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Finn Catchment Status Report

Atlantic Salmon and Sea Trout Populations and Fisheries



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Written and compiled by Art Niven cover photo © Renaud Mazonq 2005

2.0 Finn Catchment Status Report

This catchment status report is one of a series and intended to be read in conjunction with “ Loughs Agency Catchment Status Reports an Introduction”.

2.1 The Finn Catchment

The River Finn and its main tributary the River Reelan rise in the Bluestack mountain range in central County Donegal, Republic of Ireland and drain in an easterly direction for approximately 50 kilometers until its confluence with the River Foyle in Lifford. The underlying geology is predominantly Dalradian schists and gneiss with quartzites forming the hills around Lough Finn.

The catchment contains habitats and species of great diversity with blanket bog present throughout much of the upland area along the edges of the rivers and tributaries. Many oligotrophic (nutrient poor) lakes are present throughout the catchment. The dominant land use types include commercial coniferous forestry plantations and upland grazing changing to lowland grazing with arable farmland in the lower reaches. The Finn catchment has an area of approximately 320km².

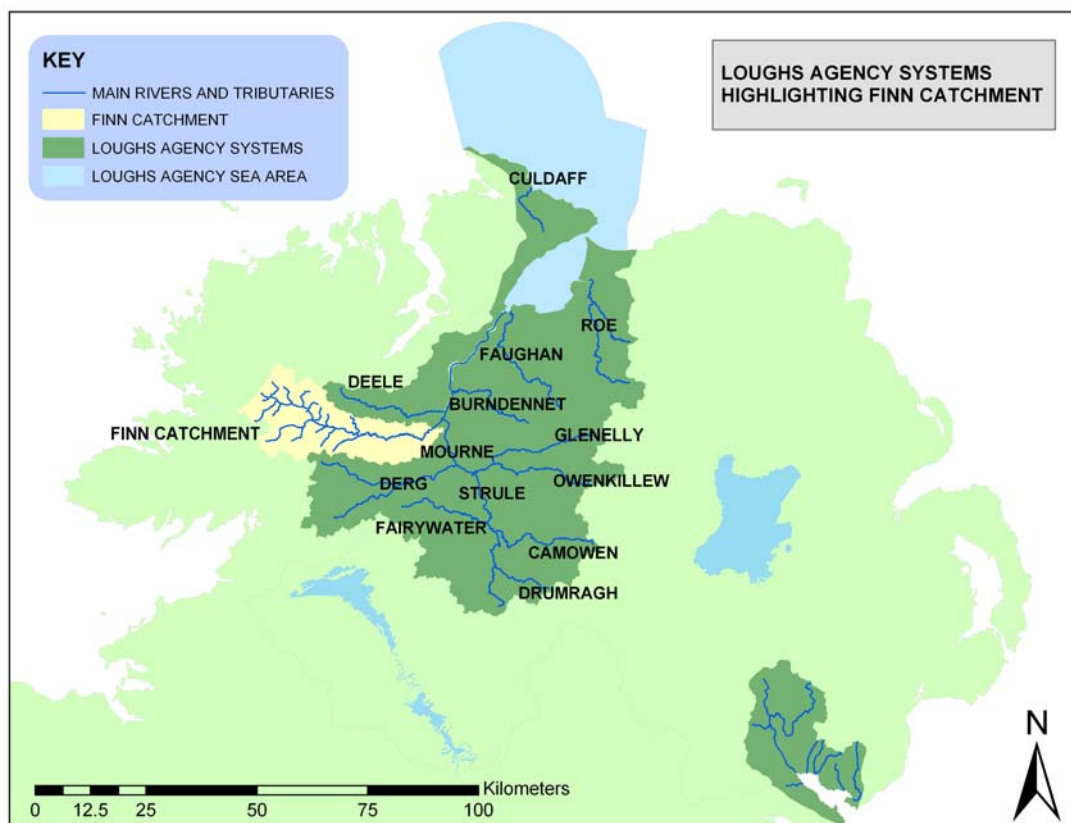


Fig 1. Map of Foyle and Carlingford systems outlining Finn catchment

2.2 Salmonid Stocks

2.2.1 Redd Counts

Redd counts are conducted on an annual basis within the Finn catchment. Known spawning grounds are monitored over a period of four to five weeks from mid November to mid December. This period represents the peak spawning time within the catchment. The rivers are also monitored at this time for fallen trees etc., which have the potential to cause a barrier to fish moving onto the spawning beds. Table 1 outlines the redd count data for the Finn catchment from 2000-2005. Limited redd counting was carried out in 2001 due to the outbreak of Foot and Mouth Disease in neighbouring Northern Ireland. Redd counts also vary from year to year depending on water levels and the resultant water clarity.

Area	2000	2001	2002	2003	2004	2005
Foyle System	2134	1667	4238	3163	2412	5354
Finn and Tributaries	159	137	234	101	149	343
Reelan and Tributaries	245	154	377	350	410	341
Total Finn Catchment	404	291	611	451	559	684

Table 1. Redd counts for Finn catchment and Foyle system 2000-2005

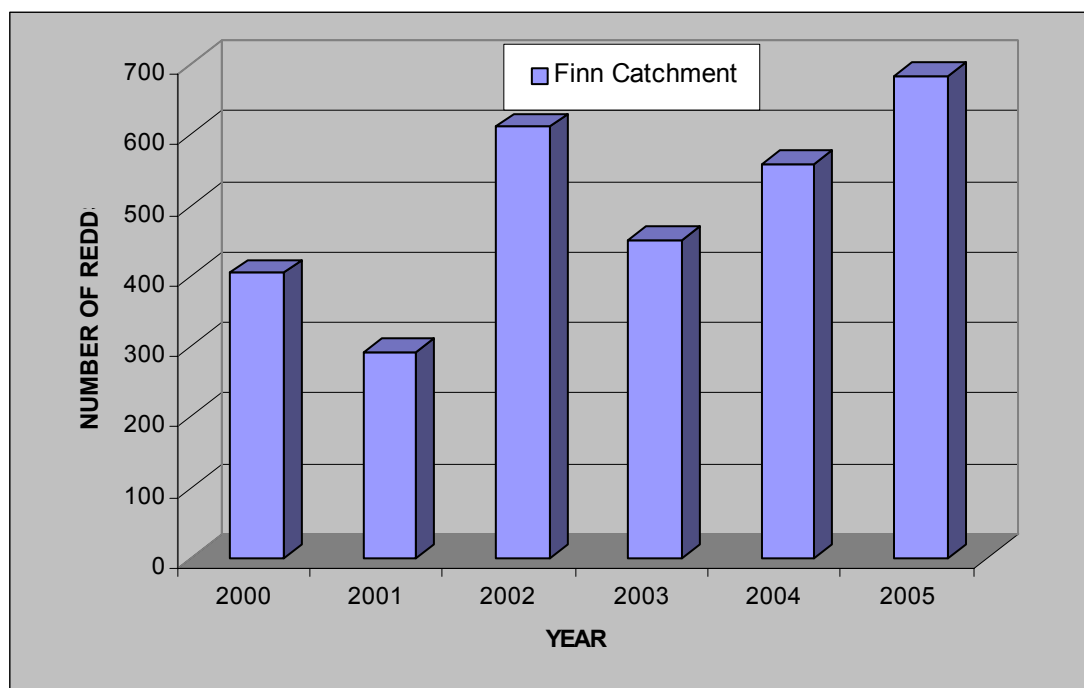


Fig 2. Redd counts for the Finn catchment 2000-2005 note low count in 2001 due to the outbreak of Foot and Mouth Disease in Neighbouring Northern Ireland.

