Spartina anglica 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Cyperales	Poaceae

Common name Englisches Schlickgras (German), rice grass (English), townsends grass (English), common cord grass (English)

Synonym *Spartina x townsendii* , fertile amphidiploid
Spartina x townsendii , agg.
Spartina x townsendii sensu lato

Similar species

Summary Spartina anglica is a perennial salt marsh grass which has been planted widely to stablize tidal mud flats. Its invasion and spread leads to the exclusion of native plant species and the reduction of suitable feeding habitat for wildfowl and waders.

view this species on IUCN Red List

Species Description
\"A deep-rooting perennial, 30-130cm high, spreading by soft stout fleshy rhizomes, forming large clumps and extensive meadows. Culms erect, stout, many-noded, smooth. Leaves green or greyish-green; sheaths overlapping, rounded on the back, smooth; ligules densely silkily ciliate, with hairs 2-3mm long; blades with a fine hard point, 10-45cm long, 6-15mm wide, flat or inrolled upwards, firm, closely flat-ribbed above, smooth, the upper widely spreading. Panicles erect, finally contracted and dense, 12-40cm long, of 2-12 spikes, overtopping the leaves. Spikes erect or slightly spreading, stiff, up to 25cm long; axis 3-angled, smooth, terminating in a bristle up to 5cm long. Spikelets closely overlapping, in two rows on one side of and appressed to the axis, narrowly oblong, flattened, 14-21mm long, mostly 2.5-3mm wide, 1- rarely 2- flowered, falling entire at maturity, loosely to closely pubescent. Glumes keeled, pointed; lower two-thirds to four-fifths the lenght of the upper, 1-nerved; upper as long as the spikelet, lanceololate-oblong, tough except for the membranous margins, 3-6 nerved. Lemma shorter than the upper glume, lanceolate-oblong, 1-3 nerved, with broad membranous margins, shortly hairy. Palea a little longer than lemma, 2-nerved. Anthers 8-13mm long. Grain with a long green embryo, enclosed between the lemma, palea, and glumes. Ch. no. 2n = 122-124\" (Hubbard, C.E. 1968, Grasses, Penguin Books Ltd, England).

Lifecycle Stages
'Die-Back' has occurred since the mid 1920's in several sward areas in the south of Britain. In Poole Harbour, England for example, 208ha of *S. anglica* recorded in 1924 was reduced to about 63 ha by 1984 (Gray & Raybould: in Patten 1997). Die-back is due to death caused by soft-rotting of the rhizomes and a gradual decline in vigour of old populations. The definitive cause of die-back is unknown. It however tends to occur in waterlogged, fine sediments, which induce anaerobiosis and toxic sulphide levels.

Habitat Description
S. anglica growth may have perceived benefits other than coastal protection and land reclamation. The increase in elevation level and sediment stabilization caused by *S. anglica* growth may enable native salt marsh species to establish and may facilitate transitions / successions to other vegetation types. This process will lead to the development of new salt marsh areas. *S. anglica* has high productivity. Growth and death results in a large amount of energy and organic matter entering the ecosystem. *S. anglica* may form the basis of many food webs and is a possible food source for many grazers. *S. anglica* growth may exclude several animal species but it also provides habitat for many others e.g. rails. *S. anglica* also has the potential to be used for economic benefits e.g. biofuel, paper making, fish food, green manure, or health products (Chung 1993).

Reproduction
Spartina anglica spread occurs in two phases, initial invasion and establishment of seedlings or vegetational fragments, and then expansion of tussocks by radial clonal growth (up to 30cm per year). Spreading tussocks fuse to form clumps that can expand into extensive meadows. Expansions may experience a lag phase. When expansions are occurring it can be very rapid. For example at Poole Harbour, England, *S. anglica* introduced in 1899, expanded to cover over 200ha (more than 60% of the intertidal mud flat) by 1924 (Gray & Raybould: in Patten 1997).
Spartina anglica is known for the unpredictable production, viability and germination of its seeds. Seed production of *S. anglica* is variable both temporally and spatially (Gray *et al*. 1991). It appears that *S. anglica* has a self-incompatibility system that requires to be broken down for seed set to occur (possibly by higher than average temperatures and humidity). Seed does not set in most years resulting in periods of spread by clonal expansion. Successful seed set has the potential to result in high seed numbers. *S. anglica* can produce up to 5 million spikelets per hectare. Less than 5% of these spikelets are likely to produce viable seed. *S. anglica* seeds do not form a seed bank. Seeds failing to germinate in their first season do not remain viable.

General Impacts
S. anglica has been used world-wide as an agent for coastal protection / stabilization and land reclamation. Its invasion and spread leads to exclusion of native plant species such as Zostera and Salicornia species. It also leads to the loss of feeding habitat for wildfowl and waders. The spread of *S. anglica* also threatens the economic interests of commercial oyster fisheries and tourism industries (due to invasion into amenity areas).

Management Info
Physical: Smothering with plastic sheeting, burying and repetitive burning have achieved kill rates of over 90%. They however, are more costly than herbicides and have practical problems e.g. sheeting may become dislodged by tidal currents. These methods are therefore only suitable for use on small areas. Seedlings or young plants can be dug out. In Northern Ireland the largest plant to be dug out successfully was 50cm in diameter. Attempts to dig up larger clumps have been unsuccessful. Other possible control methods being researched include steam treatment.
\r\nChemical: Herbicide application is the most frequently used control method due to its practical ease of use and cost effectiveness. The herbicides Fluazifop (Fusilade) and Haloxyfop (Gallant) both regularly achieve over 90% kill after one application. Complete eradication requires repeated treatment application.
\r\nBiological: Other possible control methods being researched include biological control using an insect (*Prokelisia spp.*).

Pathway
Coastal protection and land reclamation schemes.

Principal source:

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ALIEN RANGE

[1] IRELAND
[2] UNITED KINGDOM

[1] NEW ZEALAND

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