NITH CATCHMENT FISHERY TRUST

ANNUAL REPORT

JANUARY TO DECEMBER 2014

PUBLISHED MARCH 2015

Nith Catchment Fishery Trust

Nith Catchment Fishery Trust (NCFT) is a Scottish registered Charity which was formed in late 2009 to conserve and enhance all native freshwater fish and their habitats located within the inland and coastal waters of the River Nith catchment and the jurisdictional area of the Nith District Salmon Fishery Board.

The aims of the Nith Catchment Fishery Trust are:

- To advance environmental protection and improvement by conserving and enhancing all species of freshwater fish and their environs within the River Nith catchment, for public benefit.

- To advance the education of the general public through raising awareness of aquatic ecosystems including their fauna, flora and economic activity within the River Nith catchment.

Trust Directors
Mr E P K Weatherall - Chairman
Mr R Clark - retired 24.03.14
Mr T C F Florey
Mr J Henderson
Mr P Hutchison
Mr D Kempsell
Mr B Lord
Mr J McKie
Mr R Schiller
Mr A S Wood

Staff
Ms Debbie Parke - Operations Manager/Biologist
Miss Emily Iles — Project Officer
Miss Amy Fergusson— Seasonal Fishery Assistant

The work carried out in 2014 by the NCFT would not have been possible without the support and funding of the following organisations:

The fall in catches of salmon and sea trout on the River Nith continued, one might say accelerated, during 2014. As recently as 2008 some of the best catches for decades were enjoyed by many on our rivers. Last year they were the worst. Needless to say I am extremely concerned by this decline.

Across Scotland rivers are experiencing reductions in catches, some more, some less, but the problem seems to be both national and international. Salmon and sea trout numbers have always functioned cyclically for reasons that are, at best, only partially understood. There is a growing suspicion that the source of the current decline lies in the marine environment where research into activities of migratory salmonids is notoriously difficult.

Another major feature of 2014 is the completion and publication of, on behalf of the Scottish Government, Andrew Thin's Wild Fisheries Review. This review makes many recommendations which, if adopted, will have a profound effect on how our river is managed. Amongst these recommendations are proposed the disbanding of River Boards and Trusts and replacing them with fewer "Local Fishery Management Organisations." We will do whatever we can to ensure that change, when it comes, is for the better so far as the Nith Catchment is concerned.

In the meantime we will work with our colleagues from other rivers, to urge the Scottish Government to allocate resources towards investigating the plight of salmonids, particularly in the marine environment, where individual rivers like ours are powerless.

During 2014 we continue to do good work in areas where we can make a difference. Minimising damage from wind farms, hydrogenerators, destruction of vermin, control of invasive non-native species, habitat improvement and education to name just a few.

Notwithstanding the low catches there was a sharp increase in the percentage of our fish caught and released. It is vital that this trend continues until there is a recovery in fish numbers. All anglers are urged to resist the temptation to kill fish.

My term as Chairman has so far, to my regret, coincided with a worrying decline in catches in the Nith. I know we will do what we can to optimise conditions on our river while encouraging and supporting work in international waters. The ways of migratory salmonids is, to say the least, mysterious. You may, however, be assured that I, your Board and your Trust will do what we can to improve the situation.

Let us all hope for a better season in 2015

E.P.K. Weatherall
Chairman
Nith Catchment Fishery Trust

Biologist's Comments

The last year has had its ups and downs. The lack of salmon caught during 2014 highlighted the ever decreasing downturn in salmon numbers and the fact that this is not just happening on the Nith or even just the Solway rivers but that nearly all rivers throughout Scotland have experienced poor numbers of returning adult salmon. In fact, these same decreases are being experienced in Iceland, Norway, Canada and other European countries. This all points to the fact that the problems are happening out at sea. It is, however, very difficult to track salmon once they are out at sea and although a lot of research has been carried out over the last few years into the marine phase of the salmon's lifecycle, there are still large knowledge gaps. On a local level, we can continue to protect the salmon in its freshwater environment and try to ensure that those salmon that do make it back have the best opportunity to spawn and that juveniles have the best chance of survival.

We therefore come back to what we can do at a local level and the Trust will continue its work towards improving fish habitat, monitoring and researching the aquatic environment and promoting best practice and conservation initiatives to increase fish stocks. However, it is not just the Trust or Board which is responsible for making sure that future generations get to enjoy the pastime of fishing for salmon. Anglers, farmers, landowners, industry and other river users also need to be responsible for their actions.

