwater coarse and game angling) in the preceding two years, more people in England and Wales go fishing than take part in any other sport[26]. In addition, research on sea angling has estimated that around 2 million people went sea angling at least once in England and Wales in 2002 (there is no comparable data for Scotland and Northern Ireland)[27].

2.24 With high levels of participation, angling also has high levels of involvement across a broad social mix (a range of age and income groups) and can contribute towards building social cohesion. This benefit from angling was particularly evident from research in Germany which found that recreational fishing was a very popular leisure activity with about 3.3 million people aged 14 or older having angled at least once in Germany or abroad in 2002. The research showed that angling was evenly distributed among all social classes and was particularly popular among the younger aged population[28]. In this way, angling provides important social benefits by encouraging participation among a range of age groups and social classes and facilitating social interaction.

2.25 Similarly, studies in England and Wales have highlighted the benefits of angling in encouraging participation activity across a broad social mix. Research, for example, shows that sea angling is enjoyed across a wide spectrum different social classes as follows: AB class (5.6% of households); C1C2 (5.4%); and, DE (4.0%)[29]. Angling, therefore, is an activity that transcends social class distinctions as it offers a range of fishing experiences with a corresponding range in cost.

2.26 Further to this, research on the motivations of anglers also frequently highlights the benefits of angling as a social activity and encouraging social interaction. For instance, while research in Australia on the motivations behind angling concluded that 'relaxation' received the highest score in regard to the level of importance (3.53 out of 5), 'socialisation' received the next highest score (3.46) more than 'experiencing nature' (3.45), 'catching a fish' (3.14) and 'experiencing excitement' (3.12). These findings are also supported by research in the United States which showed that the experiences which anglers rated as most important included, nature appreciation, personal achievement and social affiliation (including meeting new people, increasing fellowship, and spending time with friends and family)[30].

2.27 For these reasons, angling is also regarded as a popular sport among persons with disabilities. In being a sport which is accessible to all, angling has facilitated participation among persons with disabilities and has helped them socialise, build a

[25] Drew Associates Limited (2004) Research into the Economic Contribution of Sea Angling, March 2004, Department for Environment, Food and Rural Affairs.
[26] Environment Agency (2004) *Our Nations' Fisheries: The Migratory and Freshwater Fisheries of England and Wales – A Shapshot*, Environment Agency.
[27] Prime Minister's Strategy Unit (2004) *Net Benefits: A Sustainable and Profitable Future for UK fishing*, March 2004, Prime Minister's Strategy Unit, Cabinet Office.
[28] Arlinghaus, R. (2004) *Recreational Fisheries in Germany: A Social and Economic Analysis*, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin.
[29] Drew Associates Limited (2004) *Research into the Economic Contribution of Sea Angling*, March 2004, Department for Environment, Food and Rural Affairs.
[30] Thomas, A.B., and Vogelsong, H. (2003) The Social Benefits of Saltwater Recreational Fishing. *Proceedings of the 2003 Northeastern Recreation Research Symposium*, Department of Recreation and Leisure Studies, East Carolina University. See also, William C. Gartner, W., Love, L.13, Erkkila, D. and Fulton, D. (2002) *Economic impacts and social benefits study on Coldwater angling in Minnesota*, June 2002, Final report, Minnesota Department of Natural Resources.

sense of independence and integrate into the wider community. In this regard, angling facilitates have been developed with specific intention of encouraging participation among anglers who have disabilities, as highlighted in the following example:

The National Disabled Angling Facility, Aughrim

In Aughrim, Co. Wicklow in the Republic of Ireland, a specific site has been developed to encourage the participation of anglers who have disabilities. The site incorporates a four acre artificial lake set in eight acres of woodland and picnic areas but includes specific pathways suitable for wheelchair access to enable anglers with disabilities to get close to the lakeside. In addition, the car park and disabled toilets are located onsite adding to the accessibility of the facilities for wheelchair users. By facilitating participation in angling, the facility has helped to encourage social interaction among persons with disabilities and promoted integration within broader community activities. While the facility is designed with people with disabilities in mind, it is open to everyone all year round, including beginners as tuition is available, and can cater for around two hundred people.

Eastern Regional Fisheries Board, http://www.eastcoastmidlands.ie

2.28 However, it is important not to overstate the benefits of angling in promoting social cohesion. As all studies point out that anglers are predominately male (for example, women only comprised five per cent of anglers in England and Wales in 2001[31]), greater opportunity exists to promote the sport and encourage greater participation levels among the female population.

Crime reduction benefits

2.29 Evidence suggests that angling can also be used as tool or way for reducing crime. In England, for example, the police originated scheme, known as 'Get Hooked on Fishing', has targeted socially excluded young people aged 10 to 16, 75% of whom have been referred by crime prevention agencies as being at risk of offending. This programme teaches angling and the associated environmental values to young people and is seen as a way of encouraging them to participate and focus on a positive recreational activity.

2.30 Research on the scheme has shown that angling has proved to be successful in diverting young people away from crime and anti-social behaviour. Indeed, of the 660 youngsters who have been through the programme, 98% are still fishing and not one has offended. Truancy is also down 75%, academic standards have risen and of the 12 peer group leaders recruited from each year's intake to help to carry the scheme forward, not one of school leaving age is unemployed and several have gone on to higher education[32].

Environmental benefits

2.31 As recreational angling is heavily dependent on the existence of a good quality environment, anglers have sought to protect the environment through a monitoring and development capacity to ensure long term sustainability of the sport. In England, for example, revenue from freshwater anglers' rod licences generates around £18 million per annum for the Environment Agency to help protect the aquatic environment. Anglers, therefore, help to act as custodians of the environment and pressure from angling clubs has led to the prosecution of those who pollute waterways.

[31] Environment Agency (2004) *Our Nations' Fisheries: The Migratory and Freshwater Fisheries of England and Wales – A Shapshot*, Environment Agency.

[32] Clarke, B. (2005) *Reformer Shows Way to Reel in Problem Children*, The Times, 5th June 2005.

2.32 Research in Australia has also identified a strong link between anglers and their high level of care for the environment. In examining the degree of importance of recreational fishing to society, the statements that received some of the highest levels of agreement / strong agreement included:

- 'Even if I didn't fish, it would still be important for me to know that healthy fish populations exist (95% of respondents);
- 'We should do everything we can today to ensure that future generations inherit healthy recreational fisheries' (93% of respondents)[33].

2.33 On the other hand, while anglers have a general concern for protection of the environment, evidence suggests that they need to learn more about how their own practices can have a detrimental environmental impact. This was identified in research in Germany which concluded that while most anglers appeared broadly 'ecological', their own impact on ecosystems was not appreciated. In addition, only a minority of anglers agreed that own behaviour had to change for the conservation of the ecosystems[34].

Educational benefits

2.34 Closely linked to the point above, angling can also provide additional educational benefits. Being an outdoor recreation, angling opens up potential to learn more about wildlife, ecology and the natural environment. By building an understanding and awareness among the angling population, this also increases the likelihood of anglers actively caring for the environment.

2.35 Moreover, angling can be used as a way of promoting broader educational issues. In England, for example, the Thomas Adams School in Wem, Shropshire, has included a certified fly fishing course on its curriculum which aims to improve pupils' knowledge of the countryside. In these classes, pupils can earn credits for a certificate of personal effectiveness, which has been accredited by the Award Scheme Development and Accreditation Network (ASDAN) to be the equivalent of a GCSE[35].

Conclusion

2.36 Drawing on a range of national and international studies, this section has demonstrated that angling can provide a range of economic, environmental and social benefits. While many international studies have adopted different methodological approaches, focused on various types of angling (coarse, game and sea) and examined different types of evidence such as spend per angler, overall expenditure or contribution to employment, it is clear that recreational angling has a significant economic impact. Broadly speaking, while this economic contribution was considered to have the greatest impact in areas where job opportunities are limited such as rural locations, the research shows that angling can complement other sectors such as tourism and make an important contribution to regional and national economies.

2.37 Furthermore, although the basis of research on the social impact of recreational angling is more limited, a number of key national and international studies have outlined that angling can contribute to a range of social outcomes including education, crime reduction, social cohesion, health and the environment.

[33] Sutton, S. (2005) *An Assessment of the Social Characteristics of Queensland's Recreational Fishers*, CRC Reef Research Centre, School of Tropical Environment Studies and Geography, James Cook University.
[34] Arlinghaus, R. (2004) *Recreational Fisheries in Germany: A Social and Economic Analysis*, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin.
[35] Salter, M. (2005) *Labour's Charter for Angling 2005*, Martin Salter MP, Parliamentary Spokesman for Angling and Shooting.

2.38 In Northern Ireland, there is an absence of recent research which has examined the economic and social value of recreational angling across the whole region for each type of angling, coarse, game and sea. By examining the impact of recreational angling in Northern Ireland, this report aims to address this information gap and explore the economic and social issues raised in this section.

III Economic impact of recreational angling - local/NI anglers

Introduction

3.1 This section assesses the economic impact of recreational angling undertaken by local anglers resident in Northern Ireland (NI). The section describes the level of participation in angling by reference to data on the number of angling licences issued to NI resident anglers by the Fisheries Conservancy Board (FCB) and the Loughs Agency (LA), in addition to estimating the extent of participation in sea/shore angling. The section then describes the characteristics of local anglers, based on a combination of official data and the responses to our survey of local anglers in Northern Ireland. Following this, the analysis estimates the gross expenditure and overall economic impacts of local angling.

Participation in recreational angling among local/NI residents

3.2 A key driver of the overall economic impact of recreational angling concerns the level of participation in angling and, in relation to local angling, the numbers of Northern Ireland residents who engage in recreational angling.

Domestic game and coarse angling

3.3 Given the legal requirement to possess a licence before an individual can engage in recreational game or coarse angling in Northern Ireland, we believe that the best available indicator of the size of the population of game and coarse anglers is the number of licences issued by the fisheries boards.

3.4 Game and coarse angling licences are issued in NI by the Fisheries Conservancy Board (FCB) and the Loughs Agency. A variety of licence types are available through each agency for game or coarse angling, including for adults, juveniles, OAPs and disabled persons, and season or short duration licences. In addition, it is possible to obtain an endorsement for licences issued by either agency to enable licence holders to fish in the other agency's area, for example, an endorsement on a licence issued by the FCB to allow holders to fish in the Loughs Agency area or *vice versa*.

3.5 Figures were provided to the consultancy team by the FCB and the Loughs Agency in respect of the numbers and breakdown of licences issued during 2003, 2004 and 2005 (2004 being the latest year for which figures are available from the FCB). Based on the licence issue data, Table 3.1 presents our estimates of the number of NI-resident anglers who purchased game/coarse licences from the FCB during the period 2003-2005. We estimate that a total of 19,328 NI resident anglers purchased game/coarse licences from the FCB during 2005. This compares with a total of 18,476 during 2004 and 17,662 in 2003, implying an overall increase in the estimated number of local anglers purchasing FCB licences of 9.4% over this period.

Table 3.1: Participation in Recreational Angling – Estimated Number of *NI Resident* Game/Coarse Anglers Who Purchased Game/Coarse Licences Issued by the Fisheries Conservancy Board[36]

Year	Fisheries Conservancy Board	
	Licences Issued to NI Residents	*% Annual Change*
2003	17,662	
2004	18,476	*4.6*
2005E*	19,328	*4.6*

Source: Fisheries Conservancy Board licence data
*Estimate based on annual growth between 2003 and 2004

3.6 The table below profiles our estimates for the numbers of NI-resident anglers who purchased Loughs Agency game/coarse angling licences during the period 2003-2005. We estimate that 5,562 NI residents purchased LA game/coarse licences during 2005, up from 5,077 in 2004 and 4,634 in 2003, implying a 20% increase in the estimated number of Loughs Agency NI-resident anglers over this period.

Table 3.2: Participation in Recreational Angling – Estimated Number of *NI Resident* Game/Coarse Anglers Who Purchased Game/Coarse Licences Issued by the Loughs Agency[37]

Year	Loughs Agency	
	Licences Issued to NI Anglers	*% Annual Change*
2003	4,634	
2004	5,077	*9.6*
2005	5,562	*9.6*

Source: Loughs Agency licence data

3.7 Table 3.3 brings together the figures shown in Tables 3.1 and 3.2 to arrive at an estimate for the overall number of NI residents engaged in recreational game/coarse angling. According to the figures, it is estimated that close to 25,000 Northern Ireland residents participated in game or coarse recreational angling in Northern Ireland during 2005. We believe that this figure provides the most accurate estimate for the numbers of NI-resident game/course anglers, being based on the most up-to-date data available to the team on angling license issues.

Table 3.3: Participation in Recreational Angling – Estimated Total Number of *NI Resident* Game/Coarse Anglers

Year	Estimated Total NI-resident Game/Coarse Anglers	
	Total	*% Annual Change*
2003	22,296	
2004	23,553	*5.6*
2005 Est.	24,890	*5.7*

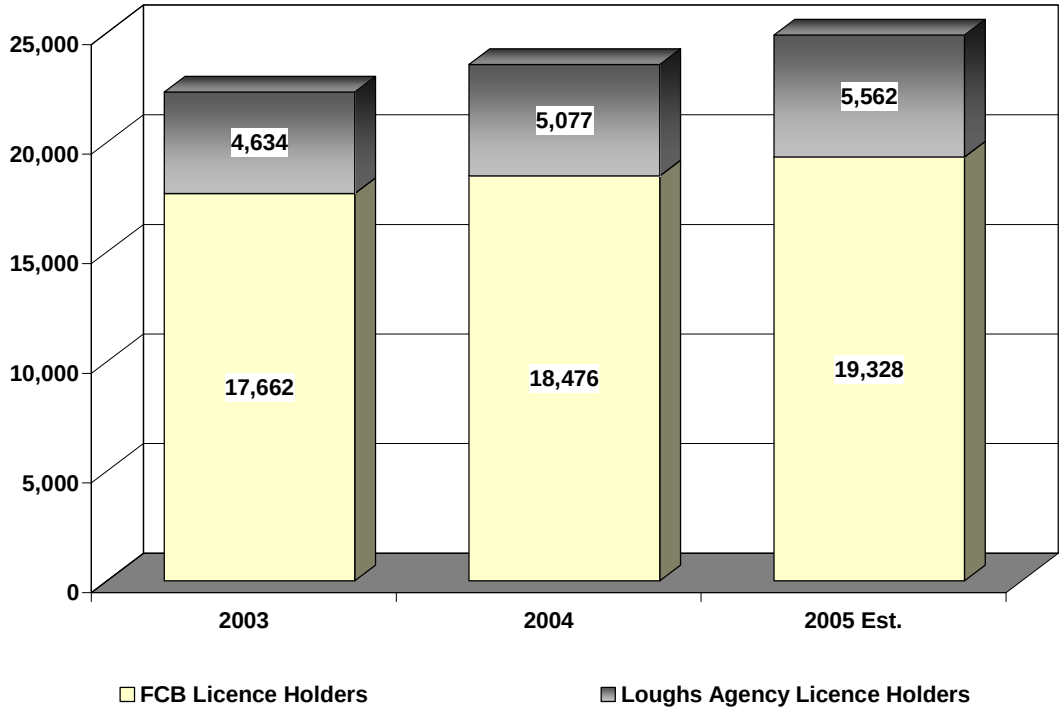
Source: Loughs Agency licence data

[36] The estimated number of NI-resident anglers who purchased FCB game/coarse licences reflects an adjustment to published FCB data to take account of joint game/coarse and game/coarse 3-day and 14-day licences sold to what are correctly believed by DCAL experts to be cross-border and other visiting anglers who purchased such licences to fish in the Erne system. In total, 500 such licences out of the overall number of licences issued by the FCB were allocated in our analysis to visiting anglers. In addition, endorsements were excluded from the figures for licence issues to avoid double-counting/duplication of anglers.

[37] As in the case of FCB licence issues, endorsements were excluded from the figures for Loughs Agency-based estimates.

3.8 Figure 3.1 is a graphical illustration of the overall number of NI-resident game/coarse anglers based on the analysis of FCB and LA licence data pertaining to the period 2003-2005. The chart highlights the overall growth in the estimated level of participation in domestic game/coarse recreational angling among Northern Ireland residents over this period.

Figure 3.1: Estimated Total Number of *NI Resident* Game/Coarse Anglers – 2003-2005



Source: Loughs Agency and Fisheries Conservancy Board

Domestic sea and shore angling

3.9 Due to the fact that a licence is not required to engage in sea or shore angling in Northern Ireland (expect when fishing for salmon or sea trout in the sea), it is more difficult to definitively estimate the extent of participation in sea/shore angling. For the purposes of the current exercise we considered the following sources as bases for the estimation of the population of NI resident sea/shore anglers:

- PricewaterhouseCoopers / Indecon survey of Local Anglers in Northern Ireland; and
- Previous research on participation in sea/shore angling among households in England and Wales.

3.10 Table 3.4 below profiles the findings from the PricewaterhouseCoopers / Indecon survey of Local Anglers in Northern Ireland in relation to the breakdown of respondents according to their primary interest in angling. The survey evidence suggests that approximately 17% of NI resident anglers are primarily interested in sea/shore angling. One approach to estimating the population of sea/shore anglers, based on the survey evidence, would be to apply the proportion of survey respondents stating that their primary interest lies in game/coarse angling to the estimated overall net total of NI resident game and coarse licence holders (derived above). This then generates an estimate for the number of persons whose primary interest lies in sea/shore angling. Applying this approach yields an estimate of participation in sea/shore angling among NI residents of 5,061 sea/shore anglers in 2005.

Table 3.4: Participation in Recreational Angling – Estimated Number of NI Resident Sea/Shore Anglers based on PwC/Indecon Survey Evidence

Angling Type	Adjusted % of Survey Respondents	Estimated Net Total NI Resident Game and Coarse Anglers - 2005	Estimated Net Total NI Resident Sea/Shore Anglers - 2005
Game	68.5		
Coarse	14.6		
Total Game and Coarse Only	83.1	24,890	
Sea/Shore	***16.9***		***5,061****

Source: PwC/Indecon Confidential Survey of Local Anglers in NI and analysis of FCB and Loughs Agency angling licence data

5,061 = (24,890 / 83.1 * 100)-24,890*

3.11 Another approach to estimating the extent of participation in sea/shore angling is to derive Northern Ireland participation levels based on benchmarking of patterns evident in other UK regions. A study undertaken for the Department for Environment, Food and Rural Affairs, for instance, examined the economic contribution of sea angling[38]. In order to obtain basic information on participation in angling, this study undertook research as part of General Omnibus Survey of 10,980 adults in England and Wales during the summer of 2003. The survey indicated that 5.02% of households participated in sea angling in 2003.

3.12 Given that there was an estimated 22.2 million households in England and Wales in 2003 (ONS (2003), 2001 projection), the above proportion implies that 1.11m households participate in sea angling. If one adjusts this figure to reflect the presence in some households of more than one angler, this results in an estimate of 1.45 million sea/shore anglers. This is equivalent to 2.74% of the estimated mid-2003 population of England and Wales of 52.79 million persons. Applying this proportion to the population of Northern Ireland would result in an estimate for the number of sea/shore anglers of 46,822. We believe, however, that this constitutes an over-estimate of the extent of participation in sea/shore angling in Northern Ireland, particularly when compared with the estimated population of game and coarse anglers.

[38] Drew Associates Limited (2004), *Research into the Economic Contribution of Sea Angling*, March 2004, Department for Environment, Food and Rural Affairs.

3.13 In addition, we also considered data from the Continuous Household Survey for Northern Ireland. This survey, *inter alia*, accessed information on the extent of participation in angling in general among households in NI. In particular, figures for the 2005/06 period indicate that of 3,213 people surveyed, 118 or 4% stated that they participated in angling during this period. If one applies this percentage to the Northern Ireland population as a whole (estimated at 1,724,408 persons in 2005[39]), this would suggest that some 69,000 persons engage in angling in Northern Ireland. If one subtracts from this figure the estimated total number of game/coarse anglers (24,890), this would suggest that are approximately 44,110 sea/shore anglers in NI. Our considered view is that this would represent an overestimate of the actual number of residents who engage primarily in recreational sea/shore angling in Northern Ireland.

3.14 Given the need to ensure caution in estimation and usage of figures pertaining to the population of anglers, our preferred approach is to conservatively estimate the population of sea/shore anglers on the basis of the up-to-date survey research undertaken during this study rather than the more simplistic benchmarking approach outlined above. On this basis, we estimate the extent of participation in sea/shore angling among NI residents at approximately 5,061 persons during 2005.

Overall participation in recreational angling among local anglers in Northern Ireland

3.15 Aggregating the estimates for the numbers of game, coarse and sea/shore anglers, described above, provides an estimate for the overall level of participation in recreational angling among NI residents. Our analysis suggests an overall participation level of close to 30,000 locals who engage in recreational angling (see Table 3.5).

Table 3.5: Participation in Recreational Angling – Estimated Overall Number of NI Resident Anglers

Angling Type	Estimated Total NI Resident Recreational Anglers - 2005
Game/Coarse	24,890
Sea/Shore	5,061
Total	**29,951**

Characteristics of local/NI-resident recreational anglers

3.16 As indicated at the outset, our analysis of the characteristics of local anglers in NI is based on a combination of official data and the findings from our survey of local anglers, and focuses on the following key aspects:

- Anglers' primary interest in angling (i.e. game, coarse or sea/shore angling);
- The main angling methods employed;
- Last season/year in which anglers engaged in recreational angling in Northern Ireland;
- Number of days anglers engaged in angling in their local county by type of angling during the last season/year;
- Number of days anglers engaged in angling elsewhere in NI by type of angling during the last season/year;
- Number of nights spent away from home by NI anglers during last season/year according to type of accommodation used;
- Breakdown of total expenditures on recreational angling in NI during last season/year by category of expenditure.

[39] See NISRA http://www.nisra.gov.uk/archive/demography/publications/annual_reports/2005/Table2.1_2005.xls

Primary interest of local anglers

3.17 An indication of the primary interest in angling among local/NI-resident anglers is provided by the PwC/Indecon survey evidence presented in the table below. While a number of respondents to the survey stated more than one category, according to the findings, 86% of NI-residents anglers who responded to the survey stated that their primary interest was in game angling, while 18% stated that their primary interest was in coarse angling. A total of 21% of local anglers responding to the survey stated that their main interest was in sea/shore angling.

Table 3.6: Characteristics of Local/NI-resident Recreational Anglers – Primary Interest in Angling

Primary Interest of Local/NI-Resident Anglers			
Angling Type	**No. of Respondents**	***% of Total****	***Adjusted % of Total***
Game angling	574	*86*	*68.5*
Coarse angling	122	*18*	*14.6*
Sea angling	82	*12*	*9.8*
Shore angling	60	*9*	*7.2*
Total	667	*126*	*100*

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

* Figures may not add to 100% due to respondents stating more than one category

3.18 An estimated breakdown of the extent of participation in recreational angling among Northern Ireland residents, based on the analysis of licence data and the above survey evidence, is presented in the table below. We estimate that some 20,527 individuals participated in game angling during 2005, while 4,363 engaged in coarse angling and 5,061 participated in sea/shore angling.

Table 3.7: Characteristics of Local/NI-resident Recreational Anglers – Estimated Breakdown of NI-Resident Anglers by Type of Angling

Primary Interest of Local/NI-Resident Anglers	
Angling Type	**Estimated No. of Anglers**
Game angling	20,527
Coarse angling	4,363
Sea angling	2,923
Shore angling	2,138
All Angling	**29,951**

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

Main angling methods employed

3.19 In terms of the main methods that are employed by visiting anglers, the following table shows that game angling is the most popular with coarse and pike having broadly similar number of angling participants. With specific regard to game angling, the vast majority are involved in flyfishing. The most popular fishing type of coarse angling is Pleasure while Dead Bait is most popular with Pike Anglers.

Table: 3.8: Breakdown of Main Angling Methods Employed by Local/NI-Resident Anglers

Type of angling	Fishing method / type	% of anglers	Base
Game Angling	FlyFishing	79	449
	Spinning	9	
	Worming	12	
Coarse Angling	Pleasure	59	117
	Match	9	
	None in particular/unsure	32	
Pike Angling	FlyFishing	24	101
	Spinning	26	
	Dead Bait	50	

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

Last season engaged in angling

3.20 Table 3.9 below indicates the pattern of angling activity in relation to the last season in which respondents to our survey of local anglers stated they had last engaged in recreational angling. According to the survey evidence, the majority (75.6%) of respondents last engaged in angling during the 2005 season.

Table 3.9: Characteristics of Local Anglers in Northern Ireland - Last Season in which Respondents Engaged in Angling in Northern Ireland

Year	No. of Respondents	% of Respondents
Pre 1950	1	0.1%
1974	1	0.1%
1980	1	0.1%
1990	1	0.1%
1992	1	0.1%
1995	1	0.1%
2002	3	0.4%
2003	4	0.6%
2004	21	3.1%
2005	504	75.6%
2006	129	19.3%

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

Time spent angling in local area and elsewhere in NI

3.21 Table 3.10 presents a statistical analysis of the number of days NI resident anglers spent on angling in their local county during the 2005 season. Across all types of angling, local anglers responding to the PwC/Indecon survey indicated that they spent on average 43 days engaging in the pursuit in their local county during 2005. The median number of days spent angling by NI residents in their local county was 25 days and there is a noticeable variation around the mean number of days. Within the total, it is notable that game fishing predominates over coarse and sea/shore angling, with local anglers spending on average 35 days engaged in game angling, compared to an average of 5 days on coarse, 2 days on sea and 1 day on shore angling in their local county during 2005. Again, there is however considerable variation around the mean figures.

Table 3.10: Characteristics of Local Anglers in Northern Ireland - No. of Days Spent in Local County on Recreational Angling by Type - 2005 Season

Statistics/Angling Type	Game	Coarse	Sea	Shore	Total*
Mean	35	5	2	1	43
Median	25	0	0	0	25
Standard Deviation	36	16	8	7	38
Min. No. of Days reported	0	0	0	0	0
Max. No. of Days reported	250	170	70	90	250

Source: PwC/Indecon Confidential Survey of Local Anglers in NI
*Game, coarse and sea/shore components may not add to totals due to rounding

3.22 Of importance in relation to the wider economic impacts of recreational angling in Northern Ireland concerns the extent to which NI resident anglers spend time away from home when they engage in angling activities. Table 3.11 below presents a statistical breakdown of the number of days spent by NI resident anglers engaging in angling elsewhere in Northern Ireland, i.e. days spent away from their local areas. According to the research on Northern Ireland anglers, NI residents spent on average a total of 14 days away from their home while engaged in angling during the 2005 season, while the median number of days spent away from home was 5. As in the case of local angling, there is a substantial variation around the average number of days spent angling elsewhere in Northern Ireland.

Table 3.11: Characteristics of Local Anglers in Northern Ireland - No. of Days Spent Elsewhere in Northern Ireland on Recreational Angling by Type - 2005 Season

Statistics/Angling Type	Game	Coarse	Sea	Shore	Total
Mean	8	3	1	1	14
Median	5	0	0	0	5
Standard Deviation	11	10	7	5	13
Min. No. of Days reported	0	0	0	0	0
Max. No. of Days reported	80	85	99	50	105

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

Type of accommodation used by anglers in NI

3.23 Table 3.12 profiles the characteristics of local anglers in relation to the number of nights spent away from home by type of accommodation used when engaged in angling during the 2005 season. The survey findings indicate that the most popular form of accommodation used by respondents in Northern Ireland when angling away from home is camping/caravan accommodation, followed by other accommodation not stated, Bed and Breakfast/Guesthouse accommodation, self catering accommodation, hotel accommodation and fishing lodge accommodation. The pattern of accommodation used would suggest that typical expenditures on this area are likely to be low among local anglers in Northern Ireland and this feature if evidenced by the high proportion of nights in the other category, which would include staying with relatives/friends.

Table 3.12: Characteristics of Local Anglers in Northern Ireland - % Breakdown of No. of Nights Spent Away from Home in Northern Ireland on Recreational Angling by Type of Accommodation Used During 2005 Season

Statistics/Angling Type	Hotel	Fishing Lodge	B+B/ Guesthouse/ Farmhouse	Camping/ Caravan	Self Catering/ Chalet	Other, incl. Friends/ Relatives
% of Total Reported Nights	*6.3*	*0.6*	*9.8*	*42.8*	*9.1*	*31.4*

Source: Indecon analysis of PricewaterhouseCoopers - Confidential Survey of Local Anglers in NI

Expenditure patterns among local anglers

3.24 A key driver of the overall economic impacts of recreational angling concerns the characteristics of anglers in relation to their expenditures on locally produced goods and services. As part of our survey research among local anglers in Northern Ireland, we sought the inputs of anglers in relation to their typical angling-related expenditures during the last season in which they engaged in angling. Table 3.13 profiles the expenditure characteristics of NI resident anglers by type of angling and category of expenditure during the 2005 season. The findings from our survey research indicate that among Northern Ireland resident anglers as a whole (i.e. across all types of angling), respondents typically spent an overall total of £1,313 on angling related expenditures during the 2005 season. In terms of the different types of recreational angling, typical overall annual expenditures vary between £1,253 per local angler in the case of game angling, £1,459 in relation to sea/shore angling and £1,425 in respect of coarse angling during 2005.

