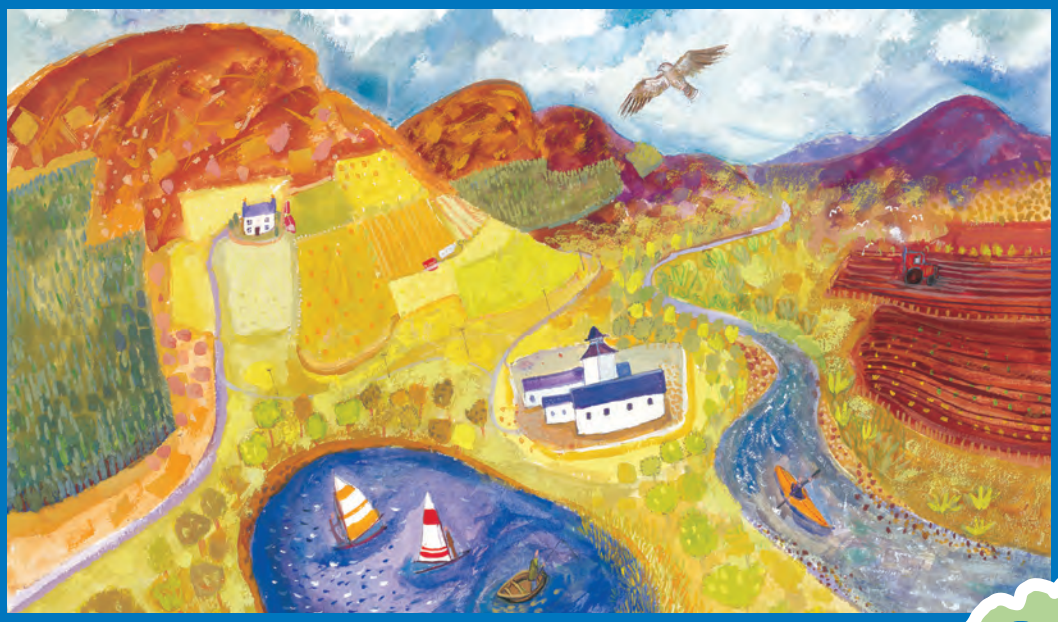


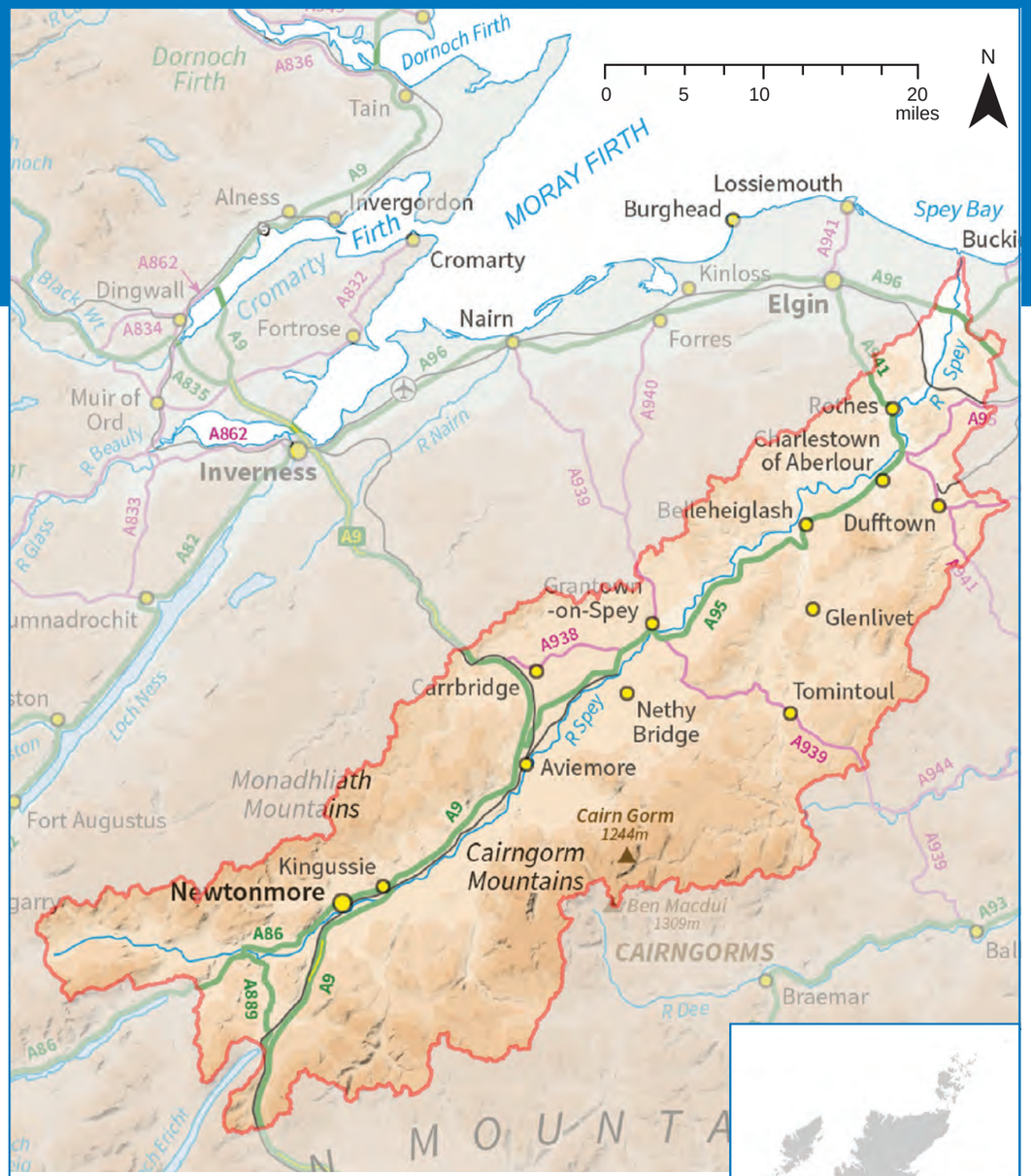
SPEY
CATCHMENT INITIATIVE

RIVER SPEY

CATCHMENT MANAGEMENT PLAN

November 2016

Map 1:
River Spey Catchment



Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Further details available at:
www.snh.gov.uk/publications-data-and-research/snhi-information-service/map/

Contents

WATER

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PEOPLE

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INDUSTRY

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NATURE

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Executive Summary

The Spey is one of Scotland's most iconic rivers, renowned for its purity and natural beauty. It is of national and international importance for its salmon rod fishery, whisky distilling industry and its wildlife. Nearly half of the Cairngorm National Park lies within the Spey catchment and the river's importance to the environment is recognised through its Special Area of Conservation status. In its upper reaches it also contributes significantly to the Nation's hydropower generation output.

Catchment Management Planning has become an established mechanism for developing a cohesive and holistic approach to large scale stewardship of the water environment. For the Spey catchment it offers a way of collating and summarising in one document the key issues, pressures and opportunities as they pertain to a geographic area as defined by the river network. By recognising the links between the health of a river and associated land use, it aims to enable all those with an interest in the river to communicate, liaise and work more effectively together.

Since the launch of the first Spey CMP in 2003, much has been achieved. The River Spey is in as good a state as it has ever been however there is no room for complacency. Increasing pressures on it as a resource must be tempered with safeguarding its special features and its quality. The need to increase resilience to safeguard against the predicted impacts of climate change, particularly the more extreme flood events, has never been greater. Legislation such as the Water Framework Directive and Flood Risk Act should be seen as opportunities for positive action which can be achieved through cooperation, collaboration and partnership working.

Having taken stock of progress to date (published as the River Spey Catchment Management Plan Review 2016 and available online at www.speyfisheryboard.com), a new plan for the Spey will focus action for the next 5 years and beyond and is presented in the following pages of this document. It sets out a strategic framework for the wise and sustainable use of the water resource and for the protection and enhancement of water quality and natural heritage for the public benefit.

With background information on and links to, the many interacting and interdependent issues associated with the river network, this plan lays out a series of desired objectives and actions for the next 5 years. It should be used to guide and develop the future work programmes of all those involved with the river's management and development, and is crucial in obtaining funding to deliver specific actions outlined within this management framework. The Plan highlights priorities for action with an emphasis on partnership working as a delivery mechanism.

This document which has been developed by the Spey Catchment Initiative Steering Group (SCISG) in no way overrides, takes precedence over, or prioritises any organisation's or individual's remit.

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Executive Summary

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Rather, it collates in one document the issues, drivers, pressures and aspirations from multiple sources as they apply specifically to the Spey Catchment. The plan is set out under a series of 8 strategic aims. These cover the topics of water environment, flood management, communities, economic development, fisheries management, farming, forestry and woodland, and habitats and species.

Each of the strategic aims presents a broad, aspirational vision for that management area, providing the context for its inclusion and laying out the specific issues that need addressing in the short to medium term. Some of these focus on activities that will enable effective implementation of national and international legislation including the Water Framework Directive and Flood Risk Management Act. While for ease they have been presented separately, it is vital that none of the strategic aims are viewed in isolation as many are inextricably linked. Objectives and actions to tackle specific issues and opportunities identified under the strategic aims are set out in action tables within each chapter. For each action, key organisations which have a particular interest in that issue have been identified as have associated objectives which may be found elsewhere in the plan. Progress against the actions will be monitored by the Spey Catchment Initiative Steering Group and reported back to the wider community at regular intervals. As part of this process, priorities for action may be re-examined in the light of changing circumstances and additional actions and targets included as and where appropriate.

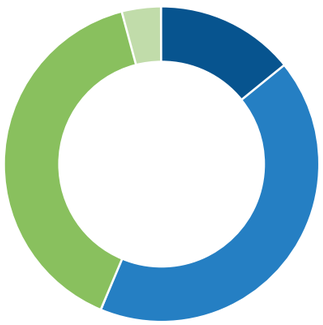
This plan will deliver the aims of Scottish Government policy over a wide range of topics, predominantly environmental, but also rurally focused economic issues. Synergy with the requirements of Scottish Government legislation is fundamental and this Catchment Management Plan will be instrumental in focusing action to help deliver both national and local, targets and objectives. However it also enables us to take a truly holistic view of the water environment and incorporate key issues which bring direct benefits to the communities that live within it such as recreation, community engagement and economic development. These benefits will include safeguarding the public water supply, reducing the scale and impact of flood events, planning for future climate change, ensuring adequate supplies of pure water for whisky distilleries, maintaining salmon fishery, increasing understanding of, and connecting the public to the river, and maintaining and increasing the value of the water environment for wildlife. Ultimately, this plan ensures that we are addressing the key issues, in the right place and at the right scale; to bring about long lasting benefits on multiple strategic fronts.

Spey Catchment Initiative Steering Group
November 2016

CATCHMENT MANAGEMENT PLANNING

Throughout the Spey Catchment there are many organisations involved in river management or river environment activities, each with its own remit for delivery. Catchment management planning has evolved from a desire to consider the catchment holistically and integrate activities that deliver multiple benefits. It also seeks to help organisations engage more effectively with each other and the wider community including the farmers and landowners. The pressure to protect the water environment whilst achieving other important goals such as reducing flood risk, increasing renewable energy generation and securing adequate water supplies to meet growing industrial and domestic requirements has never been greater. This catchment management plan (CMP) collates the key elements of all the latest policy and plans that are relevant to the Spey, providing the framework and context to guide activities for the next 5 years and develop future programmes.

A comprehensive review of progress against the original 2003 Spey CMP took place in 2015, which showed that considerable progress has been made in many areas.



Overall progress in delivering the management objectives from the 2003 Spey Catchment Management Plan.

© Scotavia/SEPA

This new CMP, for which there has been wide ranging consultation and participation, builds on this progress to provide a plan of action for the next five years. It sets out non statutory management proposals for the Spey catchment that are presented as a set of eight Strategic Aims that are then subdivided into objectives and associated actions.

While presented separately it is vital that these Strategic Aims are not viewed in isolation. There is a huge amount of correlation between topics and many issues such as invasive species or climate change cut across multiple Aims. There is overlap between objectives such as those listed under flood management and communities, or between fisheries and habitats and species. Activities in one area will have impacts, be they positive or negative, in others. For example, improving water quality will be to the benefit of habitats and species while built development may create challenges for flood management and/or water quality. The aim of this CMP is to promote partnership working to reduce conflict and provide the best possible holistic solution.

For the purposes of clarity, objectives have been aligned under a specific Aim, but that is not to say actions could fit equally well elsewhere and reference is therefore made to associated objectives elsewhere in the plan. A Glossary of Terms and an Acronyms and Abbreviations index may be found on pages 66 & 68 respectively.

Setting the Scene

LEGISLATION

Since the original CMP was written in 2003, new legislation on a range of issues has led to more integrated approaches within catchment management to deliver on multiple benefits. Interpretation through various strategies and plans at both national and regional level now provide a comprehensive framework for managing Scotland's waters and the changes that are required to be implemented in it.

There are national targets to be met regarding improving water quality and more natural river functioning as well as increasing resilience to flooding, expanding woodland cover and meeting renewable energy generation targets. All the while populations are expanding, precipitation patterns are changing and designated sites, species and areas of conservation need protecting and enhancing.

Reference to specific legislation, plans and strategies will be made in the following chapters, however more detailed information may be found at the following websites:

www.legislation.gov.uk

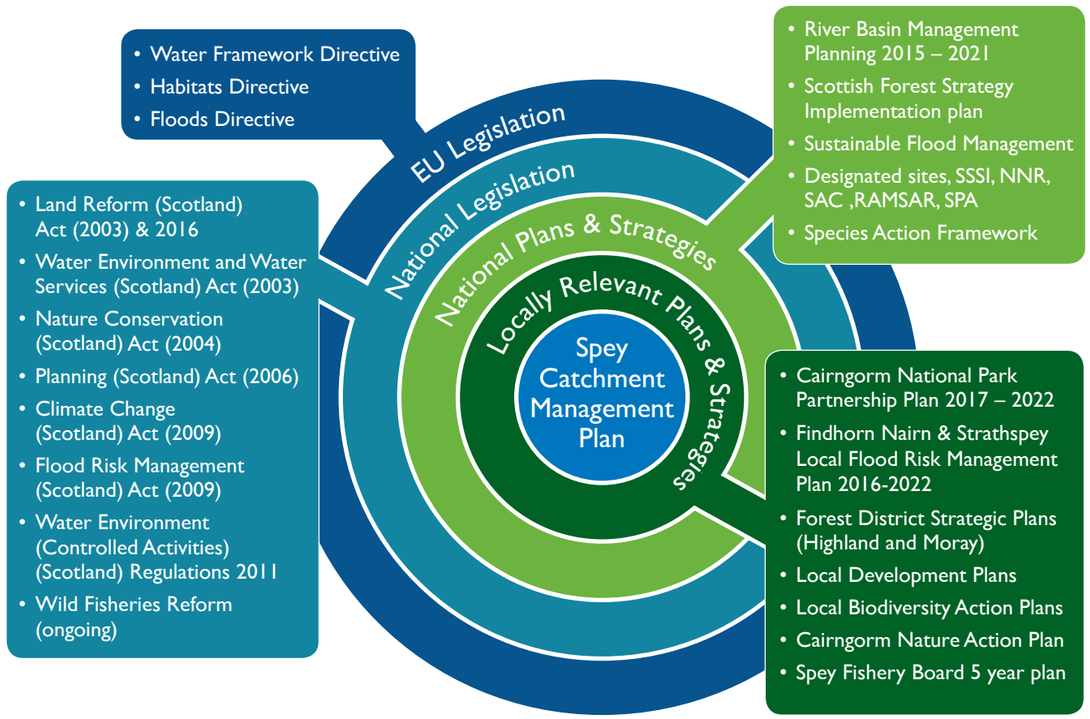
www.gov.scot/topics

www.sepa.org.uk

www.scotland.forestry.gov.uk

www.snh.gov.uk

www.cairngorms.co.uk



SPEY CATCHMENT

GEOGRAPHY

The River Spey is the seventh largest river in Britain, with a catchment area of over 3,000 km^2 and a stream network length of about 36,500km, of which the main river comprises 170 km (105 miles). It rises in the high ground of the Monadhliath and Cairngorm Mountain ranges and flows in a north easterly direction before discharging into the Moray Firth at Spey Bay. The catchment falls between two Local Authority administrations, the Highland and Moray Councils. Two thirds (67%) of the catchment falls within the Cairngorms National Park and just over half (53%) of the National Park area lies within the River Spey catchment, see Map 2 (pg69).

The Spey runs through areas known historically as Badenoch, Strathspey and Speyside. Strathspey, from the Gaelic Srath Spè, is considered to run from the source of the Spey as far as Grantown on Spey. From here to the mouth of the river at Spey Bay is known from the anglicised version of the name as Speyside. Upstream of Kincraig is known as Badenoch which comes from the Gaelic Baidenach meaning "Flooded land".

For the purpose of this document, the 'upper' catchment is taken to be the land upstream of Grantown-on-Spey and includes the major tributaries of the rivers Dulnain, Nethy, Druie, Feshie, Tromie and Truim. The lower catchment roughly aligns with Moray council's boundary and extends from Grantown to Spey Bay and includes the rivers Avon, Livet and Fiddich.

GEOLOGY

The solid geology of the catchment is dominated by slow-weathering crystalline rocks (schists and gneisses) in the uplands. These are intruded in a number of places by granite and in the Moray Firth coastal plain are overlain by Devonian 'Old Red' sandstones. A band of limestone rock runs in an arc from Dufftown to Tomintoul. This solid geology is illustrated in Map 4 pg71 . For most of its length, the River Spey flows through a wide, alluvial plain composed of silts, sands and water-borne pebbles. The plain is mostly fertile but subject to periodic inundation. In upland areas, there are extensive beds of peat, some many metres thick.

The geography of the catchment was moulded by the most recent series of four ice ages. Glacial erosion deepened many valleys and when the glaciers melted, barriers of sediment were deposited across the end of these valleys, causing the formation of long lochs such as Lochs Ericht, Einich and Avon. Most of the lower valleys are filled with outwash terraces and the coastal plain contains raised beach shingle bar formations. Following the retreat of the glaciers, drift deposits were laid down over the bare rocks on the lower ground. Constant scouring by sand and water has meant that the bedrock of the higher ground, such as the Cairngorm plateau, has little or no soil cover. Thus, when it rains, there is little cover for the water to soak into and it runs off directly into a watercourse. The burns on these hillsides react rapidly to any change in weather conditions; there is little water retention and spates can occur at any time of year.

WATER QUALITY

The River Spey is classed as one of the cleanest rivers in Scotland and its catchment is described as being 'almost pristine'. However there are still areas where water quality falls below expected standards and action is required to improve their condition. As pressures on the water system intensify, there is also a challenge to ensure that water quality elsewhere does not deteriorate. SEPA carries out routine chemical and biological monitoring of all major waterbodies within the catchment and shares this information with many other statutory bodies.

The European Water Framework Directive (Dec 2000) introduced a statutory requirement to set and achieve 'good ecological status' targets based on flora, fauna and physical habitat. In Scotland this is being progressed through the River Basin Management Planning process (RBMP). All water courses which have a catchment of more than 10km^2 or lochs that have a surface area of more than 0.5km^2 have been classified for their ecological condition. There are 100 of these within the Spey Catchment and their 2014 water quality classification is shown on Map 3 pg70.

PRECIPITATION, CLIMATE CHANGE AND FLOODING

The average annual precipitation broadly follows the relief of the catchment with the highest precipitation in the mountainous areas and the lowest on the coastal plain of the Moray Firth. While precipitation in the upper catchment falls predominantly in the period August-February, it is the months of July and August which provide the highest rainfall in the lower catchment. The upper catchment receives most of its precipitation from frontal systems while in the lower catchment rainfall patterns are dominated by convective summer storms. Much of the precipitation in winter months falls as snow in upland areas. The flow of water through the catchment is monitored by SEPA, using a network of gauging stations. The lowest station at Boat O'Brig shows an average daily flow of about 65m^3/s with a dry weather flow (Q95) of about 19 m^3/s. Peak flows can exceed 500m^3/s with the highest ever recorded flow estimated to be 1058m^3/s in August 1970.

