Littoral and sublittoral chalk

Introduction

Coastal chalk is exposed principally in the south and east of England from Dorset in the west to Flamborough Head in the north. Marine and subaerial erosion of chalk has resulted in the formation of vertical cliffs and gently sloping shore platforms. The most extensive areas of littoral and sublittoral chalk occur in Kent and Sussex. In Britain, chalk forms less than 0.6% (113 km) of the coastline.

The greatest proportion of European coastal chalk (57%) and many of the best examples of littoral and sublittoral chalk habitats are located on the coast of England, so the UK has an international responsibility to ensure the conservation of this scarce habitat.

Characteristic features of chalk coastlines are their geomorphological formations, such as cliffs and reefs, which create a range of micro-habitats of biological importance. The generally soft nature of chalk results in the presence of a characteristic flora and fauna, notably rock-boring invertebrates such as the spionid worm *Polydora* sp. and the bivalved piddocks.

Chalk habitats, especially in south-east England, are intrinsically low in species-richness due to the unusual friable and easily eroded nature of chalk and the prevailing harsh environment, characterised by extreme water temperatures, high levels of turbidity, siltation and scouring.

Threats

- **Coastal defence**

Widespread modification of this habitat has occurred in Kent and Sussex, resulting in the loss of many upper-shore and splash-zone communities and sub-habitats.

- **Deteriorating water quality**

Pollution and nutrient enrichment alters the species composition of marine communities.

- **Human disturbance**

Trampling, stone-turning and damage to rocks can all have a negative impact on chalk biodiversity.

- **Invasive species**

Native plant species are being displaced by non-native introductions such as the Pacific Wireweed *Sargassum muticum.*

- **Sea level rise**

Littoral chalk platforms will become increasingly submerged with rising sea levels. Habitat continuity is at risk if rising sea level proves faster than the pace of cliff erosion. Where sea defences prevent erosion, such adjustment is not possible.

Habitat Management

Maintain natural coastal processes

Allow natural coastal processes to continue to dictate, where possible, the geomorphology of the littoral and sublittoral environment. Cliff stabilisation measures are a threat to some invertebrate species; the top shore concrete promenades of Thanet are an example of loss of habitat.

On some coasts, including much of the Sussex Chalk, a storm beach of shingle lies at the back of the wave cut platform/base of cliff. This provides some degree of natural protection against cliff erosion, though the amount of shingle can vary according to the storm. The future of this storm beach in relation to rising sea level will be one of the determining factors over the future pace of cliff erosion and the nature of the littoral platform in the future. Where storm beach shingle is absent (as on some parts of the Sussex coast) the wave-cut littoral platform is cleanly exposed right up to the cliff face, or cliff falls may partially or totally cover the platform/cliff junction zone.

Retain tide-swept debris

Management should aim to reduce public disturbance of drift material or the collection of driftwood and avoid any attempts to “tidy up” tide-swept debris, especially seaweed.

Rare and scarce terrestrial invertebrates in this habitat:

Molluscs (Mollusca)
Paludinella littorina RDB 3,WCA (Schedule 5)

Beetles (Coleoptera)
Rove beetles and allies (Staphylinidae/Scydmaenidae/Silphidae)
Medon pocoferus RDBI
Staphylinus pedator Na
Bledius fergussoni Local
Bledius praetermissus Local

Flies (Diptera)
Craneflies (Tipulidae)
Gonomyia conoviensis N
adults of this cranefly have been found at freshwater seepages in the wave-cut notch at the base of the cliff at Beachy Head, a remarkable occurrence of an otherwise northern and western species living by streams

Geranomyia unicolor
larvae of this cranefly feed in high tidal zone and splash one on green algae and lichens; adults shelter in cliff nooks and on large boulders. In the Dover area, it is mainly dependent on large fallen blocks on a wave-cut platform/upper shore where green algae gain some shelter from intense scour

This habitat is essentially a marine one and as such is not fully covered by the Buglife Habitat Management handbooks, which deal with terrestrial invertebrate groups. Little information is therefore available to offer management advice for this Priority Habitat.