

Tenby Harbour and Tenby North Beach – Intertidal Biotope Survey

Site location: Tenby Harbour and Tenby North Beach, Pembrokeshire
Date of survey: 24/02/24
Survey Start time: 1100hrs
Survey Finish time: 1530hrs
Low Water time: 12.29
Low Water height: 1.42m
Weather conditions: No rain, wind WSW 5-9mph. Survey unaffected by conditions.
Surveyors: Aethne Cooke
Mike Camplin

Survey Objective:

To map the intertidal sediment biotopes in the boxed area indicated in Figure 1. Note that only the intertidal sediment was surveyed. Non-natural walls and natural bedrock at the back of the shore and in the harbour were not surveyed. A larger area than the required boxed area was surveyed in order to provide a wider context for the mapped information provided.

Survey Method:

The intertidal biotope survey method was based on Wyn (2006)¹ using the JNCC (2022) version of the biotope classification².

Tide height on the day of survey did not allow access to the extreme lower shore, but was sufficiently low for the purpose of this survey.

Site Description:

Tenby North Beach is a moderately exposed enclosed sandy beach, extending for approximately 1km between Tenby Harbour and Waterwynch Bay. At its southern end, Tenby Harbour has a north-west aspect, sheltered by the headland of Castle Hill and the outer historical harbour wall.

The survey extended from inside Tenby Harbour northwards to just south of Goscar Rock (approximately the bottom half of Tenby North Beach).

The mapped distribution of intertidal sediment biotopes is indicated in Figure 2. Species and biotopes recorded are summarised in Annex 1. Figures 3-12 illustrate further the description provided below.

Tenby Harbour:

Below the inner harbour wall, the back of Tenby Harbour is characterised by a sloping sandy beach of medium grained sand which dries out at low water. This area contains sparse numbers of the polychaete *Scolecopsis squamata* and is recorded as LS.LSa.MoS.AmSco. No infauna was recorded in a small strip to the right as you walk onto the harbour floor and this is recorded as LS.LSa.MoS.BarSa.

This band of sand transitions to a flatter area of sandy mud interspersed with elevated ripples of sand towards the harbour entrance. Both these habitats (muddy sand and clean sand) are characterised by polychaetes (including *Arenicola marina* (lug worm)) and *Cerastoderma edule*

¹ Wyn (2006). Handbook for Marine Intertidal Phase 1 Biotope Mapping Survey'. Published by Countryside Council for Wales.

² JNCC (2022). The Marine Habitat Classification for Britain and Ireland Version 22.04. [24/02/2024]. Available from: <https://mhc.jncc.gov.uk/>

(cockle) - LS.LSa.MuSa.CerPo. Dense numbers of *Peringia* sp. (laver spire shell) occupy a large area of the muddy sand in the inner area of the harbour (TN1).

The depth of anoxia in the sediments in the harbour varies. Towards the mouth of the harbour in the elevated sandy ridges, anoxia was evident at 10-15cm below the sediment surface. In the flatter muddy sand areas, it was 1-5cm below the surface. In the inner east corner of the harbour a small discrete patch of soft anoxic sandy mud was present covering approximately 15m² (TN2).

Scoured sand pools (TN3) are located at both the east (end of harbour wall) and west (end of slipway) entrances to the harbour. Just behind the slipway on the east side of harbour entrance, there is a boat support rack, under which the mud is anoxic and no live cockles were recorded (TN4).

Tenby North Beach:

The entirety of the beach is sand, with the exception of the prominent Goscar Rock (not surveyed) and smaller rocky outcrops towards the harbour end of the beach. The NW corner of the survey box is close to one of these smaller rock outcrops. This outcrop (TN5) is dominated by an encrustation of barnacles, limpets and *Fucus spiralis* (spiral wrack) - LR.MLR.BF.FspiB. Other smaller lower lying sand scoured rock outcrops towards the back of the shore and closer to the harbour entrance support ephemeral green algae and *Porphyra* sp. (laver bread) - LR.FLR.Eph.UlvPor (TN6).

A band of medium grained sand extends along the back of the shore. For a section of this, holes on the sand surface indicated the presence of Talitrid amphipods (sandhoppers). With the exception of a protrusion of *Cerastoderma edule* and polychaetes (LS.LSa.MuSa.CerPo) in a finger of sandy sediment extending from the harbour, the majority of the remainder of the beach surveyed was primarily a community of polychaetes and amphipods in fine sand (LS.LSa.FiSa.Po). A higher occurrence of the isopod *Eurydice pulchra* and the polychaete *Scolecopsis squamata* in the sieve indicated a band of the biotope LS.LSa.MoSa.AmSco above the LS.LSa.FiSa.Po.

It should be noted that boundaries on the map are indicative only. The transition from one biotope to another can happen over many meters of shore.

