LOUGHS AGENCY OF THE FOYLE CARLINGFORD AND IRISH LIGHTS COMMISSION

River Faughan, Lough Foyle South and Tributaries Catchment Status Report

Conservation, protection and assessment of fish populations and aquatic habitats

Loughs Agency of the Foyle Carlingford and Irish Lights Commission

Art Niven, July 2012

Conservation, protection and assessment of the fish populations and aquatic habitats are presented for 2011. The series of catchment status reports has been streamlined in 2012 to facilitate quicker reference to contemporary information. Additional information can be found in associated publications and previous status reports available on the Loughs Agency website.

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TABLE OF CONTENTS

TABLE OF CONTENTS 3
1.0 INTRODUCTION 6
2.0 ATLANTIC SALMON STOCKS SUMMARY 8
2.1 NET FISHERIES 9
Fig 1. Total commercial catch 1952-2009 and 5 year average total commercial catch. 9
2.2 ROD CATCH 10
Fig 2. Loughs Agency reported and corrected rod catch with % returns made 11
Fig 3. Reported rod catch for salmon/grilse in the Loughs Agency area and 5 year average. 11
Fig 4. Faughan Reported rod catch and 5 year average 12
2.3 FISH COUNTERS 12
Fig 5. River Faughan annual fish counts. *Note variation in equipment over this period 13
Figure 6. River Faughan monthly fish counts 13
2.4 REDD COUNTS 14
Figure 7. Annual redd counts and 5 year running average 14
Figure 8. Recent redd count data for the total Foyle area and Faughan catchment 14
2.5 JUVENILE ABUNDANCE/ELECTROFISHING SURVEYS 15
Fig 9. Faughan salmon fry electrofishing index 15
Fig 10. Foyle area salmon fry index comparison chart 2011 *the number of standard monitoring stations varies between catchments 15
Fig 11. Faughan and Foyle South salmon fry electrofishing classifications 16
2.6 MARINE SURVIVAL 17
2.7 DISCUSSION 17

Table 1. Faughan catchment Atlantic salmon/grilse statistics 2002-2011 18
3.0 TROUT STOCKS SUMMARY 19
3.1 ROD CATCH 20
Fig 11. Loughs Agency reported and corrected rod catch (Sea trout) with % returns made 21
Fig 12. Reported rod catch for Sea trout in the Loughs Agency area and 5 year average 22
Fig13. Faughan Reported Sea trout rod catch and 5 year average 22
3.2 JUVENILE ABUNDANCE/ELECTROFISHING SURVEYS 23
Fig 14. Faughan trout fry index 23
Fig 15. Foyle South/Muff River trout fry index 23
Fig 16. Foyle area trout fry index comparison chart 2011 *the number of standard monitoring stations varies between catchments 24
Fig 17. Faughan and Foyle South Trout fry classifications 25
3.3 DISCUSSION 26
4.0 SUMMARY OF OTHER SURVEYS AND FISH STOCK ASSESSMENTS 27
4.1 WATER FRAMEWORK DIRECTIVE FISH MONITORING 28
Fig 18. Faughan WFD Fish Surveillance Station 2011 catch data 29
Fig 19. Faughan WFD survey juvenile salmon length frequency, 2011, multi method approach (N = 89) 29
4.2 JUVENILE LAMPREY POPULATION MONITORING 30
4.3 INVASIVE SPECIES AND BARRIERS TO MIGRATION 32
5.0 WATER QUALITY SUMMARY 33
Fig 20. 2011 Ammonia classifications 34
Fig 21. 2011 BOD classifications 35
Fig 22. 2011 Phosphorous classifications 36
Fig 23. 2011 suspended solids classifications 37
Fig 24. 2011 BMWP macro invertebrate classifications 38
6.0 CONSERVATION AND PROTECTION SUMMARY 39

6.1 CREW REPORT ON 2011 40
6.2 PROPOSED HABITAT IMPROVEMENT SCHEMES FOR 2012/13 42
7.0 CATCHMENT INITIATIVES 43
8.0 ACTIONS FOR 2012/2013 44

1.0 INTRODUCTION

The Loughs Agency series of catchment status reports outlining information collected and actions completed during 2011 have been restructured for reporting in 2012. It is anticipated that this will facilitate the same level and diversity of information dissemination provided in previous years while directing interested parties to more detailed sources of information available in other Loughs Agency publications. More detail on any of the topics included in this report can be found in previous status reports available on the Loughs Agency website.

The joint themes for the 2012 series of catchment status reports are wild trout conservation and littering. Both of these contemporary issues are of great significance to the ongoing conservation and protection of our aquatic and riparian habitats and are important issues when attracting and informing responsible users to the local area.

In 2011 the Loughs Agency has continued to participate in innovative ways to tackle the growing problem of littering. The “throw away” society has resulted in rivers acting as major conduits for discarded materials from varied sources. On their journey downstream these discarded items catch on trees and other vegetation resulting in both visual and unseen impacts upon our biodiversity and water quality.

During 2011 the Loughs Agency in Partnership with Causeway Coast Kayak Association, Limavady Borough Council, Strabane District Council and Roe Angling Association conducted canoe and bank based river clean ups at key locations throughout the river corridors of both the River Roe and Glenelly River. Over three tons of mixed rubbish was removed during these two river clean up events. While the Loughs Agency does not have a legislatory remit to tackle the issue of littering it is eager to encourage a partnership approach to tackling this key issue.

Within the Foyle and Carlingford areas the conservation of wild trout populations is of ever growing importance. Rod catch returns have shown a marked decline of Sea trout over recent decades. The Loughs Agency has been working with local partners in 2011 to monitor populations of brown trout and sea trout to collect information which can be used to develop conservation and

protection programmes. Targeted monitoring programmes have been ongoing within the Derg catchment, Burndennet catchments, Inishowen and Lough Foyle tributaries. This is in addition to ongoing annual electrofishing surveys which record the abundance and distribution of trout throughout the Foyle and Carlingford areas.

The Loughs Agency promotes responsible use of the valuable aquatic resources of the Foyle and Carlingford areas. The protection of these resources can only be achieved through effective collaborative partnerships. If your organisation is interested in participating in “hands on” action please contact the Loughs Agency to discuss possible partnership development.

2.0 ATLANTIC SALMON STOCKS SUMMARY

- There were no net fisheries pursued for Atlantic salmon in the Foyle area in 2011. This is due to the continued failure of the River Finn to meet its conservation limits as outlined under the Foyle Area (Control of Fishing) Regulations 2010. Angling is permitted in the River Finn and River Foyle on a catch and release basis only.

- Total declared Atlantic salmon rod catch for the Foyle and Carlingford area was 3533. Total declared rod catch for the Faughan catchment was 776.Voluntary catch and release for the Foyle and Carlingford areas was 28%.

- Returning adult Atlantic salmon counts derived from an electronic fish counter at Campsie Barrage on the River Faughan were 995 salmon/grilse in 2011. This compares to a 5 year average of 1102.

- Spawning redd counts for the Foyle area were 1313 in 2011 with 216 redds recorded within the Faughan catchment

- Juvenile electrofishing surveys within the Faughan catchment at 25 standard sites recorded an average of 39 salmon fry (Young of Year).

Loughs Agency Management Strategy for Atlantic Salmon

The Loughs Agency uses an audit point management system for monitoring the populations of Atlantic salmon within the Foyle and Carlingford areas. Population estimates and indices are derived for various life history stages including adult counts from electronic fish counters situated at key locations, spawning redd counts, juvenile electrofishing indices, rod catch and commercial net catches.

Numbers of Atlantic salmon stocks particularly grilse (1SW fish) from southern populations of north east Atlantic stocks are currently at a low point. International research has highlighted climate change and marine ecosystem change as potential causes for this observed decline. The Loughs Agency is working with colleagues at regional, national and international levels to understand this decline and to implement best practice conservation actions.

2.1 NET FISHERIES

Net fisheries have not been operated in the Foyle area since 2009 (Figure 1). The Foyle Area (Control of Fishing) Regulations 2010 provides various mechanisms for regulating both commercial and rod fisheries for salmon including under Section 3. (1) The Commission shall make a declaration.....if it is satisfied that..... (d) the number of salmon which have migrated upstream of the River Finn fish counter during each of any two of the previous five calendar years has not exceeded 5,410. A declaration under this shall..... (d) in the case of sub-paragraph (d), suspend netting in the River Foyle, Lough Foyle and seaward of Lough Foyle and restrict angling in the River Finn to angling on a catch and release basis only from the date and time specified in the declaration....The Commission can make the relevant declaration ending the suspension of netting and restriction on angling if it is satisfied that the number of salmon migrating upstream of the relevant counter during each of any four of the previous five calendar years has exceeded the number of salmon for that river.

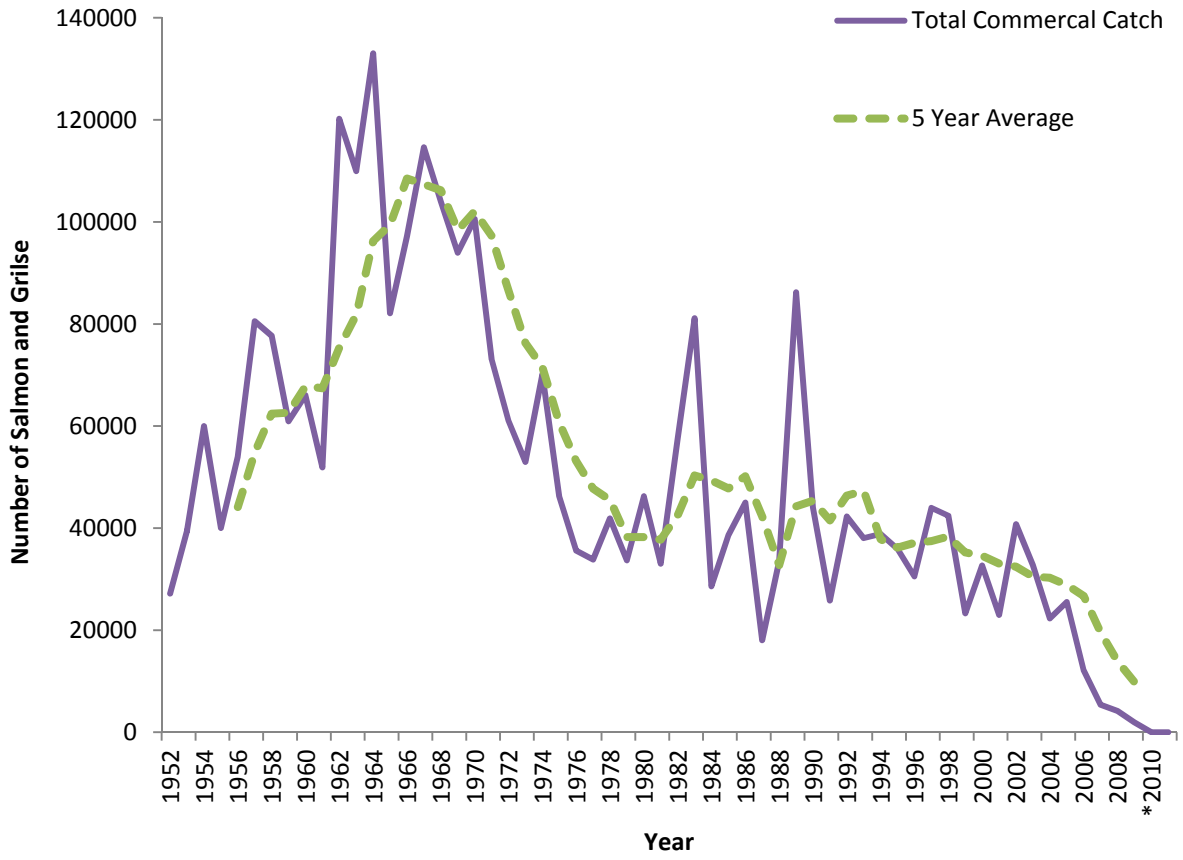

Fig 1. Total commercial catch 1952-2009 and 5 year average total commercial catch.

2.2 ROD CATCH

Total rod catch returns were 46% in 2011 (Figure 2). A total of 3533 salmon/grilse were caught in the Foyle and Carlingford areas in 2011 (Figure 2 & 3). 776 salmon and grilse were reported caught in the Faughan catchment (Figure 4). Salmon/Grilse caught and voluntarily released were 28% in the Foyle and Carlingford area and 24% in the Faughan area.

Trends in rod catch have generally increased over recent years. This is largely due to a number of factors including an increased number of rod licenses being issued and a higher % of returns being made (Figure 2). **It is your legal obligation to make an accurate and timely rod catch return.**

There are a number of important reasons for making rod catch returns.

- How many fish were caught in YOUR RIVER OR LAKE?
- What % of fish were caught and released in YOUR RIVER OR LAKE?
- Is catch and release increasing?
- What species were caught?
- Essential for developing sustainable fishery management policy
- Screening of future developments (roads, hydro etc.) against fishery interests.
- An important tool for assessing strength of runs
- Aids with developing access and infrastructure (stiles etc)
- It is required by law that all rod licence holders make an accurate catch return
- Facilitates long term trend monitoring
- Participate in the management of your river (doing your bit)
- At a time of reduced marine survival for Atlantic salmon accurate information is essential for sustainable management
- Aids in ensuring good decision making so that future generations can enjoy the sport of fishing
- Ensuring that all species caught are sustainably managed now and in the future

An unreported fish is a wasted opportunity, for economic development, for conservation, for protection of our fishery resources, for education and for future generations.

