

COMBINED ANNUAL REPORT OF THE NITH DISTRICT SALMON FISHERY BOARD AND THE NITH CATCHMENT FISHERY TRUST

### 2023





The **Nith District Salmon Fishery Board (NDSFB)** is constituted under the Salmon Fisheries Legislation commencing in the 1860s as subsequently amended and presently stated in the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003 as amended. The Nith Board is empowered under fisheries legislation to do such Acts as it considers expedient for the protection, enhancement and conservation of stocks of salmon and sea trout and the general protection and enhancement of the fishery itself.

The Nith Board's principal objectives are therefore to preserve, protect and enhance stocks of migratory salmonids in the Nith catchment and to preserve, protect and enhance the fishery. Its main areas of jurisdiction comprise the principal River System of the River Nith and all its tributaries including parts of the Solway Firth.

The Board financial year runs from 1<sup>st</sup> December to 30<sup>th</sup> November in any given year. Tri-annual elections were held on 30<sup>th</sup> June 2021.

The Nith Board for the year comprised: -

**Chairman** Percy Weatherall

**Lower Proprietors** Robbie Cowan Caerlaverock Estate

Kim Lowe Dumfries and Galloway Council

Peter Hutchinson Douglas Hall Fishery
Tom Brown Drumburn Estate

Upper Proprietors Peter Landale Dalswinton Estate

Nick WrightCloseburn Castle FishingAnna FergussonBuccleuch Estates LimitedDavid KempsellD & G Angling Association

Richard Gladwin Blackwood Estate

Upper Co-opteesThomas FloreyAngling Representative

Raymond Mundle Angling Representative

### Invitees

In addition to the elected Chairman, lower proprietors and upper proprietors, the Nith Board has invited representatives from the Scottish Environmental Agency (SEPA) and NatureScot however in recent years SEPA and NatureScot no longer have officer time available to fulfil these invitations.

### Staff

Mr Roderick Styles – Clerk Mr Jim Henderson – Fishery Director Mr David McMichael – Water Bailiff Miss Shalom Oyenekan – Assistant Biologist

### The Nith Board met on: -

25<sup>th</sup> January 2023 – Board meeting.

14<sup>th</sup> April 2023 – Annual Qualified Proprietors Meeting followed by Board meeting.

21st July 2023 – Annual Public Meeting followed by Board meeting.

12<sup>th</sup> October 2023 – Board meeting.

### **Board members attendance at Board meetings**

Dates	Percy	Robbie	Kim	Peter	Tom	Peter	Nick	Anna	David	Richard	Thomas	Raymond	%
	Weatherall	Cowan	Lowe	Hutchison	Brown	Landale	Wright	Fergusson	Kempsell	Gladwin	Florey	Mundle	attendance
25/01/23	Χ	Χ			Χ		Χ	Χ	Χ	Χ	Χ	Χ	75%
14/04/23	Х			Χ		Х	Х		Χ	Χ	Х		58%
21/07/23	Х			Х	Χ			Х	Χ	Χ		Χ	58%
12/10/23	Х		•	Х	Х	Х			Χ	Χ	Х	Χ	66%

Minutes from these meetings can be found on the Board website - NDSFB meeting agendas (river-nith.com)

### **Complaints**

There were no complaints received during year 1st December 2022 to 30th November 2023.



The Nith Catchment Fishery Trust (NCFT) is a Scottish Registered Charity and Company Limited by Guarantee which was formed in 2009 to conserve and enhance all native freshwater fish and their habitats located within the inland and coastal waters of the River Nith catchment within the jurisdiction of the Nith District Salmon Fishery Boad. The Trust works closely with the Nith District Salmon Fishery Board to conserve freshwater fish and their habitats. Part of the Trust's remit is to educate and increase awareness of the aquatic environment.

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.

The Trust financial year runs from 1st January to 31st December in any given year.

### **Trust Directors**

Mr Percy Weatherall – Chairman Mr Jim Henderson Mr Peter Hutchison Miss Faye McCormick Mr Gordon Kerr Mr Kevin Corder Miss Freja Grant Mr Thomas Florey

### Staff

Ms Debbie Parke - Operations Manager/Biologist Miss Shalom Oyenekan - Intern/Assistant Biologist (6 months) Miss Jocelyn Wong – Intern (3 months)

The Trust Directors met on: -

Mr Robert Schiller

24<sup>TH</sup> January 2023 – Trustee meeting.

13<sup>TH</sup> April 2023 – Annual General Meeting followed by Trustee meeting.

20<sup>TH</sup> July 2023 – Trustee meeting.

11th October 2023 - Trustee meeting.

### Trustee attendance:

Dates	Percy	Jim	Peter	Faye	Gordon	Kevin	Freja	Thomas	David	Robert	%
	Weatherall	Henderson	Hutchison	McCormick	Kerr	Corder	Grant	Florey	Kempsell	Schiller	attendance
24/01/23	Х	Х	Х	Х	Х		Χ	Χ	Х		80%
13/04/23	Χ	Χ	Χ		Х		Χ	Χ			60%
20/07/23	Χ	Χ	Χ			Χ	Χ		Х		50%
11/10/23	Х	Х		Х			Χ	Χ	Х		60%

The work of the Nith Catchment Fishery Trust is funded by: -













& Misses Robinson's Charitable Trust

Nith Catchment Fishery Trust is a Registered Scottish Charity. Charity no. SC040908. Company no. SC366067. Registered Office: 37 George Street, Dumfries, DG1 1EB. Registered in Scotland

### Chairman's Foreword

2023 did not buck the trend of recent fishing seasons regarding the number of salmon caught in our river. Whilst the numbers remain similar to that of the previous year, the general trend remains in a downward direction. Frustrating as this is, we remain committed to the cause of managing those fish that are present in our river and ensuring that they are afforded maximum chance to reproduce to sustain stocks. As Chairman of the Nith District Salmon Fishery Board and the Nith Catchment Fishery Trust I am alarmed to read that Atlantic Salmon have been reclassified as "endangered" by the International Union for the Conservation of Nature. This places them in the same conservation status as the Siberian Tiger and Mountain Gorillas and is a stark wake up call to us all who value our king of fish.



At the time of writing this foreword there is a little heat in the sun and winter would appear to be behind us, there is certainly plenty of water in the river. Our fisheries staff are busy preparing to conduct the spring task of smolt trapping. They intend trapping smolts from the Crawick Water again this year, not to tag them but to make an assessment on the total number of smolts that this tributary produces for our river. Eventually over the coming years we will trap most of the larger tributaries and thus be in a position to make an assessment on the most productive smolt producing areas of the catchment. This is useful to us in the Fishery Board and Trust when delegating where to allocate limited funds for management purposes.

On a personal note, I am heartened by the habitat works that we have conducted over the year and are planning for the coming year. Planting the riverside verges with native broadleaved species of trees provides so many benefits to our countryside and a multitude of species using the habitat that develops as a result of denying agricultural stock access to the river's edge. In fishery terms this is a long term management initiative but one worth supporting. The maturing trees and vegetation in our habitat schemes will stabilise the river banks and help prevent against further erosion. Hopefully this will assist in stemming the deluge of gravel that is washed down our river every winter. Our fishery team were very successful in gaining funding to improve the habitat in the upper Crawick at Corsebank. This funding came from the electric rallying world series "Extreme E" who held one of their global events in the Nith catchment. Due to the status of this event the worlds media focused their attention on racing teams and their drivers when our staff took them electrofishing. We hope this draws attention to the plight of our salmon in crisis.

On a positive note, when walking on the banks of the Nith during 2023, I noticed that the purple bloom of Himalayan Balsam was not as virulent as it has been in recent years. Perhaps this is due to suboptimal weather conditions or a poor year for cross pollination in the previous year. However, this is good news for our native plant species that thrive on the banks of the Nith and are often shaded out.

As I write this, we have recently held an event to launch the start of the new salmon fishing season. It is nice to see so many people attending these events and gives those of us tasked with the management of our rivers fish the chance to listen to the views of the anglers.

In closing I urge you all to wet a line and hope your reel sings loud and often!