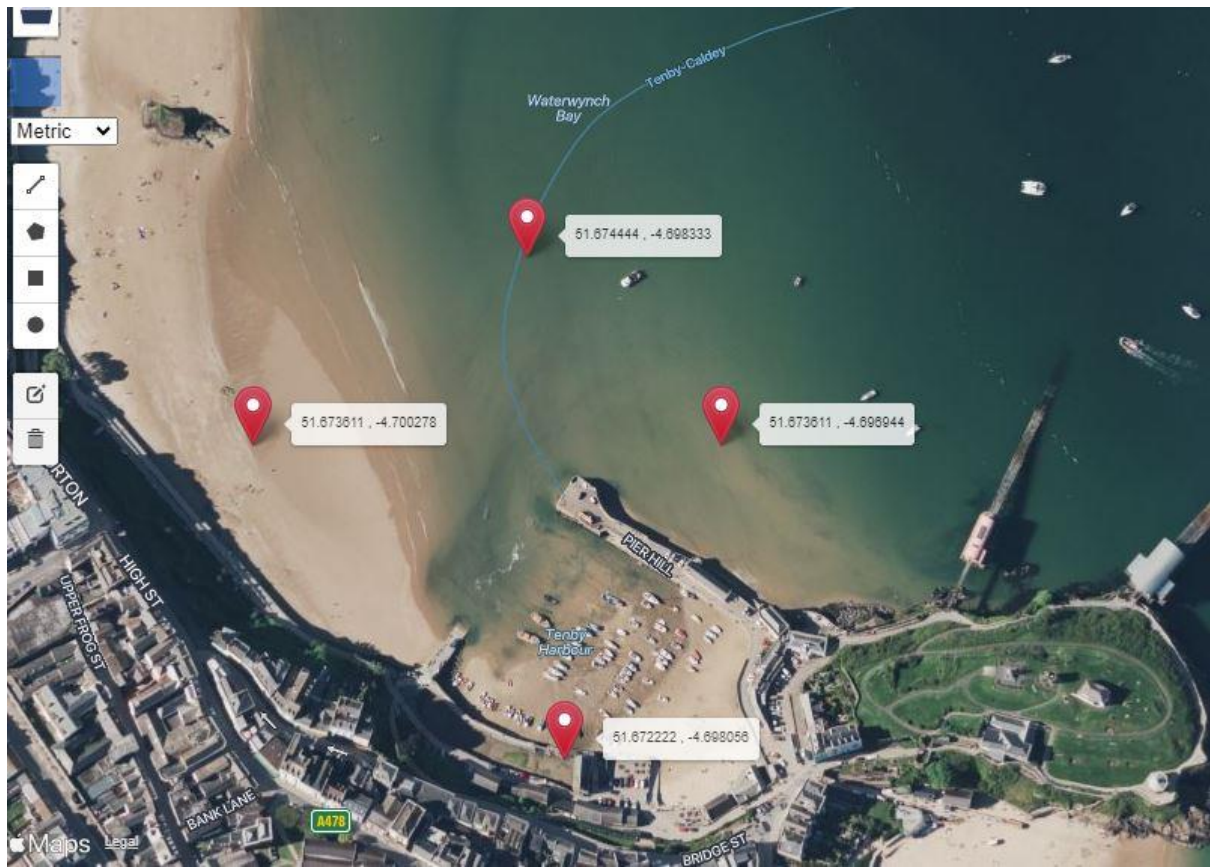


Figure 1. Corner positions for survey grid at Tenby Harbour and Tenby North Beach.





Figure 3. View towards harbour entrance from back of harbour. Muddy sand in foreground and sandy elevations towards harbour entrance.



Figure 4. View towards back of harbour, showing sandy mud in foreground and sand bar behind.



*Figure 5. *Peringia* sp. (laver spire shell) on muddy sand surface.*



Figure 6. Varying depths and intensity of anoxia within the harbour area.



Figure 9. Cockles in muddy sand.



Figure 10. Cockles in coarse-medium sand.



Figure 11. View towards the harbour from the lower shore across fine sand.



Figure 12. View towards Goscar Rock.

ANNEX 1.

Species recorded:

Scolecopsis squamata
Nephtys sp.
Arenicola marina
Lanice conchilega
Polychaeta (indet.)

Bathyporeia sp.
Haustorius arenarius
Amphipoda (indet.)

Eurydice pulchra
Anurida maritima

Cerastoderma edule
Macomangulus tenuis
Mytilus edulis
Nucella lapillus
Littorina sp.

Fucus spiralis
Porphyra sp.
Green algae (indet.)

Semibalanus balanoides
Chthalamus montagui
Chthalamus stellatus
Patella sp.
Nucella lapillus

Biotopes recorded:

LS.LSa.St.Tal	Talitrids on the upper shore and strand-line
LS.LSa.MoSa.BarSa	Barren littoral coarse sand
LS.LSa.MoSa.AmSco	Amphipods and <i>Scolecopsis</i> spp. in littoral medium-fine sand
LS.LSa.FiSa.Po	Polychaetes in littoral fine sand
LS.LSa.MuSa.CerPo	<i>Cerastoderma edule</i> and polychaetes in littoral muddy sand
LR.MLR.BF.FspiB	<i>Fucus spiralis</i> on exposed to moderately exposed upper eulittoral rock
LR.FLR.Eph.UlvPor	<i>Porphyra purpurea</i> and <i>Ulva</i> spp. on sand-scoured mid or lower eulittoral rock