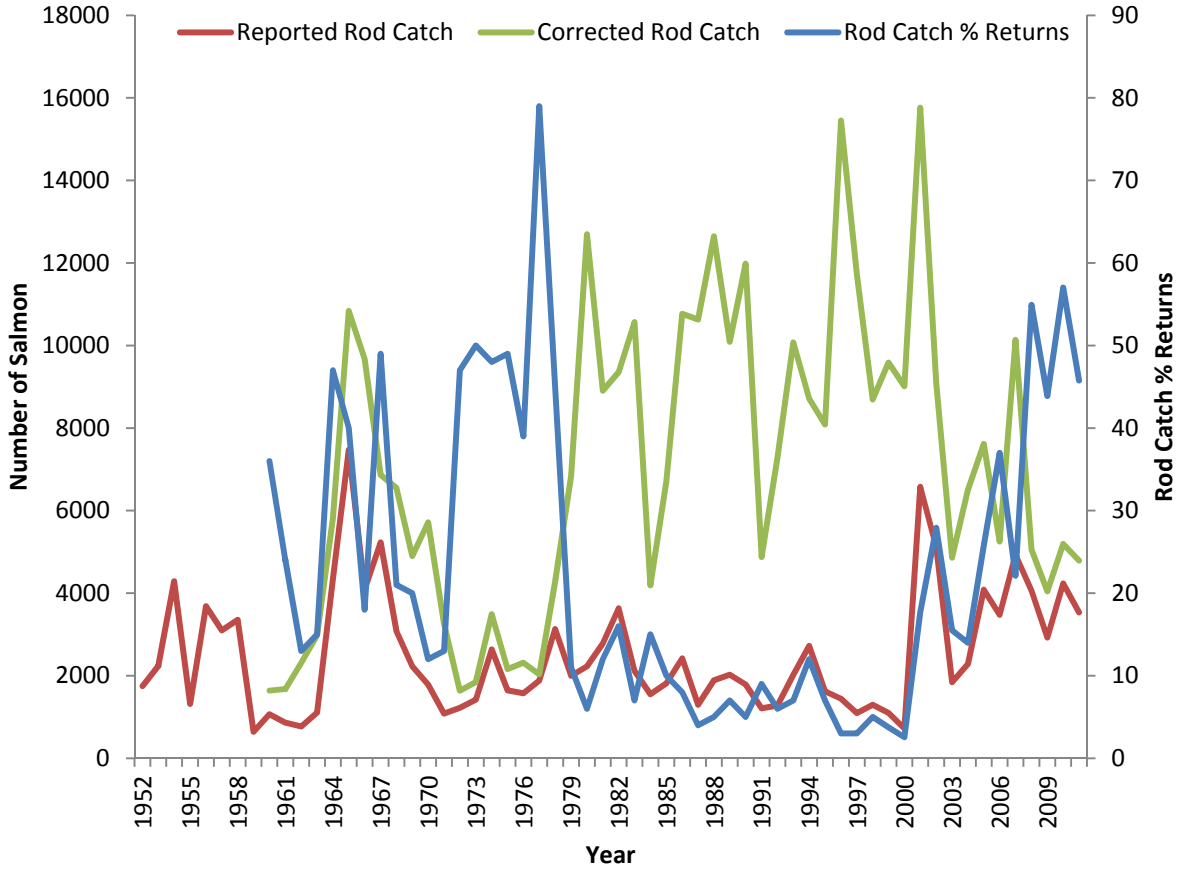

Fig 2. Loughs Agency reported and corrected rod catch with % returns made

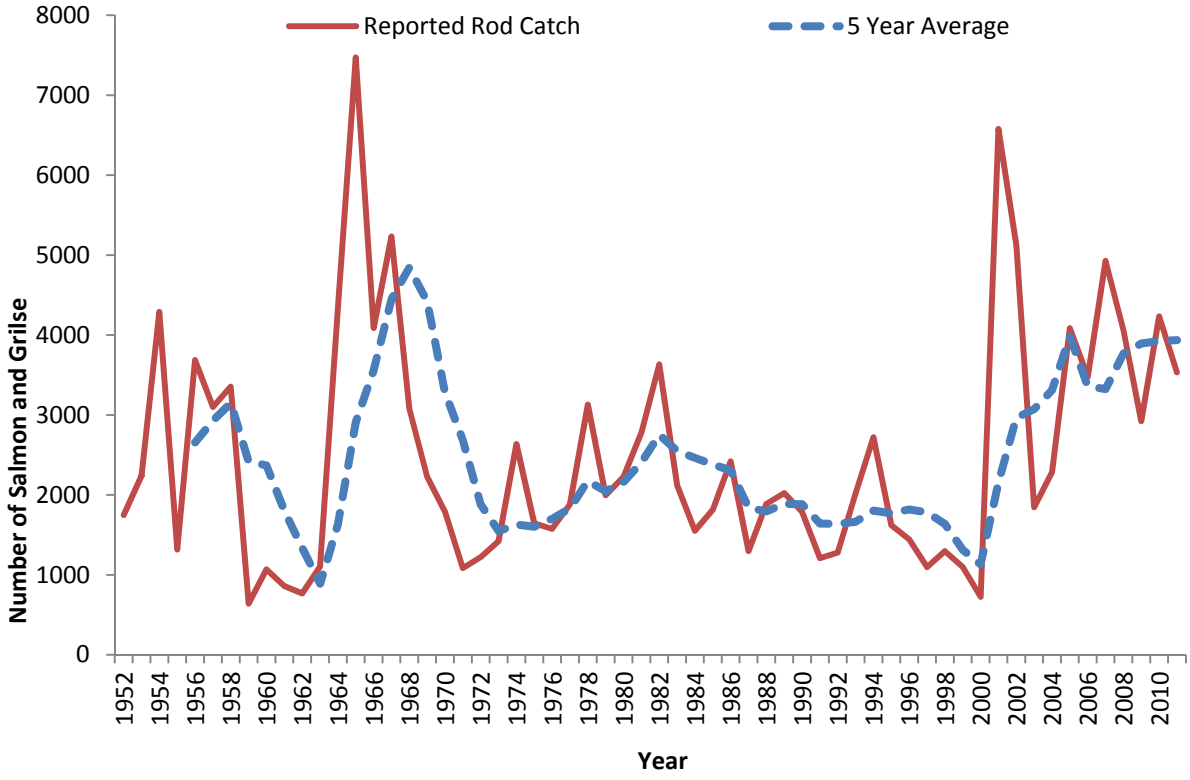

Fig 3. Reported rod catch for salmon/grilse in the Loughs Agency area and 5 year average.

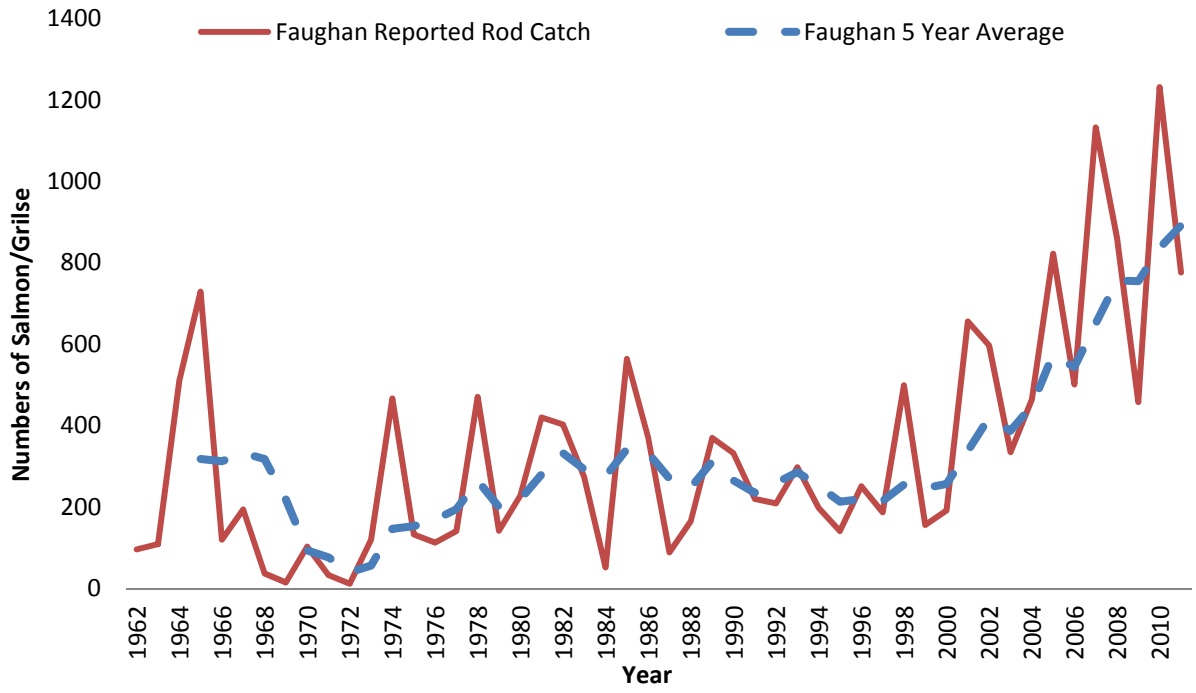

Fig 4. Faughan Reported rod catch and 5 year average

2.3 FISH COUNTERS

The Loughs Agency operates a network of electronic fish counters throughout the Foyle and Carlingford areas to monitor the migration of Atlantic salmon into freshwaters. The counters are used to assess the attainment of conservation limits and management targets for key catchments.

In 2011 the Faughan fish count as recorded by the electronic fish counter at Campsie Barrage was 995 with a 5 year average of 1102 (Figures 5 & 6). The management target for the Faughan is 800 and the conservation limit is 640.

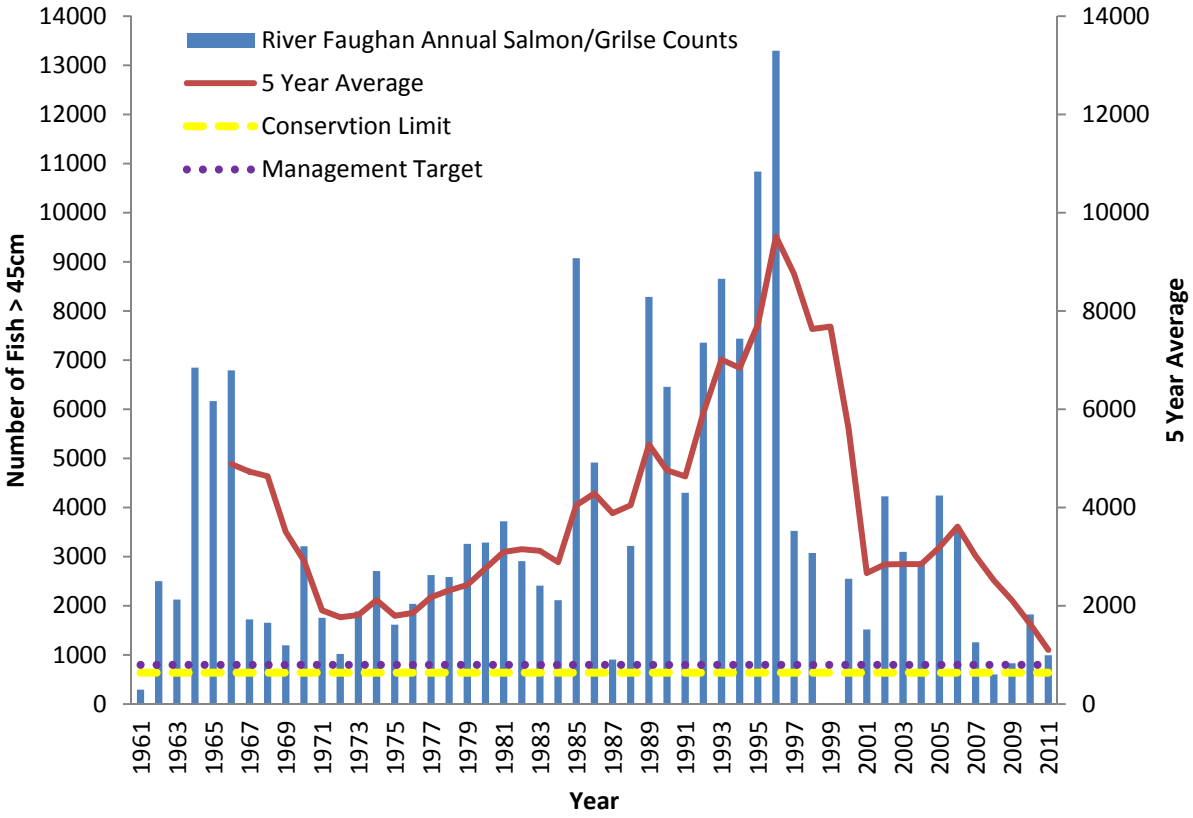

Fig 5. River Faughan annual fish counts. *Note variation in equipment over this period

