NITH CATCHMENT FISHERY TRUST

ANNUAL REPORT

JANUARY TO DECEMBER 2020

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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.

& Misses Robinson's Charitable Trust

Cover photo: Kelloholm Primary School visiting the hatchery

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Chairman's Foreword

2020 was an extraordinary year. When it opened 'social distancing' was an unknown concept, face mask-wearing was confined to hospital operating theatres and Covid-19 was something you might hear in a game of Chinese whispers. One year on and we are in a second, or is it third? Lockdown and our lives – in particular our social and recreational lives – have been thoroughly disrupted. Our government is trying to navigate its way through the uncharted waters of a pandemic that is having a profound and as-yet unquantifiable impact on all of our lives. It has not been easy.

The River Nith, however, has been quite unaffected by the upheaval that has rocked the world of humans. It has continued to make its stately way from the beautiful Lowther Hills in which it rises to the silvery Solway. Flood and drought have followed one another as spring follows winter. Birds and beasts have bred on its banks, fish have swum in its pellucid waters and, occasionally, an angler has been tempted to pursue his (or her) ancient sport. Our river is a soothing constant in troubled times.

The initial impact of lockdown was intense. Your board could not meet and our staff were unable to go about their business. Happily, as the year progressed, ways were found for us to function in the time of Covid. Board and Trust members (myself included) discovered I.T. skills they little suspected they had and Zoom meetings became the new normal. Likewise, as new protocols were formulated, ways were found to re-engage in riverine management and remunerative consultancy work. We kept calm and carried on.

Fishing effort on the Nith was suppressed in lockdown and your board is conscious of the economic impact this has had on fishery interests. Happily, our stakeholders understand the issues we have all faced over the past year and continue to give us very welcome support.

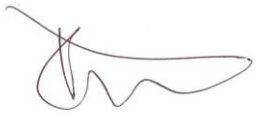
The West Coast Salmon Smolt Tracking Project was set to kick off in spring 2020 but fell victim to Covid. We had developed plans with the Atlantic Salmon Trust and other fishery boards and trusts to trap and tag smolts descending our river, track them to the Solway and on up the West Coast. The project was postponed, not cancelled. I am delighted to be able to report that it will proceed this spring and have high hopes that it will produce some of the hard data we so badly need to manage better the salmonids in our river.

Notwithstanding the inevitable reduction in fishing effort engendered by Covid it is very encouraging to be able to report that 2020 saw the highest recorded catch of salmon on the Nith since 2013. This bodes well for the current season and has already stimulated renewed angling interest.

I must take this opportunity to thank the many diverse organisations that your board and trust work with in its efforts to manage the river and its stocks of fish. Without their continuing support we would be in a poor state indeed. I must also thank our hard-working staff for their unceasing industry in these troubled times.

To conclude on an optimistic note; our government's vaccination programme – now in full swing – seems to be getting the better of Covid, there is light at the end of the lockdown tunnel and spring is in the air.

With best wishes for a thoroughly enjoyable and productive fishing season on the River Nith in 2021.



E.P.K. Weatherall
Chairman

Biologist's Comments

Our Trust had an ambitious year ahead planned as we went into Christmas holidays at the end of 2019. We had burnt the midnight oil and prepared for the coming of 2020 and as we returned to work in the New Year, getting caught up on the previous year's report writing, I remember news reports becoming more concerning about the potential for a virus that we had not heard much about, maybe coming our way. Come springtime and Covid-19 was a household talking point and its influence completely altered the work of our Trust and our ability to do our job. The Trust's plans to trap smolts on the Nith were postponed, our Fishing for the Future project with associated school trips all cancelled along with the Nith Young Anglers Club outings. A significant part of the Trusts work over recent years has been the National Electrofishing Project (NEPS). This project allows us to compare the performance of the Nith with all other Scottish salmon rivers and it is important to keep that project maintained in order that trends can be established and management advised. Sadly, this government funded project was also cancelled.

We had put so much work into co-ordinating an interesting program of events for the year and the opportunities to engage with the river community were all cancelled. Our Sea Trout Experience event which has become very popular with locals and visitors alike and provides the river the opportunity to show case its potential had to be cancelled. Our Salmon Open Day, when anglers can fish for the day for free, was cancelled as was the Drumlanrig Country Fair. These are important events for the Trust as they offer the opportunity to engage with the public and convey information about the Trust and the management of the River Nith and the aquatic environment.

Thankfully, during late spring/early summer we were able to get back out on the ground to take on the important work of conducting fisheries surveys. Coupled to that work, we undertook fish rescues in relation to the maintenance of the Carlisle to Kilmarnock railway line. Whilst we were able to work, the strictest Covid-19 policies were put in place for the safety of ourselves and those who we may encounter as we conducted our work. Much of that work takes place in remote locations, but still had to be performed according to guidelines and national policies. We spent time during the year preparing for the future events and projects that will assist us when this virus has been managed to a degree that permits us to fully engage with the public.

Our funders have fully understood the predicament that Covid-19 has placed us in and have continued their support for the Trust and its work. We have continued to keep them informed of future plans and the direction of the Trust. Without their support momentum would be lost and recovery from the Covid-19 impacts would be very difficult. On behalf of the Trust, I would like to express thanks to all who support us.

We are very optimistic looking forward, not least of all due to the significantly increased numbers of salmon that were recorded during 2020 in the Nith catchment. Despite anglers being unable to come to our region and fish, we recorded the highest number of salmon caught by rod and line since 2013. Those fish were in pristine condition and ran the river earlier. We hope this trend continues and lifts the spirits of all our anglers.

Farewell to the rath of 2020 and we welcome in the vaccinated 2021.