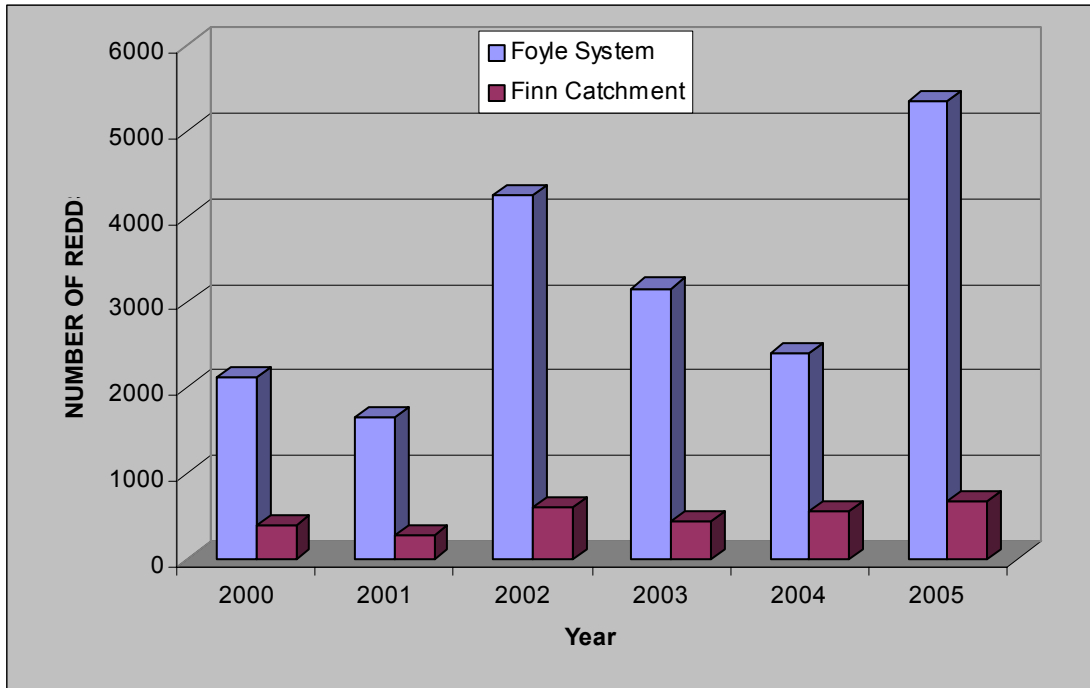


Fig 3. Redd counts for Finn catchment and Foyle system 2000-2005

2.2.2 Juvenile Abundance

In 2005 a total of 32 sites were electrofished in the Finn catchment. Figure 4 shows the classification of these results from 2001-2005 for salmon fry and the proportion of sites that fall into each category. Absent = 0, Poor = 1-4, Fair = 5-15, Good = 15-24 and Excellent = >25 salmon fry.

Salmon

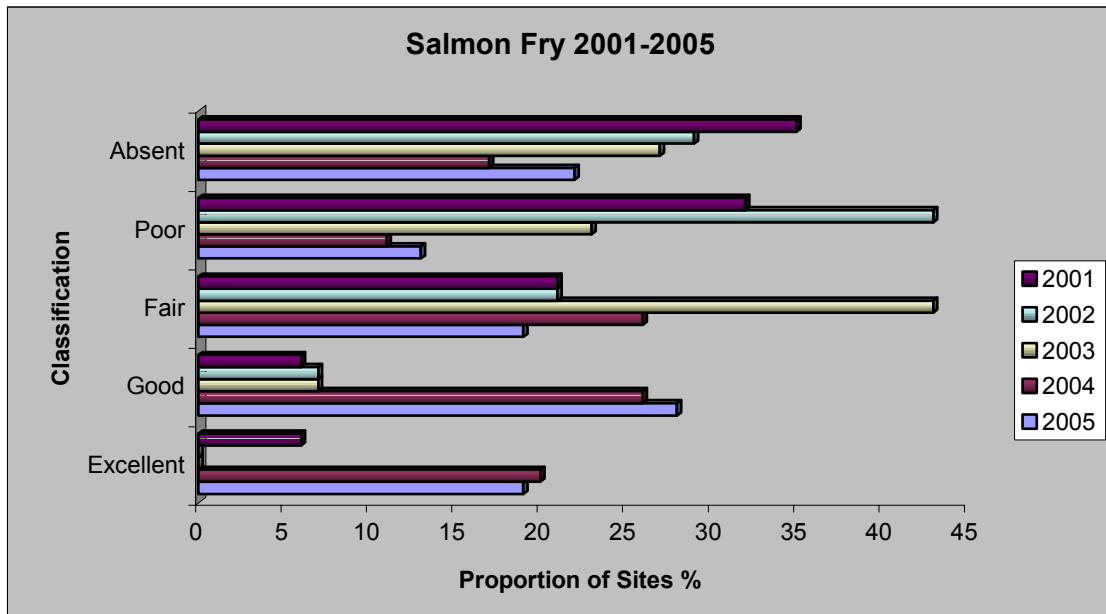


Fig 4. Salmon fry abundance classification in the Finn catchment in 2001-2005.

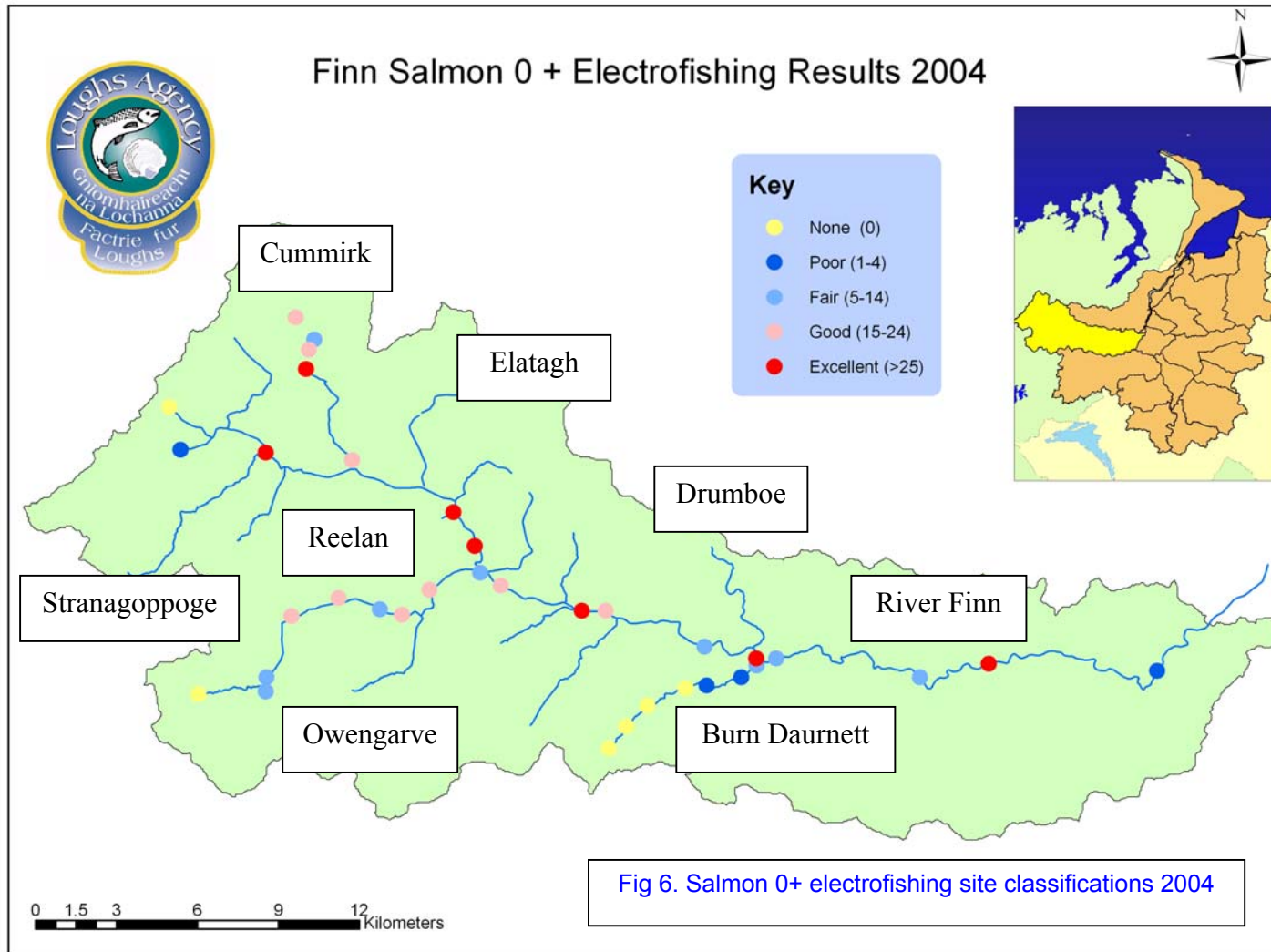
The number of sites classified as absent for salmon fry in figure 4 may be unrepresentative of the Finn catchment due to the methods used for the selection of electrofishing sites which are often based on access to the river. Sites are sometimes located near bridges where slipways often provide good access to the river. A review of electrofishing sites within the Finn catchment is currently being undertaken by the Loughs Agency to improve electrofishing site selection creating a more representative monitoring tool based on salmonid nursery habitats within the River Finn and its tributaries.