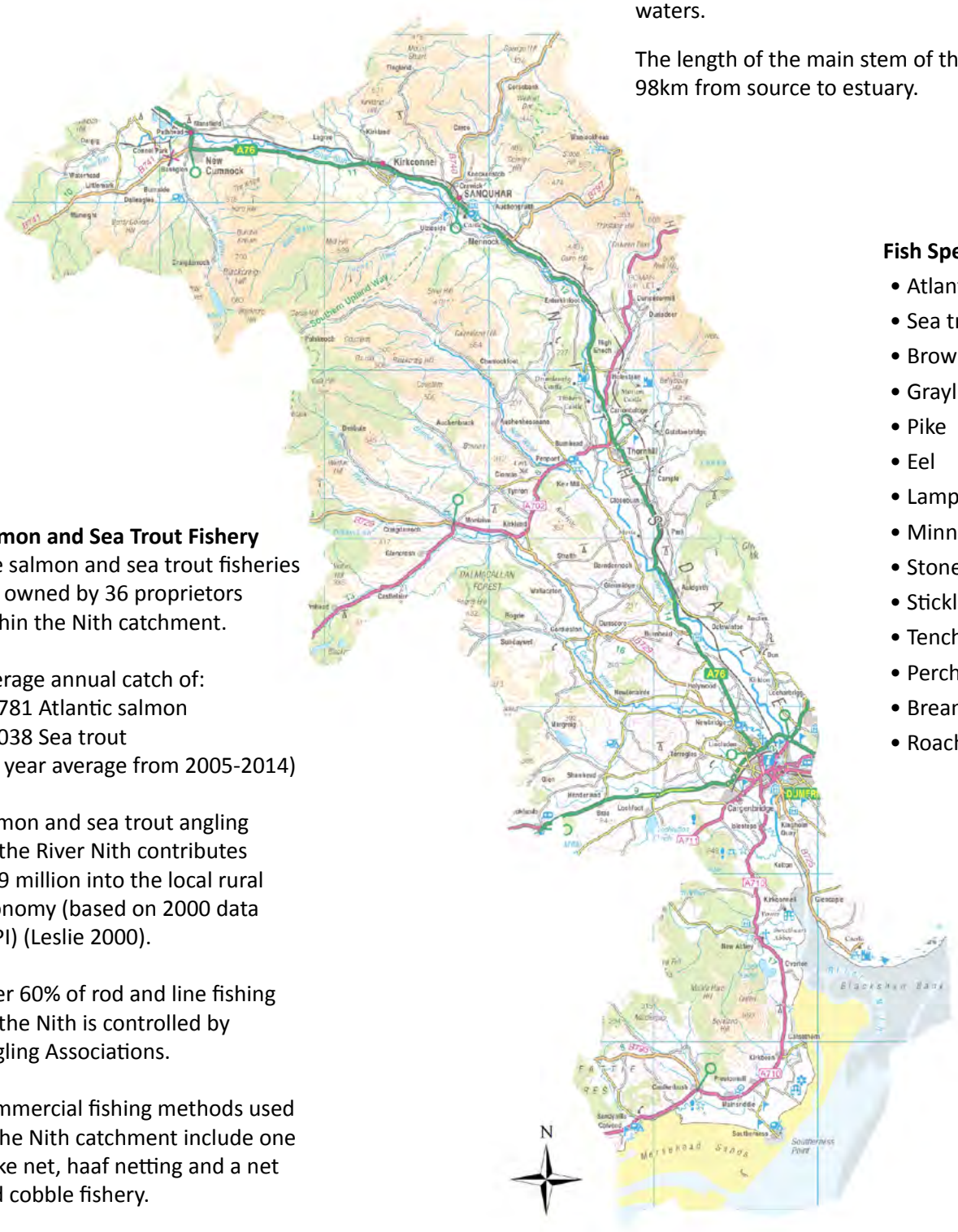
On a more positive note, the Fishing for the Future project, which started in 2013 to raise awareness of the aquatic environment and introduce young people to fishing, has been a great success. During 2014 over 450 individuals took part in 86 sessions and were given the opportunity to learn all about salmon, aquatic invertebrates, electrofishing, fishing and commercial fisheries. Over 30% of the children who took part said they would like to take up fishing as a result of the project and many more found that they had more respect for the aquatic environment and the animals that reside in it. Encouraging young people into angling is a vital part of ensuring the future of fishing in Scotland. However, providing the next generation with an understanding of how human activities can impact, not just on the number of fish in the river, but the local economy and tourist industry is just as important. These could be our future farmers, teachers, construction workers, civil servants and possibly even prime ministers.

Debbie Parke
Operations Manager/Biologist
Nith Catchment Fishery Trust

The River Nith Catchment

Vital Statistics
The total catchment area is 1596km^2 which includes the main stem River Nith, its tributaries, coastal burns and connected still waters.

The length of the main stem of the River Nith is 98km from source to estuary.



Fish Species Present

- Atlantic salmon
- Sea trout
- Brown trout
- Grayling
- Pike
- Eel
- Lamprey
- Minnow
- Stone loach
- Stickleback
- Tench
- Perch
- Bream
- Roach

Salmon and Sea Trout Fishery
The salmon and sea trout fisheries are owned by 36 proprietors within the Nith catchment.

Average annual catch of:
- 2781 Atlantic salmon
- 1038 Sea trout

(10 year average from 2005-2014)

Salmon and sea trout angling on the River Nith contributes £2.9 million into the local rural economy (based on 2000 data +RPI) (Leslie 2000).

Over 60% of rod and line fishing on the Nith is controlled by Angling Associations.

Commercial fishing methods used in the Nith catchment include one stake net, haaf netting and a net and cobble fishery.

Other Fisheries
The Nith also has healthy brown trout and grayling fisheries which are owned by landowners throughout the catchment. There are also a number of still water trout and coarse fisheries within the catchment. Sea fishing is popular at the quay at Glencaple and off the coast.

Salmon and Sea trout catch data for 2014

The catch data received by the Nith District Salmon Fishery Board for the 2014 season showed another poor year for the salmon and grilse catches for the River Nith with the a total of 851 salmon and grilse being caught. This is the lowest recorded catch on record since 1952. The river conditions did not help matters with low water conditions prevailing throughout most of summer. The majority of the sea trout were captured in June, July and August whereas most of the salmon were caught in October.

The tables and graphs below show the salmon and sea trout catches over the last 10 years and a marked decrease can be seen in the number of salmon being caught over the last four years. Conversely, we have started to see an increase in the number of sea trout being caught over the last three years. Ultimately, our salmon and sea trout numbers are greatly reduced and, although it is likely that the cause of this reduction is out at sea, we need to continue to do all that we can within the freshwater environment to ensure that the maximum number of smolts make it out to sea.

Over the entire river, catch and release rates have increased with 64% of salmon and 87% of sea trout being returned. This is a great increase on last year with an additional 5% of salmon and 25% of sea trout being returned! To put this into perspective, in 2008 there were 2446 rod caught salmon killed on the Nith compared to 2014 when191 rod caught salmon were killed. This is a huge reduction, albeit there are fewer fish being caught.

The decreasing number of anglers on the river banks is also a cause for concern and it is very difficult to quantify the effect of the reduced effort in relation to the decrease in salmon returns as the time spent angling is not collected.

Table 1 - Number of salmon and grilse caught over the last 10 years

Year	Rods	Nets	Total	% C&R	10 year average
2005	2284	1379	3663	34%	3051
2006	2682	921	3603	26%	3038
2007	2993	932	3925	41%	3121
2008	3764	740	4504	35%	3268
2009	2095	644	2739	36%	3342
2010	2336	970	3306	43%	3375
2011	1637	545	2182	40%	3344
2012	1283	352	1635	40%	3173
2013	940	465	1405	59%	3114
2014	520	331	851	64%	2781

