Marine Intertidal Phase 1 Habitat Map

by Marine Evidence Working Group, CCW, 09/2011

Main contributors to this directory entry: P. Brazier, M. Jones, J. Moore, A. Taylor & G. Wyn

The Countryside Council for Wales (CCW) has mapped the entire coastline of Wales to provide a standard biological map of habitats in the intertidal zone. This baseline data supports site selection and monitoring, and advice on marine planning and developments.
The Countryside Council for Wales champions the environment and landscapes of Wales and its coastal waters as sources of natural and cultural riches, as a foundation for economic and social activity, and as a place for leisure and learning opportunities. We aim to make the environment a valued part of everyone’s life in Wales. We are the government’s advisors on all aspects of the environment and nature conservation in Wales.

Our specialist staff have unique in-depth knowledge of the Welsh environment and can provide strategic advice on the environmental evidence priorities and lead the research required.

This technical document forms part of a series describing the spatial marine evidence datasets available in the Countryside Council for Wales. It was produced by the Marine Evidence Working Group chaired by Catherine Duigan, Head of the Marine and Freshwater Ecosystems Group (c.duigan@ccw.gov.uk). Other group members include Carl Atkinson, Aethne Cooke, Cameron Edwards, Jenny Kamp, Mary Lewis, Kirsty Lindenbaum, Kirsten Ramsay, Ana Ruiz, Karen Robinson, Kate Smith, Helen Wilkinson. This project was co-ordinated by Kirsty Lindenbaum (k.lindenbaum@ccw.gov.uk) and Mary Lewis (m.lewis@ccw.gov.uk), and Monica Jones (mn.jones@ccw.gov.uk) is the key contact for data access and maps.
Marine Intertidal Phase 1 Habitat Map

Introduction

A ten year intertidal survey was commissioned by CCW in 1996 to provide information on the distribution and extent of habitats and biological communities along the Welsh coastline. Mapping was undertaking using the methodology laid out in Wyn et al. (2006) and based on a national classification of marine biotopes prepared by Connor et al. (1997).

A general account of the survey and its principal finding can be found in Wyn & Brazier (2009).

Data Description

This dataset consists of detailed maps of the marine habitats and communities (biotopes) present across the entire Welsh intertidal zone, thereby providing a broad ecological context (national, regional and local) for the shoreline environment in Wales. Additional spatially-referenced data include notes on features of interest (target notes), a large collection of digital photographs, uses of the shore, lists of species at selected locations, and general descriptions of each shore section. Each habitat record is also tagged with its substratum type and relevant conservation designation. A detailed description of the survey results are given in Brazier et al. (2007).

Geographical and Temporal Extent:

The maps cover the entire intertidal zone of Wales, from the lowest level of low tides to where the tidal influence ceases, mapped at a scale of 1:5000. The data was collected between 1996 and 2005. Re-mapping of limited areas has been undertaken in 2009/2010.

Data Confidence and Limitations:

The habitat classification is well described. However less confidence can be placed in the mapped boundaries of sediment habitats due to the transition from one sediment habitat to another. The position of habitats on cliff environments have less accuracy due to the difficulties of visually representing a 3D feature on a 2D map.

Sites are mapped once and therefore are a 'snapshot' in time. Most physical habitats, particularly rocky shores, change very little, but changes in some communities of animals and plants do occur, and some high energy sediment shores can change dramatically over short timescales. Although the biotopes were mapped at a detailed level, the natural complexity and patchiness of the shore can often be even higher.

The survey was carried out by trained surveyors and all the data has been through a validation process (Brazier et al. 2011).
**Value for Conservation and Planning**

This dataset forms a key baseline evidence layer and as such is relevant to the range of legislation that encompasses the intertidal zone. This includes marine Special Areas of Conservation (SAC) under the EC Habitats Directive, which extend up to Mean High Water Mark, as well as Sites of Special Scientific Interest (SSSI) which extend to the Low Water Mark. In total, some 70% of the Welsh coastline is protected by a conservation designation.

Intertidal ecological information is also relevant to several current and emerging policy and planning initiatives, which provide a wider spatial context for marine planning, including:

- Natural Environment Framework and Environment Strategy for Wales;
- Shoreline Management Plans;
- River Basin Management Plans under the Water Framework Directive;
- Marine Contingency Plans (e.g. for oil spills);
- Wales Climate Change Strategy;
- Wales Integrated Coastal Zone Management Strategy;
- National Flood and Coastal Erosion Risk Management Strategy for Wales;
- Local Marine Recreation Plans;
- Local Biodiversity Action Plans (LBAPS); and
- Technical Advice Note (TAN) 14 (on Coastal Planning), TAN15 (on Development and Flood Risk) and TAN5 (on Nature Conservation).

**How Should This Information Be Used**

The biotope distribution data provides information on intertidal features that may be sensitive to human activities, including some that are considered nationally rare or scarce. Therefore, the maps are essential base data layers for planning in the intertidal zone (including planning for offshore activities that require onshore connections e.g. cables), particularly for assessing the suitability of areas for specific uses. They should be used to establish the baseline characteristics of the intertidal zone, from which further environmental assessment can be carried out.

Many intertidal areas in Wales are also classified as Biodiversity Action Plan habitats or lie within areas designated as SSSI and/or SAC, and planners should use these designations to distinguish areas of particular conservation importance. The supporting data also provides information that may help answer detailed questions about specific locations, e.g. the use of photographs or additional survey information to identify shoreline activities and impacts.

Interpretation of the biotope distribution data for assessing sensitivity to human activities will require a basic understanding of the national marine habitat classification (Connor et al. 1997) and a reasonably wide understanding of intertidal ecology. CCW would expect to provide this technical expertise as required.
Restrictions on use

OS Restrictions: The data were prepared with reference to Ordnance Survey base mapping. There are no restrictions on use but third parties wishing to re-use this data must first seek permission from Ordnance Survey or acquire a licence issued by CCW. All outputs must include the appropriate acknowledgement.

Sensitive Feature Restrictions: The data contains features that CCW deem to be environmentally sensitive. This data may only be re-used in strict confidence under the terms of CCW’s restricted release licence. This licence specifies the redaction of sensitive features to an appropriate scale for published material.

References


Key Statistics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area of intertidal zone</td>
<td>56,856ha</td>
</tr>
<tr>
<td>Area within marine SAC</td>
<td>27,503ha</td>
</tr>
<tr>
<td>Area within SSSI</td>
<td>42,233ha</td>
</tr>
<tr>
<td>Total area of BAP habitats</td>
<td>15,418.01ha</td>
</tr>
<tr>
<td>Total number of habitats (biotopes)</td>
<td>148</td>
</tr>
<tr>
<td>Number of nationally important habitats</td>
<td>20</td>
</tr>
<tr>
<td>Number of specialised habitats</td>
<td>33</td>
</tr>
<tr>
<td>Number of rare habitats</td>
<td>81</td>
</tr>
<tr>
<td>Number of scarce habitats</td>
<td>44</td>
</tr>
</tbody>
</table>

Proportions of BAP habitats in Wales
Map 1: Main map (left) shows coverage of CCW Intertidal Phase 1 Survey and examples of intertidal habitats and substrata map for Gann Flats are presented above.

OS base maps reproduced with permission of HMSO. Crown copyright reserved.
CCW licence no. 100019741.