



Water Environment Fund Annual Report to Scottish Government 2014 - 2015

1. Summary

- 1.1 This document reports the environmental improvements delivered by the funding provided by the Scottish Government and SEPA through the Water Environment Fund and pilot catchment project in 2014/15.
- 1.2 The Scottish Government granted £2,650,000 in 2014/15 for projects to improve the physical condition of Scotland's water environment. This was later supplemented by Scottish Government and by SEPA bringing the total funding to £2,754,987. This report describes the environmental improvements enabled by this funding through £2,473,306 grants to third parties by the Water Environment Fund and £281,681 to progress the pilot catchment project. .
- 1.3 Water Environment Fund grants enabled third parties to undertake
 - 1.3.1 Ground works to improve 1.5 km of urban water courses in East Tullos Burn in Aberdeen and Stane Gardens in Shotts, also bringing significant improvements to greenspace for local communities.
 - 1.3.2 Ground works to improve 3km of rural water courses on Allt a'Mharaidh on the River Feshie and Balmaleedy Burn in Aberdeenshire, improving one water body to good ecological status.
 - 1.3.3 Ground works to remove and/or ease four barriers to fish migration on the River Cowie, Culbernie, Loch of Skene and Waterton Loch, opening up 50km to fish and leading to one water body reaching good status.
 - 1.3.4 Scoping studies for identify opportunities to improve the Tollcross Burn (Glasgow) and Lyne Burn (Dunfermline) as part of wider projects to improve urban greenspace.
 - 1.3.5 Four scoping studies to improve engineered channels in rural areas at Insh Marshes, Aberarder on the River Nairn, the River Bervie in Aberdeenshire and the River Lunan in Angus.
 - 1.3.6 Five scoping studies to remove and/or ease over 20 barriers to fish migration on the River Avon, River Almond, Corrie Burn, Old Mill Burn (Tributary of the Tarff Water) and the Midlothian Esks, potentially opening up 275 km to migratory fish.
 - 1.3.7 Removal and control of bankside Invasive Non-Native Species (INNS) in 15 fishery trust areas across Scotland.

- 1.4 In addition to improvements to the physical condition of Scotland's water courses that help meet objectives of the Water Framework Directive, funded projects also brought about wider benefits to designated nature conservation sites, local fisheries and angling opportunities, community amenity and urban green space creation. The Water Environment Fund has played a significant role in leveraging in other funds to enable the delivery of a range of multiple benefits. Working in partnership with local authorities, landowners and managers, contractors and local communities a greater understanding of the benefits of improving the physical condition of Scotland's water environment is being built
- 1.5 The pilot catchment project continues to promote improvements to physical condition at a catchment scale and explore the synergies that can be gained by combining this with natural flood management. Over the last year, work has continued in the four catchments (Dee, South Esk, Nith and Glazert), taking identified projects through a stepwise process of landowner/land manager engagement and options appraisal/outline design. Two projects have reached the options appraisal stage and nine projects are at the detailed design stage. Taking these projects through detailed design and onto ground works over the 2015-16 financial year and beyond will result in significant improvements to the physical condition of 10 water bodies.

2. Introduction

- 2.1 Delivering improvements to the physical condition of the water environment is a key challenge in the delivery of the river basin management plans¹. The condition of the beds, banks and shores of 22% of Scotland's water bodies are not meeting good status or potential due to an historical legacy of pressures such as barriers to fish migration and engineering. The vast majority of these pressures fall out with the scope of current regulation. The primary delivery mechanism for required improvements is the provision of support and funding for voluntary improvements and working in partnership with others.
- 2.2 Since 2008, the Scottish Government has provided funding to deliver non-regulatory improvements through the Water Environment Fund. The Fund has progressively increased its grant funding to its current level of over £2.5 million in 2014/15. In order to be eligible, projects must help Scotland achieve river basin management planning by improvement the physical condition of the banks, bed and shores or removing barriers to fish migration.
- 2.3 SEPA administers the Water Environment Fund on behalf of Scottish Government. A team of eight work with applicants across Scotland to encourage and support eligible projects. Applications are subject to technical and external appraisal to determine whether funding should be awarded.
- 2.4 WEF was notified and approved by the European Commission under Article 14 and 29 of the Agricultural Block Exemption Regulations.
- 2.5 More detail on WEF funded projects can be found in section 3-6 below and the table in Annex 1. During 2014/15, funding was made available through WEF for all stages of improvement projects from scoping, feasibility and options appraisal to design and ground works. Approximately 21% of funding

¹ [Current condition and challenges for the future.](#)

was spent on the essential preparation of scoping and options appraisal and 67% on ground works. More detail can be found in the tables and pie charts in Annex 2.

- 2.6 Since 2012, the Scottish Government has provided funding for the pilot catchment project which aims to promote improvements to physical condition at a catchment scale and explore the synergies that could be gained by combining this with natural flood management. Over the last year significant progress has been made on essential preparation, including landowner engagement and options appraisal/outline design, which are necessary to enable a move forward towards on the ground environmental improvements. Importantly, this project is influencing how the second RBMPs are implemented at a catchment scale. More detail can be found in Section 7 below and the table in Annex 1.

3. Improving the physical condition of urban rivers

- 3.1 Urban projects are often associated with greater constraints and risks and are correspondingly more expensive. However, they also offer greater opportunities for wider local community benefits and, with strong partnerships, can bring together a variety of funding streams to implement an integrated approach to environmental improvements and community green space.