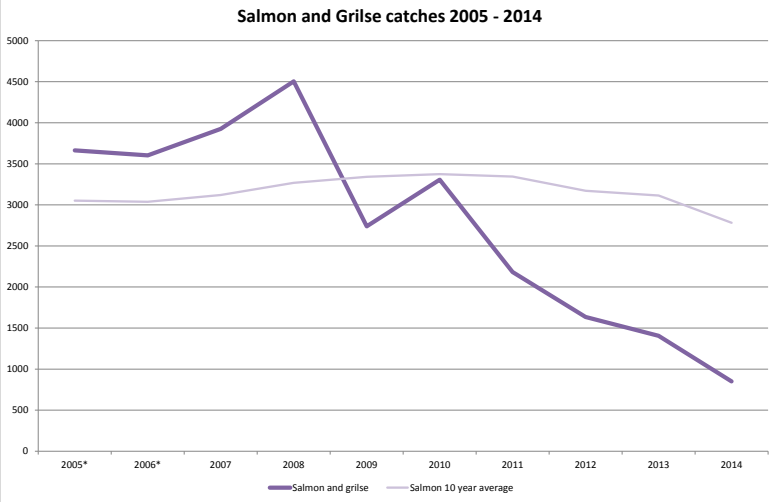
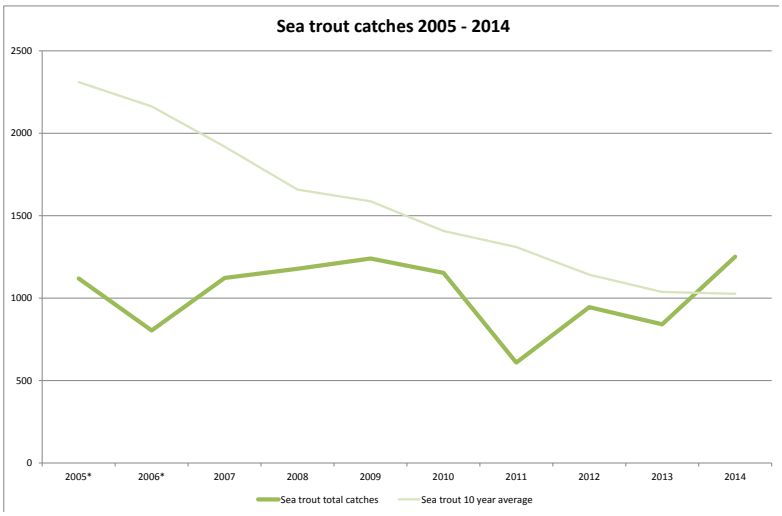


Table 2 - Number of sea trout caught over the last 10 years

Year	Rods	Nets	Total	% C&R	10 year average
2005	1007	112	1119	29%	2310
2006	708	96	804	28%	2163
2007	1022	100	1122	43%	1919
2008	961	217	1178	52%	1658
2009	1104	136	1240	49%	1588
2010	850	303	1153	44%	1408
2011	515	94	609	46%	1310
2012	782	163	945	55%	1142
2013	671	170	841	62%	1038
2014	1119	132	1251	87%	1026



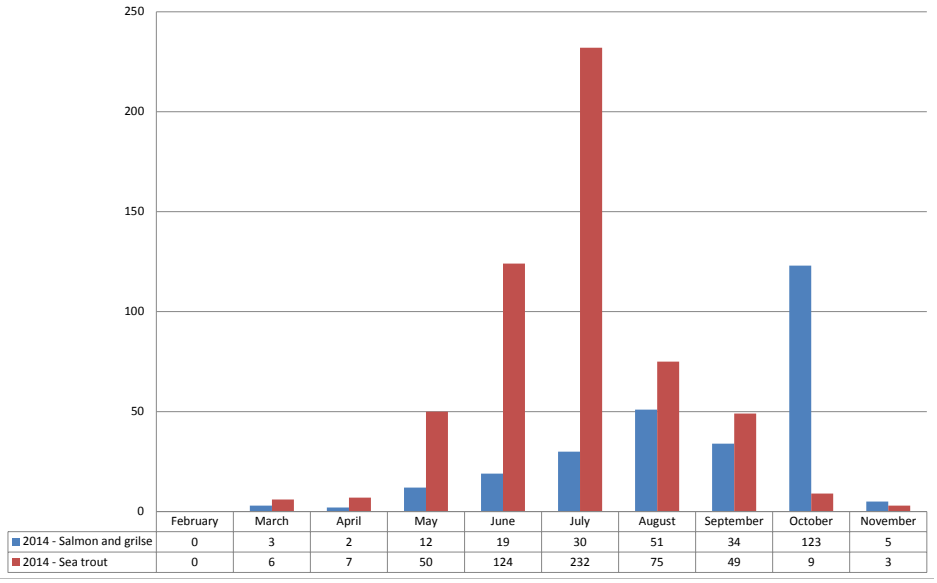
Catches throughout the River

Lower beats - *Burgh, DGAA, Portrack, Cowhill, Rosehill, West Cluden Mill and West Cluden Farm.*

The highest catches of both salmon and sea trout took place in the Lower Nith with 279 salmon and 555 sea trout being caught. The highest sea trout catches occurred in June and July. October saw the highest catches of salmon.

Unfortunately, the lower section of the river had the lowest catch and release rates with 47% of salmon and 76% of sea trout being released.

Rod caught salmon and sea trout in the Lower Nith and Cairn during 2014



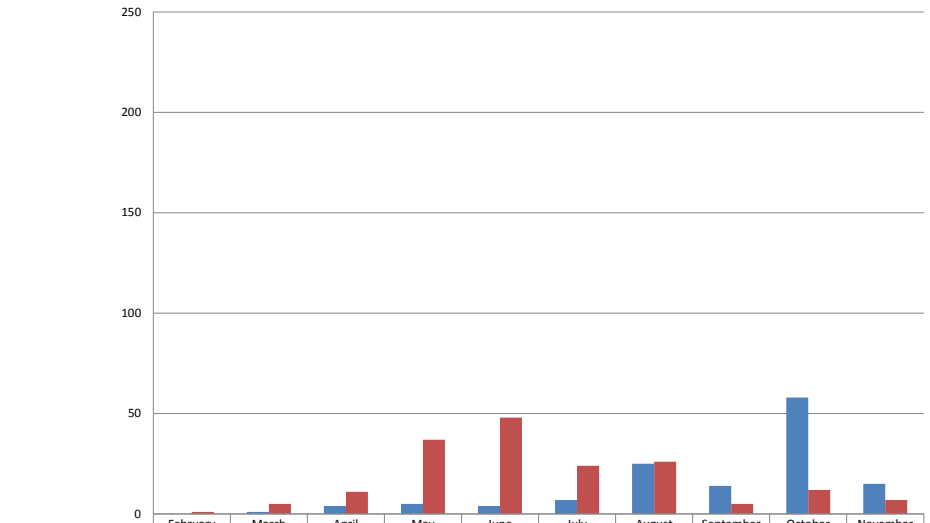
	February	March	April	May	June	July	August	September	October	November
2014 - Salmon and grilse	0	3	2	12	19	30	51	34	123	5
2014 - Sea trout	0	6	7	50	124	232	75	49	9	3

Middle beats - *Barjarg, Bardennoch, Blackwood, Camling, Carsemains, Closeburn, Dalswinton, Ellisland and Friars Carse.*

Between them, the middle beats caught a total of 133 salmon and 176 sea trout. Sea trout catches peaked in June, which is earlier than the lower section and the main month for catching salmon was October.

