Nith Catchment Fishery Trust

Annual Report

January to December 2012

Published March 2013

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

Percy Weatherall—Chairman
Mr Alan Bryden
Mr Ronald Clark
Mr Jin Henderson
Mr Peter Hutchison
Mr Brian Lord
Mr Jim McKie
Mr Robert Schiller

Staff

Ms Debbie Parke
Mr John Stainsby—Seasonal Fishery Assistant
Miss Amy Fergusson— Seasonal Fishery Assistant
Miss Sophie Whytock— Seasonal Fishery Assistant

The work carried out in 2012 by the NCFT would not have been possible without the support and funding of the following organisations:

and all of the donations given by anglers, members and other interested parties.

Thank you!

Chairman's Foreword

The past twelve months have been challenging on many fronts for our Trust. We are all working in a financially difficult environment and charitable Trusts are not immune. In addition, the discovery of the menace that is American Signal Crayfish (ASC) into our catchment is concerning to say the least. However, I am pleased to report that it was due to the diligence of our Biologist that ASC were discovered during a monitoring programme. We are continuing to monitor the problem and are putting in place strategies to attempt to contain this non-native species.

I am very pleased with the education programme that our Trust continues to deliver. It is encouraging to see that people of all ages, gender and walks of life desire to learn about the aquatic environment, the fish that inhabit it and have a sense of care about our rivers and lochs. Indeed our attendance at the Galloway Country Fair was encouraging with the level of interest that many people have for the work that the Trust does. The Trust maintains a demanding workload and continues to achieve its goals. This is only achieved by the members, Directors and staff and their enthusiasm for the success of the Trust and its objectives. I would like to take this opportunity to thank my Directors for their input and congratulate the staff on their many achievements.

Percy Weatherall
Chairman
Nith Catchment Fishery Trust

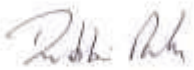
Biologist's Comments

During the spring of the year I plan my summer surveying schedule. This schedule has to take account of the availability of staff and resources to do the task and of course suitable river/weather conditions to conduct the work. 2012 proved difficult, many of my colleagues across Scotland experienced similar challenges of, needing to survey, but the river was in the fields and chocolate brown. I am pleased to report that with perseverance and flexible working we got all our surveying completed.

In addition to my normal work this year two major items consumed my time. Firstly the diversion of the River Nith at New Cumnock was an exciting and interesting project. The Trust managed the, not insignificant task of rescuing fish from the original channel and transferring them to a place of safety. Secondly the discovery of American Signal Crayfish in our catchment has consumed our time and by necessity has had to take priority over other work. Occurrences like these have shown me that planning for the Trust's work has to be flexible especially when the summer doesn't even arrive!

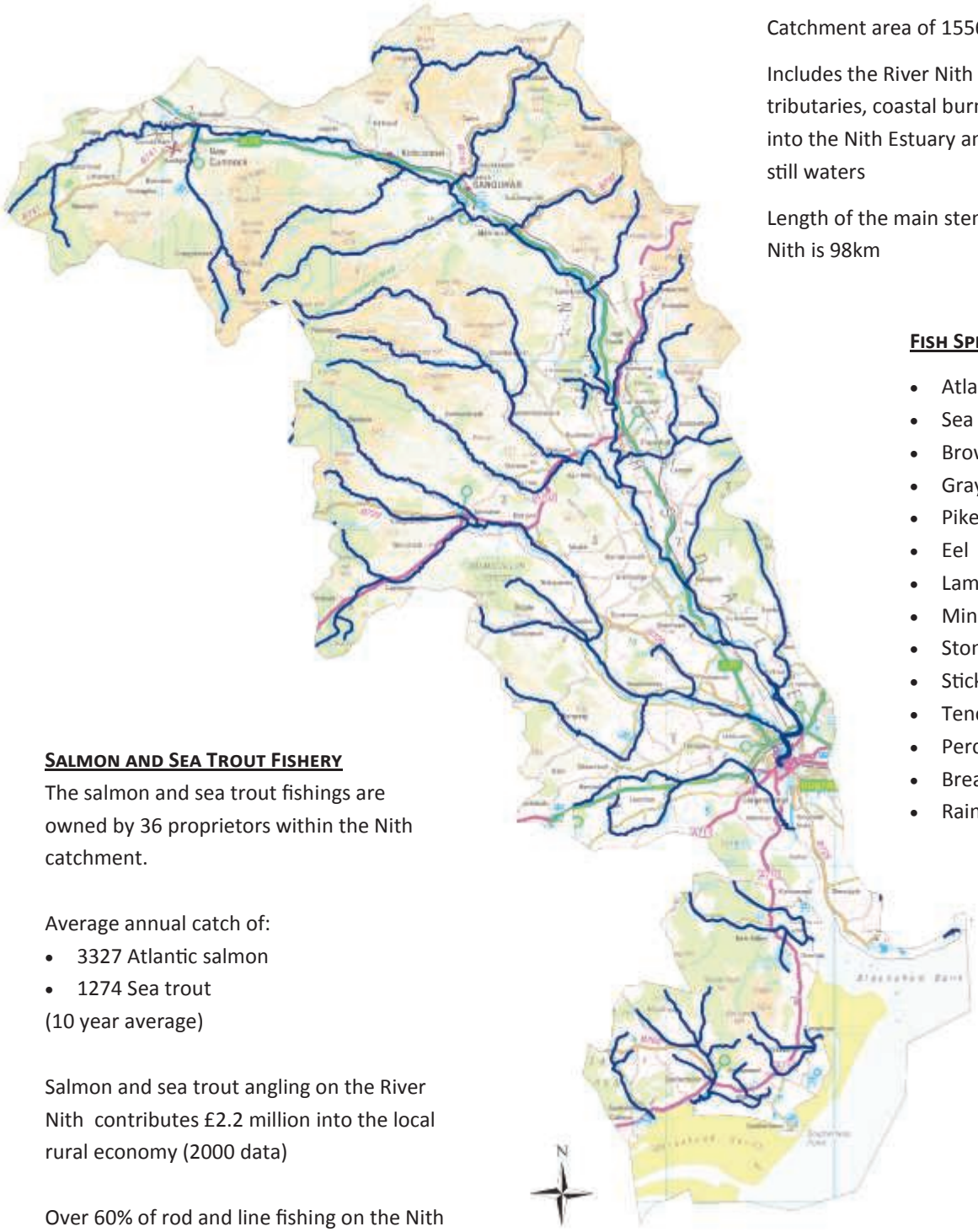
Over the last 5 years the NDSFB and NCFT have been working to the original Nith Fishery Management Plan which was published in 2008. All works conducted by the Trust are intrinsically linked back to this plan and follow an agreed direction of fishery management. Now the original five year cycle is in it's final year and we are considering the new Fishery Management Plan which will set out our goals and aspirations, in fishery management teams, for the next five years.