E.P.K. Weatherall Chairman

### **Fishery Directors report**

The 2023 salmon fishing season got off to a start with an opening ceremony at Blackwood Estate, Auldgirth. A well-attended event was enjoyed by locals and Nith anglers from further afield. Some enthusiastic attendees took advantage of the kind offer from Mr Gladwin, to fish the Blackwood beat for free on the opening day whilst others sampled the exclusive "Nith" bottled whisky supplied by Claxton's. Whilst salmon fishing may be at a low ebb currently, it is heartening to see the enthusiasm of the river community pulling together to celebrate the new salmon fishing season.

Whilst in management terms we are always busy, I cannot remember a busier year for us working with construction and water management to protect the aquatic environment. We were especially occupied by repairs and maintenance on the railway infrastructure which runs parallel to the Nith through our catchment. An example of our work on this subject was the repairs to the Ballochan Viaduct at Auldgirth conducted by Story Contracting Ltd. This structure



conveys the Kilmarnock to Carlise railway over the Ballochan Burn. Vegetation fouling the railway had to be cleared from the structure and it was necessary to enter the burn with a tracked excavator. Prior to this happening fishery staff informed the contractors of the appropriate time of year to conduct the work in order that impacts on salmon and sea trout could be avoided. In addition, our staff performed a fish rescue in advance of any work taking place in the water environment. This was a successful operation which resulted in us removing more than 80 salmon, trout, eels, minnows and stoneloach.

The renewable energy industry continues to flourish throughout the Nith catchment. We continue to be consulted on every wind farm that is proposed within the catchment. However, the grid connection to convey the power from the wind farms is covered by a separate planning application. Due to the nature of these projects, they are not site specific, the grid connection traverses the catchment crossing all watercourses on its route to connecting to the larger distribution network. We work with organisations such as Scottish Power Energy Networks (SPEN) and their contractors to ensure that these projects do not impact on salmonid species of fish. In the vicinity of water crossings we perform fish rescues which immediately removes fish from the working area and in addition we take aquatic invertebrate samples which enables us to monitor the health of the water environment in the area of the grid connection works site.

2023 was a very productive year for the Board and Trust in terms of habitat improvements. Our staff took on a very ambitious task of removing all of the original tree shelters from the former surface coal mine site at House of Water in the upper Nith catchment. NDSFB planted every tree on this site in 2004 following major river diversion works which were conducted to allow for the abstraction of coal. Approximately 10,000 trees were planted originally and the uptake has been very good, many of the trees are now in excess of four meters high. They have very thick trunks and are adapted to cope with the wind-swept open landscape left from the restored mine site. The species mix includes alder, hazel, birch, willow, gean, hawthorn, and blackthorn. The removal of plastic from the flood plain of the upper Nith is good for the overall environment of our catchment. All of the shelters removed were reused or recycled. This project was funded by Hargreaves, owners of the House of Water site, with whom NDSFB have enjoyed a long-term working relationship.

Tight lines to you all for 2024.

Jim Henderson Fishery Director

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### THE RIVER NITH CATCHMENT

### **Vital Statistics**

The total catchment area is 1596km<sup>2</sup> 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.

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### **Fish Species Present**

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

**Salmon and Sea Trout Fishery** The salmon and sea trout

fisheries are owned by 36 proprietors within the Nith catchment.

2023 annual catch using all methods:

- 389 Atlantic salmon
- 552 Sea trout

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

Haaf netting still occurs on the River Nith but this fishery is very much reduced in scale.



### **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.

### FISHERIES MANAGEMENT PLAN 2023 - 2028

The Board and Trust have been working on a new Fisheries Management Plan to cover the period 2023 - 2028. The production of this plan is supported by the Scottish Government and forms one of the many fisheries management plans which cover most of Scotland. The plan lists historic actions and management of salmon and sea trout within the Nith catchment. In addition, the plan outlines the current status of our fish stocks and the planned actions which we intend embarking on to protect and enhance those stocks.

Unlike previous plans this plan is web based and designed to adapt to change and will enable us to review the outcomes of our work on an annual basis. The plan can be seen here - Scotland's Fishery Management Plans (arcgis.com).

### **Proposed Management Actions**



### **Climate Change and Habitat Degradation**

The River Nith Fisheries Team are working towards making our rivers more resilient to changes in the climate and to tackle the biodiversity crisis. This includes actions such as planting native trees along the riparian zones of rivers to help shade the water and stabilise banks and restoring natural functions to many of the watercourses within the Nith catchment.



### **Illegal Exploitation**

NDSFB will maintain a qualified team of water bailiffs that enforces Scottish fisheries legislation throughout the Nith catchment to ensure that stocks of Atlantic salmon and sea trout are not illegally exploited. We will continue to react to all incidents of breaches of fisheries legislation.



### Scientific research and monitoring

The Board and Trust will continue to conduct monitoring of aquatic species of flora and fauna throughout the Nith catchment and use this as a means of measuring the health of our watercourses. We will participate in national surveys and projects to improve our knowledge and in the furtherance of management of salmon and sea trout.



### Water quality and quantity

As part of our monitoring throughout the catchment, we will continue to monitor and extend our ability to detect influences which may impact adversely on aquatic species. This work will be conducted to assist the regulatory body (SEPA) to monitor the watercourses within the Nith catchment.



### **Invasive Non-native Species**

The Board and Trust recognise the importance of preventing the influx of invasive non-native species (INNS) into the catchment and apply the ethos of "prevention is better than cure". The Board and Trust will offer advice on preventative measures to avoid the spread of non-native species and within our capabilities, treat INNS when possible.



### Predation

Wherever salmon are present, either in the marine environment or in the freshwater, predators exist to feed on them. During these times of salmon in crisis it is very important to ensure that any predation is kept to a level which does not put the future existence of salmon in jeopardy. Nith District Salmon Fishery Board apply for licences from the Scottish Government to enable them to take actions against certain species that would otherwise be illegal.



### Raising awareness and education

Raising awareness of environmental issues surrounding aquatic environments and techniques used to restore watercourses to a more natural, sustainable state, is an important aspect of the work of the Board and the Trust.

### FISHERIES MANAGEMENT PLAN



### Barriers to fish passage

Access to spawning areas is of paramount importance for salmon and sea trout to complete their life cycle successfully. There are few obstructions to fish passage in the Nith catchment and those that exist are largely natural waterfalls. The Board and Trust is currently working to remove known man-made barriers.



### Stocking

The Board recognises the contribution that hatchery produced stock can contribute to fisheries management, in appropriate circumstances. The Board will continue to operate its hatchery facilities to best practice and in accordance with licence conditions.



### **Disease and Fish Health**

Disease can have a severe impact on fish stocks if undiscovered/diagnosed. Nith Catchment Fishery Trust and Board react to any reported incidents of unexplained fish deaths, often reported by anglers. Promotion and use of the reporting apps developed by Fisheries Management Scotland assists in gaining a national awareness of any potential outbreaks.



### **Developments**

Development such as road, rail, public utilities, forestry, local authority projects, renewable energy projects and their associated infrastructure has the potential to impact negatively on the aquatic environment and the species that reside within. The Board and Trust will work to advise development plans and proposals throughout the catchment which could potentially impact on the water environment.



### Lobbying

The Board and Trust recognise the importance of lobbying political support for our fisheries management work and to ensure that the water environment and fisheries issues are held high on the political agenda. Accordingly, political leaders and representative on a national and local level will be invited to attend appropriate events to maintain an awareness of issues.



Debbie and Jim with MSP Mairi McAllan and her partner Iain Renwick at Extreme E during 2023

### **Conservation Regulations 2023**

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 2023 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.