The middle beats released 113 of the salmon caught (85%) which is the highest collective catch and release rate on the river. They also released 90% of the sea trout caught with only 17 being killed.

Rod caught salmon and sea trout in the Middle Nith 2014



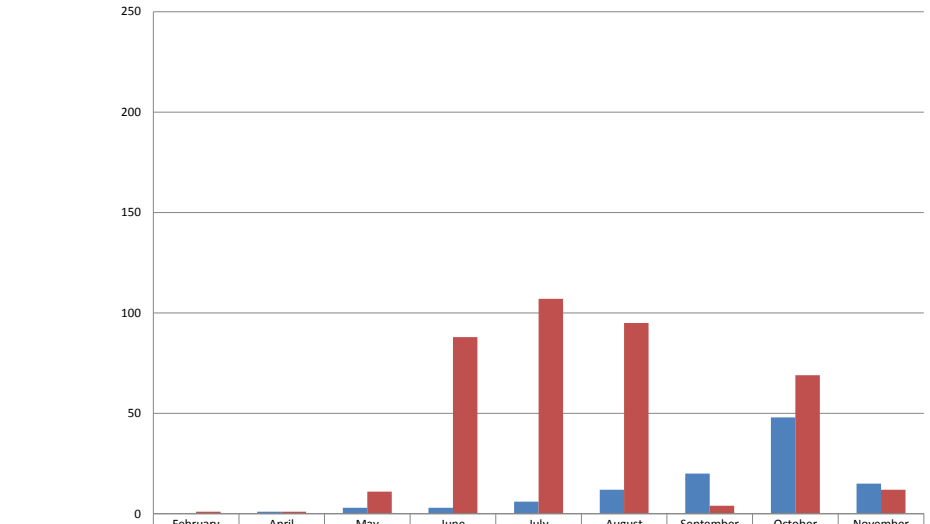
	February	March	April	May	June	July	August	September	October	November
2014 - Salmon and grilse	0	1	4	5	4	7	25	14	58	15
2014 - Sea trout	1	5	11	37	48	24	26	5	12	7

Upper beats - *Buccleuch, UNAA, Ryehill and Old Mains.*

There was a total of 108 salmon and 388 sea trout caught in the upper section of the Nith. The majority of the sea trout were caught over June, July and August with another peak in October. Salmon followed tradition with the highest catches occurring in October.

The upper beats returned 100% of the sea trout caught and 80% of the salmon, meaning only 22 fish were killed in this section.

Rod caught salmon and sea trout in the Upper Nith 2014



	February	April	May	June	July	August	September	October	November
2014 - Salmon and grilse	0	1	3	3	6	12	20	48	15
2014 - Sea trout	1	1	11	88	107	95	4	69	12

Juvenile salmonid surveys 2014

One of the most important tasks that the Trust does on an annual basis is the monitoring of many different sites throughout the catchment. We are monitoring to see if fish are present and if so, at what densities and diversity of species. The importance of this work cannot be overestimated. The results of this work can indicate an issue such as pollution or a blockage precluding fish from accessing spawning habitat upstream. Fisheries managers rely on the results of monitoring to assist them in making future management decisions.

We have traditionally conducted electrofishing monitoring throughout the catchment at many locations, often over 100 sites per year have been sampled. We have built up a very good knowledge of the health of our fish population throughout the catchment. We would now like to look at long term population densities and thus have commenced a new sampling regime during 2014.

We have selected 10 sites throughout the catchment. These sites are located on the main stream River Nith and its tributaries. The ten sites will be sampled every year and it is anticipated that over time, long term trends will be established. The intention here is to detect any issues specific to individual areas of our catchment and enable managers to address those issues timeously.

Table 1. Density of juvenile salmonids per 100m²

Site	Watercourse - Location	Salmon fry	Salmon parr	Trout fry	Trout parr
1	Nith - Nith Lodge	9	16	38	3
2	Nith - Boig Road Bridge	6	21	0	0
3	Nith - Guildhall Bridge	30	12	0	0
4	Nith - Auldgirth New bridge	3	1	0	3
5	Nith - Martington Railway	12	0	0	0
6	Crawick - Spango bridge	17	5	1	0
7	Mennock - Glenim	5	9	8	6
8	Scaur - Glenwhargen	44	24	32	8
9	Cample - Kirkbog Farm	64	5	4	0
10	Dalwhat Water - Bailwood	0	4	1	2

Excellent	Good	Moderate	Poor	Very Poor	Absent

Sites 1 to 5 are all main stem River Nith, starting with Site 1 at Nith Lodge, which is the most northerly site, and working downstream to Site 5 near Nunholm in Dumfries. Throughout these sites there was an average of 12 salmon fry (moderate), 10 salmon parr (good), 7.6 trout fry (moderate) and 1.2 trout parr (very poor) found to be present. It is to be expected that higher densities of juvenile salmonids are to be found in the main stem of the river as trout generally prefer smaller rivers to spawn in. The number of juvenile salmonids spawning in the River Nith varies from site to site, mostly due to the type of instream habitat available to them. Electrofishing in main stem locations is notoriously difficult due to the increased depth and flow of the water.

It can be seen that the Scaur Water is one of our most productive rivers, containing excellent densities of salmon fry and parr, and trout fry. The Crawick and the Mennock contain poor to moderate densities of juvenile salmon with the Mennock containing more trout parr.

Wild Fisheries Review

During 2014 the Scottish Government instigated a review of wild fisheries in Scotland. The review was conducted by Mr Andrew Thin and lasted for six months after which a report was prepared and is now being considered by the Scottish Government. The report was completed in October 2014 and contained 53 recommendations for the future sustainable management for all species of freshwater fish found in Scotland.

Potentially this could result in major changes to the organisations that manage our fish and the way in which they operate. Currently in Scotland there are two main organisations, District Salmon Fishery Boards and Fishery Trusts. The Nith Board has been in existence for more than 150 years. And our Trust has been operating for 6 years. Both work well and ensure that all functions of fishery management are fulfilled within the River Nith catchment. Our management of fisheries within the Nith catchment has continued to evolve and modernise to meet the challenges faced currently and to suit the political environment in which we operate. Any potential changes resulting from the Wild Fisheries Review will ultimately be an extension of that evolution process.

So potentially what could this mean for the Nith if some of the recommendations in the report are adopted? Below is a list of just some of the potential changes that could arise if certain recommendations are adopted.