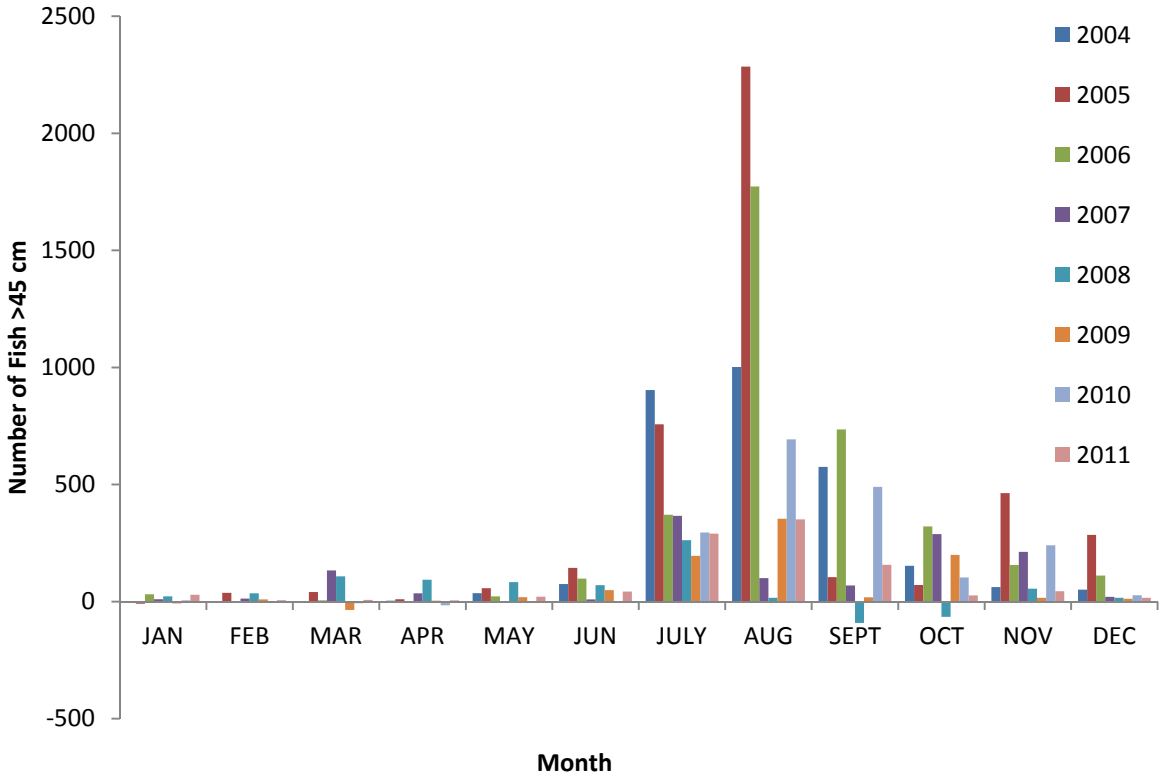

Figure 6. River Faughan monthly fish counts

2.4 REDD COUNTS

Atlantic salmon redds (spawning nests) are counted on an annual basis and have been shown to be a good indicator of returning population size. Annual redd counts and the 5 year running average are displayed in Figures 7 & 8. In 2011 there was a total count of 1313 redds with a five year running average of 3459. 216 redds were recorded in the Faughan catchment in 2011/12. It should be noted that there was poor redd counting conditions in 2011/12. Salmon have not been recorded in the tributaries of the Foyle South catchment.

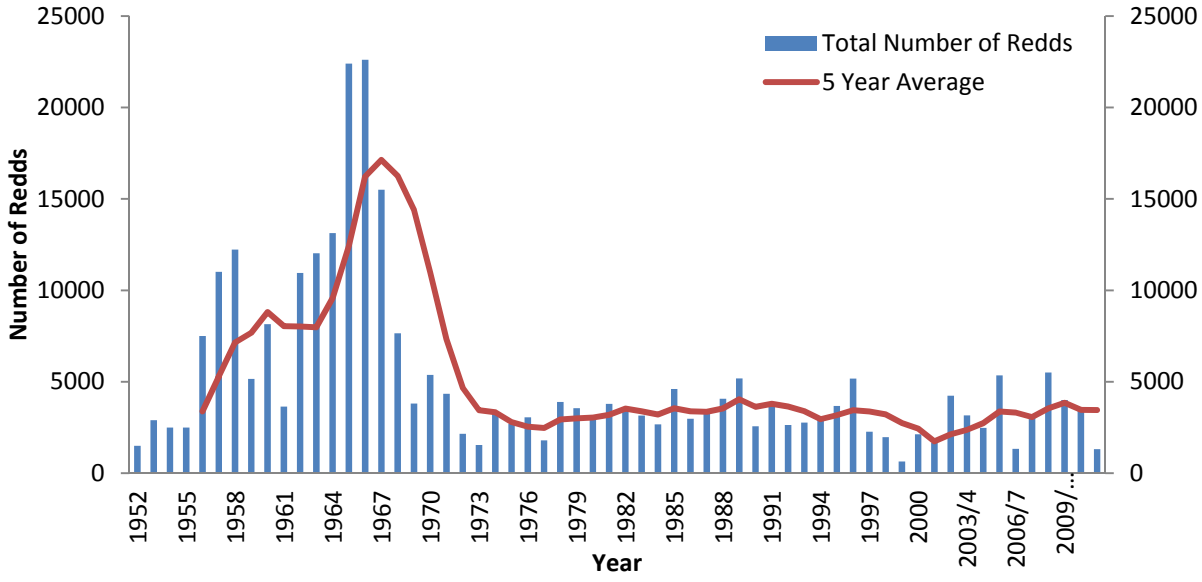

Figure 7. Annual redd counts and 5 year running average

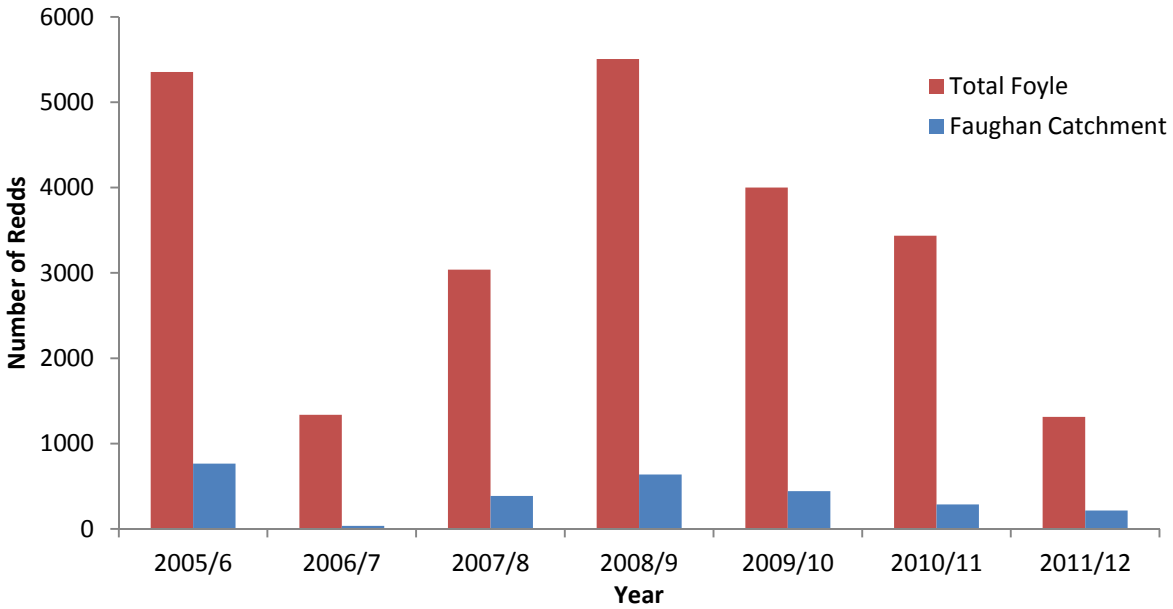

Figure 8. Recent redd count data for the total Foyle area and Faughan catchment

2.5 JUVENILE ABUNDANCE/ELECTROFISHING SURVEYS

Juvenile Atlantic salmon abundance is measured on an annual basis by following a standardised procedure (Crozier and Kennedy, 1996). A fixed number of sampling stations are monitored using this semi-quantitative (5 minute timed) electrofishing methodology. Over many years an index has been developed to show trends for individual catchments (Figures 9 & 10). In 2011 the mean number of salmon fry (young of year) recorded at 25 standardised monitoring stations within the Faughan catchment was 39. No salmon fry were recorded in the Foyle South catchment.

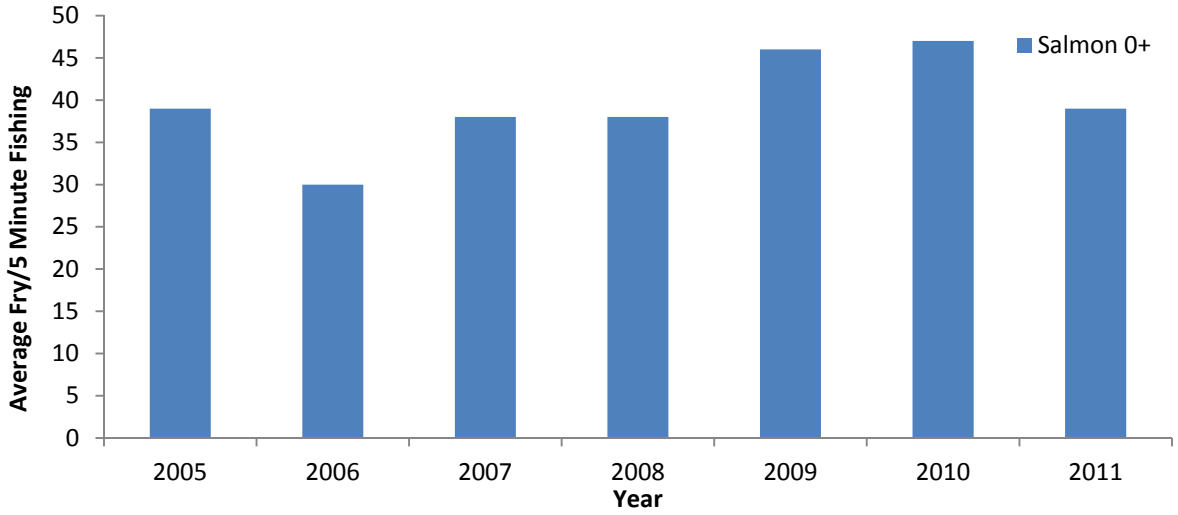

Fig 9. Faughan salmon fry electrofishing index

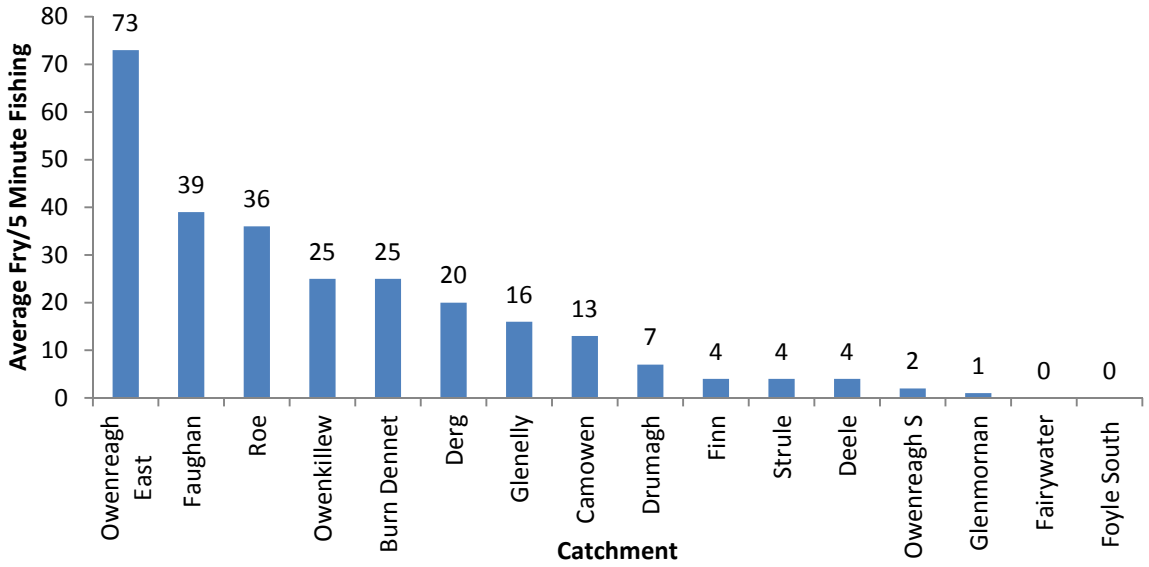

Fig 10. Foyle area salmon fry index comparison chart 2011 *the number of standard monitoring stations varies between catchments