Table 3.13: Characteristics of Local Anglers in Northern Ireland - Breakdown of Total Expenditure on Recreational Angling in Northern Ireland by Type of Angling and Category of Expenditure During 2005 Season - £

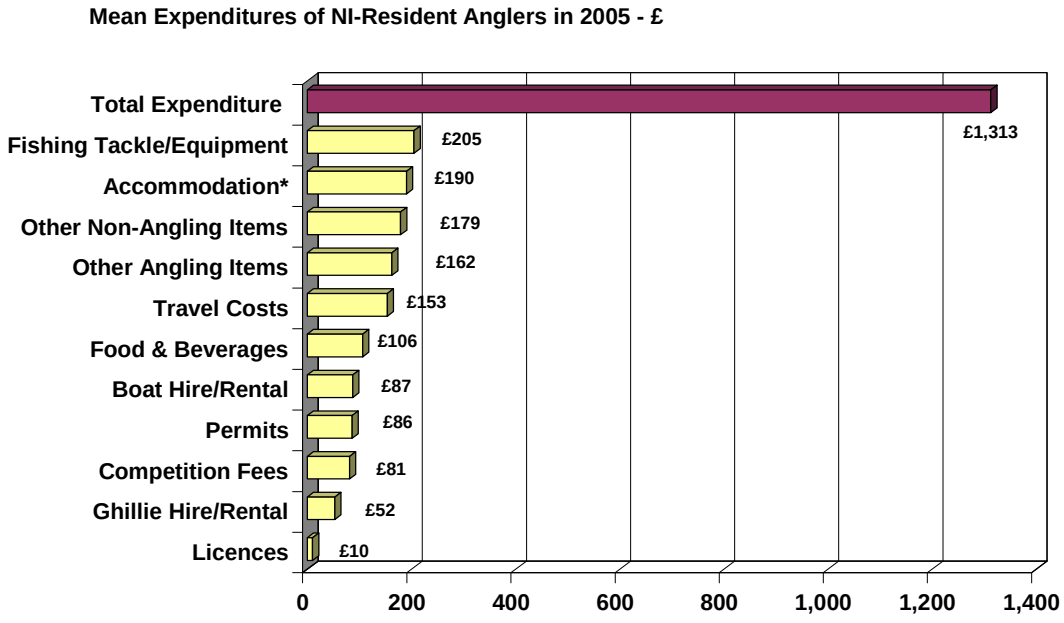
Expenditure Category/Statistics	Mean Total Annual Expenditures - £ - 2005			
	Game	Coarse	Sea/ Shore	All Angling
Accommodation	190	265	238	205
Food and Beverages	173	243	155	190
Fishing Tackle/Equipment	195	93	287	179
Boat Hire/Rental	159	164	209	162
Ghillie Hire/Rental	143	202	151	153
Licences	94	146	106	106
Permits	79	104	130	87
Competition Fees	91	70	0	86
Travel Costs	65	97	124	81
Other Angling Items	54	31	59	52
Other Non-Angling Items	10	10	0	10
Total Expenditure During Last Season/Year	**1,253**	**1,425**	**1,459**	**1,313**

Source: PwC/Indecon Confidential Survey of Local Anglers in NI

3.25 A pictorial representation of the mean levels of reported expenditures by category of expenditure incurred by local anglers across all types of angling activity during the 2005 season is presented in Figure 3.2. In terms of typical annual expenditures incurred by local anglers, among the largest average levels of expenditure during the last season/year were incurred on fishing tackle and equipment (£205 during 2005), followed by expenditures on accommodation (£190), other non-angling items (£179), other angling items (£162), travel costs (£153), food and beverages (£106), boat hire/rental (£87), permits (£86), competition fees (£81), ghillie hire/rental (£52) and angling licences (averaging £10 during 2005). Again, there are significant variations in expenditures by category dependent on the type of angling (game, coarse or sea/shore angling).

3.26 Later in this section we utilise the above breakdowns in the estimation of the overall expenditure/economic contribution of domestic recreational angling in Northern Ireland.

Figure 3.2: Mean Total Expenditures on Recreational Angling by Local Anglers in Northern Ireland by Category of Expenditure During 2005 Season - £



Source: PwC/Indecon Confidential Survey of Local Anglers in NI

Estimates of expenditure/economic contribution of domestic angling

3.27 In estimating the current value of the total expenditure and gross economic contribution of domestic game, coarse and sea angling activity in Northern Ireland, we utilise the following data/information sources:

1. Data on number of game and coarse licences issued by the FCB and the Loughs Agency to NI resident/domestic anglers, (described earlier in this section);

2. Estimate of number of sea/shore anglers'

3. The findings of survey research among local/NI resident anglers in relation to expenditure patterns among anglers.

3.28 In particular, we calculate the total value of domestic game, coarse and sea/shore angling in Northern Ireland according to the approach summarised in Figure 3.3.

Figure 3.3: Approach to Calculation of Estimated Gross Expenditure Contribution of Domestic Game, Coarse and Sea/Shore Angling

Total Value of Domestic Game Angling	***Total Value of Domestic Coarse Angling***	***Total Value of Domestic Sea/Shore Angling***
=	**=**	**=**
No. of NI Resident Game Angling Licence Holders	*No. of NI Resident Coarse Angling Licence Holders*	*Estimated NI Resident Population of Sea/Shore Game Angling Licence Holders*
*	*	*
Estimated Mean Annual Expenditures on Game Angling	*Estimated Mean Annual Expenditures on Coarse Angling*	*Estimated Mean Annual Expenditures on Sea/Shore Angling*

Estimates of gross expenditure contribution of domestic game angling

3.29 In deriving our estimates for the gross expenditure contribution of domestic/NI game, coarse and sea/shore anglers, we have assumed that our survey respondents constitute a representative sample of the entire population of game, coarse and sea/shore anglers in Northern Ireland. In particular, we assume that the pattern of annual total expenditures indicated through the survey research is representative of the pattern of annual expenditures across the population of anglers. This takes into account the pattern of angling activity during the season/year, including the number of days spent angling.

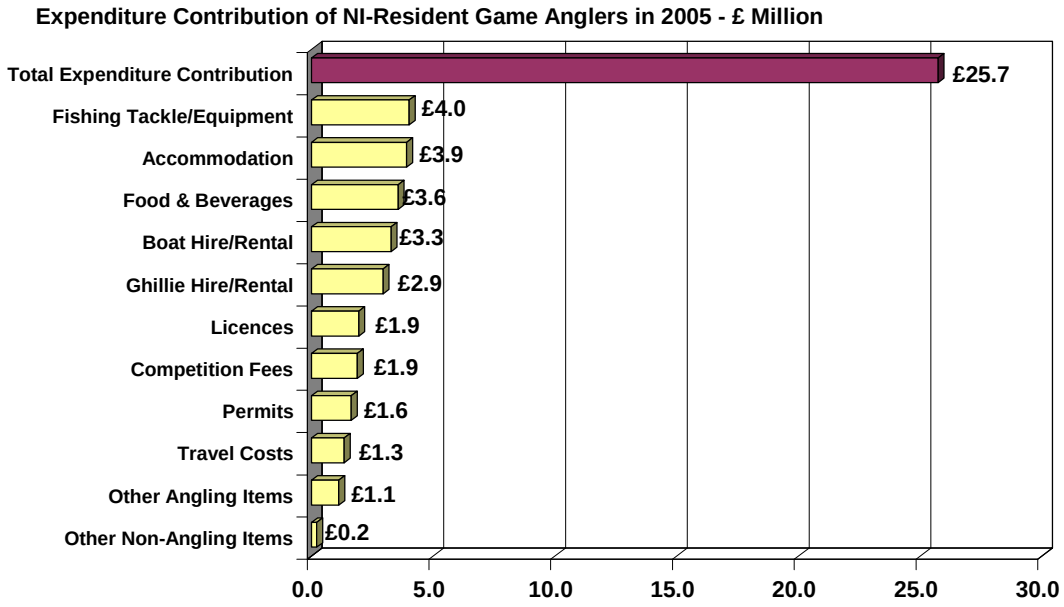
3.30 In Table 3.14 we present a breakdown of our estimates of the gross expenditure contribution of domestic game angling in Northern Ireland, based on 2005 values. We estimate that the overall gross expenditure contribution, arising from the presence of domestic/NI resident game anglers, amounts to just over £25.7 million in 2005.

Table 3.14: Estimated Gross Expenditure Contribution of Domestic Game Angling – £

Expenditure Category	Total Net NI Resident Game Licence Holders - 2005	Mean Annual Expenditures - 2005 - Game Angling - £	Estimated Current Expenditure Contribution – 2005 - £
Fishing Tackle/Equipment	20,527	195	4,002,765
Accommodation		190	3,900,130
Food and Beverages		173	3,551,171
Boat Hire/Rental		159	3,263,793
Ghillie Hire/Rental		143	2,935,361
Licences		94	1,929,538
Competition Fees		91	1,867,957
Permits		79	1,621,633
Travel Costs		65	1,334,255
Other Angling Items		54	1,108,458
Other Non-Angling Items		10	205,270
Total Expenditure Contribution - 2005		**1,253**	**25,720,331**

3.31 Figure 3.4 presents a graphical breakdown of the estimated gross expenditure contribution of domestic game angling in Northern Ireland by area of expenditure. Within the overall expenditure contribution of £25.7 million in 2005, the largest areas of expenditure among local game anglers included expenditures on fishing tackle and equipment (£4 million during 2005), accommodation (£3.9 million) and food and beverages (£3.6 million).

Figure 3.4: Estimated Gross Expenditure Contribution of Domestic Game Angling – £ Million



Estimates of gross expenditure contribution of domestic coarse angling

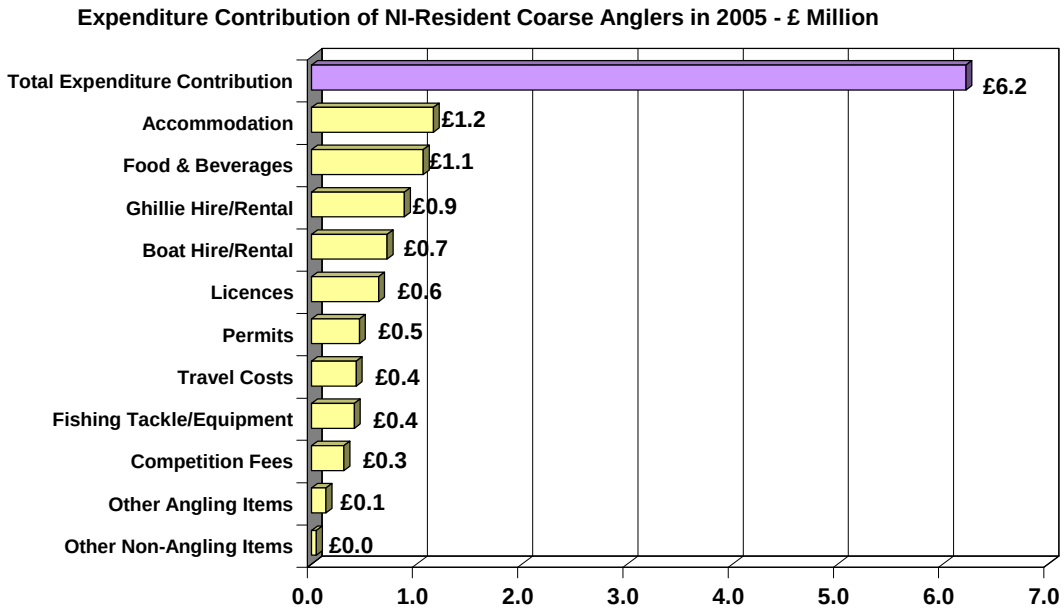
3.32 Our estimates of the gross expenditure contribution of domestic coarse angling in Northern Ireland are presented in Table 3.15. Our estimates, based on an estimated population of NI resident coarse anglers of 4,363 in 2005, indicate a gross expenditure contribution arising domestic coarse angling totaling some £6.2 million.

Table 3.15: Estimated Gross Expenditure Contribution of Domestic Coarse Angling – £

Expenditure Category	Total Net NI Resident Coarse Licence Holders - 2005	Mean Annual Expenditures - 2005 - Coarse Angling - £	Estimated Current Expenditure Contribution - £ - 2005
Accommodation	4,363	265	1,156,195
Food and Beverages		243	1,060,209
Ghillie Hire/Rental		202	881,326
Boat Hire/Rental		164	715,532
Licences		146	636,998
Permits		104	453,752
Fishing Tackle/Equipment		93	405,759
Travel Costs		97	423,211
Competition Fees		70	305,410
Other Angling Items		31	135,253
Other Non-Angling Items		10	43,630
Total Expenditure Contribution - 2005		**1,425**	**6,217,275**

3.33 The figure overleaf presents a breakdown of the overall gross expenditure contribution of domestic coarse angling in Northern Ireland. Of the estimated overall gross expenditure contribution of £6.2 million in 2005, the main components were accommodation (£1.2 million), food and beverages (£1.1 million) and ghillie hire/rental (£0.9 million).

Figure 3.5: Estimated Gross Expenditure Contribution of Domestic Coarse Angling – 2005 Values – £ Million



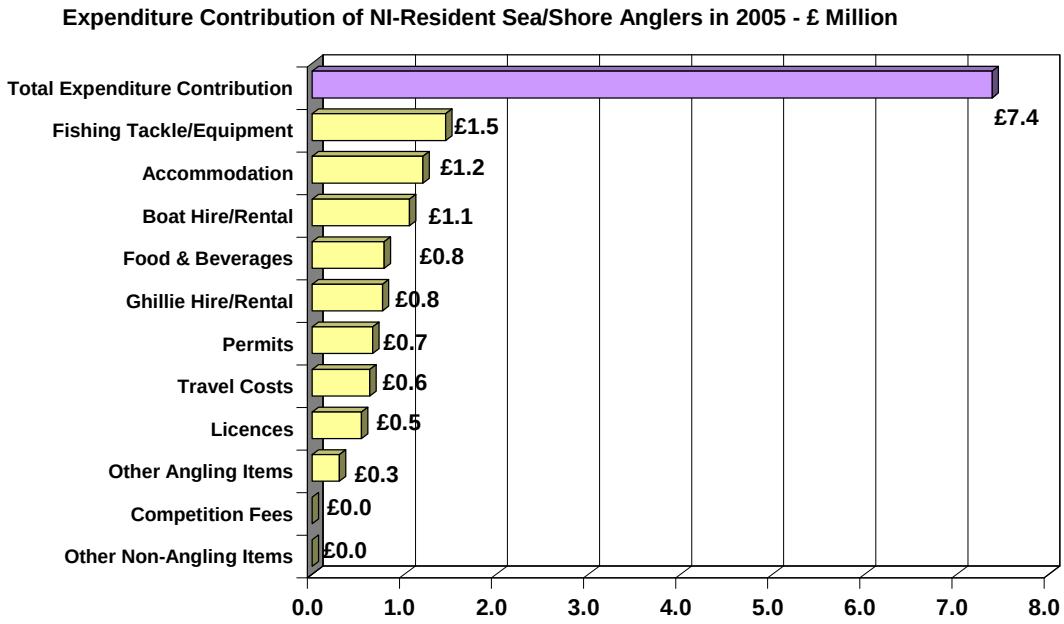
3.34 Our estimates of the gross expenditure contribution of domestic sea/shore angling in Northern Ireland are shown in Table 3.16. Based on our estimate of the population of sea/shore anglers presented in Table 3.4 and the analysis of typical expenditure patterns among NI resident sea/shore anglers presented in Table 3.12, we estimate the overall gross expenditure contribution of domestic sea/shore angling at £7.4 million.

Table 3.16: Estimated Gross Expenditure Contribution of Domestic Sea/Shore Angling – 2005 Values – £

Expenditure Category	Estimated NI Resident Sea/Shore Anglers - 2005	Mean Annual Expenditures - 2005 – Sea/Shore Angling - £	Estimated Current Expenditure/Economic Value – Sea/Shore Angling - £ - 2005
Fishing Tackle/Equipment	5,061	287	1,452,507
Accommodation		238	1,204,518
Boat Hire/Rental		209	1,057,749
Food and Beverages		155	784,455
Ghillie Hire/Rental		151	764,211
Permits		130	657,930
Licences		106	536,466
Travel Costs		124	627,564
Other Angling Items		59	298,599
Total Expenditure During Last Season/Year		**1,459**	**7,383,999**

3.35 A detailed breakdown of the estimated gross expenditure contribution of domestic sea/shore angling is presented in Figure 3.8. The principal components of the overall gross expenditure impact of £7.4 million in 2005 are fishing tackle and equipment (£1.45 million), accommodation (£1.2 million), and boat hire/rental (£1.1 million).

Figure 3.6: Estimated Gross Expenditure Contribution of Domestic Sea/Shore Angling – 2005 Values – £ Million



Estimated overall gross expenditure contribution of domestic angling

3.36 The aggregation of the gross expenditure contributions of game, coarse and sea/shore angling to arrive at an overall estimate of the gross expenditure contribution of all domestic recreational angling activities in Northern Ireland is presented in Table 3.17 below. We estimate the overall gross expenditure contribution of domestic recreational angling in Northern Ireland at £39.3 million in 2005.

Table 3.17: Estimated Overall Gross Expenditure Contribution of Domestic Recreational Angling in Northern Ireland – £ Million – 2005

Type of angling	Estimated Population of Anglers	Mean Annual Total Expenditure - 2005 - £	Estimated Gross Expenditure Contribution – £ Million – 2005 Prices
Game	20,527	1,253	25.7
Coarse	4,363	1,425	6.2
Sea/Shore	5,061	1,459	7.4
Total Recreational Angling – NI Residents	**29,951**	**1,313**	**39.3**

Net economic impact of domestic recreational angling

3.37 The above estimates pertain to the *gross* expenditure impacts of domestic recreational angling. However, an important issue relates to the distinction between net overall economic impacts versus gross benefits relating to a particular economic activity. The above estimated impacts from local angling in Northern Ireland relate to the direct gross impacts of the expenditures undertaken by local anglers. To arrive at an estimate of the *net* overall economic contribution of this activity to the Northern Ireland economy, it is necessary to adjust the gross expenditure impact to reflect the following factors:

- The indirect and multiplier impacts of these expenditures
- The opportunity cost of the labour and other resources utilised in supplying products and services purchased by local anglers, i.e. the displacement impact of the activities undertaken by local anglers.

Multiplier impacts

3.38 In assessing the overall economic impacts of local angling account must be taken of the fact that associated expenditures give rise to indirect and induced impacts on the economy, resulting from the demand for goods and services from sub-supply sectors and the additional incomes and further expenditures that are generated through this process throughout the economy. These effects can be estimated using a so-called multiplier. The multiplier tells us by how much overall income/output changes when there is a shift/change in autonomous spending. Defining the marginal propensity to consume (*MPC*) as the proportion of additional income that households consume, and the marginal propensity to import (*MPM*) as the proportion of additional income that households spend on extra imported goods, the formula for the multiplier *k* is given in Equation 1.

Equation 1: Multiplier Formula

$$k = \frac{1}{(1 - MPC) + MPM}$$

3.39 If, for example, we assume that the *MPC* equals 0.7, and the *MPM* equals 0.2, then this would imply a multiplier of 2. This means that any change in autonomous spending will result in a 2-times change in the overall equilibrium level of income. For example, a €100 increase in autonomous spending would result in a 100 x 2 = €200 increase in the equilibrium level of income.

3.40 For the purposes of estimating the economy-wide economic impacts of expenditures undertaken by local anglers in NI, we apply a multiplier of 1.29. This reflects research undertaken on the tourism sector of the NI economy.[40]

[40] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

Displacement impacts

3.41 In addition to the multiplier impact, it is necessary in an economic impact assessment to take account what level of overall economic activity would be likely to prevail in the absence of the activity of the sector under review, i.e. local angling. In particular, there is an opportunity cost associated with the resources utilised in servicing the additional demand for goods and services in the Northern Ireland economy generated through local angling activity, which may be re-deployed elsewhere in the economy.

3.42 The displacement factor used in this report is 59.5%. This figure was based on the findings from the survey of local and visiting anglers and on existing research as follows. In regard to the survey of domestic anglers, the findings show that 37% are not members of a local club which indicates that this proportion is very likely to spend their money on other activities. As the estimated total number of local anglers is 29,951 (see Section 3), this relates to 11,082 anglers. Moreover, the survey of tourist anglers shows that 82% of anglers surveyed indicated that angling in NI was the primary purpose of their visit. This would suggest that 18% would be likely to visit Northern Ireland anyway in the absence of angling opportunities. Based on our estimate of the total number of tourist anglers (4,913 anglers), this would indicate that some 884 anglers would be likely to visit Northern Ireland in any case. Bringing the local and visiting anglers together, therefore, we estimate a weighted average of 34% of total anglers who would have spent their money on other activities in any case in the absence of angling opportunities.

3.43 Reflecting on previous research, a study on the economic impact of angling in Ireland applied an opportunity cost factor of 85% in the estimation of net economic impacts[41]. For the purposes of the current assessment of angling in Northern Ireland we apply a mid-range estimated opportunity cost factor of 59.5% (= average of 85% and 35%). This factor reflects both the specific conditions evident within the angling sector in addition to the macro-economic conditions in the Northern Ireland economy.

Net economic impacts

3.44 Applying a multiplier of 1.29 and an opportunity cost/displacement factor of 59.5% yields an estimate for the net economic impact of local angling on the Northern Ireland economy amounting to £20.5 million during 2005 (see Table 3.18 below).

Table 3.18: Estimated Overall Net Economic Impact of Domestic Recreational Angling in Northern Ireland – £ Million – 2005

Type of angling	Estimated Gross Expenditure Contribution – £ Million	Economy-wide Impacts Incl. Multiplier Impacts	Adjustment to reflect Displacement Impacts/ Opportunity Cost	Estimated Net Economic Impact – £ Million – 2005
Game	25.7	33.2	Less 59.5%	13.4
Coarse	6.2	8.0	Less 59.5%	3.2
Sea/Shore	7.4	9.5	Less 59.5%	3.9
Total Recreational Angling – NI Residents	**39.3**	**50.7**	Less 59.5%	**20.5**

[41] Indecon (2003) An Economic / Socio-Economic Evaluation of Wild Salmon in Ireland, Central Fisheries Board.

Employment Impacts

3.45 The expenditures incurred by local anglers and the wider net economic impacts associated with these expenditures also support employment and job creation in the Northern Ireland economy. To estimate the extent of employment supported through local recreational angling, we draw from recent research undertaken by Cogentsi (2007) on the contribution of tourism to the Northern Ireland economy.[42] According to this research, in 2003, tourism expenditure (including domestic and overseas tourism) in Northern Ireland totalled some £1,278 million and this expenditure supported 18,000 full time equivalent (FTE) jobs. This would imply that approximately 14.1 FTEs are supported for every £1 million of tourism expenditure in the Northern Ireland economy. While this constitutes an average ratio and does not take into account diminishing returns, it provides an indicative first order measure of employment impacts arising within the local angling sector. Applying this approach to the estimated net economic impacts pertaining to the local angling sector yields the employment estimates indicated in the table below. We estimate that a total of approximately 715 FTEs are supported through the direct and multiplier impacts of the expenditures undertaken by local game, coarse and sea anglers in Northern Ireland.

Table 3.19: Estimated Employment Impacts Arising from Economic Impacts of Local Angling on Northern Ireland Economy – 2005

Employment Impacts	**2005**
Total *Net* Direct Economic Impact (incl. multiplier impacts) - £ Million	**50.7**
Of which:	
Game angling	33.2
Coarse angling	8.0
Sea angling	9.5
Estimated No. of FTEs supported per £1 Million of tourism expenditure	14.1
Implied estimated No. of FTEs supported through Tourism Recreational Angling	**715**
Of which:	
Game angling	468
Coarse angling	113
Sea angling	134

[42] Cogentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Trade, Enterprise and Investment.

Conclusion

3.46 In this section we have evaluated the current economic impact of recreational angling in Northern Ireland provided by local anglers. The following paragraphs summarise our findings and key conclusions.

3.47 In assessing the economic impacts of recreational angling undertaken by local anglers resident in Northern Ireland, we commenced by describing the level of participation in angling, by reference to data on the number of angling licences issued to local and visiting/tourism anglers by the FCB and the Loughs Agency, in addition to estimates on participation in sea/shore angling. We then described the characteristics of local anglers based on a combination of official data and the responses to our survey of local anglers in Northern Ireland. Following this, we estimated the gross expenditure and overall economic impacts of local angling.

3.48 The principal findings from our analysis in relation to the level of participation in angling and the population of anglers were as follows:

- Given the legal requirement to possess a licence before an individual can engage in recreational game or coarse angling in Northern Ireland, we believe that the best available indicator of the size of the population of game and coarse anglers is the number of licences issued by the two fisheries agencies;

- We estimate that a total of 19,328 NI resident anglers purchased game/coarse licences from the FCB during 2005. This compares with a total of 18,476 during 2004 and 17,662 in 2003, implying an overall increase in the estimated number of local anglers purchasing FCB licences of 9.4% over this period;

- We estimate that 5,562 NI residents purchased LA game/coarse licences during 2005, up from 5,077 in 2004 and 4,634 in 2003, implying a 20% increase in the estimated number of Loughs Agency NI-resident anglers over this period;

- We estimate that close to 25,000 Northern Ireland residents participated in game or coarse recreational angling in Northern Ireland during 2005;

- We estimate that 5,061 NI residents engaged in recreational sea/shore angling during 2005, bringing the overall level of participation in recreational angling (including game, coarse and sea/shore angling) among NI residents to 29,951;

- According to the findings from the PwC/Indecon Survey of Local Anglers in Northern Ireland, the majority (75.6%) of anglers last engaged in angling during the 2005 season;

- Across all types of angling, local anglers responding to the PwC/Indecon survey indicated that they spent on average 43 days engaging in the pursuit in their local county, while they spent on average a total of 14 days away from their home while engaged in angling during the 2005 season;

- The most popular form of accommodation used by anglers in Northern Ireland when angling away from home is camping/caravan accommodation, followed by other accommodation not stated (which includes staying with friends and family), Bed and Breakfast/Guesthouse accommodation, self catering accommodation, hotel accommodation and fishing lodge accommodation. The pattern of accommodation used would suggest that typical expenditures on this area are likely to be low among local anglers in Northern Ireland;

- The findings from our survey research indicate that among Northern Ireland resident anglers as a whole (i.e. across all types of angling), respondents typically spent an overall total of £1,313 on angling related expenditures during the 2005 season. In terms of the different types of recreational angling, typical overall annual expenditures vary between £1,253 per local angler in the case of game angling, £1,459 in relation to sea/shore angling and £1,425 in respect of coarse angling during 2005.

3.49 In relation to the expenditure and net economic impacts of domestic recreational angling in Northern Ireland, the key findings/conclusions from our analysis were as follows:

- We estimate that the overall gross expenditure contribution arising from the presence of domestic/NI resident game anglers amounts to some £25.7 million in 2005;

- Our estimates, based on an estimated population of NI resident coarse anglers of 4,363 in 2005, indicate a gross expenditure contribution arising domestic coarse angling totaling some £6.2 million in 2005;

- We estimate the overall gross expenditure contribution of domestic sea/shore angling to be similar to that for coarse angling, at just under £7.4 million in 2005;

- Taking into account the game, coarse and sea/shore angling areas, we estimate the aggregate gross expenditure contribution of NI resident anglers at £39.3 million in 2005;

- The above estimates pertain to the *gross* expenditure impacts of domestic recreational angling. However, to arrive at a set of estimates for the overall *net* economic value of recreational angling requires the consideration of two important factors, namely:

    - The indirect and multiplier impacts of these expenditures
    - The opportunity cost of the labour and other resources utilised in supplying products and services purchased by local anglers, i.e. the displacement impact of the activities undertaken by local anglers.