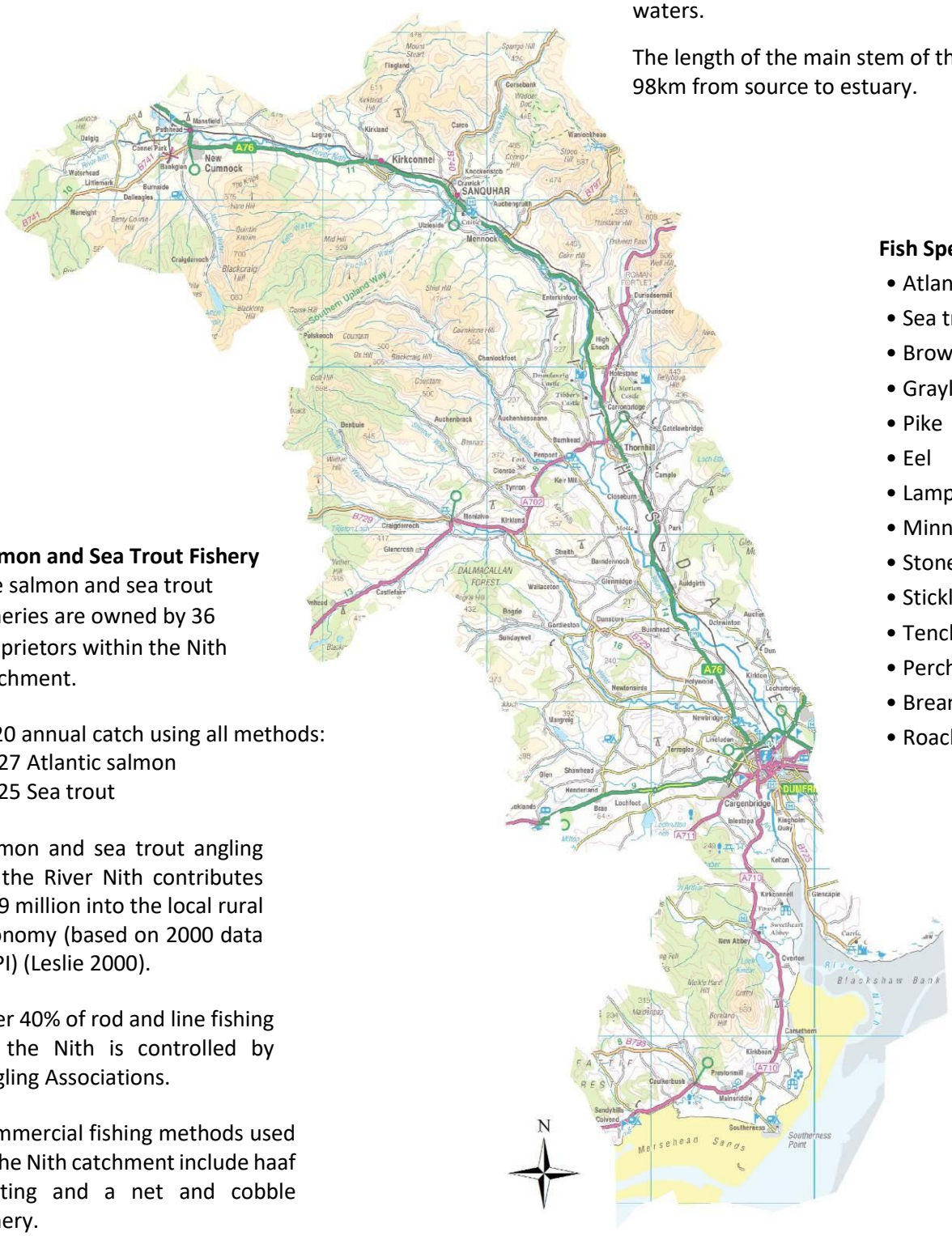
Debbie Parke
Operations Manager/Biologist
Nith Catchment Fishery Trust

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.

2020 annual catch using all methods:

- 827 Atlantic salmon
- 625 Sea trout

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 40% of rod and line fishing on the Nith is controlled by Angling Associations.

Commercial fishing methods used in the Nith catchment include 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.

Overview of Fisheries Management work carried out during 2020 (Board and Trust)

Enforcement

- Bailiff team comprised 3 employed warranted bailiffs and 2 volunteer warranted water bailiffs
- 6 incidents dealt with by enforcement staff
- Restricted patrols of beats compliant with Coronavirus policy
- Managed all fishing enquires
- Regular patrols of the upper beats and spawning beds
- Meeting attended at Carsphairn to discuss enforcement with Police Scotland
- Advised Dee District Salmon Fishery Board, Aberdeen regarding instruments to prevent illegal netting
- Catchment wide permission checks

Exploitation

- Collated Catch return data for 2019 and published on website
- Dealt with incidents regarding releasing deep hooked fish
- Distributed the Nith Fish Conservation grading categorisation on behalf of the Board and responded to Scottish Government
- Met with DG Council regarding permit regulations
- Published Nith Conservation Code for 2020 season (Cat 3)

Engineering and Forestry

- Attended Technical Working Group meetings regarding restoration of the open cast coal site for House of Water and Greenburn.
    - Consulted on Braehead waterbody outflow to Nith at Greenburn OCCS
    - Consulted on repairs to Dalgig Burn channel restoration
- Performed 7 fish rescues in relation to construction work
- Full electrofishing surveys carried out in connection with 9 engineering projects
- Met with Network Rail, Glasgow to discuss Land Slip at Auldgirth and negotiated follow up aquatic surveys regarding land slip repair work
- Responded to consultation on SEPA Fish Protection Guidance
- Onsite meeting regarding proposed river engineering works on the Cairn Water
- Met with SEPA senior management in Stirling to discuss national policy
- Reviewed all plans for phase 2 of New Cumnock flood defense project for East Ayrshire Council

Water Quality

- Raised the issue of response to pollution incidents at SEPA Dumfries meeting and SEPA National Policy meeting
- Attended MS Teams meeting with FMS and River Directors on continued liaison with SEPA
- Maintained a watching brief on the Upper Nith SEPA project and kept NDSFB Chairman and Clerk informed
- Reported 3 incidents of pollution to SEPA on Glenesslin Burn, River Scaur and Carcow Burn
- Investigated incident of pollution on River Scaur as SEPA officer unable to leave home
- Worked with SEPA to identify downgrading of Lower Nith due to agricultural diffuse pollution
- Provided water quality data to SEPA for Greenburn Coal Mine
- Met with representative of Barjarg Fishing regarding agricultural input to River Nith
- Numerous aquatic invertebrate surveys completed