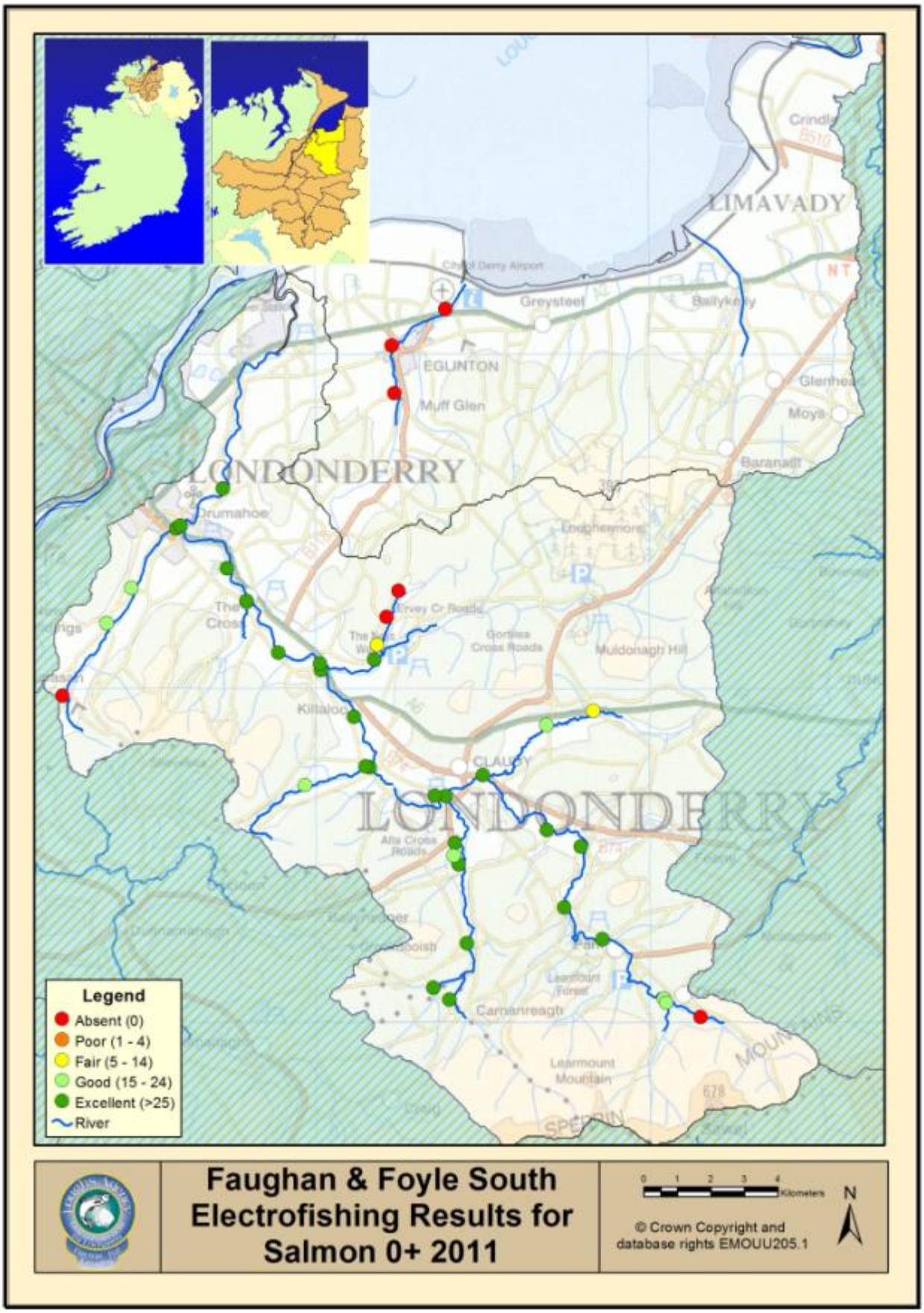

Fig 11. Faughan and Foyle South salmon fry electrofishing classifications

2.6 MARINE SURVIVAL

Marine survival continues to be of significant concern throughout the southern range of Atlantic salmon in the North East Atlantic. The nearest monitoring station to the Foyle area which provides robust survival data to the International Council for the Exploration of the Seas Working Group on North Atlantic Salmon is the River Bush in Co Antrim. Marine survival rates for One Sea Winter (1SW) grilse pre the mid 1990's was around 30%, in recent years this has fallen to extremely low levels with a marine survival rate of only 2.6% for the 2010 cohort returning to the river in 2011, this is the lowest on record. Multi Sea Winter (MSW) Atlantic salmon appear to be doing slightly better. The international SALSEA Merge project investigating the marine portion of the Atlantic salmon's life cycle reported in 2011. Further information can be found at http://www.nasco.int/sas/salseamerge_documents.htm this will provide a firm platform on which to develop future salmon management strategy at an international level that takes into consideration the complex lifecycle of Atlantic salmon and its place within both freshwater and marine ecosystems.

2.7 DISCUSSION

As outlined above Atlantic salmon have a complex lifecycle which can be impacted upon by many factors. The impacts cannot always be quantified making it difficult to accurately estimate the number of returning adult salmon/grilse to our rivers each year. An analysis of cohort/age class strength throughout its lifecycle from egg to spawning adult is complicated by numerous factors. These include varying egg survival rates, differing age at smolting, marine survival rates, time spent at sea/age at spawning and number of spawning migrations made.

It is extremely difficult to infer from one life history stage or stages what the strength of any returning cohort will be. This is currently exacerbated by extremely low marine survival rates possibly as a result of altered marine food webs and oceanic prey distribution all in the context of climate change.

In the table below a simple example is given to outline this complexity assuming that the dominant life history of Foyle salmon is followed.

YEAR	FISH COUNTER	ROD CATCH	REDD COUNT	ELECTROFISHING INDEX
2002	4228	597	673	N/A
2003	3097	335	441	N/A
2004	2855	464	501	N/A
2005	4245	822	766	39
2006	3625	501	35	30
2007	1257	1132	387	38
2008	604	861	637	38
2009	831	458	442	46
2010	1825	1231	287	47
2011	995	776	216	39

Table 1. Faughan catchment Atlantic salmon/grilse statistics 2002-2011

Cohort analysis on the short time series of data above demonstrates that the strongest returning cohort recorded in 2005 produced an above average rod catch. The same cohort produced the best redd count. When this cohort was followed through to the following summer it produced the lowest number of juvenile salmon contained in the time series.

When the weakest returning cohort for the short time series from 2008 is followed through it becomes apparent that more fish than have been counted have been caught by the rod fishery and more redds were counted than fish counted. This cohort also produced the second highest number of juveniles produced in the following summer. It was noted that there was extremely high water during peak migration times in both 2008 and 2009 resulting in suspected bypassing of the counting channel.

In 2011 a below average returning adult count to the River Faughan was recorded, rod catch was 776 for the Faughan catchment. There was a low redd count in 2011 due to poor redd counting conditions with peak spawning time dominated by high water. Juvenile electrofishing surveys in 2012 will provide information on the strength of the next cohort.

3.0 TROUT STOCKS SUMMARY

- In 2011 total declared Sea trout rod catch for the Foyle and Carlingford area was 315. Total declared rod catch for the Faughan catchment was 113.

- In 2011 juvenile electrofishing surveys within the Faughan catchment at 25 standard sites recorded an average of 4 trout fry. In the Lough Foyle South/Muff River catchment at 3 standard sites an average of 49 trout fry were recorded

- Sea trout stocks have declined significantly in the Foyle area over recent decades with most recent rod catches being the lowest on record.

- Similar declines in sea trout stocks have been observed in other parts of Ireland and the west coast of Scotland. Diverse reasons for population declines have been proposed and are currently being investigated.

- The Loughs Agency will be implementing a sea trout research project in 2012 which will monitor local sea trout populations.

- Ongoing brown trout monitoring projects will continue in 2012 including a brown trout radio tracking study of the Lough Derg wild brown trout population.

Development of a Loughs Agency Trout Management Strategy

During 2011 the Loughs Agency consulted with stakeholders on the development of a trout strategy. The draft strategy contains 19 policies which relate to six main areas:

- **Habitat improvement**
- **Exploitation**
- **Stock management**
- **Barriers to migration**
- **Culverting**
- **Water abstraction and impoundment**

At present Loughs Agency monitor stocks of trout in a number of ways including analysis of rod catch data, and juvenile electrofishing surveys. During 2011 a sea trout monitoring programme was instigated on a tributary of the Burndennet and the Lough Derg Wild Trout Conservation Project continued with the Loughs Agency working in partnership with Pettigo and District Angling Association.

3.1 ROD CATCH

Sea trout are a prized quarry in both the Foyle and Carlingford areas but display very different life history strategies to both the resident brown trout and Atlantic salmon. Rod catch provides one of the key "audit points" for the management of this species. Declared rod catch has highlighted the significant declines over recent decades. It should be noted that sea trout populations fluctuate greatly and like many wild populations of animals they are prone to boom and bust cycles.

Over the duration of the decline in sea trout populations various reasons for the decline have been suggested including spawning habitat loss, barriers to migration, increased numbers of sea lice due to salmon aquaculture, natural population fluctuations, inshore marine ecosystem change, over fishing, pollution of key spawning streams etc. All of these will have impacted the Sea trout populations to some extent. Within the Foyle area Sea trout average weight tends not to exceed 2-3 lbs with larger specimens being quite rare. In the Carlingford area Sea trout are considerably larger with average weight somewhere between 5-8lbs with larger double figure specimens encountered from time to time. The difference between west and east may be down to the quality and availability of suitable prey species. Irish Sea populations of Sea trout tend to be much larger and may be indicative of less impacted prey species populations. A parallel could be made between documented north coast of Ireland sea bird populations and Irish Sea populations, with Irish Sea populations doing better because of better availability of prey species. North coast of Ireland sea bird populations have been in decline over recent decades, in parallel with the plight of Sea trout.

In the Foyle and Carlingford area the minimum size for retaining a Brown trout or Sea trout is 25.4cm. All Sea trout over 40cm must be tagged and there is a bag limit of 1 Sea trout per day, up to a maximum of 5 during the period from the start of the season to 31st May. A bag limit of 2 Sea trout over 40cm per day applies from the 1st June to the end of the season up to a maximum of 20. There is also a daily bag limit of 4 Brown trout or Sea trout of 40cm or less in length throughout the season. Stricter club/association rules may apply.

Within the Foyle area there is generally a geographic north south divide with sea trout dominant in the northern catchments and brown trout dominant in the southern catchments. Historically the northern catchments and their associated small streams provided excellent spawning and nursery habitat and when associated with high densities of salmon may have been a major reason for seaward migration of juvenile trout in search of prey and less competition. The southern catchments still hold good populations of resident Brown trout with significant angling development potential. These populations however are more susceptible to pollution events. Figures 11, 12 & 13 outline Sea trout rod catch for the Foyle and Carlingford areas and for the Faughan catchment. While no rod catch data is available for the Foyle South catchment in respect of the Muff River this area may be locally significant for Sea trout spawning and as such would merit closer investigation.

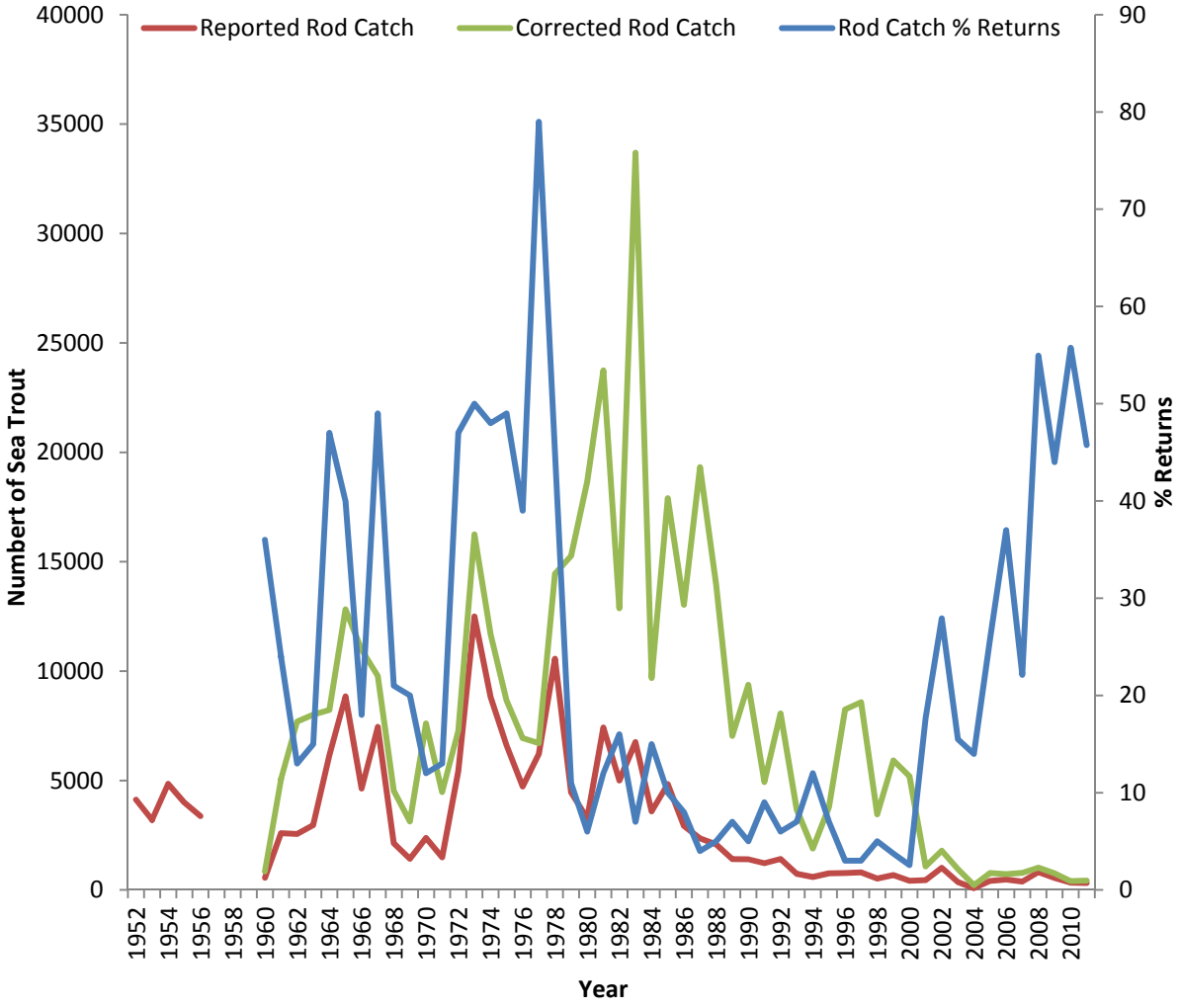

Fig 11. Loughs Agency reported and corrected rod catch (Sea trout) with % returns made