Setting the Scene

Over the twentieth century, Scotland has seen a 0.5°C rise in the average annual temperature and this is expected to continue to rise. The UK Climate Programme (UKCP09), predictions for Northern Scotland suggest that the seasonality of precipitation is likely to become more pronounced in the future. It estimates that winter mean precipitation may increase by 13% (very unlikely to be less than 3%) and summer mean precipitation to decrease by 11%. However mean figures can disguise the scale and impact of individual events and local flow data suggests that high flow events (which follow extreme or prolonged rainfall) are happening more frequently.

The need to manage flooding more effectively is now a national and local priority. Detailed flood maps are now available for the whole catchment and potentially vulnerable areas have been recognised. Multiple measures through many avenues are now being pursued to mitigate for or reduce the impact of flooding. These include implementation of hard engineering or natural flood management schemes to restricting built development and flood appropriate land management.

POPULATIONS

There are approximately 25,000 permanent residents in the catchment with the highest concentrations around Aviemore and Grantown (nearly 4000 each). There are smaller planned towns along the main stem of the Spey such as Kingussie, Aberlour, and Fochabers. Numerous villages of up to 800 residents are scattered throughout the area from Spey Bay to Dalwhinnie, Tomintoul to Carrbridge. Relative to central Scotland it is considered a low population density area.

ECONOMY

Tourism, agriculture, forestry, food and drink are the main economic activities within the catchment. Over 50% of all Scotch whisky is produced on Speyside and the distilling industry makes a huge contribution to the local economy, particularly in Moray. Other major employers include Walker's Shortbread at Aberlour, Baxters of Speyside at Fochabers and the numerous businesses that cater for the tourist trade, especially around Aviemore. Scottish Water provides the majority of drinking water within the catchment via two major groundwater abstractions at Kinakyle (Aviemore) and the Dipple Wellfield (Fochabers). There are also many private supplies for remote domestic properties as well as commercial operations, including many of the catchment's whisky distilleries.

LAND USE

Hill farming, forestry and sporting estates dominate the land-use pattern in the upper catchment, while cattle rearing, extensive commercial forestry and arable farming become more prevalent as the valley floor widens. 50% of the River Spey catchment is mountain and moorland and is used as rough grazing whereas only about 5% is used for arable agriculture. The remaining 45% of 'intermediate ground' between the high ground and the more sheltered valley floor presents the most diversity of land use. It is here that the greatest competition between farming, forestry and sport exists and most change happens due to the influence of economic pressures. Map 5 pg72 illustrates the major land classifications of the River Spey catchment.

© Nipso Photography

FISHERIES

The River Spey is one of Western Europe's primary rivers for Atlantic salmon and sea trout. In 2015 the rod fishery industry had a 10 year average catch of nearly 7600 salmon and 2200 sea trout. Extrapolation of figures from a 2004 survey indicate that rod fishery is currently worth £15.3million to the local economy and employs 367 full time equivalent jobs within the catchment.

The Spey Fishery Board which was established under the 1860s Salmon Fisheries legislation is responsible for the management, protection, enhancement and conservation of salmon and sea trout stocks in the river. Other fisheries also exist in the catchment, for brown trout, pike and eels, and there are several rainbow trout fisheries and trout farms.

The Scottish Government are currently in the process of reforming wild fisheries management in Scotland. It is anticipated that District Salmon Fisheries Boards in their current format will be replaced by new (and fewer) fisheries management organisations which will have a broader all species remit. A draft Bill is expected to go before parliament in 2017 but this may well be delayed.

HYDRO-ELECTRIC POWER

River Spey catchment water is used for the generation of hydro-power via diversion to two hydro stations in neighbouring catchments. Firstly, Scottish & Southern Energy plc diverts water from the rivers Tromie and Truim to Loch Ericht (Tummel/Tay catchment). Secondly, water is diverted from the River Spey itself (at Spey Dam), and from the River Mashie into the River Pattack (Loch Laggan/Spean catchment) for hydro-power generation at Fort William. It is estimated that as much as 70% of the water resources of the upper catchment are diverted for hydro-power generation. The dams associated with these schemes have little storage capacity and act primarily as diversionary structures. The schemes were established by various private Acts of Parliament between 1921 and 1942. Compensation arrangements are in place to allow abstraction if the natural flow is above Q95 ($0.68m^3/s$) which is known as "the hands-off flow". If the flow falls below this level then no abstraction occurs and all the water is passed to the river. Additionally at Spey Dam, 22 days of freshets are released to provide the conditions necessary for the migration of salmonids in the River Spey.

Setting the Scene

© SEPA

NATURAL HERITAGE

The main stem of the River Spey has been a Site of Special Scientific Interest since 1998 on account of its important populations of Atlantic salmon, sea lamprey, otter and freshwater pearl mussel. It is also a Special Area of Conservation under the EU Habitats Directive. The River Spey is considered one of the most important rivers in Western Europe for freshwater pearl mussel. Two sections of the River Spey are of outstanding biological and geomorphological interest; Insh Marshes is one of the least modified floodplains in North Western Europe and an internationally important wetland whilst the lower River Spey has a range of shingle islands and alluvial alder woodland habitats on a scale that is exceptional in Britain.

RECREATION

Water based recreation activities are increasingly popular on the Spey with the middle reaches renowned for white water kayaking and rafting. Journeying along the river in open boats is growing and sailing and windsurfing at Loch Morlich and Loch Insh are possible. The Speyside Way long-distance route has been extended and now runs between Spey Bay and Kincraig with proposals to extend it further to Newtonmore.

© SCI

CULTURAL HERITAGE

There is a wealth of cultural heritage associated with the river system. During the 18th and 19th centuries, Strathspey became the scene of the greatest log floating activity in the country and Speymouth became the premier exporter of timber in Britain. Records suggest that timber was floated on the River Spey as early as 1539.

Commercial salmon fishing on the lower river probably dates back to the 12th century, and the ice house at Tugnet is a reminder of the past importance of the salmon netting operation at the mouth of the River Spey.

Until the emergence of large span bridges in the 19th century, the river was mostly crossed by ferry and at least ten small ferries plied the River Spey, some continuing until the 20th century. The Craigellachie Bridge which was built between 1812 and 1814, was designed by Thomas Telford and is the oldest surviving cast iron bridge in Scotland. At the uppermost reaches of the river, Garvamore bridge was built in 1731 as part of the General Wade military road from Fort William to Inverness.

© Lee Haxton/CNPA

Water Environment

- **WE1** Maintaining Water Status
- **WE2** Improving Water Status
- **WE3** Water Quality Characteristics
- **WE4** Managing Water Quantity
- **WE5** Climate Change

Communities

- **C1** Flood Resilience
- **C2** Access & Recreation
- **C3** Education & Training
- **C4** Cultural Connections
- **C5** Renewable Energy

Fisheries Management

- **FISH1** Fish Stocks
- **FISH2** Habitat Quality
- **FISH3** Sustainable Angling
- **FISH4** Fisheries Management

Forestry & Woodland

- **FW1** Woodland Expansion
- **FW2** Woodland Habitats & Biodiversity
- **FW3** Woodlands and Flow Management
- **FW4** Forestry Management

Summary of
Strategic Aims & Objectives

Flood Management

- **FM1** Sustainable Flood Management
- **FM2** Natural Flood Management
- **FM3** Communication
- **FM4** Community Engagement

Economic Development

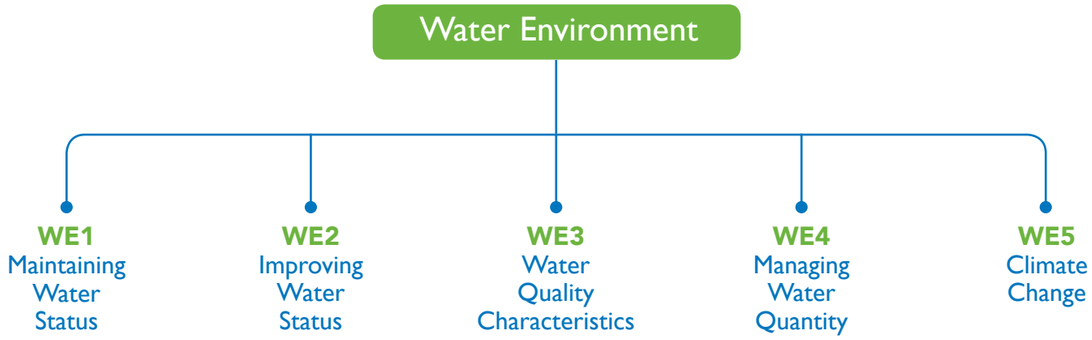
- **ED1** Built Development
- **ED2** Tourism
- **ED3** Catchment Management

Farming

- **FARM1** Diffuse Pollution
- **FARM2** Water Flow Control
- **FARM3** River Functioning
- **FARM4** Wetlands & Ponds
- **FARM5** Land Management

Habitats & Species

- **HS1** Designated Species
- **HS2** Mammals
- **HS3** Riparian, River & Wetland Habitats
- **HS4** Rivers & Wetland Birds
- **HS5** INNS



Improving the water environment for the benefit of the wider environment, communities, and industry.


© Anne Elliott

The water environment of the Spey catchment is considered to be in a good, many would say, near pristine condition. It is fortunate to experience fewer pressures than many other rivers. However, that is not to say it is without its problems and there are areas where it suffers from specific issues such as diffuse pollution, discharges, abstractions and historic physical alterations.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Protecting, managing and improving Scotland's water environment is fundamental to safeguarding biodiversity and ensuring that our unique aquatic wildlife is protected. Many water bodies within the catchment are also part of protected areas and support species or habitats identified as requiring special protection under European and UK legislation. Further information on these can be found in the Habitats and Species chapter of this document.

The condition of the water environment can be threatened by wider scale challenges beyond the localised effect of individual developments. These include the impact of climate change, spread of invasive non-native plants and animals, shifts in land uses or practices, or the introduction of diseases that can damage the health of aquatic wildlife.

In order to deliver improvements and maximise associated social and economic benefits, SEPA and other public authorities are working together with voluntary organisations, land managers, local communities and businesses, to reduce pressures on the water environment using solutions that are as cost effective as possible. Well designed solutions will often deliver multiple benefits that contribute to other objectives such as sustainable flooding management, community engagement or habitat resilience.

Action to control new potential pressures has been in place since April 2006 through the Water Environment Controlled Activities (Scotland) Regulations 2011 (CAR). These apply to activities such as those liable to cause water pollution, water abstraction, water impoundment or new engineering alterations to the beds, banks and shore of rivers and lochs. Anyone carrying out such an activity is now required to take appropriate, proportionate and timely action to protect and improve the water environment.

Maintaining and enhancing a good water environment is inextricably linked to all the other strategic aims outlined in this CMP. It is vital that the water environment is maintained and enhanced for the benefit of our communities, fisheries, industries, species and the wider environment.


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THE RIVER BASIN MANAGEMENT PLAN (RBMP)

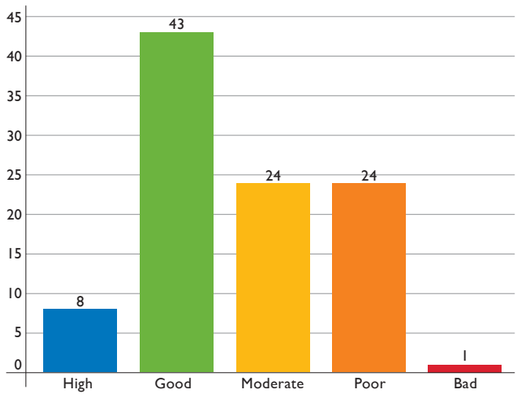
The River Basin Management Planning (RBMP) process, for which SEPA is the lead authority, sets out objectives to protect, manage and improve the water environment throughout the country. A surface water body is classified to describe how much its condition differs from "near natural" condition. Those in a "near natural" condition are at High status whilst those whose ecological quality has been severely damaged are at Bad status. Surface water bodies that have been substantially changed in character for purposes such as flood protection or hydropower generation are known as heavily modified water bodies and are classified according to their "ecological potential". The aim is to maximise their ecological quality within the constraints imposed by their physical modifications. The overall aim is that 88% of all water bodies in the Scotland river basin district will be in at least a Good condition by 2027. A further 6% will recover to Good after 2027 as a result of the plan's actions.

Plan to improve the overall condition of surface water bodies in the Spey catchment:

Now 2021 2027

Condition: High Good Moderate Poor Bad

Overall condition of surface water bodies – by numbers:



Within the Spey catchment there are 100 defined water bodies of which 49 are at below Good condition as classified in the RBMP process (2014 data). Of these, 6 are downgraded specifically for water quality, 2 for physical condition, 8 for flows and levels and 26 for barriers to fish migration. The remainder are below Good due to unspecified ecological factors that have resulted in poor fish conditions and that require further investigation.

Appendix A on p63 displays and lists those water bodies within the Spey catchment assessed at below Good status (as of 2014).

Data on specific water bodies: **www.sepa.org.uk/data-visualisation/water-environment-hub/**

Annual classification changes and updates (since 2014): **www.sepa.org.uk/environment/water/classification/classification-results/**

General information on the water environment: **www.sepa.org.uk/environment/water**

Water Environment

WE1 MAINTAINING WATER STATUS

Increasingly the challenge is to safeguard the water quality that we already have and protect it from deterioration whilst also meeting increased demand for safe drinking water and economically important water uses.

There should be a continual aspiration to go beyond the regulatory minimum and seek to achieve High water quality status wherever possible. Where risks exist, measures should be put in place at the earliest opportunity to prevent possible deterioration.

Significant investment by Scottish Water over the last 10 years has addressed many of the pollution issues previously associated with waste water treatment within the catchment. We now need to ensure there is no water quality deterioration associated with these plants. Septic tank discharges are still an issue in some areas as is disposal of fat down drains. Awareness of waste water best practice needs to be promulgated and use could be made of existing education programmes that have been developed elsewhere such as the Dee catchment partnership septic tank programme.

Since their introduction in 2009, there has been increasing voluntary compliance with SEPA's diffuse pollution prevention General Binding Rules and this should continue to be encouraged as these are mandatory requirements under the CAR regulations. Good land use practices need to be maintained and strengthened where necessary.

There is an ongoing and continued need to promote best practice and encourage all involved with water and land management to go beyond basic compliance requirements. Any new development must not impact on existing Good or High ecological status and the habitats of important species must be preserved wherever possible.

OBJECTIVE

Continue to maintain and where possible enhance, the quality of the water environment that is already deemed to be at good status within the Spey catchment.

ACTIONS	Key Partners	Associated Objectives
Continue to ensure 'Good' or 'High' ecological status as set out in WFD is maintained. Where practical aim to improve 'Good' status water bodies to 'High'.	SEPA, SWI, NFUS	FARM1, FARM5, ED1
Where there is a risk of deterioration of the water quality, assess what actions can be taken to mitigate risk.	SEPA, SNH, SCI, NFUS, SWI	WE4, ED1
Engage with local industry and land managers to promote best practice and going beyond compliance with the aim of achieving 'High' ecological status.	SEPA, SWI, CNPA, LA's, SNH	FARM5, FW4
Ensure that instream developments and abstractions do not impact on "Good" ecological status or important species.	SEPA, CNPA, SFB, LAs	WE3
Ensure discharges from waste water treatment works and septic tanks do not contribute to the deterioration of water quality.	SEPA, LA's CNPA SW	ED1
Raise awareness of waste water best practice issues, including disposal of fat into drains, utilising existing education programmes developed elsewhere (eg Deeside septic tank programmes).	SEPA, SNH, SCI, LAs, SW	ED1

WE2 IMPROVING WATER STATUS

Many of the actions required to improve the ecological status of currently "below good" water bodies are targeted by the RBMP process for completion by 2021. However, to achieve this will require continued partnership working between agencies, landowners and interested groups, and financial support through mechanisms such as the Water Environment Fund and SRDP programmes. The resulting improvements will contribute to the continued expansion of businesses that depend on a high quality water environment whilst also improving the health and range of populations of wild plants and animals across the catchment.

A list of waterbodies at below Good status that require improving can be found on p.63. Of the 26 water bodies affected by barriers to fish passage (2014 classification), SEPA has earmarked 7 for improvement by 2021 and a further 14 by 2027. Where barriers exist due to abandoned weirs and dams, there may be opportunities to demolish the obstruction and create a more naturally functioning water course. It is also expected that the issues associated with water quality at Loch Insh and Green Burn will be tackled by 2021. **Further details may be found at: www.sepa.org.uk/environment/water/**

Although not falling within the criteria to be a "named water body", many smaller watercourses within the catchment also suffer from a degraded water environment often due to diffuse pollution or modifications such as straightening or embankments. These now need to be identified and the issues then addressed at a local level.

OBJECTIVE

Improve the status of the water environment where it is failing to meet good status (as per requirements of Scotland River Basin Management Plan), focusing on priority measures required to be delivered by 2021.

ACTIONS	Key Partners	Associated Objectives
Prioritising waterbodies that are at less than 'Good' status, facilitate restoration works in partnership with relevant stakeholders on those waterbodies which are failing WFD targets due to morphological pressures.	SEPA, SWI, CNPA, SCI	FARM1, WE4, FISH2
Engage with local industry and land managers and help them voluntarily achieve the measures placed against them (eg fish barrier easement, diffuse pollution).	SEPA, SFB, FCS, SCI, SWI	FARM1
Provide advice to industry and land managers on how to access funding for improvements and where appropriate, assist in co-ordinating improvement projects.	SRUC, NFUS, SWI, SEPA, SCI	FARM5
Identify and improve those discharges that are currently having a detrimental impact on water quality.	SW, SEPA, SWI,LAs, SNH	
Identify areas with poor local water quality that may not be accounted for at a waterbody scale and assess the impact and potential to remedy at a local scale.	SEPA, SFB, SCI, NFUS	FISH2
Continue to raise awareness of statutory and non statutory diffuse pollution codes of practice.	SEPA, FCS, SCI, SFB, SWI, NFUS	FARM1, HS3
Identify RBMP measures planned for beyond 2021 that are achievable at an early stage and investigate if they can be brought forward.	SEPA, SWI, SCI	ED3
Develop an understanding of the impact of river works (inc historical works) on system dynamics and use to inform river restoration activities.	SEPA, SWI, FCS, SCI, SFB	

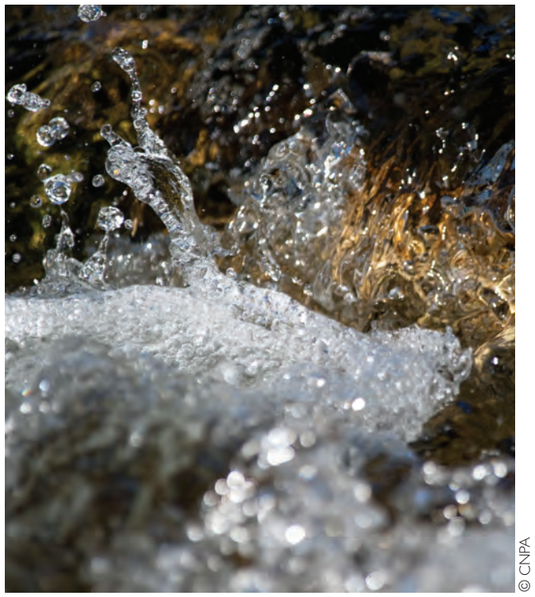
Water Environment

WE3 WATER QUALITY CHARACTERISTICS

Water quality refers to the chemical, physical and biological characteristics of water as assessed against a set of standards normally relating to drinking water, safety of human contact or the health of ecosystems. Its quality depends on local geology and ecosystems as well as human factors such as sewage dispersal, industrial pollution or agricultural runoff. Within the Spey Catchment water quality is generally considered to be very good if not pristine, however even here there are some issues which should be addressed.

Water contains a range of dissolved minerals such as calcium, phosphorous or magnesium, dissolved or heavy metals and suspended fine sediments. The acidity of the water which is measured by its PH value is dependent on the concentrations of the various elements present which are themselves affected by temperature, oxygen concentrations and flow rates. The amount of nitrogen and carbon dioxide present can have an impact too. Biochemical oxygen demand (BOD) is a measure of the dissolved oxygen in the water and is used as an indicator of the degree of organic pollution of the water.