We eagerly await the results of the Celtic Sea Trout project which the Trust has been working on for the past three years. The Trust has assisted in the gathering of samples in the marine and the freshwater environment. All samples have been catalogued and recorded according to set protocols to ensure consistency prior to dispatch to our colleagues at Bangor University, Wales. This is exciting work using genetics and micro-chemistry to give us enhanced knowledge of sea trout which are so vital to the River Nith system.



Debbie Parke (BSc Hons)
Biologist
Nith Catchment Fishery Trust

The River Nith Catchment



Vital Statistics

Catchment area of 1556km^2

Includes the River Nith and its tributaries, coastal burns that drain into the Nith Estuary and connected still waters

Length of the main stem of the River Nith is 98km

Fish Species Present

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

Salmon and Sea Trout Fishery

The salmon and sea trout fishings are owned by 36 proprietors within the Nith catchment.

Average annual catch of:

- 3327 Atlantic salmon
- 1274 Sea trout

(10 year average)

Salmon and sea trout angling on the River Nith contributes £2.2 million into the local rural economy (2000 data)

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

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

Other fisheries

The Nith also has a healthy brown trout and grayling fishery 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.

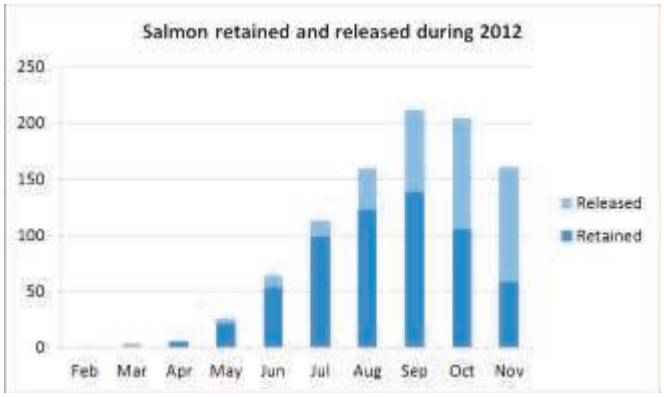
2012 Catches

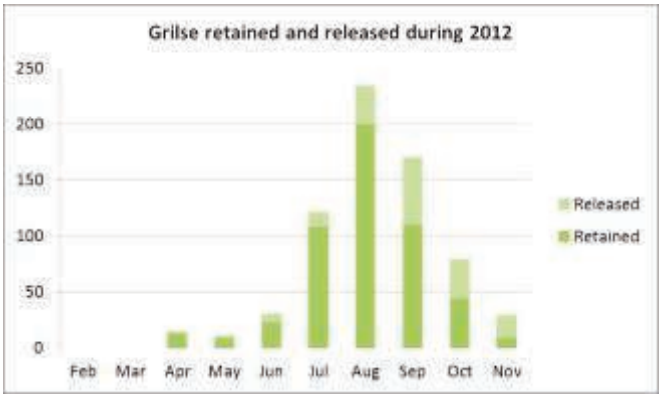
So what happened in 2012?

In 2012, 1635 was the reported catch of salmon and grilse, which was 25% down on 2011's reported catch of 2182. Sea trout catches were more positive with 945 being reported, that is a 55% increase on the number of sea trout reported in 2011.

Salmon and Grilse

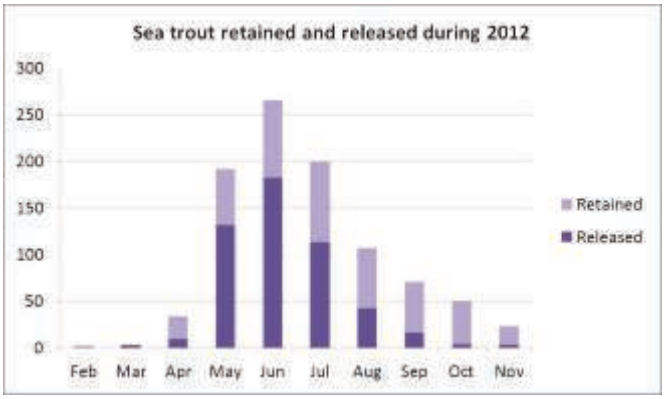
The spring component of the 2012 season (between 25th February and 1st June) totalled 60 fish, which was a decrease on the 124 spring fish caught in 2011. In June 94 fish were caught and a further 234 fish in July (an increase on the 190 caught in 2011). August proved to be the most productive month with 394 fish being caught (523 in 2011). Catches dropped only slightly in September with 382 fish being reported (515 in 2011) and fell back in October to 284 (444 in 2011). The final month of the season saw catches of 190 fish, a slight increase on 170 in caught 2011. The main reduction in the number of fish seen in 2012 occurred during the months of August, September and October with 129, 133 and 160 fewer fish being caught in each respective month. Unfortunately 2012 has not been a good year for salmon.





Sea trout

A total of 39 sea trout were caught between the 25th February an the end of April. Catches increased in May to 191 and then peaked in June at 265. Catches then started to fall away with 200 in July, 107 in August, 71 in September and 49 in October. The season finished with 23 caught in November. In every month there was an increase on the number of sea trout caught compared to 2011 and generally 2012 was perceived to be a good year for sea trout by anglers on the river.



Was it just the Nith?