- 3.2 During 2014/15, £2,016,957.90 (approximately 82%) of WEF funding supported the restoration of urban rivers across Scotland.

3.2.1 Working within a partnership lead by Aberdeenshire Council, historical engineering pressures were removed to improve a 1km of the East Tullos Burn and associated green public space.

3.2.2 The Stane Gardens project in Shotts, North Lanarkshire, funded in 2013/14 and led by North Lanarkshire Council, is now in its construction phase of improving 500m of water course within an urban green space for the local community. This project was short listed for a Sustainable Urban Regeneration Forum award, recognising the community benefits restoration works can have in the urban environment.

3.2.3 Work to scope out environmental improvement and multiple benefits to the Tollcross Burn has begun. Led by Glasgow City Council, the first phase will focus, on the design and build of a section of the water course through Sandyhills Park (See case study A).

3.2.4 In partnership with Fife Council and Lothian & Fife Green Networks, the Lyne Burn project is scoping environmental improvements required across the Burn in part of Dunfermline and starting with the design and build of a section of the water course through Rex Park (See Case study A).

3.2.5 A scoping study identified 8 reaches for restoration on the Boghead Burn in Bathgate.

4. Improving the physical condition of rural rivers

- 4.1 During 2014/15 £171,546.04 (approximately 7%) of WEF funding supported projects restoring rural rivers. This type of project necessitates working closely with landowners and managers.

- 4.1.1 A 1.2km stretch of the Allt a'Mharaidh was restored as part of a forestry commission led partnership and linked with an associated peatland restoration scheme, improving the water body to good ecological status (See Case Study B).
- 4.1.2 A 1.5km stretch of the Balmaleedy Burn in Aberdeenshire was restored
- 4.1.3 The RSPB led a scoping study at Insh Marshes, looking to reduce the embankments along 7km of river and restore the natural functioning of the flood plain.
- 4.1.4 The Esk River and Fishery Trust were funded to lead a scoping study on the River Bervie, identifying potential sites for restoration and to gather morphology data on the River Lunan to support a scoping study.
- 4.1.5 In Aberarder on the River Nairn, an estate led project is looking to restore the natural functioning of 4km of the river, removing the historical engineering of the straightened perched channel.

5. Removing barriers to fish migration

- 5.1 During 2014/15 £278,804.24 (approximately 11%) of funding supported projects to remove, ease or provide fish passage on barriers to fish migration. Working in both urban and rural locations, most of these projects are part of a Scotland-wide programme of work being undertaken by the Rivers and Fishery Trusts.
 - 5.1.1 A fish pass was installed across the intake pool weir on the River Cowie by Stonehaven and District Angling Association, opening up 25km of river to fish.
 - 5.1.2 A RAFTS led project eased an impassable barrier to fish passage, opening up 10km of river to migratory fish and improving WFD classification from Poor to Good Status was undertaken on a bridge apron at Culburnie on the River Allt an Loin near Beauly, to ease what was an impassable barrier to fish passage. This opened up 10km of river and improved the water body from poor to good ecological status.
 - 5.1.3 Loch of Skene and Waterton Loch fish passes were successfully installed, opening up 15km to migratory fish
 - 5.1.4 A scoping study to secure fish passage across two barriers on the Avon Water in South Lanarkshire was undertaken. This project seeks to open up 35km of river to fish and improve the Avon Water to Good Status.
 - 5.1.5 An appraisal of options to secure fish passage at seven weirs along the River Almond, West Lothian was undertaken. This project has the potential to open up 30km of identified and surveyed spawning habitat and potentially over 100km of accessible river.
 - 5.1.6 A scoping study for enabling fish passage for approximately 7km past an unused structure was undertaken on the Corrie Burn in Moray.
 - 5.1.7 A study of the Creamery Weir on the Old Mill Burn near Twynholm identified full removal as the preferred option.
 - 5.1.8 Scoping studies of 13 barriers on the Midlothian Esk were undertaken with the potential to improve access for migratory fish

to over 130km of river, improve the ecological status of 15 water bodies in Midlothian (See Case Study C).

6. Control and eradication of riparian Invasive Non Native Plant Species (INNS)

- 6.1 This year the Water Environment Fund supported the River and Fisheries Trusts to eradicate and control bankside INNS in 14 fishery trust areas in Scotland with 121.5 hectares of control by spraying, pulling and cutting. Invasive Non Native Plant Species can have a negative impact on the water environment by out competing diverse native plants and shading fish spawning areas. The work, carried out through a pan-Scotland eradication project coordinated by the Rivers and Fishery Trust for Scotland, made a significant contribution to improving the riparian ecology of Scotland's rivers and also improved the understanding of the presence (and now absence) of these species. Further detail on work to eradicate INNPS is described in Case Study D. WEF also supported the Tweed Forum with INNPS control of Japanese Knotweed, Himalayan Balsam and Giant Hogweed across the Tweed catchment.