## NITH DISTRICT SALMON FISHERY BOARD CONSERVATION POLICY Conservation Category 3 - No Salmon to be Killed

### Statutory Regulations

Fishing seasons

 $\begin{array}{ll} \mbox{Rod and Line} & \mbox{25th February - 30th November} \\ \mbox{Net} & \mbox{25$^{th}$ February - 9$^{th}$ September} \end{array}$ 

- No fishing for salmon or sea trout on Sundays by rod and line
- No fishing for salmon or sea trout from 6pm
   Friday to 6am Monday by net
- No salmon to be killed within the Nith
  catchment

### It is illegal to:

- Deliberately attempt to foul hook fish or to take fish which have been foul hooked i.e. those not hooked in the mouth.
- Kill kelts, smolts or parr.
- Take unclean or unseasonable fish being baggots, highly coloured, black or red fish and fish about to or in the process of spawning.
- Sell salmon or sea trout which have been caught with rod & line.
- Use natural shrimps or prawns on any part of the river upstream of the Kingholm Gates at the bottom end (tidal area) of the Dumfries Town Fishings.
- Fish for any fish without written permission (or permit) from the beat's owner or his representative.
- Fish with any form of salmon roe.
- Fish with a "fixed line."
- Use gaffs, tailers or knotted mesh nets.

All fish caught must be recorded with the beat proprietor with the exception of:

- 1. Kelts, i.e. fish that have spawned.
- 2. During spring only, sexually mature fish that have not yet spawned.

Breach of any of the above could lead to criminal prosecution, seizure of fishing equipment and vehicles.

### **Nith Voluntary Regulations**

The Board notes the existing voluntary catch and release practices for sea trout on many beats throughout the Nith catchment.

The Board recommends that if sea trout are to be taken, the following guidance should be adhered to

- All sea trout under 10" and over 3 lb must be returned.
- Sea trout retained should be limited to no more than 1 Sea Trout in any day.
- Barbless hooks be used when the intention is to Catch & Release.
- Foul hooked fish i.e. those not hooked in the mouth, must be returned to water.
- Ripe or darkly coloured fish should be returned to the water. If in doubt, RETURN it!
- Fish being returned to the water should not be handled by the tail or gills and should be released as quickly as possible. Remove the hook with forceps and return the fish facing upstream and gently support it until it swims
- Fish being retained should be killed as quickly as possible using a priest or appropriate instrument.

### **General Rules**

- Respect boundaries between adjoining beats.
- Anglers must show permits, tackle and catch to Bailiffs, Police Officers or other anglers if requested.
- Anglers under 12 years of age should be accompanied by an adult when fishing.

### Methods & Equipment

Do not use sweep nets, ground bait or rod rests. Do not fish from trees, bridges, etc. or use assistance from anyone in such a position. The maximum permitted line breaking strain for all types of fishing should be 15lbs.

### Spinning and Bait fishing

Bait/spinner must be kept moving through the water at all times.

The maximum permitted hook size for bait fishing will be No 4.

### Fly Fishing

Fly hooks or tubes should be properly dressed with a coloured body and a reasonable quantity of hair/fur/feather in proportion to the hook size.

Anglers should not use weights or lead-core lines of any kind when fishing with the fly. No retrieve, other than slow hand-lining should be made until the cast has been fished out.

### **General Conduct**

disturbance to the water.

Always fish in a sporting manner. Give consideration to anglers on the opposite bank.

Fish down through pools in rotation, taking at least one full step between casts.

Avoid unnecessary wading or any avoidable

Always respect the environment, wildlife, other anglers and members of the public.

Do not park vehicles so that they obstruct gateways or cause a hazard on the roadway. Remove waste nylon and personal litter from the river banks and parking places.

Follow the Country Code. Always respect farm animals and crops.

Do not light fires or allow dogs to roam free. Always be conscious of and alert to hazards and look after your own safety and the safety of other anglers.

Report strange goings-on immediately to: River Enforcement Staff - 07785 743663 Police – 101

### STOCK ASSESSMENT

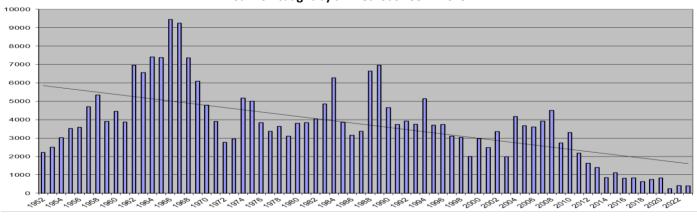
### Salmon and Sea trout catch data for 2023

Every year catch data is requested directly from salmon fishing proprietors. This data is amalgamated when it comes into the office and provides an insight into how the river performed during the previous 12-month period. However, it should be noted that this data does not consider fishing effort and can be highly variable with some anglers not submitting their catch data to proprietors. This data is also provided to the Scottish Government by salmon fishing proprietors and the five-year average is one of the main parameters used by the Marine Directorate when they are assigning river gradings for the coming year.

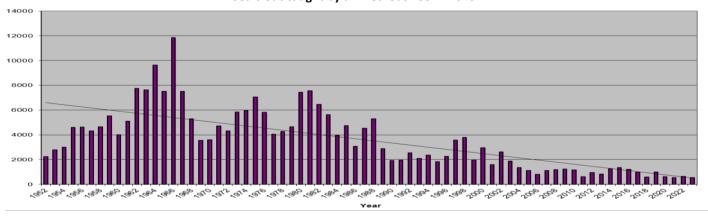
Overall, rod catches for salmon and grilse and sea trout were reduced on 2022's catch data with 331 salmon and grilse and 475 sea trout being reported caught.

		Salmon and Grils	е		Sea trout and Herling			
	Rods	Nets		5 year	Rods	Nets		5 year
Year	(C&R%)	(C&R%)	Total	average	(C&R%)	(C&R%)	Total	average
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
2021	181 (100%)	71 (100%)	252	656	418 (89%)	125 (36%)	543	748
2022	365 (100%)	49 (100%)	414	573	523 (92%)	112 (27%)	635	679
2023	331 (100%)	58 (100%)	389	525	457 (85%)	95 (24%)	552	671

### Salmon caught by all methods 1952 - 2023



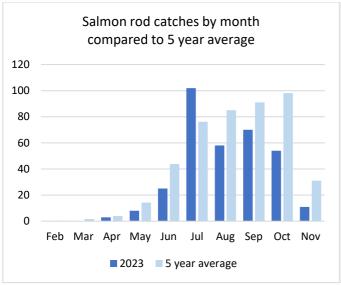
Sea trout caught by all methods 1952 - 2023

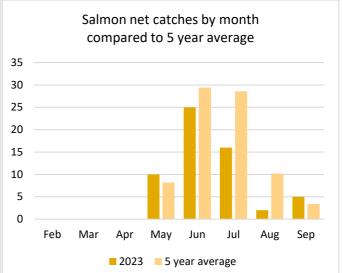


### STOCK ASSESSMENT

### Salmon and grilse catches in 2023

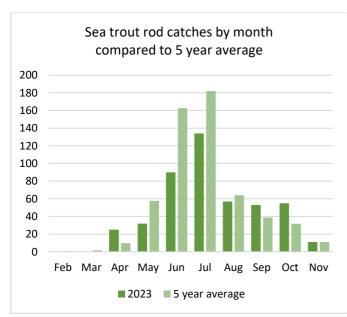
The River Nith was a category 3 river in 2023 which meant that it was 100% catch and release for salmon and grilse. The highest numbers of Salmon were caught in July. This is complete contrast to the 2000's when October was considered the best month for salmon catches on the River Nith. In total, 389 salmon and grilse were caught by rods and nets in 2023.

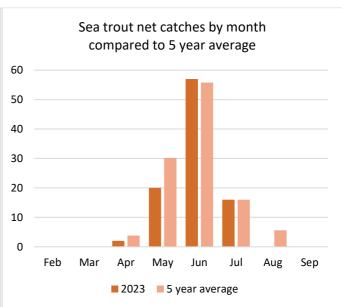




### Sea trout catches in 2023

The peak months for sea trout catches by rod and line were June and July. However, when compared with the 5-year average for these months, numbers were significantly reduced. The catch data shows that sea trout catches remained higher than the 5-year average in April, September and October.







