Scottish Natural Heritage

WHITEADDER WATER
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1629

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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.

Description of the site

Whiteadder Water Site of Special Scientific Interest (SSSI) comprises a 20km stretch of the Whiteadder Water running from just south of Cumledge Mill (near Preston) in the west to Hutton Bridge approximately 1.5km east of Hutton. The SSSI represents a stretch of meandering river and encompasses all rock exposure, river banks and associated river cliffs. The Whiteadder Water has eroded down through Lower Carboniferous rock (rock laid down between 355 to 320 million years ago) giving rise to important rock exposures (some of which are fossil-bearing) along the length of the river banks.

During the Lower Carboniferous period, Scotland had a tropical climate and lay close to the equator in an environment of shallow, tropical seas. The rock sequences along the Whiteadder Water were formed from sediments laid down at the bottom of these shallow seas. The particular location where the Whiteadder Water rocks were formed is called the Northumberland Basin. This basin was the southernmost of two shallow seas - the other being the more northern Midland Valley Basin. The Northumberland Basin was bordered to the north and south by higher upland areas.

The rock exposures presently seen represent a sequence known as the 'Cementstone Group' which in turn forms part of a larger sequence called the 'Calciferous Sandstone Measures'. The 'Cementstone Group' is a rock sequence containing very thin bands of sandstone, shale and cementstone. (Cementstone is a limestone which contains clay and calcium carbonate, in such a proportion that the stone can be burnt for cement).

The fossil-bearing rocks within Whiteadder Water SSSI are internationally important. The site contains more types of fossil plant than any other comparable locality in Britain or overseas. The fossil-bearing rocks are located within some of the rock

outcrops along the riverbanks and may also be found as loose material on the river bed. They have yielded a diverse fossil flora which is in an exceptional state of preservation. Preservation is so good that it is possible to observe the plants' cell structures, which may be used to reconstruct the whole plant form.

Over 50 species of plant have been identified from Whiteadder Water SSSI and many of these are unique to the site, for example, certain fossil ferns, progymnosperms (believed to be ancestors to the conifers), pteridosperms (seed-bearing ferns) and lycopods (ancestors of club mosses). This assemblage of plants has been used by palaeobotanists to study the earliest Carboniferous floras. This is a period of time where there was a rapid diversification of terrestrial vegetation. Of particular importance is the presence of the oldest known seed-bearing plants which provide vital information on the early evolution of seeds.

The most recent site condition monitoring (SCM) assessment in 2002 found the feature to be in an unfavourable condition. This was largely due to active tipping of waste materials which appeared to be occurring within the SSSI at Preston Quarry at the time of the survey visit.

Natural features of Whiteadder Water SSSI	**Condition of feature** (date monitored)
Palaeozoic palaeobotany	Unfavourable – no change (January 2002)

Features of the overlapping River Tweed SAC / SSSI that are not notified as natural features of Whiteadder Water SSSI	**Condition of feature** (date monitored)	**SAC or SSSI**
Rivers with floating vegetation often dominated by water-crowfoot.	Unfavourable – no change (November 2004)	River Tweed SAC
Trophic range river/stream	Unfavourable – no change (September 2004)	River Tweed SSSI
Vascular plant assemblage	Unfavourable-declining (September 2005)	River Tweed SSSI
Atlantic salmon *(Salmo salar)*	Unfavourable – recovering (August 2004)	River Tweed SAC/SSSI
Brook lamprey *(Lampetra planeri)*	Unfavourable – no change (November 2004)	River Tweed SAC/SSSI
River lamprey *(Lampetra fluviatilis)*	Unfavourable – no change (November 2004)	River Tweed SAC/SSSI
Sea lamprey *(Petromyzon marinus)*	Unfavourable – no change (November 2004)	River Tweed SAC/SSSI
Otter *(Lutra lutra)*	Favourable – maintained (November 2003)	River Tweed SAC
Beetle assemblage	Unfavourable – recovering (January 1995)	River Tweed SSSI
Fly assemblage	Unfavourable – recovering	River Tweed SSSI

	(January 1995)	

Horizontal rock sequence


Past and present management

Limited parts of the SSSI were previously used for quarrying. This had a negligible effect on the scientific value of the site.

Presently, the river banks and surrounding land consist of low-lying grassland and the area is generally used for farming and cultivation. There are also several areas of woodland along the river banks which are listed on the Inventories of Ancient, Long-established and Semi-natural Woodland for Scotland (SNH, 1997).

Rock Exposure

The site is of international importance so it is crucial that the rock outcrops are not obscured. Any changes that potentially threaten exposures and accessibility, such as tree planting, restoration, infill, and the tipping of waste, should be discouraged.

Fossil Collecting

This site yields a spectacular fossil fauna which is vulnerable to damage by collectors. At present, the level of fossil collecting is acceptable, with little evidence of hammering. However, large-scale, irresponsible collecting would be very damaging to the scientific value of the site. Signs to discourage indiscriminate collecting and highlight the geological significance of the site, in accordance with the Scottish Fossil Code (SNH, 2008), would assist should concerns be raised in future.

Access

The river, a tributary of the Tweed, is crossed by several roads and consequently the SSSI can be easily accessed. Access along the banks of the Whiteadder presents no problems except where there are areas of overgrown vegetation. However, care should be taken in the vicinity of the steep and rather unstable rock cliffs.

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 to 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 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 the geological interest for which Whiteadder Water SSSI has been notified, ensuring that any rock exposures are not obscured and that adequate access is maintained.**

2. **To implement a programme of vegetation removal where necessary to improve access to exposures and to prevent them from being obscured.**

3. **To monitor levels of tipping and waste and remove any associated materials from within the SSSI.**

Other factors affecting the natural features of the site

None noted at present.

Date last reviewed: 28 March 2011