7. Improving physical condition alongside Natural Flood Management

- 7.1 During 2014/15 £281,681 was used to progress the pilot catchment project across 10 water bodies in four catchments; River Nith, River South Esk, River Dee and the Glazert Water. In addition, a fifth catchment, the River Leven, was added in order to test the learning obtained through the initial catchment-scale baseline studies that were undertaken in 2013-14.
- 7.7 Close working with landowners, land managers and wider catchment stakeholders has been an essential element to the development of these projects which will ultimately deliver significant environmental improvements to achieve our Water Framework Directive objectives. In 2014/15 the project achieved the following:
- 7.7.1 River Nith
- (i) Upper Nith: Options appraisal and outline design completed for Castle Mains; landowner engagement and options appraisal completed for a further 5km downstream of the Castle Mains site. Buy-in secured for detailed design for the two reaches. (See Case Study E)
 - (ii) Crichope Linn: Landowner engagement and options appraisal completed; agreement secured to proceed to design.
 - (iii) Laggan Burn: landowner engagement and options appraisal completed.
- 7.7.2 River South Esk
- (i) Melgund Burn: options appraisal completed and funding approved for Esk Rivers and Fisheries Trust to lead on design in 2015-16.
 - (ii) Lemno: landowner engagement and options appraisal completed.
- 7.7.3 River Dee
- (i) Bo Burn: options appraisal and follow-up landowner engagement completed; funding approved for Dee Fisheries Trust to lead on design in 2015-16.

- (ii) Leuchar Burn: landowner engagement completed
- (iii) Gormack Burn: landowner engagement completed
- (iv) Tarland: landowner engagement and options appraisal completed

7.7.4 Glazert Water

- (i) options appraisal and follow-up landowner engagement completed for Birdston
- (ii) contribution to the EcoCo Life+ project which will deliver improvements in the catchment up to 2018.

7.7.5 River Leven catchment

- (i) Catchment baseline study partially completed

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June 2015

Annex 1

Table 1: Detail of projects and environmental improvements supported by the Water Environment Fund in 2014/15

Project name	Applicant	Cost – Water Envir.t Fund contribution	Type – scope/design/ works	Summary of project/ environmental improvement
River Cowie	Stonehaven and District Angling Association	£4,230.00	Works – Fish Barriers	A fish pass was installed across the Intake Pool Weir on the River Cowie. This project opened up 25km of river to migratory fish. This project improved the WFD status from moderate to good. This project has completed.
Culburnie Bridge Apron	RAFTS	£15,488.70	Works – Fish Barriers	This RAFTS led project eased an impassable barrier to fish passage. This project opened up 10km of river to migratory fish. This project improved WFD classification from Poor to Good. This project has completed.
Dee Obstructions Phase 2	Dee Fishery Trust	£14,000.00	Works – Fish Barriers	Loch of Skene and Waterton Loch fish passes were successfully installed and completed in 2014. This project opened up 15km to migratory fish This project is not yet completed and will apply for further funding from WEF.
East Tullos Burn	Aberdeen City Council	£35,000.00	Works - Morphology Improvements	Physical improvement works to 1km of river c with associated wetlands. Delivering multiple benefits in an urban deprived setting, with improvements to, green space, urban diffuse pollution and morphology. The project improved the physical condition of 0.7km of river. This project was on an unclassified watercourse, so no change in WFD classification. This project has completed.
Allt a'Mharaidh	Forestry Commission Scotland	£2,000.00	Works – Morphology Improvements	This forestry commission led project was part of a wide partnership and linked with an associated peatland restoration scheme. This project improved the physical condition of 1.2km of river. It is expected that this will improve the classification from moderate to good. This project has completed.

Balmaleedy Burn	Aberdeenshire Council	£38,390.00	Works – Morphology Improvements	The project to improve the physical condition of this burn completed in 2014. A later flood caused some damage which Aberdeenshire council are to repair. The project improved the physical condition of 1.5km of river. This project has completed.
Rottal Burn	Esk Rivers and Fisheries Trust	£1,760.00	Works – Morphology Improvements	The physical works associated with the Rottal burn project completed in 2012. Monitoring of the efficacy of the works has been ongoing and the 1.2km of improvements to the physical condition showed morphological and ecological improvements. This project improved the WFD status for morphology from moderate to good. This project has completed.
East Ayrshire Bogs	East Ayrshire Coalfield Environment Initiative	£30,000.00	Other works	The second year of a three year project to make Peatland/Bog drainage improvements has been completed. WEF is no longer funding this type of improvement.
Migdale Track Repair	RAFTS	£98,351.37	Other works	Repairs were made to a damaged track and associated tree planting following removal of a weir on the River Evelix.
High Cree Liming	Galloway Fisheries Trust	£10,000.00	Other works	Liming was carried out to reduce acidification from forestry in the Galloway area. Monitoring data show this was successful as an interim measure until the impact of improved forestry management takes effect. WEF is no longer funding this type of improvement.
RAFTS Pan Scotland INNPS control	RAFTS	£132,138.66	INNPS control	RAFTS coordinated a pan- Scotland programme of control and eradication of Invasive Non Native Species across Fourteen Rivers and Fishery Trusts (Giant Hogweed, Himalayan Balsam and Japanese Knotweed) across 80 water bodies. This project has not yet completed and will apply for further funding from WEF.
Tweed INNPS control	Tweed Forum	£14,312.50	INNPS control	Control and eradication of Japanese Knotweed, Himalayan Balsam and Giant Hogweed across the Tweed catchment.
Avon Water Barriers	RAFTS	£55,757.90	Scoping – Fish Barriers	First stage in a project to secure fish passage across two barriers on the Avon Water in South Lanarkshire. Scoping works are substantially complete and appraisal of the various options is underway. This project will ultimately help improve the Avon Water to good status for fish passage and good status overall.

