Notification date: 14 July 1986

COUNTY: DERBYSHIRE SITE NAME: CRESSBROOK DALE

DISTRICT: WEST DERBYSHIRE SITE REF: 15 WKH

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act, 1981.

Local Planning Authority: PEAK PARK JOINT PLANNING BOARD, West Derbyshire District Council

National Grid Reference: SK 173738 Area: 117.77 (ha.) 291 (ac.)

Ordnance Survey Sheet 1:50,000: 119 1:10,000: SK 17 NE, SE

Date Notified (Under 1949 Act): 1954 Date of Last Revision: 1972

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
Part National Nature Reserve. Boundary alteration (extension & reduction).

Description and Reasons for Notification:
The White Peak of Derbyshire and Staffordshire is one of the most important masses of carboniferous limestone in Britain. It lies both in latitude and altitude between the other notable areas of carboniferous limestone, the Mendips and the Craven area of north Yorkshire. The limestone is cut by valleys, the 'dales', which expose areas of high geological interest and contain a range of woodlands, scrub, grassland and streams.

The dales vary in their orientation. Those that run east-west show a strong contrast between the south facing slopes which are warm and dry and the north facing slopes which are cool and moist. Dales running north-south have only slightly cooler east facing than west facing slopes. Soils vary considerably; large areas are covered by a shallow black soil that is frequently leached and sometimes strongly acid. Richer moister soils occur in the floor of the dales where material has washed from the slopes and where there may also be variable deposits laid down in recent geological time.

The woodlands of the dales are dominated by ash *Fraxinus excelsior*. In those areas that are regarded as being the oldest this is associated with wych elm *Ulmus glabra*. Small-leaved lime *Tilia cordata* is present in variable quantities but oak *Quercus robur* is absent except in the western dales. The understorey is mostly hazel *Corylus avellana* coppice with rowan *Sorbus aucuparia* and field maple *Acer campestre*. On rock outcrops yew *Taxus baccata* and rock whitebeam *Sorbus rupicola* are present. Woodland shrubs include bird cherry *Prunus padus* dogwood *Cornus sanguinea* and guelder rose *Viburnum opulus*. The ground flora is dominated by dog's mercury *Mercurialis perennis* or tufted hair-grass *Deschampsia cespitosa* with a very wide range of other woodland plants. In moist areas ferns and bryophytes form an important component.

Scrub in the dales is varied; much is derived from hawthorn *Crataegus monogyna* encroachment onto the grassland, some of it being 80–100 years old. This scrub is enriched with blackthorn *Prunus spinosa*, buckthorn *Rhamnus catharticus* and rose *Rosa* spp. In several dales there is a distinctive type of scrub known as 'retrogressive scrub', typically developed on poor soils and over limestone screes. Here hazel forms a fairly open habitat with the ground between colonised by a rich

plant community often dominated by bloody cranesbill *Geranium sanguineum* with Nottingham catchfly *Silene nutans* and stone bramble *Rubus saxatilis*.

Grasslands in the dales are very rich in species. Meadow oat *Avenula pratense* and carnation sedge *Carex flacca* are abundant. The richness and type of grassland varies according to aspect, grazing and soil conditions. On more acid areas mat-grass *Nardus stricta* and wavy hair-grass *Deschampsia flexuosa* are locally dominant occasionally with bilberry *Vaccinium myrtillus* and more rarely heather *Calluna vulgaris*. Tall, dry, herb-rich grasslands contain marjoram *Origanum vulgare* and field scabious *Knautia arvensis*, damper tall grasslands have abundant meadow sweet *Filipendula ulmaria* with water avens *Geum rivale* and hogweed *Heracleum sphondylium*.

Other habitats in the dales include rock outcrops and scree. In the White Peak, dog's mercury colonises – scree along with oat-grass *Arrhenatherum elatius* and mouse-eared hawkweed *Hieracium pilosella*. Rock outcrops are typically colonised by early flowering species such as rue-leaved saxifrage *Saxifraga tridactylites* and shining cranesbill *Geranium lucidum*.

Many dales are dry but some have streams in winter only and some, permanent or semi-permanent rivers. These streams are fringed by reed-grass *Phalaris arundinacea* and in the water courses fool's watercress *Apium nodiflorum* and the bryophytes *Cinclidotus fontinaloides* and *Fontinalis antipyretica* are abundant.

The dales woodlands attract a range of typical woodland birds but are particularly noted for the high density of nesting pairs compared with the surrounding areas. Those include hole-nesting species such as redstart *Phoenicurus phoenicurus*. In the open grasslands of the upper valley slopes and near walls wheatears *Oenanthe oenanthe* are common. The cliffs attract kestrels *Falco tinnunculus* and jackdaws *Corvus monedula*. Associated with the streams are a variety of birds notably dipper *Cinclus cinclus* and grey wagtail *Motacilla cinerea*.

Biology
Cressbrook Dale is a steep-sided dale running in a north-south direction containing some spectacular limestone cliffs. The tree canopy is of ash with a little wych elm and a dense shrub layer of bird-cherry, field maple, guelder rose, hazel and dogwood. The field layer is dominated by dog's mercury with patches of ramsons *Allium ursinum* and lily-of-the-valley *Convallaria majalis*. In a few localities mezereon *Daphne mezereum* and spurge laurel *D. laureola* occur. It has been suggested that the presence of small-leaved lime together with lily-of-the-valley, bird cherry and dogwood indicates that at least a part of the woodland may be primary.

Some extensive areas of scrub occur. On west facing slopes there are areas of 'retrogressive scrub' rich in species such as dark red helleborine *Epipactis atrorubens*, broad-leaved helleborine *Epipactis helleborine* and bloody cranesbill. Other areas of scrub are dominated by hawthorn with abundant blackthorn, rose and buckthorn. These areas of scrub form a mosaic with tall ungrazed grassland and are very important to insects.

The range of limestone grasslands in this dale is perhaps the finest in the whole of the White Peak. Wardlow Hay Cop above the dale is one of the best outside the dales. It is covered with meadow oat and carnation sedge and areas of acidic grassland dominated by mat grass. Stemless thistle *Cirsium acaulen* occurs here at one of its most northerly sites in Britain. In the dale, heath false-brome *Brachypodium pinnatum*, another species near its northern limit also occurs. On very poor soils below the crags are found the rare bird's-foot sedge *Carex ornithopoda* and fingered sedge *C. digitata*. In many parts of the dale the grasslands

are remarkable for the richness of limestone plant communities and for the insects that they support.

There are a number of mine spoil heaps in the dale where spring sandwort *Minuartia verna* is common and rock hutchinsia *Hornungia petraea* abundant. Both species are particularly associated with such sites but scarce elsewhere in the country.

Cressbrook Dale is one of the most important sites in the region for lichens growing on limestone and in the moister parts of the dale there is a rich bryophyte flora.

Geology

The sequence of limestones seen in Cressbrook Dale were laid down in a warm shallow sea some 330 million years ago during what is called the Brigantian Stage of geological time. These limestones, which form part of a group of rocks known as the Carboniferous Limestone, consist of a large number of distinctive layers of rock, many of which yield important fossils. Several layers of volcanic rock are also present in the sequence. Cressbrook Dale is one of the most important geological sites in Derbyshire as studies of the rock sequence have enabled geologists to understand the conditions that existed on the sea floor in this area during Brigantian times. The sites also provides evidence to show that volcanoes were periodically active in the Derbyshire area at this time.