The Spey is renowned for its population of Freshwater Pearl Mussels, however they have experienced a sharp decline since 2001. Water quality requirements for this species need to be agreed by the UK Technical Advisory Group, particularly acceptable phosphorus concentrations and minimum flow requirements. Methods are required for continuous water quality monitoring, particularly for key parameters such as fine sediment or phosphorous. On a broader level, an assessment is required to determine whether sedimentation or acidification is an issue for the Spey catchment.



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OBJECTIVE

Improving understanding of key characteristics that are important to water quality within the Spey catchment.

ACTIONS	Key Partners	Associated Objectives
Identify appropriate water quality and flow targets that will support conservation objectives for particular species including (eg Phosphorus concentrations & FWMP).	UK TAG, SNH, SEPA	HS1, HS3
Determine if acidification is an issue for the upper parts of the Spey.	SEPA, SNH, SFB	
Devise, test and implement methods for enabling continuous water quality monitoring (eg for phosphorus or fine sediment).	SEPA, CNPA FCS, SCI (with Univ's)	
Assess available data on extent of contaminated land within the River Spey catchment and restore any such areas to beneficial use.	SEPA, FCS, LAs	

WE4 MANAGING WATER QUANTITY

Ensuring that there is enough water available to meet all abstraction requirements whist protecting the needs of the natural environment is a sensitive balancing act. The economic wellbeing of communities and businesses depend on a reliable and continuous supply of this natural resource however wildlife and river functioning can be adversely affected by the resulting pressures on water flows and levels. This can vary between wet and dry years but over time can lead to scoured incised water courses with reduced extent, quality, diversity and connectively of aquatic habitats.

Within the Spey catchment, the main pressures on flows and levels are from water abstractions used for hydroelectric generation, industrial and agricultural uses and drinking water. All abstraction regimes are managed through the Controlled Activities Regulations and can be altered either to increase or reduce the abstraction rate if there is justification to do so. Where there are issues, improving water flows and levels can provide a range of environmental benefits including restoring flows to dry or nearly dry rivers, helping restore and support runs of migratory fish (Atlantic salmon) and improving the health and range of populations of wild plants and animals.

There is an increasing need to better understand and deal with, the long term impact of low water flows and abstraction issues on the ecology and functioning of particular water bodies within the catchment. In order to maintain water environment quality, adequate flows are required in all our rivers and burns. The SAC interests of the catchment need to be continually monitored, particularly during low flows so that early adjustments can be made to abstraction regimes to prevent harm.

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OBJECTIVE

Better understand and deal with, issues associated with low water flow, storage and abstraction regimes within the catchment.

ACTIONS	Key Partners	Associated Objectives
Ensure flows in the rivers and burns of the Spey catchment meet the requirements of riverine, riparian and wetland species and habitats.	SNH, FCS, SFB, SEPA, SWI	HS1, HS3, FISH2
Reduce the impact of surface and groundwater abstractions on riverine, riparian and wetland ecology.	SEPA, SWI	HS3
Continue to monitor and where necessary adjust abstraction regimes to prevent harm to SAC interests and ecological status, especially during low flow periods.	SEPA, SFB, SWI, SNH	HS1, FISH1
Where necessary, assess the potential impact of land use change on flows and undertake monitoring as opportunities arise.	SEPA (Uni Research), FCS	FM1, FM2, FARM5, FW3
Improve knowledge of the floodplain functionality within the upper Spey catchment in order to identify restoration opportunities.	SNH, SEPA, CNPA, FCS, LAs	FM2
Where necessary, carry out ecological and hydrological research and monitoring to help determine ecologically acceptable flow regimes for the catchment.	SNH, SEPA, CNPA, FCS	FM1, FISH2, HS3, FARM3

Water Environment

WE5 CLIMATE CHANGE

Climate change predictions suggest that we can expect milder, wetter autumns and winters with warmer, drier summers. Extreme weather is likely to become more variable and more frequent, leading to a greater risk of droughts and floods. This will increasingly affect demands on water resources, the ability of the water environment to cope with more variable volumes of water and the pattern of land use itself. Lower overall summer rainfall could result in less water in rivers to dilute pollutants or longer periods in which rivers occupy a fraction of their bed width, leading to declines in the abundance of plants and animals. Warmer summer temperatures could affect salmon sustainability, particularly in unshaded burns high in the catchment. Conversely, increased frequency of extreme precipitation events could lead to increased soil, nutrients and other pollutants from land washed into rivers and increased erosion rate of storm-swollen rivers, leading to habitat changes.

Proactive action is required to adapt and develop catchment scale resilience to these events, from adjusting land management practices, particularly in the uplands, to a better understanding of the impact of intense rainfall events on ecology and which areas will be most sensitive to the higher predicted temperatures. As more detailed knowledge at the national level becomes available, it should be assessed and implemented such that resilience can be improved at a catchment level.

Further information may be found at: www.environment.scotland.gov.uk/get-informed/climate/climate/

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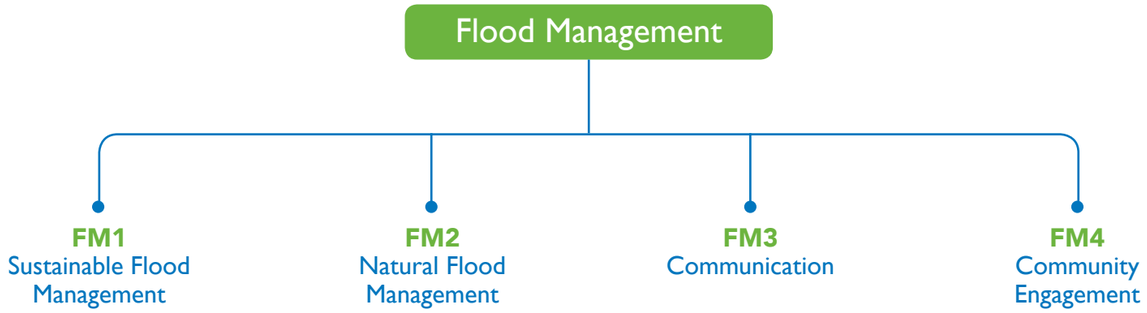
OBJECTIVE

Develop catchment resilience against the impacts of climate change, such as increased frequency and intensity of high rainfall events and associated spates.

ACTIONS	Key Partners	Associated Objectives
Develop extreme temperature mitigation projects in line with Marine Scotland Science mapping of catchment areas most sensitive to high temperatures.	SNH, SEPA, CNPA, FCS	FISH1
Through monitoring of the effects of increased frequency and severity of intense rainfall events, develop understanding of their impacts on the ecology of the river.	SNH, SEPA, CNPA, FCS	FM1, FISH2, FW3
Adjust land management practices to better cope with increased rainfall events.	SNH, NFUS, SEPA, CNPA, FCS	FM1, FARM5, FW4, ED3



To address the challenges of understanding and managing water flow at catchment and local level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Flooding is a natural process but can be devastating for those that are caught up in its path. Its impacts during peak flows can be exacerbated by many activities that intentionally or otherwise, effect the natural functioning of watercourses and floodplains.

This can include land drainage, the diversion of watercourses, canalisation, artificial embankments, built development, or poor agricultural and forestry practices. As weather patterns change in the next 50 years and with increased precipitation expected, the frequency and severity of floods in Scotland are also expected to increase This means that there is ever increasing pressure on flood risk management just to maintain the current levels of flood risk protection. In the long term traditional approaches such as erecting flood walls will not be sustainable on their own and more holistic approaches are now required.


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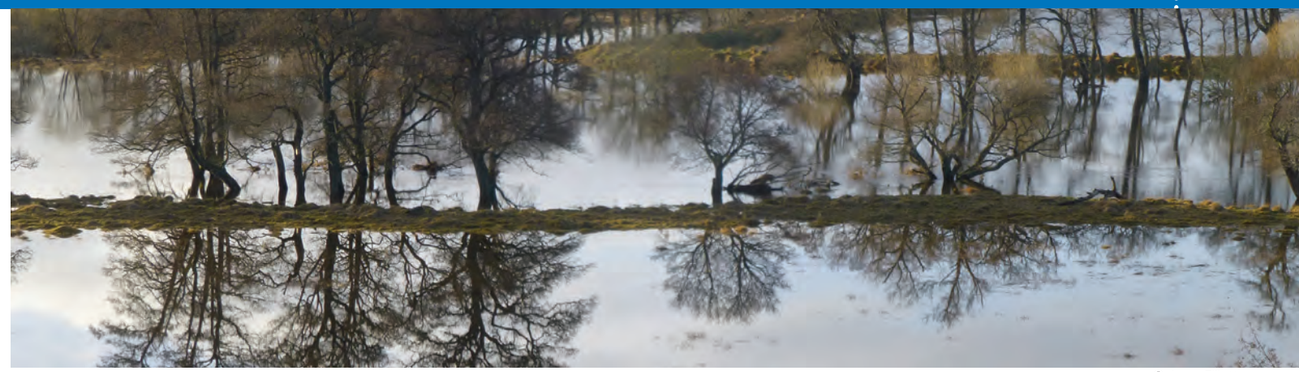
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FLOOD RISK MANAGEMENT IN SCOTLAND

In Scotland a framework for delivering a more sustainable approach to flood risk management has been established in legislation under the Flood Risk Management (Scotland) Act 2009 (FRM Act). This has led to the development firstly of Flood Risk Strategies and then Local Flood Risk Management Plans (LFRMP) across Scotland. The Spey catchment falls within the Findhorn, Nairn and Speyside Local Plan District (FNS LPD).

The Flood Risk Management Strategy **(apps.sepa.org.uk/FRMStrategies/findhorn-nairn-speyside.html)** identifies the river sub catchments which contain areas at risk of flooding within the local plan district. It defines these sub catchments as Potentially Vulnerable Areas (PVAs) and for each summarises the consequences of flooding in terms of number of properties (both residential and industrial) at risk and financially as estimated Annual Average Damages costs. It also suggests in broad terms, a range of actions required to improve the situation.

Eight PVAs have been identified within the Spey catchment at Spey Bay (05/04), Forres (05/06), Rothes (05/09), Carrbridge(05/10), Aviemore (05/11), Kingussie (05/12), Newtonmore (05/13) and Dalwhinnie (05/14). The LFRMP specifies the detailed 6 year plan of action to tackle or alleviate the greatest risks identified in the Strategy. The 2016-2022 LFRMP for Findhorn, Nairn and Speyside (FNS LFPMP) was published in June 2016 by Moray Council and is available at **www.moray.gov.uk/downloads/file105636.pdf**. Key actions to be delivered include Scottish Water modelling many of the sewer catchments along the Spey, the maintenance of existing flood protection schemes (Moray Council), a series of surface water and flood protection studies (The Highland and Moray Councils) and reducing flood risk from the A9 and A96. More detailed information on flood management in Speyside may be found at **www.moray.gov.uk/moray_standard/page_80332.html** and **www.highland.gov.uk/info/1210/environment/81/flooding/3**.

In 2013 SEPA also launched their publically available interactive flood map for the whole of Scotland **(map.sepa.org.uk/floodmap/map.htm)**. This details those areas likely to be affected by flooding from rivers (fluvial), the sea (coastal) or surface water (pluvial) for a range of scenarios (10% (1 in 10 years), 0.5% (1 in 200 years) and 0.1% (1 in 1000 years) probability of flooding). Other data maps are also available in the tool and include existing flood defences, impacts of flooding (on populations, economic and environmental) and areas where there is theoretical potential for NFM measures.


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FM1 SUSTAINABLE FLOOD MANAGEMENT

It is recognised that there needs to be a more integrated approach to land and water management throughout the river system, with an acknowledgement that activities in one part of the catchment can influence flooding elsewhere. Whilst the FNS LFRMP addresses specific local issues based around PVAs, a catchment wide strategic vision for flood management needs further development such that sustainable flood management is achieved wherever possible by the restoration of a more natural flooding regime. Renaturalisation of previously modified burns (such as took place at the Allt Lorgy), reconnection of floodplains and the ability to manage land, particularly in the uplands, in a way that attenuates rates of runoff will be crucial to this process. The challenge will be to find or develop funding mechanisms that recognise the downstream benefits (including to the PVAs) that derive from appropriate up stream actions (outside the PVAs) Flood risk management, particularly NFM and resilience building against the impacts of climate change, will need to become embedded in land use & change decisions and mitigated for in future ground work activity.


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OBJECTIVE

Implement sustainable flood management via restoration of a more natural flooding regime and delivery of the Findhorn, Nairn and Speyside Local Flood Risk Management Plan.

ACTIONS	Key Partners	Associated Objectives
Deliver flood protection studies on the Gynack, Aviemore Burn and Dalfaber Road (Aviemore) as identified in FNS LFRMP (2016-2022).	HC	HS3, C1
Reduce flood risk from A9 and A96 as identified in FNS FRMP.	TS, SEPA	ED1
Manage land, particularly in the uplands, in a way that attenuates rates of runoff (thereby reducing the severity of floods and droughts).	ALL	FM2, FARM2, FARM5,FW3
Better understand the potential impact of climate change precipitation projections on the catchment.	SEPA, CNPA	WE5
Build capacity and resilience to cope with climate change projections within the catchment.	ALL	WE5
Re-naturalise sections of previously modified burns (replicating Allt Lorgy project at other suitable locations).	SCI, SEPA, LAs	WE2, FISH2, HS3, FARM3

FM2 NATURAL FLOOD MANAGEMENT

NFM involves balancing and integrating the restoration of natural features and processes with existing land uses. It seeks to provide additional protection and climate proofing to the river system as a whole and may be used alongside more traditional engineering methods by working with natural features and processes to manage the sources and pathways of flood waters. It will not necessarily provide protection from large flood events but can contribute to reductions in flooding during smaller, more frequent events, while simultaneously delivering many other benefits such as improved river morphology or better riverine habitats. NFM benefits can be realised through improving land management practices which is explored further in the farming and forestry sections of this document.

NFM can also be the most cost effective way for local communities to address flooding where the cost of traditional flood defences cannot be justified. This is particularly relevant throughout the Spey catchment where generally the number of properties at risk within a specific area is very small and therefore the cost /benefits ratio is not enough to trigger large capital expenditure.

SEPA has produced a comprehensive handbook on NFM techniques which may be found at **www.sepa.org.uk/media/163560/sepa-natural-flood-management-handbook1.pdf**.


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OBJECTIVE

Develop appropriate NFM sites to contribute to spate flow management and thereby reduce downstream impacts to infrastructure.

ACTIONS	Key Partners	Associated Objectives
Build on 2014 SEPA published NFM data such that potential NFM sites within the catchment are identified.	SEPA, LAs, SCI, CNPA	WE4, FM1, C1
Support and where appropriate, help to deliver NFM potential as identified above and in the FNS FRMP.	CNPA, SCI, SEPA	FARM2, FM1, FARM4, FW3
Develop a landscape scale approach to NFM and deliver at this large scale.	ALL	ED3, WE5, FARM2
Wherever possible, reinstate the functionality of active floodplains.	SEPA, FCS	FARM4, FM1, HS3, HS4
Assess, develop and deliver potential floodplain restoration programme for Insh Marshes.	RSPB,SCI, FCS, SNH, SEPA	WE2, WE4, FM1, C1
Deliver demonstration sites of NFM techniques.	ALL	

FM3 COMMUNICATION

To enable appropriate flood management decisions to be made, it is vital that all involved, from specialists to the wider community, have a good understanding of the issues and the broader implications of any actions on the wider catchment. There is an ongoing need to share data and improve knowledge and understanding of flood management issues within the Spey catchment and to raise awareness of the benefits and risks of the various approaches that are available.

The continual monitoring of water levels throughout the catchment via the SEPA network of gauging stations is vital to this process. Live water level data is available on line for any station at **apps.sepa.org.uk/waterlevels/**. Additionally the Centre for Ecology and Hydrology hosts the National River Flow Archive at **www.nrfa.ceh.ac.uk/** where further information about daily and peak flows may be found.

At the community level, Floodline provides a vital warning service for those in areas at risk and SEPA has an ongoing commitment to providing this service. Continued awareness raising and promotion of the service is required, as is details of who vulnerable residents can contact for help and advice.

FLOOD ALERT

FLOODING IS POSSIBLE. BE PREPARED.

OBJECTIVE

Undertake catchment wide information dissemination associated with flooding and flood management.

ACTIONS	Key Partners	Associated Objectives
Improve knowledge, understanding and awareness of flood management issues within the Spey catchment.	SEPA, LAs, FCS, SWI	C1, WE4, ED1, FARM2
Raise awareness of the options, benefits and risk of various approaches & contributions to flood management.	SEPA, LA's, CNPA, SWI	FM1, FM4, C1, ED1, FARM2, FW3
Continue to provide information on water levels and flood threats through Floodline.	SEPA	C1, FM4
Ensure impacts of increasing rainfall predictions are considered in decision making process and allowed for in future ground works activity.	LAs, SEPA, CNPA	WE5, ED1
Continue to provide information from water level monitoring stations throughout the catchment through up to date communication methods.	SEPA	FISH3, FM4

FM4 COMMUNITY ENGAGEMENT

A key part of the flood risk management process is to encourage communities and land managers to come together and seek out solutions to local flooding issues that they themselves can deliver. Collaborative approaches with a local partnership or community resilience group at its centre are often far more effective at instigating progress, providing conduits to local knowledge and constructive dialog from the start. Further information may be found in the Communities section of this document.

Everyone has a duty and responsibility to protect themselves and their property from flooding and there are many simple preventative measures that can be taken to reduce damage and disruption should flooding occur. Many are unaware of their individual responsibilities and there is a requirement to promulgate more effectively self help measures and community resilience plans. Planning advice on the protection of people, property and infrastructure from flood risk may be found at **www.sepa.org.uk/environment/land/planning/**.

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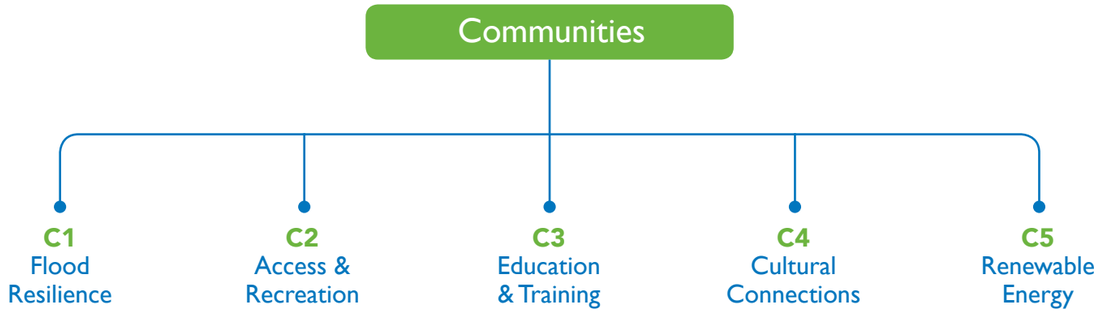
OBJECTIVE

Encourage community level engagement in tackling flooding related issues.

ACTIONS	Key Partners	Associated Objectives
Encourage collaborative approaches and community engagement to tackle local flooding related issues.	ALL	FM1, C1
Support local partnerships and community resilience groups instigated to tackle specific issues.	CNPA, SCI, SWI	C1
Promote self help measures within communities and individuals responsibilities for appropriate actions as per FNS FRMP.	HC, MC, SW, SEPA	C1



Connecting communities with their river environment

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For the communities that exist along the riverbanks of the Spey catchment, the river environment can be many things from a visual amenity and place of recreation to a provider of employment. It can also be the source of much concern, especially in times of heavy rain. This chapter focuses on the interests, opportunities and issues associated with the river environment as its affects local people and the contribution that communities can make to its enhancement and sustainability.


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C1 FLOOD RESILIENCE

There are many measures that can and are, being put in place to help manage flood waters at a catchment or watercourse level, (see Flood Management chapter) but there is still a responsibility, laid down in the 2009 Flood Act, on organisations and individuals to protect themselves from flooding. There is much that can be done from signing up to SEPA's Floodline early warning system to having self-help home protection measures should the worst occur. Following the publication of the Local Flood Risk Plan in 2016, developing community resilience is seen as a priority, especially within PVAs. Plenty of advice and practical support is available through many organisations including SEPA, local councils and **www.nationalfloodforum.org.uk** and **www.knowyourfloodrisk.co.uk**, but awareness of this now needs to promulgated more fully.