Planning and consultation

- Planning lists checked on a weekly basis and responses made where appropriate to Dumfries and Galloway Council and East Ayrshire Council
- Responded to 4 forestry plans
- Responded to 9 wind farm planning applications

Habitat

- Negotiated habitat restoration as part of mitigation for Scottish Water's works at Kirkconnel
- Planted willow whips at Greenburn
- Planted willow whips in Crawick habitat scheme
- Checked habitat schemes for winter damage
- Planted willow whips at Kelloholm

Renewables

- Full aquatic surveys (electrofishing, invertebrate and Freshwater Pearl Mussel surveys) carried out in connection with 9 renewables projects.
- Met with consultants regarding future wind farm proposals at Greenburn
- Onsite meeting with Community Wind at Sanquhar I Wind Farm regarding culverting issues
- Met consultants to discuss the installation of Penpont hydro plant

Fish stocks and monitoring

- 2019 catch data collected and reported on website
- Provided electrofishing data to SFCC
- NCFT/NDSFB conducted electrofishing at over 150 sites throughout the catchment
- 10 annual electrofishing sites surveyed
- Smolt trapping and tagging project postponed till 2021
- Attended Marine Scotland Science stocking meeting
- Met with representatives of Glasgow University to identify sites for traps and listening stations
- Procured smolt trapping fyke nets, tags and receivers for Nith Smolt Tracking Project
- All electrofishing data inputted to SFCC database

Access

- Negotiated solutions to culverting issues at Sanquhar 1 Wind Farm
- Constructed fish pass within culvert at Sanquhar 1 Wind Farm
- Checked status of old dam on Ballochan Burn on behalf of SEPA - no access issues
- Inspected fish passage easement on Connel Burn, New Cumnock – surveying proved no access issues and a successful solution
- Continued engagement with FLS, SEPA, SLR Consulting on the issue of culvert re-seating at Euchanhead
- Attended SEPA workshop to identify downgraded watercourse with regards fish barriers

Governance

- Attended River Directors meeting
- Completed year end accounts for Nith Catchment Fishery Trust
- Applied for grants to assist with operating costs through Coronavirus pandemic – not successful
- Completed all funder reporting requirements
- Applied for grants from Coastal Benefit Fund and Gregs Grants
- Met with Holywood Trust representative to discuss Fishing for the Future project grant application
- Applied and gained for funding for Fishing for the Future project 2020/21
- Conducted a review of business insurance for both Trust and Board
- Review of IT and backup systems and upgraded accordingly Provided information to Fishery Trusts regarding Fishing for the Future project
- Met with Buccleuch Estates to discuss river staffing
- PAT testing of all electrical equipment

Marine survival

- Attended Atlantic Salmon Trust meeting re West Coast Salmon Smolt Tracking project (WCSSTP)
- Completed Home Office licence training to enable tagging of smolts
- Gained funding to run Nith Smolt Tracking project, adding value to WCSSTP
- Applied for and obtained a seal control licence
- Attended national round table meeting at Scottish Parliament and evening reception

Predation

- Licenses applied for and gained to prevent serious damage to wild stocks of salmon/sea trout by cormorants, goosanders and seals.
- License returns completed
- 19 mink trapped
- Participated in Government Piscivorous bird research project

Biosecurity

- Continue to highlight biosecurity issues on all planning responses
- Conducted invasive weed control JK at a number of locations on a commercial basis
- Discussed crayfish issues with Euchanhead Wind Farm
- Treated all Giant hogweed along River Nith and Scaur Water
- Monitored crayfish at Lochfoot

Hatchery

- 95,000 fry stocked to licenced sites
- Post stocking electrofishing surveys carried out
- Brood stock captured for fry production for 2021
- Hatchery maintained over rearing season
- Upgraded hatchery electrical infrastructure

Outreach

- Nith Salmon Season Opening Event held at Drumlanrig Estate
- Ran Fishing for the Future programme in schools up until March 2020 then cancelled due to Covid-19
- Engaged a television cameraman to record footage to enable us to digitise our Salmon in the Classroom sessions
- Provided social media article re Scaur Water pollution incident
- Attended Opening of the River Cree fishing season

Brown trout from Upper Nith

Fisheries Management

Conservation Regulations 2020

All Scottish salmon rivers are now assigned a Conservation Categorisation grading from 1 to 3. The definition of these Categorisations is provided in the box below. The River Nith was assigned a category 3 status for 2020 which means that all salmon must be released.

Category (Grade) 1	At least an 80% mean probability of conservation limits (CL) being met in the last 5 years. Exploitation is sustainable and therefore no additional management action is currently required.
Category (Grade) 2	60-80% mean probability of CL being met in the last 5 years. Management action is necessary to reduce exploitation; mandatory catch and release will not be required in the first instance, but this will be reviewed annually. Where a Board does not exist, assistance in plan formulation will be offered to those responsible for local management.
Category (Grade) 3	Less than 60% mean probability of CL being met in the last 5 years. Exploitation is unsustainable and mandatory catch and release (all methods) for 1 year will be required. Management action is necessary to reduce exploitation.

Opening of the River Nith 2020 Salmon Fishing Season

The opening event for the 2020 salmon fishing season on the River Nith was held at Drumlanrig Estate by kind invitation of His Grace the Duke of Buccleuch and Queensberry. Drumlanrig Estate Manager Anna Fergusson presented an opening speech in which she highlighted some of the issues that influence the stocks of salmon and sea trout in our rivers and the management initiatives that we are currently promoting to improve stocks. Piper Sandy Dunlop piped in the new season as MSP Oliver Mundell offered the traditional "Toast" to the fish and wished all present, luck for the coming season.

