

SUBLITTORAL SANDS AND GRAVELS

What are sublittoral SANDS AND GRAVELS?

The sublittoral zone is that which occurs below the limit of the low tides. These underwater habitats contain substrates with a range of particle sizes from mainly sand to mainly gravel, with various combinations of sand and gravel in-between. This plan extends its influence to twelve nautical miles offshore.

Where are they found in the UK?

Sands and gravels are one of the most common habitats found beneath the level of low tide around the coast of the UK. They occur in a wide range of environments from sheltered bays and estuaries to open coast.

Why are sublittoral sands and gravels of CONSERVATION IMPORTANCE?

In spite of being relatively common, sublittoral sands and gravels are considered to be of international importance for conservation because of the high number of species they support. These include a variety of marine life including polychaete worms, molluscs, starfish, crustaceans, sea anemones, whelks and sea urchins. Sublittoral sands and gravels provide a crucial nursery area for commercial fish such as flat fish and bass. Other fish present include plaice and sandeels, which are an important food source for tern species.

SUBLITTORAL SANDS AND GRAVELS IN THE DURHAM AREA

Much of the substrate along the coast in the Durham region is formed of sublittoral sands and gravels, which are largely formed from rock material.

What is the state of sublittoral sands and gravels in the DURHAM AREA?

The infralittoral sands and gravels support a wide range of species including amphipods, bivalves and polychaetes. Where the sediment is muddier and of a mixed grade, there is a greater number of polychaetes and bivalves. These are generally found further offshore than the sandy sediments and closer inshore in the Seaham area. Few amphipods and echinoderms species



Other action plans and statements covering issues relevant to sublittoral sands & gravels:-

- (C) LITTLE TERN*****
- (C) ROSEATE TERN***
- (C) COMMERCIAL FISH*****
- (C) WRECKS AND REEFS*****
- (C) MUDFLATS*****

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are recorded in inshore areas off the Durham coast. In deeper water, the diversity of polychaetes, bivalve worms and echinoderms is greater, reflecting the increased stability of the substratum.

WHERE do sublittoral sands and gravels occur in the Durham area?

Sublittoral sands and gravels occur along the coast, about 3 to 4 kilometres offshore. Here, the most frequently occurring biotope is circalittoral muddy sand with echinoderms. The sediments lie at less than 15m in depth and are predominantly made of fine sands. Wildlife present includes sand mason worms, razor shells, crabs and plaice. From Seaham to Peterlee there is an area of circalittoral muddy sand with polychaetes and bivalves. This is situated about two kilometres offshore with a further larger area of this biotope further offshore.

There are areas of sublittoral sediment off Tynemouth and Seaham, where there is a higher proportion of cobbles than gravels. In the area off Tyneside there are horse mussels (*Modiolus modiolus*) present and off the coast at Seaham, the polychaete worm *Sabellaria spinulosa* is present. On harder substrata in the area, this species has formed sand tubes.

Sublittoral sands and gravels are at RISK from:-

FISHING CAUSING PHYSICAL DISTURBANCE - the towing of heavy fishing gear over the seabed disturbs sand and gravel habitats and causes serious damage to the number of species it supports. Fragile or large bodied/slow growing animals are most at risk. Repeated trawling prevents recovery of the seabed.

THE REMOVAL OF PREDATORS AND COMPETITORS - may affect trophic relationships.

POLLUTION - sublittoral sands and gravels are at risk from many sources of pollution including industrial waste, sewage, agricultural runoff, chemicals, anti-fouling agents and heavy metals. Persistent chemicals have led to the decline of the dogwhelks in the North Sea and a breakdown of DNA in marine species.

Shipping accidents and oil leaks lead to localised pollution.

COASTAL CONSTRUCTION WORK - the laying of pipes and cables and the development of marinas and coastal defences all have an adverse effect on the physical environment and ecological communities of sublittoral sediment

HIGH LEVELS OF BIVALVE EXPLOITATION - overfishing of shellfish can affect species balance and lead to changes in the biological community.

FISHING TECHNIQUES - the use of beam trawls and dredging are highly damaging to the fauna of sands and gravels.

