

ECOLOGICAL SURVEY OF THE PORTER VALLEY

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Friends of the Porter Valley

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EXECUTIVE SUMMARY

This report has been prepared by the Friends of the Porter Valley to identify, publicise and help protect the ecological capital of the valley. Companion reports cover archaeology and users.

Through providing a gradient from urban to rural over a distance of 3 miles (5 km) a wide range of landscape and ecological experiences are provided by the valley. The special quality of the park sequence results from the intermixture of tended open space and natural elements. In the lower parks one side of the stream is formal, designed landscape, the other ancient woodland, so users can be admiring bedding plants one moment and spreads of native spring flowers the next. At regular intervals up the valley man-made dams, important in the industrial history of Sheffield, are disused and have returned to nature providing a rich and readily accessible source of natural history interest. In addition to 6 dams and 6 ancient woods the ecological capital of the valley includes areas of scrub, veteran trees, species-rich grassland, wetlands and flowery road verges.

At the species level much of the wildlife is visible from the main routes up the valley. It include species popular with the public, such as grey squirrel, ducks, heron, bluebell, foxglove and orange-tip butterflies, together with others mainly known to regular users, for example water vole, badger, dipper, kingfisher, bullhead, cowslip, ragged-robin and king-cup. Locally, species of high conservation importance are present like the native freshwater white-clawed crayfish, bats, western gorse and wax-cap fungi.

Certain features of the ecological capital, on which the valley depends for its ability to draw large numbers of visitors, not once, but again and again, are under threat and an Action Plan has been prepared to reverse this. It involves major repair work to and de-silting of the six dams before open water is lost. A lottery grant will be applied for to cover this. Woodland management has been neglected over the last 30 years, it is essential that a Management Plan is soon implemented. The relic, species-rich grassland that dates back to pre-enclosure days, requires monitoring as parts of this scarce resource are deteriorating from either over- or under-grazing. Extensions to the path network are required to relieve congestion on the main spine route and to make wildlife-rich habitats away from the valley floor accessible to the public. The site of a potential Local Nature Reserve has been identified. The Action Plan also covers education, community involvement and economic sustainability. The Plan and its recommendations have arisen from a thorough understanding of the ecology of the valley and Sheffield's strategies for Key City Sites.

1. INTRODUCTION

This report has been prepared by The Friends of the Porter Valley to identify, publicise and help protect the ecological capital of the valley. It is the result of survey work by volunteers over the years 2000 to 2001 and covers the area shown in Fig.1. Companion reports have been prepared covering archaeology and a user survey.

The Sheffield Unitary Development Plan (1998) has recognised the special character of the valley by designating it Green Belt, the majority of which is additionally graded as An Area of High Landscape Value where new development will be permitted only under very special circumstances. The Porter Valley is bordered, in part, by two Conservation Areas, Fulwood and Ranmoor, and the Mayfield Valley contains an Area of Special Character and an Environment Centre used throughout the year for teaching school children. The valley forms an important part of Sheffield's Network of Green Corridors and the valley bottom, from Hunter's Bar to the top of Porter Clough, is designated an Ecological Site of Scientific Interest with the dams, rivers and woods noted as of particular value. There are five important geological sites on the south side of the valley. So officially, the Porter Valley, or the Porter Valley Sequence as it is sometimes known, is recognised as being of the highest value to the people of Sheffield.

More recently the Sheffield Site Categorisation Strategy (2000) has recognised it as a Key City Site (Level 1) having:

- the ability become an established visitor destination in its own right
- the capacity to attract large numbers of visitors both from Sheffield and further afield
- its own individual characteristics which give the site special importance
- good accessibility (public and private transport)
- substantial size and the capacity and potential to generate increased use

In 1996 the Sheffield Centre for Ecology and Environmental Management (SCEEM) carried out an Ecological survey of the valley bottom that was primarily botanical and species based (SCEEM 1996). Readers are referred to this for exhaustive plant lists. Our survey has broken new ground in studying the valley from watershed to watershed rather than concentrating on the valley bottom. We have taken a community approach, investigating a particularly wide range of plant communities and organisms, including scrub, road verges, freshwater, butterflies and moths, and lower plants so as to acquire a rounded

view of the valley's ecology rather than only examining popular groups. Finally, the site evaluation and action plan include a strong social element, the overriding theme being that the wildlife is there for the people of Sheffield to experience and enjoy and not to be hidden away in exclusive reserves.

2. GEOLOGY

The valley between Hunters Bar and the head of Porter Clough is underlain by rocks of Carboniferous age belonging to the Millstone Grit and Lower Coal Measures. Both are very similar, being alternating sandstones and shales. These were laid down on land as part of the delta of a great river flowing south from what is now Scotland. Occasional brief marine incursions flooded the delta, laying down narrow marine bands which act as markers and can be identified by their distinct fossil assemblages, particularly regarding goniatites, which are relatives of ammonites. Though there are few rock exposures in the Porter Valley, compared to the Rivelin Valley, an important streamside exposure of shale by Shepherd Wheel Dam shows the important junction between the Lower Coal Measure and the Millstone Grit systems. This is marked by the Pot Clay Marine Band, a dark, richly fossiliferous horizon only a few centimetres thick (Fig.2).

As one proceeds up the valley from Hunter's Bar one might expect to be working up the geological column and encountering progressively younger rocks. However, because the rocks are dipping east, being on the eastern side of the Pennine anticline, one is working down the succession and meeting older rocks, until the valley suddenly steepens near the site of the now demolished Clough House, where the rocks start getting younger again (Fig. 2).

The main geological sites are mostly associated with stream courses. At the Hangingwater Road Bridge, the Rough Rock sandstone is well exposed in the stream bed. At the junction of the Porter and the Mayfield Brooks there is a ten foot high exposure of shale on the south bank; then for 300 yards above the junction of Mark Lane and Clough Lane, the Redmires Flags outcrop in the stream as far as the waterfall, where the 'fall maker' is a particularly hard bed of sandstone. Above this point the valley steepens and the rocks start getting younger, so the higher valley sides are made of the Rough Rock which is exposed in small walling quarries. The sandstones contain few fossils, but occasional beds show ripple-marked surfaces and display plant remains that became stranded on the delta (Fig.2).

A few strata are geologically recent, dating from the early post-glacial period, about 10,000 years ago: these are known as superficial deposits. There is no glacial drift in the area, but the upper valley is partly filled in by a deposit