Often the most effective way of making things happen at a local level is through communities working together and Community Flood Action Groups can be an important mechanism to enable this to happen. They provide a forum where specific concerns can be raised, local knowledge can be pooled with professional advice and proactive solutions sought to issues which may not otherwise receive the necessary attention. Such a group has existed in Newtonmore for some time and encouragement should be given to replicate elsewhere.

Additionally, if communities can become more aware of and engaged in, land management and land use decision making, they may be able to have a positive influence on flooding impacts that directly affect their community.


© SCI


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OBJECTIVE

Increase community resilience to flooding and severe weather events.

ACTIONS	Key Partners	Associated Objectives
Raise awareness of flood risk and actions that can be taken to prepare individuals, homes and businesses to manage and reduce overall impact of local flood events.	LAs, SW, SEPA	FM4
Encourage more Community Flood Action Groups to proactively seek solutions to local flooding issues.	LAs, CNPA	FM4
Encourage more people to be more engaged with land management and land use decision making and the flooding impacts this can have on local communities.	ALL	FM4, FARM5

C2 ACCESS AND RECREATION

The Land Reform (Scotland) Act 2003 provided for a general right of responsible access to land and inland waters throughout the country. With access comes responsibility and the "leave no trace" adage applies equally well to the river environment as to the hills. The Scottish Outdoor Access Code (2005) provides detailed guidance on these responsibilities and is based on three key principles, namely to respect the interests of other people, care for the environment and take responsibility for your own actions.

Leisure and recreation activities such as angling and canoeing bring people into direct contact with the rivers and lochs of the catchment. Kayaking is especially popular between Grantown on Spey and Aberlour and there has been a growth in adventure tourism activities such as white water rafting (between Ballindalloch and Knockando) and canyoning in some upper tributaries. The 'Spey Users' Group' has proved effective at resolving issues between these different interest groups. Non-native species can be (inadvertently) spread by recreational activity. This is due to the mobility and free roaming nature of recreation participants who constantly move between regions and water catchments, creating an ongoing challenge to control any spread.

Development of the national core path networks continues and demand for low-level walking routes continues to grow. The Speyside Way is one of four official Long Distance Routes in Scotland. First opened in 1981, it has been extended over the years and now runs from Spey Bay to Kincraig with plans to reach Newtonmore in the near future. More now needs to be made of the opportunities associated with this iconic route (see Economic Development chapter). Additionally, many local path networks including some that run along watercourses have been refurbished or extended in recent years and new ones such as the Aviemore Riverside Park created. More now needs to be done to encourage their use, particularly amongst the less active in society.

OBJECTIVE

Promote responsible access along the catchment with a focus on maintaining and improving the experience and encouraging inactive people become more active.

ACTIONS	Key Partners	Associated Objectives
Continue to promote responsible access and behaviour on and around the water environment. Maintain positive dialog between all river users and ensure all acknowledge and respect each other's rights and responsibilities.	LAs, SNH, CNPA, SFB, SWI, Access Forum	ED2, FISH3, FARM5
Ensure any impacts of recreational activity on the water environment is sensitively managed.	LAs, SNH, CNPA, SFB	FISH4
Raise awareness amongst recreational users of the how non native species can be spread.	LAs, SNH, CNPA, SFB	HS5
Extend the Speyside Way from Kincraig to Newtonmore and upgrade the existing route east of Boat of Garten.	CNPA, SNH	ED2
Encourage more use of the path networks along the Spey and its tributaries, especially by the less active in society.	CNPA, LAs, Paths for All	ED2

C3 EDUCATION AND TRAINING

Knowledge and understanding of the natural river environment within the general population is vital if appropriate stewardship and decision making is to be taken. When individuals connect with their surroundings, they are more likely to take care of them. In an era where more and more children are disconnected from nature, it is increasingly important that environmental education is provided both in school and through outside learning. Over the years primary school schemes have been developed within the Spey catchment including River Bank Boxes which are loaned out to schools and the Spey Fishery Board's hugely successful Salmon Go to School programme. Since the introduction of Curriculum for Excellence, the potential to engage with older pupils outside of traditional subject boundaries now exists and opportunities to do this should be explored as and when they arise, as should the development of a wider reaching community "Water School".

Many rural communities depend on employment provided through the land management sector for their sustainability. An increasingly wide range of specific skills are required to deliver effective river management and if not available locally, they have to be contracted in from further afield. This can range from the expertise of ghillies and digger operators for instream works, to undertaking green engineering techniques such as willow spiling or constructing an engineered log jam. Local skills gaps need to be identified and training or support funding put in place to address the shortfall.

The Third Sector encompasses an estimated 45,000 voluntary organisations in Scotland. Third Sector led activities relating to improving the environment are estimated to be worth over £100 million annually to the Scottish economy. The contribution that this sector and volunteers in particular can make to enhancing the river environment is ever more crucial as public funding reduces. There are increasing opportunities for the public to become involved in activities as diverse as INNS control, wildlife or wildcrime monitoring or willow coppicing.

OBJECTIVE

Increase knowledge and understanding of the natural river environment, building local skills and increasing volunteer participation.

ACTIONS	Key Partners	Associated Objectives
Support the provision of river and wetland environmental education & activities to inform and educate on healthy river systems and catchment functioning.	CNPA, SCI, SFB, LA	FM4
Continue to deliver programmes such as Salmon Go to School and maintain resources such as the River Boxes.	SFB, SNH	FISH3
Seek to improve knowledge, understanding and awareness of river processes and issues within the local community through development of a "water school".	SCI	COM1, FM3, FARM3
Support practical river management skills development by encouraging all those involved in river works to gain the necessary knowledge, expertise and training.	SFB, CNPA	FARM3
Identify local skills gaps and build local capacity in green engineering skills and techniques.	CNPA, SCI	FARM5
Develop volunteer programme(s) focused around the water environment activities such as wildlife crime monitoring, willow coppicing, INNS control and photo post site monitoring.	SCI, SFB, CNPA	HS5

C4 CULTURAL CONNECTIONS

The history and cultural value of the River Spey and its catchment is often overlooked, even by the communities that exist alongside or within it. However when a moment is taken to reflect, there are significant chapters in local history that have helped shape the area into the communities as they are today. In the 1700s, vast quantities of Caledonian timber were floated down the Spey to build pipelines for London's water supply and warships for Nelson's Navy. The early 1800s saw the construction of the Tugnet ice house at Spey Bay. Reputedly the largest industrial ice house ever built in Scotland, it is now preserved as a reminder of the past prosperity of a thriving coastal salmon fishery industry. As bridges replaced ferries across the Spey, there are many examples reflecting different eras of construction with the most famous being the Telford Bridge at Craigellachie which is the oldest surviving cast iron bridge in Scotland. Ongoing conservation of this built heritage is a vital part of the river environment.

Music, song, stories and language contribute hugely to the heritage of the area and can give valuable insight into its history of the area. For instance the gaelic for the River Mashie is Mathaisidh which means "good meadow river" and Truim means "elder tree river". There should be more encouragement to record and celebrate the cultural significance of the River Spey, both for its communities but also to enhance visitor experience. Indeed, part of Moray Council's 2014-17 Cultural Strategy is a vision that visitors to the area encounter a dynamic and authentic cultural offering.

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HNS ©

OBJECTIVE

Record and celebrate the natural cultural significance of the River Spey to the communities of the catchment.

ACTIONS	Key Partners	Associated Objectives
Encourage recording and engagement in the natural and cultural heritage associated with the River.	CNPA, SNH	C3
Facilitate conservation of the built and cultural heritage of the river environment.	CNPA, SCI	C3

C5 RENEWABLE ENERGY

In 2015, 26% of the UK's electricity came from renewable generation in Scotland with 69% of this coming from wind and 29% from hydro outputs. The Scottish Government has a target to generate the equivalent of 100 per cent of gross annual electricity consumption through renewable sources by 2020. As the requirement to produce more of our energy from renewable sources increases, so the technology to achieve this is constantly evolving. Although the potential to develop further large-scale hydro schemes is limited, in part by environmental constraints, there is still scope for exploiting small-scale hydro resources in a sustainable way.

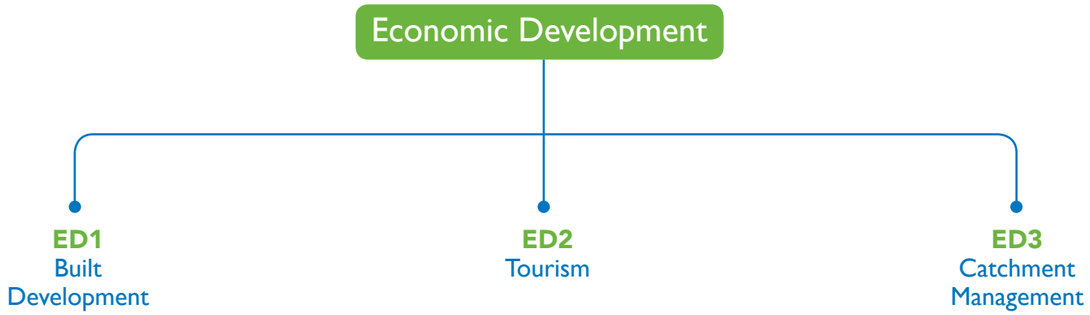
There are three main methods for generating electricity from fresh water sources: storage schemes involving dams that impound water in reservoirs, pumped storage which incorporates two reservoirs and run of river schemes that use the natural flow of a river. It is the latter that is most suited to small or micro scale schemes and with over 500 miles of tributary network within the Spey catchment there remain multiple opportunities for such schemes to be developed, particularly for the benefit of small communities. In 2015, the Kingussie Community Development Company was able to commence electricity production from a micro hydro scheme on the Gynack. It is providing affordable power to the nearby golf course with the excess being fed into the national grid to fund other community projects. Other sustainable renewable energy schemes that could be utilised by communities include biomass heating and community woods. Additionally as water heat extraction technology improves, its applicability of use within the catchment should be explored.

SCI ©

OBJECTIVE

Promote opportunities for communities to develop and benefit from renewable power generation.

ACTIONS	Key Partners	Associated Objectives
Support community associations to develop and sustain renewable energy schemes such as micro hydro, biomass and community wood schemes.	CNPA, SEPA	
Use Kingussie hydro scheme as a demonstration site to inspire other communities to consider similar initiatives and promulgate lessons learnt from their experiences.	CNPA	
Ensure interested communities are supported in any aspirations to develop hydro schemes such as accessing industry support or grant funding.	CNPA	
Explore potential of water heat extraction technology for use within in the catchment.	SWI	



Realising the potential benefits of the river system to local economic development

The economic value of the river to the communities that live along it and industries that exist because of it should not be underestimated. A healthy river supports thriving businesses and enhances the local environment.

As well as encouraging economic growth through enabling new development, there is also a need to protect existing economic assets, by maintaining water capacity, water quality and protecting assets from the impacts of flooding.

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ED1 BUILT DEVELOPMENT

The whisky industry is vital for the economic prosperity of many of the catchment's smaller communities and nearly 50% of all Scotch Whisky distilleries are located on Speyside. There has been exponential growth within the industry in the last few years which has led to considerable upgrade or expansion of distillery operations in the area.

Although ever more tightly controlled, the demand for new housing throughout the catchment continues unabated. A new settlement of An Camus Mor is planned for the banks of the Spey near Aviemore. Local plans are regularly reviewed and maximum use is being made of diminishing available land. The pressure to build in perceived inappropriate locations remains, although detailed flood mapping carried out by SEPA in 2015 has helped highlight particularly vulnerable areas.

As housing, industry and tourism grows, so the pressure on water quality increases and the demand for improved infrastructure including water supply, sewage treatment works and transport networks grows. ScotGov has committed to dualling the A9 trunk road between Perth and Inverness by 2025 and has recently allocated funds to dual the A96 between Inverness and Aberdeen. Both these roads run alongside or cut across significant sections of the River Spey and their upgrades have the potential to impact on the river and wetland habitats both during construction and beyond.

There is a need to continue to develop a greater understanding of relationships between water and wastewater capacity, new development requirements and environmental capacity including the capacity to cope with flooding events. Whilst supporting built development growth, it will continue to be a challenge to minimise its impact on the water quality of the catchment. Sustainable surface water management systems (SUDS) are designed to drain surface waters in a more natural manner resulting in a reduction in the rate of flow and /or the removal of pollutants. They are now recognised as best practice and are generally required for most new developments.

OBJECTIVE

Ensure continued capacity within the Spey catchment to support planned growth in housing, industry, forestry and farming.

ACTIONS	Key Partners	Associated Objectives
Minimise the impact of residential and industrial development on the water quality through appropriate implementation of SUDS	SEPA, SWI, LAs, CNPA	WE1, WE2, HS3
Better understand the relationships between water, wastewater and environmental capacities and new development requirements, ensuring there is match investment in water quality and capacity to deliver built expansion as identified in Local Development Plans.	CNPA, HC, MC, SW, SEPA SNH	WE1, FM1
Protect existing assets and ensure that all new developments take into account their potential impact on the frequency and intensity of flood events.	SEPA	FM1, C1
Ensure the river & wetland environment is protected and improved during major infrastructure projects such as the A9 dualling.	SEPA, SFB, CNPA	HS1, WE1
Support the continued expansion of the Whisky industry whilst ensuring no detrimental impact on surrounding water environment, flows or quality..	CNPA, LAs, SWI	WE1, WE3, HS3

ED2 TOURISM

Tourism is a vital part of the catchment's economy, bringing an estimated 1.5million visitors to the area every year and within the CNPA boundary it accounts for nearly 43% of all employment. The River network forms a vital part of the area's attraction, from its world class status as an angling destination to its outstanding natural beauty when admired from afloat or the Speyside Way.

Multiple opportunities exist to capitalise further on the tourism contribution that the river network can make to local economies be it from established activities such as angling or wildlife tourism, to more recent innovations such as adventure tourism.

Following the significant upgrade works that have been undertaken to extend the Speyside Way (which now runs continuously from Spey Bay to Kincraig) the focus should now be to realise the business opportunities associated with this Long Distance walk, from enhancing visitor experience, encouraging additional facilities and marketing of the route itself for walking, cycling or canoeing. There is still great potential to attract further visitors, which in turn will strengthen the area's economy. A coordinated approach to marketing the Spey experiences and promoting responsible, appropriate and sustainable experiences is vital if we are to protect the very things that make the area so special and attractive to visitors. In the past, the need to manage and accommodate a variety of interests has been effectively met through the Spey User Group Forum. As use of the river intensifies, there is a requirement to manage the associated impacts and refreshing this User Group could achieve that aim.

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OBJECTIVE

Raise the profile of the River Spey as a destination and realise its tourism potential whilst managing associated impacts.

ACTIONS	Key Partners	Associated Objectives
Refresh the Spey User Group as a means of addressing emerging issues and coordinating the tourism opportunities.	CBA, Moray Speyside DMO	C4
Enhance the visitor experience of both the River Spey and the Speyside Way and realise the business opportunities associated with them.	CBA, CNPA	ED1, C3, C4
Encourage more coordinated marketing of the tourism experiences to promote the Spey as a multiuse route for walking, cycling and canoeing	CNPA	C2, C4
Maintain and promote the Spey as a world class angling destination	SFB	FISH 3
Promote responsible, appropriate and sustainable wildlife and adventure tourism opportunities.	User Groups	C4, C5

ED3 CATCHMENT MANAGEMENT

The value of our near pristine water environment and the vital contribution that it makes to industry, residents and visitors often goes unnoticed by the public at large. Much more could and should be done to raise the profile of the economic, cultural and environmental importance of the river Spey and its tributaries. Given that most commercial decisions are financially driven, a better understanding of the natural capital value of the water in and to, various parts of the catchment is required. This will inform decision making and the trade-offs between the multiple demands on the river system.

The Spey Catchment Initiative was instigated in 2010 as a partnership project between public and private organisations to take forward key actions from the 2003 Spey catchment management plan. Since then it has delivered many multiple benefit projects relating to holistic water stewardship and demonstrated the effectiveness of partnership working and collaborative ventures. It has the ability to draw a wide variety of (sometimes disparate) stakeholders together and develop a cohesive holistic, multiple benefit project that meets their specific individual objectives. Often these would not be achievable or progressed in isolation.

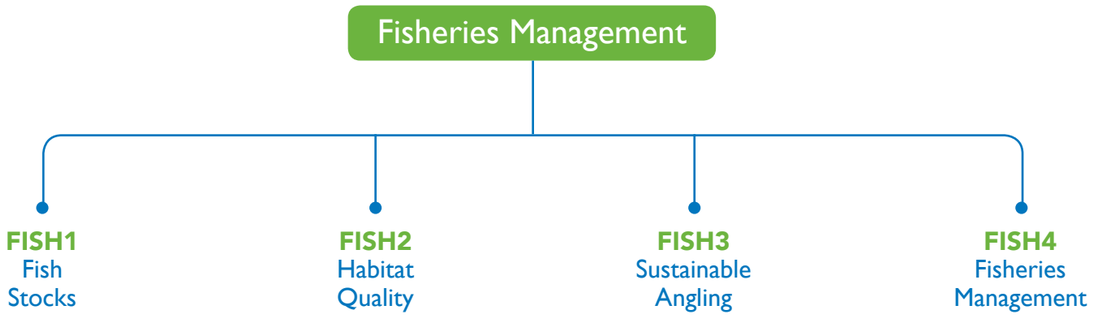
The need for a holistic approach to delivering current national targets (RBMP and Flood risk management 6 year plans) whilst protecting and enhancing natural assets has never been greater and the role of the catchment partnership working has become even more crucial and relevant. The challenge now is to ensure the medium term future of this hugely effective and reputable local environmental enhancement delivery mechanism such that partners continue to work collaboratively for the management of the whole catchment

OBJECTIVE

Working together to value water as an asset and realise holistic local and catchment scale objectives.

ACTIONS	Key Partners	Associated Objectives
Understand the natural capital values of the river in order to inform and use in decision making and trade-offs between multiple demands on the river system.	CNPA, SEPA SNH, SFB	
Maximise the collaborative benefits of partnership working through the Spey Catchment Initiative and continue to enable different stakeholders to meet and engage with each other.	ALL	Delivery of many
Continue to support the Spey Catchment Initiative Project Officer post as a local delivery mechanism and secure resources for its continuation for the life of this plan.	ALL	Delivery of many
Ensure wide dissemination of all information relating to the CMP using a variety of media, sharing and engagement opportunities, promoting and raising awareness of the value of catchment management work.	ALL	
Review the CMP at appropriate intervals and update to ensure new issues, objectives and actions are incorporated as and when appropriate.	SCI	

Fisheries Management



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To conserve and improve the status of indigenous fish populations in the Spey catchment and to encourage and develop recreational angling in a sustainable manner

ATLANTIC SALMON

The River Spey supports one of the healthiest populations of Atlantic salmon in Western Europe. It's rod fishery industry has a 10-year average catch of 8,500 salmon and grilse which in 2004, was shown to generate £11.8 million for the local economy and support 367 full time equivalent jobs in the catchment. This is likely to have significantly increased since then.

Adult salmon spawn in fresh water, and their young develop as fry and parr for up to four years before migrating to sea as smolts. Smolts migrate into the north and western Atlantic where they feed for up to four years before maturing and returning to their natal river to breed. If they return after one year they are known as grilse and if after several years are known as multi-winter salmon. Monitoring by Marine Scotland Science has suggested that the marine survival of smolts originating from Scottish rivers has declined in recent decades. This is thought to be due to climatic changes in the North Atlantic, but other factors such as predation or exploitation at sea may also be contributory factors.

Cyclical changes in the runs of salmon have led to a reduction in the numbers of grilse although multi sea-winter salmon numbers remained relatively stable. This has resulted in fewer adults returning to the River Spey, with a corresponding impact on rod catches. Since the 1990's reduced exploitation has been promoted (by the SFB and others) in order to maximise the numbers of adult salmon surviving to spawn. This has included the removal of legal and illegal coastal nets and the promotion of catch and release of rod-caught fish. By 2015, the latter policy has resulted in 94% of all rod-caught salmon and grilse being voluntarily released back into the river to spawn.

In addition to the problems facing salmon in the marine environment, there are several freshwater factors which also threaten the health of the Spey's salmon population. These include man-made barriers to fish passage, water quality issues, increasing incidence of extreme flows, predation of adult and juvenile fish, degradation of juvenile fish and spawning habitat through civil engineering and pollution, and the introduction of disease, parasites and non-native species.