### SCIENTIFIC RESEARCH AND MONITORING

### **Juvenile salmonid surveys 2023**

During the summer months, June to September inclusive, fisheries staff monitor juvenile salmonid populations throughout the catchment. The surveying is conducted by means of electrofishing and whilst onsite, water temperature data, conductivity and pH are recorded along with available instream and riparian habitat. Surveying is conducted for many varied reasons, but it is worth noting that whilst onsite our staff are monitoring for pollution and take a photographic record of conditions at time of survey. In 2023, 160 sites were surveyed and additional 27 sites were surveyed as part of NEPS. 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. Overall, this provides us with a temporal and spatial overview of the health of the catchment.

To compare year on year performance, 10 sites throughout the catchment were selected in 2014 to be surveyed annually using full-quantitative, three run survey techniques. In the year 2023, an additional site, the Craig Burn, was surveyed, making up a total of 11 sites. These sentinel sites are located on the mainstem River Nith and its main tributaries. The eleven sites were sampled to allow long term trends to be observed. The intention here is to detect any issues specific to individual areas of the catchment and enable managers to address those issues timeously. In 2023, the average densities of salmon fry across the eleven sites surveyed was 52 fry per 100m2 which is a moderate increase from the average in year 2022. However, the salmon parr populations have significantly reduced. The trout fry and parr numbers have remained moderate with a slight increase in populations of trout fry.

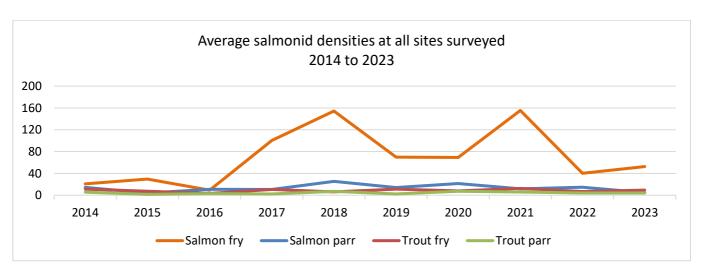
### **Electrofishing results for the Annual sites in 2023**

Watercourse	Site code	Location	Salmon fry (/100m²)	Salmon parr (/100m²)	Trout fry (/100m²)	Trout parr (/100m²)	Other species
River <u>Nith</u>	Nith001	Downstream of Nith Lodge, New Cumnock	38.00*	8.37*	22.55*	8.90*	SL, M
River <u>Nith</u>	Nith008	Upstream of <u>Boig</u> Road Bridge, New Cumnock	38.61*	8.06*	7.84*	0.00	E, SL, M
River Nith	Nith027	Upstream of Guildhall Bridge, Kirkconnel	109.37*	3.75*	1.49	0.00	E, SL, M, SB
River Nith	Nith010	At <u>Auldgirth</u> New Bridge	0.91	0.91	0.00	0.91	E, SL, G
Afton Water	Aftn001	Upstream of Blackcraig Bridge	86.55*	17.49*	2.38	0.00	-
Craig Burn	Aftn0062	Nearest corner to garden fence	23.94*	0.87	30.07*	20.73*	-
Crawick Water	Craw001	Downstream of Spango Bridge	75.51*	2.08	15.89*	0.00	-
Mennock Water	Menn001	Upstream of confluence with Glenim Burn	23.54*	1.23	12.56*	7.23*	-
Scaur Water	Scar001	Downstream or Bridge at Glenwhargen	72.33*	5.13*	8.38*	0.00	-
Cample Water	Camp001	Downstream of bridge at <u>Kirkbog</u> Farm	107.26*	1.78	0.00	0.00	E, SL, M
<u>Dalwhat</u> Water	Dlwt001	Upstream of <u>Bailwood</u> Plantation	0.00	0.00	0.69	6.23*	-
		Average of all sites:	52.37	4.52	9.26	4.00	

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

Key to classification of salmonids per 100m<sup>2</sup>

absent very poor poor moderate good excellent

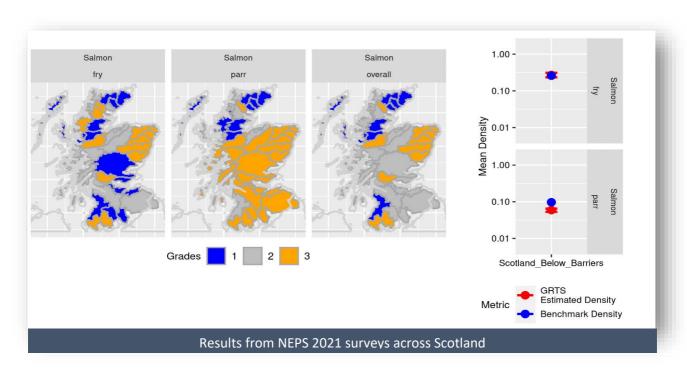


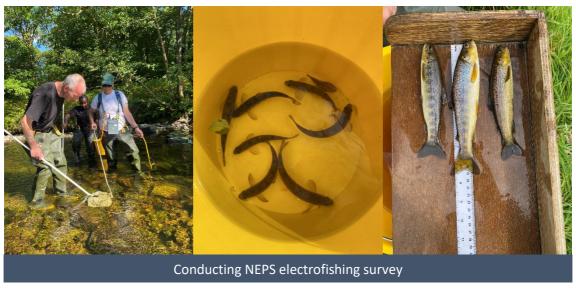
### SCIENTIFIC RESEARCH AND MONITORING

### **National Electrofishing Programme Scotland 2023**

The Board and Trust undertook juvenile salmonid survey work as part of the Scottish Government's National Electrofishing Programme Scotland (NEPS) and conducted electrofishing surveys of 27 sites throughout the catchment. At each site water quality samples and genetic samples were also taken. The genetic samples will be analysed by the Marine Directorate to establish if escaped farmed salmon on the West Coast have bred with our native salmon and diluted the native genetics.

The results for the 2023 samples will be published in 2024 but we now have results from the previous three years of conducting NEPS available. The maps below show the gradings assigned in 2021 based on the observed number of salmon fry and parr captured during each year compared to the benchmark. It can be seen that salmon fry in 2021 were at the benchmark and accordingly a grade of 1 was assigned. Salmon parr densities were below the benchmark and a grade of 3 was assigned. These results are consistent with those gained during our annual surveys. Generally, across Scotland, parr densities were reduced on the benchmark with only a few rivers in the north-east of Scotland containing higher than predicted densities. From initial observations during the 2023 NEPS sampling programme, we would anticipate parr numbers being below the benchmark again. Full details of the results from 2018, 2019and 2021 can be seen found at the Scottish Government's NEPS shiny app.





### SCIENTIFIC RESEARCH AND MONITORING

### **Nith Smolt Tracking Project**

The Nith Trust and Board undertook a third year of salmon smolt tagging in the River Nith as part of the Nith Smolt Tracking Project (NSTP). The objective of the Nith Smolt Tracking Project (NSTP) was to tag and track the migration of salmon smolts down the River Nith to gain an understanding of the number of salmon that were being lost on that journey and try to identify any areas where large losses were occurring. Private funding enabled 50 salmon smolts to be trapped and tagged with acoustic tags in the Crawick Water. These smolts were then released to continue their journey downstream. Acoustic receivers were placed at strategic locations in the River Nith and recorded the tagged smolts as they passed, allowing the NCFT to determine the number of smolts that made it successfully through that section of river and how many successfully made it to the estuary. An additional eight in-river receivers meant that we could cover shorter sections of river during 2023.

### **West Coast Salmon Smolt Tracking Project**

The Nith Smolt Tracking Project ran alongside the third year of the Atlantic Salmon Trust's West Coast Salmon Smolt Tracking Project (WCSSTP), an ambitious project to track salmon smolts from rivers on the west coast of Scotland, to follow their migration in the marine environment. As part of WCSSTP project 75 smolts were tagged with acoustic tags by NDSFB and NCFT staff on the main stem of the River Nith and their journey was tracked down 22km of the lower River Nith and then out into the Irish Sea. As a combined result of these two projects, a total of 130 salmon smolts were tagged and tracked up the west coast of Scotland in 2023. The Atlantic Salmon Trust is currently analysing the data from these smolt tagging projects and the results will be published shortly.



