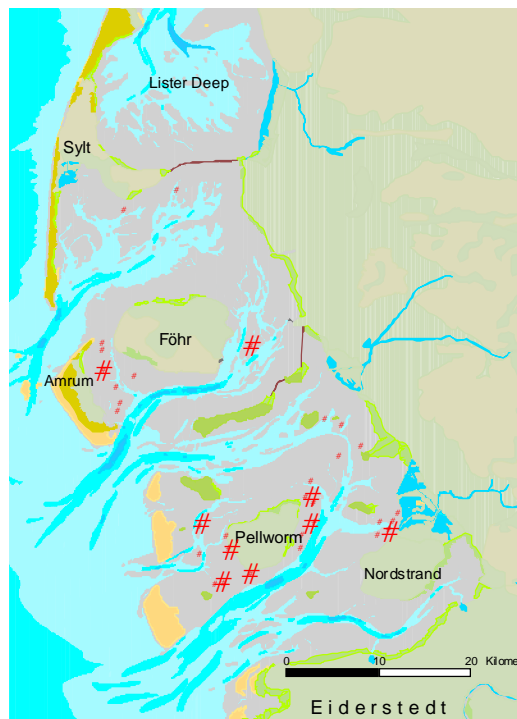


Gracilaria vermiculophylla (Gracilariales, Rhodophyta) – a Pacific algae spreading on tidal flats of the Wadden Sea

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Since 2002 a formerly undiscovered algae is spreading strongly in the Wadden Sea of Schleswig-Holstein. The algae has been identified as *Gracilaria vermiculophylla* by Jan Rueness, Oslo. It is a red algae from the Pacific which is spreading along European coasts and in other Atlantic waters¹.



Gracilaria is found mainly on beds of blue mussels where it can form dense layers, comparable to the common epiphyte of mussel beds the brown algae *Fucus vesiculosus*. The algae is very abundant on some mussel beds on muddy substrates but occurs also on sand and mudflats. The algae has been found on all mussel beds between the Eiderstedt Peninsula and the island of Sylt, but not been found on mussel beds in the Lister Deep yet.



Gracilaria vermiculophylla is new to the Wadden Sea but it is not clear when it was introduced. In the Dutch Wadden Sea, *Gracilaria* has spread since the Eighties (N. Dankers, Alterra). At this time, the species was identified as *G. verrucosa* which is considered a synonym of *G. vermiculophylla*². Possibly the same *Gracilaria* species is now reported to spread on the tidal flats of Niedersachsen in a similar way as in Schleswig-Holstein (Herlyn, NLO). As *G. vermiculophylla* has been found on many European coasts, it is considered to be the invading species in these cases, but species determination requires DNA-testing.

Distribution of *Gracilaria vermiculophylla* on mussel beds in the Wadden Sea of Nordfriesland. Big dots indicate beds with thick layers as shown on the photos above, small dots indicate a scattered occurrence.

The algae is passively attached to blue mussels by the byssus threads of these molluscs. On sandy substrates the algae settles when it becomes trapped in the burrows of the lugworm *Arenicola marina* which is typical for many algae in the Wadden Sea. An active attachment to hard substrates has not been observed so far and fertile specimen are rarely seen.



Literature:

- 1 Rueness, J. in press. Life history and molecular sequences of *Gracilaria vermiculophylla* (Gracilariales, Rhodophyta), a new introduction to European waters. *Phycologia*.
- 2 Bellorin, A. M., M. C. Oliveira & E. C. Oliveira 2004. *Gracilaria vermiculophylla*: A western Pacific species of Gracilariaceae (Rhodophyta) first recorded from the eastern Pacific. *Phycological Research* 52.

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