- Taking these factors into account, we estimate the overall net economic impact or net benefit arising from the presence of recreational angling in Northern Ireland at £20.5 Million in 2005, of which £13.4 million relates to game angling, £3.2 million in respect of coarse angling and £3.9 million generated through sea/shore angling.

- We estimate that a total of approximately 715 Full-Time Equivalent jobs are supported through the direct and multiplier impacts of the expenditures undertaken by local game, coarse and sea anglers in Northern Ireland.

IV Economic impact of recreational angling - visiting/tourist anglers

Introduction

4.1 This section examines the economic impacts of recreational angling undertaken by visiting/tourist anglers. For the purposes of this study, visiting / tourist anglers are those anglers who do not reside in Northern Ireland. The analysis describes the extent to which visitors to Northern Ireland participate in recreational angling, referring to information provided on the number of angling licences issued and our estimates on participation of visiting anglers in sea/shore angling.

4.2 The section then describes the characteristics of visiting anglers and on the basis of this evidence, provides estimates of the gross expenditure contribution and the net economic impacts of tourism angling on the Northern Ireland economy.

Extent of angling tourism to Northern Ireland

Game and coarse angling tourism

4.3 To estimate the economic contribution of tourism angling to the Northern Ireland economy, it is necessary to firstly estimate the number of visitors to Northern Ireland who travel to the region with the primary objective of engaging in recreational angling. In this sub-section we estimate the numbers of angling visitors to Northern Ireland who engage in game, coarse and sea/shore angling.

4.4 As it is necessary to possess a licence to engage in game or coarse angling in Northern Ireland, the best available data on the numbers of visiting anglers to Northern Ireland who engage in game and/or coarse angling is through the figures available from the Fisheries Conservancy Broad and the Loughs Agency in relation to the annual numbers of game and/or coarse angling licences purchased by visitors from outside Northern Ireland.

4.5 The FCB and Loughs Agency issue licences to both game and coarse anglers and it is instructive to consider the breakdown of these licences from the perspective of the primary interest in angling among visiting anglers to Northern Ireland. Table 4.1 profiles the numbers of game and coarse angling licences issued by the FCB to visitors to Northern Ireland over the period 2003-2005. There are a range of licence types available from the FCB, including season, OAP, and juvenile licences, and these are available for both game and coarse angling. In addition, it is possible to purchase a joint game/coarse or coarse/game licence, while it is also possible to add an endorsement onto a licence to permit angling in the Loughs Agency area. It is notable that a large number of licences are issued on a joint coarse/game basis, which allows coarse anglers to also engage in game angling. If one excludes these licences, we estimate that the Loughs Agency issued a total of 631 ‘pure’ game licences and a total of 369 ‘pure’ coarse licences to visitors to NI during 2005.

Table 4.1: Tourism Recreational Angling in Northern Ireland – Numbers of Game/Coarse Angling Licences Issued to *Visiting/Tourism Anglers* by Fisheries Conservancy Board

Licence Type	Fisheries Conservancy Board		
	No. of Angling Licenses Issued to Visitors to NI*		
	2003	2004	2005 – Est.**
Game season	61	75	92
Game OAP	52	54	56
Game Juvenile	17	26	40
Game 14-day	35	98	274
Game 3-day	188	178	169
Joint Game - 14-day	255	223	195
Joint Game - 3-day	235	292	363
Foyle Endorsement	5	9	16
Coarse season	203	166	136
Coarse OAP	14	29	60
Coarse Juvenile	40	27	18
Coarse 14-day	67	88	116
Coarse 3-day	52	45	39
Joint Coarse - 14-day	328	503	771
Joint Coarse - 3-day	1,946	1,698	1,482
Total	**3,498**	**3,511**	**3,524**

Source: Fisheries Conservancy Board

**Note: Licences issued to game anglers permit anglers also permit coarse angling, but not vice versa

*** Estimate based on growth between 2003 and 2004

4.6 Table 4.2 describes the number of licences issued to visiting game and coarse anglers by the Loughs Agency over the period 2003-2005. According to the figures, a total of 688 game licences and 10 course licences were issued by the Loughs Agency in 2005, accounting for 98.5% and 1.5% of the all licences issued to visitors to Northern Ireland respectively. The figures highlight the predominance of game angling in the Loughs Agency areas.

Table 4.2: Tourism Recreational Angling in Northern Ireland – Numbers of Game/Coarse Angling Licences Issued to *Visiting/Tourism Anglers* by Loughs Agency

	Loughs Agency		
	No. Issued to Visitors to NI		
Licence Type	2003	2004	2005
Game Season Adult and Juvenile	72	110	101
Game FCB Endorsement	118	203	246
Game 14-day licences	72	63	66
Game 3-day licences	144	307	275
Coarse Season Adult and Juvenile	1	1	10
Total	**407**	**684**	**698**

Source: Loughs Agency

4.7 Table 4.3 below presents our estimates for the overall number of game/coarse visiting anglers to Northern Ireland over the period 2003-2005, based on those who purchased FCB licences. Following a number of adjustments to the FCB licence data to take account of potential duplication of entries (where the same anglers buy more than one licence or licence type) and inclusion of joint coarse/game and 3-day/14-day licence holders who fish the Erne system, we estimate that the number of visiting anglers to Northern Ireland who purchased FCB licences to have totalled 4,011 during the 2005 season. This compared with a total of 4,002 in 2004 and 3,993 visitors in 2003, representing an increase of just 0.5% over this period.

Table 4.3: Tourism Recreational Angling in Northern Ireland – Estimated Annual Number of Game/Coarse Visiting Anglers to Northern Ireland Who Purchased Licences Issued by the Fisheries Conservancy Board – 2003-2005

Year	Fisheries Conservancy Board	
	Estimated. No. of Visiting Anglers[43]	*% Annual Change*
2003	3,993	
2004	4,002	*0.23*
2005E*	4,011	*0.23*

Source: Fisheries Conservancy Board

* Estimate based on growth between 2003 and 2004

4.8 The estimated number of visiting anglers to Northern Ireland who purchased licences issued by the Loughs Agency over the period 2003-2005 is indicated in the table below. We estimate that a total of 452 anglers visited Northern Ireland during the 2005 season and purchased game/coarse licences from the Loughs Agency. This compared with a total of 481 visiting anglers during 2004 and 289 during 2003, implying an overall increase in estimated visitors fishing the Loughs Agency areas during this period of over 56%.

Table 4.4: Tourism Recreational Angling in Northern Ireland – Estimated Annual Number of Game/Coarse Visiting Anglers to Northern Ireland Who Purchased Licences Issued by the Loughs Agency – 2003-2005

Year	Loughs Agency	
	Estimated. No. of Visiting Anglers[44]	*% Annual Change*
2003	289	
2004	481	*66.4*
2005	452	*-6.0*

Source: Loughs Agency

[43] In estimating the number of visiting game/coarse anglers based on FCB licences, based on advice provided by DCAL the available licence data for 2003 and 2004 referring to joint game/coarse and game/coarse 3-day and 14-day licences sold were uplifted by a total of 500 licences to reflect the fact that a proportion of licence issues recorded as being issued to NI resident anglers actually related to cross-border and other visiting anglers who purchased such licences to fish in the Erne system. In addition, endorsements were excluded from the figures to avoid double-counting/duplication of anglers. We also understand that some duplication may arise in relation to 14-day and 3-day (game and coarse) licence holders. However, given the very small numbers of licences involved, we are not of the view that this impacts on the overall figures to a significant degree.

[44] As in the case of licences issued by the FCB, in estimating the numbers of visiting anglers who purchased licences through the Loughs Agency, endorsements were excluded from the figures.

4.9 Table 4.5 below brings together the estimates presented in Tables 4.3 and 4.4 to indicate the estimated overall number of game/coarse visiting anglers to Northern Ireland during the period 2003-2005. Based on the licence data provided by the FCB and the Loughs Agency, it is estimated that close to 4,500 game/coarse anglers visited Northern Ireland during the 2005 season. This represented a small decrease compared with 2004 and a 4.2% increase overall over the period 2003-2005. We believe that these figures provide the most accurate estimates for the numbers of game/course anglers visiting NI on an annual basis since 2003, being based on the most up-to-date data available to the team on angling license issues.

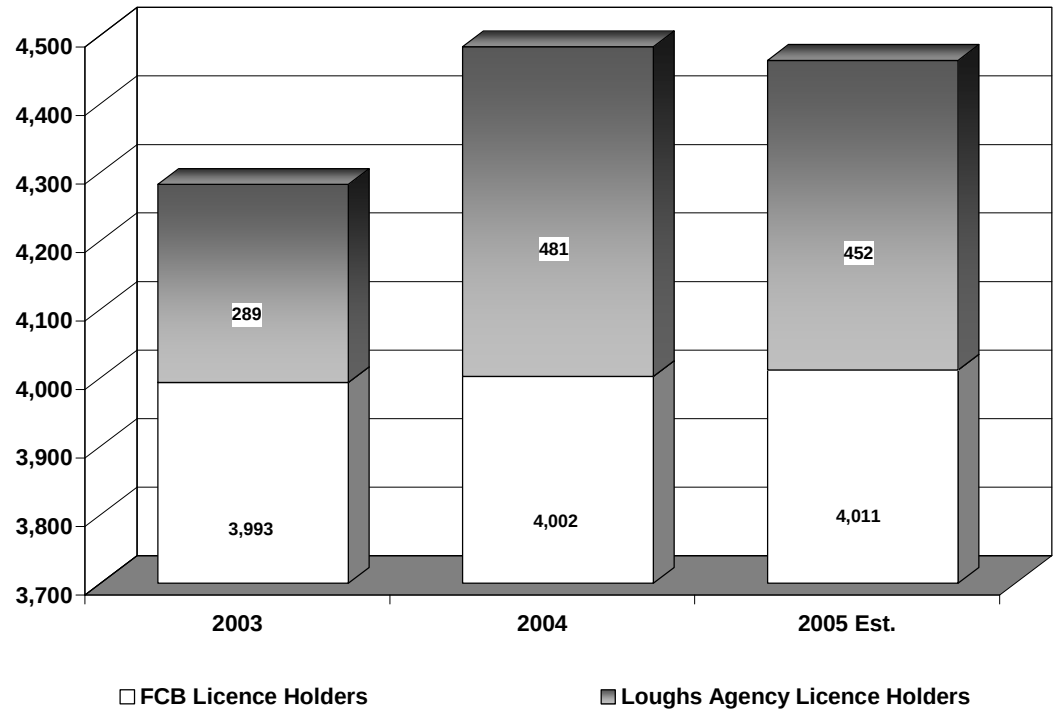
Table 4.5: Tourism Recreational Angling in Northern Ireland – Estimated Annual Total Number of Game/Coarse Visiting Anglers to Northern Ireland

Year	Total Game/Coarse Visiting Anglers to NI	
	Estimated Total No. of Visiting Anglers	*% Annual Change*
2003	4,282	
2004	4,483	*4.7*
2005	4,463	*-0.4*

Source: Fisheries Conservancy Board and Loughs Agency

4.10 A pictorial representation of the breakdown of the estimated numbers of visiting game/coarse anglers to Northern Ireland during the period 2003-2005 is provided in Figure 4.1. The chart highlights the slow growth evident in the numbers of visiting anglers to Northern Ireland between 2003 and 2005.

Figure 4.1: Tourism Recreational Angling in Northern Ireland – Breakdown of Estimated Annual Total Number of Game/Coarse Visiting Anglers to Northern Ireland – 2003-2005



Source: Loughs Agency and Fisheries Conservancy Board

Sea/shore angling tourism

4.11 As a licence is not required to engage in sea or shore angling in Northern Ireland (except where fishing for salmon or sea trout), it is more difficult to definitively estimate the number of visiting/tourist anglers engaging in sea/shore angling. Our approach to estimating the number of visiting/tourist sea/shore anglers to Northern Ireland is to base our estimates on the responses to PricewaterhouseCoopers/Indecon's survey of visiting anglers to Northern Ireland. The PwC/Indecon survey asked visitors to state their primary interest in recreational angling and the findings from this survey are summarised in the table below, which indicate that some 10% of angling visitors to Northern Ireland who responded to the survey stated that their primary interest was in either sea or shore angling.

Table 4.6: Tourism Recreational Angling in Northern Ireland – Breakdown of Respondents to Survey of Visiting Anglers by Primary Interest in Recreational Angling

Primary interest in recreational fishing	Visiting Anglers - %*	Adjusted % of Total
Game angling	52	47.7
Coarse angling	47	43.1
Sea angling	5	4.6
Shore angling	5	4.6
Total	**109**	**100**

Source: PwC/Indecon Confidential Survey of Visiting Anglers to Northern Ireland
* Note: Components do not add to 100% due to some respondents stating more than one interest

4.12 Utilising the survey information presented above in addition to the data on the numbers of game/coarse licences issued by the FCB and Loughs Agency, it is possible to infer the number of visitors engaging primarily in sea/shore angling. The estimation is shown in the table below and based on the figures discussed, it is estimated that approximately 450 anglers visited Northern Ireland during 2005 with the primary objective of engaging in sea/shore angling. We also estimate from the data on licenses issued and the survey evidence that there were approximately 2,344 visiting game anglers and 2,119 visiting coarse anglers to NI during 2005.

Table 4.7: Tourism Recreational Angling in Northern Ireland - Estimated Number of Visiting/Tourist Sea/Shore Anglers to Northern Ireland - 2005

Angling Type	% of Anglers by Primary Interest in Angling (PwC/Indecon Survey	Estimated No. of Visiting Game and Coarse Anglers – 2005	Estimated Total Visiting Sea/Shore Anglers - 2005
Game	52%	2,344	
Coarse	47%	2,119	
Total Game and Coarse Only	99%	4,463	
Sea/Shore	***10%***		***450****

Source: PwC/Indecon Confidential Survey of Visiting Anglers to Northern Ireland and analysis of FCB and Loughs Agency angling licence data
* 450 = (4,463 / 99 * 109)-3,963

4.13 We also considered the data available from the Northern Ireland Tourist Board (NITB) in relation to the estimated breakdown of visitors to Northern Ireland according to those which came primarily for the purpose of engaging in angling. Our analysis of NITB figures indicated that, on average over the period 2002-2004, 25.5% of visitors to Northern Ireland who came with the primary objective of engaging in angling activities stated that their preferred activity was sea/shore angling. However, the NITB have attached a caution to the interpretation of these figures, which are based on small sample sizes, particularly when disaggregated by type of angling.

Characteristics of visiting/tourist anglers

4.14 Our analysis of the characteristics of visiting/tourist anglers is based on a combination of official data and the findings from our survey of visiting anglers, and focuses on the following key aspects:

- Last season/year in which visiting anglers engaged in recreational angling in Northern Ireland;
- Views of anglers on Northern Ireland as a destination for recreational angling;
- Whether angling was the primary purpose of visit to NI;
- Number of trips to NI by visiting anglers during last 5 years;
- Origin of visiting anglers to Northern Ireland;
- The extent to which tourists visit other countries to engage in recreational angling;
- Number of days spent during visit on angling and non-angling activities;
- Duration of Stay of Angling Visitors to Northern Ireland during Last 5 Years;
- Number of party members accompanying recreational angling visitors to NI;
- Visiting anglers' primary interest in angling (i.e. game, coarse or sea/shore angling);
- The main angling methods employed;
- Main time/month of year in which visiting anglers engaged in angling by type of angling;
- Accommodation used by angling visitors to NI;
- Breakdown of total expenditures on recreational angling by visitors to NI during last season/year by category of expenditure; and
- Breakdown of average expenditures per visit/trip to NI and per day spent angling.

4.15 We describe each of the above characteristics based on the findings from the PwC/Indecon Survey of Visiting Anglers below.

Last season/year in which visiting anglers engaged in recreational angling in Northern Ireland

4.16 Table 4.8 below presents the findings from the PwC/Indecon research in relation to the last season in which visitors stated they engaged in recreational angling in Northern Ireland. According to the survey evidence the majority of respondents last visited Northern Ireland during the 2005 and 2006 seasons.

Table 4.8: Characteristics of Visiting/Tourism Anglers - Last Season in Which Visitors Engaged in Angling in Northern Ireland

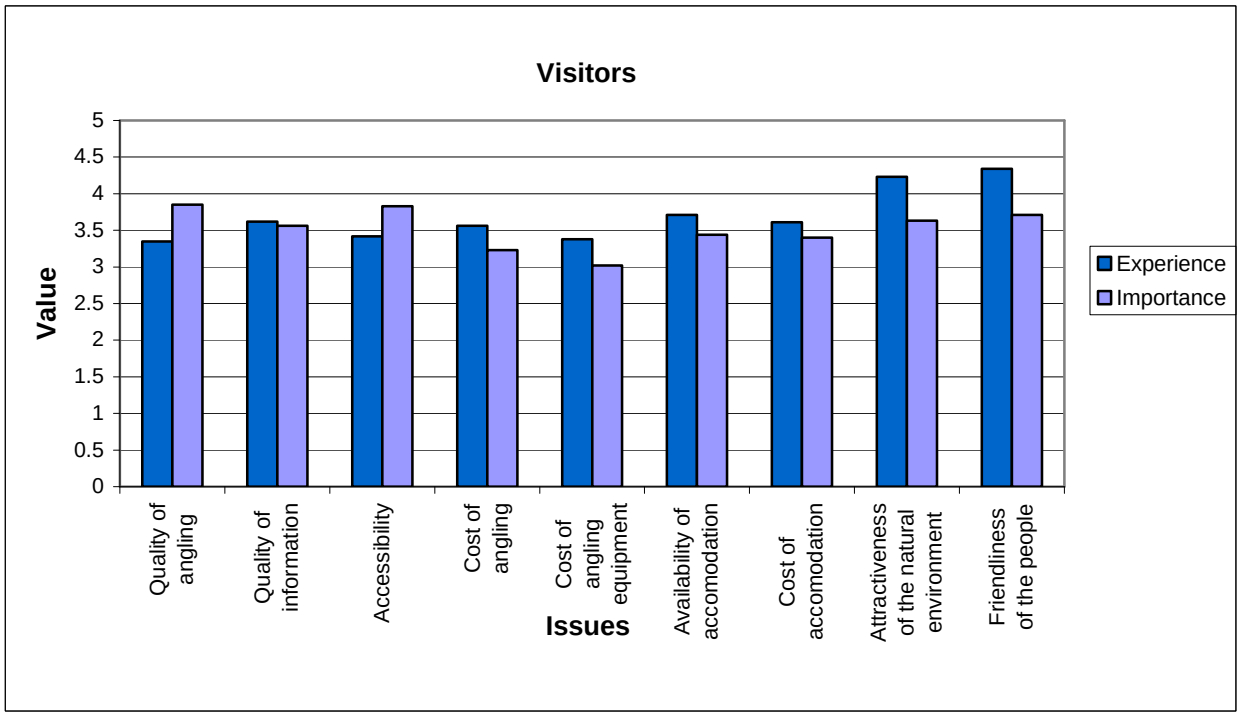
Year	No. of Respondents	% of Respondents
2003	1	0.5%
2004	1	0.5%
2005	69	36.9%
2006	114	61%
Not specified	2	1.1%

Source: Indecon analysis of PricewaterhouseCoopers/Indecon Confidential Survey of Visiting Anglers to NI

Views of anglers on Northern Ireland as a destination for recreational angling

4.17 The survey also examined the extent to which visiting anglers were satisfied with their tourist and angling experience in Northern Ireland. As a means of analysing the views of visiting anglers, the survey first assessed the factors that are important to fishing experience and then examined the extent to which visiting anglers were satisfied with these factors. Therefore, by comparing the level of importance against the degree of satisfaction, it is possible to identify areas in which the angling product and experience needs to improve, as shown in Figure 4.2.

Figure 4.2: Level of Importance versus Actual Experience of Factors - Visiting Anglers



Source: PricewaterhouseCoopers/Indecon Confidential Survey of Visiting Anglers to NI

4.18 The figure shows that the key factors that are rated of most importance to the fishing experience of visiting anglers are the quality of angling, quality of information on fisheries, accessibility / access to angling waters, the attractiveness of the natural environment and the friendliness of the people. Other factors such as cost (cost of angling and the cost of angling equipment) and the availability of accommodation are rated as being less important.

4.19 When comparing experience against the various levels of importance, a number of interesting findings emerge. First of all, it can be seen that, in general, visiting tourists in Northern Ireland have a relatively high level of satisfaction compared to importance with regard to a number of factors that contribute to their angling experience. This is particularly true in regard to cost factors (cost of angling, cost of angling equipment and cost of accommodation) and the availability of accommodation. For each of these factors, the experience of anglers related very closely to the level of importance they attached. It is notable, however, that the experience of visiting anglers in relation to the attractiveness of the environment and the friendliness of the people exceeded the level of importance attached by anglers to these factors.

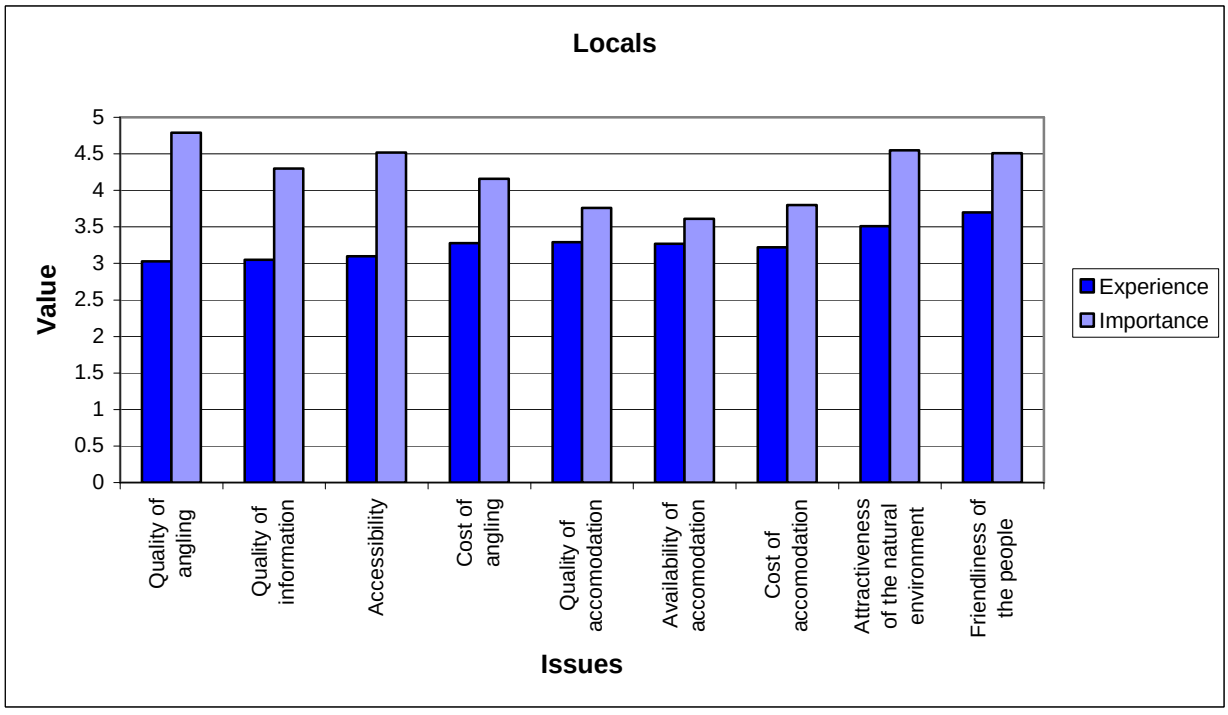
4.20 However, there are a number of factors in which gaps between importance and satisfaction can be identified. These include:

- **Quality of angling**: gap of 0.5 (3.85 score of importance and 3.35 score in satisfaction);
- **Accessibility of angling waters**: gap of 0.4 (3.83 score of importance and 3.42 score in satisfaction).

4.21 In essence, the survey shows that in terms of the recreational angling experience in Northern Ireland, these two areas do not meet the full expectations of the visiting angler, although the gaps in the differences are very small.

4.22 When comparing the degree of gaps between importance and satisfaction for domestic anglers, a number of interesting findings can be outlined, as shown in the following figure. Overall, the survey analysis shows that, in general, local anglers are noticeably less satisfied with the angling experience in Northern Ireland than visiting anglers. Indeed, local anglers appear from the survey evidence to exhibit a significant gap between the importance attached to different factors and their actual experience across all these factors (see Figure 4.3).

Figure 4.3: Level of Importance versus Actual Experience of Factors - Domestic Anglers



Source: PwC/Indecon Confidential Survey of Local Anglers in NI

4.23 In relation to domestic anglers, significant gaps (of 0.9+) can be identified for a number of factors including:

- **Quality of angling**: gap of 1.8 points between level of importance attached and stated actual experience of anglers;
- **Accessibility of angling waters**: gap of 1.4 points between level of importance attached and stated actual experience of anglers;

- **Quality of information**: gap of 1.3 points between level of importance attached and stated actual experience of anglers; and

- **Attractiveness of the environment**: gap of 1.0 point between level of importance attached and stated actual experience of anglers.

Primary purpose of trip to NI

4.24 Table 4.9 presents the survey evidence in relation to the primary purpose of visitors' trips to Northern Ireland, in terms visitors' engagement in angling and non-angling activities. Among the respondents, the survey figures indicate that 81.8% of visitors were primarily engaged in angling activities during their stay in Northern Ireland.

Table 4.9: Characteristics of Visiting/Tourism Anglers – Primary Purpose of Visit to Northern Ireland

	No. of Respondents	% of Respondents
Angling	153	81.8%
Non-Angling	34	18.2%

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Number of trips to NI by visiting anglers

4.25 A statistical analysis of the annual number of trips made by visiting anglers to Northern Ireland during the period 2001-2005 is presented in Table 4.10 below. The survey findings indicate mean number of trips made by responding visiting anglers of 1.4 during the 2005 season, while the median number of trips made was 1. While significant variation in the frequency of trips made to Northern Ireland was reported among respondent anglers to the survey, we believe that the mean indicated represents a robust estimate of trip frequency among visiting anglers and is consistent with the interpretation of license data pertaining to visiting anglers.

Table 4.10: Characteristics of Visiting/Tourism Anglers – Number of Trips to Northern Ireland during the last 5 years

Year	Mean	Median	Standard Deviation
2001	1.44	1	0.5
2002	1.38	1	0.49
2003	1.36	1	0.48
2004	1.45	1	0.50
2005	1.39	1	0.49

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Origin of visiting anglers

4.26 A breakdown of the origin of visiting anglers to Northern Ireland is presented in Table 4.11 overleaf. According to the findings from the survey of visiting anglers, the majority of respondents were from Great Britain. However, the figures also indicate that a very proportion of visiting anglers (35.3%) come from across the border in Ireland. Only 4.3% of respondents were from outside GB or Ireland.

Table 4.11: Characteristics of Visiting/Tourism Anglers – Origin of Visiting Anglers

	No. of Respondents	% of Respondents
Ireland	66	35.3
GB (incl. Isle of Man)	113	60.4
Other International	8	4.3

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

The extent to which tourists visit other countries to engage in recreational angling

4.27 The survey evidence also shows that a significant proportion of visiting anglers to Northern Ireland also travel to other countries and regions to participate in recreational angling, although this varies by type of angling (see Table 4.12). In particular, the survey findings suggest that game and coarse anglers have a greater tendency than sea/shore anglers to visit other countries in addition to NI to engage in angling. An important implication from the analysis shown is that a high proportion of anglers visiting NI also visit other countries to engage in angling and this highlights the importance of ensuring that NI remains competitive if the region is to continue to attract significant numbers of visiting anglers.

Table 4.12: % Breakdown of Length of Stay in Other Countries and Regions of Visiting Anglers to Northern Ireland by Type of Angling

	Game Angling - %	Coarse Angling - %	Sea Angling - %	Shore Angling - %
None	37	57	85	89
Less than 7 days	10	7	4	6
7 - 14 days	13	14	3	1
15 - 21 days	10	4	2	2
22 - 28 days	6	1	0	0
29 - 56 days	12	7	3	1
57 - 84 days	4	2	2	1
85 - 112 days	2	3	0	0
112 days+	6	5	1	1
Not answered	0	0	0	0
Total	**100**	**100**	**100**	**100**

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

4.28 The table overleaf also outlines the main areas / regions which anglers visit. It is clear that Britain and the Irish Republic are the most popular destinations. A significant proportion of visiting anglers have also visited other countries in Europe and North America.

