

**CYFOETH NATURIOL CYMRU
NATURAL RESOURCES WALES**

SITE OF SPECIAL SCIENTIFIC INTEREST: CITATION

DENBIGHSHIRE

CHWAREL A MWYNGLODDFA PENARTH

Date of Notification:

1985, 14 October 2021

National Grid Reference:

SJ110422

O.S. Maps:

1:50000 Sheet Number: Sheet 125

1:25000 Sheet Number: Sheet 255

Site Area:

16.1 hectares

Description:

Chwarel a Mwyngloddfa Penarth is of special interest for its fossils (Palaeozoic Palaeobotany) and its population of hibernating lesser horseshoe bats *Rhinolophus hipposideros*.

The site is situated about a mile to the east of Corwen in Denbighshire and lies on the northern edge of the Berwyn moorland. Grazed and hedged pastureland lies to the east and south, sloping down towards the floor of the Dee Valley. Conifer woodland lies immediately to the west of the site.

Chwarel a Mwyngloddfa Penarth SSSI includes the disused quarry, extensive mine workings and spoil heaps resulting from slate extraction in the nineteenth and twentieth centuries.

Geology:

Chwarel a Mwyngloddfa Penarth is internationally important for studies of Palaeozoic palaeobotany. It has yielded the oldest examples of *Prototaxites hicksii*, now recognised as a fungus assigned to the ascomycetes, and of the probably aquatic *Pachytheca* sp. that remains of uncertain affinity. The equally enigmatic *Berwynia carruthersii* is known only from this locality. The disused workings expose a succession of southerly-derived basinal deposits comprising a lower sequence of uniform, cleaved mudstones and an overlying sequence of turbiditic sandstones, siltstones and shales. Locally referred to as the Pen-y-Glog Group, these rocks have yielded a graptolite fauna spanning the *murchisoni* and *riccartonensis* biozones. This clearly indicates an early Wenlock (lower Sheinwoodian Stage) age for the exposed sequence and helps to establish that the fossils of the enigmatic land-colonising organisms are probably the oldest-known of their kind in Great Britain and possibly globally. The site has considerable potential for elucidating the evolution and taxonomy of early Palaeophytic organisms.

Biology:

Lesser horseshoe bats have a restricted distribution in Britain. Chwarel a Mwyngloddfa Penarth is the second largest hibernation site for this species in north-east Wales.

The lesser horseshoe bats hibernate throughout the now-disused slate mine's tunnels and chambers. This complex of underground workings provides a range of conditions suitable for bat hibernation; little disturbance and with stable internal temperatures, humidity and air flow. The usage is predominantly for hibernation, although small numbers of lesser horseshoe bats will be present throughout the year.

The quarry, spoil heaps and scrub, especially the dense scrub adjacent to the plantation to the west, are likely to provide local foraging and roosting habitat for the bats. The plantation itself is likely to represent an important winter foraging area.

Remarks:

Known as Pen y Glôg Quarry in geological circles since the pioneering work of Hicks (1881, 1882), this site is known locally as Penarth Quarry and sometimes is referred to as Corwen Slate Mine. The geological feature was notified as Penarth Quarry SSSI in 1985. Its national importance was confirmed in 1995 when Pen y Glôg Quarry was included in the Geological Conservation Review volume *Palaeozoic Palaeobotany of Great Britain* (Cleal, C.J. and Thomas, B.A., 1995) as part of a national survey and evaluation of sites of geological and geomorphological importance. This most recent re-notification incorporates the lesser horseshoe bat hibernation site as a feature of the SSSI.

Chwarel a Mwyngloddfa Penarth also functions as an important hibernation site for other bat species including Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentonii*, brown long-eared bat *Plecotus auritus* and whiskered/Brandt's bat *Myotis mystacinus/brandtii*. The quarry and mine may also be an important swarming site for these species.

The site lies within the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). A small part of the site, which includes the deepest part of the mine, overlaps the Berwyn SSSI, the Berwyn Special Protection Area (SPA) and the Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains Special Area of Conservation (SAC).