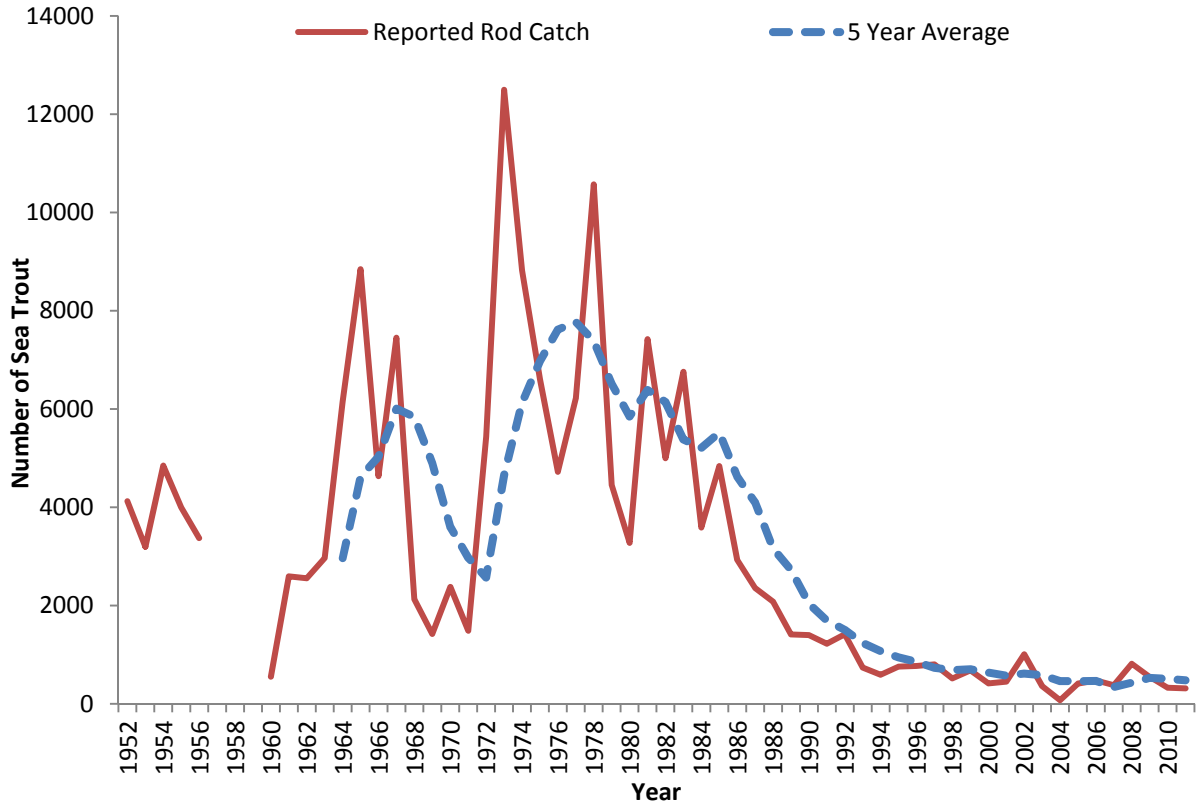

Fig 12. Reported rod catch for Sea trout in the Loughs Agency area and 5 year average.

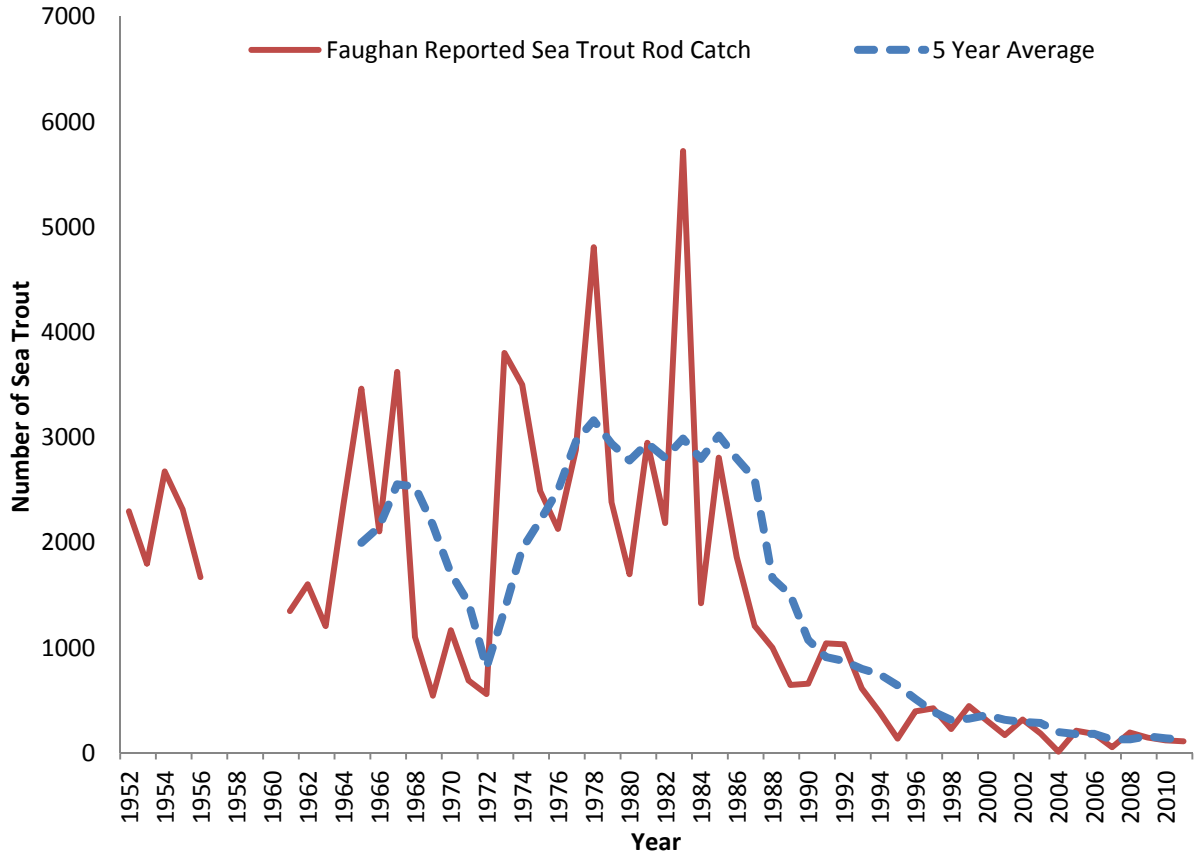

Fig13. Faughan Reported Sea trout rod catch and 5 year average

3.2 JUVENILE ABUNDANCE/ELECTROFISHING SURVEYS

As for juvenile Atlantic salmon Trout abundance is measured on an annual basis by following the same standardised procedure (Crozier and Kennedy, 1996). A fixed number of sampling stations are monitored using this semi-quantitative (5 minute timed) electrofishing methodology. Over many years an index has been developed to show trends for individual catchments (Figures 14 & 15). In 2011 the mean number of trout fry (young of year) recorded at 25 standardised monitoring stations within the Faughan catchment was 4. At 3 sites fish annually on the Muff River within the Foyle South catchment an average of 49 trout fry were recorded in the Foyle South catchment.