Reported catches across Scotland appear to have varied with some rivers fishing well and others not, however we are not alone, with the Spey, Stinchar and Lochy all reporting poor years. Most of the Solway rivers appear to have all performed poorly with the Urr, Cree and Luce's catches being down. We will have to wait for final figures to be published in order to get an idea of the true situation across Scotland but it is not thought that this is a specific in-river problem but that something is happening at sea. Research carried out as part of the SALSEA project has shown that fluctuations in the numbers of prey fish, such as the herring and mackerel that the salmon feed on, influence the size and mortality rates of salmon returning from the marine environment. However, with research just really scratching the surface of the marine life of salmon it is difficult know if it is something at sea or a natural fluctuation in the population. One of the most important contributions that we can make to assist the salmon in its recovery is to kill as few as possible when they return to spawn.

Conservation

Encouraging catch and release

Unfortunately, current catch and release rates on the Nith are very low compared to other rivers in Scotland. An average river in Scotland is returning 70% of the total number of salmon and grilse caught each year, where as, in 2012 only 40% of rod caught Nith salmon were returned. In response to this, efforts have been made by the Board and the Trust to raise awareness of the benefits that returning fish can have to the overall production of a river. It is estimated that if the return rate of salmon increased on the Nith to 70%, that would be an additional 4.7 million eggs being laid down. That is nearly half of all the salmon produced by hatcheries across Scotland and about 30 times more than is produced by the NDSFB hatchery every year. Slowly the perception of anglers is changing and salmon are being seen more as a resource rather than a food source. The most beneficial action an angler can take to increase the number of salmon and sea trout in the River Nith and its tributaries is to release more of the fish they catch.

Percentage of salmon released	Number of additional salmon eggs laid down
30%	1,723,500 (1.7 million eggs)
40%	2,700,000 (2.7 million eggs)
50%	3,375,000 (3.4 million eggs)
60%	4,050,000 (4 million eggs)
70%	4,725,000 (4.7 million eggs)
80%	5,400,000 (5.4 million eggs)
90%	6,075,000 (6 million eggs)
100%	6,750,000 (6.7 million eggs)

Table showing the number of additional eggs that could be laid down in the Nith as the percentage of salmon released increases

A comment often stated by anglers regarding catch and release is “The fish was deep hooked and it was bleeding so I killed it”. Is there any truth in this statement? Work conducted recently on the River Naver in the north of Scotland, indicated that many of these deep hooked fish actually go on to survive. During tagging research on the Naver, deep hooked, bleeding fish were tagged and subsequently were recaptured by anglers. The fact that a fish is bleeding should not dissuade any angler from returning the fish to the river. Anglers should consider long and hard before performing “surgery” on a fish to retrieve a single hook. Far better to cut the line and give the fish a chance to throw the hook itself. Knowing that potentially you are going to want to unhook and return a fish to the river anglers should be equipping themselves with the appropriate gear to facilitate this action. Long nosed forceps should be carried by all anglers and using single or double hooks rather than trebles will all assist. Further information on best practice for catch and release is available on the River Nith website—www.river-nith.com. The one sure thing for anglers to remember is, that when the priest strikes the fish’s head it’s game over! Bleeding is no excuse for killing fish!

Fishery Biologist leads by example!

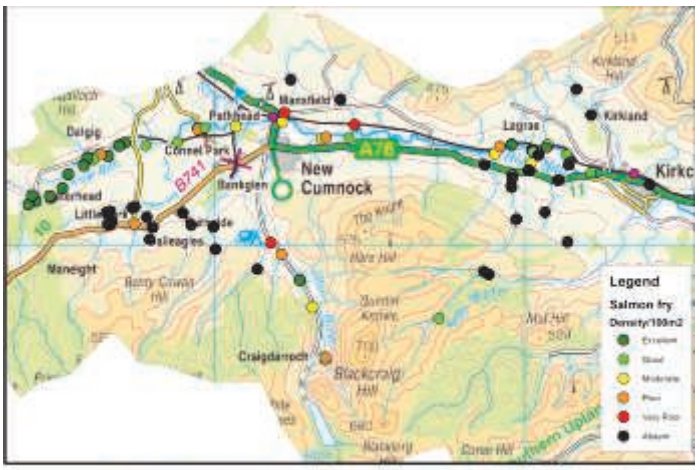
Having analysed the 2012 catch data for salmon and grilse captured in the Nith, only two beats achieve a 70% catch and release rate. However it is of greater concern that three beats returned less than 30% of their catch of salmon and grilse. When analysed, the sea trout data shows a better return rate, with a 9% increase in the overall catch and release rate compared with 2011 figures. Six beats have a 100% catch and release rate and three beats released over 70% of sea trout caught.

Electrofishing and Monitoring

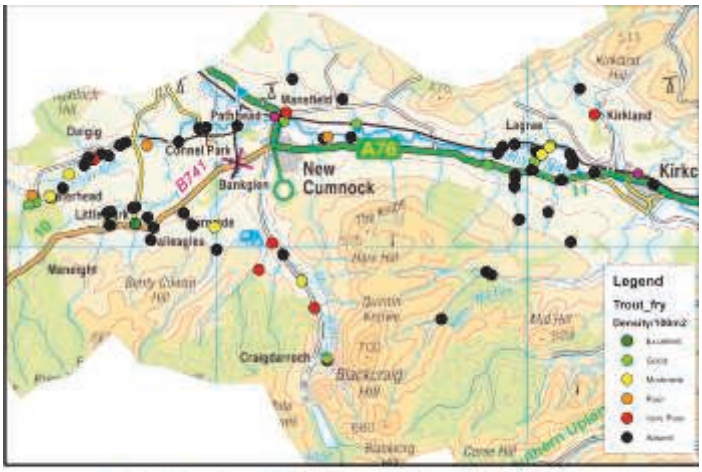
Electrofishing is conducted within the Nith catchment every year to monitor the populations of salmon and trout juveniles present in different watercourses. In 2012, over 120 sites were surveyed by fully trained staff using single run, semi-quantitative survey protocols developed by the Scottish Fisheries Coordination Centre. In response to concerns raised in 2011 regarding the effects that the Open Cast Coal Mines may be having on the salmonid populations, detailed surveys were carried out on the Upper Nith (from the source of the Nith to Kirkconnel) and on the Afton Water. The Afton Water is a tributary of the Nith but is not influenced by coal mining so acts as a good control to assess if there are any impacts on the salmonid populations. The densities of fry and parr were then classified using the SFCC national classification scheme. This classification scheme categorises the data according to five categories derived using data from over 1600 Scottish sites.