Table: Salmon smolts tracked as part of the Nith Smolt Tracking Project 2021-2023

					Average	
		Number	Mean mass	Mean length	migration time	% detected at
Year	River	tagged	(g)	(mm)	in river (days)	Kingholm Quay
2021	Crawick/Mennock	50	26.8	138.1	17.78	48.%
2022	Scaur	75	27.7	139.5	10.98	57%
2023	Crawick	48	28.0	140.1	-	56%



### **STOCKING**

### **Nith District Salmon Fishery Board Hatchery Operations**

As can be seen on the Board's website, the Board has for many years operated a hatchery for salmon and sea trout ova. In 2023, 30,000 salmon and sea trout were reared in the Board's hatchery.

### Hatcheries and the Law

The Marine Directorate of the Scottish Government and Fishery Biologists now take the informed scientific view that hatchery operations are biologically unsound and potentially damaging in that they could corrupt the indigenous genetic strain of wild breeding salmon in Scottish rivers.

The Marine Directorate controls rigorously the ability of anybody to stock fish into any river or loch throughout Scotland. (see Introduction of freshwater fish and ova: forms and guidance - gov.scot (www.gov.scot)

It is now illegal to stock hatchery reared salmon into a river system without licences issued by The Marine Directorate. These are issued to suitably qualified persons or bodies (usually the local District Salmon Fishery Board or Fishery Trust), but only in certain very limited circumstances and only if rigorous controls and monitoring criteria are applied.

Currently, the Nith Board must apply to The Marine Directorate for and have issued to it what might be described as a "Capture" of broodstock licence and a "Planting Out" licence for the resulting alevins and fry. The application process is detailed and complex and must have produced with it mapping with grid references for both capture of brood stock and planting of resulting juvenile salmon.

### **Current Hatchery Operations**

Regarding the current hatchery operations operated by the Board, the licences that the Board has obtained from The Marine Directorate to run the hatchery relate to compensatory stocking of juvenile salmon as a consequence of the loss of spawning watercourses resulting from open cast coal mine working in the upper reaches of the Nith catchment. The alevins/fry are restocked into depleted areas (the mining sites) as close as possible to the source from where captured brood stock was taken to supply the ova ultimately resulting in the alevins/fry. The licences have a limited life and are due to expire in 2025.

### The position on Atlantic salmon stocks nationally and internationally.

It has been recognised both nationally and internationally that salmon numbers returning to their native rivers have been reducing in numbers.

In January 2022 the Scottish Government announced its Wild Salmon Strategy. Rural Affairs Secretary Mairi Gougeon stated that "there is significant evidence showing that populations of Atlantic salmon are at crisis point and we must invigorate our collective efforts to ensure a positive future for the species".

On 11 December 2023 the International Union for Conservation of Nature (IUCN) released a listing statement to the effect that Atlantic salmon have been reclassified from 'Least Concern' to 'Endangered' in Great Britain (as a result of a 30-50% decline in British populations since 2006 and 50-80% projected between 2010-2025), and from 'Least Concern' to 'Near Threatened' in terms of global populations (as a result of global populations declines of 23% since 2006)

https://fms.scot/iucn-classifies-atlantic-salmon-in-great-britain-as-endangered/

### **STOCKING**

### The Board, its Functions and Duties

The Board performs its duties under Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003 and related legislation to the best of its abilities. It employs fully qualified staff who continually update themselves on and put into practice best practice for the management of the salmon fishery.

Freshwater Fisheries Management is currently undergoing development and change at the direction of Scottish Government, through the Marine Directorate.

Under the present salmon fisheries legislation, the Board is empowered to deal only with salmon and sea trout, although in line with evolving modern best fisheries management practice, the Nith Board and the Nith Fishery Trust embrace a "whole of river all species approach" to fisheries management.

This is a management approach that both Board and Trust have adopted and evolved over a number of years, but it has recently become necessary for the Board and the Trust to develop a more cohesive integrated strategy for all species management arising from the recent publication of Scottish Government's Salmon Strategy and Biodiversity Initiatives. The Board and Trust (in common with other Boards and Trusts throughout Scotland) are currently developing a Fishery Management Plan on a Scottish Government approved template, to cover the whole of the Nith Catchment. This plan will include provision for future consideration of the Board's salmon hatchery operations, if it is considered necessary and permissible to continue to operate the Board's hatchery.

### **Summary and Conclusions**

- a) The Board operates a hatchery for the hatching of salmon ova under Licenses issued by The Marine Directorate for the specific purpose of compensatory stocking of juvenile salmon into watercourses near to the sites of former open cast coal mining sites due to recognised depletion of breeding success because of Open Cast Coal Operations.
- b) The informed scientific view currently is that hatchery operations are biologically unsound and potentially damaging in that they could corrupt the indigenous genetic strain of wild breeding salmon in Scottish rivers. This position is endorsed by The Marine Directorate of Scottish Government. Fishery Boards and Trusts have no choice but to accept the position.
- c) By reason of The Marine Directorate Licencing system for hatcheries and the belief of many qualified fisheries scientists that the stocking of salmon into watercourses is damaging, the days of operating a salmon hatchery on any river simply to try to boost numbers of returning salmon are gone.
- d) Any hatchery that operates in Scotland now must operate for a specific environmental purpose and carry a licence issued by The Marine Directorate. In fact, there are very few hatcheries that now operate in Scotland as a result of the requirement to hold a licence to stock fish into rivers and lochs.
- e) Salmon as a species are now recognised by Governments and IUCN as being in crisis and 'Endangered' and Near Threatened' in terms of global populations (as a result of global populations declines of 23% since 2006).
- f) The Board members are elected representatives of salmon angling fishery owners and anglers and commercial salmon net owners and tenant haaf netters. As such, Board members have a vested interest in doing all that can legally be done to preserve, protect and enhance the salmon and sea trout fisheries that they are elected to protect. Salmon and sea trout are a critical component of the ecology of the Nith river system.
- g) The revenue generated from legal methods of salmon fishing both directly from the issue of fishing permits and to the local economy and the value of the salmon fisheries are adversely affected by the decline in the numbers of salmon and sea trout.
- h) Consequently there is no benefit to anybody who has an interest in owning or exercising the right to fish for and take salmon (including all Board members) in failing to practice or exercise the best possible means of trying to ensure that salmon and sea trout numbers in the river are maximised.

### **STOCKING**

The Board is fully conscious of the concerns about salmon being in crisis and endangered. The Board will continue to adopt best informed practice in striving to achieve its statutory duties to

"do such acts, execute such works and incur such expenses as may appear to them expedient for—

- a) the protection or improvement of the fisheries within their district;
- b) the increase of salmon; or
- c) the stocking of the waters of the district with salmon."

per s. 45 of the Salmon and Freshwater Fisheries (Consolidation) (Scotland) Act 2003
This includes the carefully managed legally permitted operation of salmon hatcheries, if there is sound scientific justification for hatchery operations.



Clockwise from top left: Salmon eggs fertilised (late autumn), Incubating ova (winter), unfed fry in spring, fry being stocked into the Dalgig Burn (spring).

### **WORKING WITH INDUSTRY**

### Railway Infrastructure

During 2023 The Board and Trust were involved with a number of railway contractors working on the Kilmarnock - Carlise railway. An extensive maintenance schedule was being undertaken which involved many of the bridges and culverts which convey water from one side of the railway to the NDSFB responds initially to a Controlled Activities Licence to the Scottish Environment Protection Agency (SEPA) and provides specialist fisheries protection input to any project. contractor then engages our fisheries staff to conduct fish rescues and invasive species mitigation works. These are good opportunities to interact with the construction sector about the sensitivities of the aquatic environment and fish habitats.

### **Wind Farm Developments**

The wind farming industry is evident for all to see throughout the Nith catchment. This industry interacts with our fishery staff in number of ways. The Board and Trust are consulted at the planning stage of any wind farm where we provide written submissions. We also conduct aquatic surveys to appraise the developers about the current status of the water environment in the vicinity of their wind farm. These surveys are repeated during the construction phase and post construction thus an overall impact assessment can be made.