Table 4.13: % of Visiting Anglers to Northern Ireland Who Have Also Visited Other Countries to Engage in Angling

Country Visited	Visitor anglers in Northern Ireland
England	17
Republic of Ireland	61
Scotland	30
Wales	12
Other UK	2
Europe	52
North America	12
South America	2
Asia	<1
Other	11
None mentioned	0

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Number of days spent during visit on angling and non-angling activities

4.29 An analysis of the number of days spent in Northern Ireland by angling visitors according to the time spent on angling and non-angling activities is contained in Table 4.14. On average, visitors to Northern Ireland during 2005 spent a total of 5.7 days engaged in angling and 2.2 days on other activities. There is, however, is a noticeable variation around these averages.

Table 4.14: Characteristics of Visiting/Tourism Anglers – Days Spent in Northern Ireland by Activity during the last 5 years

Year	Mean		Median		Standard Deviation	
	Angling	Non-Angling	Angling	Non-Angling	Angling	Non-Angling
2001	4.95	2.04	7	1	3.9	4.5
2002	5.24	2.21	7	1	3.8	3.0
2003	4.81	2.32	7	1	3.6	3.1
2004	5.25	2.13	7	1	3.7	2.9
2005	5.67	2.15	7	1	4.0	3.1

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Duration of stay of angling visitors to Northern Ireland

4.30 Relating the number of days to the number of trips permits an analysis of the typical duration of stay of angling visitors to Northern Ireland. Our calculations, presented in Table 4.15, indicate that visitors came to Northern Ireland during 2005 for just under 5 days on average, while the median number of days per trip was 8.

Table 4.15: Characteristics of Visiting/Tourism Anglers – Duration of Stay of Angling Visitors to Northern Ireland during Last 5 Years

Year	Mean Days per Trip	Median Days per Trip
2001	4.5	8
2002	4.5	8
2003	4.5	8
2004	4.9	8
2005	4.9	8

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Number of party members accompanying recreational angling visitors to NI

4.31 Angling visitors to Northern Ireland may also be accompanied by other persons, including other anglers, family members, and friends/relatives, or may visit alone. The analysis of the PwC/Indecon survey findings, presented in Table 4.16, indicate that visiting anglers rarely visit NI alone and most anglers are typically accompanied by up to 4 other anglers on average, 0.7 family members, 0.7 friends/relatives and 5.5 other persons. However, there is significant variance in relation to the typical size of angling visitor groups, as evidenced by the range of responses indicated.

Table 4:16: Characteristics of Visiting/Tourism Anglers – Number of Party Members (Including Respondent)

Relationship	Mean	Median	Standard Deviation	Min	Max
Family Members	0.7	0	1.3	0	9
Other Anglers	3.9	2	10.4	0	93
Friends/Relatives	0.7	0	1.5	0	10
Visiting Alone	0.1	0	0.3	0	1
Other	5.5	5.5	6.4	1	10

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Month of visit to NI of tourist anglers

4.32 In terms of the seasonal nature of angling tourism, the analysis presented in Table 4.17 indicates the proportion of respondents to the PwC/Indecon Survey of Visiting Anglers according to the main months in which visitors engaged in angling. The figures indicate that the main months when visitors arrive in Northern Ireland to engage in recreational angling are between April and October.

Table 4:17: Characteristics of Visiting/Tourism Anglers – Primary Months Angling in Northern Ireland

Month	No. of Respondents	% of Respondents
January	2	1.1%
February	3	1.6%
March	7	3.7%
April	23	12.3%
May	81	43.3%
June	52	27.8%
July	41	21.9%
August	33	17.6%
September	64	34.2%
October	22	11.8%
November	3	1.6%
December	1	0.5%

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Accommodation used by angling visitors to NI

4.33 What are the typical forms of accommodation used by visiting/tourist anglers to Northern Ireland? The findings from the PwC/Indecon survey of visiting anglers, shown in Table 4.18 below, indicate that the largest proportions of visitors typically stay in hotel or bed and breakfast/guesthouse accommodation. The next most popular form of accommodation is self-catering/chalet accommodation (22.4% of visitors).

Table 4.18: Characteristics of Visiting/Tourism Anglers – % Breakdown of Number of Nights Spent During Last Season/Year by *Visiting Anglers* to Northern Ireland by Type of Accommodation Used

Statistics/ Accommodation Type	Hotel	Fishing Lodge	B+B/ Guesthouse/ Farmhouse	Camping/ Caravan	Self-Catering/ Chalet	Other, incl. Family/ Friends
% of Total	*25.6%*	*7.7%*	*23.7%*	*3.2%*	*22.4%*	*12.2%*

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI

Expenditure patterns among angling visitors to NI

4.34 Of particular importance in relation to the overall economic impacts of tourist angling concerns the overall level and pattern of expenditure among visiting anglers to Northern Ireland. As part of our survey of visiting anglers, we asked respondents to indicate their overall annual expenditures during the last season in which they visited Northern Ireland and their expenditures on a range of angling-related and other items. A statistical analysis of expenditure patterns among visiting anglers is presented in Table 4.19.

Table 4:19: Expenditure Patterns - Characteristics of *Visiting Anglers* to Northern Ireland - Breakdown of Total Expenditure on Recreational Angling in Northern Ireland by Category of Expenditure During 2005 Season - £

Expenditure Category/Statistics	*% of Reported Expenditure*	Mean	Standard Deviation
Accommodation*	*27.8*	196.6	171
Food and Beverages	*26.6*	188.1	97
Fishing Tackle/Equipment	*15.2*	107.5	101
Boat Hire/Rental	*3.2*	22.6	77
Ghillie Hire/Rental	*0.9*	6.4	14
Licenses	*3.9*	27.6	19
Permits	*4.6*	32.5	18
Other Items (Angling)	*7.4*	52.3	66
Other Items (Non-Angling)	*10.3*	72.8	62
Other Costs	*0.1*	0.7	8
Total Expenditure During 2005 Season	***100***	**707**	**375**

Source: PwC/Indecon Confidential Survey of Visiting Anglers to NI
*On trips involving at least 1 overnight stay

4.35 According to the survey evidence, visiting anglers to Northern Ireland (including game, coarse and sea/shore anglers) typically spent an average of £707 during the 2005 season. In terms of expenditure categories, the highest proportions of annual expenditures incurred by respondent visiting anglers related to accommodation (27.8%), food and beverages (26.6%), fishing tackle and equipment (15.2%), followed by other non-angling items (10.3%) and other angling items (7.4%). It is important to note that there is very significant variation in expenditure patterns within the sample of respondent anglers, reflecting the origin of anglers and, in particular, the impact of cross-border anglers from Ireland, and the type of anglers (game, coarse or sea).[45]

4.36 To fully understand the nature of expenditure patterns among visiting anglers, however, it is necessary to relate overall annual expenditures to the number of average trips made by anglers during a given year and to the typical duration of such trips. In Table 4.20 we indicate the breakdown of average expenditures per trip and average expenditures per trip per day/night spent in Northern Ireland during the 2005 season. Taking into account the average annual expenditures of visiting anglers (totaling £707 during 2005), the average number of trips made by visiting anglers (1.39) and the average duration of such trips (4.9), we estimate that the average overall spend per trip per visiting angler during 2005 came to just over £508.6, while the average spend per trip per day/night is estimated at £103.8.

[45] Where implausible returns were received from responding anglers in relation to expenditure levels, these 'outliers' have been removed for the purposes of calculating the expenditure estimates indicated.

Table 4.20: Characteristics of Visiting Anglers to Northern Ireland - Breakdown of Average Expenditure per Trip and Per Day/Night during 2005 Season - £

Expenditure Category/Statistics	Mean Annual Spend per Angler - £	Mean Spend per Trip per Angler - £*	Mean Spend per Trip per Day/Night per Angler - £**
Accommodation*	196.6	141.4	28.9
Food and Beverages	188.1	135.3	27.6
Fishing Tackle/Equipment	107.5	77.3	15.8
Boat Hire/Rental	22.6	16.3	3.3
Ghillie Hire/Rental	6.4	4.6	0.9
Licences	27.6	19.8	4.0
Permits	32.5	23.4	4.8
Other Items (Angling)	52.3	37.6	7.7
Other Items (Non-Angling)	72.8	52.4	10.7
Other Costs	0.7	0.5	0.1
Total Expenditure During Last Season/Year	**707.0**	**508.6**	**103.8**

Source: PwC /Indecon Confidential Survey of Visiting Anglers to NI
* Mean spend per trip per angler = mean annual spend per angler / mean number of trips per angler per annum (=1.39 – ref. Table 4.10)
** Mean spend per angler per night = mean spend per trip per angler / average trip duration (nights) (= 4.9 – ref. Table 4.14)

4.37 As indicated above, the mean annual expenditure figures reported by anglers in the survey of visiting anglers included expenditures among cross-border anglers from Ireland, anglers from Great Britain and anglers from other countries. In addition, typical expenditures differ between game, coarse and sea anglers. As indicated in Table 4.11, there is a high incidence of cross-border angling involving visitors to NI from Ireland. These anglers typically exhibit low average expenditures, reflecting their lower requirements for accommodation in particular. To the extent that the cross-border element figures highly in tourism angling in NI, this may result in lower average expenditures than in other regions in the UK. Previous research has, for example, indicated higher average daily expenditures in Scotland.[46] However, we believe that this reflects the high incidence of game (and particularly Salmon) angling in Scotland, which typically exhibits high average daily expenditures compared with coarse or sea angling, and the lower impact of cross-border angling in that region.

4.38 As noted previously, our analysis of the number of visiting anglers pertains to all visitors who have visited Northern Ireland and engaged in angling during their stay. It does not indicate the number of visitors who came to Northern Ireland specifically for the purpose of engaging in angling. In deriving the expenditure and economic contributions of these anglers, our estimates therefore take account of expenditure on angling as well as non-angling activities.

[46] See, for example, The Economic Impact of Game and Coarse Angling in Scotland, Scottish Executive, 2004. (http://www.scotland.gov.uk/Publications/2004/03/19079/34376).

Estimates of expenditure/economic contribution of visitor/tourist angling

4.39 We consider three aspects of the overall impact of visitor/tourism angling on the Northern Ireland economy, namely:

- The *gross* expenditure contribution of visitor/tourist angling;
- The net *direct* economic impact of visitor/tourist angling;
- The overall economic impact, including indirect/multiplier effects.

Gross expenditure contribution of visitor/tourist angling

4.40 The gross expenditure contribution of an activity such as recreational angling represents the overall expenditures on goods and services sold in the local economy, in this case Northern Ireland, resulting directly from the presence of this activity. It should be noted that this constitutes a gross impact and does not take into account the extent to which these expenditures result in imported goods and services, and the extent of opportunity costs and displacement impacts associated with angling activities. We discuss these issues later in this section.

4.41 Our estimates of the gross expenditure contribution of visitor/tourist angling to the Northern Ireland economy are based on the equation specified in Figure 4.4.

Figure 4.4: Components of Gross Expenditure Contribution and Net Economic Impact of Visitor/Tourism Angling

Number of visitor/tourist anglers
*
Average number of trips per year
*
Average number of days/nights per trip
*
Average expenditure per angler per day/nigh

=

Total Gross Expenditure Contribution of Visitor/Tourism Angling
*
Multiplier Factor
*
Opportunity Cost of Resources/Displacement Impact Factor
=

Net Economic Impact of Visitor/Tourism Angling

4.42 Our analysis of the estimated gross expenditure contribution of visitor/tourism angling to the Northern Ireland economy is presented in Table 4.21. We estimate a gross expenditure contribution arising from visitor/tourist anglers to Northern Ireland totaling approximately £3.5 million during 2005. The estimate is based on an overall total for the number of angling visitors of 4,913 during 2005, an average number of trips per year of 1.39, a trip duration averaging 4.9 nights and an average expenditure per angler per night of £103.8.

Table 4.21: Estimated Gross Expenditure Contribution of Visitor/Tourism Recreational Angling to Northern Ireland Economy – 2005

Details	2005
No. of Game/Coarse anglers	4,463
No. of Sea/shore anglers	450
Estimated Total Visiting Anglers to NI	**4,913**
Average no. of trips per year (**Table 4.10**)	1.39
Average no. of days per trip (**Table 4.15**)	4.9
Average expenditure per angler per night (**Table 4.20**)	£103.8
Estimated total gross expenditure contribution	**£3,473,402**

Source: Indecon calculations

Net economic impact of visitor/tourist angling

4.43 An important issue relates to the distinction between net overall economic impacts versus gross benefits relating to a particular economic activity. The above estimated impacts from visitor angling in Northern Ireland relate to the direct gross impacts of the expenditures undertaken by visiting anglers. To arrive at an estimate of the *net* overall economic contribution of this activity to the Northern Ireland economy, it is necessary to adjust the gross expenditure impact to reflect the following factors:

- The indirect and multiplier impacts of these expenditures
- The opportunity cost of the labour and other resources utilised in supplying products and services purchased by overseas visiting anglers, i.e. the displacement impact of the activities undertaken by visiting anglers.

Multiplier impacts

4.44 In assessing the overall economic impacts of visiting/tourism angling account must be taken of the fact that associated expenditures give rise to indirect and induced impacts on the economy, resulting from the demand for goods and services from sub-supply sectors and the additional incomes and further expenditures that are generated through this process throughout the economy. These effects can be estimated using a so-called multiplier. For the purposes of estimating the economy-wide economic impacts of expenditures undertaken by visiting anglers to NI, we apply a multiplier of 1.29. This reflects research undertaken on the tourism sector of the NI economy.[47]

[47] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

Displacement impacts

4.45 In addition to the multiplier impact, it is necessary in an economic impact assessment to take account what level of overall economic activity would be likely to prevail in the absence of the activity of the sector under review, i.e. local angling. In particular, there is an opportunity cost associated with the resources utilised in servicing the additional demand for goods and services in the Northern Ireland economy generated through local angling activity, which may be re-deployed elsewhere in the economy.

4.46 The displacement factor used in this report is 59.5%. This figure was based on the findings from the survey of local and visiting anglers and on existing research as follows. In regard to the survey of domestic anglers, the findings show that 37% are not members of a local club which indicates that this proportion is very likely to spend their money on other activities. As the estimated total number of local anglers is 29,951 (see Section 3), this relates to 11,082 anglers. Moreover, the survey of tourist anglers shows that 82% of anglers surveyed indicated that angling in NI was the primary purpose of their visit. This would suggest that 18% would be likely to visit Northern Ireland anyway in the absence of angling opportunities. Based on our estimate of the total number of tourist anglers (4,913 anglers), this would indicate that some 884 anglers would be likely to visit Northern Ireland in any case. Bringing the local and visiting anglers together, therefore, we estimate a weighted average of 34% of total anglers who would have spent their money on other activities in any case in the absence of angling opportunities.

4.47 Reflecting on previous research, a study on the economic impact of angling in Ireland applied an opportunity cost factor of 85% in the estimation of net economic impacts[48]. For the purposes of the current assessment of angling in Northern Ireland we apply a mid-range estimated opportunity cost factor of 59.5% (= average of 85% and 35%). This factor reflects both the specific conditions evident within the angling sector in addition to the macro-economic conditions in the Northern Ireland economy.

Net economic impacts

4.48 Applying a multiplier of 1.29 and an opportunity cost/displacement factor of 59.5% yields an estimate for the net economic impact of visitor angling on the Northern Ireland economy amounting to £1.8 million during 2005. This is equivalent to an average net economic impact of £369.4 per visiting angler for the 2005 year (see Table 4.22).

Table 4.22: Estimated Overall *Net* Economic Impact of Visitor/Tourist Recreational Angling on Northern Ireland Economy – 2005

Breakdown of Overall Impact	2005
Estimated *Gross* Expenditure Contribution	£3,473,402
Indirect/Multiplier Impact (@1.29 times)	£1,007,286
Total *Net* Direct Economic Impact (incl. multiplier impacts)	**£4,480,688**
Adjustment to reflect opportunity cost of resources @ 59.5%	(£2,666,009)
Estimated Overall Net Economic Impact	**£1,814,679**

[48] Indecon (2003) An Economic / Socio-Economic Evaluation of Wild Salmon in Ireland, Central Fisheries Board.

Table 4.22: Estimated Overall *Net* Economic Impact of Visitor/Tourist Recreational Angling on Northern Ireland Economy – 2005

Breakdown of Overall Impact	2005
Net Impact per Visiting Angler	*£369.4*

4.49 It should be noted that the above figures do not include expenditures by non-angling accompanying persons, and will therefore, to this extent, underestimate the full value. However, we do not have evidence on whether accompanying persons would have visited Northern Ireland if they did not visit with anglers. However, it is also important to bear in mind that accompanying persons who are also anglers are included in the above estimates.

Employment Impacts

4.50 As in the case of local angling, the expenditures incurred by visiting anglers and the wider net economic impacts associated with these expenditures also support employment and job creation in the Northern Ireland economy. We estimate the extent of employment supported through tourism recreational angling by reference to Cogentsi (2007), which examined the contribution of tourism to the Northern Ireland economy.[49] An indicative first order measure of employment impacts arising within the tourism angling sector is indicated in the table below. We estimate that a total of approximately 63 FTEs are supported through the direct and multiplier impacts of the expenditures undertaken by game, coarse and sea anglers visiting Northern Ireland.

Table 4.23: Estimated Employment Impacts Arising from Economic Impacts of Tourism Recreational Angling on Northern Ireland Economy – 2005

Employment Impacts	2005
Total *Net* Direct Economic Impact (incl. multiplier impacts) - £	£4,480,688
Estimated No. of FTEs supported per £1 Million of tourism expenditure	14.1
Implied estimated No. of FTEs supported through Tourism Recreational Angling	**63**

Regional impacts

4.51 In relation to the regional impact of recreational angling, according to Fáilte Ireland:

> "because tourism is characterised by the fact that consumption takes place where the service is available and tourism activity is particularly concentrated in areas which lack an intensive industry base, it is credited with having a significant regional distributive effect."

4.52 We believe that this is particularly the case in relation to recreational angling since angling activities typically take place outside the major urban areas and are typically

[49] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

focussed on less developed regions. We believe that this would apply particularly in the case of Northern Ireland.

Conclusions

4.53 In this section we evaluated the current economic impact of recreational angling in Northern Ireland provided by tourist anglers. The following paragraphs summarise our findings and key conclusions.

4.54 Our assessment of the economic impacts of recreational angling undertaken by visiting/tourist anglers commenced by describing the extent to which visitors to Northern Ireland participate in recreational angling, referring to information provided on the number of angling licences issued and our estimates on participation of visiting anglers in sea/shore angling. We then described the characteristics of visiting anglers before developing our estimates of the gross expenditure contribution and the net economic impacts of tourism angling on the Northern Ireland economy.

4.55 In relation to the extent to which visitors to Northern Ireland participate in recreational angling, the main findings from our analysis were as follows:

- Participation in game or coarse angling in Northern Ireland requires the purchase of a licence from either the FCB or the Loughs Agency;
- We estimate on the basis of the numbers of game/coarse angling licences issued by the FCB and the LA that some 4,500 game/coarse anglers visited Northern Ireland during the 2005 season. This represented a small decrease compared with 2004 and a 4.2% increase overall over the period 2003-2005;
- We estimate the number of visitors engaging in sea/shore angling at 450 anglers during 2005.

4.56 In relation to the characteristics of visiting anglers, the following key aspects are relevant, based primarily on the findings from the PwC/Indecon Survey of Visiting Anglers to Northern Ireland:

- According to the findings from the PwC/Indecon survey, the vast majority (97.9%) of visiting anglers last visited Northern Ireland during the 2005 and 2006 seasons;
- The survey figures indicate that 81.8% of visitors were primarily engaged in angling activities during their stay in Northern Ireland;
- According to the survey evidence, the number of trips made by visiting anglers to NI averaged 1.4 during 2005. On average, visitors spent a total of 4.9 days per trip to NI;
- On average, angling visitors were accompanied by 3.9 other anglers, 0.7 family members, 0.7 friends/relatives and 5.5 other persons. A very small proportion visited Northern Ireland alone;
- The main months when visitors arrive in Northern Ireland to engage in recreational angling are between April and October;
- An important implication from the analysis of research among visiting anglers shown is that a high proportion of anglers also visit other countries to engage in angling and this highlights the importance of ensuring that NI remains competitive if the region is to continue to attract significant numbers of visiting anglers;

- In terms of accommodation used by visiting anglers, according to the evidence from the PwC/Indecon survey, the largest proportions of visitors typically stay in hotel or bed and breakfast/guesthouse accommodation. The next most popular form of accommodation is self-catering/chalet accommodation (22.4% of visitors);

- According to the survey evidence, visiting anglers to Northern Ireland typically spent a total of £707 during the 2005 season. In terms of expenditure categories, the highest proportions of annual expenditures incurred by respondent visiting anglers related to accommodation (27.8%), food and beverages (26.6%), fishing tackle and equipment (15.2%), followed by other non-angling items (10.3%) and other angling items (7.4%);

- Taking into account the average number of trips made by visiting anglers and the average duration of such trips, we estimate that the average overall spend per trip per visiting angler during 2005 came to just over £508.6, while the average spend per trip per day/night was £103.8.

4.57 The key findings/conclusions from our analysis in relation to the estimated expenditure contribution and overall economic impacts of visiting/tourist angling in Northern Ireland were as follows:

- We estimate a gross expenditure contribution arising from visitor/tourist anglers to Northern Ireland totaling approximately £3.5 million during 2005.

- An important issue relates to the distinction between net and gross benefits, as the amounts here relate to gross benefits. These gross benefits need to be adjusted when one is considering the economy-wide contribution to GDP in Northern Ireland. In particular, the following issues need factored into the analysis:
  - The indirect and multiplier impacts of these expenditures
  - The opportunity cost of the labour and other resources utilised in supplying products and services purchased by overseas visiting anglers, i.e. the displacement impact of the activities undertaken by visiting anglers.

- Applying a multiplier of 1.29 and an opportunity cost/displacement factor of 59.5% yields an estimate for the net economic impact of visitor angling on the Northern Ireland economy of £1.8 million during 2005. This is equivalent to an average net economic impact of £369.4 per visiting angler for the 2005 year.

- We estimate that a total of approximately 63 FTEs are supported through the direct and multiplier impacts of the expenditures undertaken by game, coarse and sea anglers visiting Northern Ireland.

V Current social and environmental impacts

Introduction

5.1 Reflecting on the other benefits of angling, this section examines the social and environmental impact of recreational angling in Northern Ireland. This section draws on evidence from the survey, other published research and interviews with key stakeholders. The section examines the impact in Northern Ireland in regard to the following issues:

- **Environmental benefits;**
- **Educational benefits;**
- **Crime reduction benefits;**
- **Social cohesion benefits;**
- **Health benefits.**

Environmental benefits

5.2 Given the dependence of angling on a good quality environment, anglers in Northern Ireland have contributed towards protection of the environment by highlighting areas of pollution. Anglers regularly monitor the waterways and within the FCB area in 2004, for instance, 194 of the complaints of alleged pollution that were brought to the FCB board were substantiated[50]. Indeed, in Northern Ireland, the environmental benefit is considered to be one of the most important factors that contributes to the angling experience. This is supported by the survey research which found that while most anglers (52.7%) felt that catching a fish contributed most to their fishing experience, a significant proportion also considered that being in an attractive natural environment and appreciating nature (18.2%) was the most important aspect of the angling experience.

5.3 In addition, revenue from angling permits generates significant funding for the FCB and Loughs Agency to help protect the aquatic environment. In 2004, for example, £208,093 was provided to the FCB through the sale of fishing licences. Fish are also important indicators of the health of the freshwater environment in Northern Ireland.

5.4 Furthermore, private fisheries and angling clubs have proactively developed the aquatic environment. Bann Systems and Moyola Angling Association, for instance, has invested in nursery areas in small tributary rivers that will allow fish, such as Salmon, Brown Trout and Dollaghan, to spawn and raise their young. These habitat improvements have helped to ensure the healthy maintenance of fish populations in certain rivers and have also provided an area to allow other wildlife to prosper.

5.5 On the other hand, there are concerns that angling can have a detrimental impact on the environment. These are mainly centred on overfishing, given the declines and current low stocks of a number of species such as Salmon[51]. In response, conservation measures such as bag limits and catch and release practices have been more widely adopted by anglers but close monitoring of fishing stocks is still required to ensure the long term impact of angling on the fishing stocks in Northern Ireland.

[50] Fisheries Conservancy Board for Northern Ireland (2004) *Annual Report and Financial Statements for the Year Ended 31st December 2004*.
[51] Northern Ireland Assembly (2001) *Inquiry into Inland Fisheries in Northern Ireland, Committee for Culture, Arts and Leisure, Volume 1*

Educational benefits

5.6 Being an outdoor recreation, angling can provide educational opportunities by allowing participants to learn about wildlife, ecology and the natural environment. The Loughs Agency, for example, has designed certified educational courses for its angling programmes that include:

- Designing a fly;
- Spinning for pike;
- Designing and making a piece of angling equipment; and,
- Promoting health and safety at the river.

5.7 While the accreditation of fishing courses as a national schools qualification in the formal education sector has yet to be finalised, these courses are certificated and are largely focused on individuals between 11-16 that experience learning difficulties. The courses are implemented in partnership with local schools and are based on using angling as a tool or mechanism for developing numeracy skills and facilitating learning on science and the environment.

5.8 The Loughs Agency has also actively encouraged participation in the sport of angling through a range of events aimed at the education and community sector. These events include: taster sessions; 1 day angling experiences; and, fishing trips and courses in fly tying and casting for both young people and adults. The Agency, for example, organised the first registered event (2005) in Northern Ireland as part of the UK wide campaign 'National Fishing Week' through the Youth Fishing Festivals. Through this campaign, the Agency has encouraged nearly 300 young people to take part with many picking up a rod for the first time. During the 2 day festival, participants are educated about the environment, river life, safety, casting and fly tying as well having a fishing experience. Around 70% of participants have continued with the sport after the festival and purchased juvenile licences and permits. Many young people have also encouraged their friends and family to take part in the sport.

5.9 In the delivery of angling awareness sessions, the Agency utilises the skills, experience and training of the National Angling Guides Association and the Professional Angling Guides and Instructors Network (PAGIN) to ensure a professional and safe experience. In the 2005/6 term, the Loughs Agency, through PAGIN, worked with approximately 28 pupils in the Western Education and Library Board area. 14 of these pupils completed a fly tying course in June 2006. In addition, the Agency hosts an annual angling fair at their headquarters which is attended by around 4,000 to 5,000 people over a weekend.

5.10 The Loughs Agency has developed and undertaken many other educational programmes for schools and community groups which promote learning about wildlife and the environment. Stemming from the Agency's interpretative centre 'Riverwatch', which has welcomed nearly 30,000 visitors since opening in 2003, outreach programmes have been created such as 'Salmon in the Classroom', 'Vital Signs' and 'Adopt a Stream'. These programmes are focused on educating children in fishery welfare and environmental aspects of waterways within their communities and combine published material, fieldwork and interactive work with teaching in the classroom. Although these programmes have been recently introduced, making it difficult to fully evaluate their impact, it is evident that angling has made a contribution to the education development of children. Comments received through evaluation of the 'Salmon in the Classroom' programme in 2006 are outlined in the following text box:

Comments from Salmon in the Classroom Programme, 2006

'Both teachers and children found it enjoyable and extremely interesting'(Mr Blee, Loughash Primary School);

'This was a highly motivating project. The children were involved in a very responsible role looking after the eggs and ensuring that the stream habitat was suitable for the survival of their fish. The children took these responsibilities very seriously. An exceedingly thought provoking experience for all.' (Ms Sweeney, Loughmacrory Primary School).

5.11 Overall, therefore, the work of the Loughs Agency shows that angling can support the national curriculum with a particular relevance to environmental education and rural studies and can establish potential savings in the areas of educational development.[52]

5.12 Further to this, local development partnerships in Northern Ireland have received funding through the Department of Agriculture and Rural Development in Northern Ireland to encourage schools to participate in angling and river conservation. Lower Bann Partnership, for example, has received funding to develop a project in which local schools adopt a section of a tributary river. Under the scheme, school children are encouraged to participate in angling and the river is used as a basis for learning about conservation. In addition, the scheme assists in protecting the environment by monitoring pollution and acting as a 'river watch'.

5.13 In addition, the registered charity Angling First Ltd, has worked with colleges that teach young people that have been expelled from other schools. As part of a reward day, young people are introduced to angling and at the same time are given the opportunity to learn about the environment and health and safety. In this way, angling has acted as an educational tool (as part of the Education Otherwise than at Schools Initiative) and also helped to act as an incentive to reward good behaviour. Following interviews with staff from the Kinnego Centre, the text box below outlines some of the benefits can be realised through angling:

[52] Hawkhead, T. (2004) *Green Spaces-The Secret Ingredient*, groundwork.org.uk.