A - Excellent
B - Good
C - Moderate
D - Poor
E - Very poor
Absent

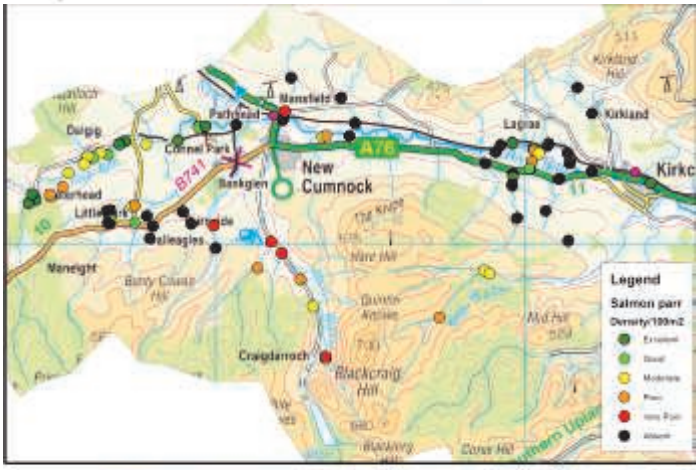
The results for the Upper Nith and the Afton are shown on the maps below. It can be seen that salmon fry are found in excellent densities in the upper reaches of the Nith, where the river flows past the coal mines, but further downstream densities are lower with moderate to good numbers being found. Salmon parr densities are decreased in the downstream section of the Upper Nith but this is due the surveys targeting fry habitat rather than parr habitat. Trout fry densities are poor or absent in the upper stretch, however this is nearly always the case where salmon are present as they out-compete trout fry. Trout fry and parr are more often found in the smaller tributaries of the Nith and Afton where salmon cannot access. Densities of salmon and trout were moderate to very poor on the Afton with occasional areas of high densities. This is likely due to the water conditions at time of survey which were sub-optimal.



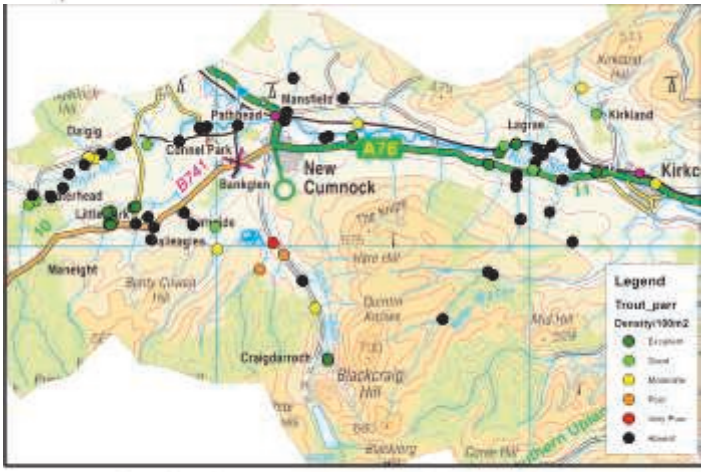
Densities of salmon fry in the Upper Nith and Afton Water



Densities of trout fry in the Upper Nith and Afton Water



Densities of salmon parr in the Upper Nith and Afton Water



Densities of trout parr in the Upper Nith and Afton Water

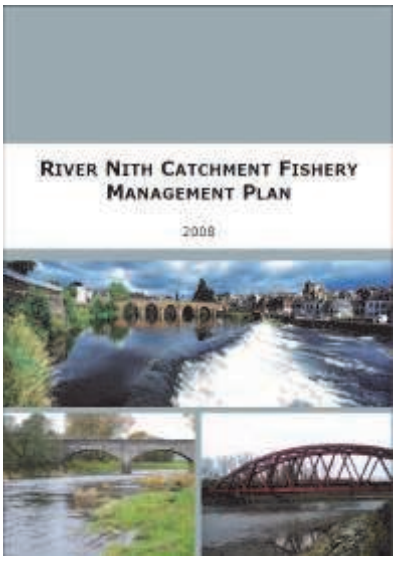
Monitoring our Rivers and Still Waters

Aquatic Invertebrates

Invertebrates such as stonefly and mayfly nymphs and caddis fly larvae, are an important part of an aquatic ecosystem and due to their importance in the food chain, their absence can have a detrimental impact on other species of animals and birds. The presence or absence of certain species of invertebrate can be a good indication of the quality of the water i.e. if it is being affected by diffuse pollution or acidic runoff. The Trust has recently started carrying out surveys to monitor invertebrate populations within the Nith and uses this information in conjunction with fish population densities to assess any changes in water quality and to monitor any restoration projects. The Trust is always looking for keen volunteers to assist with the monitoring of invertebrates within the catchment so if you are interested in taking part please contact Debbie at trust@river-nith.com.

The presence of stonefly and mayfly nymphs indicate high water quality

Fishery Management Plan Review



Since writing the original Fishery Management Plan for the Nith catchment in 2008 the world of fisheries has moved on and it is a very different fisheries scene today. Some of the changes have included the complete protection of the European eel, A*nguilla Anguilla*, the proliferation of renewable energy schemes throughout the catchment, the commissioning of the Robin Rigg offshore wind farm, 4500 salmon grilse recorded catch in 2008 down to 1635 salmon and grilse recorded catch in 2012, fewer young people coming into angling, the science of genetics being used in fisheries management, invasive species threatening our biosecurity ever more, the increasing use of catch and release as a management policy and the near collapse of the sea trout fishery.

So how has the Nith reacted…..we have collaborated with other partners in researching the decline of sea trout, we conduct electrofishing surveys in response to renewable energy proposals, often in areas where only eels exist, we encourage anglers to adopt the new Nith Angling code which promotes catch and release, we have protected many hectares of river banks for riparian habitat schemes and we are tackling the issue of invasive plants and coping with American Signal crayfish. A review of implementation has been published recently that highlights the work that has been conducted between 2008 and 2012 by the NDSFB and the NCFT. This is available on our website www.river-nith.com

Now it is time to write a new plan that takes into account the changes that we have seen over the first cycle of the Fishery Management Plan, builds on work that has already been conducted and clear sets out our aspirations for the future.