River Nith Opening Ceremony 2020 Drumlanrig Estate

Beat Profile – Drumlanrig Estate

The fishing on the River Nith at Drumlanrig Castle comprises double bank fishing. The river broadens from a rocky gorge into a mainly gravelled riverbed with suitable pools and reaches which provide good accessible fishing for Salmon, Sea Trout and Grayling. This is divided into stretches known as the Nith Linns, The Castle Beats (divided into Upper, Middle and lower Beats) and the Boatford Beat.

Providing weather conditions are favourable, Salmon will run early in the year. Sea Trout also run early and can be expected in quantity from May onwards whilst Grayling abound in the winter months.

Although slightly differing in lengths, the Castle beats are balanced for quality and each contains a proportion of low and high water pools, thereby ensuring fishable water at all times except perhaps during periods of extreme drought or high flood. Nith Linns runs for two miles immediately above the Upper Beat and is mainly fished from the true left (East Bank). It has many streams and pools which provide good lies for both Salmon and Sea Trout as well as Brown Trout. Rocky in nature, it has steep banks. The Boatford Beat runs for three and a half miles below the Lower Beat with a number of streams and pools. Three miles of this beat provide double bank fishing. The River Scaur fishing comprises eight miles of double bank fishing plus half a mile of single bank fishing.

Further details on tickets and how to book can be found on Drumlanrig Castle website - www.drumlanrigcastle.co.uk/field-sports/fishing-2

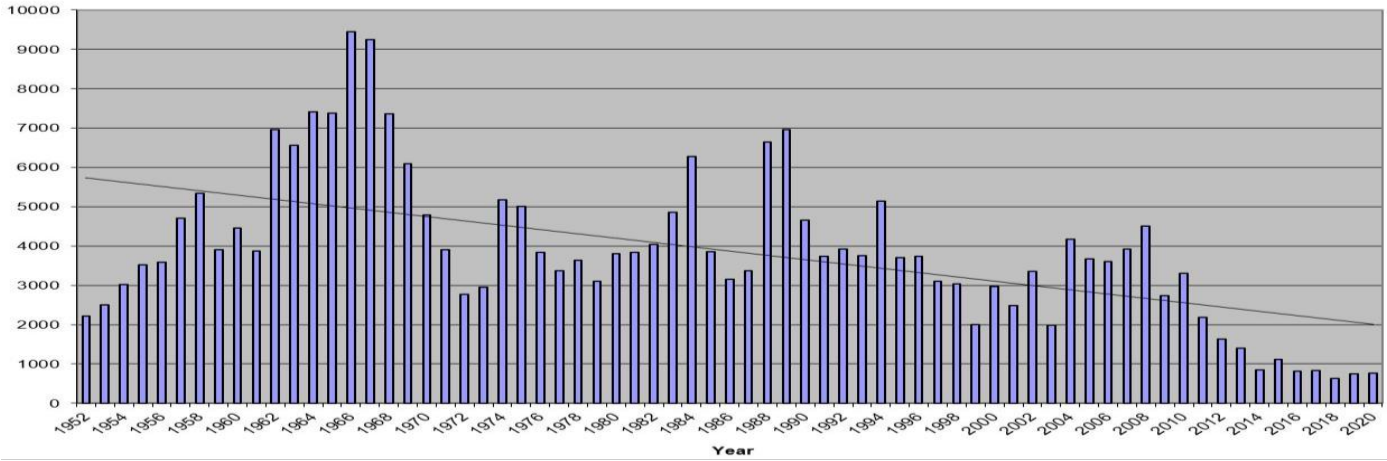
STOCK ASSESSMENT

Salmon and Seat trout catch data for 2020

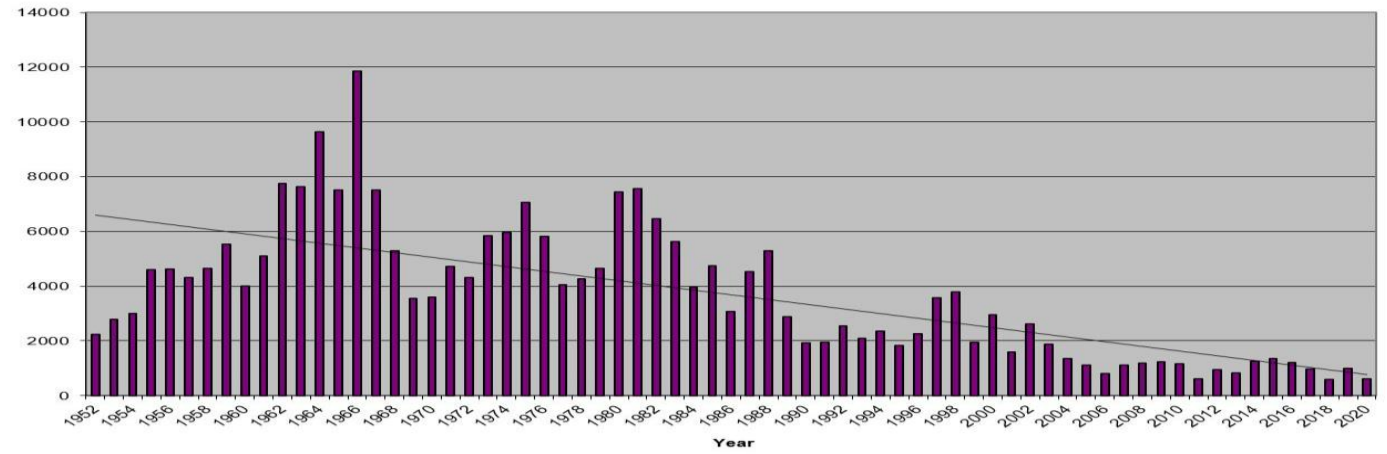
The 2020 season proved to have a better run of salmon than has been seen for a while. In fact, despite the reduction in angler numbers due to the Covid-19 pandemic, the 2020 season was the best rod caught salmon returns since 2013 which is encouraging. Those who did fish were successful and caught multiple fish. The salmon caught were in excellent condition with deep bodies. It is anticipated that we will see the fruits of this good run reflected in the salmon fry densities during 2021's survey season. Sea trout catches however, do not accurately reflect the number of sea trout likely to have been running the river, as the early part of the sea trout run coincided with lockdown. Those local anglers that did manage to fish for sea trout once restrictions eased, were successful.