The Kinnego Centre

The Kinnego Centre is a special unit for children with social, emotional or behavioural problems. Pupils attend their mainstream school two days a week and the Kinnego Centre three days a week and the aim of the centre is to help the children return to full time mainstream education.

As part of the broader educational initiatives provided by the Kinnego Centre, thirty pupils have taken part in the introduction to angling scheme delivered by the registered charity, Angling First Ltd during 2005. Before participating in the scheme, the Kinnego Centre work closely with Angling First Ltd to discuss the individual needs of the children and tailor the programme accordingly. For instance, as well as teaching the pupils how to fish emphasis can be placed on education (science and the environment) and / or social and behavioural skills (through team building exercises).

From completing the scheme and learning how to fish, the pupils have earned a sense of achievement and have now been opened up to new interest / activity which they can pursue with their friends. Staff at the Kinnego Centre have also identified an improvement in the personal development of some pupils. In particular, while the pupils have learned to fish and gain more understanding and appreciation of the environment, the scheme has provided a way of encouraging the children to work together, develop relationships and relax. Indeed, by building these relationships and social skills, the scheme has helped the children to open up and talk to staff.

Crime reduction benefits

5.14 By targeting socially excluded young people, evidence suggests that angling can be used as way of diverting young people away from anti-social behaviour and reducing crime. In Northern Ireland, angling programmes targeting young people from deprived communities and socially excluded young people have been established by the Loughs Agency in partnership with the Youth Justice Agency. Under this scheme, the Youth Justice Agency contributes funding to the Professional Angling Guides and Instructors Network to take young people on day trips and introduce them to angling. 12 young people have participated at different levels with 6 completing reparation order and 3 completing the 'introduction to Angling' course.

5.15 In addition, charitable organisations have been involved in encouraging socially excluded young people in areas of high crime and deprivation to take up angling. In 2005, for example, the registered charity, Angling First Ltd, worked with a total of 596 young people over a one and / or four day period from a range of deprived areas in Northern Ireland including, *inter alia*, Ardoyne, Tigers Bay, Twinbook, Old Warren and the Garvaghy Road area of Portadown[53].

5.16 Following the programme, the charity can point to a wide number of individuals who have taken up the sport on a regular basis, one child having actually gone on to represent Ireland at junior international level. More specially, evaluations of the scheme have found that of the 596 young people introduced to angling in 2005, 75% went fishing after the charity fishing trip and 17% have taken up angling on a regular basis. This shows that the programme has encouraged young people to take up angling and has helped to focus energy on more positive activities. Therefore, by helping to divert young people away from anti-social behaviour, angling has potential to complement other social initiatives and to create savings for the criminal justice system. Indeed, this

[53] Angling First Ltd (2005) *Activity Report and User Statistics 2005, Getting Kids off the Streets and into Fishing*.

impact could be particularly significant as the cost to the taxpayer of keeping one young person in a secure unit is estimated at £150,000 a year[54].

Social cohesion benefits

5.17 Given the broad level of participation of angling and the community based membership of clubs, angling can also contribute towards building social cohesion in Northern Ireland. With just under 30,000 local anglers (game, coarse and sea) in Northern Ireland in 2005, angling is a popular sport in Northern Ireland which has participation in geographical areas throughout the region and across different sections of society. Indeed, the Continuous Household Survey shows that of 36 sports, angling is the 7th most popular in Northern Ireland[55].

5.18 While the demographic breakdown is not available for all licence holders, analysis of the licence holders shows that angling is popular among all age groups. Indeed, of all the 22,798 licences purchased by anglers in the FCB area in 2004, 12% were juvenile licences and 14% were senior citizen licences[56]. For the Department of Culture, Arts and Leisure permits, the demographic spread is greater with 21% of the 15,780 permits being purchased by juveniles and 10% by senior citizens[57].

5.19 The survey research also shows that angling is enjoyed by a range of different social classes. 31% of all survey respondents in this study, for example, had an income range of less than £15,000 while 30% had an income range between £25,000 - £59,999. 4% of respondents had an income of £60,000 or more. As anticipated, visitor anglers were better represented across the higher income ranges than the local anglers, as shown in the following table:

Table 5.1: Income range for anglers

Income range	Local anglers	Visitor anglers	Total
Less than £15,000	36%	16%	31%
Between £15,000 and £24,999	27%	22%	26%
Between £25,000 and £39,999	21%	32%	23%
Between £40,000 and £59,999	5%	18%	7%
£60,000 or more	2%	9%	4%
Refused	9%	4%	8%
Total	100%	100%	100%

Source: Indecon / PricewaterhouseCoopers Survey

5.20 Angling, therefore, provides opportunities to bring together a range of age and income groups and facilitate interaction and relationships that contributes towards building social cohesion. The survey evidence also shows that socialising with family and friends is the sixth most important factor which contributes most to their fishing experience. 9.4% of all anglers rated socialising with family and friends as the most important factor with visiting anglers giving this factor greater weight (13.1% of visiting anglers compared with 8.4% of domestic anglers).

5.21 This role of angling to contribute towards social cohesion is strongly evident within angling clubs. Overall, there are 106 angling clubs in Northern Ireland: 69 game angling clubs; 15 coarse angling clubs; and, 22 sea angling clubs. These clubs play an important role in facilitating group fishing activities and largely in the case of game angling clubs, take responsibility for owning and / or managing a considerable amount

[54] Salter, M. (2005) *Labour's Charter for Angling 2005*, Martin Salter MP, Parliamentary Spokesman for Angling and Shooting
[55] www.nisra.gov.uk. The other more popular sports included: darts, football (indoor and outdoors); swimming; jogging; keepfit / aerobics; snooker / pool/ billiards; and, golf
[56] Fisheries Conservancy Board for Northern Ireland (2004) *Annual Report and Financial Statements for the year ended 31st December 2004*
[57] Department of Culture, Arts and Leisure, 2004, Permit numbers

of fishing land, (see Annex 1 for details regarding the ownership and lessee arrangements of waterways). In most cases, the management of waterways by angling clubs is conducted on a volunteer basis which has facilitated community organisation and encouraged local people to participate in the management of waterways and have a stake in their local neighbourhood.

5.22 In addition, angling is a sport which is especially popular with disabled people with 1175 DCAL permits (8%) and 1,385 FCB licences (6%) being sold to disabled persons in 2004. Measure 4.9 of the Building Sustainable Prosperity Programme, among other initiatives such as the PEACE Programme, for example, has provided support for angling infrastructure to specifically assist disabled anglers.

5.23 Survey research has also shown that disabled persons regularly participate in the sport with 53% of permit holders fishing in a DCAL fishery at least once a week[58]. Therefore, by being a relatively inexpensive sport that is accessible to all, angling has facilitated broad participation among a range of ages and vulnerable groups helping them to socialise and take part in community life. In fact, this benefit of angling is supported by research of disabled anglers which found that social interaction was the aspect of fishing which was the most important to them[59]. Following consultations with one representative of an organisation that provides support to people with disabilities, the text box below provides further evidence of the benefits of angling:

Cedar Foundation

The Cedar Foundation is an organisation established to provide training for young adults with physical disabilities. As part of their training initiative, the Cedar Foundation has worked with Angling First Ltd to introduce young adults to angling and teach them how to fish. As outdoor activities can be limited for those that have disabilities, the Cedar Foundation believes that angling is one activity that can be universally enjoyed.

With over 20 participating on the introduction to angling scheme in 2005, the Cedar Foundation has noted that many of the young adults have now taken up angling as a hobby with their friends and families. Angling, therefore, has helped improve the young adults' sense of independence and social skills which has encouraged greater participation and integration in the wider social community.

5.24 However, as with other studies, it is important not to overstate the benefits of angling in promoting social cohesion. While the number of female anglers has been increasing in recent years, the continuous household survey shows that the vast majority of anglers are predominately male. Of the number of respondents that had taken part in angling in 2005/06, 4% were female[60]. In this light, opportunity exists to further realise the potential for angling to build cohesion promoting more participation among female anglers.

5.25 By not being associated with any particular flags or emblems, angling has strong levels of participation across the political divide in Northern Ireland, including cross-community memberships within individual angling clubs. Through this inclusive membership, angling has helped to develop contacts and relationships which have contributed towards enhancing social cohesion between the two main communities.

5.26 Indeed, angling has often been used as a way of actively facilitating cross-community engagement. Angling First Ltd, for example, has brought together pupils from two schools across the community divide, Dunmurry High and St Colum's Twinbrook. Through an introductory programme, angling provided the opportunity for pupils from

[58] Department of Culture, Arts and Leisure (2005) *Survey of Disabled Anglers, Questionnaire Analysis*, May 2005, Department of Culture, Arts and Leisure Research and Statistics Branch
[59] Department of Culture, Arts and Leisure (2005) *Survey of Disabled Anglers, Questionnaire Analysis*, May 2005, Department of Culture, Arts and Leisure Research and Statistics Branch
[60] Continuous Household Survey, www.nisra.gov.uk

both schools to come together in a neutral setting, share their experiences in learning how to fish and develop relationships. In fact, the value of angling in being able to develop this cross-community engagement is even more striking given that it was the first time many of the pupils had personal contact, despite the schools only being located ½ mile away from each other.

5.27 Through these relationships, evidence suggests that the angling programme has contributed towards developing greater understanding and appreciation of the cultural divisions in Northern Ireland. For example, after completing the angling programme and having travelled through an area of mid-Ulster that he had never been to before to get to the fishing lake, one participant, commented that he 'didn't realise there were so many Protestants living in Northern Ireland'[61]. From consultations with one member from an interface group, the ability of angling to develop relationships and build linkages on a cross-community basis is clearly identified in the following text box:

Suffolk Lenadoon Interface group

Suffolk Lenadoon Interface Group was set up to build better relationships between the Catholic and Protestant communities in outer west Belfast. As one way of seeking to develop relationships, the Interface Group has encouraged young people to take up angling. This has involved running programmes that bring a range of young people (normally groups of 20-30) together to show them how to fish. At first, the Interface Group brought the young people together in single identity groups. This helped the young people develop the required personal confidence and social skills before cross-community engagement could take place. Following the first steps of single identify development, the Interface Group brought the two communities together during an angling activity summer camp. During the camp, angling provided the opportunity in which young people from different sides of the interface could interact, in most cases for the first time, and work together in teams to catch fish. In this regard, angling has been the tool or mechanism that has helped young people to build linkages and develop relationships on a cross-community basis.

5.28 Further to this, angling has facilitated the development of relationships on a cross-border basis. The three principal angling clubs are all organised on an all-island basis with the clubs in Northern Ireland part of a nine county provincial administrative structure (i.e., Ulster Angling Federation, Ulster Coarse Fishing Federation and the Ulster Council of the Irish Federation of Sea Anglers). Outside of the administrative structure, a range of competitions are held across the island of Ireland in which clubs are invited to participate. This provides the opportunity for participants from across the border to come together, develop relationships and gain an understanding of cultural differences.

5.29 Angling programmes have also been designed to facilitate cross-border engagement. Angling First Ltd, for example, has led a number of four day residential cross-border fishing trips in Ireland in which around 20 young people from the more deprived areas in Belfast (e.g., Taughmonagh) and Lisburn (e.g., Old Warren) fish together with young people from deprived areas of Cork and Dublin. In many cases, these trips have been the first time the young people from Northern Ireland have visited the Republic of Ireland and engaged on a cross-border basis. Angling, therefore, has provided the tool to facilitate relationships and open up the young people to new experiences and broader understanding.

5.30 The opportunity for angling to contribute towards promoting greater cultural awareness and facilitating social cohesion is also supported by survey research for this study. While local anglers were less positive that meeting people from different cultural backgrounds was the most important factor that contributed most to their fishing

[61] Angling First Ltd (2005) *Getting Kids off the Streets and into Fishing*, Activity Report and User Statistics 2005, Angling First Ltd.

experience (2.5%), this issue was considered important for visiting anglers (7.2%). Indeed, meeting people from different cultural backgrounds was the 8th most important factor that contributed most to the fishing experience for visiting anglers

Health benefits

5.31 Angling is a source of outdoor recreation which can provide health benefits in relieving stress and helping people to relax and unwind. This benefit of recreational angling is clearly identified from the survey which found that health issues were some of the factors that contribute most to the angling experience. While most anglers (51.8%) felt that catching a fish contributed most to their fishing experience, the following factors also received significant proportions across both domestic and tourist anglers: relaxing (21.0%); undertaking a healthy outdoor activity (7.3%); and, releasing stress (6.0%).

5.32 By helping participants to relax and unwind, angling can also bring psychological benefits. Introduction to angling programmes in Northern Ireland, for example, have encouraged participation among a range of mental health and victim support groups such as Northern Ireland Association for Mental Heath, Rethink, Praxis, Wave, and North and South Armagh Victims Encouraging Recognition. Under these programmes, angling has provided an opportunity for the participants to relax which has helped to improve mental and social problems. This benefit of angling is described in the following text box:

South Armagh Victims Encouraging Recognition (S.A.V.E.R) and North Armagh Victims Encouraging Recognition (N.A.V.E.R)

SAVER / NAVER is a support group set up for victims of the conflict in Northern Ireland. As one of the consequences of the conflict, the group feels that, in some cases, the relationships within families that have suffered injury or loss have broken down. As part of wider measures to encourage healing within families, the group have been eager to choose activities that would bring families together, encourage relaxation and facilitate social interaction, particularly between fathers and sons. To this end, the group organised a 'dads n' lads' club and participated in an introduction to angling programme.

Many of the participants in this programme have continued to fish and the SAVER / NAVER group has emphasised that angling has helped to build confidence of the family members to talk to one another, particularly about difficult emotional issues. This has improved the relationships within families allowing them to become closer and has encouraged victims to engage in more participative social activity.

5.33 Angling also provides an accessible sport in which disabled persons can participate and gain health benefits. This is supported by research on disabled anglers which found that leisure and recreation was considered to be the most important aspect of fishing[62].

5.34 Indeed, the value of outdoor recreation is increasingly being promoted amongst health professionals. It is recognised that the pollution filtering role of vegetation has significant relevance for such health issues as asthma, and that moderate exercise in green soundings can make a positive contribution to healthy living[63]. As a healthier and more active population reduces the strain on acute clinical services, potential savings can be then identified for local health providers and the National Health Service

[62] Department of Culture, Arts and Leisure (2005) *Survey of Disabled Anglers, Questionnaire Analysis*, May 2005, Department of Culture, Arts and Leisure Research and Statistics Branch.
[63] Lewis, K. (2004) *The green flag award scheme – 8 years on.* ILAM Places and Countryside Seminar, Birkenhead; Bird, W. (2002) *Walking for Health.*

(NHS)[64]. In this way, angling complements current health promotion policy which is increasingly adopting a proactive approach by focusing on promoting a healthy and active population[65].

Conclusion

5.35 Drawing on evidence from the survey, other published research and interviews with key stakeholders, it is clear that angling can provide a range of benefits beyond economic contributions. These wider benefits can have an impact on environmental and social spheres in Northern Ireland and are summarised below:

- By monitoring the waterways, contributing funding through the sale of licences and investing in nursery areas, anglers have made an impact on environment through protection and development. Anglers, for example, regularly highlight areas of pollution to watchdog organisations such as the FCB and private fisheries and angling clubs have also been proactively involved in developing nursery areas that nurture fish and other wildlife;

- In relation to social benefits, one of the main outcomes from angling is its ability to encourage and facilitate participation and interaction among a diverse range of individuals and groups. In 2005, for example, it is estimated there were 31,871 resident game, coarse and sea anglers in Northern Ireland with the survey showing that the levels of participation encompass a broad range of ages and social classes / levels of income;

- Through this broader social interaction, evidence suggests that angling can contribute towards helping to divert young people away from anti-social behaviour, building relationships and linkages on a cross-border and cross-community basis, and facilitating greater social cohesion;

- Angling can be used as tool to enable learning. This specially relates to using angling as a way of promoting learning about wildlife and the environment.

- By being a relaxing outdoor activity, angling can improve a healthy living lifestyle that can contribute health benefits. While most anglers felt that catching a fish contributed most to their fishing experience, the health benefits from angling are also appreciated with a significant number of anglers highlighting that relaxing, undertaking a healthy outdoor activity and releasing stress were factors that contributed most to their fishing experience.

- Further to this, evidence suggests that by promoting a number of benefits, significant savings in other departments and agencies can be realised. This is particularly relevant in the cases of health and crime reduction.

[64] In England, for example, Commentators, for instance, suggest that the lack of physical activity equates to around 2-3 per cent of NHS annual costs which translates into around £1.5 billion per annum in 2004 prices, New Economics Foundation (2004) *Green Cities and Why We Need Them*, NEF Pocketbook 9.
[65] HM Treasury (2004) *Securing Good Health for the Whole Population*.

VI Projected economic impacts of recreational angling

Introduction

6.1 In this section we develop a set of scenarios for the projected economic impact of recreational angling. The objective of this exercise is to provide an illustrative indication of the potential future value of recreational angling in Northern Ireland under a range of assumptions regarding market growth and policy actions on the part of the government.

6.2 Our scenarios for the future value of recreational angling in Northern Ireland are divided into two elements, namely:

- Scenarios for projected economic impact of domestic recreational angling;
- Scenarios for projected economic impact of visitor/tourist angling.

Scenarios for domestic recreational angling

6.3 For the purposes of this study, we have considered the following scenarios for the future economic value and impact of domestic recreational angling:

- Scenario 1 – Base Case Scenario – assuming continued market growth without any change in government policy in relation to the development of the domestic recreational angling sector;
- Scenario 2 – Medium Growth Scenario – assumes continued market growth combined with policy changes to target an increase of 50% in the angling participation rate relative to the overall Northern Ireland population over a 10-year period;
- Scenario 3 – High Growth Scenario - assumes continued market growth combined with policy changes designed to achieve a doubling of the current angling participation rate relative to the overall Northern Ireland population over a 10-year period; and
- Scenario 4 - High Participation/High Expenditure Scenario – as per Scenario 3 in relation to angling participation, in addition to assumption that average daily expenditures among local anglers increases by 50% by 2015.

Scenario 1 – Base Case Scenario

6.4 In developing our base case scenario for the future value/economic impact of recreational angling it is necessary to project the paths for two key variables, namely:

- The rate of annual growth in the population of anglers;
- The rate of annual growth in the average annual expenditure levels among anglers.

6.5 Our projection for the number of anglers (including the breakdown between game, coarse and sea/shore anglers) based on our base case scenario is presented in Table 6.1.

Table 6.1: Scenarios for Future Economic Value of Domestic Angling - Projected Number of Anglers - Base Case Scenario Assuming Continued Market Growth and No Policy Change

Year	Base Case Scenario - No Policy Change				Population Projection - Northern Ireland - '000 persons	*All Anglers as % of Population*	*% Annual Average Change - All Anglers*
	All Anglers	Game	Coarse	Sea/Shore			
2005 - Base	29,951	20,527	4,363	5,061	1724.4	*1.7*	
2006	30,550	20,938	4,450	5,162	1732.9	*1.8*	*2.0*
2007	31,008	21,252	4,517	5,240	1741.2	*1.8*	*1.5*
2008	31,473	21,570	4,585	5,318	1747.9	*1.8*	*1.5*
2009	31,945	21,894	4,654	5,398	1754.5	*1.8*	*1.5*
2010	32,361	22,179	4,714	5,468	1761.0	*1.8*	*1.3*
2011	32,781	22,467	4,775	5,539	1767.5	*1.9*	*1.3*
2012	33,109	22,692	4,823	5,595	1774.0	*1.9*	*1.0*
2013	33,440	22,918	4,871	5,651	1780.5	*1.9*	*1.0*
2014	33,775	23,148	4,920	5,707	1787.1	*1.9*	*1.0*
2015	34,113	23,379	4,969	5,764	1793.6	*1.9*	*1.0*

Source: Projections based on NISRA, Population Projections for Northern Ireland

6.6 Based on 2005 data, the estimated overall number of NI resident anglers, at 29,951, currently equates to approximately 1.7% of the overall Northern Ireland population. The annual average growth in the total number of NI resident anglers between 2003 and 2005 was 5.7%. Our considered view is that under a scenario where there is no direct policy interventions designed to further develop the recreational angling sector, future growth is unlikely to continue at this high level. We believe that a more plausible scenario would entail a stable to small increase in the overall angling participation rate relative to the population over a 10-year period. Our base case scenario therefore assumes that the angling participation rate among NI resident anglers will increase slightly from its present level of 1.8% towards 2% of the projected NI population by 2014/2015 under continued market growth. This would imply an estimated population of domestic anglers of around 34,113 by 2015. It is important to stress that this constitutes an indicative growth scenario and that, as in any projection, there are market risks which may result in the actual outturn being above or below this level.

6.7 To project the gross expenditure contribution and the overall net economic impact of domestic recreational angling in Northern Ireland it is also necessary to estimate the future trend of average expenditures among anglers. Table 6.2 sets out our projections for the mean annual expenditure levels among game, coarse, sea/shore anglers and the overall NI resident angling population over the period 2005-2015. We believe that the most plausible assumption regarding the path for the future average annual expenditure among anglers entails expenditures growing in line with consumer price inflation. We have therefore assumed that mean annual expenditures increase in line with projected consumer price inflation across the UK as published in the Bank of England's May 2006 Inflation Report. The medium term inflation target set by the Bank of England entails retail/consumer price inflation in the UK at 2% per annum. Under this assumption the mean annual total expenditures of domestic recreational anglers in Northern Ireland would increase towards £1,624 by 2015 from the present estimated level of £1,326, equivalent to an overall increase of 22.5% over this 10-year period.

Table 6.2: Scenarios for Future Economic Value of Domestic Angling - Projected Average Annual Expenditures – £ - Scenarios 1-3

Year	Mean Annual Expenditure - £ - Scenarios 1-3				Projected CPI Inflation
	Game	Coarse	Sea/Shore	Total Angling	
2005 - base	1,253	1,425	1,459	1,313	
2006	1,282	1,458	1,493	1,343	2.3
2007	1,310	1,490	1,525	1,373	2.2
2008	1,336	1,520	1,556	1,400	2
2009	1,363	1,550	1,587	1,428	2
2010	1,390	1,581	1,619	1,457	2
2011	1,418	1,613	1,651	1,486	2
2012	1,446	1,645	1,684	1,516	2
2013	1,475	1,678	1,718	1,546	2
2014	1,505	1,711	1,752	1,577	2
2015	1,535	1,746	1,787	1,608	2

Source: Calculations based on Consumer Price Index Inflation projections for UK as a whole (see Bank of England, Inflation Report, May 2006)

High growth/high impact scenario – expenditure assumption

6.8 As indicated at the outset, it is also instructive to consider an alternative scenario involving the same assumptions as implied by scenario 3 in relation to angler participation in addition to an assumption which builds in a faster rate of increase in average expenditures among local anglers. For the purpose of our indicative high expenditure growth scenario, we assume that average annual expenditures among local anglers increase by 50% over the period 2005-2015 (see Table 6.3 below), which compares with 22.4% under scenarios 1-3.

Table 6.3: Scenarios for Future Economic Value of Domestic Angling - Projected Average Annual Expenditures – £ - High Expenditure Growth Scenario

Year	Mean Annual Expenditure - £ - Scenario 4			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	1,253	1,425	1,459	1,313
2006	1,305	1,484	1,519	1,367
2007	1,359	1,545	1,582	1,424
2008	1,415	1,609	1,648	1,483
2009	1,474	1,676	1,716	1,544
2010	1,535	1,745	1,787	1,608
2011	1,598	1,817	1,861	1,675
2012	1,664	1,893	1,938	1,744
2013	1,733	1,971	2,018	1,816
2014	1,805	2,053	2,102	1,891
2015	1,880	2,138	2,189	1,970

Source: Calculations based on Consumer Price Index Inflation projections for UK as a whole (see Bank of England, Inflation Report, May 2006)

6.9 Multiplying the projected population of anglers by the mean annual expenditure of these anglers results in the estimated gross expenditure contribution of domestic anglers. Our base case scenario for the annual gross expenditure contribution of domestic game, coarse and sea/shore angling in Northern Ireland over the period 2005-2015 is presented in Table 6.4. Under the base case scenario entailing continued market growth but no change in government policy regarding the development of the domestic angling sector, we estimate that the annual gross expenditure impact could total £55.4 million by 2015, compared to the current estimated contribution of £39.7 million. This constitutes an indicative central projection and it should be reiterated that market risks may result in the actual outcome being either above or below this level.

Table 6.4: Scenarios for Future Economic Value of Domestic Angling - Projected Gross Expenditure Contribution - 2006-2015 - Base Case Scenario Assuming No Policy Change – £ Million

Year	Base Case Scenario for Gross Expenditure Contribution - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	25.7	6.2	7.4	39.3
2006	26.8	6.5	7.7	41.0
2007	27.8	6.7	8.0	42.6
2008	28.8	7.0	8.3	44.1
2009	29.8	7.2	8.6	45.6
2010	30.8	7.5	8.9	47.1
2011	31.9	7.7	9.1	48.7
2012	32.8	7.9	9.4	50.2
2013	33.8	8.2	9.7	51.7
2014	34.8	8.4	10.0	53.3
2015	35.9	8.7	10.3	54.9

Source: PwC / Indecon calculations

6.10 As described in Section III, to arrive at an estimate for the overall net economic impact of domestic recreational angling it is necessary to adjust the estimated gross expenditure contribution to reflect the indirect and induced impacts of this spending, in addition to the displacement impact of the expenditures in terms of the opportunity cost of resources utilised. Based on our approach outlined in Section III, our base case scenario for the net economic impact of game, coarse, sea/shore and all domestic recreational angling is shown in Table 6.5.

Table 6.5: Scenarios for Future Economic Value of Domestic Angling - Base Case Scenario for Projected Net Economic Impact Assuming No Policy Change - 2006-2015 – £ Million

Year	Base Case Scenario for Net Economic Impact - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	13.4	3.2	3.9	20.5
2006	14.0	3.4	4.0	21.4
2007	14.5	3.5	4.2	22.2
2008	15.1	3.6	4.3	23.0
2009	15.6	3.8	4.5	23.8
2010	16.1	3.9	4.6	24.6
2011	16.6	4.0	4.8	25.4
2012	17.1	4.1	4.9	26.2
2013	17.7	4.3	5.1	27.0
2014	18.2	4.4	5.2	27.8
2015	18.7	4.5	5.4	28.7

Source: PwC / Indecon

6.11 Under the base case scenario for domestic angling, we estimate that the potential future net annual economic impact of domestic recreational angling could total £28.9 million per annum by 2015, assuming continued market growth. In present value terms and assuming a discount rate of 5% per annum over the period 2005-2015, we estimate the present value of the estimated annual net economic impacts of domestic recreational angling over the period 2005-2015 under the base case scenario to amount to £203.3 million.

Scenario 2 – Medium Growth Scenario

6.12 Our medium growth scenario for the future economic impact of domestic recreational angling in Northern Ireland entails the following assumptions:

- The government implements a range of policy interventions designed to target a 50% increase in the proportion of the Northern Ireland population participating in recreational angling, from the current 1.8% to 2.7% over a 10-year period, i.e., by 2015;
- The mean annual level of expenditure per angler increases in line with projected consumer price inflation.

6.13 Table 6.6 below sets out our medium growth scenario for the population of NI resident/domestic anglers over the period 2005-2015. Based on the assumption that the proportion of the Northern Ireland population participating in recreational angling increases by 50% to reach a rate of 2.7% by 2015, we estimate that the population of anglers could reach 46,785. This would imply an annual average rate of increase in the number of anglers of 4.6% over this 10-year period.

Table 6.6: Scenarios for Future Economic Value of Domestic Angling - Projected Number of Anglers – Scenario 3: Medium Growth Scenario Assuming 50% Increase in Angling Participation Rate by 2015

Year	Medium Growth Scenario				Population Projection - Northern Ireland - '000 persons	*Anglers as % of Population*	*% Annual Average Change - All Anglers*
	All Anglers	Game	Coarse	Sea/Shore			
2005 - Base	29,951	20,527	4,363	5,061	1722.4	*1.7*	
2006	31,317	21,463	4,562	5,292	1732.9	*1.8*	*4.6*
2007	32,745	22,442	4,770	5,533	1741.2	*1.9*	*4.6*
2008	34,239	23,466	4,988	5,786	1747.9	*2.0*	*4.6*
2009	35,801	24,536	5,215	6,049	1754.5	*2.0*	*4.6*
2010	37,433	25,655	5,453	6,325	1761.0	*2.1*	*4.6*
2011	39,141	26,825	5,702	6,614	1767.5	*2.2*	*4.6*
2012	40,926	28,049	5,962	6,916	1774.0	*2.3*	*4.6*
2013	42,793	29,328	6,234	7,231	1780.5	*2.4*	*4.6*
2014	44,744	30,666	6,518	7,561	1787.1	*2.5*	*4.6*
2015	46,785	32,064	6,815	7,906	1793.6	*2.6*	*4.6*

Source: Projections based on NISRA, Population Projections for Northern Ireland

6.14 Table 6.7 presents our medium growth scenario for the annual gross expenditure contribution of domestic angling by type of angling over the period 2005-2015. Based on the assumption that the government implements a range of policy interventions that result in a 50% increase in the proportion of the Northern Ireland population participating in recreational angling, while the mean annual level of expenditure among anglers rises in line with projected consumer price inflation, we estimate that the annual gross expenditure contribution of all domestic angling could reach £76 million by 2015.