Many of these issues are being addressed by the SFB in collaboration with riparian owners, government agencies and Local Authorities through a comprehensive fishery management plan.

TROUT

Brown trout are ubiquitous throughout the catchment and the sea-going form of the species, "sea trout", provides a significant rod fishery with a 10-year average catch of 2,200. Resident brown trout also provide localised fisheries, but their economic importance is more difficult to assess due to the informal nature of their management. There is much still to be learnt about the dynamics of brown and sea trout populations. However, as many of the factors that potentially affect salmon in fresh water also impact upon trout, actions to avoid these will be mutually beneficial for both species, particularly the management of smaller tributaries. The SFB is already responsible for the conservation of sea trout, and their fishery management plan considers management and research for all trout in the catchment as well.

Rainbow trout are not native to Scotland but have been introduced to the River Spey catchment, mainly for commercial put-and-take fisheries as well as private lochs and ponds operating recreational fisheries. If rainbow trout escape from stocked fisheries into the River Spey they may disrupt indigenous freshwater ecosystems by competing with salmon and trout for food and preying on other fish. There is not yet any evidence of self-sustaining populations within the catchment but introductions need to be better co-ordinated.

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PIKE AND OTHER FISH SPECIES

Pike are common in the slower-flowing, middle reaches of the River Spey and also many of the lochs within the catchment. The pike population supports a small fishery which could be expanded if promoted more widely, although there is still little biological information to support the management of such a fishery.

Eight other indigenous fish species are found within the River Spey catchment: European eel, sea lamprey, river lamprey, brook lamprey, flounder, minnow, three-spined stickleback and Arctic charr.

A range of non-native fish species are already present within the catchment, particularly in still waters, although some have been recorded in the Spey main stem. The impact of these non-native species has not yet been assessed, but without intervention and management, their spread within the catchment is likely, as are further introductions.

FISH1 FISH STOCKS

In 2016 a Scottish Government three-year moratorium on coastal netting out with estuary limits was imposed following recommendations by the North Atlantic Salmon Conservation Organisation to manage salmonid stocks sustainably. Concurrently, a process of categorising the status of rivers according to their Conservation Limit has begun.

Juvenile fish stocks are subject to predation by sawbill ducks (Goosanders and Mergansers) and Cormorants. However, it is not yet known whether these birds migrate to the Moray Firth and other catchments, or remain within the Spey and its tributaries. Evaluating this would help inform debate and decision making. Migrating smolts and returning adult salmon are also subject to predation by Grey and Common Seals. The management of these species is licensed but this is complicated by the fact both Common Seals in the Dornoch Firth and Atlantic salmon in the Spey are protected species under European law. Therefore, an appropriate balance must be made to ensure the sustainability of both species.

A number of barriers to fish migration have been removed in recent years, but many still remain. Efforts have been made to mitigate against the impact of these barriers by stocking hatchery-reared fish above them. However, more work is required to determine the most appropriate strategy for this fishery management tool.

Of the other indigenous fish species, the three lamprey species are of particular conservation importance (as listed in the Habitats Directive). Eel numbers are known to be at an unprecedented low throughout its European range. Improved information on the distribution and abundance of these native fish species is required since they all represent an integral part of the river's ecology.

OBJECTIVE

Conserve and enhances salmonids and other fish species through collaborative working and the adoption of appropriate polices

ACTIONS	Key Partners	Associated Objectives
Review and refine the methodology and data for determining conservation limit status with the aim of maintaining the Category One status of the River Spey.	SFB, SNH, Marine Scotland	HS1
Develop a research project to establish the spatial variation of sawbill populations and their predation impact on juvenile fish stocks within the river and estuary.	MFPMG SFB, SNH	HS4
Continue to work to reduce the impact of seal predation on smolt and adult salmonid stocks.	SFB, SNH	
Restore salmon population upstream of Spey Dam.	SEPA, SFB	WE4, HS1
Improve baseline knowledge on distribution and ecology of other fish species present within the catchment.	SFB, SNH	HS1
Develop an understanding of the role of, and most appropriate strategies for, mitigation stocking of salmon.	SFB, SNH	HS1
Maintain database of barriers to fish migration. Continue to work with regulators and operators to resolve fish passage issues.	SEPA, SFB, SNH, SWI	WE2
Focused around Loch Insh, improve knowledge of Atlantic Charr, particularly their spawning range and their genetics and investigate better monitoring methods.	SFB	

FISH2 HABITAT QUALITY

A key contributing factor to the survival rate of eggs, fry and parr is the quantity and quality of suitable habitat within the catchment. Clean flowing water in channels with varied sediment substrate and dappled bankside shading create the ideal conditions for juvenile salmon to thrive. These conditions are synonymous with a healthy water environment in general and so the presence (& quantity) of salmon is a reflection of overall ecosystem health.

Enhancement or restoration activities proposed elsewhere in this plan be it for farming, forestry, flooding or water environment purposes, all contribute to improving habitat quality for fish too. The focus to date has been on the larger watercourses (as defined in the RBMP process) but opportunities exist to better understand the contributions that the smaller tributaries (that are less than 1.5m wide) can make.

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In the past, some modifications to river banks and side channel closures were implemented either for agricultural gain or to increase water flows. This was in the belief that it would enhance fishing conditions. It is now considered that the latter is not actually the case and in fact salmon habitat could be extended by reconnecting these channels where practicable. A full inventory of disconnected channels is required so that prioritised restoration can take place.

OBJECTIVE

Conserve and restore riparian and instream habitat quality and diversity.

ACTIONS	Key Partners	Associated Objectives
Develop understanding of small streams (<1.5m wide) contribution to salmon habitat within the Spey catchment.	SFB, FCS SNH	HS3
Restore habitat quality and natural processes in modified streams.	SFB, SNH, FCS, SEPA	WE1, HS3, FARM3
Complete inventory of blocked mainstem and tributary side channels. Develop prioritised plan of reconnection to create habitat & high water refuges for a range of species.	SFB, FCS, SCI	HS3, FARM3
Extend native riparian woodland upstream, beyond existing limits, reconnecting and enhancing existing woodland fragments where possible.	FCS, SFB	FW1, HS3, FARM5
Investigate the cumulative impacts of industrial thermal inputs on the Spey mainstem, particularly in relation to distillery cooling water discharges.	SFB, SNH, SWI, SEPA	ED1 WE3
Resurvey Loch Beag and Loch Alvie to establish status of introduced fish populations. Compare results of traditional loch habitat survey techniques with results from Environmental DNA (eDNA) analysis of water sampled from both lochs.	SFB, NP, SNH	
If the eDNA pilot is successful, utilise this technique to assess the status of fish populations in other standing and running water locations across the catchment.	SFB, NP, SNH	

FISH3 SUSTAINABLE ANGLING

No industry or sport can hope to have a sustainable future if it is not able to attract new participants. Recreational fishing is no exception and with its aging demographic, there are real concerns about the declining number of people who participate in the sport and thereby contribute financially to its management. It is also apparent that angling is failing to attract new participants, particularly from younger generations and there is a continued lack of female participants in the sport.

It is essential that there is improved awareness of the River Spey as a fishery resource amongst all age groups. Better marketing is required alongside new approaches to attracting participants. Traditional fishing lets may in the future be just one option for recreational fishing. Accessibility will need to be broadened and innovative approaches taken so that the long term future of the industry is secured through increased participation as without fishing, there will be no income with which to manage the fishery.

All avenues for promoting the catchment's fisheries need to be further developed including internet, social media and word of mouth. In particular, there are elements of the river's non-salmon fisheries which are currently underutilised and failing to fulfil their full economic and social potential. The SFB's "Salmon Go To School" programme has been invaluable in generating awareness amongst children about the river, but the resources for this programme are limited. There is considerable scope to expand this programme further and to develop it into one that also teaches children to fish. In this respect, the role of "put and take" facilities as an entry point to the sport for young people could be enhanced, with scope for this sector to be integrated more closely with wild fisheries management.

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OBJECTIVE

Identify and develop opportunities for the promotion of sustainable fisheries, maximising the economic value of angling but also its role, at the individual and society level, as a valuable form of outdoor recreation.

ACTIONS	Key Partners	Associated Objectives
Promote sustainable angling opportunities for all sport fish.	SFB, CNPA	C2, ED2
Develop and implement an effective strategy to increase angling participation levels amongst females.	SFB, CNPA	ED2, C2
Encourage the uptake of angling as a recreational activity amongst younger age groups, particularly focusing on those from rural communities.	CNPA SFB, SCI	C2
Expand Salmon in the Classroom programme to reach more children.	SFB, SCI	C3
Develop and promote the health benefits of angling as an accessible and stimulating activity for all age groups.	SFB, SCI CNPA	C2

FISH4 FISHERIES MANAGEMENT

The Scottish Government has pledged to reform wild fisheries management structures in Scotland and is currently part way through this process. A 2014 review made 53 separate recommendations which have since been consulted upon. The Government's proposals are wide ranging and include changes to structure and function of existing District Salmon Fishery Boards and the areas they manage. They would like to see fewer management organisations that will then have an all species remit. In due course it is expected that a Bill will go before Parliament to define the new management and financial structures and establish the foundations for a more secure and sustainable future for wild fisheries. The Spey Fishery Board is working closely with all relevant stakeholders to establish effective new structures, fit for purpose for the 21st Century, so as to conserve, protect and enhance all freshwater fish species throughout the catchment. In the meantime, it will continue to operate under its current remit until such time as the transition to the new structures takes place.

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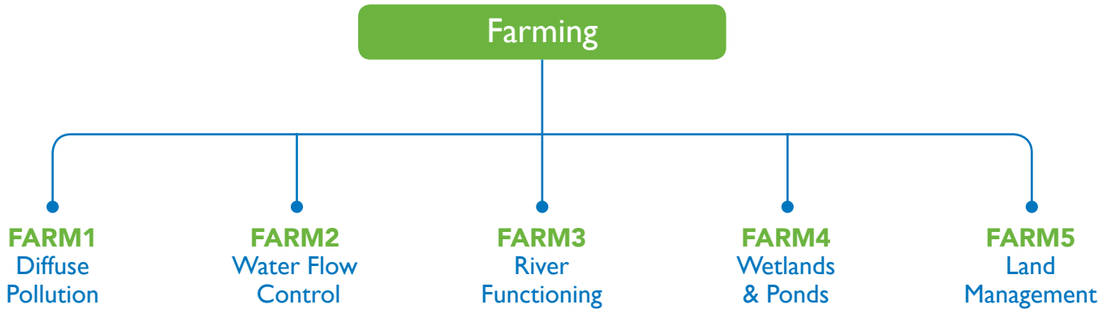
OBJECTIVE

Ensure the smooth and effective transition from District Salmon Fishery Boards to the Fishery Management Organisation structure proposed by the Scottish Government's programme for Wild Fisheries Reform.

ACTIONS	Key Partners	Associated Objectives
Extend the scope of fishery management to protect, conserve and enhance all native freshwater fish species and their habitats so as to develop and enhance their social and economic benefits.	Scot Gov SFB	ED2, HS3
Develop management and administration structures to ensure effective, transparent and accountable governance in the operation of the new fishery management structure.	SFB	
Continue to develop and promote evidence-based fishery management through integrated data gathering, research and dissemination in collaboration with all partners.	SFB et al	
Develop appropriate measures for the effective enforcement of new fishery management legislation.	SFB, Scot Gov	
Explore options for contributions from other water users to the work of Fishery Management Organisation to support a holistic approach to river management.	SFB, CNPA, Marine Scotland	C2



Promote good farming practices and land management for the benefit of the water environment

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Farming plays a tremendously important role in the social and economic fabric of the River Spey catchment and its contribution to the successful management of the water environment is enormous. There is often insufficient recognition for the positive actions that are made by farmers and crofters, such as bankside vegetation management, wader habitat enhancement, or going beyond minimum regulation requirements.

As knowledge and awareness of both river processes and the issues surrounding river related works continues to increase within the land management community, so does the opportunity to enhance the river environment for the benefit of all.

Recent years have seen improved compliance with General Binding Rules and increased promotion of agricultural practices which benefit water quality and riparian and wetland habitats. The contribution that this makes to the water environment is more widely understood and we now need to maximise opportunities to enhance watercourses and margins through use of the appropriate Agri-environment scheme options. When new techniques are trialled it is often in parts of Scotland well away from the Spey, therefore opportunities for developing best practice demonstrations on sites within the catchment also need to be pursued more vigorously.

FARM1 DIFFUSE POLLUTION

One of the key focuses of water quality improvement programmes throughout Scotland is to reduce pollution from all sources be they industrial, domestic or agricultural. Fertiliser and manure application, pesticide use, runoff from farm steadings and soil erosion all have the potential to contribute to diffuse pollution and degrade water quality. In 2008 SEPA introduced a series of Diffuse Pollution General Binding Rules (DPGBRs). This has helped to focus on a wide range of land management activities that are liable to cause pollution and the necessary actions that must be taken to help protect and improve water quality. They define the statutory baseline of good practice for a range of farming activities including acceptable working distances from water courses. Farming and Water Scotland provide extensive advice on compliance via the SRUC website as well as access to the most recent versions of the rules. **(www.sruc.ac.uk/info/120603/farming_and_water_scotland)**.

There has been considerable progress regarding compliance with many of the GBRs but poaching (or livestock access) within 5m of a surface water course or wetland still needs to be addressed in many parts of the catchment. Where watercourses need to be fenced, new off stream watering provision is required for livestock. The preferred solution is to install mains water fed troughs, however in many rural areas this is neither practical or economically feasible. Alternative solar and hydro powered pump/trough systems have been developed in recent years but awareness of these alternatives needs to be promulgated more effectively. Assistance is available through Agri-environment and other schemes to help fund the necessary improvements and many organisations are working with land managers to ensure the benefits from these schemes are realised.

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OBJECTIVE

Reduce the impact of diffuse agricultural pollution on the surface and ground water quality of the Spey catchment.

ACTIONS	Key Partners	Associated Objectives
Engage with land managers to promote best practice and help them voluntarily achieve compliance with national standards.	SEPA, NFUS, RICS, CNPA	WE1, WE2
Increase awareness of both statutory and non-statutory diffuse pollution codes of practice and promote practical actions that reduce diffuse pollution.	SEPA, SAC, RICS, SRUC, SWI	
Encourage appropriate riparian fencing and off stream watering programmes where rivers are polluted by stock or river banks are damaged by livestock.	NFUS, CNPA, SFB, SRUC, SAC, SEPA	WE1, WE2, HS3
Provide advice to land managers on how to access funding for improvements and where appropriate assist in co-ordinating improvement projects.	SEPA, Land agents, SCI	
Promulgate alternative watering systems such as solar & RAM powered pumps.	NFUS, SRUC	

FARM2 WATER FLOW CONTROL

How land and its interface with adjoining watercourses is managed can have a significant impact on water absorption, run off and flow rates. The cumulative effect of bare uplands, straightened channels, ditches and embankments on flow rates and water quantity may not be apparent until many miles downstream. Reconnecting watercourses with their local floodplains, strategically planted woodland schemes and appropriate drain blocking, even at a small scale, can all contribute to effectively slowing run off into watercourses. This appropriate holding or slowing water at source can reduce the impacts of high flows further downstream and reduce damage to arable farmland and built infrastructure.

The idea of allowing a floodplain to re-naturalise through the removal of artificial embankments can be a very sensitive issue, from both an economic and social viewpoint. As the strategic vision for catchment scale natural flood management is developed, it will assist in identifying those areas that could contribute most to this ideal. It is recognised that floodplains often include some of the most valuable land for farming and therefore impracticalities abound in allowing many floodplains to fully revert to their "natural state". There may however be options to better manage peak flood flows through controlled temporary storage and drainage measures behind existing flood banks such as with spillways and valves. As climate change alters weather patterns, the need to build resilience to better cope with higher frequency heavy rain events has to be considered by all land managers and small actions at a local level will contribute to overall water management at the larger catchment scale.

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OBJECTIVE

Developing land management practices which contribute to high flow and flood water management and thereby reduce flooding impacts downstream.

ACTIONS	Key Partners	Associated Objectives
Encourage a holistic approach to water management within the farming community.	NFUS, RICS, SEPA, SRUC, CNPA	FM1
Utilise SRDP and other schemes to undertake channel and floodplain restoration (such as removal/set back of embankments, wetland creation).	Land Agents, NFUS, RICS, SEPA, SRUC	FM1, FM2
Encourage actions that slow run off into watercourses such as appropriate drain blocking, use of flaps & valves in drains or tree planting schemes.	NFUS, RICS, SEPA, SRUC	FW3, FM1
Reconnect watercourses with their localised floodplains where possible.	NFUS, RICS, SEPA, SRUC	FM2
Consider collaborative ventures across landholdings to improve river functioning and capacity in spate flow conditions.	NFUS, RICS, SEPA, SRUC	FM1, ED3

FARM3 RIVER FUNCTIONING

When the natural functioning of watercourses through farmland is improved, as well as increasing the naturalness of watercourses it also enhances ecosystems and benefits in stream and riparian wildlife. Tree planting along river banks can contribute enormously to bankside stability, helping to reduce erosion as well as benefiting a range of riparian and instream species whilst appropriate river works can contribute to localised flow management.

Much is written in other sections of this plan about river functioning, particularly in relation to sustainable flood management and meeting government targets under the RBMP process **(See Water Environment, Flood Management and Habitats and Species)**.

Farmers and other land managers are crucial partners to enabling the delivery of improved river functioning and continued support is required to provide them with advice and guidance on options, funding, regulation and techniques to enable improvements to be made.

Over the last 20 years it has become increasingly apparent that hard engineering works such as rock revetment are not always the most appropriate solution for erosion protection, particularly in moderate or low energy environments. Many new techniques, collectively known as "green engineering", have been developed as an alternative to using rock and concrete including engineered log jams, large woody structures and willow spiling. These more natural features provide bank stabilisation and erosion protection whilst also dissipating flow energy, hosting habitats and giving an improved visual naturalness. The Manual of River Restoration techniques, is an example based guide on the full suite of river restoration and enhancement techniques that are acceptable practice in the UK. Available to download at **www.therrc.co.uk/manual-river-restoration-techniques**, it provides advice on creating floodplain wetlands, to enhancing straightened channels and bank stabilisation techniques. Further advice is also available from SEPA, the SRUC and SNH, with funding support available through schemes including the Water Environment Fund and SRDP agri environment scheme.

OBJECTIVE

Improve natural functioning of watercourses through farmland to manage flows and sediment more effectively, stabilise banks, reduce erosion and benefit ecosystems.

ACTIONS	Key Partners	Associated Objectives
Facilitate restoration of priority waterbodies which are failing WFD targets due to morphological pressures.	SEPA, SFB, SCI, SWI	WE2
Promote environmentally sustainable types of engineering works to river channel and banks.	SEPA, FU, SCF SCI, SFB	FM1
Promote agri-environment options that support river channel and bankside improvement works.	Land agents, NFUS, SCI	HS3, FISH2
Implement green engineering techniques such as log jams, large wood structures and willow spilling throughout the catchment.	SEPA, SCI, SRUC, SAC, FCS	FM2
Promote tree planting to stabilise banks and benefit instream habitats (particularly shaded areas for salmonid populations).	SFB, FCS, SFB, SCI, NFUS	FISH2, FW2
Advise and assist land managers on the Controlled Activities Regulations (CAR) process to enable progression of river enhancement works.	Land agents SCI, SEPA, SAC, SRUC, FCS	

FARM4 WETLANDS & PONDS

Flooding is a natural phenomenon and there may be scope in some areas (particularly rural), for allowing land which is prone to periodic inundation to revert to wetland. Often supported through grant funding streams, the creation or enhancement of wetland habitats on the floodplain can have many positive benefits both as part of sustainable flood management and as a contribution to increased biodiversity, particularly for riverine and wetland birds. Flood-prone areas are often of the highest quality for breeding farmland waders such as redshank, oystercatcher, lapwing and curlew, all of whom have seen a measurable decline in populations in recent years. The Strathspey Wetland and Wader Initiative (SWWI) has been working with farmers to enhance conditions for these species by promoting and encouraging agricultural practices which maintain, enhance and create suitable habitat. Continued support and promotion of the work of the SWWI is needed to prioritise efforts to halt the decline in wading bird populations.

