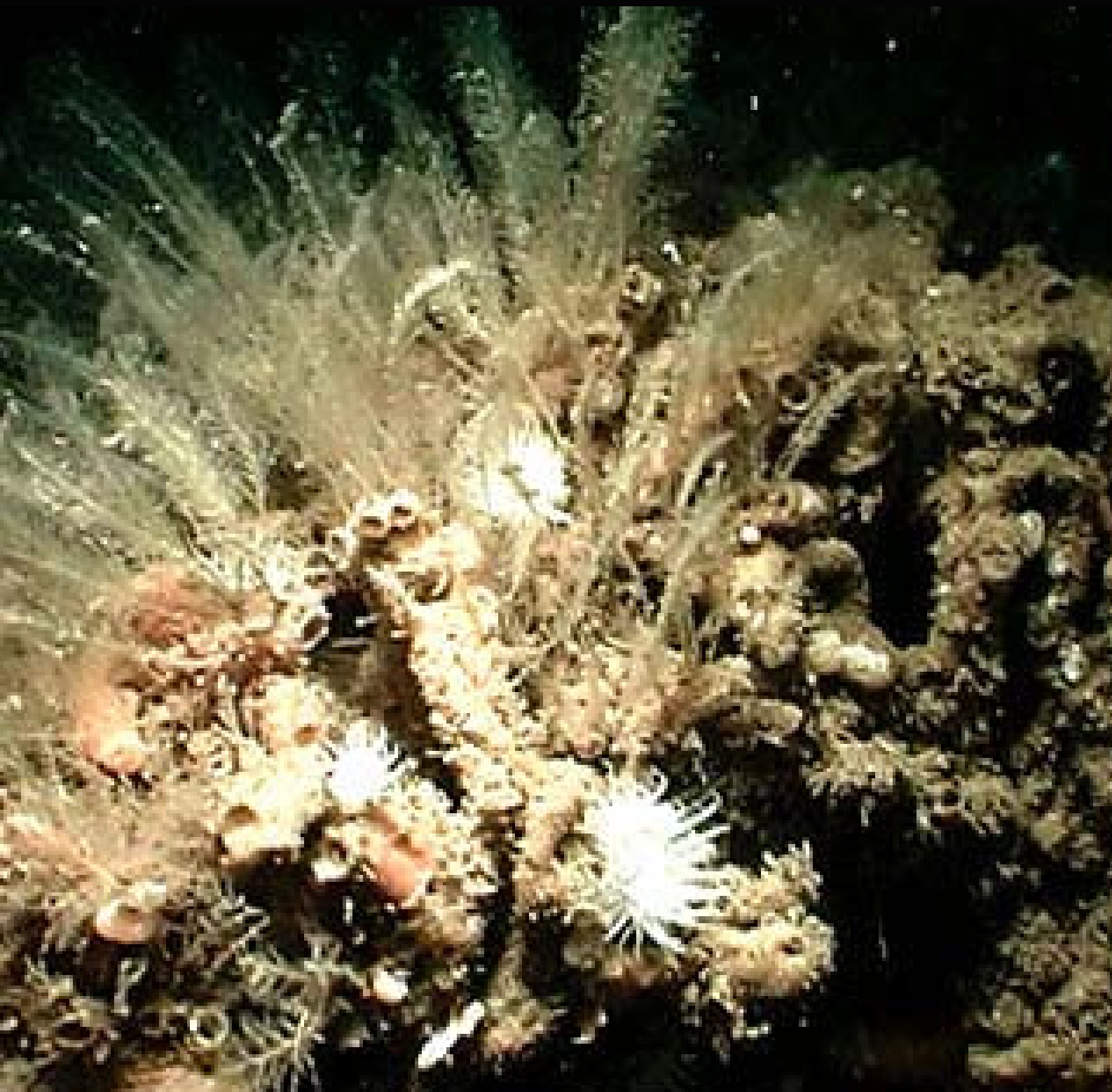
North York Moors National Park Authority

Marine Sub-tidal Habitat action plan



North York Moors National Park
Sub-tidal Habitat Action Plan
2008–2012

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

Our objectives for marine sub-tidal habitats are:

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.

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.