				This project has not completed and will apply for further funding from WEF.
Corrie Burn	RAFTS	£12,930.91	Scoping - Fish Barriers	This scoping project investigated the options for enabling fish passage for approximately 7km past an unused structure. The barrier is close to a retaining wall supporting a local road. Discussions are ongoing with Moray council, to agree a preferred way forward. This project has not yet completed and will apply for further funding from WEF.
Almond Barriers Optioneering	RAFTS	£150,000.00	Scoping - Fish Barriers	An options appraisal was undertaken of fish passage solutions at seven weirs along the River Almond, West Lothian. This project has not yet completed and will apply for further funding from WEF.
Creamery Weir	RAFTS	£12,109.73	Scoping - Fish Barriers	RAFTS are currently progressing with a project to ease fish passage across the Creamery Weir in Galloway. A scoping study was produced, identifying full removal as the preferred option. The project is not progressing to detailed design of the preferred option. This project has not yet completed and will apply for further funding from WEF.
Midlothian Esk barriers scoping	River Forth Fisheries Trust	£14,287.00	Scoping - Fish Barriers	Scoping studies are being undertaken on 11 barriers to migratory fish in the catchment. This project has not yet completed and will apply for further funding from WEF.
Lyne Burn	Fife Council	£850,000.00	Scoping & Works – Morphology Improvements	This project is in partnership with Fife Council and Lothian & Fife Green Networks. It will consider improvements across the whole water body while focusing, in this first phase, on design and build of one particular section of the water course through Rex Park. The project contributes to improvements to Green Networks being carried out by Fife Council. This project has not yet completed.
Tollcross Burn	Glasgow City Council	£900,000.00	Scoping & Works – Morphology Improvements	This project is in partnership with Glasgow City Council. It will consider improvements required across the water body whilst focusing in the first phase, on the design and build of a section of the water course through Sandyhills Park. This project has secured money from the Glasgow City Deal and also contributions from Scottish Water to help improve the sewer capacity in the area as part of the Metropolitan Glasgow Strategic Drainage Partnership. This project has not yet completed.

Insh Marshes	RSPB	£30,000.00	Scoping – Morphology Improvements	This RSPB led project is looking to reduce the embankments along 7km of river and improve the natural functioning of the flood plan. This project has not yet completed and will apply for further funding from WEF.
Aberarder, River Nairn	Aberarder Estate	£9,879.00	Scoping – Morphology Improvements	This estate led project is seeking to improve the natural functioning of 4km of the river, removing the historical engineering of the straightened perched channel. This will improve the classification by one class. This project has not yet completed and will apply for further funding from WEF.
Bervie Water Scope	Esk River and Fishery Trust	£6,014.70	Scoping - Morphology Improvements	The Esk River and Fishery Trust have led this project to identify the most degraded of the river and provide a focus for restoration measures. The scoping study has completed this year and the project is now moving to the design stage. This project has not yet completed and will apply for further funding from WEF.
Lunan Water Scope	Esk River and Fishery Trust	£10,456.00	Scoping - Morphology Improvements	The Trust surveyed morphological pressures in the catchment in order to support a scoping study. This project has not yet completed and will apply for further funding from WEF.
Boghead Burn	River Forth Fisheries Trust	£26,200.00	Scoping - Morphology Improvements	A scoping study was carried out and identified 8 reaches as opportunities for improving physical condition of the water course. . The top 2 priorities will be taken forward to design in 2015/16. This project has not yet completed and will apply for further funding from WEF.
Total (WEF projects)		£2,473,306.00		
Dee		£32,794.00	Pilot catchment project	Tarland landowner engagement and options appraisal Leuchar/Gormack landowner engagement
South Esk		£11,807.00		Lemno options appraisal

Nith		£101,249.00	Pilot catchment project	Crichope Linn landowner engagement and options appraisal Upper Nith landowner engagement and options appraisal, plus outline design for Castle Mains Laggan Burn landowner engagement and options appraisal*
Glazert		£36,580.00	Pilot catchment project	Landowner engagement, options appraisal and outline design for 1.5km reach EcoCo Life+ project
Leven		£99,251.00	Pilot catchment project	Catchment baseline study (partially completed)
Total (pilot catchment projects)		£281,681.00²		
Total		£2,754,987.00		

² Of this amount £7,391.08 will be claimed from Scottish Government in Q1 2015-16

Annex 2

Table and Pie Chart 1: Summary of funding of environmental improvements in 2014/15

Project type	Spend
Works - Morphology Improvements	£1,627,150
Works - Fish Barriers	£33,719
Scoping - Morphology Improvements	£282,550
Scoping - Fish Barriers	£245,086
INNPS Control	£146,451
Habitat Restoration	£30,000
Other works	£108,351
	£2,473,306

