

**CYNGOR CEFN GWLAD CYMRU  
COUNTRYSIDE COUNCIL FOR WALES**

SITE OF SPECIAL SCIENTIFIC INTEREST CITATION

**CARMARTHENSHIRE**

**TWYNI LACHARN-PENTYWYN /  
LAUGHARNE-PENDINE BURROWS**

**Date of Notification:** 1953, 1990, 2002

**National Grid Reference:** SN290070

**OS Maps:** 1:50 000 Sheet number: 158 & 159  
1:10 000 Sheet number: SN 20 NW  
SN 20 NE  
SN 30 NW

**Site Area:** 2292.0 ha (approx.)

**Description:**

Twyni Lacharn-Pentywyn/Laugharne-Pendine Burrows is of special interest for its sand dune, swamp and coastal dune woodland, and a large standing water body, the Witchett Pool, a population of the water vole *Arvicola terrestris*, a wintering population of the golden plover *Pluvialis apricaria*, the fen orchid *Liparis loeselii*, the dune gentian *Gentianella uliginosa*, a breeding bird assemblage, and an invertebrate assemblage. Also of importance are associated habitats comprising intertidal communities, saltmarsh, scrub, marshy grassland, semi-improved grassland and open water/river channel.

The site comprises a major spit and sand dune system (the largest in West Wales) with an extensive intertidal zone lying on the western side of Carmarthen Bay and between the settlements of Laugharne and Pendine. It is of outstanding importance for its rare coastal plants and extensive dune slacks, which merge into fen and swamp near the Witchett Pool, a nine hectare calcareous and brackish lake resulting from impeded drainage and a man-made embankment. The pool and its margins are of special interest for its breeding bird assemblage while the dunes generally are of equal importance for their invertebrates. A large area of woodland and scrub of interest serves to complete the duneland succession, some of it occurring in a mosaic with areas of semi-improved or marshy grassland. The agriculturally improved grassland situated landward of the dunes is used by nationally important numbers of wintering golden plover *Pluvialis apricaria*. The ditches, together with other wetland habitats, support an important population of the water vole *Arvicola terrestris*.

Twyni Lacharn-Pentywyn/Laugharne-Pendine Burrows consist of a linear belt of dunes extending 6.5km east-south-east from Pendine. The dune system then curves round to the northeast for a further 3.5km to Ginst Point, at the mouth of the Taf estuary. The dunes are up to 700m wide and attain heights in excess of 15m OD (height above Ordnance Datum). The linear section of the dunes appears to have developed initially on a cobble-boulder ridge formed by post-glacial sea level rise. The development of the dunes was accompanied by the formation of a curving sand spit. These processes involved the redistribution of large quantities of sand originally deposited by meltwater from ice sheets and glaciers.

The site includes extensive areas of intertidal sand and mud communities which exhibit complete zonation down the shore and are particularly good examples of their types. The back of the shore is predominantly barren sand and shingle. Upper shore sand supports communities dominated by amphipods, such as *Haustorius arenarius*, and isopods, such as *Eurydice pulchra*. The lower to middle shore is populated by communities characterised by segmented worms, including cat worms *Nephtys* sp. and the lug worm *Arenicola marina* whose casts dominate the shore at this level. On the lower shore bivalve molluscs, such as the banded wedge shell *Donax vittatus*, the thin tellin *Angulus tenuis*, the striped venus *Chamelea gallina* and the rayed trough shell *Macra stultorum* are common. Towards Ginst Point the edible cockle *Cerastoderma edule* becomes dominant along with the cat worm and the thin tellin. Pools found between sand ripples here contain crustacea, such as the shrimp *Crangon crangon* and mysid shrimps. The lowest part of the shore sustains a community of sea potato *Echinocardium cordatum*, the bivalve mollusc *Pharus legumen* and the otter shell *Lutraria lutraria*.

Several migratory fish species, such as the twaite *Alosa fallax* and allis *A. alosa* shads, as well as river *Lampetra fluviatilis* and sea *Petromyzon marinus* lampreys, make use of these inshore waters and approaches to the estuary. Common scoter *Melanitta nigra*, for which Carmarthen Bay as a whole is of national importance, sometimes utilise areas close to shore.

The extensive dune system has ridges that are divided by intervening deep and damp hollows which are exceptionally rich in rare or uncommon plants. Along the seaward edge of the dunes is a fairly narrow zone of open grassland dominated by sand couch grass *Elymus farctus*. Inland, marram grass *Ammophila arenaria* becomes more dominant, grading into semi-fixed dunes where the grassland is characterised by marram grass and restharrow *Ononis repens*, with dewberry *Rubus caesius* and red fescue *Festuca rubra* being common amongst a variety of species including wild pansy *Viola tricolor* ssp. *curtsii* and lesser meadow-rue *Thalictrum minus*. Marram grass becomes much less frequent further from the sea in the area of stable 'grey' dunes where false oat-grass *Arrhenatherum elatius* and dewberry are characteristic as is invasive sea buckthorn *Hippophae rhamnoides*. Orchids of the dry dune grassland include the pyramidal orchid *Anacamptis pyramidalis* and autumn lady's-tresses *Spiranthes spiralis*. Bare, sandy 'blow-outs' are the haunt of the robberfly *Pamponerus germanicus*, an uncommon dipteran found on west-coast dunelands. Butterflies found in the dunes include marbled white *Melanargia galathea*, brown argus *Aricia agestis*, small blue *Cupido minimus* and grizzled skipper *Pyrgus malvae*.