	Salmon and Grilse				Sea trout and Herling			
Year	Rods (C&R%)	Nets (C&R%)	Total	5 year average	Rods (C&R%)	Nets (C&R%)	Total	5 year average
2011	1637 (40%)	545 (0%)	2182	3331	515 (46%)	94 (0%)	609	1060
2012	1283 (40%)	352 (0%)	1635	2873	782 (55%)	163 (1%)	945	1025
2013	940 (59%)	465 (0%)	1405	2253	671 (62%)	170 (8%)	841	958
2014	520 (64%)	331 (1%)	851	1876	1119 (87%)	132 (8%)	1251	960
2015	702 (63%)	417 (0.5%)	1119	1438	1063 (80%)	283 (4%)	1346	998
2016	655 (100%)	163 (100%)	818	1166	866 (78%)	348 (40%)	1214	1119
2017	695 (89%)	133 (70%)	828	1004	768 (83%)	214 (12%)	982	1127
2018	520 (91%)	110 (54%)	630	849	479 (78%)	111 (26%)	590	1077
2019	586 (93%)	158 (73%)	744	828	845 (83%)	157 (31%)	1002	1027
2020	764 (100%)	63 (100%)	827	769	557 (81%)	68 (40%)	625	883

Salmon caught by all methods 1952 - 2020



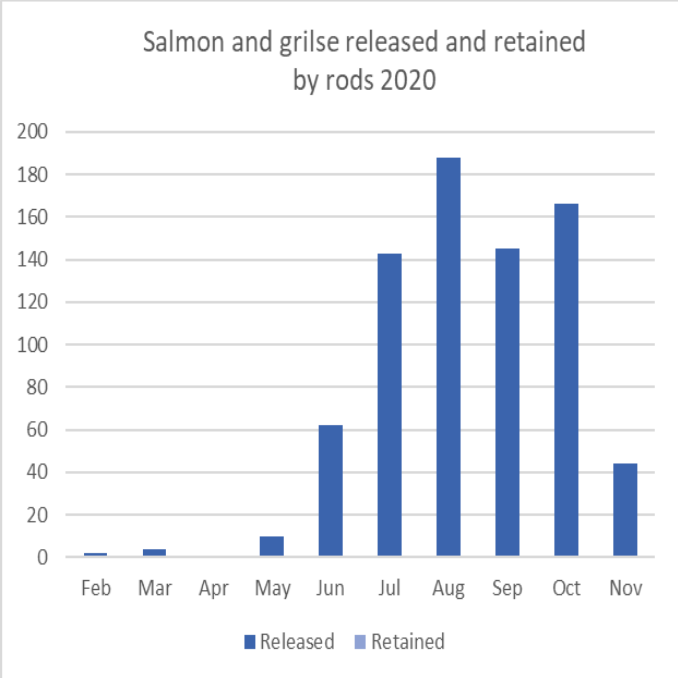
Sea trout caught by all methods 1952 - 2020

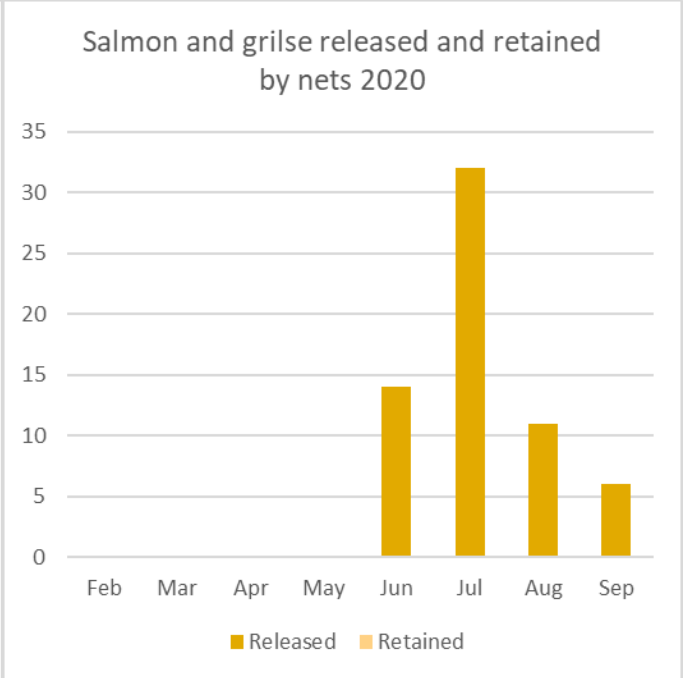


STOCK ASSESSMENT

Salmon and grilse catches in 2020

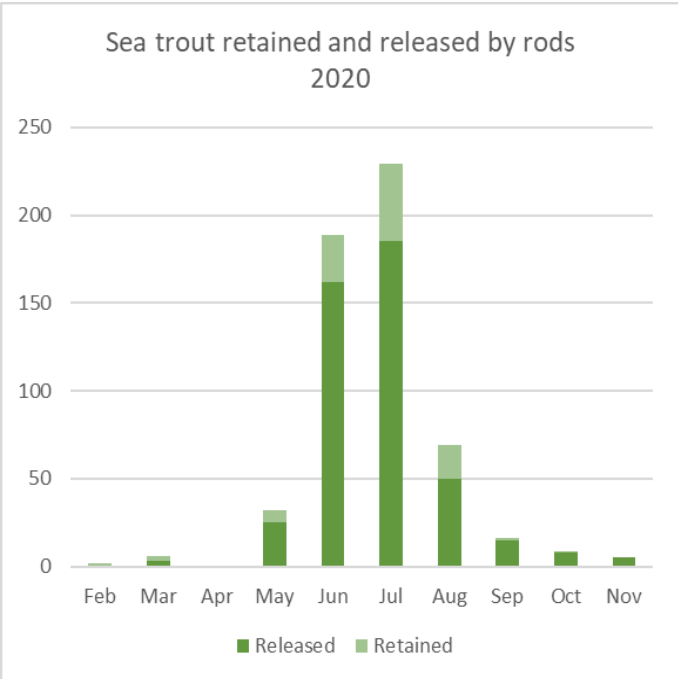
In 2020, the River Nith was asigned a category 3 grading by the Scottish Government, this dictated a 100% madatory catch and release for salmon. Covid-19 restrictions meant that fishing couldn't take place until the end of May so very few fish were caught during the spring. The peak months for salmon catches by rod and line occurred from July to October, with August recording the highest number of 188 salmon captured for that month. The salmon and grilse run continue to be earlier in the year than historically.

