RIVER SPEY
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1699

South Highland Area: Achantoul, Aviemore, Inverness-shire PH22 1QD. **Tel**: 01479 810477 EAST_HIGHLAND@snh.gov.uk
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Purpose

This is a public statement prepared by SNH for owners and occupiers of the SSSI. It outlines the reasons it is designated as an SSSI and provides guidance on how its special natural features should be conserved or enhanced. This statement does not affect or form part of the statutory notification and does not remove the need to apply for consent for operations requiring consent.

We welcome your views on this statement.

River Spey in winter at Grantown on Spey

Description of the site

The River Spey Site of Special Scientific Interest (SSSI) is situated in north-east Scotland. The river, the second largest in Scotland, flows in a north-easterly direction from its source above Loch Spey in the Monadhliath Mountains to its mouth at Spey Bay in the Moray Firth.

The River Spey has a total catchment of approximately 3 000 km^2 and the river network extends to some 36 400 km. The River Spey is fed by many tributaries including the Rivers Calder and Dulnain, which rise to the north-west in the Monadhliath Mountains, and the Rivers Fiddich, Avon, Nethy, Druie, Feshie, Tromie and Truim, which rise in the Cairngorms to the south-east. The River Spey's hydrology is unique amongst major upland rivers. Whilst the upper and lower catchments are relatively steep and fast flowing, the central section, with a shallow gradient, is more typical of a lowland river, having a broad meandering channel and wide floodplain. The water is low in nutrients (oligotrophic) and, with a relative lack of major industrial developments and intensive agriculture within the catchment; the Spey has remained fairly free from pollution.

The River Spey has a variety of freshwater and riparian habitats including beds of shingle, gravel, sand and silt, islands, fringing woodlands and marshes. Its populations of Atlantic salmon, sea lamprey, freshwater pearl mussel and otter are considered to be of national and European importance. The River Spey SSSI (comprising the main stem of the river downstream from Loch Spey) has therefore been designated for these species. It also forms part of the River Spey Special Area of Conservation (SAC), designated for the same species, which also includes many tributaries.

The River Spey has water of good quality, abundant habitat and food supply for all the freshwater stages of the salmon's life cycle and salmon occur throughout the site. Otters also find suitable habitat for foraging and resting, along with a good supply of suitable food, throughout the river system. The reaches downstream of Aviemore provide appropriate habitats for all stages of development of the sea lamprey and these support a relatively large population at the northern limit of its British distribution. The river also supports one of the most significant remaining populations of freshwater pearl mussel in Scotland. It contains extensive areas of suitable habitat, good populations of host species (salmon and trout) for the larval stage and an abundant food supply. Freshwater pearl mussels largely occur downstream from Grantown-on-Spey with few colonies in the upper reaches.

When monitored between 2000 and 2004, the populations of sea lamprey and otter were considered to be in favourable condition. Populations of Atlantic salmon and freshwater pearl mussels were considered to be in an unfavourable condition. Whilst the overall adult salmon population had been maintained, the autumn component appears to have declined since the site was designated and the density of juveniles in the river was less than the Scottish average. The pearl mussel population contained a small proportion of juveniles (less than 65mm in length) and there was localised deterioration in water quality. Management of the river and the riparian zone has since been implemented so that these populations are now thought to be recovering.

Part of the River Spey SSSI is also part of the Lower River Spey - Spey Bay SAC (which is designated for its vegetated shingle habitat and alder woodland) and part of the Moray and Nairn Coast Special Protection Area (SPA). The SPA provides foraging grounds for nationally important numbers of breeding osprey and is of particular importance to large populations of wintering seaduck and divers and a wide range of waders and wildfowl. When monitored between 1998 and 2008, most of these features were considered to be in favourable condition. Some damage to the shingle habitats had been caused by shingle extraction and use of quad bikes, both occurring outside the River Spey SSSI.

Atlantic salmon	Freshwater pearl mussel
	

Natural features of River Spey SSSI	**Condition of feature** (and date monitored)	**Other relevant designations**
Atlantic salmon	Unfavourable, recovering (October 2004)	River Spey SAC
Sea lamprey	Favourable, maintained (September 2002)	River Spey SAC
Freshwater pearl mussel	Unfavourable, recovering (October 2000)	River Spey SAC
Otter	Favourable, maintained (September 2004)	River Spey SAC

See Annex 1 for a list of natural features of overlapping Natura sites, which are not notified features of River Spey SSSI.