Sublittoral sands and gravels BENEFIT from:-

PROTECTION FROM THE EFFECTS OF FISHING EQUIPMENT - revision of the CFP to regulate use of and/or ban some of the most damaging fishing gear.

IMPLEMENTATION OF FISHERIES BY-LAWS - to minimise the impact of mollusc fisheries.

REDUCED POLLUTION INPUT to coastal waters.

RAISED AWARENESS OF THE IMPACT OF COASTAL ACTIVITIES on sublittoral sand and gravel.

THE DEVELOPMENT OF PRACTICAL MONITORING METHODS of assessing the ecological function and health of sands and gravels.

INCREASED PUBLIC KNOWLEDGE concerning the importance for wildlife of sublittoral sands and gravels.

Important SPECIES for sublittoral sands and gravels:

SAND-EEL

PLAICE

SABELLARIA SPINULOSA

HORSE MUSSEL

STARFISH SPECIES

SEA URCHIN

RAZOR SHELL SPECIES

SUBLITTORAL SANDS AND GRAVELS

TARGETS

- 1** *Protect the extent and quality of a representative range of sublittoral sands and gravel habitats and communities in the Durham area (ONGOING)*
- 2** *Monitor the wildlife status of sublittoral sands and gravels. (ONGOING)*
- 3** *Raise general awareness of the significance of the seabed below the level of low tide in terms of conservation, fishing and sustainable use of marine resources. (ONGOING)*
- 4** *Incorporate contingencies for managing sublittoral sands and gravels in local strategic planning documents such as the ICZM Plan. (2002)*

ACTION PLAN

ACTION	DATE	Possible PARTNERS	Meets TARGET No.
POLICY AND LEGISLATION			
1. Protect the best examples of sublittoral sands and gravels from the adverse effects of dredging, fishing and other activities.	2001 onwards	EN, EA, Port and Harbour Authorities SFCs, Local Fisheries, MCS	1, 4
2. Ensure that Shoreline Management Plans take proper account of the ecological value of sublittoral sands and gravels.	ONGOING	EA, EN, DEFRA, SCC, STMBC, GC, EDC	1, 4
SITE SAFEGUARD AND MANAGEMENT			
3. Identify the best examples of sublittoral sands and gravels in the DBAP area.	2001 onwards	EN, EA, JNCC	1

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ACTION PLAN

ACTION	DATE	Possible PARTNERS	Meets TARGET No.
SITE SAFEGUARD AND MANAGEMENT continued			
4. Reduce inputs of pollutants to coastal waters as required by domestic, national and European legislation.	ONGOING	EA, DEFRA, NWL	1
RESEARCH AND MONITORING			
5. Assess the ecological importance of local sand and gravel habitats and the requirements of long-lived species and their sensitivity to disturbance.	2001 onwards	EN, JNCC, DEFRA, EA, Local Diving Groups, Universities, DML	2
6. Identify criteria for identifying significant changes in biodiversity in sublittoral sands and gravels.	2001 onwards	EN, JNCC, Local Diving Groups, Universities, DML	2
7. Monitor the development of <i>Sabellaria spinulosa</i> and horse mussel communities.	2001 onwards	EN, Local Diving Groups, Universities, DML	2
ADVISORY			
8. Provide information and advice to local authorities and others in ICZM about the impact of coastal activities on sublittoral sand and gravels.	2001 onwards	EN, JNCC, DEFRA, EA, DBAP	2, 4
COMMUNICATIONS AND PUBLICITY			
9. Prepare guidelines about the importance of this habitat for biodiversity and make them available to relevant bodies.	2001 onwards	DBAP, EN	1, 3
10. Liaise with fishing organisations to promote environmental awareness with regard to sublittoral sands and gravels.	2001 onwards	DBAP, EN	1, 3, 4
11. Make reference to the subtidal environment in coastal events e.g. guided walks.	ONGOING	LAs, NT	3
12. Prepare publicity information as part of integrated coastal/marine interpretation package.	2002	CA, DBAP, LAs	3