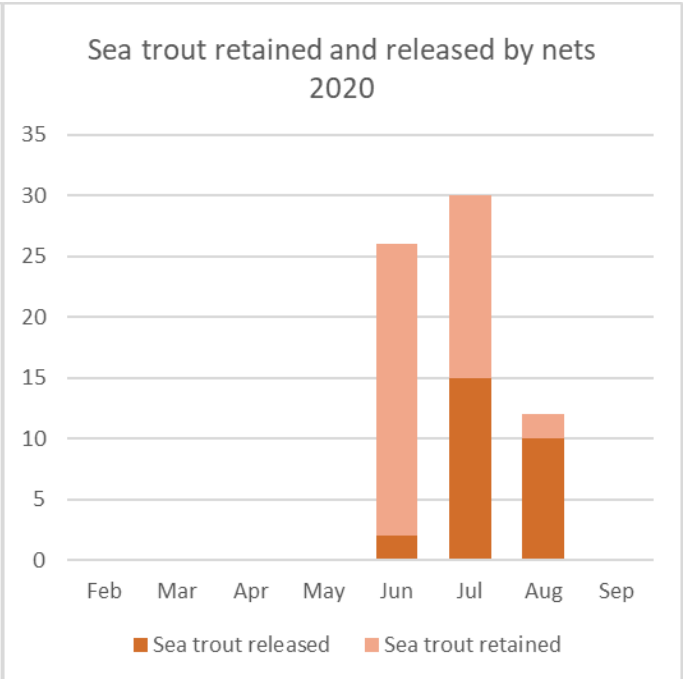




Sea trout catches in 2020

The charts below show the number of sea trout retained or released on a monthly basis by both rod and line and by haaf nets in the lower river. The main peak of sea trout being caught by anglers occurred in June and July as is traditional for the River Nith. Rod anglers returned 81% of the sea trout caught and haaf nets returned 40%.





STOCK ASSESSMENT

National Electrofishing Programme Scotland (NEPS)

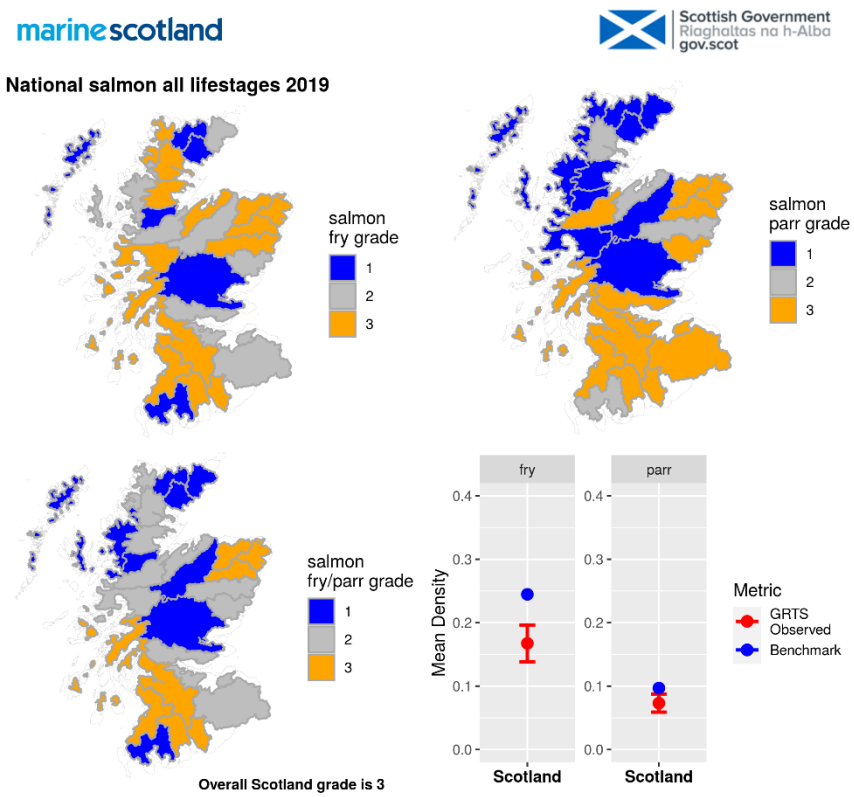
The National Electrofishing Programme Scotland (NEPS) is a national programme of electrofishing organised and funded by Marine Scotland, SEPA and NatureScot to gain a clearer picture of juvenile salmon population levels throughout Scotland. The data on the ground was collected by local Fishery Boards and Trusts during 2018 and 2019 using a strict protocol. Each participating catchment in Scotland was assigned 30 electrofishing sites. These sites were selected randomly throughout the catchment to reduce bias. The River Nith has been assigned 28 sites – five of which are surveyed on an annual basis, four of which are surveyed once every three years and the remaining four are surveyed once every nine years. This provides both temporal and spatial data to gain an overall idea of juvenile production through the catchment. The results for the surveys undertaken in 2018 and 2019 have been compiled and made public through a Shiny app produced by Marine Scotland.

Full details of the project and the results can be accessed at https://www.gov.scot/publications/national-electrofishing-programme-for-scotland/ and the Shiny App can be found here to explore the results https://scotland.shinyapps.io/sg-national-electrofishing-programme-scotland/.

The 2020 NEPS surveying was cancelled due to the Covid-19 pandemic. It is hoped that it will resume in 2021. The results show that across Scotland there was a 44% decrease in the number of salmon fry compared to 2018. There appear to be two major contributing factors to this. Firstly, the number of returning adult salmon in 2018 was down from 50,988 reported catches in 2017 to 37,586, making 2018 the lowest catch recorded since records began in 1952.

