



UK Biodiversity Action Plan Priority Habitat Descriptions

Peat and Clay Exposures with Piddocks

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Peat and Clay Exposures with Piddocks

Correspondence with existing habitats

- UK BAP broad habitat: Littoral sediment, Sublittoral sediment
- May be component part of Annex I habitats
- LR.HLR.FR.RPid and LR.MLR.MusF.MytPid; CR.MCR.SfR.Pid; CR.MCR.SfR (possibly)

Description

This habitat includes littoral and sublittoral examples of peat and clay exposures, both of which are soft enough to allow them to be bored by a variety of piddocks, particularly *Pholas dactylus*, *Barnea candida* and *Barnea parva*. Peat and clay exposures with either existing or historical evidence of piddock activity are unusual communities of limited extent, adding to the biodiversity interest where they occur. These unique and fragile habitats are irreplaceable, arising from former lake bed sediments and ancient forested peatland (or 'submerged forests'). Depending on erosion at the site, both clay and peat can occur together or independently of each other.

Where peat is present on the shore or in shallow waters, the surface may be characterised by algal mats consisting of the red seaweed *Ceramium* spp. and the green seaweeds *Ulva lactuca* and *Ulva intestinalis*. However, sand scour can limit the cover provided by these seaweeds. The crabs *Carcinus maenas* and *Cancer pagurus* often occur in crevices in the peat, with hydroids in any small pools. On clay, seaweed cover is generally sparse with species such as *Mastocarpus stellatus* and *Ceramium* spp. attached to loose-lying pebbles or shells. On the surface of the clay, there may be small clumps of the mussel *Mytilus edulis*, together with barnacles and the wrinkle *Littorina littorea*. The polychaete worms *Polydora* spp. and *Hediste diversicolor* can sometimes be present within the clay. When the piddocks have died, their holes provide a micro-habitat for species such as small crabs and anemones such as *Cereus pedunculatus* and *Aulactinia verrucosa*.

It is known that peat and clay beds exist sublittorally, but the extent and maximum depth of this habitat is not known. There is little information on the communities associated with subtidal examples of peat and clay exposures, but the flora and fauna is likely to be different to those found associated with intertidal examples. It is possible that subtidal exposures of this BAP habitat support communities, which may or may not include piddocks. Surveys of a subtidal peat and clay exposure in the Menai Strait recorded the piddock *Zirfaea crispata*, a sparse cover of hydroids (e.g. *Sertularia cupressina*, *Hydrallmania falcata*, *Tubularia indivisa* and *Nemertesia antennina*), and crabs – *Cancer pagurus*, *Necora puber* and *Carcinus maenas*.

Depending on its location, this habitat can experience periodic inundation and emergence from sediments. This habitat encompasses examples of peat and clay exposures with either existing or historical piddock activity (i.e. dead shells in piddock holes). This BAP habitat also encompasses occurrences of peat and clay exposures with no evidence of either past or present piddock activity, but which have the potential for this community to develop on the basis of environmental conditions and presence of similar beds locally. This BAP habitat does not include examples of harder sedimentary rock (e.g. limestone) with the piddock *Hiatella arctica*. It also does not include piddocks in sandstone, chalk and soft mudstone.

Summary of environmental preferences:

Salinity	Fully marine – variable
Wave exposure	Exposed to extremely sheltered
Tidal streams	Moderate to strong
Substratum	Exposures occur within a variety of shore types.
Zone/depth	Littoral to circalittoral

This habitat is distributed along the north and south coasts of Wales, and the south and east coasts of England. Clay exposures with piddocks are also found in Cumbria. Little is known about UK distribution of subtidal peat and clay exposures, but they are likely to occur in the vicinity of intertidal occurrences.

Illustrative biotopes

- LR.HLR.FR.RPid – *Ceramium* sp. and piddocks on eulittoral fossilised peat
- LR.MLR.MusF.MytPid – *Mytilus edulis* and piddocks on eulittoral firm clay
- CR.MCR.SfR – Soft rock communities
- CR.MCR.SfR.Pid – Piddocks with a sparse associated fauna in sublittoral very soft chalk or clay

Both the above biotopes correlate with this BAP habitat. There are currently no biotopes that describe subtidal peat exposures.

Current and potential threats

- *Coastal development*: Physical damage arising from development of infrastructure, trenching and cable/pipe-laying.
- *Coastal protection*: Coastal defence works can affect peat and clay habitats, both directly and indirectly, through habitat loss and also alteration of sediment regimes.
- *Dredging activity*: Maintenance and capital dredging operations may result in direct habitat removal or indirectly through changes in sediment and hydrological regimes.
- *Mussel fisheries*: Both peat and clay habitats are vulnerable to physical disturbance and smothering arising from dredge, mussel lay and mussel collection operations associated with commercial mussel fisheries.
- *Non-natives*: There is no evidence to suggest that native piddocks have been displaced in the UK, but in Belgium and The Netherlands, the non-native American piddock *Petricola pholadiformis*, has almost completely displaced the native piddock, *Barnea candida*. *Petricola pholadiformis* has been recorded in low abundances in exposures of this habitat in the UK.
- *Bait collection*: In some areas piddocks are harvested as fishing bait, which results in physical damage to the habitat.
- *Climate change*: Both clay and peat habitats are sensitive to increases in wave exposure, which can increase the rate of erosion. Elevated wave exposure may result from changes to tidal heights and increased storm events which may be linked to the effects of climate change.

Image



Figure 9. Clay exposure with dead piddock. (Image: JNCC image collection, Anon.)



Figure 10. Piddocks in peat. (Image: CCW).

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