Coupled to the wind farming industry is the energy network which is used to convey the power from the wind farm to a substation for onward transmission. This requires that a system of very heavy cabling is laid in the ground and inevitably the cable route has to traverse watercourses. The Board and Trust staff are engaged at key times during these projects. They are consulted at the planning stage, then again to agree a suitable time during the year in order that the construction project does not adversely impact on fish or breach the law. They often perform fish rescues to remove fish to a place of safety prior to invasive construction procedures. Finally, our staff conduct aquatic surveys to check that those species known to be present before the project commenced are still present after the event.

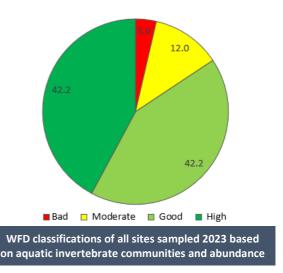


### **WATER QUALITY**

### Surveying for aquatic invertebrates

Aquatic invertebrate surveys have proven to be a valuable addition to the surveys conducted by our staff throughout the catchment. These surveys are done alongside traditional fish surveys conducted routinely to measure the impacts of construction activity in or near to watercourses. Fish give a long-term measure of environmental impacts. Aquatic invertebrate communities can indicate a more immediate measure of water quality.

This year our fisheries staff took 104 aquatic invertebrate samples from various locations throughout the Nith catchment. Harvesting aquatic samples is a relatively quick process. A three-minute kick sample is followed by decanting the sample from a survey net and fixing it in 90% denatured ethanol. The sample is then transported back to our laboratory for future analysis. During the analysis, the biologist takes the time to identify all aquatic species in the sample using a low powered microscope. Two members of staff are now accredited in Freshwater Aquatic Invertebrate Identification and one member of staff is trained in using River Invertebrate Classification Tool which compares the types of invertebrates found to be present against the types of invertebrates predicted to be present in those watercourses. This enables the watercourse to be classified in line with Water Framework Directive classifications. The analysis can take hours and is



laborious. The biologists require regular breaks from this work as it can be eye straining looking at samples down a microscope for hours at a time.

In 2023, a total of 83 sites were surveyed and the results were analysed to determine their classification category. Over 80% of the sites have "Good" to "High" classification status, 12% were "Moderate" while 3.6% were classified as "Bad". The lower classifications have been linked to degraded water quality and the presence of peat silt on the substrate at those sites.

In addition to the 83 sites sampled in relation to construction activities, invertebrate samples were also taken at the 11 annual sentinel sites electrofished for yearly comparisons. The results show that healthy populations of aquatic invertebrates are present at all the sites surveyed. Most of the sites surveyed gained classifications of "High" ecological status.

Aquatic invertebrate	reculte for	olovon annus	al continul citae
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Watercourse	Site code	Location	WHPT ASPT Abunb. *	NTAXA	WFD Classification
River Nith	Nith001	Downstream of Nith Lodge, New	6.98	22	
		Cumnock			High
River Nith	Nith008	Upstream of Boig Road Bridge,			
		New Cumnock	5.52	17	Moderate
River Nith	Nith027	Upstream of Guildhall Bridge,	6.84	19	
		Kirkconnel	0.04	15	High
River Nith	Nith010	At <u>Auldgirth</u> New Bridge	7.51	15	Good
Afton Water	Aftn001	Upstream of Blackcraig Bridge	7.07	18	High
Craig Burn	Aftn0062	Upstream from confluence with			
		Afton Water	6.99	15	High
Crawick Water	Craw001	Downstream of Spango Bridge	7.73	15	High
Mennock Water	Menn001	Upstream of confluence with			
		Glenim Burn	7.18	17	High
Scaur Water	Scar001	Downstream or Bridge at			
		Glenwhargen	6.45	20	Good
Cample Water	Camp001	Downstream of bridge at Kirkbog			
		Farm	7.25	17	High
Dalwhat Water	Dlwt001	Upstream of <u>Bailwood</u> Plantation	7.09	18	High

<sup>\*</sup> WHPT ASPT abund – abundance-related WHPT Average Score Per Taxa

### WFD Five Stage Classification System

with the stage classification system	
High Ecological Status	No or minimal change from natural condition
Good Ecological Status	Slight change from natural condition
Moderate Ecological Status	Moderate change from natural condition
Poor Ecological Status	Major change from natural condition
Bad Ecological Status	Severe change from natural condition

### **WATER QUALITY**

### Pollution incidents

Whilst undertaking their everyday tasks, fisheries staff are always alert to potential sources of pollution which could impact on the water quality within the Nith catchment. The most common causes of pollution within the Nith catchment are from:

- the discharge of raw sewage during periods of heavy rain when outdated Scottish Water sewage systems are unable to cope.
- runoff from silage effluent where storage facilities are inundated with surface water.
- the application of slurry at inappropriate times i.e. prior to heavy rainfall.
- raw sewage entering watercourses from malfunction private septic tanks.
- forestry extraction resulting in sediment loaded run off.
- insufficient water management infrastructure during construction activities.

Any incidents that are detected are reported to SEPA and we would encourage any members of the public to report these incidents directly to **SEPA's Pollution Hotline - 0800 807 060.** 

During 2023, the NDSFB reported eight incidents of pollution to SEPA.

### Long term monitoring of water quality

During 2023, the Nith Board and Trust were approached by Professor Michael Muir from the University of Glasgow who was conducting research into the water quality within the mainstem Nith and Cairn and how levels of pollutants fluctuate seasonally. This is very important work and will help gain an understanding of how water quality in the Nith is changing and help to identify sources of pollution. We have supported Professor Muir with his research and hope to work with him in the future.

In addition to projects such as the above, we are developing water quality monitoring strategies and plan to purchase water quality testing equipment. This will enable water samples to be taken at set locations throughout the catchment and identify areas where water quality is below normal levels. It is vital to understand how water quality is changing, especially as rising water temperatures can worsen the toxic influence of pollutants such as nitrate and phosphate on salmonid species of fish.

### **ILLEGAL EXPLOITATION**

### **Enforcement**

Despite the decrease in poaching activity within the Nith catchment the NDSFB Water Bailiffs continue to patrol the areas where fish build up during specific times of the year. For example, during drought events fish come into the estuary of the river and often ascend the Caul in Dumfries then spend days building up in the lower sections of the Burgh beat. These make an

attractive target for any poachers as they are often highly visible. At the other end of the catchment, in the higher reaches of the spawning tributaries, fish trying to spawn in shallow streams can prove tempting to poachers. Policing the catchment for this criminal activity often involves working at night.

During this period when salmon are classified as "endangered" there is increased regulation, conservation rules and codes it is our fishery enforcement presence on the riverbank which ensures that any conservation regulations are adhered to. Fishery regulations are no different from any other regulations in that "regulation without enforcement does not work". To ensure that fish poaching crime continues to maintain a high profile with Police Scotland and other agencies the Fishery Director sits on the Dumfries & Galloway Partnership Against Wildlife Crime (DGPARC).



### **CLIMATE CHANGE AND HABITAT RESTORATION**

### **Extreme E Legacy Project**

The Board and Trust were involved in an exciting project when the electric rally car racing series, Extreme E, held the UK leg of the world tour, in Nithsdale. Extreme E held the race in the former surface coal mine at Glenmuckloch which is being developed into a Pump Storage Hydro site. Extreme E race at different venues around the world and support an environmental "legacy" project at each location. When they were in Scotland in the River Nith catchment, they choose to support the Nith Catchment Fishery Trust's Crawick habitat enhancement project.

As part of the Legacy Project, we received funding to establish over 4 hectares of riparian woodland along the banks of the Crawick Water, build a native tree nursery and purchase a drone to capture the progress of habitat restoration projects throughout the catchment. In the build up to the rally taking place at Glenmuckloch, we hosted two days for the rally drivers, their teams and partners to come and see the legacy project on the Crawick Water and learn about the impact that climate change is having on rivers and the wildlife that depend on them. The Nith fisheries management team clad them in waders and took them electrofishing and planting trees. They may be fast in a rally car but keeping their feet on slippery rocks proved testing. Some proved very worthy with the sample net and all enjoyed experiencing a brief insight into the work of a Fishery Manager. This was a fun filled event which focused the attention of the worlds media on the environmental issue of salmon in crisis.