Fisheries Management in the Nith Catchment

The Nith Catchment Fishery Trust (NCFT) is a company set up in 2009 with charitable status whose aims and objectives 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.

The NCFT works within the jurisdiction of the NDSFB, an area of 1200km^2.

In 2008 a Fisheries Management Plan (FMP) was developed for the Nith Catchment. The Nith FMP was one a series of plans developed throughout Scotland supported by the Scottish Government. The FMP incorporated strategies and plans to address issues specific and unique to the River Nith Catchment with its thriving industry of open cast coal mining. The plan also recognised the growing awareness of the threat of non-native invasive species and to that end the Nith Trust developed the Nith Catchment Biosecurity Plan. Both the Trust and the Board work together closely to achieve the objectives of the FMP.

Youth Angling

As the average age of anglers increases it is important to encourage young people to take up the sport. The Trust arranges angling days for schools throughout the catchment to introduce them to angling. The Trust has also been involved with the Dumfries and Galloway Fishing for Knowledge Project.

Coal Mining and River Diversions

There are a number of Open Cast Coal Mines located in the upper region of the Nith catchment. Since 2000, 3km of the River Nith has been diverted in order to access coal reserves. The Trust is involved with the consultation process, habitat restoration and the monitoring associated with these diversions.

Education

One of the main aims of the Trust is to increase the awareness and knowledge people have about the aquatic environment. Projects such as Salmon in the Classroom and Raging Rivers enable us to target primary and secondary school pupils. Other events such as local environment fairs and country fairs also help to get the message out.

Crayfish Monitoring

American Signal Crayfish are found in some of the catchments that border the Nith. The NCFT carries out regular monitoring of selected sites throughout the catchment. If crayfish are detected, containment and eradication options can be quickly put into action.

Habitat Improvement

During 2010/11 fencing was erected along the Crawick Water, an important spawning tributary, to prevent livestock from

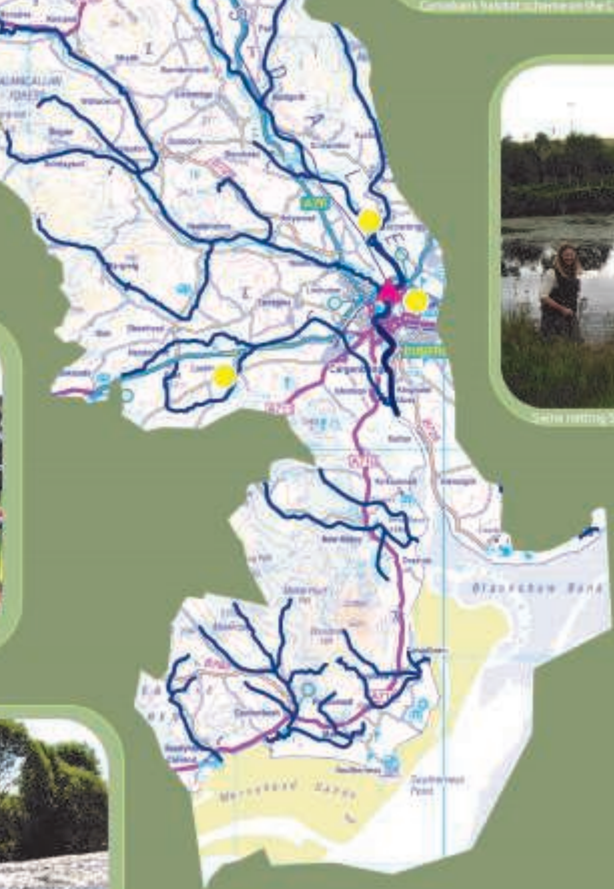
accessing the river bank. Trees were planted to provide shade and to stabilise the bank, helping to prevent further erosion and widening of the river.

Coniebank habitat scheme on the Cairn Water

DG Riparian Invasive Non-Native Species Project

The NCFT has been targeting the control of Japanese knotweed, Giant hogweed and Himalayan balsam along the banks of the River Nith and its tributaries. SEPA, Landfill tax and Dumfries & Galloway Council fund this project and Trust staff, Board water bailiffs and volunteers all assist with carrying out the work.

Injecting Japanese knotweed for the Nith INNS Project



Stillwater Fishery Census

The NCFT carried out a still water census to record all of the still waters in the catchment. The species of fish, size and type of fishery was inputted into the database which continues to be built on.

Seine netting Shaw Loch for brown trout

Fishery Awareness Seminar

Industry and the associated development/construction can have serious impacts on the aquatic environment. In order to raise the awareness of these impacts a Fisheries Awareness Seminar was held to which local stakeholders and those involved in the planning processes were invited. The day included an electrofishing demonstration and presentations.

Looking at the catch from the electrofishing demonstration.

A lamprey captured during an electrofishing survey

Electrofishing Surveys

Electrofishing surveys are carried out to monitor the health of the catchment. Surveys are primarily aimed at salmonids but all fish species are recorded.

Riverfly Anglers Monitoring Initiative

Volunteer anglers were trained, using the Riverfly Partnership methodology, to carry out aquatic invertebrate surveys. The data gained from these surveys is shared with SEPA so that pollution incidents can be identified and dealt with promptly.

Training in aquatic invertebrate surveying

Celtic Sea Trout Project

Sampling for sea trout in the Solway

The Celtic Sea Trout Project is a partnership between the countries bordering the Irish Sea. The project is designed to gain a better understanding of the marine life of sea trout. The Board and Trust sample sea trout from the freshwater and marine environments for genetic and micro chemical analysis.

Contact details

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Alien Invaders

American Signal Crayfish

One of the high priority species identified as posing a threat to the biosecurity of the Nith catchment is the North American Signal Crayfish (NASC). Signal crayfish out compete native species of invertebrate and fish, damaging aquatic ecosystems and reducing biodiversity. This can have a negative effect on fisheries such as salmon and coarse angling. NASC are present to the west and north of the Nith catchment. As a result, regular crayfish monitoring has been carried out at sites across the catchment that are considered to be high risk. This included areas where boats or canoes are regularly used, coarse fisheries and parts of the catchment close to neighbouring catchments known to contain crayfish. The Trust operated a series of traps under licence from Marine Scotland Science and caught a number of mature specimens in Lochrutton, a loch in the lower section of the Nith catchment and in the watercourse draining the Loch. Our Biologist had attended an NASC training course previously and was able to confirm that the crayfish captured were indeed American Signal Crayfish.

