File ref: G1/6

County: Lancashire **Site Name: Gait Barrows**

District: Lancaster

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981. This site is a National Nature Reserve (NNR)

Local Planning Authority: Lancaster City Council

National Grid Reference: SD 481772 **Area:** 68.6 (ha) 169.6 (ac)

Ordnance Survey Sheet 1:50,000: 97 **1:10,000:** SD 47 NE

Date Notified (Under 1949 Act): 1975 **Date of Last Revision: –**

Date Notified (Under 1981 Act): 1984 **Date of Last Revision: –**

Other Information:

1. This site is listed in "A Nature Conservation Review", edited by D. A. Ratcliffe (1977), Cambridge University Press.
2. The site supports red squirrels, a species protected under Schedule 5 of the above Act.
3. The site was declared as a National Nature Reserve in 1977.
4. The site is within the Arnside-Silverdale A.N.O.B.
5. It is immediately adjacent to Haweswater SSSI.
6. The boundary remains unchanged.

Reasons for Notification:

Gait Barrows National Nature Reserve, which was declared in May 1977 to celebrate the Silver Jubilee of Her Majesty Queen Elizabeth II, lies in the centre of the Arnside-Silverdale AONB, on Carboniferous limestone gently sloping southwards from a maximum height of 30 m OD. It contains nationally important examples of limestone pavement and northern calcareous hazel-ash woodland, and also a small tarn (Little Hawes Water) surrounded by fen, alder carr and wet meadow which add diversity to the site.

Extensive areas of limestone pavement were removed for ornamental waterworn stone before the NNR was established, but the central part of the site still contains undamaged the most important single example of limestone pavement and its flora in Britain, which is surpassed only by the more extensive pavements of the Burren in Ireland. A particularly interesting feature is the range of surface structures represented on the pavement, which in the centre consists of massive, flat, tabular limestone (clints) with few and infrequently intersecting vertical fissures (grikes). To east and west the pavement becomes more undulating and the grikes more frequently intersecting though the clints are still large, while further away from the central area the clints become smaller with numerous deeper grikes. The pavement is also of national importance geologically. In addition to the above features, the areas from which the surface layers have been removed enable profiles through the pavement and the formerly underlying structures to be studied.

Pockets of soil formed in grikes and surface depressions support the widest range of characteristic plant species recorded on any pavement in Britain. The grikes have an abundance of hart's-tongue fern and hard shield fern and rarer ferns include rigid buckler and limestone

fern. Angular Solomon's seal, tutsan, bloody cranesbill, hemp-agrimony, saw-wort, and northern bedstraw grow on the pavement or in grikes and blue moor-grass is locally common. Some of the surface depressions contain plants associated with more acid conditions such as tormentil and jointed rush often in close association with typical lime-loving species. Patches of scrub on the pavement thicken into a dense zone surrounding the central open area. This scrub or low open woodland is composed of yew, hazel, ash and oak with locally also juniper, holly, privet, dogwood, purging buckthorn and spindle. This type of scrub is similar to that which occurs on chalk and is the most northerly in which dogwood, spindle, purging buckthorn and privet are found growing together, for these are all nearing their northern limit as natives. Associated with this scrub is a rich herbaceous flora including lily-of-the-valley, deadly nightshade, bloody cranesbill, pale St John's-wort, mountain melick, dark-red helleborine, stone bramble and fingered sedge. This rich assemblage of local and rare species is a relict community which has probably remained relatively undisturbed by human influence right through the Post-glacial Period.

The pavement woodland passes into a broad peripheral zone of taller forest, though this varies in height and structure according to past differences in management. In general there is much dense coppice of hazel with standards of pedunculate oak, ash, sycamore and occasional small-leaved lime, and birch is locally abundant on damaged pavement. This is one of the best examples in the county of northern calcareous hazel-ash woodland unmodified by the introduction of exotics, the only comparable example being Cringlebarrow and Deepdale SSSI. It is situated on limestone partly covered by glacial drift giving rise to soils varying from basic to moderately acidic and there is a lesser abundance of markedly lime-loving species than in the limestone pavement woodland. Bramble is widespread in the coppice and the field layer characteristically has dog's mercury, bluebell, false brome, primrose, sanicle, enchanter's nightshade and common dog violet.

The tarn fed by springs of lime-rich water and its surrounding fen, alder carr and wet meadow add further diversity to the botanical interest of the site which supports in total an outstanding assemblage of plant species. Red squirrels, a species protected by Schedule A of the 1981 Act, occur in the woods. The invertebrate fauna is also outstanding. The wood ant is present, nearing its northern limit, and a number of very rare species of invertebrates have been recorded. 26 species of butterfly occur on the Reserve, including the nationally rare High Brown Fritillary and Duke of Burgundy. The High Brown Fritillary population is of national importance.

The geological interest of this site may be defined as follows:

The site covers a very extensive and notably undissected area of pavement which, around the edges, has been worked for limestone by the removal of the top beds. The undamaged central pavement shows a good range of solutional features including potholes, scallops, upstanding calcite veins and large solution pans (kamenitzas). The worked areas are not without interest since the quarried scars provide excellent profiles through limestone pavement and the surface reveals erosion features developed on bedding planes which were originally below the surface. The pavement around the margin of the site is wooded and characterised by extremely elongate joint-guided clints.