Fig 5 is a picture of an electrofishing site which had no salmon fry present in 2005. This site is more representative of holding water than nursery habitat and will be replaced in future years with a more appropriate site.



Fig 5. Electrofishing Site number 163, Mill Burn which will be replaced in future years with a more representative site.

The other sites that have been classified as absent for salmon fry will be monitored and evaluated in order to ascertain the reasons for an absence of salmon fry. Reasons may include among other factors, poor spawning habitat nearby, poor invertebrate numbers on which the fry feed, high sediment load, tunnelling by bank side vegetation or coniferous plantations and habitat more suited to trout or older age classes of salmon.



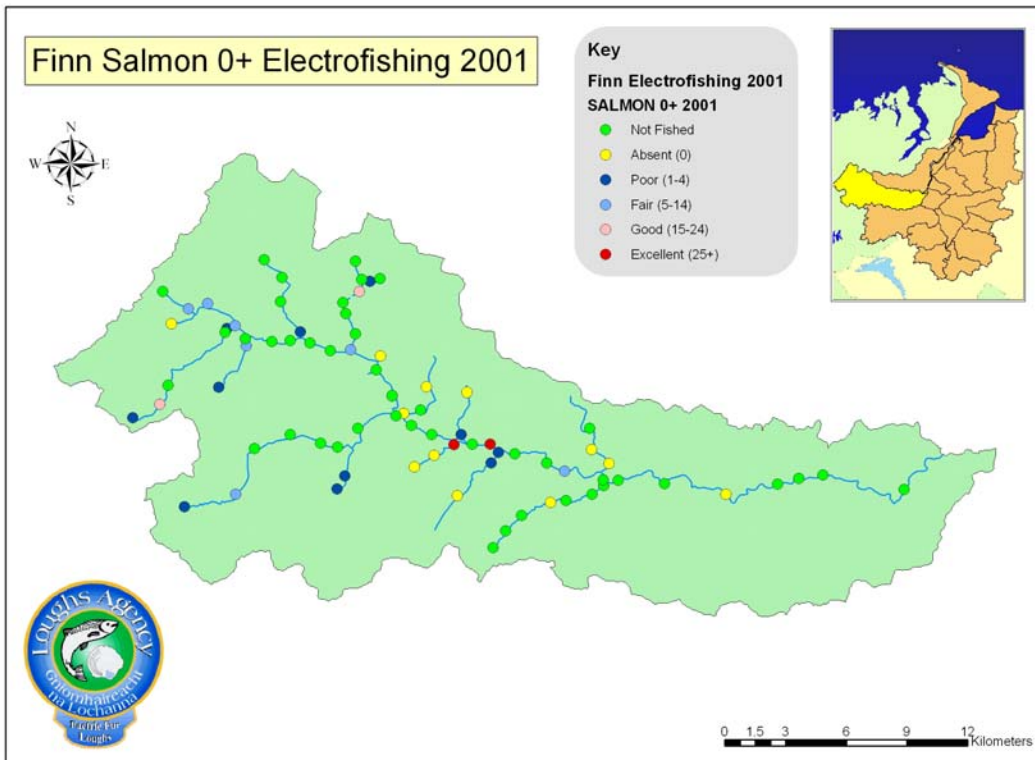


Fig 7a. Salmon 0+ fry electrofishing results 2001

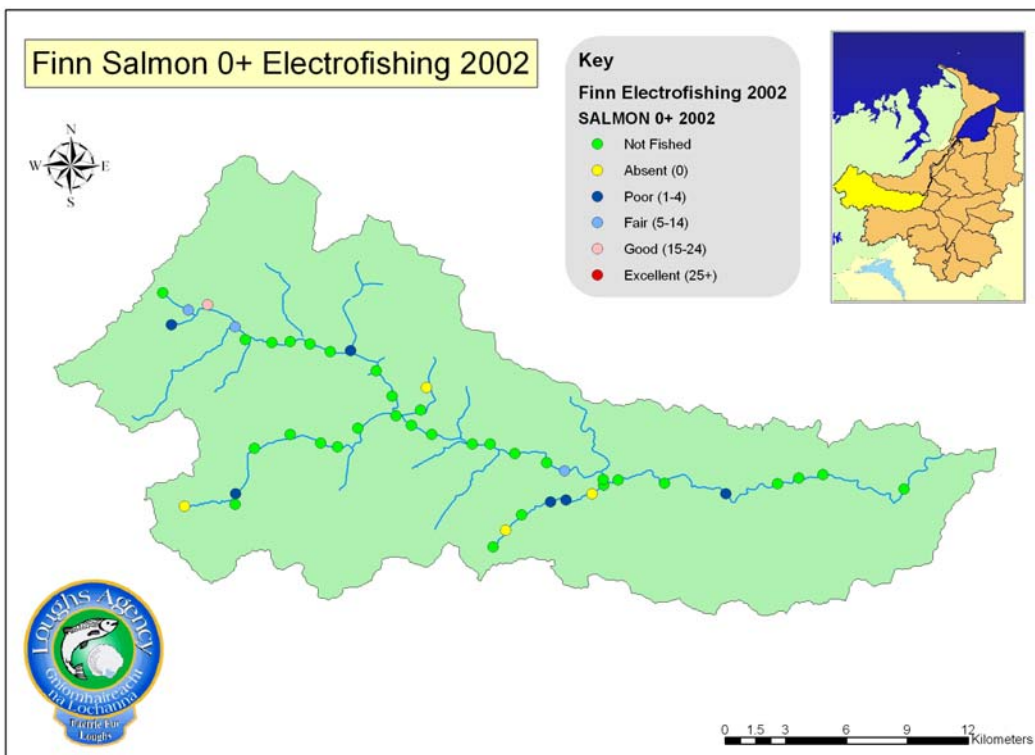


Fig 7b. Salmon 0+ fry electrofishing results 2002

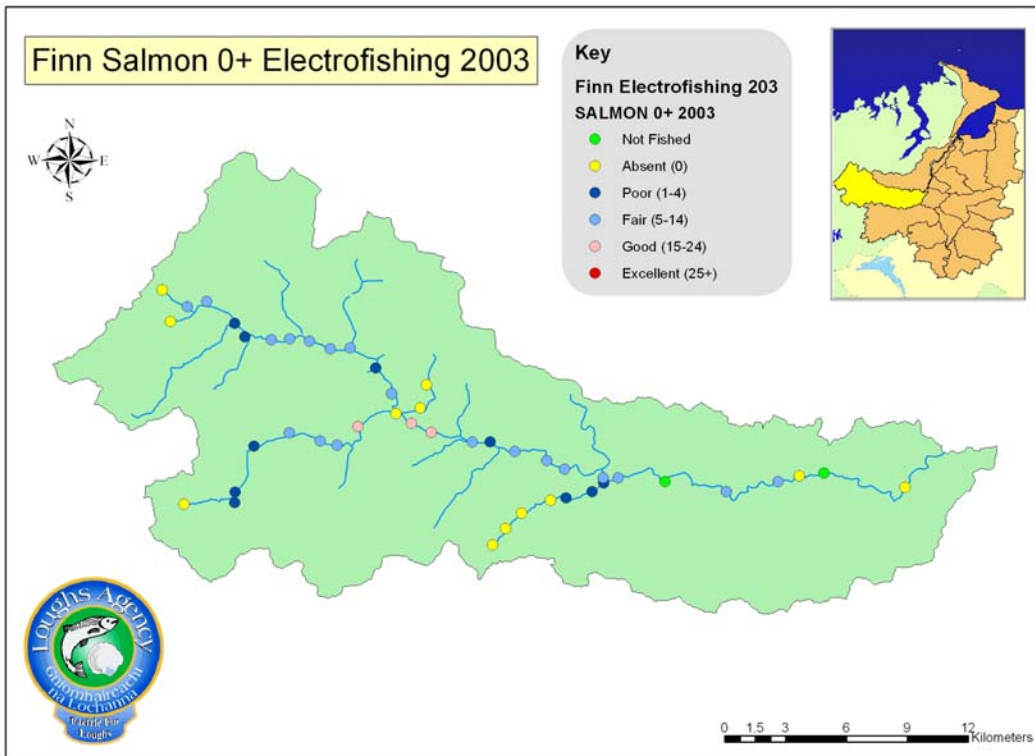


Fig 7c. Salmon 0+ fry electrofishing results 2003

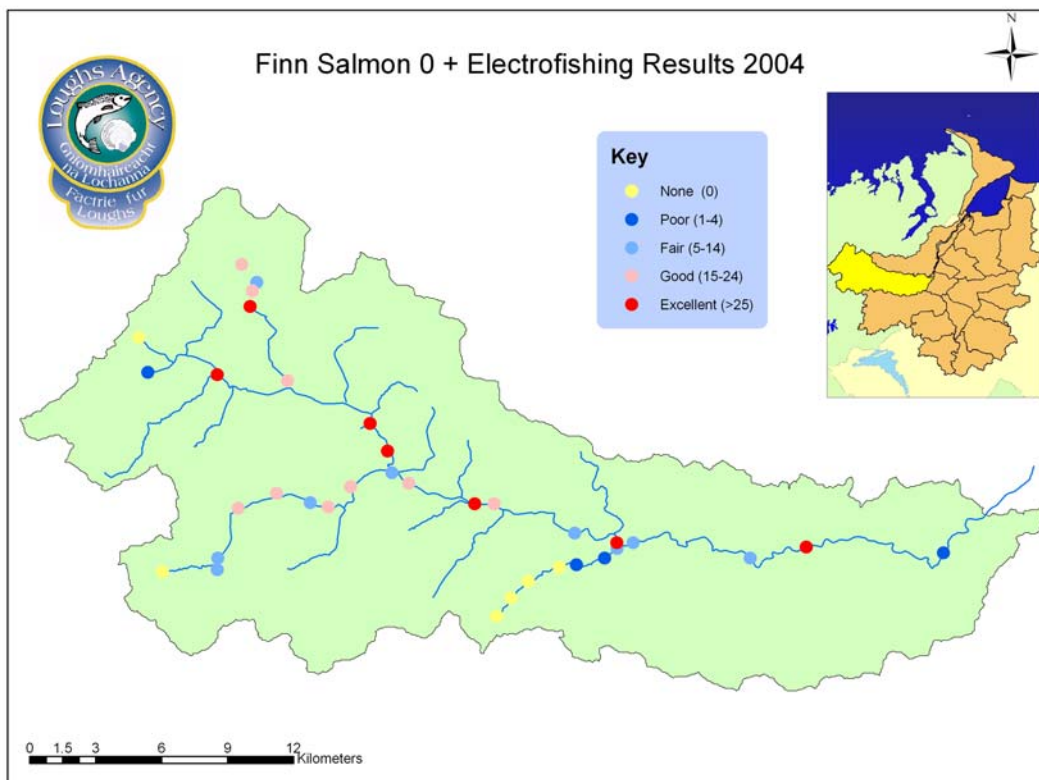


Fig 7d. Salmon 0+ fry electrofishing results 2004

Trout

In 2005 a total of 32 sites were electrofished in the Finn catchment. Figure 8 shows the classification of these results from 2001-2005 for trout fry and the proportion of sites that fall into each category. Absent = 0, Poor = 1-4, Fair = 5-15, Good = 15-24 and Excellent = >25 trout fry.