North American Signal Crayfish

Further in-depth surveys have been carried out to identify the extent of the population and regular meetings have taken place with SEPA, SNH and Marine Scotland to determine if eradication is possible. Unfortunately due to the size of the loch and the fact that they have been found to extend down into the Lochfoot Burn, eradication is not thought possible. It could have been a lot worse for the Nith, is the general consensus. The Crayfish have been found in Lochrutton and this body of water drains into the lower tidal estuary. Whilst the brackish waters of the estuary will not kill NASC it will perhaps temper their spread. The Trust is currently looking at ways in which to slow down the spread of NASC and raising awareness of the problem. Following the simple steps of Checking, Cleaning and Drying any equipment used in water related activities can prevent the transfer of invasive non-native species between water bodies.

So what are the implications for our catchment?

Of course NASC are undesirable in a healthy salmonid fishery such as the River Nith due to them competing for food and habitat, their predatory nature and their propensity to burrow into the river banks, destabilising them. However we must be careful not to embark on a knee jerk reaction in an attempt to quickly eradicate Crayfish from our catchment. Previous work has shown that it is very difficult to eradicate North American Signal Crayfish and we must ensure that our actions do not exacerbate an already bad situation. We must ensure that anglers and other water users are fully aware of the presence of NASC and of the potential for them to be spread. By raising awareness we hope to preserve the biodiversity of other parts of the River Nith Catchment.

Crayfish traps—the funnel entrance allows crayfish in but prevents them escaping

Alien Invaders

Riparian Invasive Non-Native Species Project

Giant hogweed control on the Islands in Dumfries

In 2010, a project to control Invasive Non-Native Species (INNS) within the Nith catchment was launched. The project focused on the control of invasive species of riparian plants such as Japanese knotweed, Giant hogweed and Himalayan balsam, all of which were introduced into the Nith catchment as ornamental garden plants. Unfortunately, due to their invasive nature these plants have spread into the wild, often resulting in monocultures establishing which prevent many of our native species from being able to grow. This decreases the biodiversity along the river banks and it has been suggested that species such as Himalayan balsam, which attracts lots of bees, may actually be resulting in many of our native plants failing to be pollinated. The distribution of these plants has been facilitated by rivers transporting seeds and plants down catchment.

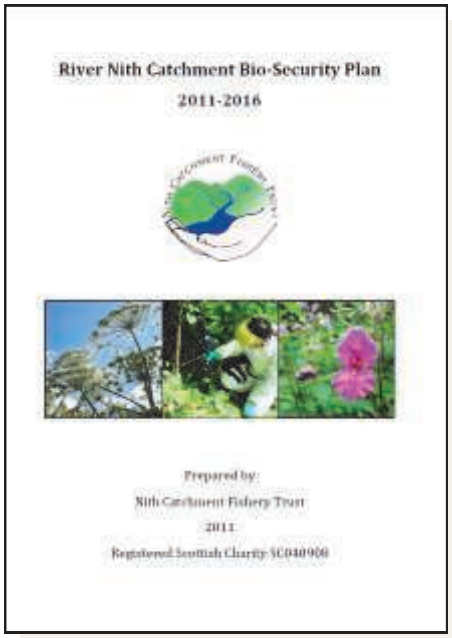
We have found that the most effective method to control Japanese knotweed and Giant hogweed is by injecting Roundup into their stems. With Japanese knotweed, the glyphosate gets drawn down into the rhizomes of plants and so far we have seen very encouraging results. Since 2010 over 16,000m^2 (80%) of the Japanese knotweed in the Nith catchment has been treated using this method and systems have been put in place to continue with this control beyond the life of the project by training volunteers. The control of Giant hogweed is carried out on an annual basis. A total of 52km of river bank along the Scaur Water and River Nith are walked and any plants found treated using Glyphosate. Since treatment began, a 65% decrease in the number of Giant hogweed plants germinating has been recorded. Himalayan balsam is the third invasive species that is being tackled in this project. Although Himalayan balsam is an annual plant it is considered to be one of the hardest of the three invasive species to control. This is due to its explosive method of distributing its seeds for metres around. One way to control this plant is by spraying large areas with Roundup, and the Tweed Forum have been experimenting using dilute concentrations to kill the Himalayan balsam leaving the native flora to thrive. The Trust carried out experiments of its own during 2012 to see how this approach works and has found that a very low dilution can work well. In order to maintain the control of these species beyond the end of the project a volunteer scheme has been put in place to train and equip people who work and enjoy recreational activities along the banks of the Nith and wish to assist with this project. In 2012, volunteers contributed over 156 hours of practical weed control to the project.

Japanese knotweed before and after photographs - first treated in summer 2012

Biosecurity

The Nith Catchment Biosecurity Plan

In 2010, as part of the RAFTS Biosecurity and Invasive Non-Native Species Programme, the Nith Catchment Fishery Trust developed a Biosecurity Plan that looked at the prevention, detection, control and eradication of aquatic, riparian and coastal invasive non-native species (INNS) within the Nith catchment. The Plan went out for public consultation and was published in 2011.



