

County: Cornwall

Site Name: Mullion Cliff to Predannack Cliff

District: Kerrier

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

Local Planning Authority: Cornwall County Council
Kerrier District Council

National Grid Reference: SW 670156 to SW 674177 **Area:** 108.5 (ha) 268.1 (ac)

Ordnance Survey Sheet 1:50,000: 203 **1:10,000:** SW 61 NE

Date Notified (Under 1949 Act): 1951 **Date of Last Revision:** 1976

Date Notified (Under 1981 Act): 1986 **Date of Last Revision:** 1993

Other Information:

The site is partly a Biogenetic Reserve.

The site is in Cornwall Area of Outstanding Natural Beauty.

The site was previously known as 'Mullion Cliffs to Predannack Head'.

The boundary has been amended by extensions.

The site is partly within the Lizard National Nature Reserve.

The site is part owned by the National Trust.

Part of the site formerly notified in West Lizard SSSI.

*These plants and insects are included in the Red Data Book listing of rare and endangered species.

Description and Reasons for Notification:

Introduction:

Mullion Cliff to Predannack Cliff is located some 10 km south of Helston on the west coast of the Lizard Peninsula, the most southerly tip of mainland Britain. The site is underlain by serpentinite and hornblende schist. The ultra basic serpentinite forms shallow, poorly drained gley soils, contrasting with the deeper, well drained soils of the hornblende schist. Offshore Mullion Island is composed of pillow lavas and cherts and is of geological interest. The combination of mild oceanic climate together with the unusual geology and soil type and exposed location has led to the development of a range of vegetation types which, in Britain, is unique to the Lizard Peninsula. The site is of great botanical importance and no fewer than 10 Red Data Book (RDB) (*) species have been confined in the British Isles to the Lizard Peninsula and County Fermanagh, Northern Ireland.

Biology:

The vegetation of the cliff exhibits a complex of maritime communities. A maritime rock-crevice community is found in places at the lowest levels in the cliff profile and is characterised by thrift *Armeria maritima* subsp. *maritima*, rock samphire *Crithmum maritimum* and sea aster *Aster tripolium*. Maritime grasslands higher up the cliff profile comprise red fescue *Festuca rubra* and Yorkshire fog *Holcus lanatus* along with thrift and sea carrot *Daucus carota* subsp. *gummifer*. In more sheltered areas, a maritime bluebell community is found, characterised by bluebell *Hyacinthoides non-scripta*, thrift and red fescue.

The cliff top supports a maritime heath community. Heather *Calluna vulgaris*, spring squill *Scilla verna* and sheep's fescue *Festuca ovina* are abundant amongst kidney vetch *Anthyllis vulneraria* and wild thyme *Thymus praecox* subsp. *arcticus*. The soil over serpentinite is very low in plant nutrients and calcium, but high in bases, so less demanding calcicoles flourish alongside calcifuge species. Hence lady's bedstraw *Galium verum*, dropwort *Filipendula vulgaris* and oxeye daisy *Leucanthemum vulgare* are common. An abundance of nationally scarce species occur including spring sandwort *Minuartia verna*, autumn squill *Scilla autumnalis*, thyme broomrape *Orobanche alba* and yellow centaury *Cicendia filiformis*. Of particular importance are the populations of the RDB (*) species fringed rupturewort *Herniaria ciliolata*, long-headed clover *Trifolium incarnatum* subsp. *molineri* and wild asparagus *Asparagus officinalis* subsp. *prostratus*.

Inland from the cliffs, deeper soils over serpentinite support a 'Mixed Heath' community. This comprises Cornish heath, western gorse *Ulex gallii*, bell heather *Erica cinerea* along with dyer's greenweed *Genista tinctoria*, great burnet *Sanguisorba officinalis* and betony *Stachys officinalis*.

The shallow soils and bare rock associated with serpentinite outcrops and former quarries exhibit an abundance of nationally scarce and RDB (*) species including large populations of wild chives *Allium schoenoprasum*, fringed rupturewort, land quillwort *Isoetes histrix*, dwarf rush *Juncus capitatus* and twin-headed clover *Trifolium bocconeii* along with green-winged orchid *Orchis morio* and autumn lady's tresses *Spiranthes spiralis*.

The cliff section over hornblende schist has a vegetation community which contrasts markedly with the serpentinite flora. The shallow, dry base-poor soils support maritime heath and grassland communities with associated gorse *Ulex europaeus* and blackthorn *Prunus spinosa* scrub. The heath is dominated by heather and bell heather and is interspersed with species-rich grassland with sheep's-bit *Jasione montana*, spring squill, autumn squill and betony. In addition, the cliffs support golden-samphire *Inula crithmoides* at its only site on schist on the Lizard, hairy bird's-foot trefoil *Lotus subbiflorus* and a notably large population of fringed rupturewort.

Several cliff flush communities dominated by common reed *Phragmites australis* occur, together with galingale *Cyperus longus*, fool's watercress *Apium nodiflorum*, bog pimpinell *Anagallis tenella* and marsh pennywort *Hydrocotyle vulgaris*.

Offshore, Mullion Island supports sea beet *Beta vulgaris* subsp. *maritimum* and a flourishing tree mallow *Lavatera arborea* population.

A rich insect fauna with several RDB species (*) is associated with the diverse topography and vegetation of the site. These include the beetles (Coleoptera), *Cathormiocerus britannicus* and *C. myrmecophilus*, the flies (Diptera), *Dolichopus cilifemoratus* and *Orthonevra brevicornis* and the butterflies and moths (Lepidoptera), high brown fritillary *Argynnis cydippe*, white spot *Haden albimacula* and small eggar *Eriogaster lanestris*.

The cliffs and offshore islands support a diverse breeding seabird community including shag *Phalacrocorax aristotelis*, kittiwake *Rissa tridactyla*, razorbill *Alca torda*, fulmar *Fulmarus glacialis*, guillemot *Uria aalge* and lesser black-backed gull *Larus fuscus*. Raven *Corvus corax*, peregrine *Falco peregrinus*, stonechat *Saxicola torquata* and rock pipit *Anthus spinoletta* also breed at this site.

Geology:

Mullion Island:

The metabasalt lavas of Mullion Island are representative of the volcanic rocks associated with the Roseland Breccia Formation tectonically emplaced on top of the Devonian Gramscatho Group of sediments. The Gramscatho Group rocks and the Roseland Breccia Formation form the tectonic basement over which the ophiolitic rocks of the Lizard Complex have been obducted.

The lavas are strikingly pillowed, indicating a submarine origin, and are associated with minor radiolarian cherts and limestones. Geochemically the lavas are tholeiites with enriched ocean ridge-type affinities. Recent studies suggest that the lavas are not directly related to the nearby Lizard Complex rocks, but rather represent a separate volcanic episode. The site is critical to an understanding of volcanic activity in the Lizard and adjacent areas.