Parts of the River Spey SSSI overlap parts of the following SSSIs: Parallel Roads of Lochaber SSSI, Lower River Spey SSSI, Alvie SSSI and Spey Bay SSSI. Further details of their notified natural features can be found within their relevant citations and site management statements.

Past and present management

Salmon fishing

The River Spey is one of Scotland's premier salmon rivers, with one of the most important salmon fisheries in Scotland. Commercial fishing on the Spey dates back at least 500 years but angling for salmon with rod and line dates back no more than 150 years. Net and coble fishing for salmon was a common feature in the lower reaches and estuary but this ceased in 1993 and angling with rod and line is the only permitted method of capture in use today. Salmon fishing is regulated by the Spey Fishery Board (SFB). A "capture and release policy" for salmon has been in place since 2003. The lower 75km of the river is the most important stretch both in terms of fish caught and income derived from angling.

A small number of fish farms and hatcheries operate within the Spey catchment. Parts of the River Spey are regularly restocked with brown trout by angling associations under licence from Marine Scotland. Salmon restocking is managed by the SFB and hatchery raised Atlantic salmon reared from brood fish of local provenance are released into specific Spey tributaries. The Spey Foundation conducts research and collects information on salmon which includes counts of smolts and returning fish, genetic analysis, tagging and the monitoring of fish health, parasites and non-native species. Floating water-crowfoot, thought to be a recently introduced species, occurs in the lower reaches of the river and can affect habitats used by salmon fry and freshwater pearl mussel (as well as causing problems for anglers).

Predators of salmonids include mergansers, goosanders, cormorants and seals which can, when necessary, be controlled under licence from the Scottish Government.

Freshwater pearl mussel fishing

Fishing for pearl mussels was a traditional activity on the Spey (and other rivers) but is now illegal. The freshwater pearl mussel is now one of the most critically endangered molluscs in the world due to over-exploitation and in Scotland this species has declined over much of its range. In spite of initiatives for tackling wildlife crime, illegal pearl fishing still takes place along the Spey and mussels are occasionally killed in large

numbers.

River Engineering

There is a long history of river engineering and other management works on the River Spey.

Significant channel straightening and dredging was carried out in the lower reaches between 1750 and 1850, associated with the floating of timber from forests such as Glenmore and Rothiemurchus to Garmouth for ship building. Coastal processes also result in the mouth of the Spey naturally moving westwards and the lowest stretch of river has been diverted several times during the last century to protect the settlement of Kingston. Extensive artificial banks have been constructed along much of the river to control flooding and for agriculture and a range of structures (croys, groynes) and boulders have been placed in the river to aid the salmon fishery. Other infrastructure in the catchment (eg road culverts and abstraction weirs etc) has impeded salmon movements but several of these obstacles have recently been removed or modified.

A variety of river works are still carried out as necessary to maintain riverbanks, protect bridges and property and for flood management - particularly around settlements in the lower catchment.

River works can have significant impacts on the protected natural features of the River Spey, both directly and indirectly (for example through disturbance to the riverbed or the suspension of sediment). This can result in the loss of salmon spawning areas, juvenile fish habitat, sea lamprey larval habitat and mussel beds. The Scottish Environment Protection Agency (SEPA) has produced best practice guidance which can minimise these potential effects:
http://www.sepa.org.uk/water/water regulation/guidance/engineering.aspx

Water diversion and abstraction

Two major hydro-electric schemes were completed in the upper Spey catchment during the 1930s and 1940s to capture water from about 378 km^2 (13%) of the upper Spey catchment. Both schemes are required to maintain minimum compensation flows downstream ameliorating the effects of flooding and regulating summer low flows. The Tummel scheme captures water from the Tromie and Truim and pipes it into Loch Ericht, augmenting the flow into the Tummel. British Alcan abstracts water from the upper Spey at Spey Dam and diverts it into Loch Laggan to generate power at Fort William. Modifications to these arrangements are currently being considered.

The River Spey is the source of the public water supply for much of Strathspey. Potable (drinking) water is taken from the alluvial gravels at a large well field at Dipple on the west bank of the Spey near Fochabers. Water is also abstracted from Loch Einich at the head of Am Beanaidh, a tributary of the River Druie. Work is currently progressing at Kinakyle, south of Aviemore, to abstract potable water from the alluvial gravels. This scheme will eventually replace the abstraction from Loch Einich.