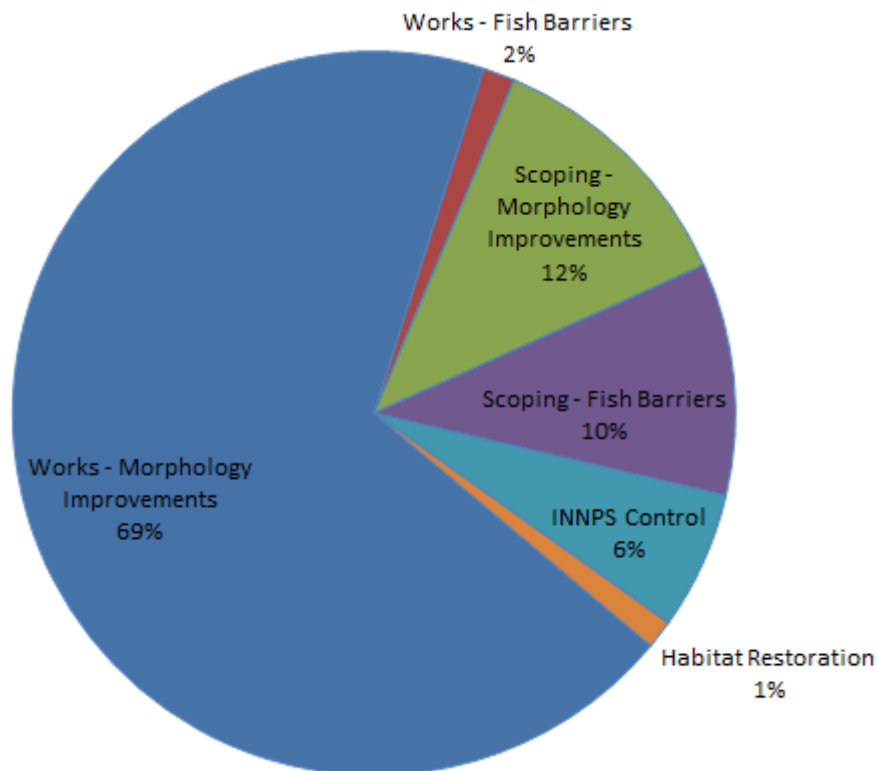
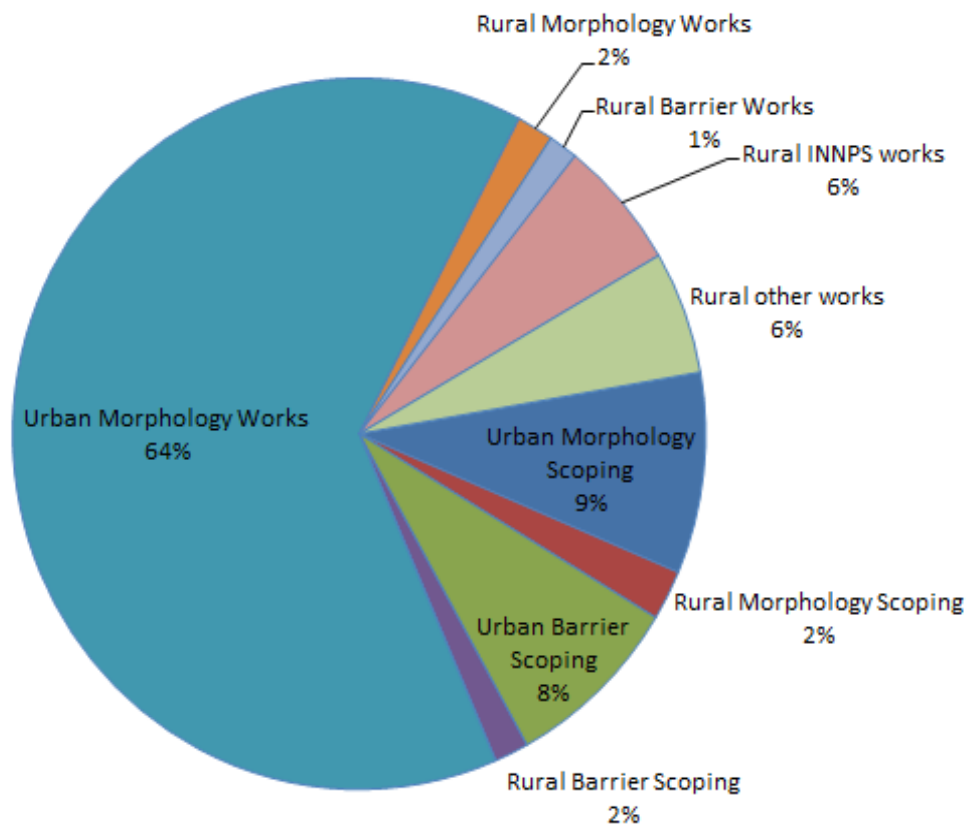


Table 2 and Pie Chart 2: Funding by urban/rural and type of project

Project type	Spend
Urban Morphology Scoping	£226,200
Rural Morphology Scoping	£56,350
Urban Barrier Scoping	£205,758
Rural Barrier Scoping	£39,328
Urban Morphology Works	£1,585,000
Rural Morphology Works	£42,150
Rural Barrier Works	£33,719
Rural INNPS works	£146,451
Rural other works	£138,351
	£2,473,306



Case Study A: Tollcross Burn and Lyne Burn

This case study describes two projects funded by the Water Environment Fund (WEF) to improve the physical condition of urban water courses together with improvements to green space for local communities; The Tollcross Burn project with Glasgow City Council and the Lyne Burn project with Fife Council.

Project aim

Both projects will:

- 1) study the entire water body to identify opportunities for improvements to the physical condition in an urban setting;
- 2) Design and undertake ground works that improve specific stretches and creating areas of positive open space for the local residents.