Constructed wetlands are treatment systems that use natural processes involving wetland vegetation, soils, and their associated microbial assemblages to improve water quality. They can collect, store and treat lightly contaminated run-off from roofs, roads and yards and so reduce inputs of diffuse pollutants to the water environment. Constructed farm wetlands may also intercept emergency leaks or spillages, control storm water run-off, and provide habitat and biodiversity benefits. They can be a functional part of waste water management and provide a sustainable alternative to conventional mechanised treatment technologies. SEPA have produced a design manual which is available online at **www.sepa.org.uk/media/131412/constructed-farm-wetlands-manual.pdf**.

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OBJECTIVE

Retain, expand and enhance wetlands and natural ponds for a variety of benefits.

ACTIONS	Key Partners	Associated Objectives
Promote and encourage agricultural practices which maintain, enhance and create wetland areas and ponds.	NFUS	FM2, HS3, HS4
Extend the "Create a million ponds" project into the National Park.	CNPA, PCT,	
Promote funding schemes that encourage pond development and the recreation of lost wetland habitats.	SWWI, SCI	HS3
Support SWWI in their work to promote wetland enhancements for the benefit breeding waders.	NFUS, SNH, RSPB	HS4
Promote the use of constructed farm wetland systems to improve water quality.	NFUS	WE1

FARM5 LAND MANAGEMENT

Looking after the water and riparian environment is seen as a vital part of effective land management. Ensuring that changes in land use do not adversely impact on riverine habitats and species should be an integrated part of any decision making process. In the past watercourses were sometimes viewed as little more than a free water supply or the boundary between land holdings, but now the multiple benefits of proactively managing them as an integrated part of the local environment is much more appreciated. This is reflected through the myriad of agricultural support schemes that exist, particularly within SRDP, to support activities that contribute to improving water quality, enhancing riparian habitats, or aiding flood management. Partnership working by the agencies is leading to a much more joined up approach, ensuring that land and water management is integrated as far as possible.

When new techniques are developed or improved methods of best practice emerge, it is imperative that demonstration sites within the catchment are developed and supported to showcase these advances. Local sites provide an opportunity to test the viability of new processes or the resilience of equipment to our harsh Highland climate.

© CNPA

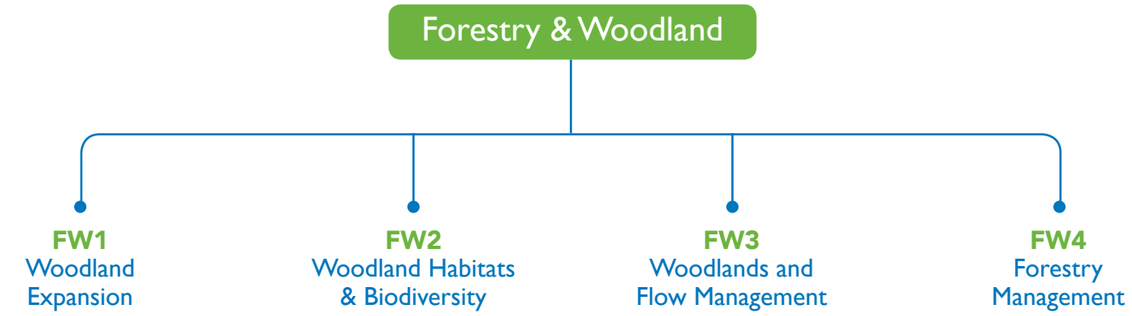
They then offer a platform to showcase and promote their use to others. For example, solar powered troughs were developed in the Borders. Once one was installed in Strathspey, the technology was proved to be suitable for the Cairngorms and now several exist within the area.

Increasingly a collaborative approach across land holdings at a sub catchment level is required to maximise the benefits that can be realised for a given watercourse and its riparian margins. For example it may be more natural to allow flooding or create a wetland or wet woodland which crosses multiple land holdings than within a single land boundary which becomes artificially constrained. Opportunities to work collaboratively should be promoted wherever possible.

OBJECTIVE

Enhancing water and riparian environments through effective land management.

ACTIONS	Key Partners	Associated Objectives
Promote through Agri-environment and other schemes agricultural practices which benefit water quality and riparian and wetland habitats.	SCRPID, SFB, NFUS, CNPA, SCI	HS3, FM2, FISH2, FW4
Encourage and assist in facilitating collaborative SRDP applications to enhance watercourses & their margins at a sub catchment scale.	SCI, SFB, CNPA	HS3, ED3
Continue to develop and support sites of best practice and new techniques which contribute to the aims and objectives of integrated catchment management.	CNPA, SCI	C3
Ensure that changes in land use do not adversely impact on riverine habitats and species.	SEPA	HS3
Develop and implement a holistic wetland and riparian habitat strategy to inform future strategy and management decisions.	CNPA, SNH, SWWI, SCI	



Expand and enhance the rich woodland resource in the catchment (at all scales), to provide multiple biodiversity, flood management, landscape, amenity and economic benefits

Scotland's forests and woodland are a vital natural asset that produce a huge range of benefits for the economy, people and environment. They are dynamic and important ecosystems that alleviate flooding, stabilise the soil and provide a home for wildlife. The benefits of woodland for the water environment are well recognised and this relationship now has a bearing on approaches to woodland creation. Floodplain and riparian woodland is part of the natural habitat structure of low lying ground adjacent to watercourses and is important for fluvial processes.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Trees contribute material to the river system such as leaves and woody debris which provide food, physical habitats and in stream shading. In the past it was standard practice to remove all dead or fallen wood from watercourses but this is not now the case. Current practice now suggests that fallen wood is left as is unless it is causing a hazard or is detrimental to river functioning.

Plenty of advice and guidance now exists **(such as from the River Restoration Centre www.therrc.co.uk/MOT/References/WT_Managing_woody_debris.pdf)** on how to manage wood in stream for a multitude of benefits from Natural Flood Management to habitat enhancement.

The Forestry Commission Scotland website at **scotland.forestry.gov.uk/** holds a wide range of material including the latest version of the Forest and Water Guidelines and information on grants and regulations. It also links to the Land Information Search Tool, which enables anyone to search for data on a specific area of land or feature throughout Scotland. **map.environment.scotland.gov.uk/landinformationsearch/lis_map.html**


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FW1 WOODLAND EXPANSION

By the beginning of the last century, woodland cover in Scotland had declined to about 5% of land cover. A state afforestation programme introduced in 1919 led to a steady increase in woodland area (mainly through the creation of coniferous plantations) and today about 17% of Scotland is woodland cover. This is about half of the average of other EU countries and less that one quarter of what once existed in Scotland.

There is currently estimated to be 13,420km^2 of woodland in Scotland of which 10,450km^2 is coniferous and 2970km^2 is broadleaved. To increase cover to the Scottish Government's target of about 25% by 2050, an additional 6500km^2 of new woodland will need to be created, equating to a sustained annual planting rate of around 100-150km^2 per year. This will be composed of native woodlands, mixed woodlands, softwood forests and energy forests. More details can be found in The Rationale for Woodland Expansion, **(www.scotland.forestry.gov.uk)** which lays out the Scottish Government's thinking on how woodland expansion can best increase the delivery of public benefits from Scotland's land.

Within the Spey catchment, there are multiple opportunities to contribute to this expansion policy particularly in the upper catchment and this could bring multiple benefits to the water environment too. Drivers for woodland expansion include helping to tackle greenhouse gas emissions, restoring lost habitats, adapting to climate change and helping to manage ecosystem services, all of which are compatible and intrinsically linked to catchment management objectives.

Continued promotion and delivery of woodland creation and expansion is needed, particularly in CNPA targeted areas or of sites that provide multiple benefits such as contributing to flow management. Further regeneration of wet and riparian woodland is desirable as is securing the development of more community woodland sites.

OBJECTIVE

Work to deliver Scottish Government Policy for woodland expansion whilst also contributing towards the objectives of integrated catchment management.

ACTIONS	Key Partners	Associated Objectives
Build on previous strategic plans to develop targeted woodland expansion throughout the catchment.	FCS, SCI, CNPA	
Identify appropriate sites for the regeneration or expansion of wet and riparian woodland.	FCS, SCI, CNPA	FARM5
Promote woodland creation in CNPA target woodland expansion areas which will also contribute to catchment objectives.	CNPA, SCI, FCS, SRUC, SAC, Agents	
Support the restoration of degraded wet and riparian woodland through SRDP agri environment and forestry schemes.	CNPA, SCI, FCS	FARM5
Encourage and support the development of more community woodlands.	FCS, WT, TFL	C3

Forestry & Woodland

FW2 WOODLAND HABITATS AND BIODIVERSITY

The last 20 years has seen changes in woodland management practices whereby conifer plantations near watercourses have been cleared and it is now established practice to plant broadleaved trees within the riparian zone. These riparian woodlands play a crucial role in helping to maintain the health and productivity of rivers and burns.

They protect river-banks, control erosion, capture and recycle mineral nutrients and increase biodiversity. In particular, native woodland benefit fisheries by reducing siltation of spawning grounds, supplying invertebrates and leaf-litter for food, and providing shade and cover. A riverbank woodland can be particularly efficient as a filtering mechanism for removing sediment. It can act as an important buffer (or nutrient sink) by intercepting and reducing the amount of diffuse pollutants reaching the watercourse from upslope land. It can also help reduce thermal stress to freshwater life by the cooling effect of its canopy shade and can improve river channel and bankside morphology through tree rooting and large woody debris inputs.

Although the majority of coniferous plantation issues along riverbanks have now been tackled, there still exist pockets which are affecting water quality that have yet to be addressed. It is intended to identify and rectify these during the duration of this plan. Where riparian woodland exists, continued active management of these areas needs to be promoted to realise the maximum benefits of these sites for the water environment. Finally, consideration should be given to the possible impact any beaver reintroduction programme may have on forestry and watercourse management within the catchment.

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OBJECTIVE

Improve habitat and biodiversity through tree species choices, and improve woodland networks as part of landscape scale habitat restoration.

ACTIONS	Key Partners	Associated Objectives
Identify any remaining local water quality issues caused by forestry and take action to rectify.	FCS, SFB, FES, SCI	WE3
Encourage deadwood in and around rivers for the benefit of in stream species.	SFB, RICS, FCS	FISH1
Use outputs from Scottish River Temperature network to inform riparian woodland planting locations to mitigate for increasing water temperature hotspots.	SFB, SCI, FCS	FISH1
Encourage active management of existing riparian woodland.	NFUS, FES, FCS, SCI	FM2
Fully utilise larger forestry scheme planning processes to gain maximum benefits for biodiversity in the catchment.	FCS	HS3
Consider specific forestry action to future proof catchment for possible introduction of beavers.	CNPA, FES, FCS	HS6

FW3 WOODLANDS AND FLOW MANAGEMENT

Forests and woodland have long been associated with an ability to reduce flood flows compared to other land uses. Studies have found infiltration rates to be up to 60 times higher within woodland shelter belts than compared to grazed pasture.

There are four main ways that woodland can help reduce flood flows:

- Greater water use by trees themselves reduces the volume of flood water downstream
- Higher infiltration rates of woodland soils reduces rapid surface runoff and flood generation
- The greater hydraulic roughness of trees, shrubs and large woody debris along stream sides acts as a drag on flood waters, slowing down flood flows
- By reducing soil erosion and interrupting the delivery of sediment (via runoff) into watercourses, this helps to maintain the water carrying capacity of river channels and reduces the need for dredging

In recent years there have been several studies and trials to demonstrate or help quantify the benefits of upland planting schemes for water flow control, key examples being Slowing the Flow in Pickering and Pont Bren in Wales. The latter started out as an upland farming efficiency project but discovered that upland woodland management and strategically located belts of tree planting are very effective at reducing water run off in heavy rain.

These techniques are now being applied elsewhere and there are examples of young contour planting schemes within Scotland. Flow control in many areas of the Spey catchment could benefit from similar upland woodland contributions and opportunities now exist to explore this further both at a strategic and local level.

Further information and examples of techniques may be found at **www.trees.org.uk**, in SEPA's NFM handbook or at **www.forestry.gov.uk**

OBJECTIVE

Facilitate opportunities for establishing or enhancing riparian, floodplain and wider catchment woodland to reduce run off rates, sediment input and aid bank stabilisation.

ACTIONS	Key Partners	Associated Objectives
Improve knowledge of upland planting's contribution to flow management. Develop strategic plan for where maximum benefits could be realised within catchment.	FCS, CNPA, SCI	FM1, FM2
Ensure forestry activities do not adversely impact on flooding frequency and intensity.	SEPA, FCS, NFUS, SFB	WE4, WE5
Deliver multiple riparian expansion/enhancement sites throughout the catchment to help reduce flow rates and stabilise river banks.	SCI, FCS	FM2
Explore potential and initiate trial for woodland management to help reduce runoff, soil erosion and sediment delivery from upland hills & agricultural land.	CNPA, FR, SFB, FES	FARM2
Use opportunities at suitable sites to develop and deliver multiple benefit woodland watercourse improvements (eg Fochabers Burn project).	FCS, SCI, SEPA, FES	FISH1, HS3, FM2, WE4
Promote the Forestry and Water Guidelines for Planting.	FCS, SCI, CNPA	
Understand more fully how mature woodland affects flows and where possible quantify with supporting data.	FCS, FR, CNPA, SCI	WE4

Forestry & Woodland

FW4 FORESTRY MANAGEMENT

Forest management has profound effects on streams, river, lochs and watercourses. Good management enhances wildlife, contribute to water flow control over land and doesn't impact on water quality. Poor management can lead to flooding, increased soil and stream erosion and greater sedimentation. Increasingly forest operations are carried out in harmony with watercourse management. Good harvesting management can do much to minimise the adverse effects of harvesting operations on streams. Risks arise because felling operations disturb the soil and remove part or all of the intercepting canopy, allowing more rain to reach the ground. The resulting increased surface water flows will then carry larger amounts of organic material and soil into the drainage system. The layout of planting and the choice and location of species can have a great influence on adjoining aquatic environments. The latter are best protected by establishing protective strips alongside the water, keeping substantial areas open to sunlight and ensuring development of thriving bankside vegetation.

© SCI

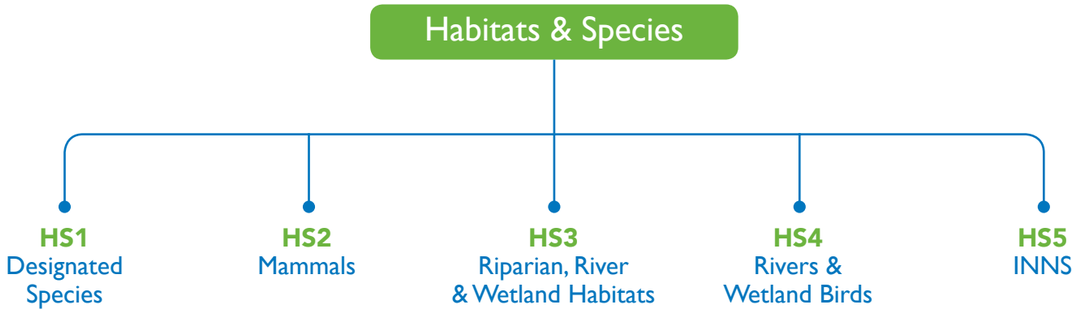
Extensive support is available to manage forestry and woodland effectively. Advice is available from organisations such as Forestry Commission Scotland and the Woodland Trust and in multiple publications available on line. Land data is readily available in the public domain at the aforementioned Land Information Search tool. Additionally SEPA's flood maps **(map.sepa.org.uk/floodmap/map.htm)** show areas that may be able to contribute to run off control. Financial support to enable woodland creation is available through many sources including the Forestry Grant Scheme (through Scot Gov Rural Payments and Services) and the Woodland Trust.

Over the next few years the intention is to identify suitable sites throughout the Spey catchment where trees could contribute to water margin resilience (bankside stability) or NFM by slowing or absorbing the flow. There continues to be a need to encourage and support forestry management activities which are beneficial to the aquatic environment.

OBJECTIVE

Encourage and promote good environmental practice for woodland management in order to protect and enhance water quality and biodiversity.

ACTIONS	Key Partners	Associated Objectives
Support the contribution of woodlands to catchment management objectives through current Forestry Grant Schemes and other funding opportunities.	FCS, SCI, SFB, CNPA, Land Agents	ED3
Develop a better understanding of the implications of forestry management practices on water quality and freshwater ecology within the catchment.	FCS, SCI, CNPA, SFB	WE3
Continue to reduce the potential for forest management activities to adversely affect water quality in the catchment.	FCS, SEPA CONFOR	WE3
Identify where and how woodland across the catchment can best contribute to Natural Flood Management.	FCS, SCI, SFB, CNPA	FM2



Restore, conserve and enhance the special natural heritage that exists within the waters and the wetlands of the River Spey catchment.

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The natural heritage of the Spey catchment is one of the most environmentally important in the whole of Scotland. The river system is recognised for its fluvial geomorphological interest and some sections such at the River Feshie and Insh Marshes are noted as best examples of river processes and landforms. Designated for its populations of Atlantic salmon, freshwater pearl mussel (FWPM), otter and sea lamprey, the main stem is also a Special Area of Conservation (SAC) and a Site of Special Scientific Interest (SSSI) and many of its tributaries are also SACs.

Throughout the Spey catchment there are many protected areas including floodplains, alluvial alder woodland, vegetated shingle bars and mire and bog habitats that together, form part of the European Natura sites network. Maintaining and protecting the special qualities of this diverse landscape and the species that exist within it can be challenging in the face of continual pressures be they economic, political or natural events.

Further information on designated sites, protected species, conservation policy and biodiversity in general may be found at SNH's website, **www.snh.gov.uk**.

Habitats & Species

HS1 DESIGNATED SPECIES

Atlantic salmon is an iconic species that is a vital part of both marine and freshwater ecosystems. Within the catchment they are vital to the existence of other species such as FWPM and their presence is an indicator of local aquatic quality. With breeding grounds in the upper parts of the tributary system, the Atlantic salmon are vulnerable to pollution resulting from poor agriculture, aquaculture or forestry practices. To maintain and enhance juvenile populations sympathetic upland management is required to reduce run-off, enhance water quality and retains suitable riverine habitat. The Atlantic salmon is a vital contributor to our rural economy (see Fisheries Management chapter). International scale conservation of this highly migratory species is being undertaken by organisations such as NASCO, the North Atlantic Salmon Conservation Organization **(www.nasco.int/index.html)**.

The freshwater pearl mussel is a globally threatened species which has a stronghold population in the River Spey. Unfortunately a 2013/14 survey reported a 50% population decline since 2001. Changes in water quality, decline in salmonid stocks, expansion of ranunculus and inappropriate river engineering are considered to pose the most significant threats. FWPM are now fully protected under law and it is an offence to remove or disturb them, however isolated incidents do still occur. Conservation works have taken place under the EU Life+ Pearls in Peril project (2012-16) but there is still much to be done. Translocation pilots require monitoring, further research is necessary to understand their poor abundance and recruitment in the upper Spey and tolerance limits for certain parameters and pollutants need to be agreed.

There are three species of lamprey in the UK; sea, brook and river. They are a primitive species with gill holes rather than slits and a large round mouth filled with concentric rows of teeth which they use to attach to their prey, including salmon. Limited information is known about the populations of lamprey in the River Spey making it difficult to provide suitable conservation management guidance to river managers. Awareness of their existence needs to be improved, as does effective monitoring methods.

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HS1 DESIGNATED SPECIES

OBJECTIVE

Conserve and enhance the Atlantic salmon, sea lamprey, freshwater pearl mussel, and otter populations of the River Spey and its catchment. Maintain or improve the condition of the water and wetland designated sites within the catchment.