- Rather than having a Board and Trust we may have one organisation
- We may be amalgamated into a larger organisation
- We may be answerable to a central tier of management
- We may have to fulfil targets set by the central tier of management
- All hatchery operations may be licenced by the central tier of management
- The Board's statutory status may be removed
- All Water Bailiffs would be warranted by a national unit not locally
- We would have to meet set criteria to qualify as an approved fishery management organisation
- There may be a ban on the killing of salmon without a killing licence accompanied by a carcass tagging scheme
- The government may change weekly and annual close seasons and the fishing tackle that may be used
- We may be responsible for future fishery development
- There may be rod licencing
- All management actions will be science based

This list is not exhaustive but the likelihood is that changes will occur. We await to see what changes are proposed and we will respond appropriately in order that we can continue to manage fish in the River Nith catchment, to the best of our ability.

Over the next year, you can expect to see public consultations being circulated by the Scottish Government in relation to some of the proposed changes. As this report is being written, a consultation on banning the killing of all salmon except under licence is underway. We would encourage any member of the public to respond to these consultations and have their say on the future of Wild Fisheries Management in Scotland. These proposals will then be put in front of the Scottish parliament where they will be decided on. Any changes are likely to occur in the coming years.

Fishery Management Plan 2014 - 2018

During 2013, the 2nd five year Nith Catchment Fishery Management Plan was written jointly by the Nith District Salmon Fishery Board and the Nith Catchment Fishery Trust and was open for consultation. It has now been published and is available on our website www.river-nith.com. The Fishery Management Plan considers the management of all species of fish within the Nith catchment, as required by Scottish Government, and contains a list of prescriptions covering the next 5 years.

Summary of Prescriptions

Poaching (High Priority)
- Maintain a team of Water Bailiffs commensurate with the threat of illegal fishing.

Exploitation (High Priority)
- Encourage the promotion of sustainable fishing throughout the catchment with all of its proprietors using the angling code and to develop an annual conservation code to be made available to all anglers.
- Promote accurate recording of all catches.
- Further endorse sustainable fishing via its education programme and by raising awareness of the benefits of catch and release.
- Adopt and promote carcass tagging which is anticipated will be initiated within the term of this fishery management plan for the purpose of assisting with the sustainable management of fish stocks.
- Discourage further exploitation of the resource.

Engineering procedures (High Priority)
- Respond to applications to conduct engineering and offer advice on mitigation and environmental protection in order to prevent degradation of habitat or fishing potential.
- Conduct monitoring in relation to engineering works.

Renewable energy (High Priority)
- Respond and comment on applications to construct renewable energy projects.
- Provide data and scientific input in relation to consideration of all renewable energy projects.
- Conduct monitoring to establish fishery data.
- Recommend mitigation to prevent damage to the resource.

Biosecurity (High/Medium Priority)
- Take full cognisance of the River Nith Biosecurity Plan when responding to consultations.
- Combat invasive non-native species throughout the catchment and continue to raise awareness about this issue.
- Participate in catchment, local, national and international initiatives to combat INNS.

Habitat degradation (High Priority)
- Carry out habitat surveys within catchment to identify potential habitat improvements.
- Carry out habitat works where identified and permitted.
- Maintain existing habitat schemes.

Access for fish (High Priority)
- Prioritise barriers within the Nith catchment using recognised barrier assessment tools.
- Remove temporary impediments to migration.
- Seek removal of any man-made obstruction to fish.

Water Quality (Medium Priority)
- Liaise with SEPA and other agencies regarding potential or existing water quality issues.
- Respond to any reported incident with the potential to impact on fish stocks and pursue through appropriate channels.
- Expand the Riverfly Partnership Anglers' Monitoring Initiative.

Marine survival (High Priority)
- Participate in appropriate local, national and international research projects.
- Work with other agencies to gain knowledge.
- Use latest science to advise and make informed management decisions on local and national levels.

Predation (Medium Priority)
- Conduct predator counts to provide accurate data for license applications.
- Apply for annual licences to cull predators.
- Conduct annual licenced predator culls.
- Conduct mink trapping within the Nith catchment.
- Improve counting techniques and keep abreast of alternative means of control.

Fish stock data (High Priority)
- Conducting electrofishing surveys throughout the catchment.
- Conduct repeat annual electrofishing surveys at core sites throughout the catchment to assess annual fluctuations.
- Carry out scale reading of adult and juvenile salmonids to gain data on the structure of fish populations.
- Continue to participate in national research programmes to determine stock dynamics and populations trends within the Nith catchment.

Artificial enhancement programmes (High Priority)
- Continue to operate a hatchery at levels agreed by the NDSFB Stocking Committee.
- Endeavour to maximise natural stock production by improving habitat, access and conserving stocks of returning adults rather than stocking artificially.
- Authorise and stock fry into areas identified.
- Monitor any salmon and sea trout stocking.
- Comment on applications made to Marine Scotland to stock brown trout.

Summary of FMP work carried out by the Fishery Trust and Board during 2014

Prescription	Actions
Enforcement	• Bailiff team comprised 1 full time, 2 part-time, 1 seasonal and 2 volunteer warranted water bailiffs • 7 incidents dealt with by enforcement staff – 1 plead guilty, 2 active and 4 cautioned
Exploitation	• Increase in 2013 catch and release rates • Consulted on Scottish Government Spring Conservation Legislation • Conservation promoted through education projects and outreach programmes and distributions of conservation codes
Engineering and forestry	• Fish rescues conducted for Kier river diversion and for Forestry Commission • Five juvenile fish surveys carried out in connection with engineering works taking place throughout the catchment • Four responses made with regard to forestry plans • Advised on DGAA river engineering works
Renewables	• Ten surveys carried out in connection with renewables taking place throughout the catchment • Thirteen scoping responses made regarding renewables projects • Nine reports submitted
Planning and consultation	• Consulted on SEPA Flood Management Plan, Whitesands Flood Prevention Scheme and SW Drought Plan.
Biosecurity	• 183 stands of Japanese knotweed treated (98% success rate), 10196.4m2 of Giant hogweed treated, 2297m2 of Himalayan balsam treated and 373.2m2 of Skunk cabbage treated • 59 signal crayfish trapped • Biosecurity signs erected
Habitat	• Habitat schemes checked and repaired • 3km of river bank planted with over 5000 native trees • Reed bed clearance for Natterjack Toads
Access	• Barrier data submitted to RAFTS/SEPA • Culvert surveys and barrier assessments conducted • Greenburn Burn barrier modified
Water Quality	• Six pollution incidents attended and reported to SEPA • Unlicensed gravel removal reported to SEPA
Marine survival	• Work carried out on application to conduct marine research • Fish counter meeting attended
Governance	• Attended meetings/consultations regarding Wild Fisheries Review • Various meetings attended • Responded to stocking applications • Staff training and appraisals carried out
Predation	• Licenses applied for and culls carried out • 10 mink trapped
Fish stocks and monitoring	• 2013 catch data analysed • Annual electrofishing sites surveyed • UDN/Fungus samples taken
Hatchery	• 189,000 salmon fry and 27,000 sea trout fry stocked • Post stocking electrofishing surveys carried out • Brood stock captured
Outreach	• Year 1 of Fishing for the Future Project completed – 447 participants took part • Various shows and fairs attended • Presentations given to other organisations • PR via website, social media, TV and newspapers