Project progress

For both projects the WEF case officer has worked closely over the last 16 months with the Local Authorities and other project partners to build projects that not only help achieve the aims of the Water Framework Directive and improve our understanding of improvement of Heavily Modified Water Bodies, but also contribute to other wider benefits, such as improvements to green networks and flood alleviation.

Tollcross Burn

The Tollcross Burn is located in the East of Glasgow between the M8 and the River Clyde. The water course runs through areas with varying degrees of social and economic deprivation with some areas in the top 5% of the most deprived areas in Scotland³. Throughout the majority of its length the Tollcross Burn is covered over or tightly constrained by surrounding urban development, with only limited areas of open water accessible local residents.

The main element of construction works in this first phase will be centred on Sandyhills Park; 400m of covered water course will be removed and replaced with 500m of open winding channel. This will contribute to the achievement of Good Ecological Potential on this water body.



Fig1: Vision of a restored Sandyhills Park

Wider benefits:

- Levers additional funds from the “City Deal” development funds recently secured by GCC to redevelop the park into an attractive area of open space;
- First ground works project to help deliver the aims of the Metropolitan Glasgow Strategic Drainage Partnership. This has levered funding and commitments from Scottish Water;
- Flagship project in GCC “Year of Green”

³Scottish Index of Multiple Deprivation 2012

Lyne Burn

The Lyne Burn runs from the north east of Dunfermline to its confluence with the Firth of Forth. The burn has been extensively covered over and straightened throughout much of its length. It has also been subject to alterations in order to provide flood defence to the surrounding communities.

For the first phase of works, construction will focus on daylighting and introducing a more natural river shape to almost 1km of culverted and straightened water course in Rex Park. This will contribute to achieving Good Ecological Potential on this water body.

Wider benefits:

- Contribute to the enhancement of green corridors within Dunfermline. This has attracted potential funding from the SNH “ERDF Green Infrastructure Programme” work that has been supported by SEPA;
- Establishment of cycling/walking routes between the centre of Dunfermline and its outlying areas using funding from Sustrans;
- Attracting “Employability” funding, helping people gain relevant experience while working with contractors on the project.

Both projects will include significant community engagement into the project design, not only to ensure that local stakeholders understand and are supportive of the work but that they take ownership of the improved green space once construction is complete.

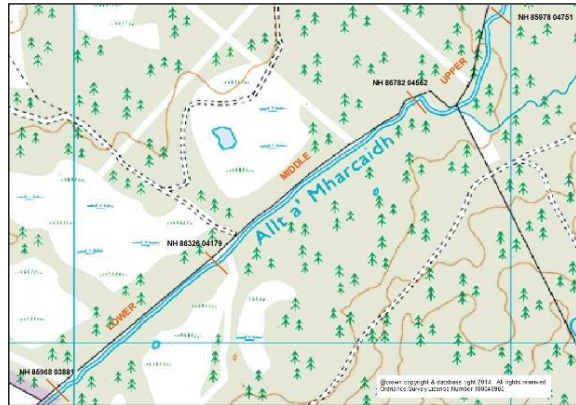
Case Study B: Allt A' Mharcaidh

Project aim

WEF worked with Forestry Commission Scotland to improve the physical condition of the Allt A'Mharcaidh (tributary of the River Feshie) an artificially straightened section of burn, using low cost techniques to kick start natural processes. This is leading to improved 'in river' conditions and improving the burn to a more naturally functioning system both morphologically and ecologically, improving the classification from moderate to good. The river improvement work was part of a larger multi partner project to restore the peatland at this sensitive protected site.

Project progress

The Allt A'Mharcaidh project lies within the Invereshie and Inshriach National Nature Reserve (NNR) on the north-western edge of the Cairngorm Mountains, 10km southwest of Aviemore close to the village of Kincaig. The works to improve channel morphology are one element of a larger project to improve the ecology of the Reserve.



Sections of embankments throughout the site have been lowered (predominately through flattening) and large woody debris has been judiciously placed in the channel. All these key pieces were secured in place through embedding root balls into the adjoining bank. Sediment sources have been exposed throughout the site. Since works completion there have been two significant flood events and all the key pieces remained in place.



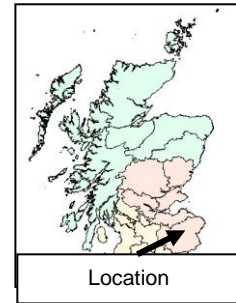
This forestry commission led project was a wide partnership (The Spey Catchment Initiative, SNH, Cairngorms National Park Authority, Diageo, Spey Fishery Board, Moray and Highland Councils and SEPA) and linked with an associated peat land restoration scheme. It improved 1.2km of the river. It is expected that this will improve the classification from moderate to good. WEF contributed £2,000 to the £55,000 project, which represents excellent value for money.