1) Sub-tidal rock and wrecks

Introduction

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 which attach themselves with holdfasts. This in turn provides cover for other marine life amongst the algae beds. Shipwrecks also provide a hard surface where larvae can settle and thereby offer an abundant food supply for other marine creatures. Both wrecks and sub-littoral rock provide shelter 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 found there. Unbroken bedrock or a smooth ship's hull offers little habitat and therefore has little species diversity. A broken-up ship or rock cut by gullies and crevices and overlain by boulders provides much more variety and localised areas of shelter.

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 tridatyla* nest on rocky coastlines and use the adjacent rocky waters for feeding and gathering areas.

National status

Submerged rock and gully systems make up much of the UK coastline, providing shelter for a rich marine life. Wrecks around the UK provide an additional resource for marine life. Most wrecks are concentrated around the main ports and busy shipping lanes, but some are to be found along the more dangerous rocky zones.

Local status

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

Threats

- Coastal construction work – pipes, cables, marinas, wind farms, coastal defences – all have adverse effects on the physical environment and on ecological communities.
- Marine pollution due to oil exploration, leakages and shipping accidents.
- Removal of species by scuba divers for collections.
- Overexploitation and incidental by-catch of BAP species stocks such as cod.
- 'Ghost fishing' (lost nets and other gear in suspension which continue to ensnare marine life) on wrecks and reefs.

Requirements

Provided they are not damaged by pollution (caused by ship wrecks) or other human influences (see above), sub-tidal rocky habitats require no direct management for their ecology. Shallow rocky waters deter large vessels from entering. Deeper areas should be protected from disturbance to the sea bed.

2) *Sabellaria spinulosa* reefs

Introduction

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 flora and fauna which would not normally survive in an exposed location.

National status

Sabellaria spinulosa is a UK BAP species. *Sabellaria* reefs were fairly common in the Southwest, but are now in decline. These reefs are very rare in the North. Damage to this type of reef can take up 150 years to recover. The reefs are not however legally protected and are often popular diving spots. Incidentally, away from the reefs individual sabellaria worms are commonly found along the coast in sandy channels on boulder beaches and amongst kelp holdfasts.

Local status

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.

Threats

- Invasive fishing practices for molluscs, crustaceans or fish, such as trawling within the reef system, can cause major damage, taking up to 150 years to repair.
- Extraction of aggregates can quickly destroy reefs. (Licensed areas are on the Crown Estate website and licences stipulate avoidance of reefs.)
- Marine pollution due to oil exploration, leakages and shipping accidents.
- Removal of species by scuba divers for collections.

Requirements

Sabellaria reefs do not require any human intervention. However, they are very sensitive habitats and take a long time to grow. For this reason the area immediately surrounding the reef would benefit from being a protected no-go zone for boats.

Sub-tidal sands and gravels

Introduction

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.

National status

Marine sub-littoral sands and gravels occur below the limit of the low tides and are one of the commonest habitats found beneath low tide level around the UK coast. They occur in many areas from sheltered bays to estuaries and open coast. Despite being common the sands and gravels are of international importance due to the number of species they support. Marine life such as polychaete worms, molluscs, starfish, crustaceans, sea anemones, whelks, and sea urchins. These habitats support commercial fish species such as cod, plaice and sand eels. Sand eels are in turn a particularly important food source for seabirds and seals.

Local status

Sand and gravel habitats form the substrate along most of the coast of north-eastern 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.

Threats

- Dredging to clear shipping lanes or to collect aggregate removes both the substrate and the life living on it.
- Certain fishing practices such as trawling for plaice can cause severe damage to the sea bed.
- Industrial fishing practises may also alter the trophic interactions within these habitats by removing predators, prey or competitors.
- Disturbances such as building sea defences and marinas and laying pipes and cables can alter tidal flow regimes. This can cause a change in the way marine sediments are laid down and alter the sediment structure.
- Pollutants from rivers, anti-fouling chemicals, oil leaks can directly kill or bioaccumulate in organisms such as whelks, leading to dramatic declines in these species.
- Growth in eco-tourism at sea can have potentialeffects on our cetaceans and other marine wildlife.

Requirements

It is important to maintain sub-tidal sands and gravels through natural erosion and sediment flow cycles. Care and consideration should therefore be given to these habitats when examining the need for any offshore developments or coastal defence measures.