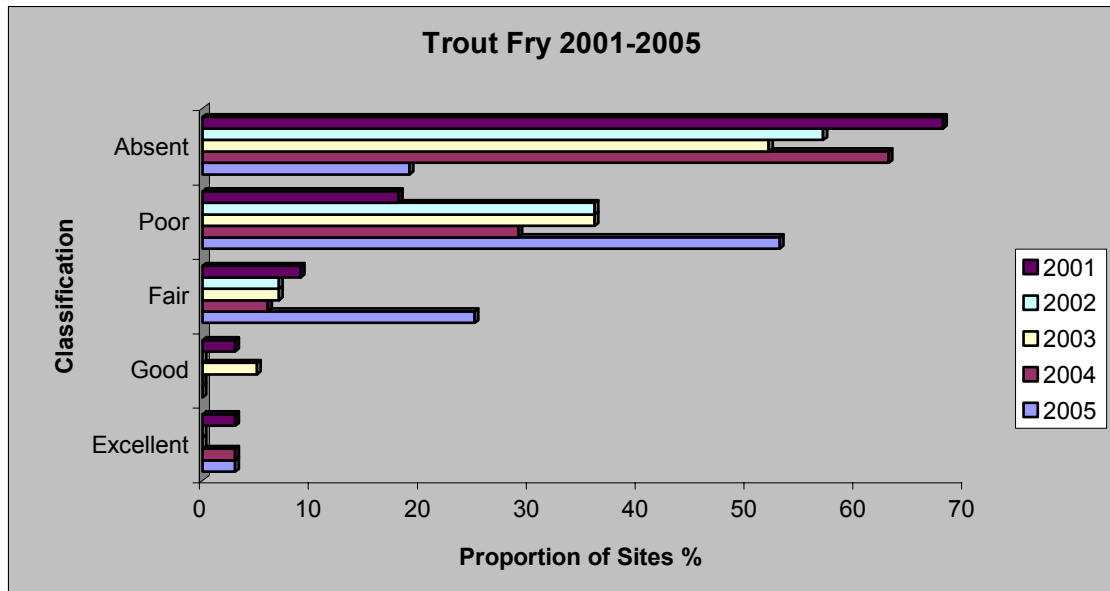
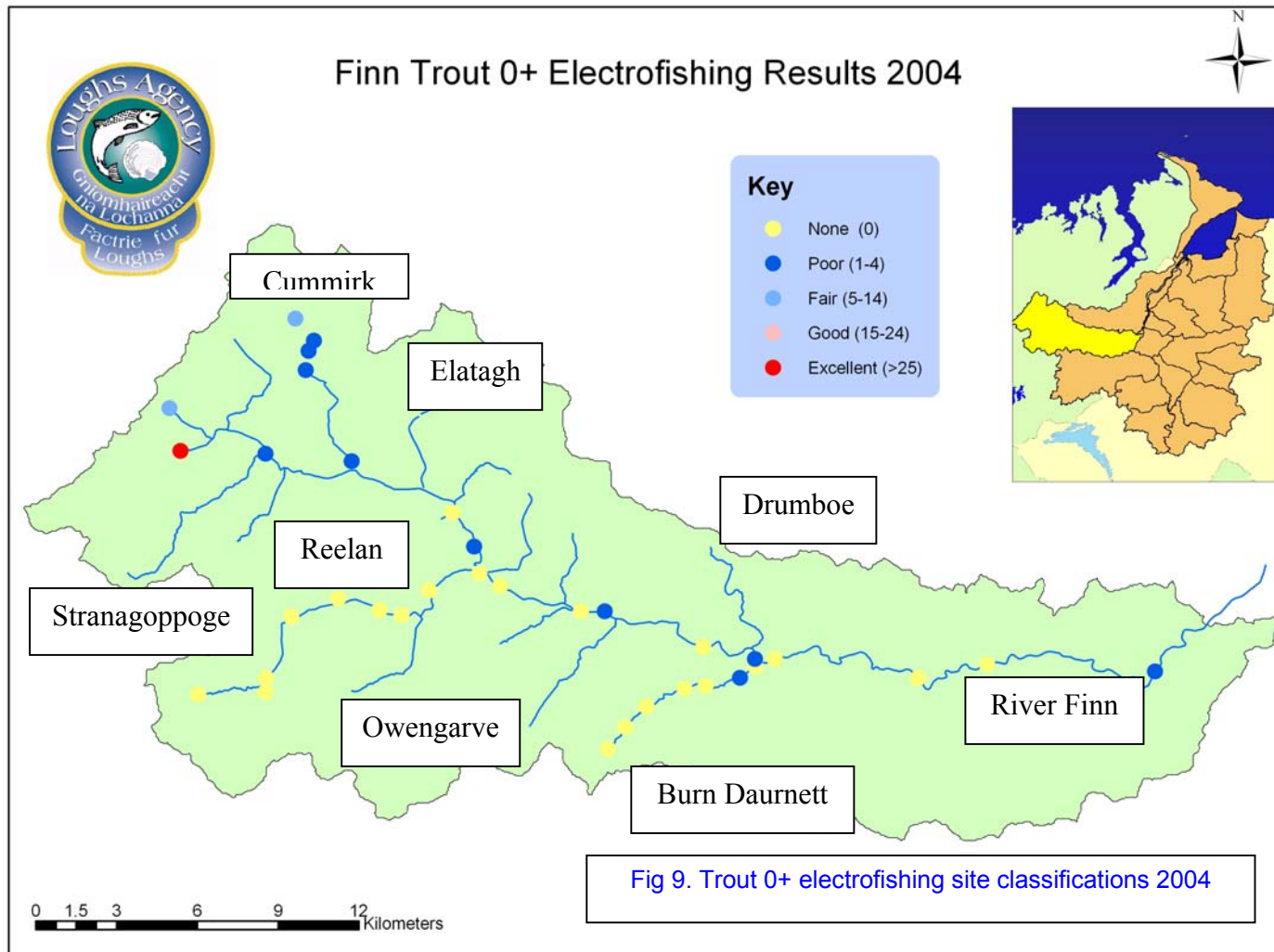


Fig 8. Trout fry abundance classification in the Finn catchment in 2001-2005.