Case Study C: Midlothian Esks fish barriers

Project aims

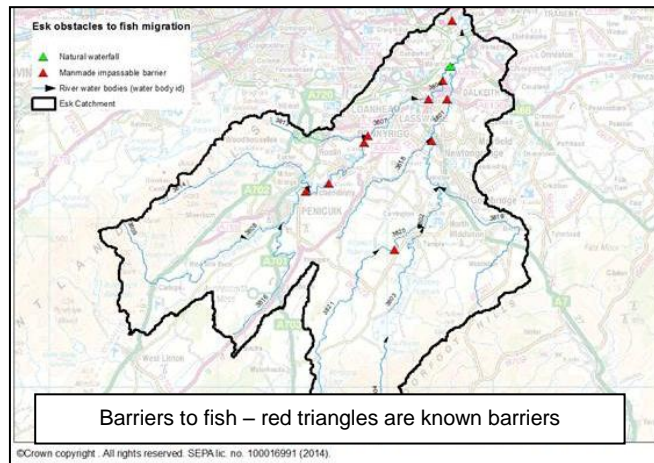
This WEF-funded project will improve the access for migratory fish (Salmon, Trout, Eels, Lamprey) over 130km of channel that is cut off by artificial barriers. This will improve the ecological status of 15 water bodies in Midlothian. The project will develop a cost-effective way of easing barriers, working strategically across a catchment and build the capacity of project partners to deliver improvements to physical condition – in this case the River Forth Fisheries Trust.



Project progress

The Trust initially walked the rivers the North and South Esk upstream of Musselburgh, surveying the 11 barriers known to SEPA and discovering two more. The Trust also mapped habitat quality and identified other issues including sources of diffuse pollution.

The Trust then commissioned a consultant to develop and compare options for easement at 13 barriers. This work will assess factors that will affect the cost of easement (location, structure etc); and the benefits from easement (area and quality of habitats upstream; social and amenity benefits).

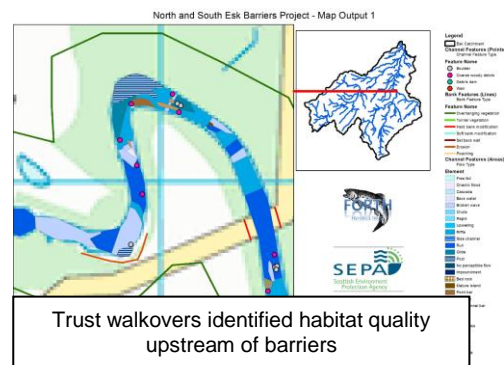


During the project the Trust have developed good working relationships with weir owners and other interested parties including Midlothian Council and local interest groups



such as the Friends of Roslin Glen. This is already proving extremely useful because it has allowed them to gain agreement to ease the two barriers that lie furthest downstream. The next phase is design of the preferred option to ease fish passage and a successful application for design funding has been made for the two lower-most barriers in Dalkeith, including the historic Montagu Bridge.

The final phase will be easement at each barrier. The Trust plan to manage such work at around two locations each year. They plan to apply for funding to do this between 2016 and 2021, by which time all the barriers are eased and 15 water bodies will see significant improvements in ecological quality, reflected in improved WFD classification.



Case Study D: Pan-Scotland Invasive Non-Native Plant Species Control Programme

Project aim:

This project, led by the Rivers and Fishery Trusts Scotland (RAFTS), aims to eradicate and control the spread of Invasive Non-Native Species (INNS) along river banks across Scotland. It is a multi-year project, supported by the water environment fund and also helps prevent the spread of these species between and within river catchments. The project focuses on the control and eradication of giant hogweed, Himalayan balsam and Japanese knotweed, all of which can cause erosion of riverbanks, out-compete native vegetation and have the ability to spread rapidly, either through water-borne seed dispersal or re-growth from plant fragments.

The project contributes to the implementation of the River Basin Management Plans which recognise the risks posed by INNS. The aim of this project is to make environmental improvements in those rivers which are affected by INNPS and where, in combination with other pressures on the physical condition, rivers have been impacted by their presence. The outcomes of the project will also help to prevent the spread of established populations of INNPS and contribute to preventing deterioration of water bodies.

Eradication of INNS can also contribute to the achievement of conservation targets for designated conservation areas as well as improving access and amenity value of the river banks.