Table 6.7: Scenarios for Future Economic Value of Domestic Angling - Projected Gross Expenditure Contribution - 2006-2015 - Medium Growth Scenario Assuming 50% Increase in Angling Participation Rate by 2015 – £ Million

Year	Scenario 3: Medium Growth Scenario for Gross Expenditure Contribution - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	25.7	6.2	7.4	39.3
2006	27.5	6.7	7.9	42.1
2007	29.4	7.1	8.4	45.0
2008	31.4	7.6	9.0	47.9
2009	33.4	8.1	9.6	51.1
2010	35.7	8.6	10.2	54.5
2011	38.0	9.2	10.9	58.2
2012	40.6	9.8	11.6	62.0
2013	43.3	10.5	12.4	66.2
2014	46.1	11.2	13.2	70.6
2015	49.2	11.9	14.1	75.2

Source: PwC / Indecon

6.15 Table 6.8 sets out the projected net economic impact of domestic recreational angling under the medium growth scenario. We estimate that the net economic impact of domestic angling could reach an annual level of £39.7 million by 2015 compared to a 2005 impact of £20.7 million. Under the medium growth scenario, the present value of the annual flow of net economic impacts over the period 2005-2015 would rise to £236.3 million compared to £203.3 million under the base case scenario.

Table 6.8: Scenarios for Future Economic Value of Domestic Angling - Medium Growth Scenario for Projected Net Economic Impact Assuming 50% Increase in Angling Participation by 2015 – £ Million

Year	Medium Growth Scenario for Net Economic Impact - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	13.4	3.2	3.9	20.5
2006	14.4	3.5	4.1	22.0
2007	15.4	3.7	4.4	23.5
2008	16.4	4.0	4.7	25.0
2009	17.5	4.2	5.0	26.7
2010	18.6	4.5	5.3	28.5
2011	19.9	4.8	5.7	30.4
2012	21.2	5.1	6.1	32.4
2013	22.6	5.5	6.5	34.6
2014	24.1	5.8	6.9	36.9
2015	25.7	6.2	7.4	39.3

Source: PwC / Indecon

Scenario 3 – High Growth Scenario

6.16 Our high growth scenario for the future economic impact of domestic recreational angling in Northern Ireland entails the following assumptions:

- The government implements a range of policy interventions designed to target a doubling in the proportion of the Northern Ireland population participating in recreational angling, from the current 1.8% towards 3.6% over a 10-year period, i.e., by 2015;
- The mean annual level of expenditure per angler increases in line with projected consumer price inflation.

6.17 Table 6.9 below presents the implied annual number of Northern Ireland resident game, coarse and sea/shore anglers based on our high growth scenario. We estimate that if the government, through successful implementation of a range of measures, achieves a doubling in the extent of angling participation among the Northern Ireland population towards 3.6%, the overall population of anglers could rise to over 62,380 by 2015. This constitutes an ambitious scenario and would require an increase of over 33,500 in the population of anglers over a 10-year period, equivalent to an annual average rate of increase of 7.6%. Given the challenges involved in achieving this level of participation, we believe that the high growth scenario represents a realistic upper bound target for the attainable level of participation over a 10-year period.

Table 6.9: Scenarios for Future Economic Value of Domestic Angling - Projected Number of Anglers – Scenario 3: High Growth Scenario Assuming Doubling in Angling Participation Rate by 2015

Year	High Growth Scenario				Population Projection - Northern Ireland - '000 persons	*Anglers as % of Population*	*% Annual Average Change - All Anglers*
	All Anglers	Game	Coarse	Sea/Shore			
2005 - Base	29,951	20,527	4,363	5,061	1722.4	*1.7*	
2006	32,231	22,090	4,695	5,446	1732.9	*1.9*	*7.6*
2007	34,685	23,771	5,053	5,861	1741.2	*2.0*	*7.6*
2008	37,325	25,581	5,437	6,307	1747.9	*2.1*	*7.6*
2009	40,167	27,528	5,851	6,787	1754.5	*2.3*	*7.6*
2010	43,224	29,624	6,297	7,304	1761.0	*2.5*	*7.6*
2011	46,515	31,879	6,776	7,860	1767.5	*2.6*	*7.6*
2012	50,056	34,306	7,292	8,458	1774.0	*2.8*	*7.6*
2013	53,867	36,918	7,847	9,102	1780.5	*3.0*	*7.6*
2014	57,967	39,728	8,444	9,795	1787.1	*3.2*	*7.6*
2015	62,380	42,752	9,087	10,541	1793.6	*3.5*	*7.6*

Source: Projections based on NISRA, Population Projections for Northern Ireland

6.18 Table 6.10 computes the implied gross expenditure contribution based on our assumption regarding the level of angling participation and the mean annual level of expenditure among domestic anglers under the high growth scenario presented above. Under the high growth scenario we estimate that the annual gross expenditure contribution could reach £101 million by 2015 compared to its presented estimated level of £39.7 million.

Table 6.10: Scenarios for Future Economic Value of Domestic Angling - Projected Gross Expenditure Contribution - 2006-2015 - High Growth Scenario Assuming Doubling in Angling Participation Rate by 2015 £ Million

Year	High Growth Scenario for Gross Expenditure Contribution - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	25.7	6.2	7.4	39.3
2006	28.3	6.8	8.1	43.3
2007	31.1	7.5	8.9	47.6
2008	34.2	8.3	9.8	52.3
2009	37.5	9.1	10.8	57.4
2010	41.2	10.0	11.8	63.0
2011	45.2	10.9	13.0	69.1
2012	49.6	12.0	14.2	75.9
2013	54.5	13.2	15.6	83.3
2014	59.8	14.5	17.2	91.4
2015	65.6	15.9	18.8	100.3

Source: PwC / Indecon

6.19 Including a multiplier factor and adjusting for displacement impacts, the estimates for the future annual net economic impact of domestic angling in Northern Ireland under the high growth scenario are set out in Table 6.11 below. Under the assumption of a doubling in the rate of angling participation, we estimate that the annual net economic impact of domestic angling could rise to £52.9 million by 2015. The present value of the future annual net economic impact between 2005 and 2015 could rise to £275.3 million under this scenario.

Table 6.11: Scenarios for Future Economic Value of Domestic Angling - Net Economic Impact under High Growth Scenario Assuming Doubling in Angling Participation Rate by 2015 – £ Million

Year	High Growth Scenario for Net Economic Impact - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	13.4	3.2	3.9	20.5
2006	14.8	3.6	4.2	22.6
2007	16.3	3.9	4.7	24.9
2008	17.9	4.3	5.1	27.3
2009	19.6	4.7	5.6	30.0
2010	21.5	5.2	6.2	32.9
2011	23.6	5.7	6.8	36.1
2012	25.9	6.3	7.4	39.6
2013	28.5	6.9	8.2	43.5
2014	31.2	7.5	9.0	47.8
2015	34.3	8.3	9.8	52.4

Source: PwC / Indecon

High participation-high expenditure impact scenario

6.20 Combining the assumptions regarding local angling participation in Scenario 3 with the high growth assumption regarding average annual expenditures among game, coarse and sea/shore anglers set out in Table 6.3 yields an alternative high participation-high expenditure impact scenario. The projected gross expenditure impacts implied by this scenario are set out in the table below. Under this scenario, we estimate that the annual gross expenditure contribution of local game, coarse and sea/shore angling could increase to over £124 million by 2015.

Table 6.12: Scenarios for Future Economic Value of Domestic Angling - Projected Gross Expenditure Contribution - 2006-2015 - High Participation-High Expenditure Impact Scenario Assuming Doubling in Angling Participation Rate and 50% Increase in Average Annual Expenditures by 2015 - £ Million

Year	High Participation-High Expenditure Impact Scenario for Gross Expenditure Contribution - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 – base	25.7	6.2	7.4	39.3
2006	28.8	7.0	8.3	44.1
2007	32.3	7.8	9.3	49.4
2008	36.2	8.8	10.4	55.3
2009	40.6	9.8	11.6	62.0
2010	45.5	11.0	13.1	69.5
2011	50.9	12.3	14.6	77.9
2012	57.1	13.8	16.4	87.3
2013	64.0	15.5	18.4	97.8
2014	71.7	17.3	20.6	109.6
2015	80.4	19.4	23.1	122.9

Source: PwC / Indecon

6.21 The implied annual projected net economic impact of local angling in NI under the high participation-high expenditure growth scenario presented above is set out in the table below. Under this scenario, the annual net economic impact could rose to an estimated £64.8 million by 2015, while the present value of annual net impacts would increase to £307.5 million.

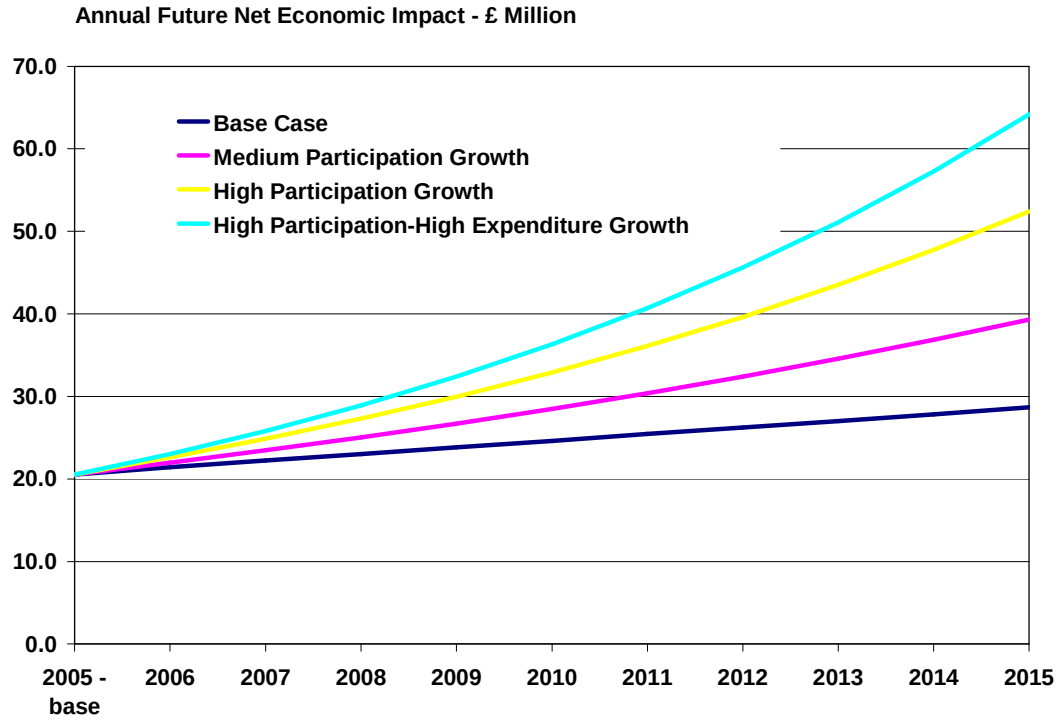
Table 6.13: Scenarios for Future Economic Value of Domestic Angling - Net Economic Impact under High Participation-High Expenditure Scenario Assuming Doubling in Angling Participation Rate and 50% Increase in Average Annual Expenditures by 2015

Year	High Participation-High Expenditure Scenario for Net Economic Impact - £ Million			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	13.4	3.2	3.9	20.5
2006	15.1	3.6	4.3	23.0
2007	16.9	4.1	4.8	25.8
2008	18.9	4.6	5.4	28.9
2009	21.2	5.1	6.1	32.4
2010	23.8	5.7	6.8	36.3
2011	26.6	6.4	7.6	40.7
2012	29.8	7.2	8.6	45.6
2013	33.4	8.1	9.6	51.1
2014	37.5	9.1	10.8	57.3
2015	42.0	10.1	12.1	64.2

Source: PwC / Indecon

6.22 A graphical depiction of the annual net economic impact over the period 2005-2015 under the scenarios for the future value of domestic recreational angling in Northern Ireland discussed above is presented in Figure 1.1 below. The indicative scenarios suggest that the annual net economic impact of domestic angling could, under various assumptions regarding policy interventions to boost the level of participation in angling among the general population in Northern Ireland and increase the average expenditure levels among anglers, increase to between £39.7 million and £64.8 million by 2015. This compares to an estimated annual economic impact of £29.8 million by 2015 under a base case scenario involving continued market growth but no policy change.

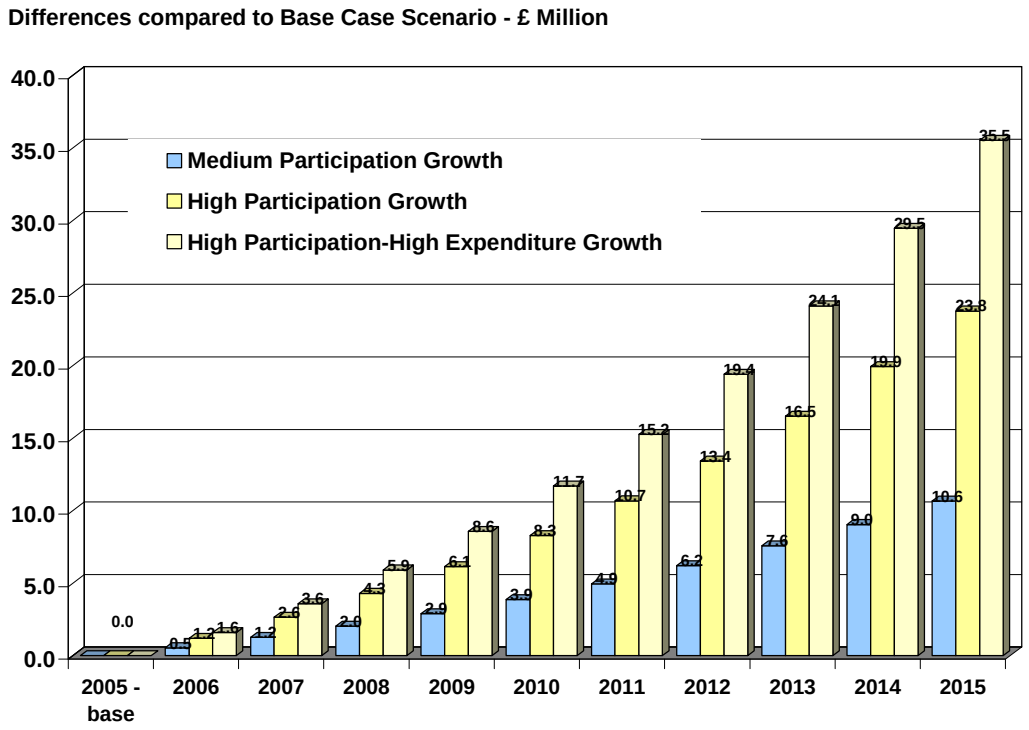
Figure 6.1: Comparison of Scenarios for Estimated Future Value of Domestic Recreational Angling in Northern Ireland –£ Million - 2005-2015



Source: PwC / Indecon

6.23 Another perspective on the potential future value of domestic angling under each scenario described above is to relate the medium and high angling participation scenarios and the high participation-high expenditure scenario to the base case scenario in terms of the annual potential additional net economic impacts arising under each scenario. Figure 6.2 therefore charts the annual differences between each of the higher impact scenarios and the base case scenario. Considered in this way, we estimate that the achievement of high levels of angling participation through targeted development policies could boost the annual net economic impact of domestic angling by between £10.8 million and £35.9 million by 2015.

Figure 6.2: Comparison of Scenarios for Estimated Future Value of Domestic Recreational Angling in Northern Ireland – Annual Difference Viz. Base Case Scenario in Net Economic Impact - £ Million - 2005-2015



Source: PwC / Indecon

Scenarios for Employment supported through domestic angling

6.24 As described in Section 3, the expenditures and wider economic impacts arising from the activities of local anglers in Northern Ireland will also give rise to employment supported as a result of these expenditures. We have also modelled a range of scenarios for the prospective future potential employment impacts pertaining to domestic recreational angling. These scenarios relate to each of the expenditure scenarios modelled above and draw from research on the contribution of tourism sector to the Northern Ireland economy undertaken by Cogentsi (2007), discussed in Section 3.[66] Applying to the employment factor identified by this research to economy-wide expenditure impacts (including multiplier impacts) of domestic recreational angling yields 3 scenarios for the number of Full-Time Equivalent jobs (FTEs) supported in the Northern Ireland economy as a result of this activity. Table 6.14 overleaf sets out our base case scenario for the number of FTEs supported by domestic angling in NI. We estimate under the base case scenario for economy-wide expenditure impacts that the number of FTEs supported could increase to approximately 1,000 in 2015 from the estimated current impact of 715 FTEs.

[66] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

Table 6.14: Scenarios for Future Employment Supported through Economic Value of Domestic Angling - Base Case Scenario - 2006-2015

Year	Base Case Scenario for Employment Supported - Number of FTEs			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	468	113	134	715
2006	488	118	140	746
2007	506	122	145	774
2008	524	127	151	802
2009	543	131	156	830
2010	561	136	161	857
2011	579	140	166	886
2012	597	144	171	913
2013	615	149	177	940
2014	634	153	182	969
2015	653	158	187	998

Source: PwC / Indecon

6.25 The table below presents our medium growth scenario for employment supported through the economic impacts of domestic recreational angling in Northern Ireland. Under our medium growth scenario for angling participation and angler expenditures, we estimate that the number of FTEs supported could rise from 715 in 2005 to approximately 1,369 FTEs by 2015.

Table 6.15: Scenarios for Future Employment Supported through Economic Value of Domestic Angling - Medium Growth Scenario - 2006-2015

Year	Medium Growth Scenario for Employment Supported - Number of FTEs			
	Game	Coarse	Sea/Shore	Total Angling
2005 - base	468	113	134	715
2006	500	121	144	765
2007	535	129	154	818
2008	570	138	164	872
2009	608	147	175	930
2010	649	157	186	992
2011	692	167	199	1,058
2012	738	178	212	1,128
2013	787	190	226	1,203
2014	839	203	241	1,283
2015	895	216	257	1,369

Source: PwC / Indecon

6.26 The table below presents our high growth scenario for employment out to 2015. Under the high growth scenario for angling participation and angler expenditures, we estimate that the number of FTEs supported could rise from 715 in 2005 to approximately 1,800 FTEs by 2015.

Table 6.16: Scenarios for Future Employment Supported through Economic Value of Domestic Angling - High Growth Scenario - 2006-2015

	High Growth Scenario for Employment Supported - Number of FTEs			
Year	Game	Coarse	Sea/Shore	Total Angling
2005 - base	468	113	134	715
2006	515	124	148	787
2007	566	137	163	866
2008	622	150	178	951
2009	682	165	196	1,043
2010	749	181	215	1,145
2011	822	199	236	1,257
2012	903	218	259	1,380
2013	991	239	284	1,515
2014	1,087	263	312	1,663
2015	1,194	289	343	1,825

Source: PwC / Indecon

6.27 Finally, the table below presents our highest growth scenario for employment supported through domestic recreational angling, based on the assumptions underlying our high growth-high expenditure scenario 4 described earlier in this section. Under this scenario, we estimate that the number of FTEs supported could rise from 715 in 2005 to over 2,200 FTEs by 2015.

Table 6.17: Scenarios for Future Employment Supported through Economic Value of Domestic Angling – High Growth-High Expenditure Scenario - 2006-2015

	Medium Growth Scenario for Employment Supported - Number of FTEs			
Year	Game	Coarse	Sea/Shore	Total Angling
2005 - base	468	113	134	715
2006	524	127	151	802
2007	588	142	169	898
2008	658	159	189	1,007
2009	738	178	212	1,128
2010	827	200	237	1,264
2011	927	224	266	1,417
2012	1,038	251	298	1,588
2013	1,164	281	334	1,779
2014	1,304	315	374	1,994
2015	1,462	353	420	2,235

Source: PwC / Indecon

Scenarios for visitor/tourist angling

6.28 We have developed the following illustrative scenarios for the future economic value and impact of visitor/tourist recreational angling in Northern Ireland:

- Scenario 1 – Base Case Scenario – assuming the number of angling visitors grows in line with the projected overall number of holiday visitors to Northern Ireland over the 10-year period 2005-2015, thereby maintaining the share of anglers in total visitors constant at current levels;
- Scenario 2 – Medium Growth Scenario – assumes that government policy interventions target an increase in the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% over a 10-year period; and
- Scenario 3 – High Growth Scenario - assumes that government policy / market stimulation interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland over a 10-year period to 2015.
- Scenario 4 – High Growth, High Impact Scenario – involving same assumptions as per Scenario 3 above combined with assumption that average daily expenditures among visiting anglers converges towards current levels in Scotland over the period to 2015.

Scenario 1 – Base Case Scenario

6.29 Our base case scenario for the potential future growth in the number of angling visitors to Northern Ireland is presented in Table 6.14. Under the base case we assume that the overall number of holiday visitors to Northern Ireland recovers after the decline recorded during 2005 with annual growth projected at between 1-1.5% per annum between 2006 and 2010, rising to 2% per annum on average between 2010 and 2015. The future scenario, therefore, is based on growth in recent trends rather than NITN targets which are much higher. On the basis that there are no policy interventions impacting on angling development, we believe the most plausible base case scenario would entail the proportion of anglers in the overall number of holiday visitors to Northern Ireland remaining constant at current levels. This would suggest that the number of angling visitors would expand to around 5,800 per annum by 2015 in line with the overall market.

Table 6.14: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Projected Number of Visiting Anglers - Base Case Scenario Assuming No Policy Change

Year	All Anglers - Estimated No.	Total NI Holiday Visitors	*% Annual Change - Total NI Holidaymakers*	*Anglers as % of NI Holidaymakers*
2005 - Base	4,913	345,000		*1.4*
2006	4,962	348,450	*1*	*1.4*
2007	5,012	351,935	*1*	*1.4*
2008	5,087	357,214	*1.5*	*1.4*
2009	5,163	362,572	*1.5*	*1.4*
2010	5,241	368,010	*1.5*	*1.4*
2011	5,345	375,371	*2*	*1.4*
2012	5,452	382,878	*2*	*1.4*
2013	5,561	390,535	*2*	*1.4*
2014	5,673	398,346	*2*	*1.4*
2015	5,786	406,313	*2*	*1.4*

Source: PwC / Indecon

Scenario 2 – Medium Growth Scenario

6.30 Our medium growth scenario for the potential future growth in the number of angling visitors to Northern Ireland is presented in Table 6.15. Under the medium growth scenario, we assume that government policy targets the achievement of an increase in the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% by 2015. This would translate into an estimated annual total of about 8,700 visiting anglers by 2015, equivalent to around 2.1% of the overall number of holiday visitors to Northern Ireland.

Table 6.15: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Projected Number of Visiting Anglers - Medium Growth Scenario Assuming 50% Increase in Angling Visitor Proportion

Year	Medium Growth Scenario - 50% Increase in Angling Visitor %			
	All Anglers - Estimated No.	Total NI Holiday Visitors	% Annual Change - Total NI Holidaymakers	Anglers as % of NI Holidaymakers
2005 - Base	4,913	345,000		*1.4*
2006	5,201	348,450	*1*	*1.5*
2007	5,505	351,935	*1*	*1.6*
2008	5,828	357,214	*1.5*	*1.6*
2009	6,169	362,572	*1.5*	*1.7*
2010	6,530	368,010	*1.5*	*1.8*
2011	6,912	375,371	*2*	*1.8*
2012	7,317	382,878	*2*	*1.9*
2013	7,746	390,535	*2*	*2.0*
2014	8,199	398,346	*2*	*2.1*
2015	8,679	406,313	*2*	*2.1*

Source: PwC / Indecon

Scenario 3 –High Growth Scenario

6.31 Our high growth scenario for the potential future growth in the number of angling visitors to Northern Ireland is presented in Table 6.16. Under the assumption that government policy interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland by 2015, this would result in the annual number of visiting anglers rising to around 11,600 within 10 years, which would equate to 2.8% of the projected overall number of holiday visitors.

Table 6.16: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Projected Number of Visiting Anglers – High Growth Scenario Assuming 100% Increase in Angling Visitor Proportion

Year	High Growth Scenario - 100% Increase in Angling Visitor %			
	All Anglers - Estimated No.	Total NI Holiday Visitors	*% Annual Change - Total NI Holidaymakers*	*Anglers as % of NI Holidaymakers*
2005 - Base	4,913	345,000		*1.4*
2006	5,352	348,450	*1*	*1.5*
2007	5,831	351,935	*1*	*1.7*
2008	6,353	357,214	*1.5*	*1.8*
2009	6,921	362,572	*1.5*	*1.9*
2010	7,540	368,010	*1.5*	*2.0*
2011	8,215	375,371	*2*	*2.2*
2012	8,949	382,878	*2*	*2.3*
2013	9,750	390,535	*2*	*2.5*
2014	10,622	398,346	*2*	*2.7*
2015	11,572	406,313	*2*	*2.8*

Source: PwC / Indecon

Expenditure assumptions

6.32 Our scenarios for the potential future value of tourism angling are also based on two alternative assumptions regarding expenditure patterns among visiting anglers to NI. Under scenarios 1-3 we assume that average daily expenditure levels among visiting anglers rise in line with general consumer price inflation. This assumption results in the projection indicated in Table 6.17, whereby the average daily expenditures increase gradually from their present estimated level of £103.8 per angler per day to £127.2 per angler per day by 2015. Alternatively, under Scenario 4 – which is similar to Scenario 3 in relation to visitor numbers but also assumes that average daily expenditure converge towards the current average expenditures evident among anglers visiting Scotland, i.e. £160 per angler per day, by 2015. This scenario is predicated on the assumption that angling development and tourism marketing and promotion policies succeed in attracting higher spending anglers to Northern Ireland.

Table 6.17: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Projected Average Spend per Visiting Angler per Day - 2005-2015

Year	Average Expenditure per Visiting Angler per Day - £ - Scenarios 1-3	Average Expenditure per Visiting Angler per Day - £ - Scenario 4
2005 - Base	103.8	103.8
2006	106.2	108.4
2007	108.5	113.2
2008	110.7	118.2
2009	112.9	123.4
2010	115.2	128.9
2011	117.5	134.6
2012	119.8	140.5
2013	122.2	146.7
2014	124.7	153.2
2015	127.2	160.0

Source: Calculations based on Consumer Price Index Inflation projections for UK as a whole (see Bank of England, Inflation Report, May 2006) and Scottish Executive (2004)[67]

6.33 To estimate the gross expenditure contribution arising from visiting/tourist anglers it is necessary to multiply the estimated number of visiting anglers by the average annual number of trips taken per angler and the average duration of each trip, before multiplying the result by the average daily expenditure per angler. While subject to change through market developments, and as a result of marketing and other policy actions, our scenarios focus on alternative projections for the number of visitors and we have assumed that the average annual number of visits and the average number of days per visit remains constant throughout the projection period, at 2.3 visits and 4.9 days per visit respectively (see Section 4). In addition, we also present a high impact scenario based on an alternative assumption for average expenditures among visiting anglers (described above in Table 6.17). Based on these assumptions, our scenarios for the number of angling visitors and our projection for the average daily spend of visiting anglers, we set out the implied scenarios for the annual gross expenditure contribution from tourism angling in Northern Ireland between over the period 2005-2015 in Table 6.18.

[67] Scottish Executive (2004) The Economic Impact of Game and Coarse Angling in Scotland, 2004, Scottish Executive, Edinburgh.