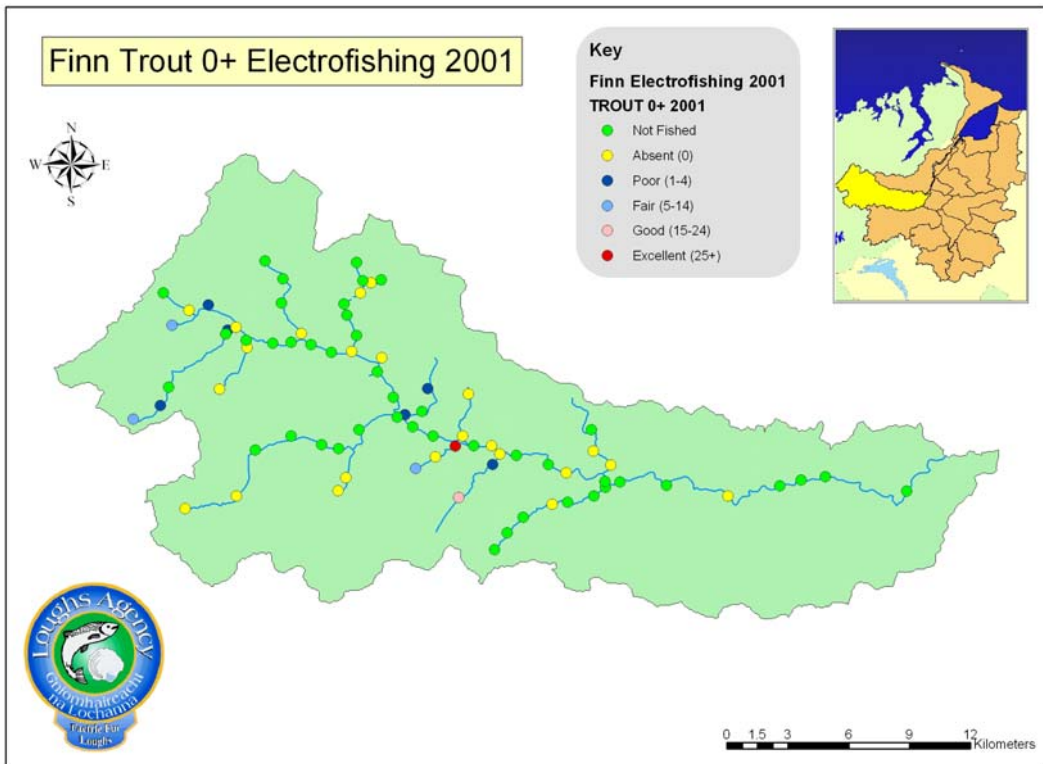


Fig 10a. Trout 0+ fry electrofishing results 2001

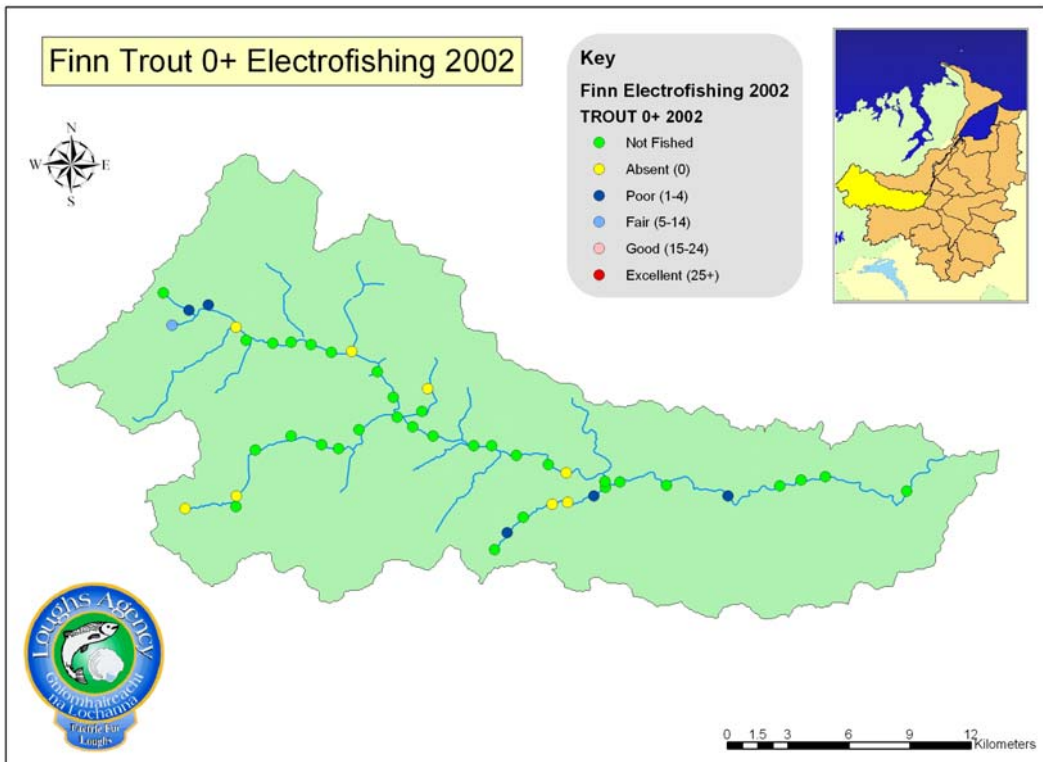


Fig 10b. Trout 0+ fry electrofishing results 2002

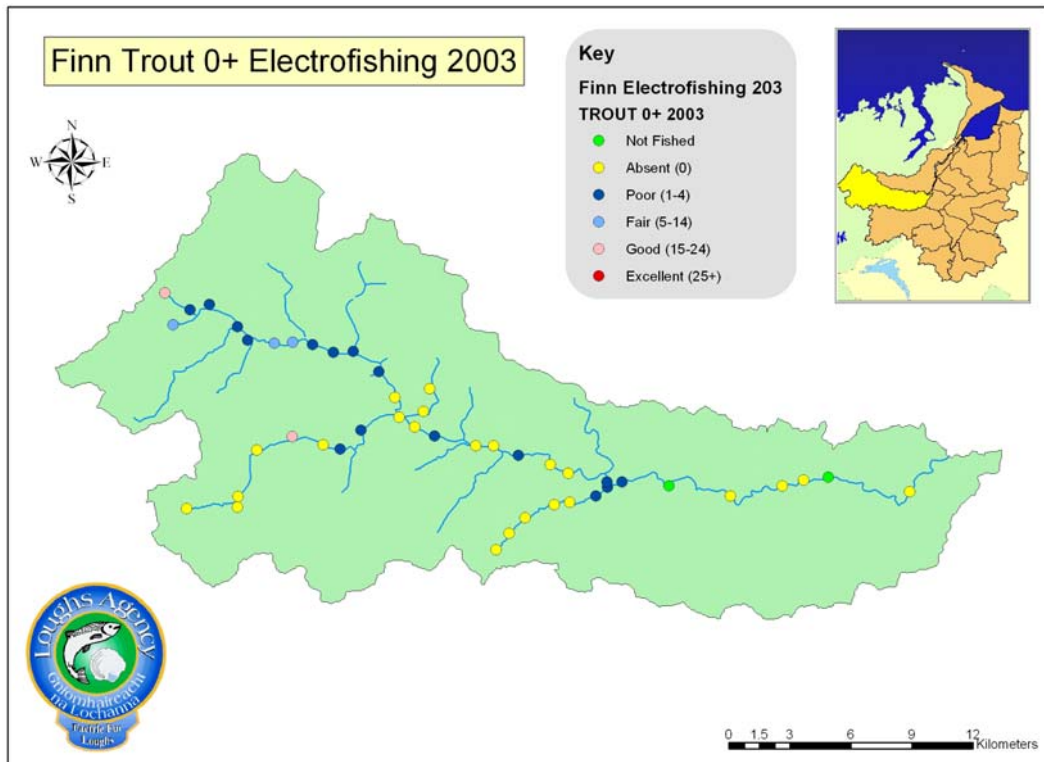


Fig 10c. Trout 0+ fry electrofishing results 2003

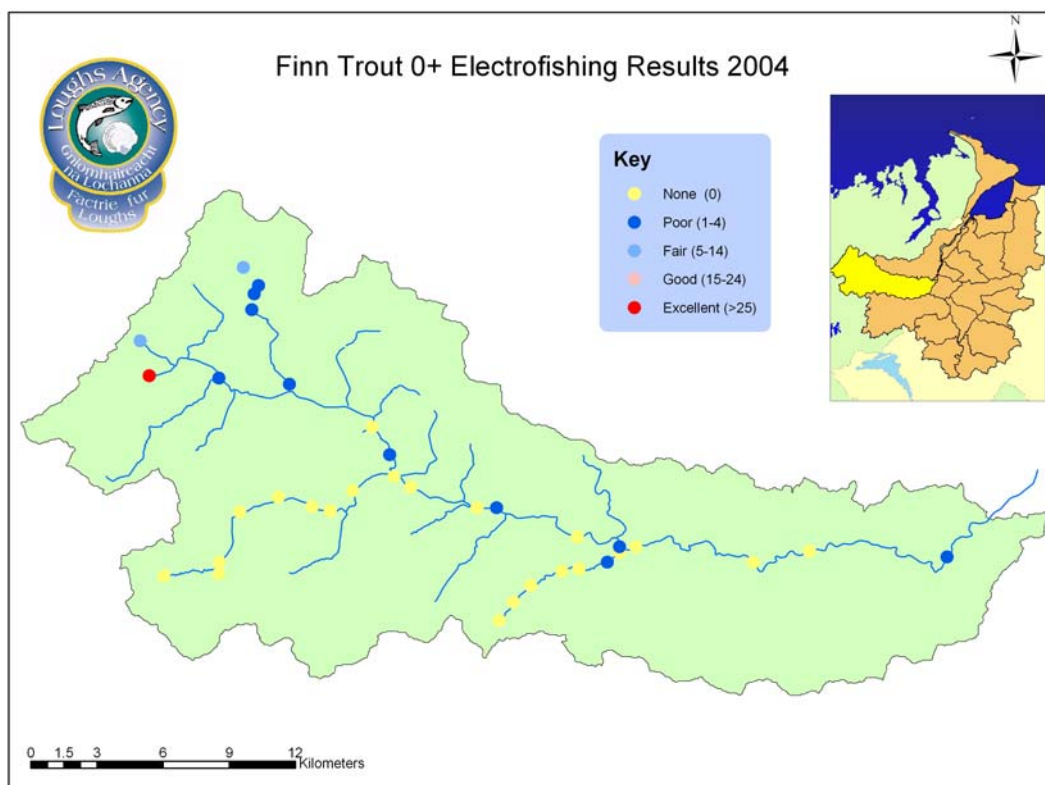


Fig 10d. Trout 0+ fry electrofishing results 2004

2.2.3 Smolt Tagging

Smolt tagging was first carried out on the River Finn in 2002. As mentioned in “Loughs Agency Catchment Status Reports, An Introduction” smolt tagging is carried out for a number of reasons including for the collection of biological data on the smolt run and a minimum estimate of marine survival rates. Table 2 outlines the numbers of smolt tagged at Killygordon on the River Finn and some of the biological characteristics. Table 3 highlights the recapture data.

The Marine Institute collates the recapture data from the tagging programme. For fish tagged in any year there is a lag of 2 years before the recapture data is available.

