

## Marine Sub-Tidal HAP



(Including sub-tidal rocks and wrecks, *Sabellaria spinulosa* reefs and sub-tidal sands and gravels)

### Objectives

1. To work in conjunction with partners to identify and designate parts of the Heritage Coast as Marine Protected Areas following introduction of the Marine and Coastal Access Bill (which is now the Marine and Coastal Access Act 2009)
2. To allow, as far as possible, the natural flow and replenishment of marine substrates along the North York Moors Coastline
3. To prevent diffuse pollution of marine sub-tidal habitats
4. To increase public awareness of these phenomenal habitats

### Introduction

#### 1) Sub-tidal rock and wrecks

Marine sublittoral rock is a common habitat off the North York Moors coastline. Old shipwrecks are consequently also common. Whitby and Scarborough are both main ports and have busy shipping lanes, further out these are littered with metal hulls of boats. Major wrecks along the coast include that of the *Rohilla* at Saltwick Bay.

Sub-tidal structures, both natural and man-made, will over time be colonised by marine life. Sheltered rocks and gullies provide refuge for shellfish and algae. Shipwrecks also provide a hard surface where larvae can settle and thereby offer an abundant food supply for other marine creatures. Both sub-littoral rock and wrecks provide shelter for other marine life and act as an important nursery area for many fish species.

The morphology of the sub-tidal structure has an important influence on the species composition; unbroken bedrock or a smooth ship's hull offers little habitat variety and therefore has little species diversity, a broken-up ship or rock cut by gullies and crevices and overlain by boulders provides greater habitat variety and localised areas of shelter with higher species diversity.

The waters above areas of sub-littoral rock are another critical part of this habitat. Some of the larger animals which use these areas for feeding, shelter and living space include seals, cetaceans and seabirds. Almost half the world population of the grey seal *Halichoerus grypus* occurs around the British Isles in areas with sublittoral rock. Cetaceans which may be seen in this environment include the UK BAP priority species harbour porpoise and bottlenose dolphin. Records of harbour porpoise have been on the decline throughout European waters since the 1940s. Seabirds such as kittiwakes *Rissa tridactyla* nest on rocky coastlines and use the adjacent rocky waters for feeding and gathering areas.

## 2) *Sabellaria spinulosa* reefs

There is only one *Sabellaria* reef system within the North York Moors National Park boundaries. This is found in the sub-littoral zone of Saltwick Bay, information on this reef is very limited.

*Sabellaria spinulosa* is a living polychaete worm that builds its own sub-tidal structure. The worm creates a tube by binding together sand particles. Although it requires a hard substrate for the initial attachment once a reef system is established, larvae are strongly stimulated to settle next to each other, and the reef can grow to immense proportions. The *Sabellaria* reef then becomes its own habitat, sheltering a diverse array of flora and fauna which would not normally survive in an exposed location.

## 3) Sub-tidal sands and gravels

Sand and gravel habitats form the substrate along most of the coast of northeastern England and the Yorkshire and Humber region. The sands and gravels along this coastal section are mostly formed from rock, rather than shells. They occur all the way along the North York Moors coast to roughly 3 or 4 km offshore. The sediments lie in approximately 15m of water and are mainly made up of fine sands. Sand mason worms, razor shells, crabs and plaice are among the key species found here.

The diversity of flora and fauna living within sub-tidal sands and gravels varies according to the level of environmental stress to which they are exposed. Upper estuarine mobile sands, subject to very low fluctuating salinity, are species poor. This habitat is characterised by mysids (*Neomysis integer*) and amphipods (*Gammarus* spp). Sand and gravel habitats that are exposed to variable salinity in the mid-and upper regions of estuaries, and those exposed to strong tidal currents or wave action, also have low diversity and are inhabited by robust, errant fauna specific to the habitat such as small polychaetes, small or rapidly burrowing bivalves and amphipods. The epifauna in these habitats tends to be dominated by mobile predatory species. In contrast, those biotopes found in full salinity in sheltered or deeper waters that are less perturbed by natural disturbance are among the most diverse marine habitats with a wide range of anemones, polychaetes, bivalves, amphipods and both mobile and sessile epifauna.

