Scottish Natural Heritage

RIVER ESK, GLENCARTHOLM
Site of Special Scientific Interest

SITE MANAGEMENT STATEMENT

Site code: 1360

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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.

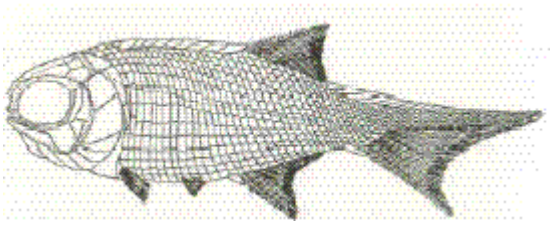
Natural features of River Esk, Glencartholm SSSI	**Condition of feature** (and date monitored)
Carboniferous - Permian Igneous	Favourable, maintained (September 2007)
Arthropoda (excluding insects and trilobites)	Favourable, maintained (September 2007)
Palaeozoic Palaeobotany	Favourable, maintained (September 2007)
Permian - Carboniferous Fish/Amphibia	Favourable, maintained (September 2007)

Description of the site

River Esk, Glencartholm Site of Special Scientific Interest (SSSI) is located approximately 3.5km northwest of Canonbie. The rocks on the site were laid down some 340 million years ago, in a shallow lagoon which covered a large part of what is now the north of England and southern Scotland. The rocks are a range of sandstones, shales and volcanic ash layers, with small areas of limestone. Whilst the volcanic ash layers are of national importance in providing evidence of violent volcanic activity during the Lower Carboniferous period, it is the fossil interest within the site that is more widely recognised.

Glencartholm is one of the most important fossil fish sites in the world. It has produced some of the finest specimens found from rocks of the Carboniferous period. The number of complete fish discovered, and their variety, with over 30 different species having been found, give the site international significance. Comparable fossil sites and associated fossil faunas occur in the USA, however, some of the Glencartholm fish are the earliest known of their type and are unique to the site. In addition to the fossil fish interest, 25 or more fossil plant species have been found including primitive seed

plants, ferns and club-mosses. The preservation of large pieces of foliage, have provided valuable information on plant structure. So far, over 20 species of arthropods including crustaceans, water scorpions and terrestrial scorpions have been found on the site. The combination of the range of fossils found, and the quality of the specimens, make this a site of international importance.

Canobius ramsayi	*Tarrasius problematicus*
	
Glencartholm SSSI actinopterygians Restoration sketched by Thomas and Bradley Dyne (1938)	

Past and present management

The main activity within the site is recreational angling. During the early 1990's, the Glencartholm Volcanic Beds and associated rocks in an area just outwith the site boundary were quarried for fossils by a commercial fossil collector. Both banks of the river are lined with deciduous trees.

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

We wish to work with the owner 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.

The site encompasses Lower Carboniferous sedimentary rocks that are nationally and internationally important for fossil fish, arthropods and plants, it also represents the so-called 'type locality' for the Glencartholm Volcanic Beds. There are several factors that may influence site management:

1. **Maintain the integrity of unobscured rock exposures.**
   The main threat to many rock exposures is through the planting of trees within or immediately adjacent to the site. Trees planted too close to exposures can lead to outcrops being obscured beneath leaf litter and roots. There should be some tree management within the site to safeguard rock outcrops.

2. **Maintain access to the rock exposures for visiting researchers.**
   In order to maximise the research and educational potential of the site, access to the exposures is required. Access to the site by prior arrangement with the landowner would ensure the need for access and the angling interests were synchronised.

Continued access to areas for bona fide researchers by prior arrangement with the landowner should be allowed. All researchers should follow the code of conduct for fossil collecting. It may be necessary to restrict access at some times in order to minimise any conflict with angling interests. Access to the site should follow the Scottish Outdoor Access Code (SOAC).

The rocks have yielded a wide range of high quality fossils. It is likely that further fossil material may be found within the site. Large-scale fossil collecting, similar to that conducted adjacent to the site in the early 1990's, could remove large amounts of important material. The removal of material should be managed to ensure that the maximum amount of information is gained from any finds. Fossil collecting should only be carried out by experienced researchers and subject to the recognised fossil collecting code of practice (ie appropriate recording of data and making important finds available to suitable establishments such as museums). Sampling from exposures should only take place in accordance with the Geological Code and wherever possible photographs rather than samples should be taken. Any finds should be reported to SNH and the local museum service and appropriately catalogued and photographed.

Date last reviewed: 19 June 2009