Dredging and trawling of sediments damages natural flow cycles and causes sedimentation of waters that adversely affects many of the animals that feed in them.

Marine sub-tidal habitats: Conclusions.

Legal status

The North York Moors coast is not designated, but has been identified as Heritage Coast. Although primarily concerned with the management of coastal land, the Heritage Coast Project in this area also focuses on the conservation of the foreshore and adjacent waters and is supporting the bid for a designated Marine Protected Area. The MPA would include and legally protect the identified Robin Hood's Bay Sensitive Marine Area.

Some of the species that occur in sub-littoral habitats are themselves subject to specific conservation legislation. For example seals, cetaceans and a number of invertebrate species are given various levels of protection under the 1981 Wildlife and Countryside Act. International protection is afforded through the EC Habitats and Birds Directives, the Bern Convention and CITES. The Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), a regional agreement under the Bonn Convention, has relevance for the conservation of some cetaceans in UK waters.

International legislation and agreements have a major influence on the management measures which can be introduced for the conservation of marine habitats around the UK. The farthest-reaching is the 1982 UN Law of the Sea Convention which was ratified by the UK in 1997 and which provides a framework for the regulation of all ocean space. It also sets out the responsibilities of coastal nations for marine habitats and wildlife and the potential for Ecological Sensitive Areas in which freedom of navigation may be limited.

Other relevant conventions include the London (Dumping) Convention, the Convention on the Protection of the Marine Environment of the North-East Atlantic (prevention of pollution from land-based and offshore sources), and the EU Common Fisheries Policy.

Dumping at sea off England and Wales is regulated through licences issued by MAFF under the Food and Environment Protection Act 1985. Similarly, the statutory duty for pollution control is the responsibility of the Environment Agency under the Urban Waste Water Treatment Directive (91/271/EEC).

Links to other action plans

Habitat Action Plans:	**Species Action Plans:**
Rocky shores*#	Cod#
Coastal slopes and cliffs*#	Plaice#
Rivers and streams*#	Otter#
* = Local Species Action Plan	Sand eels#
# = UK Species Action Plan(s)	Cetaceans (Harbour Porpoise and Bottlenosed Dolphin)#

Local action

A Heritage Coast Project Officer is by the National Park Authority on behalf of the Heritage Coast partnership to work on specific projects from the Heritage Coast management plan. Works related to marine sub-tidal habitats include:

- Assisting landowners with agri-environment schemes to enable them to reduce pollution in coastal becks.
- Raising awareness of the importance of coastal habitats through interpretation, walks, talks, work with schools, leaflets, etc.
- Running 'Adopt a Beach' projects to help clear up litter and keep an eye out for pollution.
- Monitoring coastline habitats and digitising data already collected during survey work by volunteers and professionals.
- Working with local sub-aqua groups to undertake sublittoral surveys (SEASEARCH)
- Helping to maintain up-to-date, informed disaster protocols which lay out a plan of action in case of pollution incidents such as oil spills.
- Developing other ideas from the coast's habitat action plans, management plan and the Coastal Forum.

Opportunities

- Catchment Sensitive Farming (CSF), a scheme being trialled by DEFRA on a number of rivers including the Derwent, the Esk and coastal streams and the Humber. CSF aims to ensure that land adjacent to river banks is not intensively farmed, in order to prevent diffuse pollution and sedimentation and to allow natural riparian ecosystems to redevelop.

- The active pursuit (with partners) of greater protection of the marine environment through the designation of marine protected areas, and the application of national policies from the Marine Bill to local sites.

What can you do to help

- Divers can join the 'Sea-Search' recorders group which aids conservation by informing authorities about special species and species communities within our coastal waters. (www.seasearch.org.uk)
- If you have or see a pollution incident which threatens these habitats, inform the Environment Agency or other authorities to minimise the damage.
- Use alternative means to harsh anti-fouling chemicals to clean boats.
- Take an informed interest in local policies on sea defences, dredging for aggregates, etc.
- Support sustainable fisheries – see the Marine Conservation Society leaflet at www.**fish**online.org/information/MCSPocket_**Good**_**Fish**_**Guide**.pdf for guidance.