All micro-tagged fish have had their adipose fin removed (small fin between dorsal fin and tail), if any fisher catches a salmon or grilse without this fin a bounty is payable on the return of the fish head to Loughs Agency Headquarters in Prehen, please include location and date fish was caught, length, weight and scale sample.

Year	Number of Smolts Tagged	Mean Age	Mean Length (cm)	Mean Weight (g)
2002	690	2+	12.5	19.8
2003	2252	2+	12.7	20.2
2004	773	2+	12.73	20.31
2005	390	2+	12.9	20.5

Table 2. Numbers of smolt tagged on River Finn 2002-2005

Year Tagged	Year Re-captured	Numbers Recaptured	Re-capture Location
2002	2003	10	Donegal, North Coast, Mayo, Galway
2003	2004	1	River
	2004	25	Donegal, Mayo, Kerry, River
	2005 (No data available yet)	(No data available yet)	(No data available yet)

Table 3. Re-capture data from River Finn micro-tagging programme. Note lag in data due to length of time spent at sea and length of time needed to collate data.



Fig 11. Smolt trap in position on the River Finn at Killygordon

2.3 Electronic Fish Counters

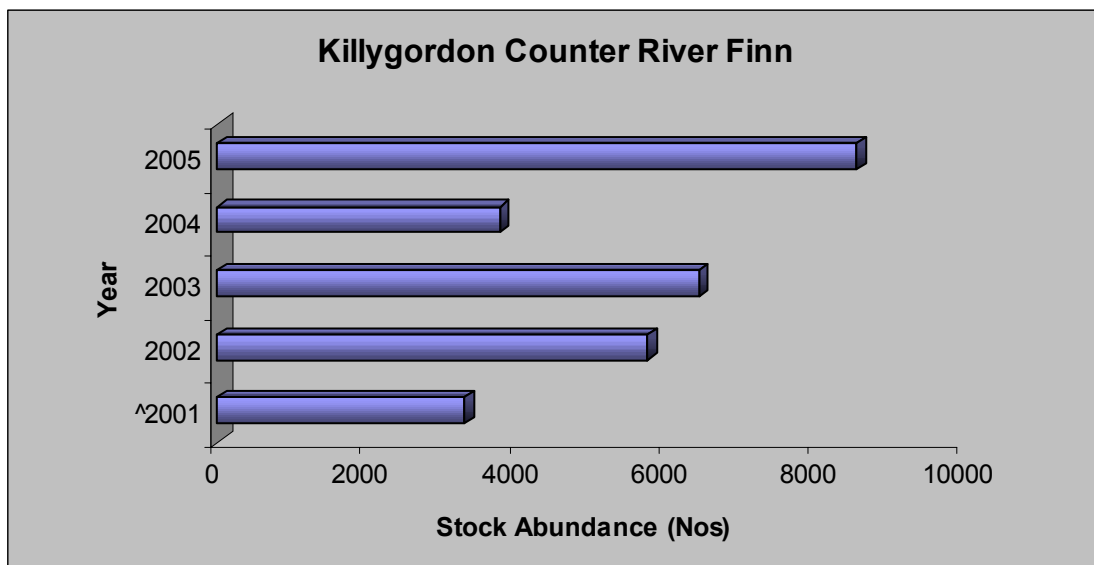


Fig 12. River Finn electronic fish counter figures at Killygordon 2001-2005. Note ^ = year counter installed. Counter funded under INTERREG IIIA and International Fund for Ireland.

Year	No of Fish Across Counter
2001	3311
2002	5768
2003	6461
2004	3778
2005	8571
Average	5578

Table 4. Fish counter figures 2001-2005

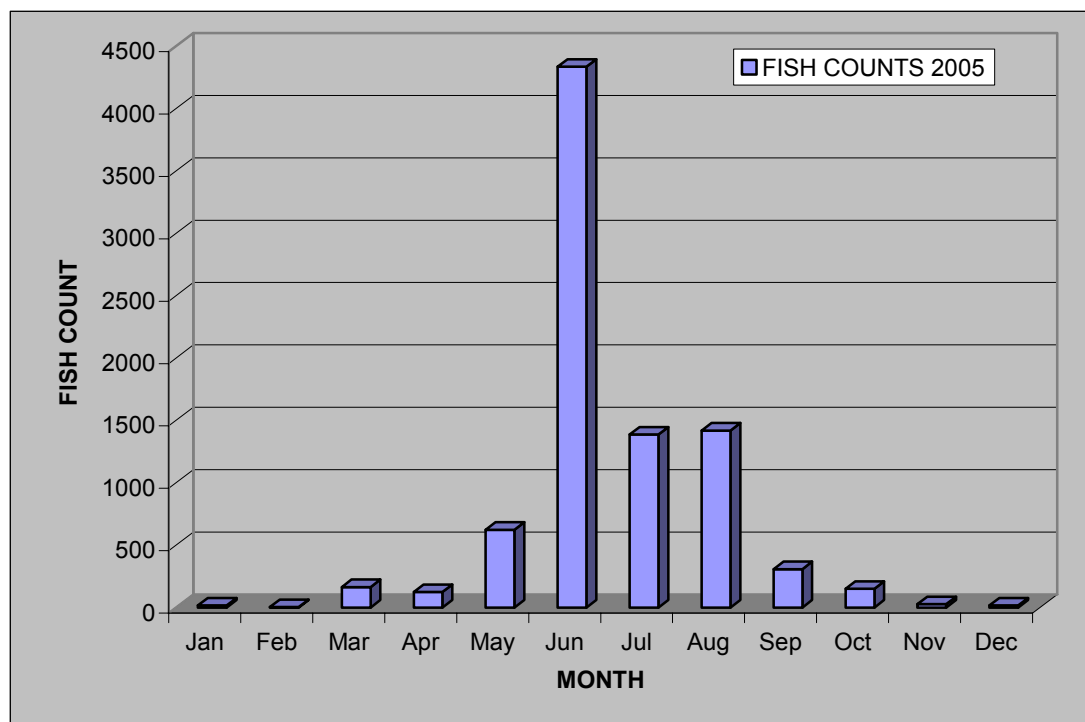


Fig 13. Monthly fish count at Killygordon during 2005

2.4 Management Targets/Spawning Targets

The management target for the Finn catchment and all tributaries including the Reelan = **4328** as counted at Killygordon electronic fish counter.