## Progress (2008-2012)

- Runswick Bay (Staithes – Sandsend) has been identified as a candidate Marine Conservation Zone. National consultation on all cMCZs was underway until March 2013 with first designations being planned for summer 2013. John Beech our Coastal Project Officer is on the regional hub for the Net Gain Project designed to identify Marine Conservation Zones in the North Sea – we are on target with our objective, working with the coastal forum, to ensure that national legislation, particularly through the Marine and Coastal Access Act 2009 reaches the local level. We eagerly wait to see if Runswick Bay is designated as a MCZ although at the time of writing the decision is on hold.
- The Shoreline Management Plan for Berwick to Flamborough Head covers our coastline and concentrates on coastal and flood defences, including any impact this may have on tidal flows and marine substrates. John Beech is on the sub cell steering group for Robin Hood's Bay and Runswick Bay – which helps to achieve our objective; to allow, as far as possible, the natural flow and replenishment of marine substrates along the North York Moors Coastline.

- The Inshore Fisheries Conservation Authority (IFCA) has replaced NESFC (North Eastern Sea Fisheries Committee) and their role is to ensure fish stocks, including shellfish, are managed sustainably. A dataset has been developed to encourage sustainable fishing practices.
- A shellfish collecting review has been undertaken. IFCA are a partner on the Coastal Forum (NYCCF) and their role is to ensure shellfish and fish stocks are managed sustainably. A leaflet was also produced in 2008 in partnership with the Coastal Forum and NESFC.
- A review has been carried out (contact Helen Bloomfield, University of Newcastle for results) into the benthic ecosystem in three prohibited trawl areas. This research has been achieved by working with partners such as NESFC, National Trust, NYMNPA and Scarborough Borough Council.
- The sea fisheries patrol vessel has been replaced and a new vessel is stationed in Whitby harbour to be used for enforcement and survey work.
- An Emergency Plan has been produced for pollution incidents such as oil spills and chemical leaks. The Emergency Action Plan was developed in 2009 by a partnership led by NYCC emergency planning department, John Beech was part of the partnership representing NPA and NYCCF. Electronic copies are available and further copies are with emergency planners at NYCC and SBC. John Beech also completed Beachmaster training in December 2010.
- A key target was to work with key partners including BSAC, PADI and local dive clubs to undertake SEASEARCH projects, co-ordinated by the Local Record Centre. This was a difficult project to undertake given sea conditions and commitment from various dive groups but marine surveys were carried out by SEASEARCH at Runswick Bay and Scarborough cMCZs in 2012.
- Various presentations have been given at Coastal Forum conferences on the sublittoral habitats off the North Yorkshire & Cleveland coastline. The National Trust's Old Coastguard Station at Robin Hood's Bay regularly takes groups on seashore safaris, with assistance from National Park Education staff when necessary. This on-going work increasing public awareness of these phenomenal habitats.

## **Case Study**

### **Candidate Marine Conservation Zone**

By John Beech, NYMNPA Coastal Officer and Heritage Coast Officer

The candidate Marine Conservation Zone (cMCZ) between Staithes and Sandsend was identified as part of the Net Gain North Sea MCZ project. It covers the inshore waters but not the intertidal zone along this exposed rural stretch of coast. The proposed MCZ focusing on Runswick Bay has a highly productive seabed. It is recommended for seven out of the twelve different seabed types including rock, sediment and gravel.

Shallow rocky areas are dominated by kelps and red seaweeds, whereas deeper areas are encrusted in living faunal turf of sponges, sea squirts, sea urchins and starfish. Interspersed with sand and gravel, this area is also important for burrowing creatures such as worms.

Runswick Bay also provides spawning and nursery grounds for many fish including herring, sprat, whiting, cod and plaice. Harbour porpoise are regularly recorded here alongside foraging seabirds such as Kittiwake.

This recommended MCZ is currently on hold as DEFRA has indicated that there is not enough evidence to support designation.

The proposed MCZ area is already a no trawl zone administered by the Inshore Fisheries Conservation Authority (IFCA) so has some degree of protection.