Table 6.18: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Scenarios for Gross Expenditure Contribution - 2005-2015 - £ Million

Year	Scenarios for Gross Expenditure Contribution - £ Million			
	Scenario 1 - Base Case	Scenario 2	Scenario 3	Scenario 4
2005 - Base	3.5	3.5	3.5	3.5
2006	3.6	3.8	3.9	4.0
2007	3.7	4.1	4.3	4.5
2008	3.8	4.4	4.8	5.1
2009	4.0	4.7	5.3	5.8
2010	4.1	5.1	5.9	6.6
2011	4.3	5.5	6.6	7.5
2012	4.4	6.0	7.3	8.6
2013	4.6	6.4	8.1	9.7
2014	4.8	7.0	9.0	11.1
2015	5.0	7.5	10.0	12.6

Source: PwC / Indecon

6.34 Under the base case scenario, which assumes continued market growth in relation to the number of visiting anglers but no policy interventions, we estimate that the annual gross expenditure contribution from tourism angling could rise from the estimated current level of £3.5 million per annum to an estimated £5 million per annum by 2015.

6.35 Our second scenario, which assumes that government policy interventions target an increase in the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% over a 10-year period, would result in the annual gross expenditure contribution from tourism angling rising from £3.5 million per annum to an estimated £7.5 million per annum by 2015.

6.36 Scenario 3, which assumes that government policy interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland, would imply a potential increase in the annual expenditure impact from £3.5 million per annum in 2005 to around £10 million per annum by 2015.

6.37 Finally, our high impact scenario involving the same assumption underlying scenario 3 in relation to growth in angling visitors but also assuming that average daily expenditures increase to £160 per day by 2015, would imply an increase in the gross expenditure contribution of tourism angling in NI to £12.6 million by 2015.

6.38 To arrive at the net overall economic impacts associated with each of the gross expenditure impact scenarios it is necessary to adjust these estimates to reflect the indirect and induced, or multiplier impacts of these expenditures on the Northern Ireland economy, and further adjusting the resulting estimates to reflect the opportunity cost of resources utilised in the process. The resulting estimated future annual net economic impacts of tourism angling on the Northern Ireland economy under each scenario are set out in Table 6.19. Under the base case scenario or continued market growth without policy change, we estimate that the annual net economic impact from tourism angling could rise from the estimated present level of £1.8 million to an estimated £2.6 million by 2015. Under scenario 2, we estimate that the net economic impact could rise to £3.9 million by 2015, while under scenario 3 we estimate that the net impact could amount to approximately £5.2 million in 2015. Finally, under the high impact scenario, entailing a doubling in the angler proportion of overall visitors and an increase in assumed average daily expenditures to £160 by 2015, we estimate that the annual net economic impact could increase to £6.6 million per annum by 2015.

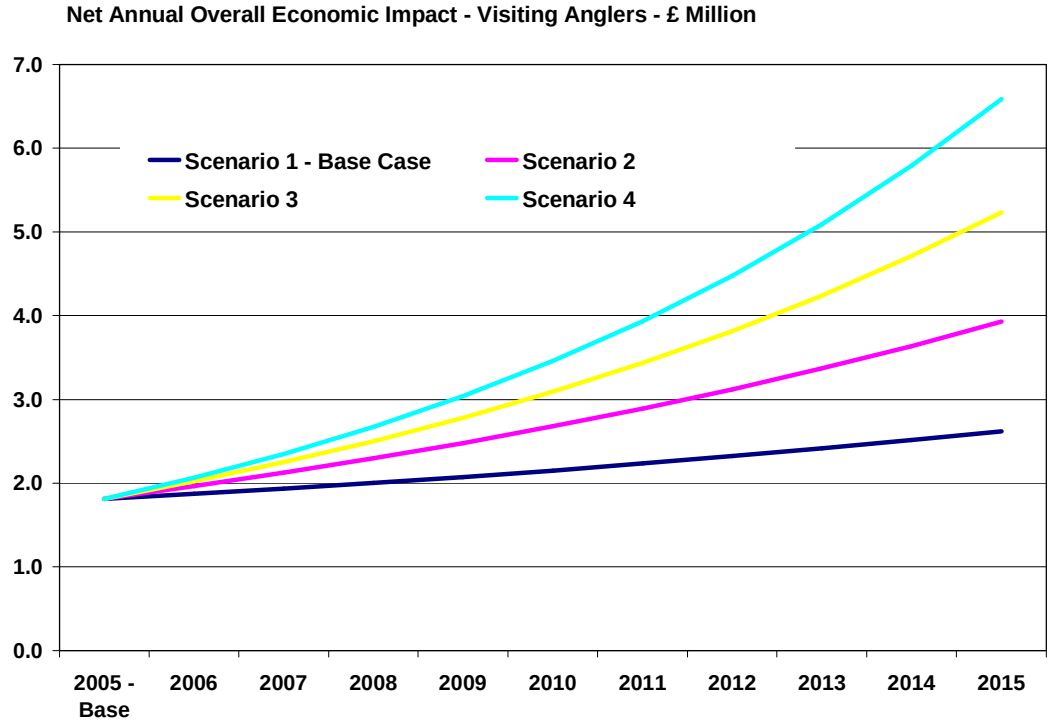
Table 6:19: Scenarios for Future Economic Value of Tourism Angling in Northern Ireland - Scenarios for Estimated Overall Net Economic Impact - 2005-2015 - £ Million

Year	Scenarios for Overall Net Economic Impact - £ Million			
	Scenario 1 - Base Case	Scenario 2	Scenario 3	Scenario 4
2005 - Base	1.8	1.8	1.8	1.8
2006	1.9	2.0	2.0	2.1
2007	1.9	2.1	2.3	2.3
2008	2.0	2.3	2.5	2.7
2009	2.1	2.5	2.8	3.0
2010	2.1	2.7	3.1	3.5
2011	2.2	2.9	3.4	3.9
2012	2.3	3.1	3.8	4.5
2013	2.4	3.4	4.2	5.1
2014	2.5	3.6	4.7	5.8
2015	2.6	3.9	5.2	6.6

Source: PwC / Indecon

6.39 Figure 6.3 provides a graphical illustration of the estimated annual net economic impact of tourism angling under each of the four scenarios identified above. Our indicative scenarios suggest that the annual net economic impact of tourism angling in Northern Ireland could increase to between £2.6 million and £6.6 million by 2015, depending market conditions and the impact of policy interventions designed to boost the number of angling visitors and the average expenditures of these anglers.

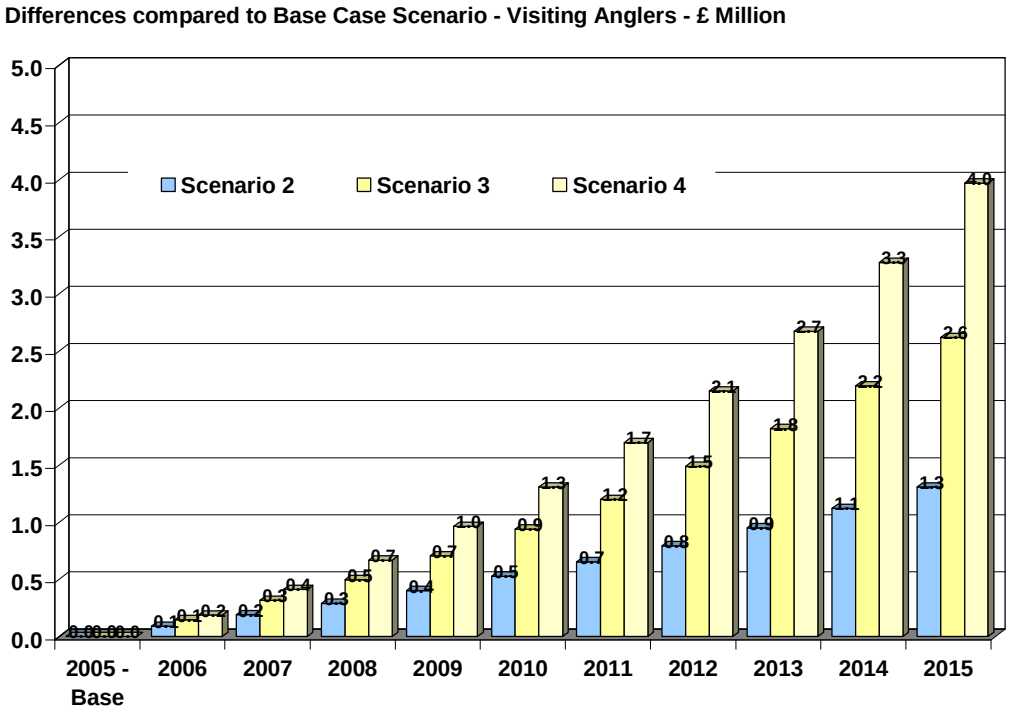
Figure 6.3: Comparison of Scenarios for Estimated Future Value of Visitor/Tourist Angling in Northern Ireland – £ Million - 2005-2015



Source: PwC / Indecon

6.40 Figure 6.4 considers the above chart from a different angle by highlighting the differences between each of scenarios 2-4 and the base case scenario 1, in terms of the annual net economic impacts. Under scenarios 2 and 3, we estimate that the achievement of a 50% or 100% increase in the proportion of angling visitors relative to the overall number of holiday visitors to Northern Ireland over a 10-year period could result in an additional annual net economic impact, over and above the base case scenario, of between £1.3 million and £2.6 million respectively by 2015. If the increase in angling visitors assumed under scenario 3 was combined with an increase in the average expenditures of these anglers, an additional net economic impact of up to £4 million per annum compared with the base case would be evident by 2015.

Figure 6.4: Comparison of Scenarios for Estimated Future Value of Visitor/Tourism Recreational Angling in Northern Ireland – Annual Difference Viz. Base Case Scenario - £ Million - 2005-2015



Source: PwC / Indecon

Scenarios for Employment supported through tourism angling

6.41 As in the case of domestic/local angling, the expenditures and wider economic impacts arising from the activities of visiting anglers to Northern Ireland will also give rise to employment supported as a result of these expenditures. Applying a similar approach to that applied in the case of domestic angling, we estimate the potential future employment supported through combining each of the four economic impact scenarios for visiting angling presented above and a factor for employment generation based on the research undertaken by Cogentsi (2007). Based on this approach, the table overleaf sets out our four scenarios for the employment associated with the economic impacts (including multiplier impacts) of the expenditures incurred by local anglers in NI. We estimate that the economic impacts arising under our base case scenario could support approximately 91 Full-Time Equivalent jobs (FTEs) by 2015, compared to an estimated 63 FTEs in 2005. The projected employment impacts could rise to 137 FTEs in 2015 under our medium growth scenario, 182 FTEs under our high growth scenario and 229 FTEs under the high growth-high expenditure scenario 4.

Scenarios for Employment Supported through Future Economic Value of Tourism Angling - 2005-2015 – Number of FTEs

Year	Scenarios for Employment Supported – No. of FTEs			
	Scenario 1 - Base Case	Scenario 2	Scenario 3	Scenario 4
2005 - Base	63	63	63	63
2006	65	68	70	72
2007	67	74	78	82
2008	70	80	87	93
2009	72	86	97	106
2010	75	93	108	120
2011	78	101	120	137
2012	81	109	133	156
2013	84	117	148	177
2014	88	127	164	202
2015	91	137	182	229

Source: PwC / Indecon

Conclusions

6.42 As part of this study, we developed a set of scenarios for the projected economic impact of recreational angling. The objective of this exercise was to provide an illustrative indication of the potential future value of recreational angling in Northern Ireland under a range of assumptions regarding market growth and policy actions on the part of the government.

6.43 Specifically, we developed scenarios for the projected future potential value of recreational angling in Northern Ireland under two areas, namely:

- Scenarios for projected economic impact of domestic recreational angling; and
- Scenarios for projected economic impact of visitor/tourist angling.

6.44 In the case of domestic angling, 4 scenarios were considered, as follows:

- **Scenario 1 – Base Case Scenario** – assuming continued market growth without any change in government policy in relation to the development of the domestic recreational angling sector;
- **Scenario 2 – Medium Growth Scenario** – assumes continued market growth combined with policy changes to target an increase of 50% in the angling participation rate relative to the overall Northern Ireland population over a 10-year period;
- **Scenario 3 – High Growth Scenario** - assumes continued market growth combined with policy changes designed to achieve a doubling of the current angling participation rate relative to the overall Northern Ireland population over a 10-year period; and
- **Scenario 4 - High Participation/High Expenditure Scenario** – as per Scenario 3 in relation to angling participation, in addition to assumption that average daily expenditures among local anglers increases by 50% by 2015.

6.45 In relation to tourism/visitor angling the following scenarios were evaluated:

- **Scenario 1 – Base Case Scenario** – assuming the number of angling visitors grows in line with the projected overall number of holiday visitors to Northern Ireland over the 10-year period 2005-2015, thereby maintaining the share of anglers in total visitors constant at current levels;
- **Scenario 2 – Medium Growth Scenario** – assumes that government policy interventions target an increase in the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% over a 10-year period; and
- **Scenario 3 – High Growth Scenario** - assumes that government policy / market stimulation interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland over a 10-year period to 2015.
- **Scenario 4 – High Growth, High Impact Scenario** – involving same assumptions as per Scenario 3 above combined with assumption that average daily expenditures among visiting anglers converges towards current levels in Scotland over the period to 2015.

6.46 We also modelled the level of employment supported through these economic impacts, based on research on the contribution of tourism to the Northern Ireland economy.

6.47 Taking the above alternative scenarios for the potential future growth in domestic and visitor angling in Northern Ireland into account, the following table provides a summary of the estimated current (in 2005) and projected potential future net economic impacts and associated employment supported by 2015 of angling in Northern Ireland.

Table 6.20: Summary of Estimated Annual Net Economic Impacts and Employment Supported through Domestic and Tourism Recreational Angling in Northern Ireland – 2005-2015

Impact Components	Base Case		Medium Participation		High Participation		High Participation/ High Expenditure	
	2005	2015	2005	2015	2005	2015	2005	2015
Domestic angling - estimated net economic impact - £ Million	20.7	28.9	20.7	39.7	20.7	52.9	20.7	64.8
Tourism angling - estimated net economic impact - £ Million	1.8	2.6	1.8	3.9	1.8	5.2	1.8	6.6
Overall Net Economic Impact - £ Million	**22.5**	**31.5**	**22.5**	**43.6**	**22.5**	**58.1**	**22.5**	**71.4**
Employment Supported – Estimated FTEs	**778**	**1,089**	**778**	**1,506**	**778**	**2,007**	**778**	**2,464**
Domestic angling	715	998	715	1,369	715	1,825	715	2,235
Tourism angling	63	91	63	137	63	182	63	229

Source: PwC / Indecon

6.48 We estimate that the overall net economic impact of recreational angling (including domestic and visitor angling) on the Northern Ireland economy at £22.5 million (based on 2005 participation and expenditure figures). This could rise to between £31.3 million and up to £71.4 million by 2015, depending on market conditions and the impact of

policy interventions designed to boost the number of local and visiting anglers, and the typical expenditures of these anglers. We also estimate that the expenditure impacts of domestic and visitor angling support a total of approximately 778 full-time equivalent jobs in the Northern Ireland economy. This employment impact could increase to between 1,089 FTEs and 2,464 FTEs, depending upon the assumptions made in relation to angler numbers and participation, and the expenditure characteristics of these anglers.

6.49 It should be emphasised that the scenarios for the potential future value of recreational angling in Northern Ireland described in this section are based on the specific assumptions regarding potential angling participation levels, the annual rate of increase in angler expenditures and, in particular, the efficacy of any government policy interventions. As in the case of any indicative scenarios of this kind, there are risks around these scenarios and actual outturns may differ significantly from those indicated under each scenario. However, the scenarios described provide useful illustrative indicators of the potential future value of both domestic- and tourism-based recreational angling in Northern Ireland under a variety of market and target-based policy making assumptions.

VII Conclusions and recommendations

Introduction

7.1 Bringing together the evidence presented in the previous sections, this section summarises the main findings and outlines some recommendations in regard to the future development of recreational angling in Northern Ireland. Before this, however, it is important to reflect on the scope and limitations of this study.

Scope and limitations

7.2 Examining the economic and social impact of recreational angling in Northern Ireland is a complex task. The following issues are relevant to this complexity:

- **Accompanying anglers:** this report seeks to estimate the economic and social impact of recreational angling in Northern Ireland. This study has examined the contribution of individual anglers and the expenditure undertaken by anglers on behalf of others. Therefore if an angler is paying for a spouse or offspring this is included. However, as the inclusion of other accompanying anglers would have produced unwieldy questionnaires, it was not viable for this study to incorporate this further element. As a consequence, the economic and social impact of angling may, in some cases, be greater than those estimated in this study;

- **Sea angling population:** as no licence or permit is required to participate in sea angling, there is no definitive understanding of the population of sea anglers. This makes it difficult to contact sea anglers, identify a sample and examine the economic and social impact of this sector in Northern Ireland. To address this issue, the study team sourced the databases of each sea angling club and sea angling boats in Northern Ireland to identify individual anglers for survey. Identifying visitor sea anglers, however, did prove difficult and it is also understood that not all sea anglers are members of clubs. The findings from the survey were analysed and compared with other research conducted in the rest of the UK and the Republic of Ireland for validation but it is likely that this study underestimates the contribution from sea angling;

- **Accessing contact details for anglers in the FCB area:** while the population of game and coarse anglers in Northern Ireland is known, no contact database of anglers in the FCB area exists which created difficulties in identifying a sample and administrating the survey. The study team, however, were able to access a database of permit holders in the DCAL public angling estate and, where available, source the databases of angling clubs which contributed towards developing a sample for the survey;

- **Accessing contact details for tourist anglers:** as no computerised contact database of anglers in the FCB area exists, this reduced the potential size of the population from which to sample tourist anglers. However, as discussed, the study team was able to access the databases held by DCAL, the Loughs Agency and, where available, angling clubs. With 48 returns the number of responses from visiting anglers was at first disappointing but additional postal questionnaires were then sent out. In addition, contact details of visiting anglers were accessed from local ghillies. From this an additional 139 completed visitor surveys were returned, giving a reasonable response rate of 15%;

- **Displacement:** in any analysis of economic impacts it is important to take account of displacement effects, i.e. the proportion of expenditures that would have incurred

in any case on other goods and services in the Northern Ireland economy in the absence of recreational angling. The displacement factor used in this report is 59.5%. This figure was based on the findings from the survey of local and visiting anglers and on existing research which examined the economic impact of salmon angling in Ireland;

- **Demographic bias:** due to variations in some age groups to respond to surveys, postal questionnaires inherently have a bias in terms of demographic representation. This representation was also reflected in this survey as 6% of respondents were from the under 18 age range, whereas 16% of licences and permits purchased in the FCB and public angling estate were by juveniles. Therefore, given the generally lower spending power of the under 18 age group, this report could overestimate the economic impact of angling in Northern Ireland. However, a higher proportion of respondents to the survey were from the 60+age group (26% as opposed to 12% of senior licences and permits purchased in the FCB and public angling estate). This means that the proportion of survey respondents of working age (18-59) and those with the greatest amount of spending power, was broadly similar to those that purchase licences and permits (67% of survey respondents of working age to 70% of anglers of working age that purchased licences and permits in the FCB and public angling estate).

- **The import content of expenditure:** in examining economic impact it is also important to reflect on the import content of expenditure, i.e. the proportion of expenditures accounted for by imported goods and services, which constitute a net leakage from the Northern Ireland economy. Based on the import content of GDP at market prices for the UK as a whole, this study assumes that imports account for, on average, 30% of domestic expenditures;

- **Multiplier impacts:** in assessing the overall economic impacts of visiting/tourism angling, account must be taken of the fact that associated expenditures (adjusted for the import component) constitute a net addition to the overall Gross Domestic Product and Balance of Payments of an economy. This important feature means that it is important to consider the indirect and multiplier impacts arising out of second and subsequent round impacts of expenditures on the NI economy. These effects can be estimated using a so-called multiplier. For the purposes of estimating the economy-wide economic impacts of expenditures undertaken by visiting anglers to NI, we apply a multiplier of 1.29. This reflects research undertaken on the tourism sector of the NI economy.[68]

Insights from other national and international research

Economic impact

7.3 While many national and international studies have adopted a range of approaches and focused on different types of evidence such as spend per angler, overall expenditure or contribution of employment, research has shown that recreational angling has significant economic impact. In Germany, for example, the economic contribution of recreational angling in 2002 was estimated at €6.4 billion per year, with around 52,000 employees being directly or indirectly dependent on the expenditure of anglers. Similarly, in England and Wales a report in 2004 concluded that freshwater angling is worth over £3 billion a year and supports many thousands of jobs.

7.4 Further analysis of the literature has also identified a number of key findings that include:

[68] See Cognentsi (2007) Tourism in the Northern Ireland Economy, Volume 1, March 2007, Northern Ireland Tourist Board and the Department of Enterprise, Trade and Investment.

- Angling can make a significant contribution to the economy, particularly in terms of tourism and employment. Broadly speaking, angling is considered to have the greatest economic impact in rural areas where job opportunities are limited;

- Tourist anglers can make a significant contribution to the economy and angling expenditure. For example, visiting anglers accounted for 52% of angling expenditure in both Scotland (according to a 2004 study) and Ireland (according to a 1988 study);

- Game angling has a greater economic impact than coarse. In Scotland, a 2004 report on freshwater angling found that 96% of angler expenditure was attributed to game fishing and 4% to coarse. In Ireland, a 1988 study on all types of recreational angling (game, coarse and sea), estimated that 49% of expenditure was attributed to game angling with 28% to coarse and 23% to sea angling;

- Significant proportions of spend by anglers is attributed to travel / fuel costs. Following this, accommodation, food and drink, equipment and, in some cases, licences account for the greatest proportions of expenditure.

Social impact

7.5 Although the basis of research on the social impact of recreational angling is more limited compared to the economic analysis, a number of key national and international studies have been conducted. These studies have outlined a range of outcomes from angling including benefits in regard to education, crime reduction, social cohesion, heath and the environment. The key findings from these studies are as follows:

- Angling is a popular sport (e.g. out of an overall population of 82 million, 3.3 million people aged 14 or older angled at least once in Germany or abroad in 2002) and there are high levels of participation across a range of age and income groups. Angling, therefore, can provide important social benefits by encouraging participation among a range of age groups and social classes and facilitating social interaction. Greater opportunity exists, however, to encourage greater participation levels among the female population;

- In being a sport which is accessible to all, angling has facilitated participation among persons with disabilities and has helped them socialise, build a sense of independence and integrate into the wider community;

- Being a source of outdoor recreation, angling can provide health benefits in terms of relieving stress and promoting relaxation. Evidence also suggests that the health benefits are one of the main motivations behind angling;

- Anglers have provided environmental benefits by acting as a ‘watchdog of the waterways’ and providing financial support for environmental agencies. However, while a strong link can be identified between anglers and their high level of care for the environment, evidence suggests that anglers, in some cases, are less willing to change their practices and understand how their activities can have a detrimental environmental impact. In recent years, however, measures such as bag limits and practices of catch and release have been more widely adopted by anglers which has contributed towards conserving fishing stocks;

- Being an outdoor recreation, angling opens up potential for participants to learn more about wildlife, ecology and the natural environment. Angling can be used to promote broader educational issues, particularly improving knowledge of the countryside;

- Following the introduction of a number of targeted angling programmes, research shows that angling can be used as a tool for reducing anti-social behaviour. Through increased social interaction, learning about the environment and encouraging participation on a positive recreational activity, angling can be employed as a mechanism to divert energy away from anti-social behaviour;

- By not being associated with any particular flags or emblems, angling has strong levels of participation across the political divide in Northern Ireland, including cross-community memberships within individual angling clubs. Through this inclusive membership, angling has helped to develop contacts and relationships which have contributed towards enhancing social cohesion between the two main communities.

The economic impact of recreational angling

Levels of participation

7.6 In examining the economic impact of recreational angling in Northern Ireland, one of the key factors to consider is the level of participation. From analysis of the number of licence holders in the FCB and Loughs Agency area, it is estimated that, in 2005, there were 24,890 resident and 4,463 tourist or visiting coarse and game anglers in Northern Ireland. This represents an increase of 10% and 2%, respectively, on the number of resident and visiting anglers in 2003.

7.7 As a licence is not required to engage in sea or shore angling in Northern Ireland (expect when fishing for salmon or sea trout by the shore), it is more difficult to estimate the number of anglers engaging in sea/shore angling. Our approach to estimating the number of sea/shore anglers was based on our own survey analysis and the surveys provided by NITB and concluded that there were 5,601 resident and 450 sea/shore anglers in 2005.

Amount of time engaged in angling

7.8 In relation to the amount of time spent angling in Northern Ireland, the survey identified that local anglers spent on average a total of 57 days engaged in angling in the 2005 season. Of these 57 days, an average of 43 days were spent angling in their own county and an average of 14 days were spent away from home.

7.9 The majority (81.8%) of visitors that participated in angling in Northern Ireland stated that angling was the primary reason for their visit. The survey evidence shows that the mean number of trips made by visiting anglers totalled 1.4 during 2005 and on average, visitors spent a total of 4.9 days per trip to Northern Ireland.

Annual expenditure of anglers

7.10 The findings from our survey research indicate that among Northern Ireland resident anglers as a whole (i.e. across all types of angling), respondents typically spent an overall total of £1,313 on angling related expenditures during the 2005 season.

7.11 Visiting anglers to Northern Ireland, on the other hand, typically spent a total of £707 during the 2005 season. Taking into account the average number of trips made by visiting anglers and the average duration of such trips, we estimate that the average overall spend per trip per visiting angler came to just over £508.6, while the average spend per trip per day/night was £103.8.

Expenditure patterns

7.12 In terms of typical annual expenditures incurred by local anglers, the largest average levels of expenditure were incurred on fishing tackle and equipment (16%), followed by expenditures on accommodation (14%), other non-angling items (14%), other angling items (12%), travel costs (12%) and food and beverages (8%).

7.13 For visiting anglers, as expected, the highest proportion of annual expenditure incurred was related to accommodation (28%). The was followed by food and beverages (27%), fishing tackle and equipment (15%), other non-angling items (10%) and other angling items (7.4%).

Estimated gross expenditure contribution

7.14 From considering the levels of participation, engagement in angling and annual expenditures, it is estimated that the aggregate gross expenditure contribution of NI resident anglers was £39.3 million in 2005. From this total figure for recreational angling, the gross expenditure contribution from game anglers amounts to £25.7 million (64%), coarse anglers to £6.2 million (18%) and sea anglers to £7.4 million (18%). This is similar to other studies which have also found that game anglers contribute a higher proportion of total expenditure.

7.15 Analysis of the number of visiting anglers, the number of trips and days / nights per trip and average expenditure, shows that the gross expenditure contribution arising from visitor/tourist anglers to Northern Ireland totaled approximately £3.5 million during 2005. Compared to other studies, as noted above, the contribution of tourist anglers to the overall expenditure in Northern Ireland (8%) is a significantly lower than the proportion of expenditure provided by tourist anglers in Ireland and Scotland (52%).

Net economic impacts

7.16 Taking displacement impacts and the import content of expenditure into account, it is estimated that the overall net economic impact or net benefit arising from the presence of recreational angling in Northern Ireland is £20.5 million in 2005. Of this figure, £13.4 million relates to game angling, £3.2 million in respect of coarse angling and £3.9 million generated through sea/ shore angling. In addition, from reflecting on the import component of the expenditure and considering indirect and multiplier impacts, we estimate the overall net economic impact of visitor/tourist game, coarse and sea/shore angling at just under £1.8 million during 2005. This is equivalent to an average impact of £369.4 per visiting angler for the 2005 year.

The social / environmental impact of recreational angling

7.17 Drawing on evidence from the survey, other published research and interviews with key stakeholders, it is clear that angling can provide a range of benefits beyond economic contributions. These wider benefits can make a significant contribution to environmental and social goals in Northern Ireland. The main findings from the study are outlined below:

- By monitoring the waterways, contributing funding through the sale of licences and investing in nursery areas, anglers have made a positive impact on the environment in Northern Ireland through protection and development. Anglers, for example, regularly highlight areas of pollution to watchdog organisations such as the FCB and private fisheries and angling clubs have also been proactively involved in developing nursery areas that nurture fish and other wildlife. Concerns, however, have been raised by some environmental groups over the need to ensure conservation measures such as catch and release are fully implemented and that the fishing resource is protected;

- In relation to social benefits, one of the main outcomes from angling in Northern Ireland is its ability to encourage and facilitate participation and interaction among a diverse range of individuals and groups. In 2005, for example, it is estimated there were just under 30,000 game, coarse and sea anglers in Northern Ireland with the survey showing that the levels of participation encompass a broad range of ages and social classes / levels of income. Angling, however, is predominately a male sport;

- Through broader social interaction among a range of ages and social classes, evidence suggests that angling can contribute towards helping to divert young people away from anti-social behaviour, building relationships and linkages on a cross-border and cross-community basis, and facilitating greater social cohesion;

- Angling can be used as tool to enable learning. This specially relates to using angling as a way of promoting learning about wildlife and the environment;

- By being a relaxing outdoor activity, angling can improve a healthy living lifestyle that can contribute health benefits. While most anglers felt that catching a fish contributed most to their fishing experience, the health benefits from angling are also appreciated with a significant number of anglers highlighting that relaxing, undertaking a healthy outdoor activity and releasing stress were factors that contributed most to their fishing experience;

- Further to this, evidence suggests that by promoting a number of benefits, significant savings in other departments and agencies can be realised. This is particularly relevant in the cases of health and crime reduction.

