UK Biodiversity Action Plan
Priority Habitat Descriptions

Blue mussel beds on sediment

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Blue Mussel Beds on Sediment

Correspondence with existing habitats

- UK BAP broad habitat: Littoral sediment, Sublittoral sediment
- May be a component part of Annex I habitats
- LS.LBR.LMus; LS.LMX.LMus.Myt; LS.LMX.LMus.Myt.Mx; LS.LMX.LMus.Myt.Sa; LS.LMX.LMus.Myt.Mu; LS.LSa.St.MytFab; SS.SBR.SMus.MytSS

Description

This habitat includes intertidal and subtidal beds of the blue mussel *Mytilus edulis* on a variety of sediment types and in a range of conditions from open coasts to estuaries, marine inlets and deeper offshore habitats. Blue mussel beds plays an important part of a healthy functioning marine ecosystem, having a role in coastal sediment dynamics, acting as a food source for over-wintering waders, and providing an enhanced area of biodiversity in an otherwise sediment-dominated environment.

Intertidal mussel beds occur on a variety of sediment substrata such as sand, cobbles and pebbles, muddy sand and mud. Mussel aggregations in this habitat are dense, and can support various age classes. The wrack *Fucus vesiculosus* is often present, attached to the cobbles or mussel shells, and the shells themselves are often encrusted with various barnacles and bryozoans. The spaces between the mussels can provide refuges for a diverse community of organisms, prominent amongst which are the winkles *Littorina littorea* and *L. saxatilis* and small shore crabs *Carcinus maenas*. The infauna of the underlying sediment (except where this is anoxic mud) may feature the gastropod *Hydrobia ulvae*, the bivalves *Macoma balthica* and *Cerastoderma edule*, the isopods *Corophium volutator*, *Crangon crangon* and *Jaera forsmani*, and polychaetes such as the sandmason *Lanice conchilega*, the lugworm *Arenicola marina* and ragworm *Hediste diversicolor*. Further infaunal sampling has indicated a diverse range of nematodes, oligochates and polychaetes.

In the subtidal, dense mussel beds can form on the upper faces of tide-swept sediment dominated substrates, almost to the exclusion of almost all other species. The common starfish *Asterias rubens* is often locally abundant as it feeds on mussels, along with other predators such as the crabs *Necora puber*, *Carcinus maenas*, *Maja squinado* and *Cancer pagurus*. Anemones such as *Sagartiogeton undatus*, the dahlia anemone *Urticina equina* and the daisy anemone *Cereus pedunculatus* can be found on gravel patches and amongst the mussels themselves. The hydroid *Kirchenpaueria pinnata* and others characteristic of strong tides and a little scour, such as *Sertularia argentea* and *Tubularia indivisa*, may also be present. Ascidians such as *Molgula manhattensis* and *Polycarpa* spp. can also feature on subtidal mussel beds, particularly in silty conditions. Infaunal species include the amphipod *Gammarus salinus* and oligochaetes of the genus Tubificoides. The polychaetes *Harmothoe* spp. *Kefersteinia cirrata* and *Heteromastus filiformis* are also characteristic of this habitat.

Note that the habitat only covers ‘natural’ beds on a variety of sediment types, and excludes artificially created mussel beds, and mussel beds which occur on rock and boulders.

Summary of environmental preferences:

Salinity	Fully marine – reduced
Wave exposure	Exposed to extremely sheltered
Tidal streams	Weak – strong
Substratum	Cobbles and pebbles; mixed sediments; sand; mud
Zone/depth	Mid eulittoral to circalittoral

Blue mussel beds are distributed around the UK coast, both intertidally and sublittorally.

Illustrative biotopes

- LS.LBR.LMus – Littoral mussel beds on sediment
- LS.LBR.LMus.Myt – *Mytilus edulis* beds on littoral sediments
- LS.LBR.LMus.Myt.Mx – *Mytilus edulis* beds on littoral mixed substrata
- LS.LBR.LMus.Myt.Sa – *Mytilus edulis* beds on littoral sand
- LS.LBR.LMus.Myt.Mu – *Mytilus edulis* beds on littoral mud
- LS.LSa.St.MytFab – *Mytilus edulis* and *Fabricia sabella* in littoral mixed sediment
- SS.SBR.SMus.MytSS – *Mytilus edulis* beds on sublittoral sediment

Current and potential threats

- *Commercial fisheries*: Targeted removal of mussels, physical damage and smothering from use of mobile fishing gear.
- *Water Quality*: *Mytilus edulis* bioaccumulates pollutants in seawater which may lead to sublethal, and in some cases, lethal responses.
- *Coastal developments*: Physical damage and displacement from infrastructure development, dredging, trenching and cable/pipe-laying.
- *Anchoring*: Physical damage can arise from sustained anchoring and mooring chains.
- *Bait digging*: Removal of mussels as fishing bait and physical damage from associated trampling in the intertidal.

Blue mussel, *Mytilus edulis* on intertidal sediment (Photo: CCW).

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