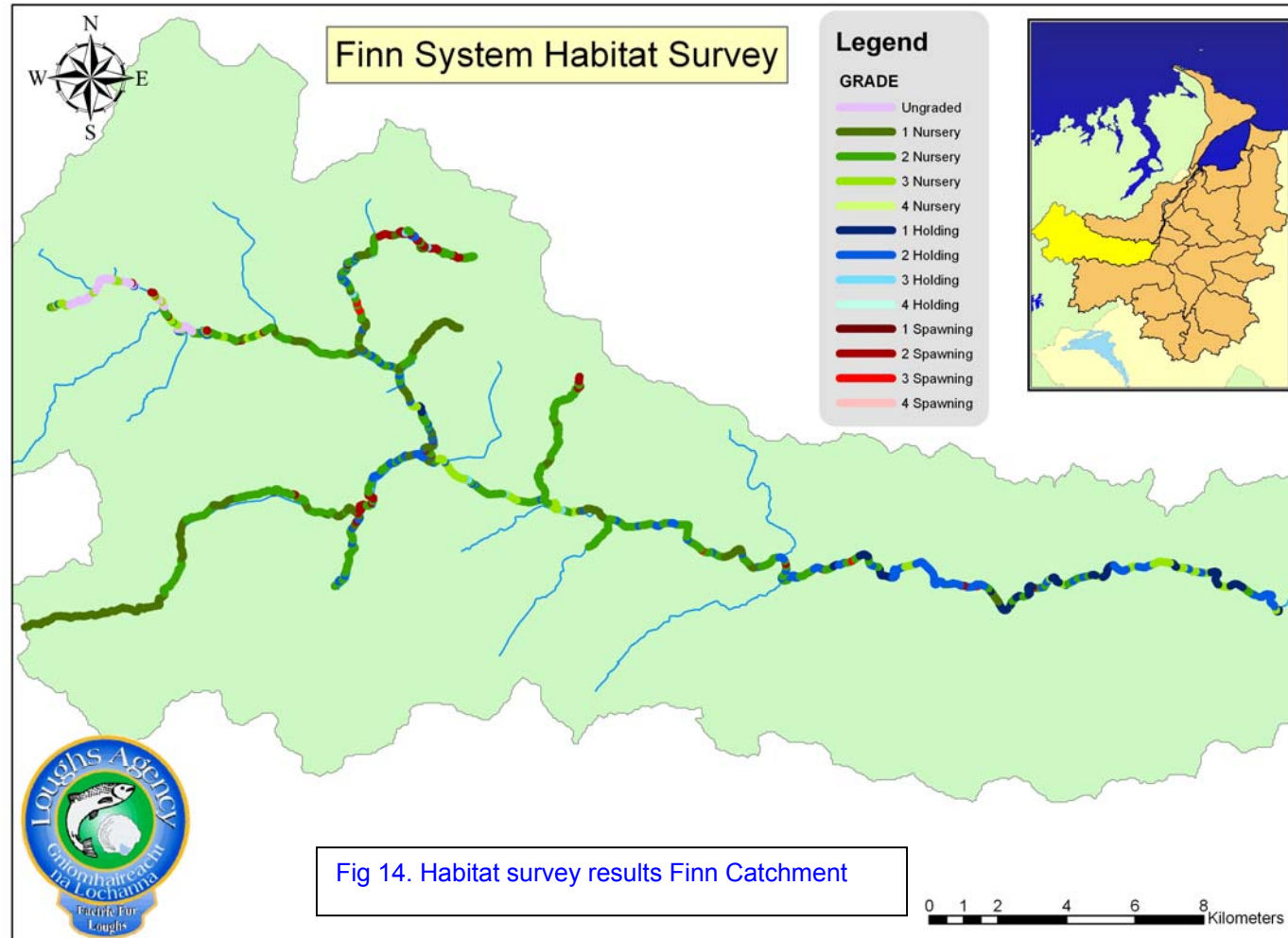
Year	No of Fish Across Counter	Estimated Rod Fishery Exploitation @ 15%
2001	3311	497
2002	5768	865
2003	6461	969
2004	3778	566
2005	8571	1286
Average	5578	837

Table 5. Finn catchment fish counter figures 2001-2005 and estimated rod catch at 15%

Year	No of Fish Across Counter	No of Fish Minus 25% (Angling, Poaching and Predation)	Estimated No of Females @ 60 %	Estimated Egg Deposition
2001	3311	2483	1490	3,725 000
2002	5768	4326	2596	6,490 000
2003	6461	4846	2908	7,270 000
2004	3778	2834	1700	4,250 000
2005	8571	6428	3857	9,642 500

Table 6. Finn catchment estimated egg deposition 2001-2005.

2.5 Habitat Monitoring



2.6 Conservation and Protection Works

Year	Nets	Salmon	Rod and Reels	Boats
2000	178	79	0	0
2001	93	29	1	1
2002	64	20	9	2
2003	48	5	5	1
2004	26	9	1	2
2005	26	6	3	1

Table 7. Seizures in the Finn catchment 2000-2005

Year	Fish Audit
2000	1 Week Redd Counting 1 Week Electrofishing
2001	1 Week Redd Counting 1 Week Electrofishing
2002	3 Weeks Habitat Surveying 1 Week Redd Counting 1 Month Smolt Tagging 1 Week Electrofishing
2003	1 Week Redd Counting 1 Month Smolt Tagging 1 Week Electrofishing
2004	1 Week Redd Counting 1 Month Smolt Tagging 1 Week Electrofishing

Table 8. Time spent on fish audits in the Finn catchment 2000-2004

Seized Items	2000	2001	2002	2003	2004	2005
Nets	528	249	207	197	180	114
Boats	26	23	9	22	16	16
Salmon	519	280	94	155	124	118
Sea Trout	31	9	23	6	7	4
Brown Trout	3	0	7	0	0	7
Rod and Reels	11	17	22	10	16	10

Table 9. Total seizures Foyle system 2000-2005

2.7 Designated Areas

The River Finn Special Area of Conservation (SAC) comprises almost the entire freshwater element of the Finn and its tributaries and also includes Lough Finn.

The site is a SAC selected for active blanket bog, lowland oligotrophic lakes, wet heath and transition mires, all habitats listed on Annex I of the EU Habitats Directive. The site has also been selected for Atlantic salmon and otter that are listed on Annex II of the same directive.

“Lough Finn holds a population of Arctic Charr (Salvelinus alpinus). This fish is a relative of salmon and trout and represents an arctic-alpine element in the Irish fauna. In Ireland this fish occurs only in a few cold, stoney, oligotrophic lakes. It is listed in The Irish Red Data Book as threatened in Ireland. The Charr in Lough Finn are unusual in that they are dwarfed. Dwarfed Charr only occur in one other Lough in Ireland, Lough Coornasahom, Co. Kerry and they are therefore of national importance. Charr are very sensitive to water quality and therefore changes in the catchment such as afforestation should be avoided to maintain this population.”

National Parks and Wildlife Service (NPWS)

2.8 Genetic Study

A recent baseline genetic study of the salmon populations of the Foyle system has confirmed the presence of genetically distinct populations both between and within river catchments. In the Finn catchment more detailed work was carried out at a finer scale. Results showed that there are families of spawners, which distribute themselves throughout the river, in relation to the availability of suitable spawning habitat. Groups of families form local sub-populations, at a level determined by the patchy distribution of suitable habitat. The basic level of genetic population structure (and perhaps the basic level of production) appears to lie at around 5-20km. In the Finn catchment there appears to be at least 4 sub-populations.

In order to successfully manage salmon populations and fisheries an understanding of the genetic diversity within a catchment is important. Preservation of genetic diversity will maintain variation within a catchment and make the wider population less susceptible to catastrophic events.

2.9 Pollution Monitoring

The Loughs Agency has a statutory obligation to monitor the pollution of watercourses in relation to impacts on fisheries. In conjunction with the County Council all reported incidents are investigated

2.10 Proposed Actions for 2006

The Loughs Agency will continue to monitor the key audit points within the Finn catchment, these include, fish counter data, electrofishing surveys, habitat monitoring and fisheries catch data.

In order to preserve, conserve and develop the salmon fisheries both within the Finn catchment and the Foyle system a number of key areas have been highlighted for further consideration and where appropriate action will be taken in conjunction with interested partners.

Important work that needs to be carried out in the Finn catchment includes

- A review of electrofishing sites within the catchment, a more representative survey with an increased number of sites will be instigated
- The creation of an inventory of potential sites for habitat improvement works. This could include investigations into fencing areas off from cattle to prevent bank erosion, bank side vegetation pruning to reduce tunnelling in suitable sites, instream works to shore up eroding banks and any other appropriate habitat enhancement works. In addition to this areas of fly tipping could be recorded and the location passed on to the relevant body.
- Fostering closer links with interested stakeholders to manage the riparian habitat in a sustainable manner.
- Continued biological data collection including genetic resurvey
- Continued monitoring of all sources of pollution
- Instigation of a monitoring programme on the Cummirk River to monitor any potential impacts in the future from the proposed landfill site at Meenaboll.

All recreational fishers are required to submit a catch return on an annual basis