The dune-slacks that occur between the ridges formed by the higher dunes vary in character according to the length of time that they are covered by water. Creeping willow *Salix repens* is the most abundant species and the ground is often carpeted with mosses. These dune-slack communities are distinguished by the frequency of such species as variegated horsetail *Equisetum variegatum*, the moss *Calliergon cuspidatum* and common fleabane *Pulicaria dysenterica*. Species of flowering plants include the nationally rare fen orchid *Liparis loeselii*, growing amongst an abundance of marsh helleborine *Epipactis palustris* and marsh orchids *Dactylorhiza* spp. Other orchids occurring in the dune slacks include frog orchid *Coeloglossum viride* and fragrant orchid *Gymnadenia conopsea*. The dune gentian *Gentianella uliginosa*, known only from six sites in Britain, also grows at Laugharne Burrows. The rare groundhopper *Tetrix ceperoi* occurs in slacks and other wet sandy areas: Laugharne Burrows is the most north-westerly European site known for this species. The dunes as a whole are also important for lower plants amongst which fungi are represented by a diversity of rare or threatened species including some not previously recorded in this country, such as *Inocybe salicis*.

The permanent water areas found at the Witchett Pool had their origin in the damming of the

Witchett Pill giving rise to an expanse of shallow water which is both brackish and calcareous. The resultant aquatic flora is diverse, with uncommon species such as greater bladderwort *Utricularia vulgaris*, soft hornwort *Ceratophyllum submersum* and the stonewort, *Chara hispida* (an alga). In shallower areas marginal species typified by common reed *Phragmites australis* occur, but also grey club-rush *Schoenoplectus tabernaemontani*, sea club rush *S. maritimus* and reed sweet-grass *Glyceria maxima*. Other notable plants found in these swampy areas include greater spearwort *Ranunculus lingua*, water dock *Rumex hydrolapathum* and cyperus sedge *Carex pseudocyperus*. These freshwater areas are rich in dragonflies, including the hairy dragonfly *Brachytron pratense*.

In many slacks, succession, in the absence of significant levels of grazing by rabbits and domestic stock, has led to the development of areas of coastal dune woodlands, dominated mainly by willow *Salix cinerea* but with alder *Alnus glutinosa* frequent in some areas. Such woodland is considered a rare and valuable habitat in both a European and British context and the stand at this site forms a large proportion of the Welsh resource. The woodland often occurs in a mosaic with areas of wet grassland and associated ditches containing plant species of local importance.

The Witchett Pool has breeding pochard *Aythya ferina*, tufted duck *Aythya fuligula*, mute swan *Cygnus olor*, coot *Fulica atra*, grey-lag goose *Anser anser*, little grebe *Tachybaptus ruficollis* and great crested grebe *Podiceps cristatus*. Substantial populations of reed *Acrocephalus scirpaceus* and sedge *A. schoenobaenus* warblers nest in the reed-beds and marshes. Marsh harriers *Circus aeruginosus* have occurred throughout the year, whilst bitterns *Botaurus stellaris* visit in winter. Important local aggregations of gadwall *Anas strepera* also occur on the Witchett Pool in winter. During passage periods and in winter Pendine Sands and Ginst Point hold notable populations of wading birds, including oystercatcher *Haematopus ostralegus* and sanderling *Calidris alba*. The driftline debris on the sandy beach has the rare strandline beetle, *Nebria complanata*, and the littoral pillbug *Armadillium album*, which belong to the dune invertebrate assemblage.

The level fields behind the sand dunes have been reclaimed from areas of former saltmarsh with parcels of improved grassland intersected by a mostly rectilinear network of drainage ditches. The fields are utilised by a large number of golden plover in winter, the population being of national importance. At the same time regionally important numbers of lapwings *Vanellus vanellus* also occur here. The ditches are frequented by water voles *Arvicola terrestris*, which range widely over the surrounding coastal levels, but are concentrated here where there is a more stable water level and an abundance of aquatic vegetation: this is one of very few extensive populations remaining in west Wales. Otters *Lutra lutra* occur along the ditches as well as in or around the Witchett Pool and its associated wetlands.

### **Remarks:**

The greater part of the site is owned by the Ministry of Defence.

The site largely falls within the area of two Special Areas of Conservation (cSACs), Carmarthen Bay Dunes/Twyni Bae Caerfyrddin for its:

- Fixed dunes with herbaceous vegetation
- Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*)
- Shifting dunes along the shoreline with *Ammophila arenaria*
- Embryonic shifting dunes

- Humid dune slacks
- Fen orchid *Liparis loeselii*
- Petalwort *Petalophyllum ralfsii*
- Narrow-mouthed whorl snail *Vertigo angustior*

and Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC for its:

- Atlantic salt meadows
- Estuaries
- Mudflats and sandflats not covered by seawater at low tide
- Large shallow inlets and bays
- Sandbanks which are slightly covered by sea water all the time
- *Salicornia* and other annuals colonising mud and sand
- Allis shad *Alosa alosa*
- Twaite shad *Alosa fallax*
- River lamprey *Lampetra fluviatilis*
- Otter *Lutra lutra*
- Sea lamprey *Petromyzon marinus*

The area is included in the Register of Landscapes of Outstanding Historic Interest in Wales (CCW & CADW, 1998). The area is considered as a Special Landscape Area in terms of the Carmarthen District Local Plan, a designation which will be adopted by the Unitary Development Plan.

The following Schedule 5 and 8 species (Wildlife and Countryside Act 1981 (as amended) are present on the site:

Water vole  
 Otter  
 Marsh fritillary *Euphydryas aurinia*  
 Dune gentian  
 Fen orchid

The following Annex II species (EC Habitats Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) are present on the site:

Otter  
 Allis shad  
 Twaite shad  
 Sea lamprey  
 River lamprey  
 Marsh fritillary  
 Fen orchid  
 Petalwort

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