ACTIONS	Key Partners	Associated Objectives
Monitor the features of the River Spey and other designated sites within the catchment.	SNH	
Take into account the needs of designated species whenever decisions are made on changes in land management including development.	ALL	ED1, FISH1 FARM5, FW4
Refine and improve monitoring methods for sea lamprey.	SNH	
Promote and increase awareness of Sea Lamprey.	SNH	C3, FARM5
Monitor existing FWPM translocations and consider targeted reintroductions and translocations.	SNH, CNPA	WE3, FISH2
Further investigate the reasons for the low abundance and poor recruitment of FWPM in the upper River Spey.	SNH	WE3, FISH1
Raise awareness of the important role of FWPM in the ecology and economy of the River Spey and problems with illegal pearl fishing among targeted local audiences.	SNH, CNPA	C3
Continue to tackle illegal FWPM fishing through joint working between authorities, police and the Partnership Against Wildlife crime.	Police, SNH, CNPA, NFUS	C3
Confirm the fish host specificity of FWPM in the Spey and identify the reasons for the lack of FWPM glochidia on fish in locations where FWPM have been reintroduced.	SNH, SFB	FISH1

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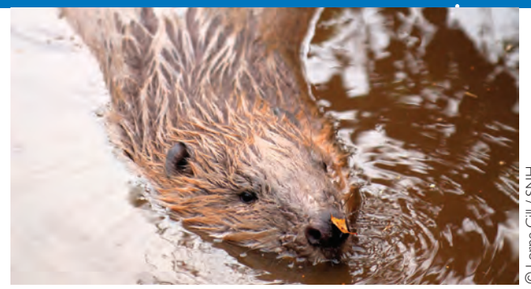
Habitats & Species

HS2 MAMMALS

Otters and their holts are fully protected under both the Wildlife & Countryside Act, and the Habitats Directive. Otters in the Spey Catchment enjoy good water quality and an abundance of prey and the most significant threat to them is death or injury on roads. Ensuring that otters are fully considered in new infrastructure and built development projects is crucial to reduce fatalities.

The water vole is one of our most threatened native mammals, having undergone a dramatic decline, particularly during the latter part of the twentieth century. This is primarily due to habitat degradation and fragmentation, but also from predation by American mink. Water vole conservation relies on maintaining tall grasses and herbs alongside the water body and minimising the opportunity for mink colonisation. The latter has been addressed in recent years through an extensive eradication programme in the Cairngorms. Continued effort is now required to conserve and enhance the remaining water vole populations.



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The European beaver is a large, semi-aquatic rodent which became extinct in Scotland about 400 years ago. It feeds on leafy vegetation in summer and trees in winter. And builds dams across streams to maintain water levels. As an 'ecosystem engineer' its presence would be considered beneficial to a wide range of species and habitats, however it could also present challenges for some aspects of land use. There is an aspiration to reintroduce beavers to Scotland and over the last 20 years a variety of studies have been undertaken to inform any potential decision by the Scottish Government including reintroduction trails in Tayside and Argyll. Should beavers be reintroduced to the Spey, support, management and monitoring will be required.

OBJECTIVE

Address issues associated with various mammals as it affects their populations within the Spey catchment.

ACTIONS	Key Partners	Associated Objectives
Protect otters by ensuring they are considered during built infrastructure development (eg roads, power lines, hydro schemes) and develop otter friendly culverts as part of road upgrading works.	CNPA, LA, TS	ED1
Apply best practice advice on otter culverts and other species specific developments for use by multiple organisations.	SNH, TS, HC, MC, CNPA	ED1
Increase knowledge of otter ecology to better understand how they are using the river and in order to inform decision making.	SCI, SNH, SNH, CNPA	
Conserve and enhance the fragmented and endangered water vole populations of the River Spey catchment.	SNH, CNPA, FCS	HS3
Support and manage beaver reintroduction or colonisation should it occur.	CNPA, SNH, FCS	HS3, FARM3, FW2
Should beavers be reintroduced to the Spey, monitor numbers and their impacts on farmland and woodland.	FCS, CNPA, NFUS	FARM 3, FW2

HS3 RIPARIAN, RIVER & WETLAND HABITATS

Healthy riparian, river and wetland habitats are a vital part of the natural landscape. They support a diversity of species and, if well managed, act as natural biofilters by trapping sediments and nutrients which result from run off and erosion. They control flow through increased transpiration and the physical action of stems and trunks slowing water movement. They aid river functioning through bank stabilisation and provide connection between the river and its floodplain. Land managers are encouraged to undertake positive works in water margins such as riparian planting, diffuse pollution control and green engineering works through schemes such as the SRDP agri –environment fund.

The benefits of wetlands are numerous from providing key wildlife habitat to flood and erosion control and ground water recharge and discharge. Long considered low value and an impediment to development, many were drained or filled in to make way for houses, roads, and farmland. With an increased understanding of the multiple benefits that wetland sites can bring, we require more knowledge of the distribution of current and historical wetland sites within the Spey catchment. This will identify existing wetlands that need to be protected from deterioration and also identify potential restoration sites.

Invertebrates are a critical component of a healthy river ecosystem. A number of key river shingle invertebrate species, including the red stonefly (a priority species in the Cairngorms LBAP) occur within the Spey watercourses but relatively little is known about their distribution and ecological needs. However it is recognised that the river shingles in which they live are vulnerable to the impacts of engineering works.

OBJECTIVE

Conserve and enhance river, riparian and wetland habitats including river restoration.

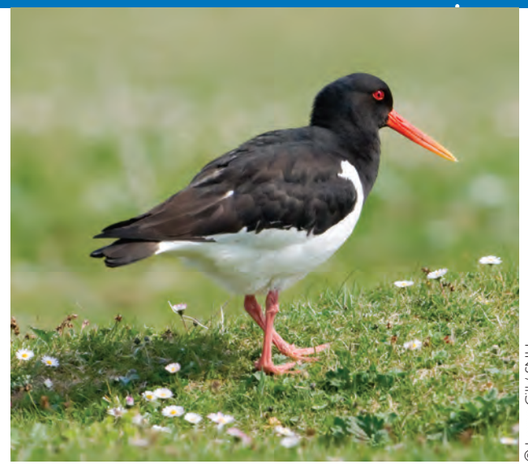
ACTIONS	Key Partners	Associated Objectives
Encourage riparian planting where appropriate to enhance instream habitats.	SFB, SCI	FISH2
Encourage SRDP applications that benefit the river and its tributaries including reducing diffuse pollution.	SCI, SFB, NFUS, SAC, agents	WE1, WE2, FARM5
Map current and historical wetland sites and use this to identify potential restoration programmes.	CNPA, NFUS SCI, SWWI	FM2, FARM4
Encourage strategic development of habitat networks throughout the catchment linking riparian, floodplain, wetland, upland and native woodland habitats.	CNPA, FCS SCI, NFUS	FW1, FARM4, FARM5
Continue to deliver river restoration projects for multiple benefits throughout the Spey and its tributaries.	ALL	FM2, FISH2, FARM3, WE2, C1
Protect wetland sites from developmental pressure, hydrological and management change.	CNPA, LAs, SNH	ED1
Recognise the importance of invertebrates to the health of the river ecosystem and manage accordingly.	ALL	FARM3

Habitats & Species

HS4 RIVERS & WETLAND BIRDS

The River Spey and its tributaries, together with adjacent wetlands, farmland, and areas of open water or marshy grassland, are all important for the survival of a number of bird species. Species include the high profile osprey and goldeneye to the lesser known common and Arctic tern, reed bunting, dipper and both pied and grey wagtail. Some of these are 'Species of Conservation Concern' or 'Locally Important' in the UK Biodiversity Action Plan. Each is dependent in a different way on these riverine and adjacent habitats. Specific sites within the catchment such as Insh Marshes are internationally renowned for their populations of wetland birds including lapwing, redshank and curlew.

The periodic inundation of land adjacent to the river is key to the maintenance of habitats which support these bird species. There may be scope for increasing the extent of wetland habitat by allowing land prone to flooding to revert to a more natural flooding regime. As the strategic vision for flood management in the catchment develops so will the identification of the most suitable areas for wetland habitat creation or enhancement. This is also an opportunity to engage with land managers on the importance of the river environment for many bird species.



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Goosander and red-breasted merganser, which are often referred to collectively as 'sawbills', are highly specialised ducks that feed predominantly on small fish. They are often perceived by fishery managers as a major threat to the salmon fishery (and salmonid populations) because of the large numbers of small fish that they consume. Sawbills are protected by law under the 1981 Wildlife & Countryside Act although there is provision for the issue of licences to kill them to 'prevent serious damage to fisheries where no other satisfactory solution can be found'. On the Spey, sawbill counts are regularly undertaken by the Spey Fishery Board to monitor populations and help quantify impact on salmonid stocks.

OBJECTIVE

Conserve and enhance the riverine and wetland bird populations of the River Spey catchment.

ACTIONS	Key Partners	Associated Objectives
Survey and safeguard populations of goldeneye (via the Goldeneye Study Group) including providing nest boxes, monitoring breeding success and publishing findings.	GSG	
Continue to work to maintain and improve the breeding wader populations in the catchment via local Initiatives.	RSPB, SNH, SWWI, GWWI	
Continue to count and monitor sawbill duck populations on the Spey.	SFB	FISH1
Raise awareness, particularly among land managers, of other bird species that depend on the river environment such as dipper and sand martins.	SNH, CNPA, Initiatives	FARM5

HS5 INVASIVE NON NATIVE SPECIES (INNS)

Managing the consequences of invasive non native species be they plant or species is always a challenge. Spotting emerging risks early and minimising their spread is the key to successfully avoiding damage to the water environment. Since 2009 the Rivers and Fisheries Trusts of Scotland (RAFTS) and public bodies such as SNH have worked together to produce biosecurity plans for freshwaters and also a code of good practice **(www.rafts.org.uk/bio-security-and-invasive-non-native-species)**. In addition to destroying or containing particular species and developing effective eradication methods for others, the aim has also been to continually raise awareness of how INNS can spread and how risks can be minimised using simple biosecurity measures.

Within the Spey catchment there is an issue with a number of non-native plant species that have 'invaded' the watercourses or margins of the river network, particularly in the lower catchment. This includes giant hogweed and Japanese knotweed, although containment of both these plants is now under control. More problematic is the floating Ranunculus fluitans (water crowfoot) in the main stem of the River Spey which is believed to have an impact on FWPM and juvenile salmon as well as causing problems for anglers on some of the most economically important stretches of river. Previously used herbicides are now not legally acceptable and although alternatives have beeen trialled, no effective solution has yet been found. Additionally, there are emerging issues with Gyrodactylis salaris, a small parasite which mainly lives on the skin of freshwater fish, especially Atlantic salmon. Although naturally occurring in Baltic rivers, salmon in areas where the parasite does not naturally occur such as the Spey have little or no tolerance of it.

Prevention is often better than cure and there is a continuing need to raise awareness of the potential problems of invasive, non-native plant species and watercourses especially as a key route into watercourses is often through garden escapes or the dumping of garden refuse.

Further information on INNS may be found at **www.nonnativespecies.org** and Scot Gov's Horticulture Code of Practice is available at **www.gov.scot/Topics/Environment/Wildlife-Habitats/InvasiveSpecies/Guidancerelatingtononnativespecies/HorticulturalCodeofPractice**

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OBJECTIVE

Develop strategies to contain and control existing INNS and prevent the introduction of new INNS within the catchment.

ACTIONS	Key Partners	Associated Objectives
Increase awareness of the non-native species in the Spey (particularly riparian plants and Gyrodactylis) and any associated legislation.	SFB, CNPA, SNH	FISH 2, WE3
Develop containment and eradication strategies for INNS plant species already present.	SFB, SNH, FCS	FISH2, COM2, C3
Undertake targeted control of non-native riparian species, particularly in the lower catchment.	SFB, FCS, SWI	C3
Maintain biosecurity awareness amongst all water users (inc wider tourist interests).	SFB, LAs, BCU,	C2, FARM5
Develop community involvement in INNS reporting, monitoring and control, even in areas where INNS are not yet a significant problem.	SFB, LAs, CNPA	C3
Investigate more fully the extent, distribution and spread of Ranunculus since 2000.	SFB, SNH, SEPA	WE3
Work with agencies to develop effective and permissible options for control of Ranunculus.	SFB, SNH, SEPA	
Raise awareness, amongst local garden centres and through the media, of the problems associated with invasive, non-native species escaping into watercourses.	Trade Associations	C3
Support continued American mink trapping programmes according to 'best practice' advice.	Scottish mink initiative, SFB	WE3, FISH2 HS3

SURFACE WATER BODY ECOLOGICAL STATUS DATA

These maps show the current condition of surface water bodies within the Spey catchment as assessed by SEPA for a range of factors that contribute to overall ecological condition. This Classification is revised annually.

Further information is available at:
www.sepa.org.uk/environemnt/water/classification/classification-results/

Water quality 2014

Access for fish migration 2014

Water flows and levels 2014

Physical condition 2014

Condition: High Good Moderate Poor Bad

River Spey Catchment –
Surface Water Ecological Conditions

WATER BODIES AT LESS THAN GOOD ECOLOGICAL CONDITION (AS OF SEP 16)

This tables lists all surface water bodies with the Spey catchment that currently fall below good ecological condition for a range of factors. Some water bodies (in blue) appear in more than one category due to multiple pressures.

Status	Water Quality	Physical Condition	Water Flows and Levels	Barriers to Fish Migration	Ecological pressures (yet to be determined)
Moderate	1. Loch Insh 2. Fiddich d/s Dufftown 3. Aberlour Burn 4. Green Burn 5 Spey Reservoir	1. Burn of Fochabers 2. Spey (Feshie to Nethy)	1. Ballintomb Burn 2. **Aberlour Burn** 3. River Livet/ Blye Water 4. River Tromie (d/s Allt Bhran) 5. River Mashie 6. Allt Bhran	1 **Fiddich (d/s Dufftown)** 2. Fiddich (u/s of Dufftown) 3. Burn of Tervie 4. River Nethy (u/s Nethy Bridge) 5. Burn out of Loch an Eilein 6. **River Tromie (d/s Allt Bhran)** 7. Broad Burn	1. River Truim (lwr catchment) 2. Allt na Baranachd 3. River Avon(Burn of Loin to Water of Ailnack) 4. Raitts Burn 5. River Feshie (Allt a Mharcaidh) 6. River Feshie (Allt Ruadh) 7. Burn of Loin 8. River Luineag (U/S Loch Morlich) 9. River Dulnain – upper catchment 10. River Tromie – Loch an t-Seilich to confluence with Allt Bhran
Poor			1. Burn of Rothes	1. **Burn of Fochabers** 2. Rothes burn 3. Burn of Aldernie 4. Knockando Burn 5. Burn of Lyneraich 6. Dulnain (Feith Mor) 7. Burn into Loch an Eilean 8. Markie Burn 9. River Spey Garva to Spey Reservoir 10. Spey source to Garva 11. **Green Burn** 12. **Allt Cuaich** 13. **Allt Bhran** 14. Modified channel between Spey & Loch Crunachdain 15. Allt Crunachdain 16. Loch an Eilein 17. **Spey Reservoir**	1. River Avon (loch Avon to Burn of Loin) 2. River Calder 3. River Dulnain (Allt nam Moireach) 4. River Gynack 5. River Feshie (main stem d/s R Eidart) 6. River Tromie – Allt Garbh Ghaig
Bad			1. Allt Cuaich		

The above table reflects classification improvements made in 2015. Note that the associated maps and graphs (p14, p62) have not yet been updated and reflect the original 2014 conditions.

Further information and the details on each water body including specific pressures may be found online at:
www.sepa.org.uk/data-visualisation/water-environment-hub/

POLICIES, PLANS AND RULES

Scottish Government legislation, strategies and national plans	www.legislation.gov.uk www.gov.scot/topics www.sepa.org.uk/environment/water
River Basin Management Planning	www.sepa.org.uk/environment/water/river-basin-management-planning
Classification of Water Bodies	www.sepa.org.uk/environment/water/classification/
Local Flood Risk Management Plan for Findhorn, Nairn and Speyside	www.moray.gov.uk/downloads/file105636.pdf
Forestry and Catchment Management	scotland.forestry.gov.uk/supporting/strategy-policy-guidance/soil-and-water-management/
Controlled Activities Regulations	www.sepa.org.uk/regulations/water/
Biodiversity, Habitats & Ecosystems	www.snh.gov.uk/about-scotlands-nature/scotlands-biodiversity/
Biosecurity plans for freshwaters & code of good practice	www.rafts.org.uk/bio-securityand-invasive-non-native-species
Rationale for Woodland Expansion	scotland.forestry.gov.uk/images/corporate/pdf/ForestExpansion.pdf

PUBLICLY ACCESSIBLE DATA

Scotland's Environment website	www.environment.scotland.gov.uk/get-interactive/map-view/
RBMP water body classification data	www.sepa.org.uk/data-visualisation/water-environment-hub/
Interactive flood maps for Scotland	map.sepa.org.uk/floodmap/map.html
Live water level data	apps.sepa.org.uk/waterlevels/
National River Flow Archive	www.nrfa.ceh.ac.uk/
Land capability for agriculture	www.soils-scotland.gov.uk/data/lca250k
British Geological Survey viewer	mapapps.bgs.ac.uk/geologyofbritain/home.html
Forestry datasets map viewer	maps.forestry.gov.uk/imf/imf.jsp?site=fcscotland_ext&
Land Information Search Tool, (land designations and features)	www.map.environment.scotland.gov.uk/landinformationsearch/lis_map.html

Useful website addresses

GENERAL INFORMATION, HANDBOOKS, MANUALS & GUIDANCE

The water environment	www.sepa.org.uk/environment/water
Flooding related advice	www.nationalfloodforum.org.uk. www.knowyourfloodrisk.co.uk/ www.sepa.org.uk/environment/land/planning/
Handbook on NFM techniques	www.sepa.org.uk/media/163560/sepa-naturalflood-management-handbook1.pdf
Manual of River Restoration techniques	www.therrc.co.uk/manual-river-restoration-techniques
Constructed farm wetlands manual	www.sepa.org.uk/media/131412/constructed-farm-wetlandsmanual.pdf
Forest and Water Guidelines	www.forestry.gov.uk/website/forestry.nsf/byunique/infd-8bvgx9
Invasive Non Native Species	www.nonnativespecies.org.uk
Woodland for Water – Woodland Measures for Meeting Water Framework Directive Objectives	www.forestry.gov.uk/pdf/FRMG004_Woodland4Water.pdf/$file/FRMG004_Woodland4Water.pdf
Landscape Scale Conservation	www.rspb.org.uk/our-work/conservation/landscape-scale-conservation/

OTHER ORGANISATIONS

The Arboricultural Association	www.trees.org.uk
Cairngorm National Park Authority	www.cairngorms.co.uk
Farming and Water Scotland	www.sruc.ac.uk/info/120603/farming_and_water_scotland
Rural Business Management	www.sruc.ac.uk/info/20005/sac_consulting
Scotch Whisky Association	www.scotch-whisky.org.uk/
Spey Catchment Initiative	www.speyfisheryboard.com/spey-catchment-initiative
Spey Fishery Board	www.speyfisheryboard.com
Woodland Trust	www.woodlandtrust.org.uk
Royal Society for Protection of Birds	www.rspb.org.uk

Glossary of Terms

Abstraction	Drawing water out of a river or catchment for industrial or irrigation purposes (includes public water supply)
Acid Rain	Deposition of acid pollutants from the atmosphere in gaseous, particulate or dissolved form
Agri-environment Scheme	Government-funded support mechanisms for sustainable agricultural activity with targeted benefits for the environment
Algae bloom	An excessive growth of algae in a loch or reservoir which typically results from high nutrient concentrations
Average Annual Damages	Theoretical average economic damages caused by flooding when considered over a very long period of time.
Aquaculture	The captive rearing of fish for consumption or fishery enhancement
Bank Stabilisation	Prevention of river bank erosion by increasing the strength of the bank by natural materials or by engineering
Benefit Cost Ratio	Summary of overall value for money of an action or project. Expressed as a ratio of benefits obtained to costs incurred
Biodiversity	The total range of life forms on earth or any given part of it, the ecological roles they perform, and the genetic diversity they contain
Buffer Strip	An area of vegetated land separating a watercourse from intensively managed land. Normally established to conserve or enhance water quality, although may also benefit habitat & species diversity
Catchment	A discrete geographical unit within which all water drains to the same end-point or outflow. NB. Groundwater catchments do not necessarily coincide with surface water catchments
Catchment Management	A process whereby all activities within a loch or river catchment are considered in relation to their impact on each other and on the quality and quantity of surface and groundwater
Competent authority	Under the Habitats Regulations, any Minister, government department, public or statutory undertaker, public body of any description, or person holding a public office
Croys	Man-made structures, often in pairs, which are constructed in river channels to influence patterns of water flow and erosion
Diffuse Pollution	Sources of pollution having no clearly definable point of origin, often derived from land-use practices
Eco system	A community of interdependent organisms and the environment which they inhabit
Engineering	Generally large-scale intervention in river channels, usually involving physical structures
Floodplain	The floor of a strath or river valley which is inundated by water when a river floods
Flood Risk Management Plans	Set outs actions that will be taken to reduce flood risk in a Local Plan District. Produced by lead local authorities
Freshet	Compensatory release of water from dam or reservoir
Fry	Young or newly hatched fish
Green Engineering	Environmentally conscious engineering solutions and techniques. Eg, willow spilling, engineered log jams, coil matting
Groundwater	Water contained in underground strata, which fills voids in soils and permeable geological formations
Indicative Forestry Strategy	A strategy, prepared and incorporated within a Structure Plan, which seeks to accommodate future commercial forest planting in an environmentally acceptable way, by identifying preferred, potential and sensitive areas for forestry