Project progress

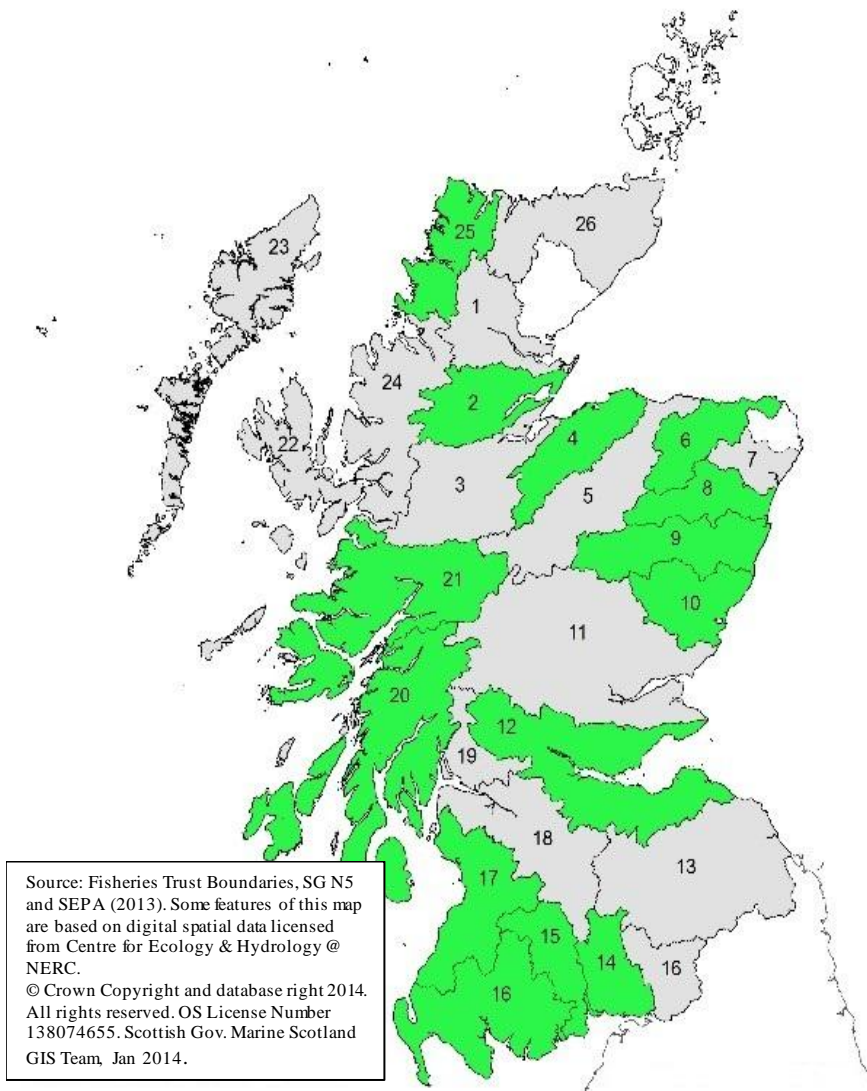
The project started in 2010 and is due for completion in 2016. During 2014-15, 1106km of river were surveyed for INNS on 109 river water bodies in 43 catchments by 14 Rivers and Fishery Trusts, with 121.5 hectares of control by spraying, pulling and cutting.

Various control measures have been implemented, such as hand-pulling or chemical treatment through spraying and stem-injection to inhibit growth and regrowth of non-native plant species.

The project has increased awareness of the impact of INNS and how they can be controlled across Scotland. It has demonstrate how eradication of INNS is possible on large scale and, by involving contractors and volunteers, has increased the experience and capacity for INNS management.

Total project costs for the year were £415,273 of which £132,138 was funded by SEPA through the Water Environment Fund. The remaining funding came through cash contributions from other sources or as in-kind contributions from individual fishery trusts.

Map 1
Fisheries Trusts areas involved in INNPS work

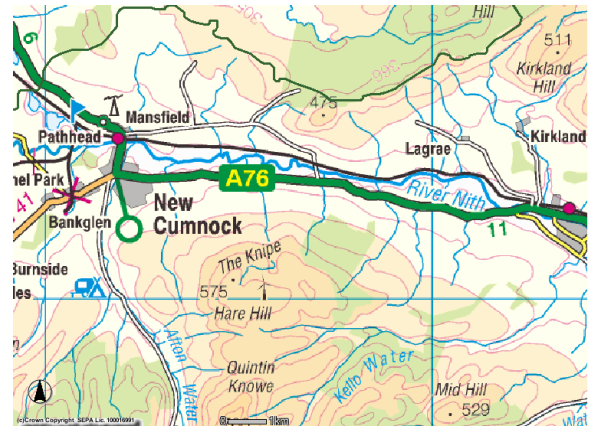


- 2– Cromarty Firth FT;
- 4 – Findhorn, Nairn & Lossie FT;
- 6 – Deveron, Bogie & Isla FT;
- 8 – River Don Trust;
- 9 – River Dee Trust;
- 10 – Esks Rivers FT;
- 12 – Forth FT;
- 14 – River Annan Trust;
- 15 – Nith Catchment FT;
- 16 – Galloway FT;
- 17 – Ayrshire Rivers Trust;
- 20 – Argyll FT;
- 21 – Lochaber FT;
- 25 – West Sutherland FT

Case study E: Pilot catchment project (Upper Nith)

Project background

In 2013, this 6km reach on the upper Nith was identified as the best morphological restoration and natural flood management opportunity in the Nith catchment. Restoration works here have the potential to improve the water body from poor to good status. These works would involve either removing or setting back the embankments for the full length of the reach.



Dramatic embankment failure caused by a 1 in 100 year flood event on 31st December 2013 caused the landowner at the top of the reach to approach SEPA to ask for help and advice.

SEPA were keen to work with the landowner to develop a long-term sustainable solution for the site to avoid the necessity for continual bank repairs and address the WFD pressure and provide localised NFM benefits.

Project progress

The initial engagement with one landowner has triggered interest across the whole 6km reach and has resulted in SEPA undertaking an options development and appraisal process for upper site at Castle Mains and subsequently the wider 6 km reach.

This project is ambitious. It involves 12 landowners and a long stretch of watercourse. However, the 9 main landowners have agreed to progress to detailed design.

In 2015, the River Nith District Salmon Fishery Board agreed to lead on the detailed design phase of the project. Design is due to be completed by April 2016.

Multiple benefits

In addition to the restoration and natural flood management benefits, further environmental benefits could potentially be achieved:

- European Protected Species – Whooper swans winter in the area and the extra floodplain habitat created by the works will benefit this species.
- Fisheries – improvements to bank side and instream habitats are likely to deliver improvements for spawning fish – Nith is regionally important as a salmon/sea trout fishery
- Water quality – likely benefits to water quality through enhanced floodplain area and better riparian management.