



UK Biodiversity Action Plan Priority Habitat Descriptions

Serpulid Reefs

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Serpulid Reefs

This habitat description has been adapted from the 1994 UK BAP Action Plan for Serpulid reefs and therefore would benefit from an update: <https://webarchive.nationalarchives.gov.uk/20110303145914/http://www.ukbap.org.uk/UKPlans.aspx?ID=43>

Correspondence with existing habitats

Habitats Directive Annex I: Reefs & Large shallow inlets and bays

Description

Serpula vermicularis is a marine worm which makes a hard, calcareous tube 4–5mm in diameter and up to 150mm long. In most places the worms are solitary with the base of the tube attached to stones or shells, and the feeding end growing up into the water. The worms can also aggregate into clumps or 'reefs' up to 1m across. The species has a worldwide distribution (except for polar seas) in sheltered sites, but the reef form has been reported from very few locations. In the UK, reefs have only been found in Loch Creran, and the Linne Mhuirich arm of Loch Sween, both sea lochs on the west mainland coast of Scotland. The reefs in Loch Sween are now reported to be dead. Small *Serpula vermicularis* reefs have also been found in two loughs on the west coast of Ireland, but the best developed reefs in the world are in Loch Creran.

The serpulid reefs in Loch Creran begin as single tubes on stones or shells on a sandy mud seabed. As more worms settle and grow on already established ones the reef grows upwards and outwards to form a rounded clump of white tubes, similar to a coral head. The worms extend their feeding fans, which are about 2cm across and a range of colours from white through orange to bright red, from the ends of the tubes. The larger reefs, over 1m in diameter, tend to collapse outwards from the centre but the collapsed sections continue growing. The reefs are best developed in a relatively narrow vertical zone in the loch, at a depth between 6–10m.

The reefs are a haven for other marine wildlife on the muddy seabed where there is little other solid attachment, and become covered with orange sponges, colonial and solitary sea squirts, hydroids and seaweeds. Mobile animals live between the tubes in the centre of the reef; particularly common are brittlestars, terebellid worms, small spider crabs, squat lobsters, hermit crabs, starfish and a range of marine snails.

The reefs at Loch Creran, at least in the sublittoral fringe, have declined over the last 100 years (together with eelgrass *Zostera marina* beds), while those in Loch Sween apparently died between 1982 and the mid 1990s.

Relevant biotopes

SS.SBR.PoR.Ser – *Serpula vermicularis* reefs on very sheltered circalittoral muddy sand.

Current and potential threats

- *Mobile fishing gear*: Serpulid reefs are fragile and vulnerable to mechanical disturbance, such as from mobile fishing gear, which would seriously damage the reefs.
- Anchors and mooring chains, movement of fish farm cages, creels can all cause mechanical damage.
- *Blockages to water flow* (e.g. building of barrages, causeways and bridges): Serpulid worms rely on water movement to feed; in both Loch Creran and Loch Sween this is a relatively gentle flow. However, changes in the water flow may have adverse effects on the reefs and their associated fauna and flora.

- *Smothering*: Serpulid tube apertures become blocked by sediments that settle out of the water column onto the seabed. Hence serpulids will be affected by any activities that result in either heavy particle suspension or sedimentation.
- *Pollution* (e.g. effluent discharge): There was a seaweed processing factory which discharged organic effluent straight into Loch Creran. It is thought that the effluent was responsible for the lack of serpulids in the area, as when the factory closed the serpulids began to colonise the area. The effluents from finfish farms might also be considered a potential threat although some of the best reefs in Loch Creran are adjacent to the moorings of a salmon farm. Finfish farms routinely use chemicals which are specifically toxic to fish lice and other crustaceans and molluscs. When such chemicals disperse in the marine environment, there is the possibility that the rich infauna of the reefs may be affected

References

<https://webarchive.nationalarchives.gov.uk/20110303145223/http://www.ukbap.org.uk/Habitats.aspx>

Edited by Nikki Chapman