A more detailed report can be found at www.river-nith.com/wp-content/uploads/2014/02/Quarterly-Report-2014-for-website.pdf

Ulcerative Dermal Necrosis and Saprolegnia sampling

The Nith Catchment Fishery Trust has supported a PhD research project which is investigating skin infections of wild Atlantic salmon and sea trout. The Trust has been responsible for the collection and handling of all samples gathered form the River Nith catchment and ensuing that they are conveyed to the Institute of Aquaculture in Stirling where they are analysed by Dr Sandra Schlittenhardt.


Fungal sample being taken from a Nith salmon

The background to this project is that in recent years a number of wild Atlantic salmon have turned up in some Scottish rivers infected by Ulcerative Dermal Necrosis (UDN) and there are concerns that this could increase. We would all like to know more about this disease in order that if it flares up we may be better equipped to treat it or prevent its spread. In addition the project is researching all other skin infections including the common saprolegnia fungus often seen on salmon and sea trout.

This is important research that cannot be conducted without access to samples. The River Nith samples were collected from fish that were captured during our hatchery operations and from samples that were gained whilst we were engaged in electrofishing operations. We are pleased to contribute towards this project in any way possible and along with other rivers assist in the better understanding of fish diseases.

Grayling Fishing on the Nith

Our river, like most other rivers throughout Scotland is known for its salmon and sea trout fishing. But there is an increasing interest in fishing for the Nith's healthy population of grayling. A band of hardy individuals brave the inclement weather experienced during the salmon close season in pursuit of these fish. Specialist anglers travel, often significant distances to enjoy this sport on the Nith.

Grayling have endured a chequered history in the River Nith. During the 1980's grayling were netted on various beats of the Nith and once captured they were killed and discarded. This was an amateur well intended fishery "improvement" conducted to assist stocks of salmon. The theory being, that grayling were predating on salmon. Thankfully enlightened thinking abandoned this practice by the late 1990's into 2000's when poaching was at its peak on the Nith. Whilst grayling were not the targeted species, they were a by catch, discarded in the bottom of the hedge whilst the catch was saved. It is testament to the species that grayling continue to thrive throughout the Nith from New Cumnock to Dumfries.


A Nith grayling and a grayling scale handed in from an angler

Not only does the Nith have a strong population of Grayling but it is claimed by many to give some of the best specimens found throughout Scotland. Who knows, with the number of grayling anglers on the Nith this winter, if a record fish is lurking in our waters, as many believe it is, we may see it soon. It is important that we sustain our grayling population as they act as an important environmental monitoring species for our river. The Trust welcomes the increased interest in grayling fishing.

Culvert surveys

The River Nith catchment has a number of culverts located from the very source of the river's tributaries across their entire length. Culverts are a vital necessity to enable roads to be conveyed over rivers and to ensure that water is safely conveyed off the catchment into the river without damaging infrastructure. However culverts can pose a major threat to fish and their migrations throughout the catchment.

Forestry Culvert

One of the best fishery improvements that can be made to any fishery is to maximise the available habitat to fish. This means that the fish are able to take up all opportunities to spawn, feed and utilise shelter in as much of the catchment as possible. Any obstruction which prevents the migrations of fish upstream or downstream therefor creates limitations on population densities and diversity.

The Trust has started a project during 2014 to map all culverts within the River Nith catchment and to assess their accessibility for fish to negotiate past them. We are interested in assessing all culverts even at the highest sections of tributaries where the watercourse is less than one metre wide. We have proven the importance of areas such as these as spawning habitats for trout and sea trout.

Once we know about the problem culverts we will then look to overcome the accessibility issues with them. Opportunities exist, for example, when forestry infrastructure is being replaced or upgraded then for very little effort a culvert may be re seated in a way that is no longer a problem for fish to negotiate.

This project is seen as a long term one that can produce significant benefits and undo some unintended actions created by engineering in the past.

Local company gets involved in the fight against American Signal Crayfish

Our Trust has been tackling the issue of American Signal Crayfish since they were discovered in the Nith Catchment two years ago. We have utilised all known methods of control, some of which are heavily reliant on staff. When using traps we are bound by the moral and legal obligation to check each trap at least once every 24 hour period.

We trialled the technique of utilising refuge traps to a) assess crayfish numbers and b) to attract crayfish of varying age classes to enable efficient capture. These traps consist of a length of pipe placed in the watercourse. Crayfish are attracted to the pipes, which resemble a toilet roll tube, and use the pipes as a hiding hole/refuge. When the refuge traps are pulled out of the river, crayfish using the pipes are captured. There is no requirement to check the pipes daily because the crayfish are free to enter and exit the pipe as and when they want. We know how to build refuge traps but the plastic pipes that we have used previously don't withstand floods.

Having discussed the problem with Mr Mike Keene of MK Welding at New Cample Farm he quickly came up with a solution of wielding metal pipes complete with tether eyes. MK Welding have assisted the Nith Fisheries Management Team on many occasions and once again they have come up trumps and fabricated 20 crayfish refuge traps that can be deployed throughout the catchment. This is a perfect example of a local industry helping to improve the environment. The Trust owes a debt of thanks to Mike and his staff at MK Welding.

Crayfish refuge trap fabricated by MK Welding

Invasive Non-Native Plant Species Project

Anyone who has been following the work of the Trust over the last 5 years will be aware of the Invasive Non-native Plant Species Project that the Trust has been involved in. This project was started by the Nith District Salmon Fishery Board in 2010 with the aim of tackling three non-native riparian plants species within the Nith catchment: Japanese knotweed, Giant hogweed and Himalayan Balsam. Five years on and over 200000 stems of Japanese knotweed, 35000 Giant hogweed plants have been treated and 45,500 square metres of Himalayan balsam has been pulled. In addition, Skunk cabbage was identified in the catchment in 2013 and since then nearly 100 plants have been treated. This is an amazing achievement and has had a noticeable impact on the Japanese knotweed, Giant hogweed and Skunk cabbage present in the catchment. We still have a way to go yet as these plants are notoriously difficult to eradicate but the work over the last few years has proved that something positive can be done to tackle these invasive species and easing access for anglers, walkers and canoeists along the length of the river.