Nith Catchment Biosecurity Plan 2011—2016

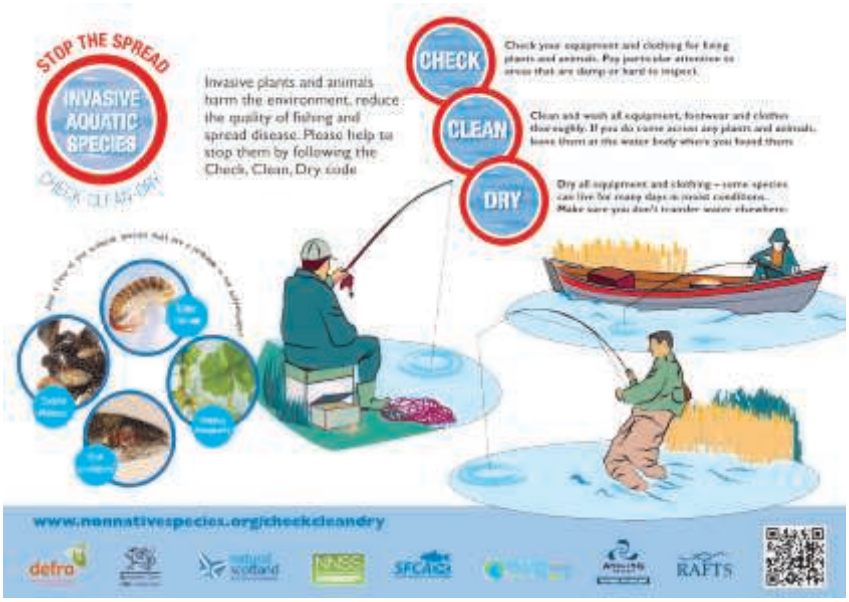
The Plan identifies INNS that are considered to be high risk to the catchment, either due to their potential to cause damage to the diversity or economy of the Nith catchment or because of their close proximity to the catchment. This document ties in closely with the Nith Fishery Management Plan and has resulted in works being carried out which fulfil both documents. The timeline within the document indicates the proposed timescale of work, including the development of rapid response protocols and awareness raising within the catchment. The Nith Catchment Biosecurity Plan can be found at www.river-nith.com under publications.

The following species were identified in the plan as being of high risk to the Nith catchment:

- Gyrodactylus salaris (Freshwater external parasite of salmon)
- Killer shrimp (*Dikerogammarus villosus*)
- Curly waterweed (*Lagarosiphon major*)
- Australian swamp stonecrop (*Crassula helmsii*)
- Zebra mussel (*Dreissena polymorpha*)
- Chinese mitten crab (*Eriocher sinensis*)

Zebra mussels and Killer shrimp—the next alien invaders?

Detailed information on any of these INNS and Check, Clean, Dry can be found at www.nonnativespecies.org



How can you help prevent these INNS reaching the Nith?

Thankfully there are some very simple steps that you can take when you go fishing. **CHECK** your equipment and clothes for plants and animals. **CLEAN** all of your equipment and clothes, if you find any plants or animals leave them at the water body you found them. **DRY** all of your equipment and clothing as this helps to kill any species that may still be present. It is important to carry out these steps, especially if you have been fishing abroad.

Education and Awareness Raising

The Wonderful World of Water

New Cumnock Primary taking part in WWoW

Angling is a popular pastime throughout the United Kingdom but unfortunately the number of young people entering the sport has declined dramatically. As a way of trying to encourage more young people into angling a project called Fishing for Knowledge was successfully run on the Nith and other rivers in Dumfries and Galloway for four years. In 2012 the Fishing for Knowledge Project evolved into the Wonderful World of Water project and was based within the new "Galloway and Southern Ayrshire Biosphere" and funded by the Biosphere Partnership's "Building Opportunity in the Biosphere" Project. In the Nith catchment, the Wonderful World of Water was run at New Cumnock Primary school and consisted of six after-school sessions. The sessions introduced the aquatic environment and the species that inhabit it, followed by a riverside walk with East Ayrshire Council Ranger Paddy MacDonald, before getting wet in the Afton Water looking for bugs and beasties and being given an electrofishing demonstration with the Trust Biologist. The pupils were then taught all about the history of fishing and how to set up fishing tackle by Borderlines before getting the chance to go fishing during the final session. New Cumnock Angling Association kindly stocked some brown trout into the river prior to the session but sadly none of them were captured. A beautiful grayling was caught and made a lovely ending to a great day. Funding is currently being sought to continue encouraging young people into angling as both of these projects were very well received and they have brought a lot of benefits into the local communities.

The Trust also provides opportunities for local schools to try a day out fishing. These days take place at a local rainbow trout fishery, Drum Loch, which is kindly provided free of charge and Borderlines provides angling instructors for the day to introduce the pupils to all aspects of angling. These days prove to be very successful and are always requested by pupils from Maxwelltown High School to be part of their annual activities week. We will be running another two days in 2013 and if you know of a school who would like to take up this offer contact Debbie at trust@river-ntih.com.

Maxwelltown High School Fishing Day on Drum Loch as part of their Activities Week

Education and Awareness Raising

Galloway Country Fair

It was a close thing but luckily the Galloway Country Fair was not cancelled due to the weather and hundreds of people braved the rain showers to attend the show. The Nith Fishery Management Tent was kept busy as a steady stream of people come through to find out what was happening on the river. We used the opportunity to showcase a DVD about the NDSFB and the NCFT demonstrating the work that we carry out. There were various displays showing all aspects of our work and the highlight of the show was our intrepid summer students in their salmon costumes!

Salmon students

Fintastic Tales and other events

In the spring we held two open days as part of Dumfries and Galloway Wildlife Festival. Members of the public were invited to a guided tour of the hatchery where the story of the life of an Atlantic salmon was told. We then ventured outside to a local burn for an electrofishing demonstration where everyone got to meet the fish that live in the burn.


Rocky the Stone loach!

The Board and the Trust were involved in other events such as Dumfries and Galloway Environment Day, Wallacehall Rural Opportunities Days, Galloway Country Fair, Climate Change and the Environment school sessions and we also opened the hatchery during the winter to angling associations, haaf netters and other local organisations, such as the Youth Support Services.

Nith in the Classroom

The Board has been running Nith in the Classroom for the last 10 years and schools throughout the Nith catchment participate on a regular basis. This project is seen as a valuable asset to the communities within the Nith catchment and gives local children an awareness of the rivers and their inhabitants. The project provides pupils with an understanding of the interactions that occur between the animals, birds, invertebrates and humans that are a part of the intricate web that is a river system and raises their awareness of the conservation measures that can be carried out to help protect this environment and it inhabitants. Participating schools are invited to visit the hatchery where they get a chance to see adult salmon and watch them being stripped of their eggs. Later on in the year, the pupils are given salmon eggs to hatch in their classroom, viewing their development using a small microscope. The pupils then release the fry into their local river and carry out a basic river survey, including kick samples and flow and depth measurements. Later in the summer, the pupils join us on another field trip to electrofish the place where they released the fry. This enables the pupils to see how the fry have developed and the techniques used by the NDSFB and the NCFT to monitor juvenile fish populations.