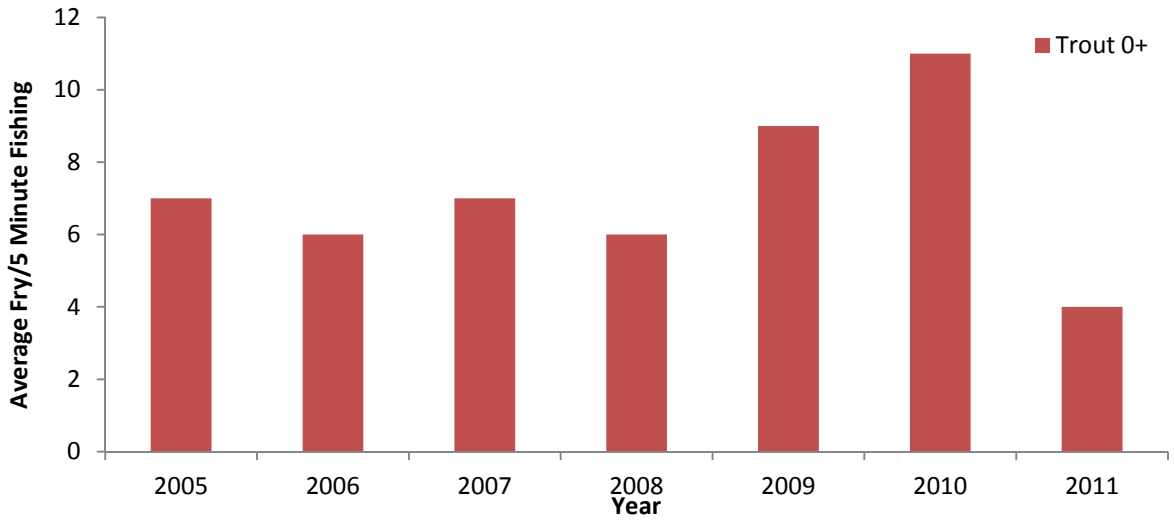

Fig 14. Faughan trout fry index

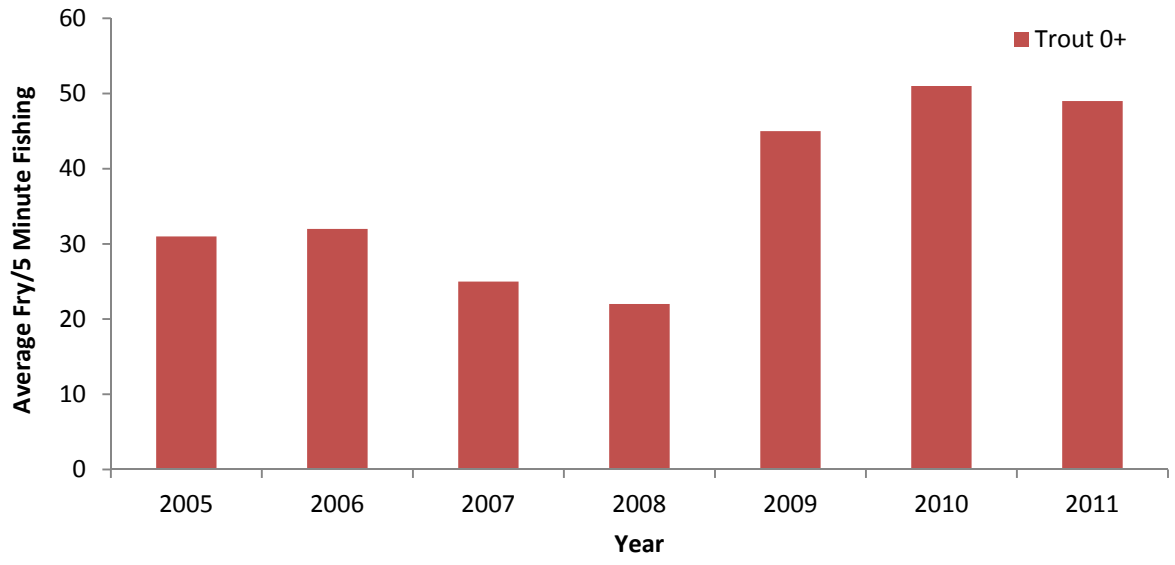

Fig 15. Foyle South/Muff River trout fry index

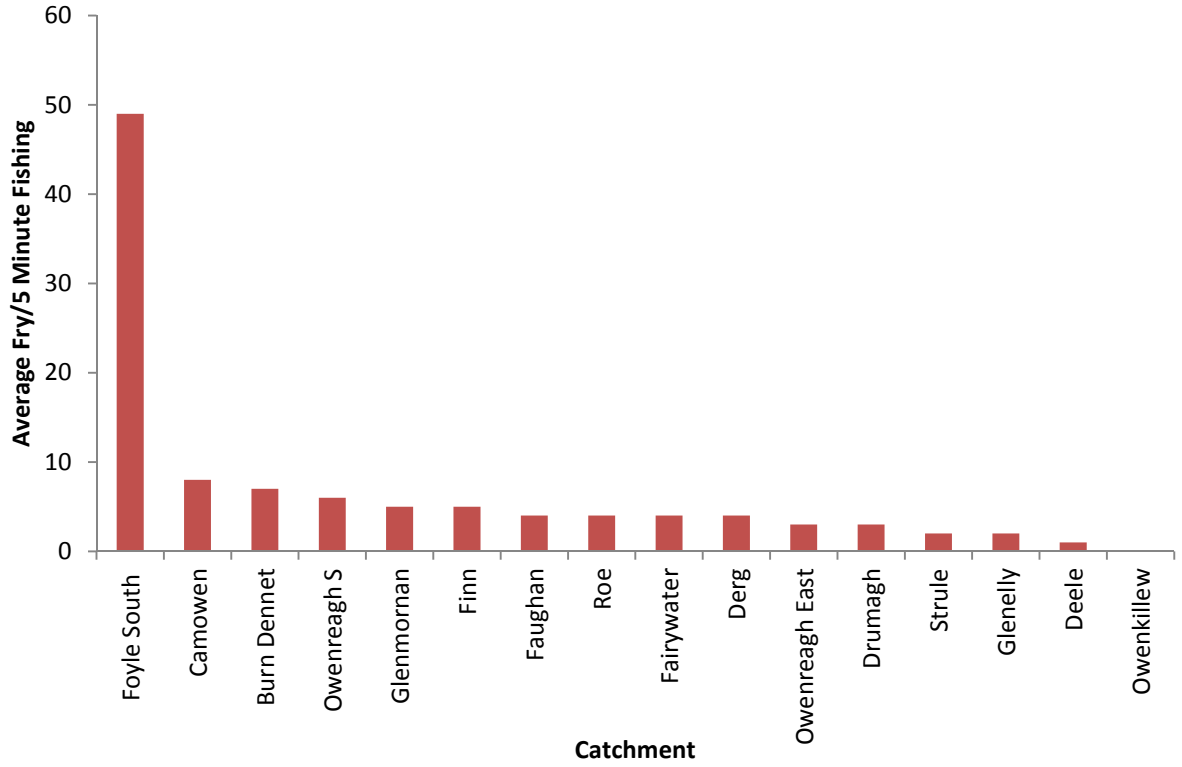

Fig 16. Foyle area trout fry index comparison chart 2011 *the number of standard monitoring stations varies between catchments

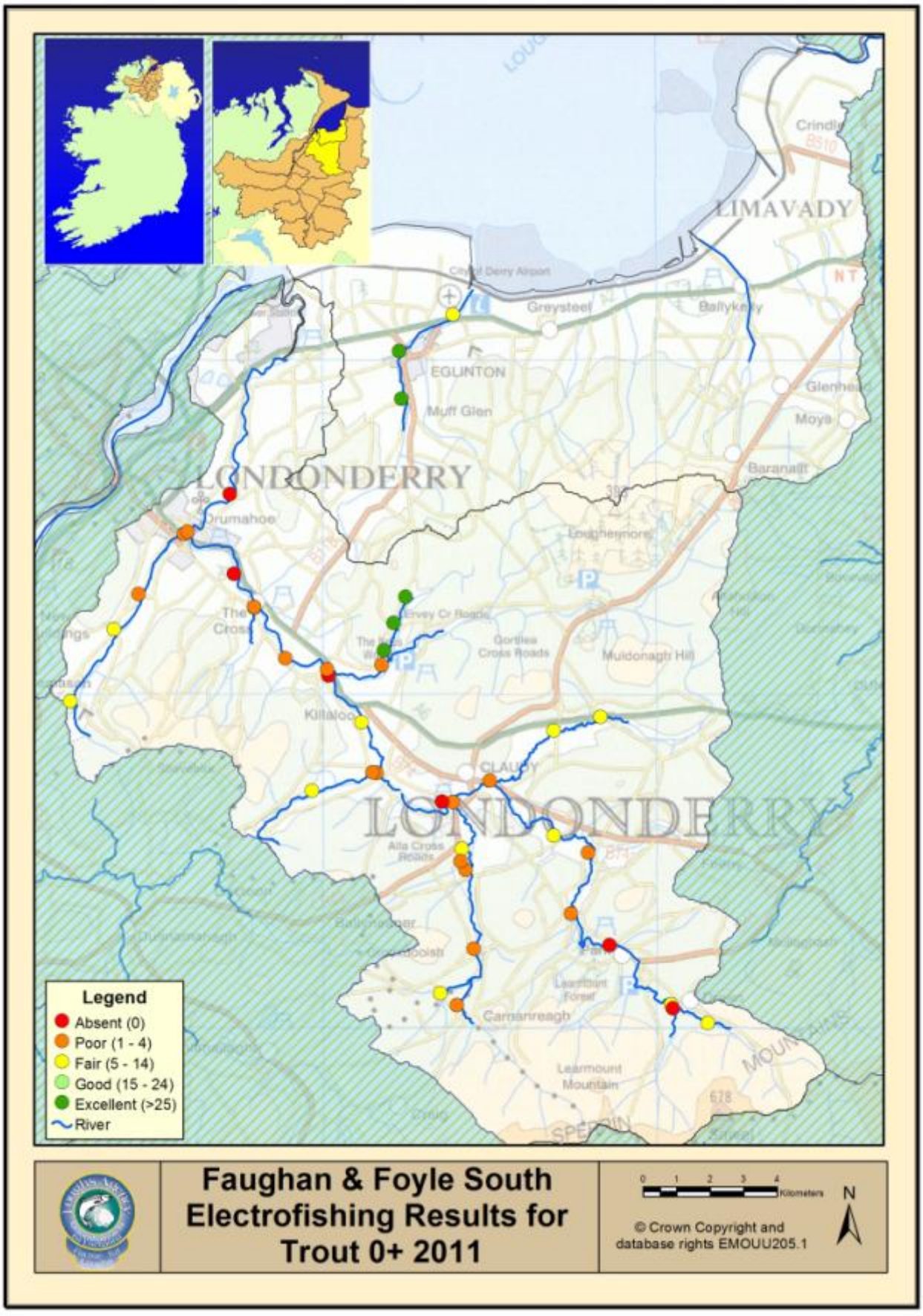

Fig 17. Faughan and Foyle South Trout fry classifications

3.3 DISCUSSION

At present rod catch and juvenile electrofishing surveys are the two monitoring programmes conducted annually on Trout populations within the Foyle and Carlingford areas. In order to extend the baseline of information future expansion of the monitoring programmes could include the development of a Trout redd index on key tributaries. This would facilitate the analysis of trends over time and the effects of any remedial works. Adult Sea trout electrofishing surveys could also be conducted to gain key biological information which could assist with regulating catch size. The Faughan and Foyle South catchments are significant habitats for Sea trout. Within the Faughan catchment there is competition with Atlantic salmon for feeding territories. While both species have slightly different habitat requirements at times they do overlap. The general trend in the Faughan is that salmon dominate the main stem and swifter water while trout dominate the smaller tributaries. In the Foyle South catchment where salmon are absent Trout dominate throughout with the highest numbers recorded in any Foyle catchment.

Ongoing monitoring is essential for the development of appropriate and contemporary regulation of the rod fishery.

4.0 SUMMARY OF OTHER SURVEYS AND FISH STOCK ASSESSMENTS

- Eight Water Framework Directive fish surveillance monitoring stations were surveyed within the Foyle area in 2011. One was within the Faughan catchment. There are no WFD fish surveillance stations within the Foyle South catchment.

- The Faughan WFD fish site was classified as good for fish. Further details can be found in the 2011 WFD Fish Surveillance Report on the Loughs Agency website under the publications section www.loughs-agency.org

- A juvenile Lamprey survey was conducted within the Faughan catchment following methods developed under the LIFE in UK Rivers Project and aligned with the ROI Lamprey monitoring programme.

- Twenty sites were surveyed for juvenile Lamprey as part of the catchment wide survey. Juvenile Lamprey were recorded at nine sites, a report on the juvenile Lamprey in the Faughan catchment is in preparation and will be available on the Loughs Agency website once complete. www.loughs-agency.org

- Work on Invasive species continued.

Additional Surveys and Fish Stock Assessments

Fish stock assessments are an extremely important part of fishery management. They provide the information on which to develop policy and to implement appropriate legislation and regulation to ensure future sustainable management.

During 2011 additional fish stock assessments were conducted for Water Framework Directive fish monitoring purposes. A multi method survey approach was used to monitor the main channel of the River Faughan at the lower end of the catchment. Quantitative electrofishing was not possible due to the width and depth of the site so a combination of electrofishing over a defined area, seine netting and fyke netting was conducted. The three survey methods used provided a good indicator of the species abundance and age classes present.

A catchment wide juvenile lamprey survey was also conducted.

In 2011 the Loughs Agency continued to meet its obligations under a raft of national and international legislation. In addition to meeting its statutory duties the Loughs Agency plans its monitoring works to best inform current and future policy development and to deliver on conservation and protection targets as outlined in the Loughs Agency Corporate and Business Plans. In 2011 in addition to the collection of standard annual audit point fishery management information surveys were conducted on fish populations for WFD monitoring purposes and to monitor the populations of juvenile Lamprey present within the Faughan catchment.

4.1 WATER FRAMEWORK DIRECTIVE FISH MONITORING

The WFD is a key piece of European environmental legislation designed to facilitate improvements in our aquatic environments. The Loughs Agency under the guidance of the Northern Ireland WFD Fish Group is responsible for fish monitoring within the Foyle and Carlingford areas. This involves the monitoring of 24 surveillance monitoring stations on a rolling six year basis. Quantitative electrofishing is the preferred method where possible and the data collected is used to derive a fish classification which is then combined with the results from other monitored parameters to create an overall surface water body classification. This ranges from High Ecological Status through Good Ecological Status, Moderate Ecological Status, Poor Ecological Status to Bad Ecological Status. The target set by the WFD is that all water bodies must reach Good Ecological Status by 2015. In 2011 the Loughs Agency monitored eight surveillance stations within the Foyle area with one in the Faughan catchment. The sample data below is for the Faughan station.