Additionally, Scotland experienced one of the hottest, driest summers on record in 2018, whereas 2019 was the second wettest summer ever recorded. Both factors will have impacted on the number of fish captured during the surveys however, it is believed that the reduced number of spawning adults was the main contributing factor.

In the Nith catchment, salmon fry densities were found to be reduced on those in 2018, moving the juvenile grading from a Grade 2 in 2018 to a Grade 3 in 2019. Combined with the Grade 3 for parr densities the Nith has an overall Grade 3 in 2019. Both Salmon fry and parr densities were below the benchmark which are the densities that would be expected for a "healthy" river. The illustrations on the right show the 2019 gradings nationally for juvenile salmon.



Grade

By comparing regional or national estimates of mean salmon density obtained from GRTS sampling with benchmark estimates, each region is given a grading (1 - 3) for fry and parr separately. A region with a grading of 1 is coloured blue, a grading of 2 as grey and 3 as orange.

Grades were obtained for each lifestage using the following rules:

* Category 1: The estimate of mean observed density exceeds the benchmark
* Category 2: The benchmark is within the confidence limits of mean observed density
* Category 3: The upper 95% confidence limit of the mean observed density is below the benchmark

Next, the grades for the two life stages are combined to provide a single (overall) grade for the juvenile assessment method using the following rule-based system:

		fry		
		1	2	3
parr	1	1	1	2
	2	1	2	2
	3	2	2	3

The full report from Marine Scotland detailing the results from the 2019 survey season can be found here - https://data.marine.gov.scot/sites/default/files//SMFS%201109.pdf.

STOCK ASSESSMENT

Juvenile salmonid surveys 2020

Every summer, between May and September, the Nith Board and Trust conduct electrofishing surveys throughout the entire Nith catchment to assess the status of juvenile salmonid populations. This is an important aspect of the Trust's work. On average, over 150 sites are surveyed each year. Some of these sites are repeated on a regular basis whilst others provide us with new information on watercourses that have never previously been surveyed. The resulting data can provide us with an insight into the productivity of the River Nith and identifies any areas where there may be issues such as pollution, lack of habitat or barriers impacting on the number of salmonids.

These surveys are conducted by fully trained staff using a mixture of single run semi-quantitative and three run fully quantitative survey protocols developed by the Scottish Fisheries Coordination Centre. The densities of fry and parr are 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.

Locally, in order that we can compare year to year performance we have selected 10 sites throughout the catchment. These sites are located on the mainstream 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.

The table below shows the results from the 10 sites that have been surveyed on an annual basis since 2014. In 2020, the average densities of salmon fry across all the sites surveyed are classified as excellent as are salmon parr densities. These salmon fry densities are comparable with those found in the 2019 set of electrofishing surveys but we can see an increase in the densities of salmon parr. The spike in salmon fry populations in 2018 one the chart below can be explained by a severe drought experienced at time of survey. A more stable feature of the trending chart is the sustained elevation of fry populations extending over the two-year period since 2019.

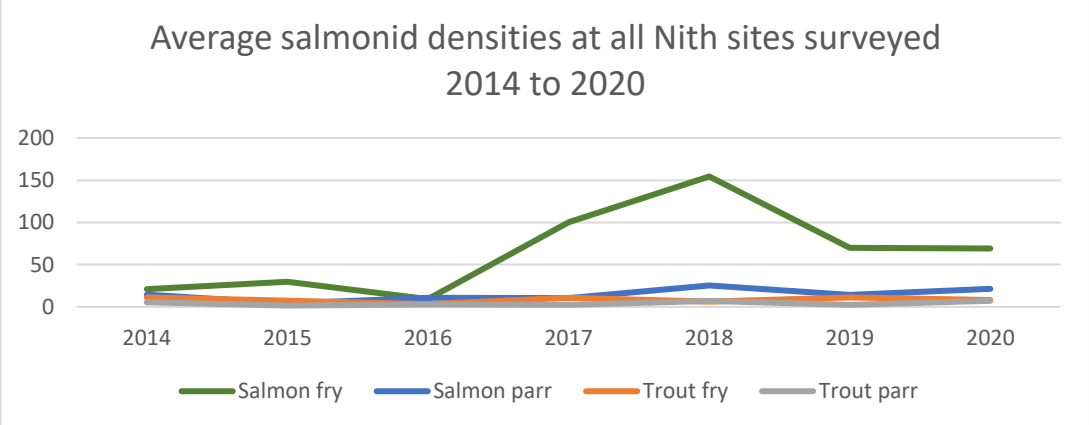
Electrofishing results for the Ten Annual sites in 2020

Watercourse	Site code	Location	Salmon fry (/100m²)	Salmon parr (/100m²)	Trout fry (/100m²)	Trout parr (/100m²)	Other species
Nith	1	Downstream of Nith Lodge, New Cumnock	14.62	21.05	0.00	5.32	SL
Nith	2	Downstream of Boig Road Bridge, New Cumnock	3.27	13.07	6.54	0.00	SL, M, L, E
Nith	3	Upstream of Guildhall Bridge, Kirkconnel	145.74	8.07	8.07	3.70	SL
Nith	4	At Auldgirth New Bridge	7.94	20.63	0.00	3.17	SL, M, G, E
Afton	5	Upstream of Blackcraig Bridge	63.15	35.36	2.35	16.51	-
Crawick Water	6	Downstream of Spango Bridge	148.00	7.86	4.69	0.00	-
Mennock Water	7	Upstream of confluence with Glenim Burn	47.34	15.77	31.78	19.83	-
Scaur Water	8	Downstream or Bridge at Glenwhargen	27.95	10.93	11.01	1.21	-
Cample Water	9	Downstream of bridge at Kirkbog Farm	233.71	77.95	11.11	0.00	SL, M, E
Dalwhat Water	10	Upstream of Bailwood Plantation	0.00	4.36	4.36	21.79	-
		Average of all sites:	***69.17***	***21.51***	***7.99***	***7.15***	

Key to other species: E – Eel, M – Minnow, SL - Stone Loach, L – Lamprey, SB – Stickleback, G – Grayling, F – Flounder, P – Pike.

