

The common cord-grass *Spartina anglica*: An invasive alien species in the Wadden Sea National Park

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Origin: The smooth cord-grass *Spartina alterniflora* was introduced in ships' ballast water from the east coast of North America to Great Britain prior to 1870. Its subsequent crossing with the native small cord-grass *Spartina maritima* resulted in the appearance of a fertile amphidiploid, the common cord-grass *Spartina anglica* C.E. Hubbard. The first specimen of which was recorded in British waters in 1892.

Vector: *Spartina anglica* was regarded as a valuable species for coastal protection and reclamation schemes in the early twentieth century. In Germany this alien species was planted at several sites in the East and North Frisian Wadden Sea in 1927-1937. In all probability, more than 70,000 shoots were imported from Britain.

Spread: From the planting areas *S. anglica* spread naturally along the entire German Wadden Sea coast within several decades. Today it occurs in coherent swards at the seaward front of salt marshes and in patches on the tidal flats. And, the *Spartina* population may benefit from global warming and may become more abundant in the near future.

Ecological impacts: Significant harmful ecological impacts of *S. anglica* are described in general as follows:

1. Replacement of native plants and more diverse native plant communities;
2. A loss of valuable habitat for endobenthic invertebrates and for migrating shorebirds and waterfowl;
3. A loss of rearing habitat for fish; and
4. Alteration the course of succession.

The common cord-grass should be regarded as a threat to the authentic biodiversity of the Wadden Sea (Fig. 1).

Human health effects: No significant human health effects has been recorded yet. However, a further increase of the *Spartina* population could induce an increase of cut injuries among walkers and swimmers by the sharp and stiff leaves.

Economic effects: In Germany *S. anglica* was planted only for ten years because the expected effects regarding sedimentation and stabilization of mudflats did not satisfy expectations. However, an increasing population could be associated with complex interactions in hydromorphodynamics and unknown effects on coastal protection. Changes associated with *Spartina* also impact recreation. Therefore, activities, such as fishing, bathing, bird watching, and botanizing, that are dependent on the extant intertidal ecosystem could be negatively impacted by the continued spread of *Spartina*.

Recommendation: Until now the introduction, establishment and spreading of alien species in the Wadden Sea is perceived only on a descriptive level in some ways. A purposeful strategy for dealing with the phenomenon in regard to the protection and conservation of the Wadden Sea National Park is missing. The development of an alien species plan is absolutely essential.



Figure 1: *Spartina anglica* displaces the native *Salicornia stricta*.

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