Kelloholm Primary visiting the hatchery

Improving and Protecting Fish Habitat

Habitat Schemes

Habitat improvement work is an important part of protecting the aquatic environment and recent research is pointing to the fact that habitat and water quality improvement may be more effective than other methods of enhancing wild fish stocks. Since 2008 a number of habitat improvement schemes have been put in place with a total of 12 hectares of land being fenced and over 10,000 native trees and shrubs being planted.

Corsebank habitat scheme on the Crawick Water

Planting of the Crawick Habitat Scheme

In the spring of 2012 over 1200 native trees were planted in the new habitat scheme on the Crawick Water. These included birch, alder, rowan, hazel, hawthorn and willow which are all native species that would naturally be found along the banks of the Crawick. These trees will take many years to establish but as they do, their roots will help to stabilise the river banks preventing erosion and the canopy cover will assist in preventing the water from becoming too warm. Juvenile salmon and trout require cool, well oxygenated water and cannot survive if water temperatures become too high so it is especially important now, with climate change becoming an all important issue, that we try to protect the spawning grounds. These habitat schemes will also play an important role further downstream by generally helping to buffer extreme water temperatures and benefiting all native fish species.

The importance of small burns

Small watercourses such as header burns and coastal burns are often overlooked when it comes to fisheries management but these minor watercourses can be important spawning grounds for sea trout and brown trout. However, they are vulnerable to extremes of temperature, over shading and over exposure and can become blocked very easily. Barriers can be formed simply through a build-up of woody debris at a crucial access point or by badly designed culverts being installed. The Trust has put together a database of all known barriers in the catchment and is in the process of prioritising them for removal. Currently a weir on the Laggan Burn is being considered for removal and has been put in as part of a Scotland-wide barrier removal funding bid by RAFTS. The Trust will continue to survey watercourses and identify areas that may benefit from habitat schemes and barrier removal.

List of NDSFB and NCFT habitat schemes within the catchment

River	Bank length (m)	Single/Double bank
Afton Water	1500	Single
Dalwhat Water	2000	Double
Carcow Burn	400	Single
Crawick Water	6000	Double
Crawick Water	1000	Double
Kello Water	1500	Double
Cample Water	1000	Double
Cample Water	1500	Double
Pollneul Burn	3800	Double
Glenesslin Burn	1500	Single
Collieston Burn	3000	Single
Skelston Burn	1000	Double
Skelston Burn	1000	Single
Spango Water	1000	Single
Spango Water	3000	Single
Pennyland Burn	550	Single
Pennyland Burn	1500	Single
Carron Water	2000	Double
Carron Water	1500	Single
Craiglearen Burn	600	Double
Craigdarrock Water	300	Single
Coal Burn	1000	Double
Total	**36.65km**	

Working with Industry

New Course for the Nith

The first of Kier's river diversions went ahead in 2012 with the River Nith being diverted into the new channel that had been constructed in 2011. The newly constructed channel was allowed to sit fallow for a year prior to water being diverted into it. This allowed bankside vegetation, including willow whips planted by the Trust in 2011, to become established in a bid to reduce the amount of erosion that would occur when it came online.

When a diversion goes ahead it is vital that the fish inhabiting the original channel are rescued and relocated into the new channel. The Trust and Board were on hand to carry out the fish rescue and over the course of 6 days many thousands of different species of fish were removed from the original channel. Fish species rescued included salmonid fry and parr, brown trout, grayling, pike, minnow, stone loach lamprey and eels. The high water levels during 2012 made it very challenging to remove fish from the channel and it required multiple electrofishing runs to reduced the number of fish in the section of the river that was going to be drained. Nets were set to prevent the fish from re-entering the old channel and around areas that in-river work was being carried out.

On the day of the diversion, a small section of earth was removed at the top of the new channel and water was allowed to enter. A sandbag dam at the bottom of the new channel enabled dirty water to be pumped into a settlement lagoon rather than enter the Nith, however the high water levels did mean that a small quantity of dirty water did enter the Nith, but this was monitored and the dilution rate was such that no impacts were experienced. Shona McFarlane from the Scottish Environment Protection Agency, Jim Henderson from the Nith District Salmon Fishery Board and Derek Hill from New Cumnock Angling Association were all present for the diversion and monitored the situation closely.

Once the majority of the river had been diverted down the new channel the final fish rescues could take place. This involved capturing all of the remaining fish, placing them into buckets and transferring them over to the new channel, kindly assisted by some of Kier Mining's staff. Everyone involved was impressed by the number of fish that were present in the Nith and enjoyed the chance to see some of the inhabitants close up. A second diversion, further up the Nith, is due to take place in 2013/14 and the Trust will be assisting with the fish rescue and planting of the channel.

Accounts 2012

Nith Catchment Fishery Trust

Statement of Financial Activities
(Incorporating an Income and Expenditure Account)
for the Year Ended 31st December 2012

	Notes	2012 Unrestricted funds £	2011 Total funds £
INCOMING RESOURCES			
Incoming resources from generated funds			
Voluntary income		32,493	25,812
Activities for generating funds	2	2,522	1,862
Incoming resources from charitable activities			
Fishery Management		22,391	19,111
Habitat Works		-	2,000
Invasive Non-Native Species Project		12,125	9,970
Young Anglers		1,521	6,158
North Atlantic Salmon Conservation Organisation			
Events		10,000	-
Total incoming resources		81,052	64,913
RESOURCES EXPENDED			
Costs of generating funds			
Costs of generating voluntary income		1,120	168
Charitable activities			
Fishery Management		47,256	48,579
Habitat Works		1,066	6,852
Invasive Non-Native Species Project		21,410	9,632
Riverfly Project		-	1,021
Young Anglers		193	1,406
North Atlantic Salmon Conservation Organisation			
Events		8,379	-
Governance costs		2,552	1,584
Total resources expended		81,976	69,242
NET INCOMING/(OUTGOING) RESOURCES		(924)	(4,329)
RECONCILIATION OF FUNDS			
Total funds brought forward		21,905	26,234
TOTAL FUNDS CARRIED FORWARD		20,981	21,905

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We are proud to be working with Nith District Salmon Fishery Board and Nith Catchment Fishery Trust to create low-impact hydro schemes, that are designed and built in a responsible manner.

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