

Notification date: 6 July 1990

COUNTY: DERBYSHIRE

SITE NAME: TIDESLOW RAKE

DISTRICT: DERBYSHIRE DALES

SITE REF: 15 W8J

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

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

National Grid Reference: SK 152780

Area: 9.3 (ha.) 23.0 (ac.)

Ordnance Survey Sheet 1:50,000: 119

1:10,000: SK 17 NW, NE

Date Notified (Under 1949 Act): –

Date of Last Revision: –

Date Notified (Under 1981 Act): 1990

Date of Last Revision: –

Other Information:

New site.

Description and Reasons for Notification:

Tideslow Rake is the largest surviving site in the South Pennines where an open vegetation characteristic of substrates rich in heavy metals (in this case principally lead) occurs. On less heavily metal-enriched parts of the site closed grasslands similar to typical limestone grasslands occur, whilst locally there are fragments of neutral grassland and relict species of the heathland which once occurred on surrounding land.

Situated 2 km north of Tideswell at an altitude of 325 m–400 m above sea level, Tideslow Rake occupies the former site of an extensive lead deposit, worked since the 12th Century by opencasting and mining, with mineral processing also being carried out on site. Excavation and dumping of waste gangue minerals has created a landscape of hummocks and hollows, composed partly of lead-rich spoil and waste. Of particular importance at this site are areas of coarse, freely-draining material with a high lead content. Due to their inhospitability such areas support only a thin cover of vegetation which contains relatively few species. Those species which do occur, however, are of considerable scientific interest as they show special adaptive features which allow them to grow in such situations.

Most notable of these plants is spring sandwort or 'leadwort' *Minuartia verna* which has a population in excess of 100,000 plants at this site and which throughout nearly all of its British distribution is confined to heavy-metal-rich soils. Two further species occur which within the South Pennines are strongly associated with heavy-metal-rich sites, mountain pansy *Viola lutea* and moonwort *Botrychium lunaria*. Other species found in these areas include red fescue *Festuca rubra*, common sorrel *Rumex acetosa*, ribwort plantain *Plantago lanceolata* and wild thyme *Thymus praecox*. These more common species are here represented by unusual populations adapted to heavy-metal-rich substrates.

On areas with lower levels of heavy-metals the turf is more closed and resembles limestone grassland, although certain typical limestone grassland plants appear to be absent because of heavy-metal enrichment. Within such grasslands the species of open vegetation listed above are accompanied by eyebright *Euphrasia officinalis*, lady's bedstraw *Galium verum*, rough hawkbit *Leontodon hispidus*, salad burnet *Sanguisorba minor*, common bent *Agrostis capillaris* and the nationally restricted

limestone bedstraw *Galium sternerii*. Locally uncommon plants such as hairy rock-cress *Arabis hirsuta*, meadow saxifrage *Saxifraga granulata*, woolly thistle *Cirsium eriophorum* and early-purple orchid *Orchis mascula* occur here. Fragments of neutral grassland occur on the fringes of the site and contain common knapweed *Centaurea nigra* and crested dog's-tail *Cynosurus cristatus*.

This site is also one of the most important in the Peak District for its lower plant flora. Some 30 species of lichen have been recorded including a number of rare and local species. Several of these species are generally found on acidic heathlands and may represent relicts of the heathland vegetation which until only 30 years ago covered many of the surrounding fields. They include *Cetraria islandica*, *Cladonia bacillaris* and *C. scabriuscula*. Other rare species include *Verrucaria melaenella*, *Veizdaea theocarpa* and *Bacidia viridescens*, the latter usually associated with old lead mineral workings.

There is a long history of ecological and biogeochemical research at this site which has contributed significantly to our understanding of how plant species adapt to stressed environments and the way in which lead enrichment inhibits agriculture.