Whisky distilling is the main industrial use in the Spey catchment with 33 malt distilleries and three dark grain plants that convert by-products to animal feeds. Abstraction of water from the catchment for distilling is therefore very important. There are relatively few large abstractions for watering crops or other agricultural uses.

Water treatment

Water quality in the River Spey is generally high, reflecting the lack of major industrial development in the area and relatively low nutrient inputs from agricultural runoff. Localised impacts have been associated with distillery use and settlements but these have largely been addressed. Many of the settlements along the river have sewage treatment facilities which are at capacity and therefore limit future housing development. There is an ongoing programme of upgrading sewage capacity and improving the quality of the water entering the river. There are privately operated water treatment facilities associated with the Cairngorm Ski Area and Glenmore.

Tourism and recreation

The River Spey and its catchment support a thriving tourism industry based upon the historical, cultural and natural history of the area together with sporting activities such as salmon fishing, winter sports, mountain biking and canoeing. The river is amongst the most important in Scotland for canoeing and some sections are heavily used by organised groups. The upper part of the river lies within the Cairngorms National Park. The Speyside Way long distance route follows the river between Spey Bay and Aviemore, with proposals to extend this to Newtonmore. There are also a wide range of other access opportunities along the banks and the river features prominently in the wider promotion of the area. Responsible access and recreation within the terms of the Scottish Outdoor Access Code (SOAC) appear to be largely compatible with protecting the nature conservation interest of the River Spey.

Land management

Some landowners/managers have entered into the Scottish Rural Development Programme – Rural Development Contracts for works to benefit the interests of the SSSI. Contracts were also entered into under previous agri-environment schemes such as the Rural Stewardship Scheme. This includes works such as fencing off water courses from stock, or creating a buffer strip along the river and its tributaries to reduce pollution from sediment or fertiliser run-off.

The Royal Society for the Protection of Birds (RSPB) and the Scottish Wildlife Trust (SWT) own land adjacent to/within the SSSI, at their nature reserves at Insh Marshes and Spey Bay respectively. Insh Marshes is also a National Nature Reserve.

Objectives for Management (and key factors influencing the condition of natural features)

We wish to work with the owners and occupiers to protect the site and to maintain and where necessary enhance its features of special interest. SNH aims carry out site survey, monitoring and research as appropriate to increase our knowledge and understanding of the site and its natural features and monitor the effectiveness of the management.

The EU Habitats and Birds Directives oblige Government to avoid, in SACs and SPAs, the deterioration of natural habitats and the habitats of species, as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of these Directives. The objectives

below have been assessed against these requirements. All authorities proposing to carry out or permit to be carried out operations likely to have a significant effect on the European interests of this SSSI must assess those operations against the relevant Natura conservation objectives (which are listed on our website through the SNHi - SiteLink facility).

1. **To maintain conditions required to support a thriving population of Atlantic salmon by, for example:**
    - maintaining the high water quality and low nutrient status of the River Spey
    - maintaining an appropriate flow regime to allow salmon movements and support aquatic habitats important for juvenile fish
    - following best practice guidelines for river engineering
    - maintaining clean silt free gravels for spawning and juvenile fish.
    - managing and designing in-river structures, culverts and fish passes to improve the uninhibited passage of migratory fish species.
    - managing and enhancing riparian vegetation to increase food availability.
    - adopting fish stocking and angling practices that safeguard the native population (and sub-populations) of salmon in the River Spey
    - control or prevention of harmful non-native species

2. **To maintain conditions required to support a thriving population of freshwater pearl mussels by, for example:**
    - maintaining clean sandy or gravely substrates with a relatively low calcium level for adult and young freshwater pearl mussels with a good supply of suspended particulate organic matter.
    - maintaining a good population of juvenile salmonids (salmon and trout) as a host for the larval glochidial phase of the mussels
    - considering further efforts to re-establish mussels in suitable parts of the river where they formerly occurred.
    - addressing the illegal harvesting of mussels
    - several actions in 1 above

3. **To maintain conditions required to support a thriving population of sea lamprey by, for example:**
    - maintaining stony or gravely areas in running water for spawning
    - maintaining beds of sandy silt in slow or still water with organic material present for the ammocoete larval stage.
    - several actions in 1 above