Glossary of Terms

Indigenous	Of a plant or animal, originating naturally in a region
Invasive Non Native Species	Any non-native animal or plant that has the ability to spread causing damage to the environment, the economy, personal health or the way we live.
Lamprey	Primitive, eel-like fish lacking a lower jaw and with a sucker-like disc around its mouth
Local Plan	Prepared and adopted by planning authorities according to statute, expressing specific policy guidance and advice for development in each locality
Local Plan District	Geographical areas for the purposes of flood risk management planning. (14 in Scotland)
Natural Flood Management	A set of flood management techniques that aim to work with natural processes (or nature) to manage flood risk
Nutrients	Chemical substances required for growth by organisms (including plants, crops and algae), e.g. phosphorus and nitrogen
Nutrient budgeting	Balancing the added nutrient (e.g. fertilisers, manure) inputs onto land with the crop or livestock outputs to avoid surpluses leaching or being washed into the environment
Overgrazing	Condition where livestock (wild and domestic) numbers are high, resulting in reduced vegetation cover and increasing susceptibility of soils to erosion
Parr	Young salmon with blue/grey finger-like markings on its sides, younger than a smolt
Phosphate	A nutrient essential in the life cycle of all living organisms, present in all animal and vegetable matter
Point source pollution	Pollution which is traceable to a specific source with a clearly identifiable point of origin. Usually from a pipe or other well defined outfall, often associated with the built environment
Potable water	Water of suitable quality for drinking
Q95	The flow in a river that is exceeded for 95% of the time (ie. the lower flows or dry weather flows)
Receptor	Entity that may be impacted by flooding (person, property, infrastructure or habitat)
Return Period	A measure of the rarity of a flood event. Statistical average length of time separating flood events of a similar size
Riparian	Pertaining to land bordering a river or burn
River Basin Management Planning	Process by which improvements to protect and improve the water environment are made and a framework for regulations to control negative impacts that activities could have on it. Derived from transposing EU Water Framework Directive into Scot's Law.
Run off	Rainwater draining from an area of land capable of transporting nutrients, fertilisers or sediment into a watercourse
Sediments	The unconsolidated (loose) material transported by a river. A mixture of particles ranging from fine sediments (sands, silts and clays), to coarser sediments like pebbles, stones and boulders
Smolt	Fully silvered juvenile salmon migrating, or about to migrate, to the sea
Spring fish	Salmon which return to fresh water in the early part of the year (usually before 1 May)
Stocking (of fish)	The introduction of captive-reared fish into an area to supplement or replace other fish
Surface water	Rivers, lochs, estuaries and coastal waters
Tributary	A smaller burn or stream flowing into a larger river channel
Potentially Vulnerable Area	Areas identified as at risk of flooding and where the impact of flooding is sufficient to justify further assessment and appraisal

Acronyms & Abbreviations

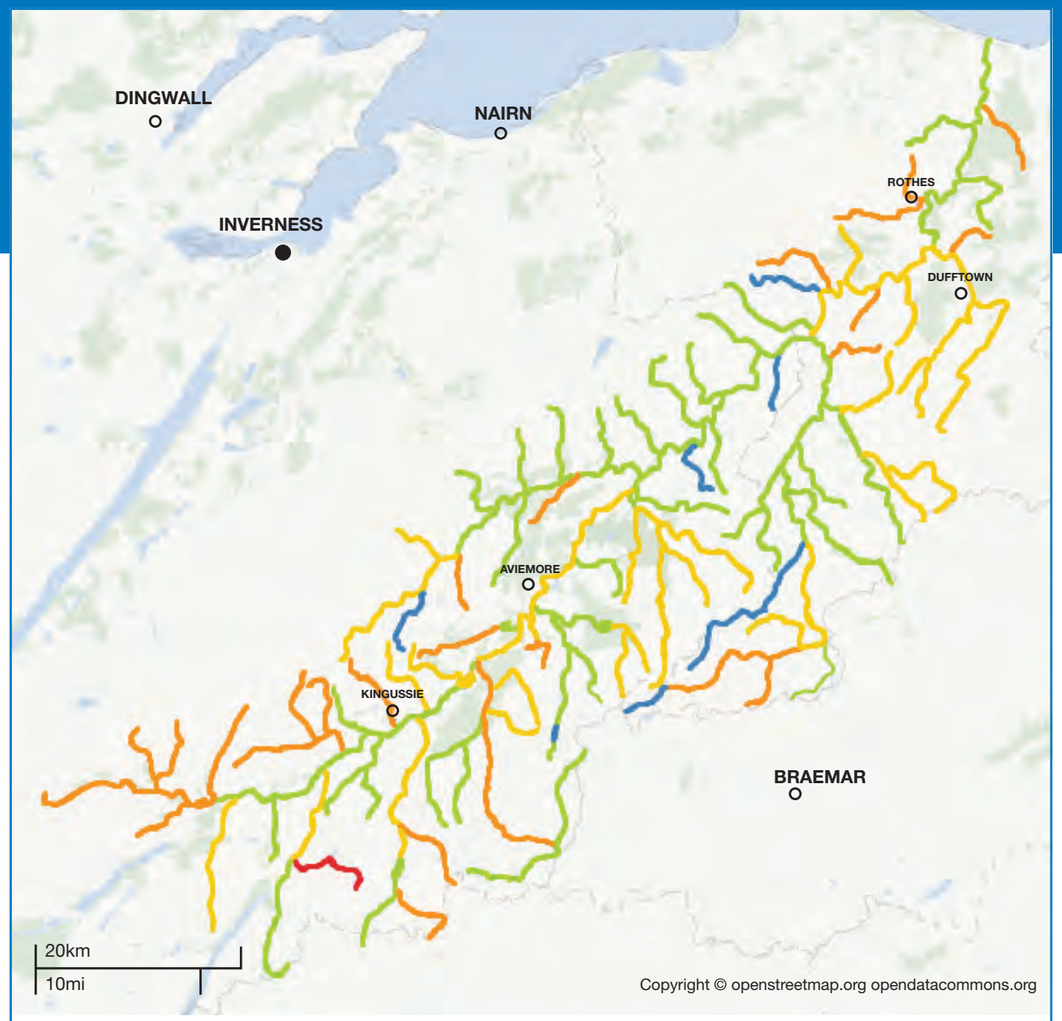
BOD	Biochemical Oxygen Demand
CAR	Controlled Activities Regulations
CEH	Centre for Ecology & Hydrology
CBA	Cairngorm Business Association
CMP	Catchment Management Plan
CNP	Cairngorm Nature Plan
CNPA	Cairngorms National Park Authority
EU	European Union
ESA	Environmentally Sensitive Area
FCS	Forestry Commission Scotland
FES	Forest Enterprise Scotland
FNS	Findhorn, Nairn and Speyside
FR	Forest Research
FRM	Flood Risk Management
GTBS	Green Tourism Business Scheme
GPDO	General Permitted Development Order
HC	Highland Council
IFM	Institute of Fisheries Management
INNS	Invasive Non-Native Species
JHI	James Hutton Institute
LA	Local Authority
LBAP	Local Biodiversity Action Plan
LDR	Long Distance Route
LFRMP	Local Flood Risk Management Plan
LPD	Local Plan District
MC	Moray Council
MS	Marine Scotland
NFUS	National Farmers Union of Scotland
NFM	Natural Flood Management
NVZ	Nitrate Vulnerable Zone
PIP	Pearls in Peril project
PVA	Potential Vulnerable Area
RAFTS	Rivers and Fisheries Trusts Scotland
RBMP	River Basin Management Planning
RSPB	Royal Society for the Protection of Birds
RSS	Rural Stewardship Scheme
SAC	Special Area of Conservation
SCA	Scottish Canoe Association
SCI	Spey Catchment Initiative
SCSG	Spey Catchment Steering Group
SDFB	Spey District Fishery Board
SEPA	Scottish Environment Protection Agency
SF	Spey Foundation
SFCA	Scottish Federation for Coarse Angling
SFGS	Scottish Forestry Grant Scheme
SL&E	Scottish Land and Estates
SNH	Scottish Natural Heritage
SRDP	Scottish Rural Development Programme
SSE	Scottish & Southern Energy plc
SSSI	Site of Special Scientific Interest
SUDS	Sustainable Urban Drainage System
SW	Scottish Water
SWA	Scotch Whisky Association
SWI	Scotch Whisky Industry
SWT	Scottish Wildlife Trust
TFL	Trees for Life
UKTAG	UK Technical Advisory Group
WGS	Woodland Grant Scheme
WFD	Water Framework Directive
WT	Woodland Trust
WTW	Water Treatment Works
WWTP	Waste Water Treatment Plant

Map 2:
Catchment and Administrative Boundaries

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Further details available at:
cairngorms.co.uk/discover-explore/planning-a-visit/

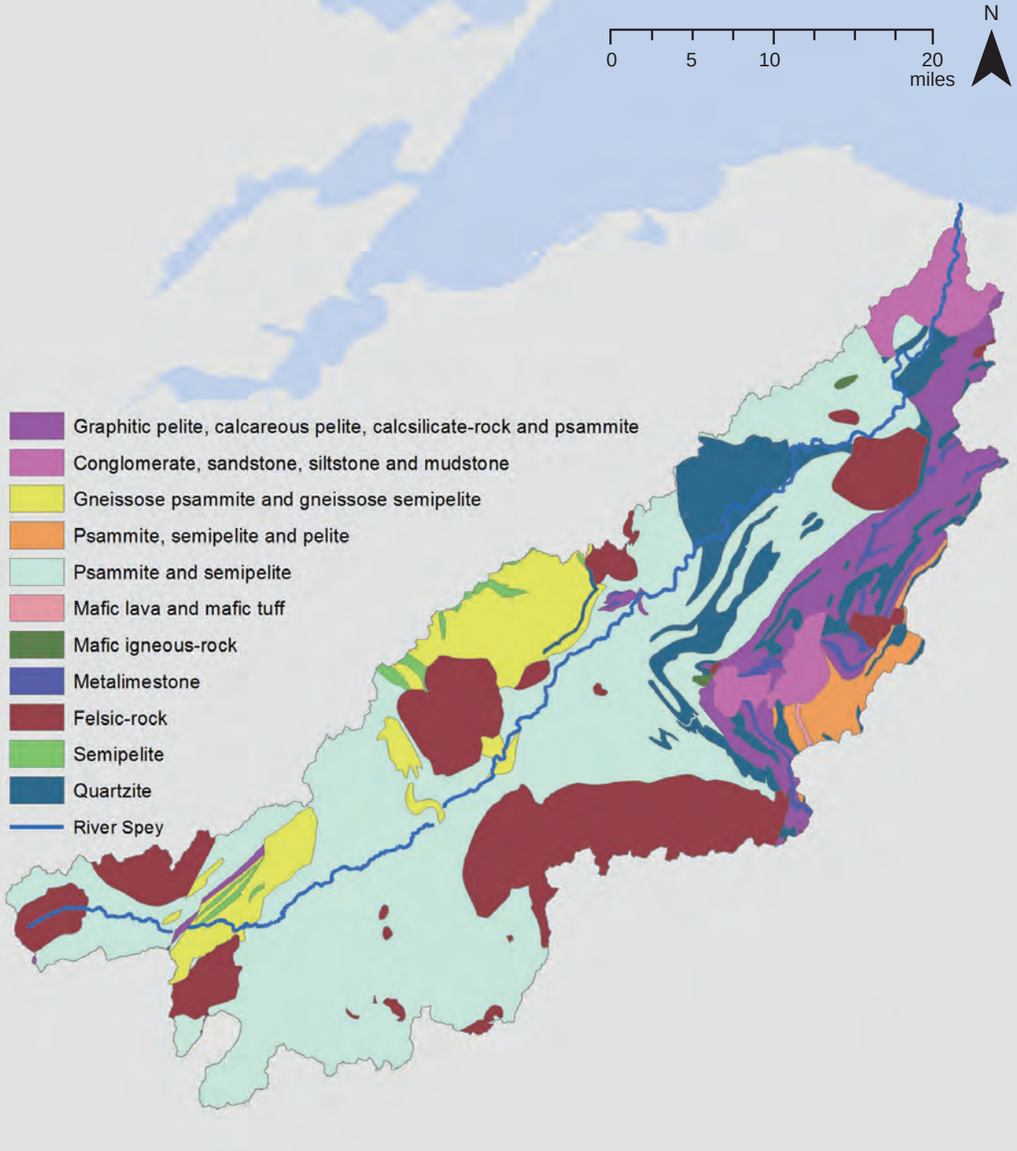
Map 3:
Overall Condition of Surface Water Bodies (2014 assessment)



Condition:
- High
- Good
- Moderate
- Poor
- Bad

Further detail available on the Water Environment hub at:
www.sepa.org.uk/data-visualisation/water-environment-hub/

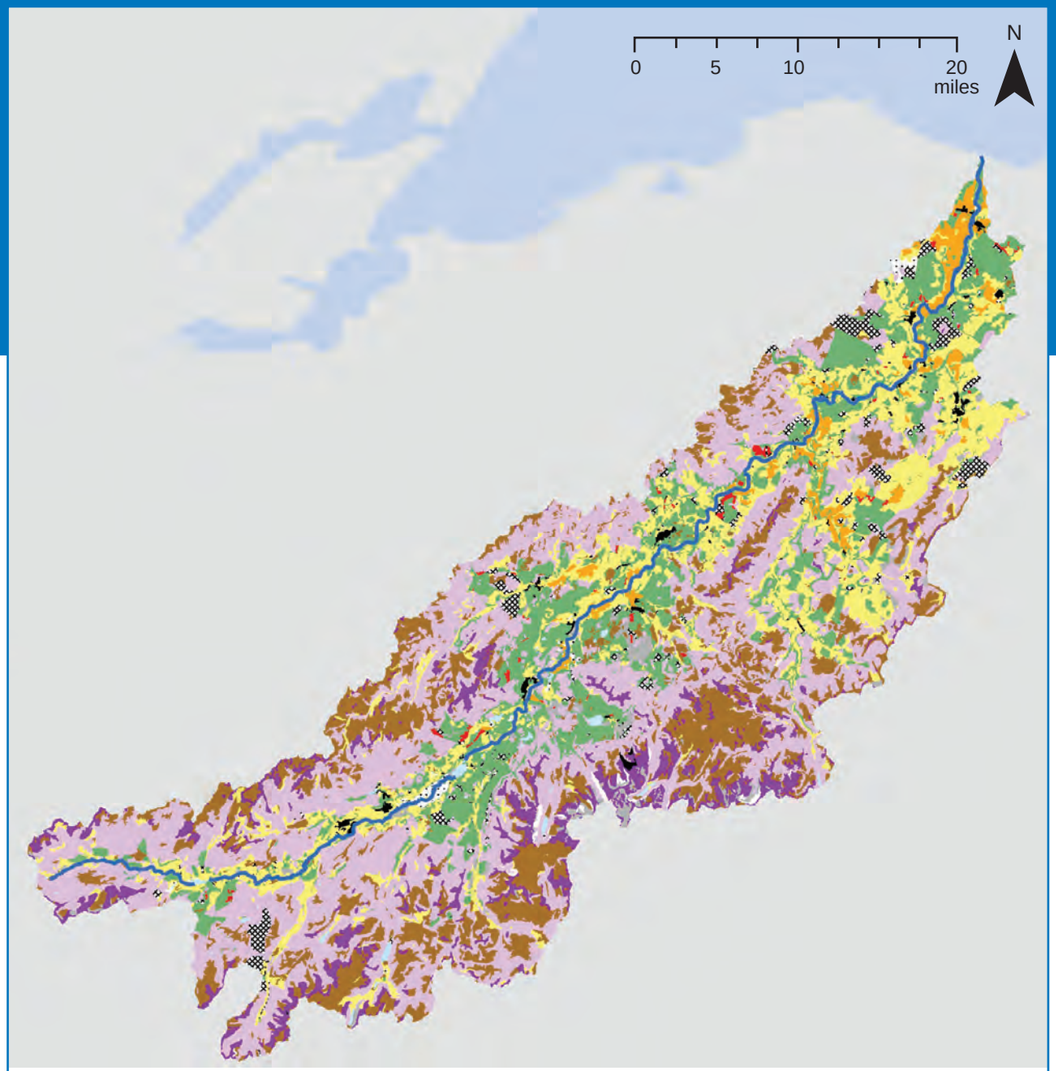
Map 4:
Solid Geology



Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

Further details available at British Geological Survey, Geology of Britain Viewer:
mapapps.bgs.ac.uk/geologyofbritain/home.html

Map 5: Land Classification



Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

- Arable
- Marsh
- Montane
- Peatland
- Woodland type
- Felled woodland
- Grassland type
- Heather moorland
- Recent planting
- Rocks and cliffs
- Fresh water
- Urban & rural development
- Other
- River Spey

Further details available at Scotland's Environment website:
www.environment.scotland.gov.uk/get-interactive/map-view/
Information on land capability for agriculture:
www.soils-scotland.gov.uk/data/lca250k

The Spey Catchment Initiative

The River Spey and its wellbeing is integral to the economic, social and environmental success of the area. As a public/private partnership, the Spey Catchment Initiative was established in 2010 to encourage closer partnership working and to take forward key actions from the original 2003 Spey Catchment Management Plan. Run by a steering group of representatives from its partner organisations, it coordinates action and engages with the wider stakeholder group of landowners, managers, fishermen, communities and industry on a raft of topics. It also employs a Project Officer to deliver multiple benefit projects tackling a range of issues throughout the catchment.

Since conception the success of the SCI has been considerable and it is now recognised as an extremely valuable mechanism both for strategic coordination and local delivery. The SCI's strength lies in its ability to facilitate partnership working to get things done and to leverage funds for groundworks delivery from external sources. By the end of 2016 it will have delivered or secured funding for over £1million worth of projects throughout the catchment. These range from riparian enhancement works and river restoration schemes, to educational materials and community riverside access facilities. In 2016 it was a UK River Prize finalist and received the River Restoration Centre's innovative project category winner for the Allt Lorgy project which continues to receive nationwide interest.

Looking to the future it is clear that the SCI has a vital role to play in delivering many of the objectives and actions of this plan. Its future will be dependent on securing a new package of funding from 2017. Future activity will be delivered through 4 priority themes:

- Delivering national and local government objectives for 2017-2022
- Sustainable flood management, focusing on NFM opportunities and demonstrating NFM techniques
- Improving riparian, riverine and wetland environments for multiple benefits
- Education, awareness raising & getting people involved in the catchment

MEMBERS:

Cairngorm National Park Authority	CNPA
Diageo	D plc
Forestry Commission Scotland	FCS
Highland Council	HC
Moray Council	MC
Nation Union of Farmers (Scotland)	NFUS
Royal Society for Protection of Birds	RSPB
Scottish Natural Heritage,	SNH
Scottish Environment Protection Agency	SEPA
Spey District Fishery Board	SDFB

Spey Catchment Initiative
c/o SNH, Achantoul, Aviemore, Inverness-shire, PH22 1QD
Tel. 01479 810477
www.speyfisheryboard.com/the-spey-catchment-initiative-intro

Further copies of this plan are available from:
Spey Catchment Initiative Project Officer
c/o SNH, Achantoul, Aviemore, Inverness-shire, PH22 1QD
Tel. 01479 810477

This publication is available in electronic format at:
www.speyfisheryboard.com/spey-catchment-initiative-publications
www.cairngorms.co.uk
www.snh.gov.uk/publications-data-and-research/publications