Spartina alterniflora 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Liliopsida	Cyperales	Poaceae

Common name Atlantic cordgrass (English), salt-water cordgrass (English), saltmarsh cordgrass (English), smooth cordgrass (English)

Synonym *Spartina alterniflora* , var. *glabra* (Muhl. ex Bigelow) Fern.
Spartina alterniflora , var. *pilosa* (Merr.) Fern.

Similar species *Spartina foliosa, Schoenoplectus maritimus, Triglochin maritima*

Summary *Spartina alterniflora* commonly known as smooth cord grass is a species that inhabits marsh habitat in its native range, where introduced It is known to establish itself in wave-protected mud and sand flats and grow very quickly into dense impenetrable stands. When introduced this species can have a negative effect on native species including some endangered. It can also hybridize with native non-invasive species of *Spartina* and offspring are known to have increased vigor and growth rates than either parent.

view this species on IUCN Red List

Species Description
S. alterniflora is an erect, perennial salt tolerant grass that characteristically grows in dense stands. The inflorescence is a flowering panicle made of many spikes and it is 10-40cm long with dense colourless flowers, which are closely appressed and overlapping. *S. alterniflora* blooms from July through November (The Invasive Spartina Project, 2003). Leaf blades which are grey-green in colour can be 20-55cm long and and be up to 5cm in width. The stems range in height from 60-250cm and are upto 2cm wide at the base (Brian Silliman., pers. comm., 2005) .

Uses
S. alterniflora is a dominant species in its native range, the salt marshes of the Atlantic and Gulf coasts of the USA. It plays an important role in sediment stabilization and serves as nursery grounds for estuarine fish and invertebrates. Marsh grasses like *S. alterniflora* are essential for land creation processes in areas such as the Chesapeake Bay (Taylor *et al.* 2001).*S. alterniflora* serves as a foundation species and is a critical carbon base for estuarine food-webs supplying carbon for the detrital and direct grazing food-web energy pathways (Brian Silliman., pers.comm., 2005).

Habitat Description
S. alterniflora grows within lower elevational marsh zones in its native range. In the San Francisco Bay area where it is introduced *S. alterniflora* and its hybrids have been observed growing both lower and higher than the native *S. foliosa*. The tidal range for *S. alterniflora* varies throughout the world, but it has the potential to grow from the mean higher high water to approximately 1 metre from mean low lower water (The Invasive Spartina Project, 2003).
The Western Aquatic Plant Management Society (2004) states that, \"*S. alterniflora* is a plant of the intertidal zone, where it colonizes mud or sandflats in saline or brackish water. Found in areas of low to moderate wave energy, the species can colonize a broad range of substrates, ranging from sand and silt to loose cobble, clay, and gravel. The species can tolerate a wide range of environmental conditions, including: inundation up to 12 hours a day, pH levels from 4.5 to 8.5, and salinity from 10 to 60 ppt\".
Spartina can grow in terrestrial areas, but is excluded by competition from other plants. It can grow in the highest reached of the intertidal zone all the way down until ~ 1m from mean low water (Brian Silliman., pers. comm., 2005).

Reproduction
The Western Aquatic Plant Management Society (2004) reports that, \"*Spartina alterniflora* can spread by seed, rhizome, or vegetative fragmentation (Daehler and Strong 1994). However, the plant does not produce seed in several areas where it has been introduced. No flowers have been observed in New Zealand or in Padilla Bay, and the Willapa Bay population was not observed to flower for almost 50 years after its introduction (Partridge 1987; Kunz and Martz 1993; Riggs 1992; Scheffer 1945). Low soil temperature can delay or suppress flowering and reduce seed production in *Spartina* spp. The species is protogynous, meaning that female flowers mature before male flowers (Bertness and Shumway 1992). This strategy helps ensure out-crossing\".

General Impacts
The Invasive Spartina Project (2003) list down the impacts of the introduced *Spartina alterniflora* in the San Francisco Bay Area:
S. alterniflora can invade mudflats and channels and convert this habitat to marshland. Loss of mudflat and channel habitat may seriously impact the foraging habitat for numerous residential as well as migrating shorebirds and waterfowl, including the federally and state endangered California clapper rail (see *Rallus longirostris obsoletus* in Status: U.S Fish and Wildlife Service). *S. alterniflora* is also invading high marsh habitat, degrading or eliminating pickleweed (*Salicornia virginica*) habitat, impacting habitat for the endangered salt marsh harvest mouse (see *Reithrodontomys raviventris* in IUCN Red List of Threatened Species)
S. alterniflora hybridizes with the native *Spartina* spp. *S. alterniflora* is therefore a threat to the survival of native *Spartina* spp. Given the robust form and reproductive vigor of both the introduced *S. alterniflora* and their hybrids. Hybrids have variable morphology and may be more vigorous than *S. alterniflora*. Hybrids are difficult to distinguish from either parent species in the field. Molecular lab tests are required to confirm *S. alterniflora* or hybrid identification
S. alterniflora can cause increased rates of sedimentation, leading to the eventual clogging of flood control channels and natural sloughs, raising them to the overall elevation of the marsh plain.

Management Info
For details on preventative, physical, chemical and biological control of this species please read our pdf file on *management information*.

Pathway
S. alterniflora was introduced to Puget Sound, in the 1940s to stabilize shorelines and increase vegetative cover (Western Aquatic Plant Management Society, 2004).*S. alterniflora* was introduced into San Francisco Bay for salt marsh restoration in the 1970s (Ayres *et al.* 2003).*S. alterniflora* was deliberately introduced to New Zealand in the 1950's from the USA primarily for land reclamation purposes and alleged habitat enhancement (Champion and Clayton, 2004).*S. alterniflora* was apparently first introduced into Willapa Bay in 1894 in a shipment of eastern oyster spat originating from the east coast of North America. Initially, the species established on the west side of Long Island (Sayce 1988) (Western Aquatic Plant Management Society, 2004).

Principal source: Invasive Spartina Project, 2003. Introduced *Spartina alterniflora*/hybrids (smooth cordgrass) Western Aquatic Plant Management Society, 2004. *Spartina alterniflora*

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Brian Silliman The Nature Conservancy David H. Smith Postdoctoral Fellow Virginia Institute of Marine Sciences College of William and Mary

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ALIEN RANGE

[1] AUSTRALIA
[1] FRANCE
[1] NETHERLANDS
[2] UNITED KINGDOM
[1] CHINA
[1] INDIA
[2] NEW ZEALAND
[13] UNITED STATES

Red List assessed species 4: EN = 1; VU = 2; LC = 1;

Ammodramus caudacutus **VU**
Reithrodontomys raviventris **EN**
Charadrius leschenaultii **LC**
Sterna nereis **VU**

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Summary: This report is the first stage in a three-stage development of a Border Control Programme for aquatic plants that have the potential to become ecological weeds in New Zealand.
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Champion, P.D.; Clayton, J.S. 2001. Border control for potential aquatic weeds. Stage 2. Weed risk assessment. Science for Conservation 185. 30 p.
Summary: This report is the second stage in the development of a Border Control Programme for aquatic plants that have the potential to become ecological weeds in New Zealand. Importers and traders in aquatic plants were surveyed to identify the plant species known or likely to be present in New Zealand. The Aquatic Plant Weed Risk Assessment Model was used to help assess the level of risk posed by these species. The report presents evidence of the various entry pathways and considers the impact that new invasive aquatic weed species may have on vulnerable native aquatic species and communities.
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