Japanese knotweed

This invasive plant species was introduced during Victorian times as an ornamental garden plant from where it escaped into the wild via watercourses and poorly disposed of garden waste. Japanese knotweed is the body builder of the invasive species world as in its native country of Japan it has evolved to thrive on lava fields. It is no wonder that in the UK it powers through tarmac and building foundations as if they were sand. Thankfully, all of the Japanese knotweed plants in the UK are female so they are unable to produce viable seeds. However, they have made up for this as even a small piece of stem the size of your finger nail can take root and establish a new stand of Japanese knotweed.

For the last 5 years the Trust, with the assistance of the Nith District Salmon Fishery Board has worked downstream from the most northerly infestation of knotweed, injecting each individual stem with undiluted Roundup Pro Biactive. Although this is slow, laborious work this has resulted in a 95-97% decrease in the size of each stand. Due to the tenacious nature of Japanese knotweed it can remain dormant under the ground for many years so we return to each site on an annual basis to treat any new stems that may be emerging. This only tends to be the odd one or two unless the site is disturbed resulting in a burst of new activity.

Japanese knotweed before and after treatment (2012 and 2013)

Giant Hogweed

Like Japanese knotweed, Giant hogweed was brought into the UK as a garden plant but unlike Japanese knotweed, it is able to produce seeds, and lots of them. Every large umbrella like flower head can produce up to 20,000 seeds and each of these seeds can stay dormant in the soil for a decade or more. These newly germinating seeds have been the most challenging aspect of controlling Giant hogweed on the Nith catchment so every year we walk the 50km of river bank along the Scaur Water and River Nith that has hogweed growing along it and inject or spray each plant with Roundup Pro Biactive. This needs to be done two or three times a year to ensure that none are missed. Over the years we have seen the number of large plants reducing but have noticed that after a series of large floods there is an increase in the number of small plants germinating. The theory is that the floods expose dormant seeds which then have the opportunity to germinate. It is necessary that Giant hogweed continues to be treated on the Nith in order to reduce numbers.

Giant hogweed is best (or worst) known for the harm it can cause to people and animals when they come into contact with it. The sap of the plant is phototoxic causing burns, blisters and long term UV sensitivity on contact with skin. Even brushing against these plants can cause a blister to form as the hairs on the leaves and stems transfer a small quantity of the sap.

Himalayan Balsam

Himalayan balsam is an annual plant, related to Busy Lizzies, and has an attractive purple flower. Its distribution within the Nith catchment is wide due to way in which is disperses it seeds by "exploding" and scattering the seeds up to a couple of metres away. Seeds are often moved around by humans and animals as they can easily get tangled on fur or caught in the creases of clothing. The scale of the problem within the Nith catchment is so large that the Trust has been limited by the amount of resources required to tackle the problem. In July 2014, after extensive research and testing, DEFRA ministers authorised the release of a rust fungus to control Himalayan balsam. This fungus will be released in Berkshire, Cornwall and Middlesex initially. If successful, this rust which only targets Himalayan balsam, will reduce the amount of balsam over the next few years allowing native plants to re-colonise.

Volunteers pulling Himalayan balsam on the islands below the caul in Dumfries

Skunk Cabbage

This is a large, dramatic looking plant that, again, was introduced as an ornamental plant from Northern America. Skunk cabbage produce large yellow bracts in late spring and have a very distinctive smell that some people find unpleasant. Infestations of skunk cabbage were found in 2013 in tributaries of the Cairn Water where they were historically introduced into large ponds. Skunk cabbage can now be found nearly 12 miles downstream.

Table 1: Species treated through the course of the project (- species not present on river)

River	Japanese knotweed (plants treated)	Giant hogweed (plants treated)	Skunk Cabbage (plants treated)	Himalayan balsam (m2 treated)
Afton Water	-	49	-	-
River Nith (New Cumnock)	480	-	-	-
River Nith (Dumfries - Sanquhar)	19,531	22,552	-	21268
River Nith (Dumfries)	7494	4225	-	5384
Nith Estuary	9,399	1601	-	0
Cairn/Cluden	101,120	35	50	0
Dalwhat Water	630	-	-	-
Craigdarroch Water	2881	-	551	-
Castlefairn Water	4683	-	225	-
Scaur Water	7618	6501	-	-
Cample Water	-	-	-	162,000
Crawick Water	452	-	-	-
Lochfoot Burn	2431	-	-	-
Lochrutton	1915	-	-	-
Pennyland Burn	15,773	-	-	2400
New Abbey Pow	15,038	-	-	-
Southwick Burn	120	-	-	-
Crooks Pow	48	-	-	0
Carse Pow	3290	-	-	-
Total number treated	**192,783 plants**	**34,963 plants**	**823 plants**	**45252 m2**

The Future

Funding for this project has now come to an end but we are currently applying for further grants from SEPA, D&G Council and local land owners to continue the fight against invasive plants. We would like to thank SEPA Water Environment Fund, Landfill Fund, D&G Council, LEADER, NDSFB, local landowners and angling associations for their support over the last five years. A big thank you to all of the volunteers that have picked up sprayers and donned gloves in a bid to control these species. For the full report please go to our website www.river-nith.com/the-trust/invasive-species.

Fishing for the Future project

Education is an important part of the Nith Catchment Fishery Trust's (NCFT) objectives and as such we have run a number of successful education programmes since the organisation started 6 years ago. The 'Fishing for the Future Project' builds on work previously carried out and aims to provide a comprehensive education programme for young people within the Nith catchment. The aim of this project is to raise the profile of the River Nith, its tributaries, the fish that thrive within it and the importance of the river to fisheries and communities in Dumfries and Galloway.

This project commenced in November 2013 and will run until July 2015. During the first year of the project, 83 sessions were delivered involving a total of 457 individuals from Kelloholm Primary, Sanquhar primary, Sanquhar Academy, Wallace Hall Academy Higher biology group, Wallace Hall Academy activity group, Closeburn Primary, Heathhall Primary, Maxwelltown High, Loreburn Primary, Dumfries High, Kirkbean Primary, Lochrutton primary, the Young Peoples Support Service and St Teresa's nursery group. Of those taking part, 239 were under 15 years old, 167 were between 15 and 25 years old and 59 were over 25 years old.