Clockwise from top left: Extreme X Legacy project on the Crawick Water; Kevin Hansen, driver for Veloce, planting trees with pupils from Kelloholm Primary school; Nith DSFB joined the Extreme E scientific panel and gave a presentation on salmon conservation; Jim with Carl from Carl Cox Motor Sport.

### **CLIMATE CHANGE AND HABITAT RESTORATION**

### **Keeping Cool in the Nith**

Rising water temperatures, driven by climate change, pose significant challenges to the river ecosystem, affecting both individual species and overall ecosystem functioning. Atlantic salmon are particularly vulnerable to warming rivers which have consequences on their migration, growth and survival. Water temperatures in many rivers in Scotland including the Nith are exceeding the upper thermal tolerance limit for salmonids.

As part of the efforts to mitigate the effects of increasing water temperature and protect the river, the river Nith

fisheries team embarked on habitat improvement schemes which include riparian tree planting. Trees that provide shade create a natural cooling effect along riverbanks. This shade helps prevent water from warming up excessively. Beyond temperature regulation, riverside trees perform other essential functions including stabilising riverbanks against erosion and provision of habitat for various aquatic organisms. They offer shelter, nesting sites, and food sources, contributing to overall ecosystem health.

Tree planting on the Nith has been a management strategy adopted for many years as evidenced by some already established riparian woodland on some parts of the catchment. However, we have not been able to quantify the benefits of the trees on temperature reduction and compare water temperatures between shaded and unshaded parts of the river.

As part of the Extreme E Legacy project, Vodafone Business sponsored the Nith Board and Trust by providing 30 temperature logging devices. These loggers will facilitate temperature monitoring in the Nith catchment and allow us to compare ambient, river and woodland temperatures. These devices send real-time temperature data to the cloud. This data is then analysed using



sophisticated data analysis software to enable long- and short-term trends in air and water temperature to be detected. We are also able to pre-set temperature thresholds and receive alerts when devices pick up temperatures exceeding these thresholds. Throughout the year of 2023, we have installed these devices and have been testing them along with project developers and data analysts from Vodafone Business. These devices will be fully operational during 2024 and should provide us with insights into water temperatures throughout the catchment and identify areas that would benefit from riparian woodland creation.



### **CLIMATE CHANGE AND HABITAT RESTORATION**

### **Habitat Restoration Options Appraisal**

Many of the watercourses within the Nith catchment have been modified historically and large stretches of the mainstem Nith and its tributaries have been disconnected from their natural floodplains by revetments to prevent farmland and homes from being flooded. Land management practices in the upper tributaries, where areas of peatland were historically drained and/or ploughed to allow for grazing to take place, has resulted in a degraded landscape. The resulting presence of livestock has meant that riparian areas have been denuded of native trees and scrub resulting in a loss of bank stability and valuable shading next to rivers. These land management practices have combined to increase the flow of water from the land, taking with it valuable nutrients and sediments, and further increasing flooding events down catchment. Overall, the natural processes of the rivers in the Nith catchment have been altered resulting in a reduction in the diversity of habitats and flora/fauna.

In 2022, the Trust applied for and was granted funding through NatureScot's Nature Restoration Fund to develop restoration options on three watercourses within the Nith catchment. These watercourses are the Crawick Water near Sanquhar, the Laggan Burn near Dunscore and the Pennyland/Lakes Burn near Kirkton. In early 2023, consultants from Royal Haskoning conducted walkover feasibility studies to assess potential restorations options to improve instream and riparian fish habitat and increase biodiversity. The following pressures were identified on these watercourses: erosion of riverbanks and widening of riverbeds, heavy historic modification to lowland tributaries through dredging, canalisation, reducing the overall length and natural function of the watercourse, build-up of silt and lack of suitable substrate due to historic dredging and canalisation, degradation of riparian habitat and connectivity with the natural floodplain; lack of instream habitat for juvenile salmonids and the presence of invasive non-native species.

An options appraisal was then conducted and the following proposed actions were identified:

- Installation of leaky dams on side tributaries to slow water flows on the Crawick Water.
- Reprofiling of banks and use of green engineering to protect banks in specific locations on the Crawick Water.
- Fencing and planting of the riparian zones with native trees to enable future bank stability and shading of the water on all tributaries.
- Creation of upland wetland areas to slow down high flow events and reduce the severity of runoff downstream on the Crawick Water and Laggan Burn.
- Re-connect the watercourse with its natural flood plain in sections that would not cause loss of high value farmland on the Laggan and Pennyland Burn.
- Re-meandering and re-alignment of canalised sections of the watercourse to restore them to their former state and riverine processes on the Laggan and Pennyland Burns.
- Easement of redundant manmade barrier on the Laggan and Pennyland Burns to allow for the passage of salmonids and other fish species.
- Comprehensive INNS control programme to prevent colonisation of recently engineered riverbanks and help to protect native biodiversity.

The next stage in this project, having identified some of the issues, is to acquire funds to enable the works required to be conducted.



### **BIOSECURITY**

### **Giant Hogweed**

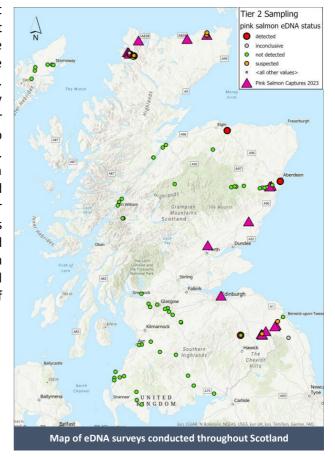
All Giant hogweed plants in the Nith catchment are treated on an annual basis, twice throughout the year. The initial treatment takes place in mid-spring when the fresh green growth of the Giant hogweed is clearly visible. We encourage anglers and river users to report in any sightings of Giant hogweed in order that we can ensure that they are treated. An inspection of the known areas where Giant hogweed traditionally grows, takes place in early summer when any flowering plants are clearly visible above the riparian vegetation. At this time of the year, they can be treated prior to them shedding seed. If the plants shed seeds, these are viable for approximately 20 years.

## Giant hogweed plant being treated

### Pink salmon in Scotland

Pink salmon have been found in Scottish rivers over recent years. These are a non-native invasive species of salmon that originate from North America. They were introduced to the Baltic area as recreational fish and have subsequently made their way from the Baltic region and can now be found in U.K. Pink salmon have been reported by fishery managers in many Scottish rivers and in a bid to map their spread, Fisheries Management Scotland developed an app so that sightings or captures of these fish could be recorded. Due to the lifecycle of pink salmon they return to Scottish rivers to spawn every second year, so adults were expected to appear in Scottish waters in 2023. To gain a better understanding of the spread of pink salmon, Fisheries Management Scotland gained funding from the Marine Fund to conduct eDNA samples across Scotland's rivers. The Nith took four eDNA samples in the lower, mid and upper Nith and the Crawick Water. Pink salmon were not detected in any of the Nith samples.





### **American Signal Crayfish**

Nith Catchment Fishery Trust continues to monitor for the presence of American Signal Crayfish. Since they were initially found in the Lochfoot area, they have been identified in the lower Dumfries town section of the River Nith. Once crayfish are established in an area it is impossible to eradicate them. Therefore, preventing them spreading to other sections of the catchment is a priority.

Any sightings of crayfish should be reported to the Nith Fishery Trust. Please remember that it is illegal to trap or be in procession of crayfish and it is illegal to release them back into the wild if caught. If they are inadvertently caught, they must be killed immediately at site of capture.



### **EVENTS AND OUTREACH**

### Opening of the River Nith 2023 Salmon Fishing Season

The 2023 salmon fishing season on the Nith got off to a start on Saturday the 25th of February with a well-attended opening ceremony at Blackwood Estate. A cold but dry day saw the procession of attendees, led by piper Sandy Dunlop, walk from the sawmill yard at Blackwood down to the Partridge Pool on the banks of the Nith. Thomas Florey, ex-Chairman of the Nith District Salmon Fishery Board gave a short speech then offered a toast of whisky to the river then wished all present the very best of luck for the season ahead.

