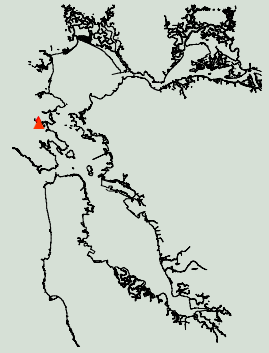




SAN FRANCISCO
ESTUARY INVASIVE
SPARTINA PROJECT

Preserving native wetlands

INVASIVE SPARTINA PROJECT



S. anglica distribution (2001)

Introduced

Spartina anglica (English cordgrass)



Above: Dense clump of *S. anglica* with leaves at angle to the stem.



Left: Inflorescence of native *S. anglica*. Note long spikelets of erect, contracted panicle.

Below: Flowering culms of native *S. foliosa* compared to *S. anglica*. Note leaf angle of *S. anglica*.



Right: Clone of *S. anglica* at Creekside Park, Corte Madera, CA.

- ❖ **Description:** A perennial hybrid species of salt tolerant grass. *S. anglica* exhibits highly variable morphology. It's a wind pollinated species that spreads by seed and vegetative means sending out underground rhizomes. It initially spreads into circular clones, and may later coalesce into large stands or meadows.
 - ❖ **Leaf blades** are persistent or falling, green or grayish-green in color, 36-46 cm in length (15-45 cm *S. foliosa*), and 11-13 mm in width (2-17 cm *S. foliosa*). Leaves protrude at angles more or less perpendicular to the culm (stem) (personal observation).
 - ❖ **Culms (stems):** Stems reach heights of 30-130 cm (30-120 cm *S. foliosa*), although the height is highly variable.
 - ❖ **Inflorescence** is 12-40 cm in length (9-25 cm *S. foliosa*), with 2-12 spikes. The spikes are 14-21 cm long (3-5 cm *S. foliosa*). Panicles are erect and dense with spikes slightly spreading. The flowers are colorless. In its native range, it flowers from July to November, although it has been noted flowering into months as late as February (Mullen and Marks 1987).
 - ❖ **Tidal range:** It inhabits a wide range of elevations, from the low to high marsh zones. In Britain, it inhabits a wider range of marsh elevations than either parent (*S. maritima*, *S. alterniflora*) (Hill, 1990).
 - ❖ **Salinity range:** The species tolerates salinities ranging from 5-40 ppt (Abberle, 1990).
- ❖ *Spartina anglica* has been found at Creekside Park in Marin County. *S. anglica* is a hybrid between England's native *S. maritima* and *S. alterniflora*. *S. alterniflora* was introduced to England from the Atlantic seaboard of the United States. *S. anglica* is now found in England, France, Germany, Denmark, the Netherlands, New Zealand, Australia, and China. In the U.S., it is found in Washington and California.

Potential impacts of introduced

***Spartina anglica* to the native ecosystem:**

1. Invasion of mudflats and channels and conversion to marsh habitat. Loss of mudflat and channel habitat may seriously impact the foraging habitat for numerous resident as well as migrating shorebirds and waterfowl including the federally and state endangered California clapper rail (*Rallus longirostris obsoletus*).
2. 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.
3. Loss of more diverse, native plant communities by out competing the native *S. foliosa*, and other native marsh species.
4. In Washington state *S. anglica* has been observed moving into marsh communities characterized by salt grass (*Distichilis spicata*) and pickleweed (*Salicornia virginica*) (Frenkel and Kunze, 1984). The endangered salt marsh harvest mouse (*Reithrodontomys raviventris*) inhabits, and the California clapper rail nests in the pickleweed zone, and they are thus threatened by the further invasion of *S. anglica*.



Left: Invasion of mudflat and channel habitat may lead to increased sedimentation rates, clogging of channels, flooding and a loss of foraging habitat for numerous shorebirds including the endangered California clapper rail, *Rallus longirostris* (below).



Above: Endangered California clapper rail forage in channel habitat and nest in pickleweed habitat which may be impacted by the introduced species.



Above: Native plant diversity is threatened by the introduced *S. anglica*.

S. anglica may be confused with the native *S. foliosa* (California cordgrass, hollow stem grass), or with other native plants in the cyperaceae family (sedges, triangular stem), or juncaceae family (rushes, round stems). Two example species that may be confused include the brackish marsh plant *Scirpus maritimus* (alkalai bulrush) or *Triglochin maritima* (arrow grass) .



S. alterniflora hybrid, above.



Scirpus maritimus, left. Superficial differences include triangular stem of the *Scirpus* vs. the round, spongy, hollow stem of the cordgrass. *Scirpus* inflorescence are an open umbel, cluster of spikelets or solitary spikelet compared closely appressed spikelet (panicle) of *Spartina*.



Triglochin maritima, left. Superficial differences include round stem of the rush, semiterete (cylindrical) blades, and their inflorescence which are a spike-like raceme born on a naked scape, with flowers on short, slender or stout pedicels compared the dense, closely appressed spikelets (panicle) of *Spartina*.

Invasive Spartina Project



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Please let us know if you find any non-native *Spartina* species

Include the following information:

- *Spartina* Species
- Location (GPS coordinates if possible or drawing on topo map)
- Approximate size of plant/clone or population
- Date seen
- Your name and contact information

