## Restoration of the bio-engineer Sabellaria spp. in the Wadden Sea

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Introduction

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*Sabellaria* worms form interconnected reefs. These reefs are commonly referred to as 'Sandkoralle' in German.

Two species of *Sabellaria* are found in the Northeast Atlantic region: the Ross worm *Sabellaria spinulosa* and the honeycomb worm *Sabellaria alveolata*.

Reefs of *Sabellaria* were a prevalent (sub)littoral structure in the 20th century in the German Wadden Sea (Figure 1).





Figure 2. Habitat suitability for *Sabellaria* reefs in the Dutch Wadden Sea.

## **Objectives and methods**

Figure 1. Sabellaria reefs in the German Wadden Sea.

## **Results and conclusion**

We found a rich fauna of sponges, anemones and sea squirts on a ~40 ha large stone revetment (Figure 3).

Moreover, we found one individual of the Ross worm *Sabellaria spinulosa* (Figure 4).

The 3D structure of the reefs attracts high species richness and the reefs provide ecosystem services such as wave attenuation and sediment stabilization. Restoration of these reefs will restore important structures and functions of the Wadden Sea.

This study mapped the habitat preferences for *Sabellaria* based on depth, flow velocity, sediment grain size, salinity and gully slope (Figure 2).

A potential hotspot near Texel was identified and was surveyed using sidescan sonar, an underwater drone and with divers.



## Active restoration is needed to bring reefs of *Sabellaria* back into the Wadden Sea.

**Figure 3. Hard substrate fauna.** 

Figure 4. Sabellaria spinulosa.