Projected economic impacts

7.18 In examining the projected economic impact of recreational angling, a number of different scenarios on the future potential value of angling were considered. For both the domestic and visitor tourist angling, four scenarios were examined including:

- **Scenario 1 – Base Case Scenario.** For domestic angling, this scenario assumes continued market growth without any change in government policy in relation to the development of the domestic recreational angling sector. For tourism/visitor angling, this scenario assumes the number of angling visitors grows in line with the projected overall number of holiday visitors to Northern Ireland over the 10-year period 2005-2015, thereby maintaining the share of anglers in total visitors constant at current levels;

- **Scenario 2 – Medium Growth Scenario.** For domestic angling, this scenario assumes continued market growth combined with policy changes to target an increase of 50% in the angling participation rate relative to the overall Northern Ireland population over a 10-year period. For tourism/visitor angling, this scenario assumes that government policy interventions target an increase in the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland of 50% over a 10-year period;

- **Scenario 3 – High Growth Scenario.** For domestic angling, this scenario assumes continued market growth combined with policy changes designed to achieve a doubling of the current angling participation rate relative to the overall Northern Ireland population over a 10-year period. For tourism/visitor angling, this scenario assumes that government policy / market stimulation interventions target a doubling of the proportion of angling visitors in the projected overall number of holiday visitors to Northern Ireland over a 10-year period to 2015;

- **Scenario 4 - High Participation/High Expenditure Scenario.** For domestic angling, this scenario takes forward the same assumptions as per Scenario 3 in relation to angling participation, in addition to assumption that average daily expenditures among local anglers increases by 50% by 2015. For tourism/visitor angling, the same assumptions are employed as per Scenario 3, combined with assumption that average daily expenditures among visiting anglers converges towards current levels in Scotland over the period to 2015.

7.19 Taking the above alternative scenarios for the potential future growth in domestic and visitor angling in Northern Ireland into account, the following table provides a summary of the estimated current (in 2005) and projected potential future net economic impacts and associated employment supported by 2015 of angling in Northern Ireland.

Table 7.1: Summary of Estimated Annual Net Economic Impacts and Employment Supported through Domestic and Tourism Recreational Angling in Northern Ireland – 2005-2015

Impact Components	Base Case		Medium Participation		High Participation		High Participation/ High Expenditure	
	2005	2015	2005	2015	2005	2015	2005	2015
Domestic angling - estimated net economic impact - £ Million	20.7	28.9	20.7	39.7	20.7	52.9	20.7	64.8
Tourism angling - estimated net economic impact - £ Million	1.8	2.6	1.8	3.9	1.8	5.2	1.8	6.6
Overall Net Economic Impact - £ Million	**22.5**	**31.5**	**22.5**	**43.6**	**22.5**	**58.1**	**22.5**	**71.4**
Employment Supported – Estimated FTEs	**778**	**1,089**	**778**	**1,506**	**778**	**2,007**	**778**	**2,464**
Domestic angling	715	998	715	1,369	715	1,825	715	2,235
Tourism angling	63	91	63	137	63	182	63	229

7.20 The analysis shows that significant net economic impacts can be projected for domestic and tourism expenditure across each of the four scenarios. We estimate that the overall net economic impact of recreational angling (including domestic and visitor angling) on the Northern Ireland economy at £22.5 million (based on 2005 participation and expenditure figures). This could rise to between £31.3 million and up to £71.4 million by 2015, depending on market conditions and the impact of policy interventions designed to boost the number of local and visiting anglers, and the typical expenditures of these anglers. We also estimate that the expenditure impacts of domestic and visitor angling support a total of approximately 778 full-time equivalent jobs in the Northern Ireland economy. This employment impact could increase to between 1,089 FTEs and 2,464 FTEs, depending upon the assumptions made in relation to angler numbers and participation, and the expenditure characteristics of these anglers.

Recommendations

7.21 This report has highlighted that recreational angling provides significant economic and social benefits to Northern Ireland. The study shows that with appropriate policy

changes or initiatives there is scope to increase the economic impact of the sector even further. It was not within the remit of this study to review existing policy in relation to the sector or to examine the case for public sector intervention. Indeed, DCAL has acknowledged that an assessment of existing policy is to be included as part of a future study on angling. In this context, we have made a number of recommendations for the way forward.

7.22 Reflecting on a number of different scenarios, this study has examined the future potential value of the angling sector in Northern Ireland. For both the medium and high growth scenarios in particular, the study has projected significant potential economic impacts up to 2015. Indeed, it is estimated that the net economic impact of recreational angling (including domestic and visitor angling) on the Northern Ireland economy could rise from £16.6 million in 2005 to between £23.3 million and £43.2 million in 2015. These scenarios, however, are based on a number of assumptions that include continued market growth and policy changes to target an increase of 50% or 100% in the angling participation rate relative to the overall Northern Ireland population. Taking forward the evidence on the current and potential value of angling outlined in this report, it is recommended that a review of policy should be conducted.

> **Recommendation 1:** In the light of the current and projected potential value of the angling sector in Northern Ireland, it is recommended that DCAL, in association with its partners (Loughs Agency and the NITB), undertake a review of public policy in relation to the sector, including one that focuses on domestic and visiting anglers. This review might be carried out in line with standard DFP/HM Treasury guidelines on evaluation and should cover the full range of interventions to examine the efficiency and effectiveness of different approaches, building on the groundwork undertaken in this report. This review would provide the basis for recommendations for options for a future strategy.

7.23 While this report has shown that potential exists to increase the net economic value of angling, much depends on increasing the angling participation rate. However, it is also important to consider the sustainability of the sector and ensure that fishing stocks are maintained to support an increase in the angling population. A balance, therefore, needs to be met between future development of angling and an increase in participation levels and protection and development of the fishing source. In addition, as domestic angling will generally promote greater social outcomes than tourist angling, a balance needs to be met between developing tourism and domestic angling and facilitating social and economic outcomes. More broadly, consideration needs to be given to examining the opportunities and constraints and costs and benefits of development. Following the review of policy, this assessment will be able to inform the development of a strategy for the sector.

7.24 In Northern Ireland, a range of stakeholders are involved in the angling sector. This includes, *inter alia*, government departments, government agencies, cross-border bodies, local authorities and angling clubs. While this system of governance has encouraged wider participation and involvement in the development of angling, it has the potential to create challenges in developing a co-ordinated and strategic approach going forward.

> **Recommendation 2:** Following full consideration of the opportunities and constraints and costs and benefits of the future development of angling, it is recommended that DCAL establish a Working Group to develop a strategy for angling in Northern Ireland and areas of the Loughs Agency. While involving representatives of key stakeholders in the angling sector, it is recommended that the Working Group also include stakeholders from the environment and social sectors given the broad range of benefits and potential savings that can be realised through angling.

7.25 This report has demonstrated the important economic and social contribution that visiting anglers can make in Northern Ireland. Indeed, in regard to the economic impacts, the overall net economic contribution of visitor / tourist anglers to the Northern Ireland economy is estimated at just under £2.7 million. This is an equivalent to an average impact of £544.4 per visiting angler for the 2005 year.

Recommendation 3: Given the benefits provided by tourist anglers, outlined in this report, it is recommended that NITB give consideration to developing a strategy that increases the promotion of Northern Ireland as tourist destination for anglers. It is also proposed that NITB give consideration to developing this strategy as part of an all-island approach with Tourism Ireland and to linking with Scotland and other partners in Britain within the context of broader East-West linkages.

7.26 One further issue that has emerged from this report is that there are a number of factors in terms of the angling experience in Northern Ireland in which local and tourist anglers expressed a low degree of satisfaction. These included issues such as the quality of angling, the quality of information, the attractiveness of the environment and the accessibility of angling waters. These are key issues that could impinge on the future growth potential of angling in Northern Ireland. Over the last number of years, however, a number programmes have focused attention on improving the angling experience and it will take time for the full impact of this activity to be realised. That being said, it will be important to continually review and monitor the quality of the angling experience to ensure that the needs of the local and visiting angler are being met.

Recommendation 4: It is recommended that issues related to the quality of the angling experience are periodically reviewed and monitored. In light of recent investment in the sector, it will be particularly important to examine the impact of this support and to determine over time whether the shortfalls in experience, identified in this report, have been met.

7.27 In considering the future development of the angling sector, DCAL, the Loughs Agency, NITB and other partners will require continuous market information on angling in Northern Ireland. One source that can provide important annual information is a database of anglers that have purchased a licence. A database of licence holders can be used to understand the demographic and geographical profile of anglers, among other things, which will provide a valuable information resource base. However, while an annual computerised database is compiled of licence holders within the Loughs Agency, a computerised database is not available for anglers in the FCB area. Indeed, one of the major challenges of this study has been to assemble a full list of anglers from which to select a sample for survey.

Recommendation 5: It is recommended that consideration be given to establishing a computerised and co-ordinated database that will hold information on licence holders and compile market information on an annual basis.

7.28 Research shows that other countries have managed to draw a significant proportion of total angling expenditure from the tourist sector. Previous studies, for example, have outlined that visiting anglers accounted for 52% of angling expenditure in both Scotland and Ireland. With a view to developing tourist angling, Northern Ireland can draw on the experience of these countries and identify best practice.

Recommendation 6: It is recommended that DCAL, in association with its partners (Loughs Agency and the NITB), undertake a study visit to other countries in which tourist angling is well developed. With a view to developing tourist angling in Northern Ireland, this study visit will be used to outline lessons and identify best practice. Again this proposal could be considered within the context of an all-island approach.

Appendix A – Questionnaires for local and visiting anglers

Confidential survey of local anglers in Northern Ireland

PricewaterhouseCoopers, in association with INDECON Consulting, is conducting research into the social and economic impact of recreational fishing in Northern Ireland and fisheries within the Loughs Agency on behalf of the Department of Culture, Arts and Leisure. This research will help inform the future development of recreational angling in Northern Ireland.

To identify social and economic impact, it is important to seek the views of anglers that have participated in recreational fishing in Northern Ireland and we would be grateful if you could complete this questionnaire and enclose your response (including any additional supporting pages) in the pre-paid business reply envelope provided.

The questionnaire will take approximately **10** minutes to complete. We would like to stress that your response will be treated as **Strictly Confidential.** All responses will be treated in accordance with the Market Research Society Code of Conduct, which guarantees confidentiality and anonymity. Under no circumstances will you be identified, nor will the responses you provide be attributed to you.

Background details

1. Are you a member of a local Northern Ireland angling club or association? Please ✓ below:

Yes	
No	

If Yes, please indicate which clubs/associations:

_____
_____

2. In what season did you last engage in angling in Northern Ireland? Please state last season/year:

_____

3. Please state your primary interest in recreational angling. Please ✓ below:

Game angling		Go to question 4
Coarse angling		Go to question 4
Sea angling		Go to question 5
Shore angling		Go to question 5

4. If you are a game or coarse angler, what fishing type do you prefer? Please select one preferred method by inserting a ✓ below:

Type of angling	**Fishing type**	**Please mark your one preferred fishing type with a ✓ below**
Game	Flyfishing	
	Spinning	
	Worming	
Coarse	Pleasure	
	Match	
Pike	Flyfishing	
	Spinning	
	Dead Bait	

Recreational fishing in Northern Ireland

5. During the last season/year in which you engaged in angling in **your local county**, please indicate the estimated total number of days you spent by type of angling:

(NB Belfast anglers should consider Co.Antrim to be their local county)

Game angling:		Total number of days during last season / year
Coarse angling		Total number of days during last season / year
Sea angling		Total number of days during last season / year
Shore angling		Total number of days during last season / year

6. During the last angling season/year, please indicate the total number of days you spent on holidays / trips **elsewhere in Northern Ireland** by type of angling:

Game angling:		Total number of days during last season / year
Coarse angling		Total number of days during last season / year
Sea angling		Total number of days during last season / year
Shore angling		Total number of days during last season / year

7. During the last season/year, please indicate the number of days you engaged in recreational angling in Northern Ireland, according to the name, type and location of fishery:

No.	NAME OF FISHERY (PLEASE STATE)	Estimated <u>total</u> no. of days angling during last season/year	Breakdown of total no of days by type of angling			
			Game	Coarse	Sea	Shore
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

8. During the last season/year, how many nights in total did you spend away from home, **but in Northern Ireland**, in any of the following types of accommodation?

Type of accommodation	Total nights during last season, in Northern Ireland, spent away from home
Hotel	
Fishing Lodge	
Bed and Breakfast/Guesthouse / Farmhouse Accommodation	
Camping / Caravan	
Self catering / Chalet	
Other – please describe	

9. During the last season/year, please provide your best estimate of the breakdown of your total expenditure (in Sterling £) on recreational angling in Northern Ireland using the table below:

Expenditures	**Sterling £ - Expenditure during last season/Year**
Accommodation (on domestic angling trips involving at least 1 overnight stay)	**£**
Food and beverages	**£**
Fishing tackle/equipment (purchase or rental)	**£**
Boat hire/rental (including charter boats)	**£**
Ghillie hire/rental (including charter boats)	**£**
Licences – annual or other	**£**
Permits – annual or other	**£**
Competition fees	
Travel costs	
Other **angling-related** purchases – please specify below and indicate typical annual expenditures	**£**
Other **non-angling** items – please specify below and indicate typical annual expenditures	**£**

Angling in other countries?

10a. Have you visited countries / regions other than Northern Ireland for recreational angling purposes **within the past 5 years**. Please ✓ below:

Yes	☐	Go to question 10b
No	☐	Go to question 11

b. If Yes, please indicate the total number of days you spent on angling visits to countries other than Northern Ireland within the **last 5 years** by type of angling:

Length of stay engaged in game (Salmon, Sea Trout, Trout etc) angling	☐	Total number of days
Length of stay engaged in coarse angling	☐	Total number of days
Length of stay engaged in sea angling:	☐	Total number of days
Length of stay engaged in shore angling:	☐	Total number of days

c. What country(ies) / regions did you visit? Please ✓ below:

Republic of Ireland		
England		
Scotland		
Wales		
Other		Please specify below

_____

Your views on recreational angling in Northern Ireland

11. Listed below are various factors relating to recreational angling in Northern Ireland. For each factor, please indicate whether you consider it to be **important or unimportant** to your fishing experience in Northern Ireland. Please ✓ below:

	Very important	*Quite important*	*Neither / Nor*	*Not very important*	*Not at all important*	*Don't Know*
Overall quality of angling	❑	❑	❑	❑	❑	❑
Quality of information available on angling	❑	❑	❑	❑	❑	❑
Accessibility/access to angling waters	❑	❑	❑	❑	❑	❑
Cost of angling – licences/permits	❑	❑	❑	❑	❑	❑
Cost of angling equipment	❑	❑	❑	❑	❑	❑
Cost of renting angling equipment	❑	❑	❑	❑	❑	❑
Availability of ghillies	❑	❑	❑	❑	❑	❑
Availability of charter boats (sea angling)	❑	❑	❑	❑	❑	❑
Cost of charter boats (sea angling)	❑	❑	❑	❑	❑	❑
Availability of accommodation facilities	❑	❑	❑	❑	❑	❑
Quality of Accommodation facilities	❑	❑	❑	❑	❑	❑
Cost of accommodation	❑	❑	❑	❑	❑	❑
The attractiveness of the natural environment	❑	❑	❑	❑	❑	❑
The 'friendliness' of the people	❑	❑	❑	❑	❑	❑
Other factors – please specify below and indicate relative importance						
	❑	❑	❑	❑	❑	❑

12. Thinking of recreational angling in Northern Ireland, **how satisfied were you** about each of the following factors? Please ✓ below:

	Very dissatisfied	Quite dissatisfied	Neither / Nor	Satisfied	Very satisfied
Overall quality of angling	❑	❑	❑	❑	❑
Quality of information available on angling	❑	❑	❑	❑	❑
Accessibility/access to angling waters	❑	❑	❑	❑	❑
Cost of angling – licences/permits	❑	❑	❑	❑	❑
Cost of angling equipment	❑	❑	❑	❑	❑
Cost of renting angling equipment	❑	❑	❑	❑	❑
Availability of ghillies	❑	❑	❑	❑	❑
Availability of charter boats (sea angling)	❑	❑	❑	❑	❑
Cost of charter boats (sea angling)	❑	❑	❑	❑	❑
Availability of accommodation facilities	❑	❑	❑	❑	❑
Quality of Accommodation facilities	❑	❑	❑	❑	❑
Cost of accommodation	❑	❑	❑	❑	❑
The attractiveness of the natural environment	❑	❑	❑	❑	❑
The 'friendliness' of the people	❑	❑	❑	❑	❑
Other factors – please specify below and indicate relative importance	❑	❑	❑	❑	❑

13. Which of the following factors do you consider contribute **most** to your fishing experience. Please rank **3** factors 1-3 (where 1 is the most important):

Factors	Rank only 3 factors (1-3)
Catching a fish	
Catching a fish to eat	
Catching and releasing a fish	
Relaxing	
Socialising with family and friends	
Competition with other anglers	
Releasing stress	
Personal achievement	
Meeting people from different cultural backgrounds	
Being in attractive natural environment and appreciating nature	
Undertaking a healthy outdoor activity	
Other, please state	

14. Is there anything else you would like to say about the **economic and social importance** of recreational angling in Northern Ireland (Please use additional pages as required).

_____

_____

_____

_____

_____

_____

_____

_____

15. What is the one thing, if anything, which would improve recreational angling in Northern Ireland (Please use additional pages as required).

_____

_____

_____

_____

_____

_____

_____

_____

Thank you. You have now completed the main questions in the survey. To assist with profiling the survey responses, could you please answer the final two questions.

16. Please indicate your age with a ✓ using the ranges below.

< 18	
18 -24	
25 -44	
45 - 59	
60+	

17. Please indicate your income with a ✓ using the ranges below.

< £15,000	
£15,000 - £24,999	
£25,000 – £39,999	
£40,000 - £59,999	
£60,000+	

If you wish to be entered in our prize draw could you please enter your Name and telephone number in the spaces below.

Name

Telephone Number

Thank you very much for taking the time to participate in this important piece of research. Could I ask you to return your confidential questionnaire in the pre-paid envelope provided.

Confidential survey of visiting anglers in Northern Ireland

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To identify social and economic impact, it is important to seek the views of anglers that have participated in recreational fishing in Northern Ireland and we would be grateful if you could complete this questionnaire and enclose your response (including any additional supporting pages) in the pre-paid business reply envelope provided.

The questionnaire will take approximately **10** minutes to complete. We would like to stress that your response will be treated as **Strictly Confidential.** All responses will be treated in accordance with the Market Research Society Code of Conduct, which guarantees confidentiality and anonymity. Under no circumstances will you be identified, nor will the responses you provide be attributed to you.

Background details

1. Please state your primary country/region of residence:
   _____

2. In what angling season did you last engage in angling in Northern Ireland? Please state last season/year

   _____

3a. How did you make your travel booking to Northern Ireland? Please ✓ below:

Tour operator	☐	
Internet	☐	
Via a business trip	☐	
Travel agent	☐	
Fishing brochure / guide book	☐	
Personal contacts with fishery	☐	
Other	☐	Please specify below

_____

b. If you made your booking through a tour operator, please indicate name of the operator:

_____

c. Please also indicate the nature of the service provided by the operator (e.g. transport, booking accommodation, arranging licences/permits, other):

_____

Recreational fishing in Northern Ireland

4. Was recreational angling the primary purpose of your visit(s) to Northern Ireland? Please ✓ below:

Yes	
No	

5. During the last season/year in which you visited Northern Ireland, please indicate the number of days you spent on angling and non-angling activities:

Length of stay engaged in angling activities		days
Length of stay engaged in non-angling activities		days

6. If you made your angling trip with others, please indicate the average number of persons in your party (including yourself) by type of group:

AVERAGE NUMBER OF PARTY MEMBERS ON RECREATIONAL ANGLING VISITS TO NORTHERN IRELAND	
	Number of Persons in Party
Family members	
Party of Fishermen / Fisherwomen	
Accompanying friends/relatives	
Visiting alone	
Other – please specify	

7. Please state your primary interest in recreational angling. Please ✓ below

Game angling		Go to question 8
Coarse angling		Go to question 8
Sea angling		Go to question 9
Shore angling		Go to question 9

8. If you are a game or coarse angler, what fishing type do you prefer? Please select one **preferred** method by inserting a ✓ below:

Type of angling	**Fishing type**	**Please mark your one preferred fishing type with a ✓ below**
Game	Flyfishing	
	Spinning	
	Worming	
Coarse	Pleasure	
	Match	
Pike	Flyfishing	
	Spinning	
	Dead Bait	

9. During the last season/year you visited, please indicate the number of days you engaged in recreational angling in Northern Ireland, according to the name, type and location of fishery:

No.	**NAME OF FISHERY (PLEASE STATE)**	**Estimated <u>total</u> no. of days angling during last season/year**	**Breakdown of total no of days by type of angling**			
			Game	**Coarse**	**Sea**	**Shore**
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						

10. Please indicate the main time/months of the year when you engaged in recreational angling in Northern Ireland by type of angling:

Game angling	
Coarse angling	
Sea angling	
Shore angling	

11. During your last visit to Northern Ireland to engage in recreational angling, how many nights did you spend in any of the following types of accommodation.

Type of accommodation	**Numbers of nights during last season**
Hotel	
Fishing Lodge	
Bed and Breakfast/Guesthouse / Farmhouse Accommodation	
Camping / Caravan	
Self catering / Chalet	
Other – please describe	

12. During the last season/year, please provide your best estimate of the breakdown of your total expenditure in Northern Ireland in Sterling £ **or** Euro € on the products and services listed in the table below. Please provide your best estimate in **one** of the columns.

Expenditures	**Sterling £ - Expenditure during last Season/Year**	**Euro € - Expenditure during last Season/Year**
Accommodation (on domestic angling trips involving at least 1 overnight stay)	**£**	**€**
Food and beverages	**£**	**€**
Fishing tackle/equipment (purchase or rental)	**£**	**€**
Boat hire/rental (including charter boats)	**£**	**€**
Ghillie hire/rental (including charter boats)	**£**	**€**
Licences – annual or other	**£**	**€**
Permits – annual or other	**£**	**€**
Other **angling-related** purchases – please specify below and indicate typical annual expenditures	**£**	**€**
Other **non-angling** items – please specify below and indicate typical annual expenditures (e.g. travel within Northern Ireland)	**£**	**€**

Previous visits?

13a. Other than your last visit, had you participated in recreational angling in Northern Ireland before? Please ✓ below:

Yes	☐	Go to question 13b
No	☐	Go to question 14

b. I would like you to think about any trips you have made to Northern Ireland over the last five years. As accurately as possible, please complete the grid below:

Year	**Number of trips to N. Ireland**	**Angling** **Length of stay engaged in <u>angling activities</u> (no of days)**	**Non-angling** **Length of stay engaged in <u>non-angling</u> activities (no of days)**	**Average cost of each trip in either Sterling <u>or</u> Euro**	
				Sterling	Euro
2006				**£**	
2005				**£**	
2004				**£**	
2003				**£**	
2002				**£**	
2001				**£**	

Angling in other countries?

14a. Have you visited countries / regions other than Northern Ireland for recreational angling purposes **over the past 5 years**: Please ✓ below:

Yes	☐	Go to question 14b
No	☐	Go to question 15

b. If Yes, please indicate the total number of overnight stays you spent on angling visits to countries other than Northern Ireland over the **last 5 years** by type of angling:

Length of stay engaged in game (Salmon, Sea Trout, Trout etc) angling		Number of overnights
Length of stay engaged in coarse angling		Number of overnights
Length of stay engaged in sea angling:		Number of overnights
Length of stay engaged in shore angling:		Number of overnights

c. What country(ies) / regions did you visit? Please ✓ below:

Republic of Ireland		
England		
Scotland		
Wales		
Other		Please specify below

_____

Your views on recreational angling in Northern Ireland

15. Listed below are various factors relating to recreational angling in Northern Ireland. For each factor, please indicate whether you consider it to **be important or unimportant** to your fishing experience in Northern Ireland. Please ✓ below:

	Very important	*Quite important*	*Neither / Nor*	*Not very important*	*Not at all important*	*Don't Know*
Overall quality of angling	❑	❑	❑	❑	❑	❑
Quality of information available on angling	❑	❑	❑	❑	❑	❑
Accessibility/access to angling waters	❑	❑	❑	❑	❑	❑
Cost of angling – licences/permits	❑	❑	❑	❑	❑	❑
Cost of angling equipment	❑	❑	❑	❑	❑	❑
Cost of renting angling equipment	❑	❑	❑	❑	❑	❑
Availability of ghillies	❑	❑	❑	❑	❑	❑
Availability of charter boats (sea angling)	❑	❑	❑	❑	❑	❑
Cost of charter boats (sea angling)	❑	❑	❑	❑	❑	❑
Availability of accommodation facilities	❑	❑	❑	❑	❑	❑
Quality of Accommodation facilities	❑	❑	❑	❑	❑	❑
Cost of accommodation	❑	❑	❑	❑	❑	❑
The attractiveness of the natural environment	❑	❑	❑	❑	❑	❑
The 'friendliness' of the people	❑	❑	❑	❑	❑	❑
Other factors – please specify below and indicate relative importance						
	❑	❑	❑	❑	❑	❑

What are your views on recreational angling in Northern Ireland?

16. Thinking of your last visit to Northern Ireland, **how satisfied were you** about each of the following factors? Please ✓ below:

	Very dissatisfied	Quite dissatisfied	Neither / Nor	Satisfied	Very satisfied
Overall quality of angling	❑	❑	❑	❑	❑
Quality of information available on angling	❑	❑	❑	❑	❑
Accessibility/access to angling waters	❑	❑	❑	❑	❑
Cost of angling – licences/permits	❑	❑	❑	❑	❑
Cost of angling equipment	❑	❑	❑	❑	❑
Cost of renting angling equipment	❑	❑	❑	❑	❑
Availability of ghillies	❑	❑	❑	❑	❑
Availability of charter boats (sea angling)	❑	❑	❑	❑	❑
Cost of charter boats (sea angling)	❑	❑	❑	❑	❑
Availability of accommodation facilities	❑	❑	❑	❑	❑
Quality of Accommodation facilities	❑	❑	❑	❑	❑
Cost of accommodation	❑	❑	❑	❑	❑
The attractiveness of the natural environment	❑	❑	❑	❑	❑
The ‘friendliness’ of the people	❑	❑	❑	❑	❑
Other factors – please specify below and indicate relative importance	❑	❑	❑	❑	❑

17. Which of the following factors do you consider contribute **most** to your fishing experience. Please rank **3** factors 1-3 (where 1 is the most important):

FACTORS	RANK ONLY 3 FACTORS (1-3)
Catching a fish	
Catching a fish to eat	
Catching and releasing a fish	
Relaxing	
Socialising with family and friends	
Releasing stress	
Personal achievement	
Meeting people from different cultural backgrounds	
Being in attractive natural environment and appreciating nature	
Undertaking a healthy outdoor activity	
Other, please state	

18. Is there anything else you would like to say about the **economic and social importance** of recreational angling in Northern Ireland (Please use additional pages as required).

_____

_____

_____

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19. What is the one thing, if anything, which would improve recreational angling in Northern Ireland (Please use additional pages as required).

_____

_____

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Thank you. You have now completed the main questions in the survey. To assist with profiling the survey responses, could you please answer the final two questions.

20. Please indicate your age with a ✓ using the ranges below.

< 18	
18 -24	
25 -44	
45 - 59	
60+	

21. Please indicate your annual income with a ✓ using the ranges below:

< £15,000	
£15,000 - £24,999	
£25,000 – £39,999	
£40,000 - £69,999	
£70,000+	

If you wish to be entered in our prize draw could you please enter your Name and telephone number in the spaces below.

Name

Telephone Number (Inc. area code)

Thank you very much for taking the time to participate in this important piece of research. Could I ask you to return your confidential questionnaire in the pre-paid envelope provided.

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