Key to classification of salmonids per 100m²

absent	very poor	poor	moderate	good	excellent



STOCK ASSESSMENT







Photos: (clockwise from top left) Surveying for Fresh Water Pearl Mussels; Electrofishing survey; Juvenile salmonids; brown trout; kick sampling for aquatic invertebrates; bucket of eels from the River Nith; large brown trout; salmon fry and parr

STOCK ASSESSMENT

River Nith Salmon Smolt Tracking Project

During 2020, the Trust was successful in obtaining grant funding through Dumfries and Galloway Council's Regional Coastal Communities Fund and the Holywood Trust to run a salmon smolt tracking project to monitor the migration of smolts on their seaward journey down the River Nith. This is a local project intended to reveal any bottle necks or potential issues where salmon smolts are vulnerable and losses occur. It is intended to provide information based on facts to assist fishery managers on the Nith on future management actions to prevent such losses in the future.

Previous studies, using tagging technology on smolt migrations have proven that up to 60% of smolts can be lost in the early stages of their passage downstream and into the coastal estuary. The Nith Salmon Smolt Tracking project will engage with the schools and coastal communities around the Nith Estuary where salmon have been an important heritage and cultural part of life.

The project will capture salmon smolts as they start their decent downstream from the catchment. The smolts will be fitted with radio tags and released from the capture site. Receiving devices placed at strategic locations along the River Nith, will record when smolts carrying these tags pass within 300m. This enables NCFT to plot the speed and distance travelled by each individual tagged smolt. Anecdotal evidence of predation occurring along the River Nith and estuary suggests that there are certain "pinch points" where smolts may get held up as they migrate, in specific flow conditions, and that heavy predation may be a factor. For example, the Caul at Dumfries, where large numbers of fish-eating birds can be seen consuming fish. In the Nith Estuary and inner Solway, smolts migrating through can be vulnerable to seal predation during low flow conditions.

Whilst the Nith Salmon Smolt Tracking project is a stand-alone project, it runs concurrently with the West Coast Salmon Smolt Tracking project (WCSSTP). The WCSSTP is a multi-partner project that is organised by the Atlantic Salmon Trust and aims to track the migration of salmon smolts from a number of west coast rivers in Scotland. The Nith is one of eight west coast rivers which are going to trap 800 smolts cumulatively, in-river, and these will be fitted with acoustic tags. The tagged smolts will be released at their capture site in the lower river. Once the migrating smolts have left the river environment their progress up the west coast of Scotland will be monitored by an array of listening devices which are deployed at strategic locations from the Solway to the top of Scotland.

Both the Nith and West Coast Salmon Smolt Tracking projects add value to each other, the Nith project is able to benefit from the West Coast project in that the Nith Smolts can be tracked on their seaward journey to the northern most listening arrays at the top of Scotland. The West Coast project benefits from the Nith project in that additional smolts will be tagged, increasing the data gained. A synergistic relationship is clearly evident for both projects.

Atlantic salmon smolt

WATER QUALITY

Aquatic Invertebrate monitoring

Nith Catchment Fishery Trust (NCFT) has always worked with the Nith Board conducting surveys throughout the catchment. These surveys are often conducted in relation to construction projects which have the potential to impact on the water environment and the species within. Fisheries surveys provide an indication of long-term water quality but increasingly NCFT are conducting aquatic invertebrate surveys to assess water quality. Aquatic invertebrate surveys provide a more immediate measure of the quality of the water in a given location.

Kick sampling for invertebrates

The water quality is assessed by the presence of specific species of aquatic invertebrates. Some species are more tolerant to pollution than others and it is possible to pin-point a source of pollution and chart its dilution down catchment as the influence decreases and the aquatic invertebrate population recovers.

Whilst water quality is the responsibility of the regulator which is the Scottish Environment Protection Agency (SEPA), both Board and Trust staff do all that we can to assist in any way, to ensure that water quality is maintained and that any occurrence of pollution is report timeously. We regularly are called out to pollution episodes and attend to investigate if there has been any influence on the fish community. This has been especially important during the winter of 2020/2021 when SEPA were severely impacted by a cyber-attack on their I.T. system.

Photos: (clockwise from top left) Emergent stonefly, Cased Caddisfly larvae, Stone fly larvae, close up of the head of a Stonefly larvae.

EDUCATION

Fishing for the Future project

The Fishing for the Future project started off in 2020 with six schools signed up for the programme. We started in January by delivering two classroom-based sessions in each of the schools and each class was provided with an aquarium containing salmon eggs to look after. Unfortunately, just as we had started to deliver the outdoor sessions that are a standard part of our spring sessions, Covid-19 hit the UK and we went into lock down, curtailing any participation in the project.

Prior to lockdown, we were able to deliver an outdoor river survey to Dumfries High School Nat 4 pupils. This involved surveying a section of the Pennyland Burn for both fish and invertebrates and studying the physical characteristics of the watercourse.

As well as curtailing our school sessions, we were also unable to run any of our angling sessions. The Covid-19 pandemic and the associated social distancing rules and regulations resulted in us not being able to deliver any of the normal outreach and education events that we would normally do. However, we explained this to our funders and agreed that we would spend our time, effort and resources on ensuring that all facilities, equipment and venues were improved to ensure that our project was more successful going forward.

School sessions

In 2020, we ran educational sessions in the following schools/classes: Wallace Hall Primary 6, St. Joseph's College Rural Skills class, Dumfries High National 4 class (S4, 5 and 6), Kelloholm Primary 4, Locharbriggs Primary 7 and Laurieknowe Primary 5. In total 132 students took part in the Fishing for the Future programme in 2020.

Session 1 – Wild Salmon hatchery visit

Session 2 – Life in Freshwater

Session 3 – Fish dissection (for older groups)

Session 4 – River survey