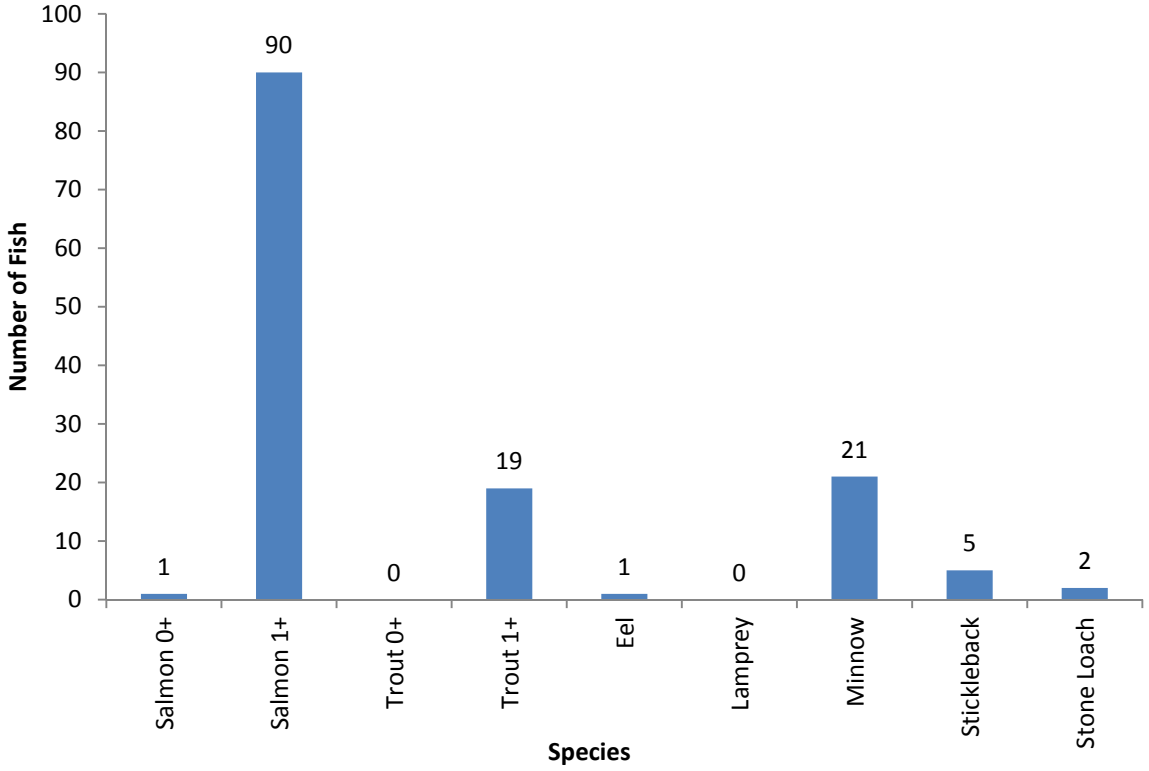

Fig 18. Faughan WFD Fish Surveillance Station 2011 catch data

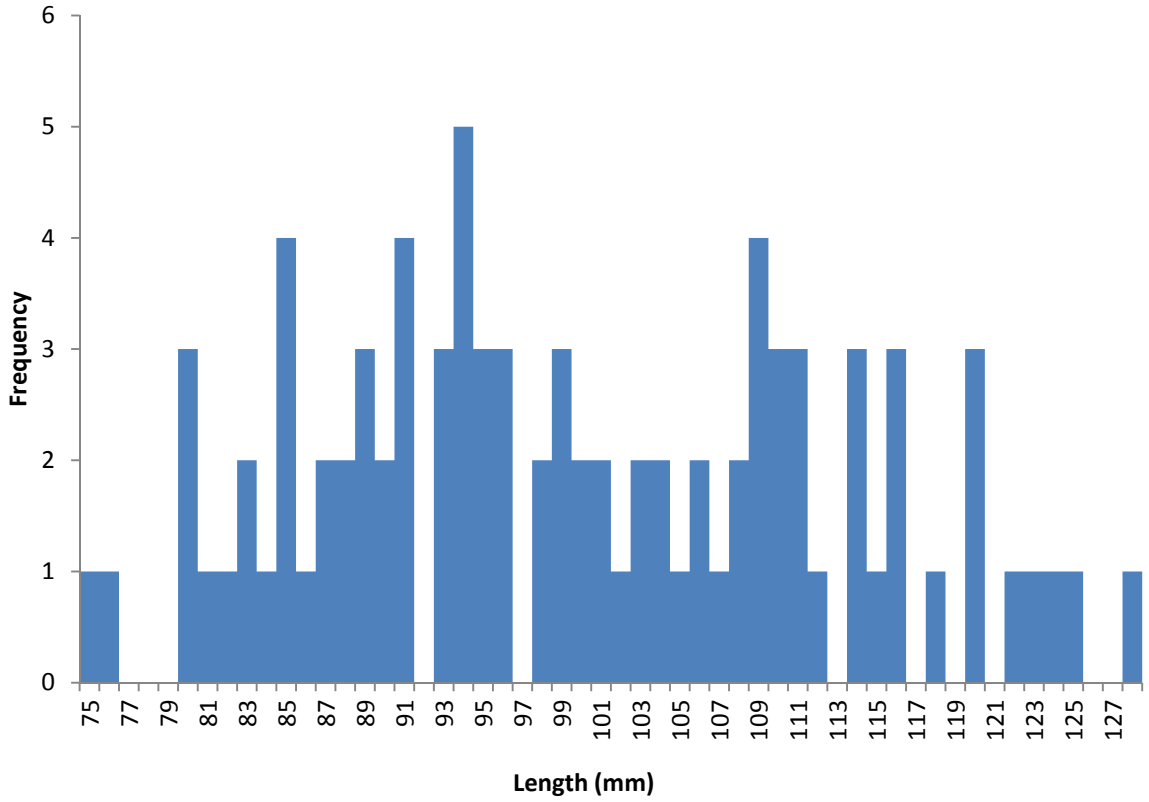

Fig 19. Faughan WFD survey juvenile salmon length frequency, 2011, multi method approach (N = 89)

4.2 JUVENILE LAMPREY POPULATION MONITORING

A catchment wide juvenile lamprey survey was conducted in 2011. Lamprey are an ancient fish species which have no jaw. There are three species of lamprey present within the Foyle area, Sea Lamprey, River Lamprey and Brook Lamprey. Both Sea and River lamprey undertake migrations to sea where they feed until they return to rivers to reproduce. Brook lamprey are resident in rivers and streams completing their lifecycle in freshwater. Lamprey have no jumping ability and rely on swimming to migrate upstream. They are extremely susceptible to any barrier to migration which can prevent access to prime spawning and nursery habitats. They are listed under the Habitats Directive as a species of conservation importance. Lamprey are locally important as a species of conservation importance and are a good indicator of aquatic health and river connectivity.

The survey method used was developed from those used by Inland Fisheries Ireland and the methodology developed under the LIFE in UK Rivers Project.

More information will be available when the final survey report is published on the Loughs Agency website.

4.3 INVASIVE SPECIES AND BARRIERS TO MIGRATION

In 2009 the Loughs Agency conducted a catchment wide survey of barriers to migration and riparian invasive species within the Faughan catchment. Both surveys have resulted in direct use of the data by national organisations and projects.

The barriers information was used to develop and test a Scotland and Northern Ireland WFD tool to assess the impact of barriers to fish migration. Developed under a Scottish and Northern Ireland Forum For Environmental Research (SNIFFER) project the WFD 111 work programme has produced a tool that will be used in both jurisdictions.

As part of the original barriers work conducted in 2009 surveyors also recorded on GPS all stands of three invasive species (Himalayan balsam, Japanese knotweed and Giant hogweed) within the Faughan catchment. This data was passed to the **C**ontrolling priority **I**nvasive species and **R**estoring native **B**iodiversity (**CIRB**) project. CIRB is an INTERREG IVA funded project co-ordinated across three jurisdictions including Northern Ireland Republic of Ireland and Scotland. The partners include Queens University Belfast, University of Ulster, Rivers And Fisheries Trusts Scotland (RAFTS), Inland Fisheries Ireland, Tweed Foundation, Galloway Fisheries Trust and the Ayrshire Rivers Trust. A number of rivers within each jurisdiction including the Faughan and Newry catchments have been chosen as demonstration sites where Invasive Non Native Species (INNS) will be controlled and methods for restoring native biodiversity trialled. While the Loughs Agency are not a formal project partner we are a member of the steering group overseeing the project and have facilitated events and knowledge transfer.

The CIRB project is a good example of partnership working including the engagement of stakeholders to tackle a persistent issue. The CIRB project will run until December 2014.

5.0 WATER QUALITY SUMMARY

- 94 sites were monitored in the Foyle and Carlingford areas for water quality parameters during the summer of 2011.
- 6 sites were monitored in the Faughan catchment and two in the Lough Foyle South catchment.
- Ammonia results were classified as very good for all sites monitored in the Faughan and Lough Foyle South catchments.
- 4 out of 6 sites on the Faughan were classified as very good for BOD, 1 classified as fairly good and 1 classified as fair. In the Lough Foyle South catchment 1 site was classified as fairly good and 1 site as fair.
- Phosphorous results were classified as favourable for all sites.
- Suspended solids were classified as favourable for nursery conditions for all sites
- Macro invertebrates were monitored in the Faughan catchment only with a BMWP classification of fair quality at 3 out of 5 sites, poor quality at 1 site and bad quality at 1 site. BMWP monitoring was conducted during the summer only.

The Importance of Monitoring Water Quality

The Loughs Agency conducts proactive and reactive pollution investigations within the Foyle and Carlingford areas. As part of this approach the Loughs Agency conducts a seasonal water quality monitoring programme. All results are collected and analysed by Loughs Agency staff at Loughs Agency facilities.

Key chemical and biological parameters including macro invertebrate monitoring, Biological Oxygen Demand (BOD), suspended solids, ammonia and phosphorous are monitored on a monthly basis during summer.

Results are available for all parameters monitored within 5 days and any follow up action can be conducted immediately.

Rivers and lakes are important habitats for varied biodiversity including fish. The Loughs Agency monitors water quality during the sensitive summer period to inform investigations