Claxton's whisky from the nearby Dalswinton bond had bottled a special bespoke Nith whisky for the occasion and a dram was enjoyed by many. Following the riverside ceremony the assembled crowd made their way back to the Fishery Board hatchery facilities and enjoyed refreshments. Some anglers took up the kind offer to fish the Blackwood beat for free for the opening day by kind permission of Richard Gladwin, Proprietor.



### **EVENTS AND OUTREACH**

### **Fishing Events on the Nith**

During 2023 the Nith held a free sea trout event over many of the most productive beats of the river. These events were run over four Friday evenings during the end of June and into July. In addition, a free open day for salmon fishing was organised. These events were intended to attract anglers to the river and enable them to experience the various beats and the fishing on offer, a "try before you buy" system. The events were attended by locals and visiting anglers alike and resulted in fish be captured on most occasions.

### **Colvend Gala Day**

The Nith Board and Trust value the opportunity to attend public events throughout the catchment to engage with the public and explain the work which is being conducted to protect salmon, sea trout and their habitats from the sea to the source of the River Nith.

One such event attended by the Board and Trust was at Colvend were we met many people from the coastal community that used to be involved in the stake net fishing industry which once flourished there.

### **Galloway Country Fair**

Galloway Country Fair provides us with the "shop window" to meet new people and renew acquaintances with colleagues we haven't seen for some time. It is an opportunity to discuss topical issues and explain theories. Young people are always interested in our display of fish.

### St. Josephs's College STEM Ambassador event

Trust staff attended at the STEM Ambassador event that they hold on an annual basis. This was the first time it had ran since Covid. Many different organisations and sectors attend the "speed-dating" like event where groups of S3 pupils are given a brief insight to the different occupations and career paths available to them.

### Wallace Hall Biology Sampling Day

To allow S3 pupils to develop biological sampling techniques, Wallace Hall Academy holds a Biology Sampling Day at Drumlanrig Castle where pit traps, quadrat surveys and pond dipping takes place. The Trust ran the pond dipping sessions as part of this day. Small groups of pupils joined us to explore life in the pond and learn how different species can indicate the health of the water environment. It was a fun day and was made even more exciting by the discovery of newts!











Clockwise from left: Wallace Hall pond dipping session; Colvend Gala Day; Inside the Fisheries tent at Drumlanrig Game Fair; Young Angler gets first cast at Galloway Country Fair; Attendance at St. Joseph's College STEM Ambassadors event.

### **EDUCATION**

### Fishing for the Future project

The Trust's well-established Fishing for the Future project delivered 22 education sessions to 214 young people, aged between 6 and 18. We engaged with Wallace Hall Primaries 5 and 7, Wallace Hall Academy, St. Joseph's College Rural Skills and Kelloholm Primary 5 as part of the Fishing for the Future school sessions. The format of these sessions was altered for the 2023 season so that schools would attend two full day sessions at Drumlanrig Estate. The first session covered the lifecycle of the salmon and practical surveying of the Marr Burn. The second session was a day to learn how to fish for rainbow trout at Slatehouse Loch. At the end of the fishing session, the pupils were taught how to turn their catch into a meal. A BBQ session followed and basic field culinary skills perfected. These sessions were very successful and the pupils gained a lot from them.

One of the aims of the Fishing for the Future project is to introduce young people to angling. In 2023, two angling taster days were delivered. Most of the participants had no previous fishing experience so the aim of the day was to introduce them to different methods of fishing and to get them hooked on angling by catching a fish.

Five Nith Young Anglers Club fishing days took place and members, along with their families, had the opportunity to go fishing for trout, grayling, perch and salmon. The Fishing for the Future project is funded by The Holywood Trust and the Misses Robinsons Charitable Trust and we would like to thank them for their continued support without which this project would not be possible.



From left: A wet but cheerful Rural Skill class from St. Joseph's College; Primary 7 pupils from Wallace Hall Primary learning how to prepare and cook a rainbow trout; Large perch caught on an Angling Day at Slatehouse Loch, Drumlanrig; Young anglers with their first catch; pupils releasing fish caught during an electrofishing survey.

### **WORK EXPEREINCE**

### **Internships**

The Trust took on two interns during 2023. Jocelyn Wong, a graduate student with the University of Glasgow, Dumfries Campus, undertook a three-month internship with us as part of her Masters in Environmental Risk Management. Whilst Jocelyn was with us, she analysed salmon smolt tracking data, assisted with the summer surveying and helped to install temperature monitors throughout the catchment.

NatureScot, Graduate Career Advantage Scotland and Fisheries Management Scotland ran a graduate placement scheme to support graduates in gaining experience and skills in river restoration for 6 months. NCFT took on one of the graduates that applied to the scheme, and they worked with the Trust for six months to gain skills and experience. Shalom Oyenekan was successful in gaining a place with the Nith and quickly became a valued member of the team, assisting with all aspects of fisheries work but particularly with aquatic invertebrate identification.

Shalom's account of her time with the Nith Catchment Fishery Trust:

My name is Shalom Oyenekan and I joined the Nith Catchment Fishery Trust (NCFT) as a Fisheries Intern in April 2023. I am from Nigeria, and I have a BSc in Aquaculture and Fisheries Management from the University of Ibadan, Nigeria. I moved to Scotland in September 2021 to undergo a Masters Programme in Applied Marine and Fisheries Ecology at the University of Aberdeen.

My internship period was packed with exciting experiences, and I am lucky to have acquired invaluable skills. I joined the team just at the beginning of the Smolt tracking project. We were out



putting receivers at different locations in the catchment, followed by the installation of smolt traps. Then the smolt tagging period started which involved placing tiny tags in smolts that allows us to track their locations as they make their way to sea.

We then moved on to planting trees as part of efforts to protect our rivers against climate change effects. I have learnt the important functions that these trees perform for the rivers including providing shade and stabilising riverbanks. Tree planting remains a priority for the Nith District Salmon Fishery Board (NDSFB) and Trust and it is a continuous initiative.

I was involved in the control of invasive non-native species. Invasive non-native species are animals or plants that have been introduced to a new location by human activity, either intentionally or accidentally. I have learnt to identify some of them present in the Nith Catchment including Japanese knotweed, Giant hogweed, American mink and American signal crayfish.

Last year we had an extended period of carrying out fish monitoring surveys. I had training on Electrofishing and also developed fish identification skills. I was able to join the team for The National Electrofishing Programme for Scotland which was aimed at monitoring juvenile salmonid populations across Scotland.

I attended an introductory course on Kick sampling for aquatic invertebrate survey and I have had experience collecting spring and summer invertebrates samples. I later went on to do a certification course on invertebrates identification which I believe is the most interesting qualification I have now. Through the winter, I have spent a lot of time analysing and identifying invertebrate samples.

I had an enjoyable experience working as an intern and I thank Graduate Career Advancement Scotland and NatureScot for organising the Working with Rivers Internship. Following the completion of the internship, I have progressed to working for the Board as an Assistant Fishery Biologist. All in all, it has been an exciting opportunity working for both the Board and the Trust.

### Supporters of the Nith

### **Allan Blyth**

The River Nith lost one of its most respected and knowledgeable anglers during 2023. Allan was a champion of the river and was often one of the first to catch a "springer" at the commencement of any new season. Allan wrote the Nith column for the Trout & Salmon magazine commenting on every beat of the river but his knowledge also extended to other Scottish rivers where he fished. We all miss Allans presence on the riverbank with his Labrador and his car travelling through the town with rod clamped ready for action! The Nith Trust was honoured to receive a cheque for £500 from Allan's wife, proceeds from a collection at his funeral. These funds have been allocated towards the Fishing for the Future project to encourage more young people to get into fishing.

The Board and Trust would like to express thanks to the following organisations and individuals for their support for the work that was conducted during 2023.







































and to Blackwood Estate, Misses Robinson's Charitable Trust, Mr Adam Keswick, Weatherall Trust, C & K Harvey, Lesley Blyth and all the people that donated fishing tackle to be passed onto new, up-coming anglers.