Fishing for the Future has a series of seven sessions at its core. These sessions run throughout the school year and start with a trip to the NCFT facilities at Auldgirth where the children get to see live adult Atlantic salmon and find out all about their lifecycle, the threats that they face throughout their amazing journey and what conservation measures can be put in place to assist their survival. This is a key session which underpins the rest of the course. When the children return from the Christmas break, some of the salmon eggs which they saw during Session 1 are brought into their classroom and placed in a specialised aquarium and cooler. The children have the responsibility of looking after these eggs, watching them hatch and the resulting alevins develop until the Easter holidays. Sessions 2 and 3 are run during January and February and they cover the subjects of freshwater and marine environments and cover a multitude of subjects from commercial fishing methods, pollution and littering, over fishing, sustainability, aquatic invertebrates and for higher groups, fish dissection.

After the Easter holidays it is time for the first field trip. We take the children to a local burn where they are able to return some of the fish that they had in their classroom. For the children, this develops a concept of the connection between the animal and its environment. During this session the children also get the opportunity to test their aquatic invertebrate identification skills that they learned in the classroom....and get a bit wet in the process! The Nith District Salmon Fishery Board come along and carry out an electrofishing demonstration to find out if salmon and trout spawned naturally in that burn and discuss the pros and cons of stocking fish into the river.

The next session is back in the classroom to learn about the history of angling, different types of fishing methods and how to cast. These skills are then put into practice during their next field trip where the guys from Borderlines instruct them on how to fish at a local still water or river. Here they learn how to hook and play a fish (if they are lucky enough to catch one) before returning them back to the water to fight another day. The final session takes the children down to the coast where they find out about other methods of commercial fishing during a guided tour of haaf netting and stake netting. Afterwards the children comb the beach looking for shells, jellyfish, crabs and any other interesting items they might come across. The issue of littering and the impact that plastic is having on the environment is discussed.

Throughout the delivery of these sessions we have found the children respond well to seeing and handling salmon and their eggs/young. We believe that this instils in them a greater respect for aquatic life, especially once the effect that human impacts such as dropping litter, pollution and habitat destruction are discussed. Overall the participants have a greater understanding of the environment, are more respectful and less likely to harm it.

We would like to thank the following individuals and organisations for the time, equipment, fishing or fish that have been contributed freely to help make this project a success: Nith District Salmon Fishery Board for assisting in the delivery of the project, Nic Coombey from Solway Firth Partnership for bringing along fascinating coastal artefacts as part of their "Making the Most of The Coast " project, Dalswinton Estate for the use of Drumloch Fishery, Drumlanrig Estate for the use of Slatehouse Loch, Upper Nithsdale Angling Association for allowing Kelloholm Primary to fish on their water, Invicta Trout Fish Farm for supplying rainbow trout for the dissection sessions, Robbie Cowan from Caerlaverock Estate for giving a demonstration of Haaf netting and Douglas Hall Fisheries for demonstrating the method of stake netting.

Photos clockwise from top left: St Teresa's identifying aquatic invertebrates, looking for bugs with Sanquhar Primary, dissecting a rainbow trout with Wallace Hall Academy, proud new angler with a small sea trout, Heathhall Primary seeing a salmon caught in the stake net, Haaf netting demonstration, rainbow trout caught by pupil from Sanqhar Academy, electrofishing demonstration with Kirkbean Primary.

This project is being part financed by Axis 4 of the European Fisheries Fund 2012-13 programme and the Holywood Trust








Outreach events

The Nith Catchment Fishery Trust attended and ran a number of events through out 2014 to raise awareness of the aquatic environment and demonstrate the work of the Trust.

Events attended

Burgh River Opening Ceremony
Friars Carse Grayling Competition
D&G Environment Day
Devorgilla Rotary Club talk
Hosted Angling Days at Dock Park x 3
Fishing Day on River Nith, Nunholm
ITV Border news reports
Dumfries Common Good Fishing Seminar
Rural Opportunities Day
Galloway Country Fair
Allanton Peace Festival
YPSS Pond Dipping Days
Talk to Scottish Beekeepers Association
Invertebrate training with Dumfries and Galloway Angling Association
Electrofishing with Dumfries and Galloway Angling Association x 2

Below is a summary of some of the meetings, conferences and training courses attended by Trust staff and volunteers during 2014:

Meetings, conferences and training courses attended

NCFT Directors meetings **x 4**
NCFT Annual General Meeting
Fisheries Local Action Group meetings x 3
Burgh Anglers AGM
NDSFB Board meetings x 4
NDSFB Annual Public Meeting
D&G Council Outdoor Learning meeting x 1
RAFTS members meeting
RAFTS/ASFB AGM
D&G Local Invasive Non-native Species meetings x 2
Funding meetings x 4
RAFTS Regional meetings x 2
Friars Carse fishing meeting
Northern Periphery Project funding meetings x 3
Local Angling Association meetings x 2
FishNith meeting x 2
PR meeting with Border news x 1
Crayfish meeting with Paul Wheelhouse
Fish counter meeting with Marine Scotland
Holywood Trust funding meeting
Fluvial Geomorphology course
Learning Opportunities course
SFCC Biologist's meeting
RAFTS/ASFB conference
PA1/PA6AW Pesticide courses x 1
Risk assessment course
Environmental games course
River Habitat Survey modelling course
Solway Firth Partnership conference
Working with Children course

Nith Catchment Fishery Trust

Statement of Financial Activities
(Incorporating an Income and Expenditure Account)
for the Year Ended 31st December 2014

	Notes	2014 Unrestricted fund £	2013 Total funds £
INCOMING RESOURCES			
Incoming resources from generated funds			
Voluntary income		34,147	32,664
Activities for generating funds	2	64	591
Incoming resources from charitable activities			
Fishery Management		11,085	14,726
Invasive Non-Native Species Project		23,139	18,539
Fishing for the Future		41,882	3,500
Education		-	1,860
Total incoming resources		110,317	71,880
RESOURCES EXPENDED			
Charitable activities			
Fishery Management		62,445	49,760
Habitat Works		600	-
Invasive Non-Native Species Project		15,597	17,415
Fishing for the Future		29,665	3,548
Education		-	1,100
Governance costs		1,346	1,274
Total resources expended		109,653	73,097
NET INCOMING/(OUTGOING) RESOURCES		664	(1,217)
RECONCILIATION OF FUNDS			
Total funds brought forward		19,764	20,981
TOTAL FUNDS CARRIED FORWARD		20,428	19,764

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