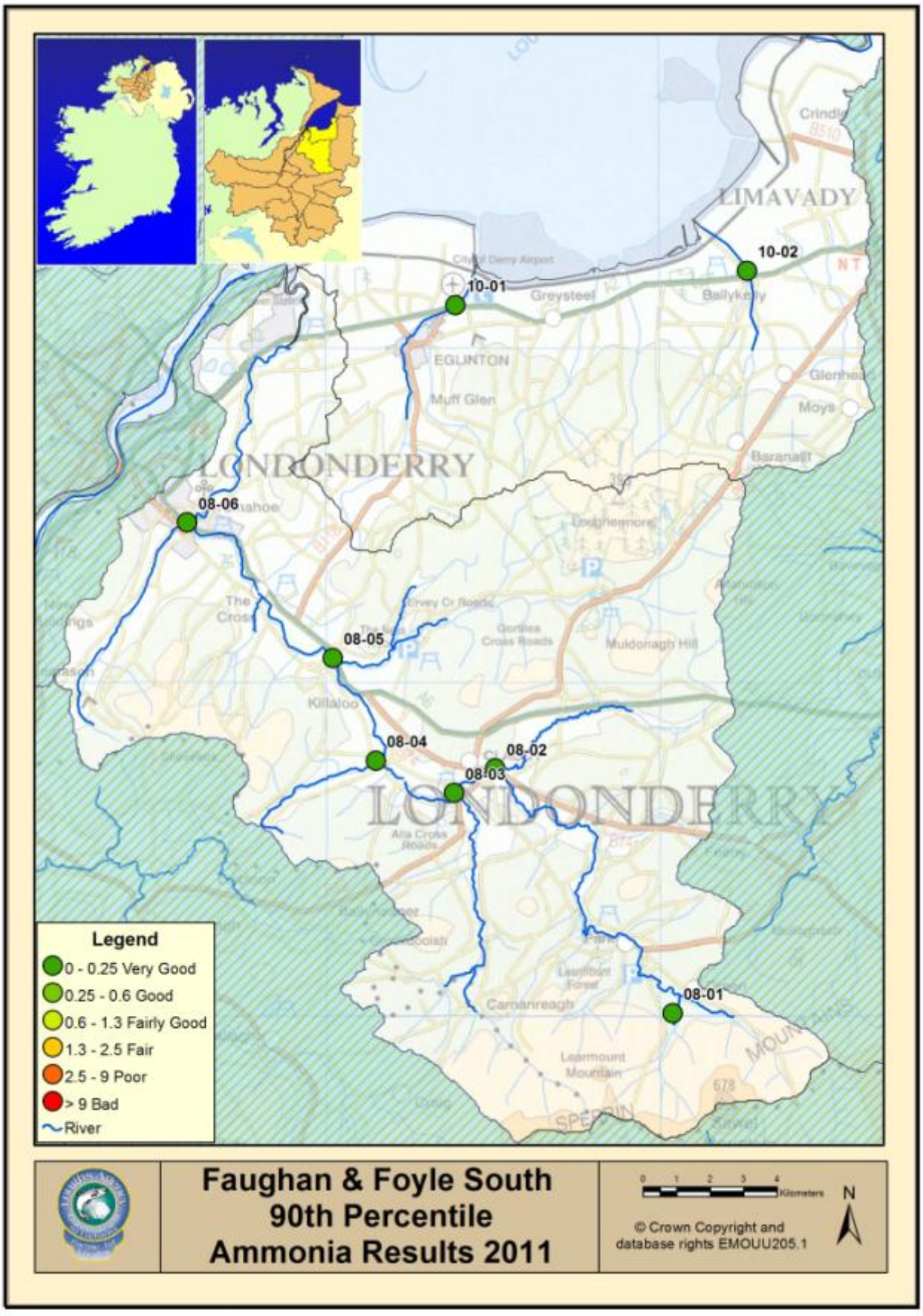

Fig 20. 2011 Ammonia classifications

Fig 21. 2011 BOD classifications

Fig 22. 2011 Phosphorous classifications

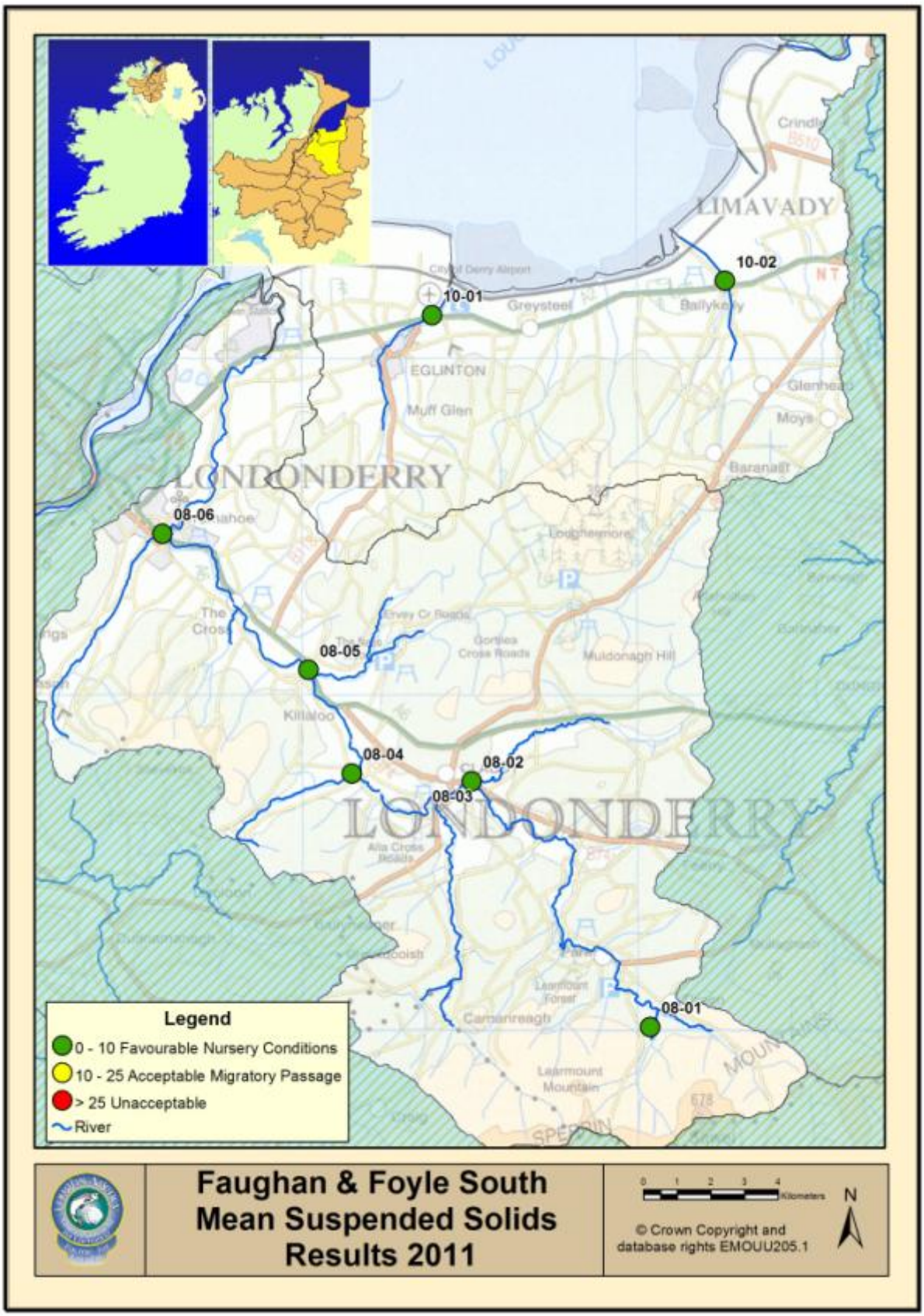

Fig 23. 2011 suspended solids classifications

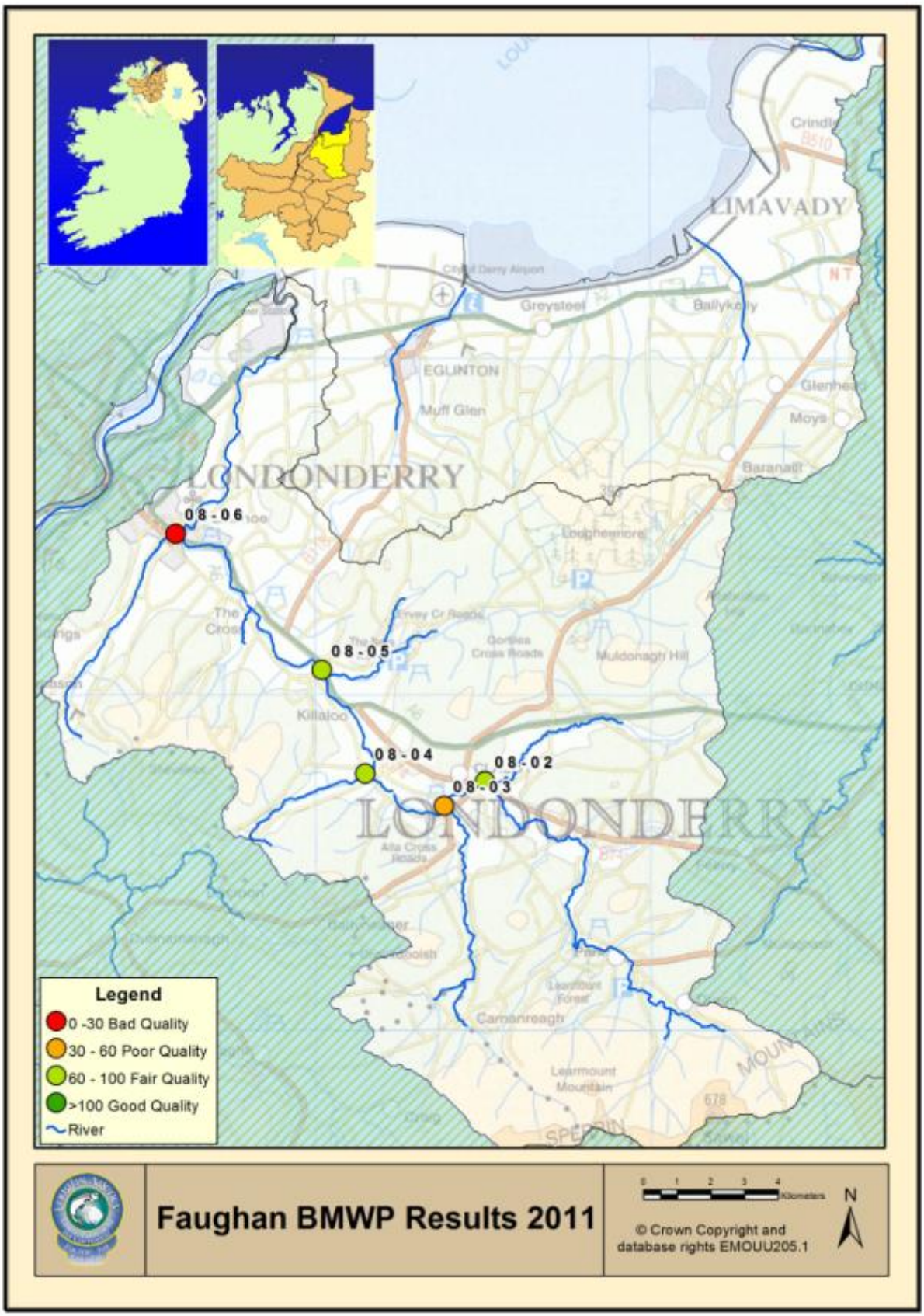

Fig 24. 2011 BMWP macro invertebrate classifications

6.0 CONSERVATION AND PROTECTION SUMMARY

- In 2011 within the Faughan catchment there were 113 patrols
- There were 124 angling license checks within the Faughan catchment in 2011. No significant angling takes place on the Muff River within the Lough Foyle South catchment.
- There were 2 joint patrols in the Faughan catchment in 2011 with local angling association personnel.
- There were 13 site/premise visits within the Faughan catchment in 2011.
- In channel and riparian habitat improvements were conducted on the Bonds Glen Burn a tributary of the River Faughan.
- 11 rods were seized and 1 net was seized in the Faughan catchment in 2011.
- The Eastern crew commented in their annual report that the summer of 2011 was unsettled with high water levels persisting.
- This may have led to fewer optimal opportunities for angling.

Conservation and Protection

The Faughan and Lough Foyle South catchments are within the Loughs Agency Eastern zone. The Eastern crew is responsible for the conservation and protection of their zone in addition to other duties throughout the Foyle area.

The Eastern crew is composed of 1 senior fishery officer and 3 fishery officers.

Each crew is responsible for amongst other tasks conducting a wide variety of conservation and protection duties including direct fishery protection, anti poaching patrols, license checks, pollution monitoring, redd counting, electrofishing and assisting with other stock assessments.

Crews will liaise with staff and volunteers from relevant government departments and angling associations to ensure water quality is maintained and to monitor all potential impacts on the fishery and aquatic resources.

6.1 CREW REPORT ON 2011

2011 saw the Eastern crew target the River Faughan and Lough Foyle South catchments with a mix of both routine and specialised patrols and an extensive programme of surveys. Working closely with both the Northern Ireland Environment Agency (NIEA) water quality team and the River Faughan Angling Association Ltd potential threats to the catchments were identified and all reports investigated.

Redd counting of the River Faughan was carried out in the most difficult of conditions as arctic conditions gripped the island of Ireland during January with temperatures of minus double figures recorded. Indeed these low temperatures did lead to some rivers freezing over. A full walkthrough of the Faughan catchment was achieved and good numbers of redds found, although some snow melt may have washed over many redds and thus accurate numbers of redds were hard to ascertain in these areas. A most welcome early spring of fine settled weather provided ideal egg hatching and development.

The summer although rather unsettled with higher water levels than expected led to a rather protracted and frustrating electrofishing and field survey season. In most cases it was snatch and run with the majority of electrofishing carried out in less than ideal water conditions. Results achieved were generally excellent with good numbers of salmon and trout recorded throughout. The electrofishing survey provided the Eastern Crew with the ideal opportunity to identify any areas of habitat loss. In addition where the situation presented itself landowners or members of the public had the opportunity to observe electrofishing first hand.

Continued work on the A2 dual carriageway restricted angling effort on the tidal section of the Faughan. This has led to anglers exploring many less well known beats further upstream. Again reported catches were quiet and it is thought that increased floods throughout the summer may have reduced angling effort and further reduced by a greater uptake of catch and release.

The wet summer presented increased risks of pollution as a result of bankside erosion, cultivated field runoff and a most frustrating and fragmented silage making season. The Eastern Crew continued to monitor watercourses of the Faughan and Lough Foyle South catchments with a mix of both reactive and

proactive inspections. Reports and incidents received were reduced from 2010 levels. Overall the Eastern Crew acknowledge the co-operation of the agricultural community in adhering to the regulations laid down under the Nitrates Action Plan. Routine water quality testing was carried out monthly by the Eastern Crew throughout the Faughan and Lough Foyle South catchments with all samples returned to the laboratory at HQ for analysis.

The winter of 2011 saw a programme of habitat improvement works completed on the Bonds Glen Burn. Bank protection, fencing and tree/bush trimming were conducted by local contractors to a high standard. This should contribute towards the improvement of the spawning and nursery habitats becoming more productive and naturalising quickly. Scope exits for further in channel improvement projects throughout the catchments.

During 2011 the Eastern Crew continued to protect the fishery of the River Faughan catchment with a mixture of both foot and boat patrols with particular attention paid to the lower reaches of the river especially the tidal zone. All reports of illegal activity were investigated and a close working relationship maintained with the protection team of the Faughan Angling Association Ltd.

The Eastern Crew will continue to protect the River Faughan and Lough Foyle South catchments and to fully implement the objectives and achieve the targets set out in the 2011-2013 Corporate Plan.

6.2 PROPOSED HABITAT IMPROVEMENT SCHEMES FOR 2012/13

Possible schemes proposed by the Eastern Crew for consideration include the following;

- Continuation of the Bonds Glen scheme including log groyne placement and spawning gravel introduction.

- River Ness. Downstream of Burntollet Bridge (502, 107) D/S had previously supported spawning activity however due to realignment of the channel and more frequent spate conditions this section had lost quantities of gravel. Gravel pockets are now fragmented in distribution and limited. The proposal is to import approximately 60 tonnes into the channel and level with a digger to create spawning areas. There is only one landowner at this site.

- Glenrandal River U/S of Glenrandal Bridge (545, 024). The river has lost spawning gravel. Also both banks particularly the R/H bank at the crossing ford has experienced some erosion. Measures needed are bolder placement to protect R/H bank. Import 20 tonnes of gravel of mixed sizes. Crossing ford would benefit from field gates and sheep wire and 2 strands of barb wire on both banks, total approx 300m's. Possible livestock drinkers needed.

- Inver River, (535, 010) Small scheme. D/S of Inver Bridge. One small field length of channel lacking spawning gravel. Approx 5 tonnes of spawning gravel plus larch timber groyne to hold the imported gravel. Tree pruning on both banks. L/H bank remove existing fence and erect new livestock fence approximately 60 m of sheep wire and two strands of barb wire plus two styles.

- River Faughan. Millbrook Bridge. U/S of bridge at slipway. River has lost most of its spawning gravel at this area. Possible gravel placement across the tail of this pool in order to improve spawning. Approximately 20 tonnes of suitable gravel mixture.

7.0 CATCHMENT INITIATIVES

Integrated catchment management planning can only be delivered through the development of true partnerships between statutory and non statutory partners. An understanding of desired outcomes and methods of delivery is essential in matching requirements and expectations to actions.

Exemplar catchment management planning is an iterative process developed and refined over time between parties who have fostered and developed productive working relationships.

Environmental legislation in tandem with societal requirements dictates that steps are taken to improve our natural habitats. From an aquatic perspective the Water Framework Directive is the key driver towards integrated management of our aquatic environments. The Loughs Agency acknowledges this and is eager to encourage participatory approaches as a way to effectively and efficiently meet challenging objectives.

In 2012/13 and beyond the Loughs Agency will aim to engage local stakeholders in participating in river corridor litter picks, the development of habitat improvement works and Sea trout monitoring programmes. We will also facilitate wider stakeholder engagement through participation in the CIRB invasive species project aimed at controlling Invasive Non Native Species and in supporting stakeholder events by providing premises for events.

If you are a member of an organisation which may be interested in working on collaborative conservation and protection projects within the Faughan and Lough Foyle South catchments please contact art.niven@loughs-agency.org to discuss potential projects.

8.0 ACTIONS FOR 2012/2013

- Implement actions from the Trout Strategy once fully adopted, including
    - Develop a Trout redd index on the Bonds Glen Burn and Muff River
    - Develop Sea trout monitoring initiatives for the Bonds Glen Burn and Muff Rivers.
- Participate in ongoing CIRB project (controlling invasive non native species)
- Conduct annual audit point monitoring programme
- Conduct habitat improvement projects
- Conduct water quality monitoring programme
- Organise a river clean up event and engage stakeholders
- Continue to screen all planning applications within the Faughan and Lough Foyle South catchments for potential impacts to the fishery and aquatic resources
- Continue to maintain the high standards of conservation and protection within the Faughan catchment
- Target all areas/individuals brought to Loughs Agency attention
- Conduct annual fish population surveys and spawning surveys
- Conduct ongoing pollution monitoring and investigate areas highlighted as being of concern

- Develop potential habitat improvement projects including riparian buffer zone creation, fencing, native species planting and in-channel habitat improvements including spawning bed and nursery habitat improvement

- Monitor forestry operations adjacent to watercourses or areas likely to impact on watercourse

- Assist with Water Framework Directive fish monitoring programme

- Monitor all sand and gravel extraction sites and onsite water management practices

- Ensure all fish passes, dams and mill races meet required standards