

**County:** Isle of Wight      **Site Name:** Thorness Bay SSSI

**Local Planning Authority:** Isle of Wight County Council, Medina Borough Council, South Wight Borough Council

**National Grid Reference:** SZ 455935

**Ordnance Survey Sheet 1:50,000:** 196

**1:25,000:** SZ 49

**Area:** 86.18 (ha)

**Date Notified (Under 1949 Act):** 1966

**Date Notified (Under 1981 Act):** 26 February 1987

**Last Revision:** 23.2.95

**Date Confirmed:** 6 August 1987

**Date Confirmed:** 21.11.95.

**Other Information:**

The site, formerly known as Gurnard Ledge to Saltmead Ledge SSSI was extended in 1987. The SSSI includes land which has been proposed for designation under the Ramsar Convention of Wetlands of International Importance, and as a Special Protection Area under EU Directive 79/409 on the Conservation of Wild Birds. Part of the site is listed in the Geological Conservation Review.

**Reasons for Notification:**

The site extends along approximately three kilometres of undeveloped and little disturbed coastline on the north west of the Isle of Wight. It comprises considerable areas of soft maritime cliffs with large expanses of intertidal sand and shingle interspersed with rocky outcrops or ledges composed of Bembridge Limestone. Two small areas of brackish marsh known as Thorness Marshes lie adjacent to the shore. The invertebrate fauna and flora of Thorness Marshes and the sea shore support large numbers of overwintering wildfowl and waders which, with the adjacent Newtown Harbour Site of Special Scientific Interest to the west, contribute to the internationally important estuarine bird populations of The Solent. Thorness Marshes is also an important site for breeding waterfowl.

The coastal section between Gurnard Ledge and Saltmead Ledge is of geological importance because of the rock sequence which occurs, and because of the fossil plants and insects which are found within the rocks. Rock exposures occur in the intertidal zone, in outcrops at the base of the slipped cliffs, and in landslide scars above the beach. The fossil flora and insect fauna are of particular importance, providing large numbers of specimens which are not known to occur elsewhere. The diverse cliff vegetation is also of considerable ecological importance in displaying a great range of successional types from pioneer communities to mature woodland.

Thorness Bay displays a full succession of rocks from the upper part of the Headon Hill Formation through to the lowest beds of the Bouldnor Formation. The best exposures are of the Bembridge Limestone and Bembridge Marls, and local changes in the thickness of the Bembridge Limestone are of particular importance in understanding the geological history of the Thorness Bay area. Near the base of the Bembridge Marls is a thin limestone, known as the 'Insect Limestone', which is the most important source of Tertiary fossil insects anywhere in Britain. Over 250 new species have been found within the limestone, including tree-ants and termites. The Insect Limestone also contains a unique flora of fossil plants, belonging to over 120 different species; 39 of these species have their type-locality here, and 20 are unique to

this site in Britain. Of particular importance is the excellent preservation of the fossil plants, which allow the recognition of plant organs not usually seen in fossilised specimens. Fossil plants also occur at other levels in the Bembridge Limestone and Bembridge Marls, and the site is of critical importance for studies of European Tertiary palaeobotany.

Structurally the cliffs are divided into a series of parallel slumps and mud-flows running perpendicular to the coast. The most recently formed cliff slumps are largely unvegetated and support only scattered pioneer plants such as coltsfoot *Tussilago farfara*, giant horsetail *Equisetum telmateia*, tall melilot *Melilotus altissima* and a variety of grass species. The more mature cliff slumps develop a vegetation dominated by wood small-reed *Calamagrostis epigejos*, common reed *Phragmites australis* and giant horsetail in association with species more commonly found on calcareous grasslands such as yellow-wort *Blackstonia perfoliata*, rest harrow *Ononis repens* and common centaury *Centaurium erythraea*. The longest established parts of the cliff have developed a dense scrub vegetation, often on raised ridges between the younger slumps. This is composed of a number of shrub and tree species ranging from sallow *Salix cinerea*, silver birch *Betula pendula* and alder *Alnus glutinosa* in the wetter areas to gorse *Ulex europaeus*, hawthorn *Crataegus monogyna* and privet *Ligustrum vulgare* in the drier areas. The semi-natural woodland on the landslip area at Burnt wood supports the nationally rare fly *Dorycera graminum* which is listed in the British Red Data Book (RDB 3).

Thorness Marshes comprise a range of botanically rich communities and supports important numbers of overwintering and breeding waterfowl. The marshes grade from reed *Phragmites australis* beds, freshwater and brackish grazing marsh alongside a small stream, through to a rich saltmarsh community developed behind a shingle bar. The grazing marsh includes areas dominated by sea club-rush *Bolboschoenus maritimus*, sea couch-grass *Elymus maritima*, and false oat-grass *Arrhenatherum elatius*, with saltmarsh rush *Juncus gerardi* and two nationally scarce species – divided sedge *Carex divisa* and marsh-mallow *Althaea officinalis* occurring locally. A diverse saltmarsh community has developed behind the shingle bar which guards the marshes, and includes saltmarsh-grass *Puccinellia* spp., sea purslane *Halimione portulacoides*, sea aster *Aster tripolium*, sea arrow-grass *Triglochin maritima*, sea milkwort *Glaux maritima* and lesser sea-spurrey *Spergularia marina*. The shingle bar displays a diverse community dominated in places by sea sandwort *Honkenya peploides* and including yellow horned-poppy *Glaucium flavum*, orache *Atriplex* spp., yellow melilot *Melilotus officinalis*, henbane *Hyoscyamus niger* and in places at the shingle/saltmarsh interface monospecific stands of the nationally scarce divided sedge.

The rich marine invertebrate fauna of Thorness shore includes large numbers of lugworm *Arenicola marina*, ragworm *Nereis diversicola*, mason worm *Lanice conchilega* and cockles *Cerastoderma edule*. The rocky limestone ledges form low platforms, dissected by rectilinear cracks, which rise up to 1.5 metres above the sand and shingle shore. They provide classic examples of a rocky shore habitat on the north west coast of the Isle of Wight. The rich algal flora they support is dominated by toothed wrack *Fucus serratus*, commonly with Irish moss *Chondrus crispus*, Japanese seaweed *Sargassum muticum*, and, on the lower shore, oarweed *Laminaria* species. The invertebrate fauna on these ledges includes an abundance of limpets *Patella vulgata*,periwinkles *Littorina* species and hermit crabs *Eupagurus bernhardus*.

Thorness Bay forms an important component of The Solent estuarine system which has been identified as an internationally important site for over-wintering wildfowl and waders. Thorness shore and marshes provide important feeding and roosting grounds for significant numbers of waterfowl including dark-bellied Brent geese *Branta bernicla*, ringed plover *Charadrius hiaticula*, grey plover *Pluvialis squatarola*, oystercatcher *Haematopus ostralegus*, dunlin *Calidris alpina*, teal *Anas cracca*, shelduck *Tadorna tadorna*, curlew *Numenius arquata*,

and snipe *Gallinago gallinago*. Thorness shore is a particularly important site in The Solent system for its overwintering turnstone *Arenaria interpres*. Less frequently occurring species include spotted redshank *Tringa erythropus*, greenshank *T. nebularia*, green sandpiper *T. ochropus* and jack snipe *Lymnocyptes minimus*. The marsh also supports important numbers of breeding waterfowl including redshank *T. totanus*, lapwing *Vanellus vanellus*, and occasional mallard *Anas platyrhynchos*; together with reed bunting *Emberiza schoeniclus* and reed warbler *Acrocephalus scirpaceus*. Ringed plover nest in small numbers on the shingle.