4. **To maintain conditions required to support a thriving population of otters by, for example:**

- maintaining a range of habitats including islands, reed beds and areas of dense bankside vegetation for holts and couches
- maintaining conditions which supply a good range of prey items such as salmonids, eels and amphibians.
- several actions in 1 above

5. To maintain the high water quality and low nutrient status of the River Spey

- maintain well oxygenated, fast flowing, silt free water of good quality at a level where Atlantic salmon, freshwater pearl mussels, sea lamprey and otters can continue to live and complete their lifecycles.
- maintain and expand low nutrient status by promoting best practice of riparian and bankside vegetation management.
- encourage the creation of waterside buffer strips through schemes such as SRDP to intercept agricultural and forestry run-off and by installing field troughs to prevent farm stock entering the river to drink.

6. To maintain and encourage the retention and enhancement of broadleaved riparian woodland along the river

- this declining habitat, a qualifying feature of the Lower River Spey - Spey Bay SAC, helps to stabilise river banks and provide both invertebrates and organic detritus to increase food availability.
- this objective can be achieved through schemes such as SRDP.

7. To maintain/increase a range of habitats within the river

- maintain clean silt free gravels for spawning adult Atlantic salmon and clean stony burns with a good supply of aquatic and terrestrial insects for the development of juvenile fish.
- maintain stony or gravely areas in running water for spawning adult sea lamprey and beds of sandy silt in slow or still water with organic material present for the ammocoete larval stage.
- maintain clean sandy or gravely substrates with a relatively low calcium level for adult and young freshwater pearl mussels with a good supply of suspended particulate organic matter.
- maintain a good population of juvenile salmonids (salmon and trout) as a host for the larval glochidial phase of the mussels.
- maintain a range of habitats including islands, reed beds and areas of dense bankside vegetation for holts and couches and conditions which supply a good range of prey items such as salmonids, eels and amphibians.

8. To encourage the use of best practice guidelines for river engineering and other management works

- promote the use of SEPA's Prevention and Pollution Guidelines for all works in or adjacent to the river

- promote the guidance on in river structures and the design of culverts and fish passes to improve the uninhibited passage of migratory fish species.

Other factors affecting the natural features of the site

Atlantic salmon and sea lamprey are migratory species which spend significant parts of their life cycle at sea. Issues influencing them at sea could therefore affect populations using the site.

Date last reviewed: 23 March 2011

Annex 1: Features of overlapping Natura sites that are not notified as SSSI natural features of the River Spey SSSI

Features of overlapping Natura sites that are not notified as SSSI natural features	**Condition of feature (date monitored)**	**SPA or SAC**
Alder woodland on floodplains	Favourable, maintained (June 2002)	Lower River Spey – Spey Bay SAC
Coastal shingle vegetation outside the reach of waves	Unfavourable, no change (October 1998)	Lower River Spey – Spey Bay SAC
Bar-tailed godwit, non-breeding	Favourable maintained, (April 2001)	Moray and Nairn Coast SPA
Common scoter, non-breeding	Favourable maintained, (April 2001)	SPA
Dunlin, non-breeding	Favourable maintained, (November 2008)	SPA
Greylag goose, non-breeding	Favourable maintained, (April 2001)	SPA
Long-tailed duck, non-breeding	Favourable maintained, (November 2008)	SPA
Osprey, breeding	Favourable maintained, (April 2001)	SPA
Oystercatcher, non-breeding	Favourable maintained, (April 2001)	SPA
Pink-footed goose, non-breeding	Favourable maintained, (April 2001)	SPA
Red-breasted merganser, non-breeding	Favourable maintained, (April 2001)	SPA
Redshank, non-breeding	Favourable, recovered (November 2008)	SPA
Velvet scoter, non-breeding	Favourable maintained, (November 2008)	SPA
Wigeon, non-breeding	Favourable maintained, (April 2001)	SPA
Waterfowl assemblage, non-breeding	Favourable maintained, (April 2001)	SPA

Notes

The list of features of overlapping Natura sites includes habitats and species found in the whole of the Lower River Bay-Spey Bay SAC and Moray and Nairn Coast SPA. Some of these features may not be present on River Spey SSSI and the presence of some species may vary from year to year.