Spartina alterniflora/hybrids (smooth cordgrass)

**Description:** Perennial, salt tolerant grass that grows erect in dense stands. It’s a wind pollinated species that spreads vegetatively by below ground rhizomes, and by seed. The plant initially establishes as circular clones which subsequently coalesce into dense stands or meadows.

- **Leaf blades:** 20-55 cm long (15-45 cm S. foliosa), tough, green-gray in color, and 2-25 cm in width (2-17 cm S. foliosa).
- **Culms (stems):** Stems range in height from 60-250 cm (30-120 cm S. foliosa). Culms are 7-12 mm wide at the base. Leaf sheaths of S. alterniflora and hybrids may be various shades of maroon at the base of the culms (white-green of S. foliosa).
- **Inflorescence:** 10-40 cm long (9-25 cm S. foliosa) with dense colorless flowers. Flowering panicle made of many spikes, which are closely appressed and overlapping. Blooms from July through November (vs. June-September of S. foliosa).
- **Tidal range:** The S. alterniflora grow within the lower elevational marsh zones in the native range, but the S. alterniflora/hybrids have been observed growing both lower and higher than the native S. foliosa in San Francisco Bay. While the tidal range for S. alterniflora varies throughout the world, it has the potential to grow from the mean higher high water (MHHW) to approximately 1 meter from mean low lower water (MLLW) as seen in Willapa Bay, Washington (Sayce, 1988).
- **Salinity range:** Optimal salinity for S. alterniflora is 10-20 ppt, but it may tolerate salinities as high as 50-60 ppt (Landin, 1990).

**S. alterniflora** is an invasive species now commonly found in marshes of South San Francisco Bay. It has been introduced from the Atlantic seaboard and Gulf coast of the United States.

Note: Hybrids between the introduced S. alterniflora and the native S. foliosa do occur and pose an equal if not greater threat to the native ecosystem. 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.
Potential impacts of introduced *Spartina alterniflora* to the native ecosystem:

1. Invasion of mudflats and channels and their conversion to marsh habitat. 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 (*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 outcompeting and hybridizing with the native *S. foliosa*, producing dense, mono-specific stands of non-native and hybrid cordgrass.

4. Threat to the survival of the native *S. foliosa* given the robust form and reproductive vigor of both the introduced *S. alterniflora* and their hybrids.

5. Invasion of high marsh, degrading or eliminating pickleweed habitat, impacting habitat for the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*).

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

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Left: Invasion of mudflats will result in a loss of foraging habitat for numerous resident and migratory shorebirds and waterfowl.

Above: Invasion of mudflats and channels and their conversion to marsh habitat. 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 (*Rallus longirostris obsoletus*).

Below: Endangered California clapper rail forage in channel habitat and nest in native pickleweed (*Salicornia virginica*) marsh, both of which may be impacted by the introduced species.

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**Thank you to The California Coastal Conservancy, National Fish & Wildlife Foundation, CALFED Bay-Delta Program, and the USFWS Coastal Program for their financial support of the Invasive Spartina Project.**

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**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

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**Invasive Spartina Project**

San Francisco Estuary Invasive Spartina Project

**Preserving native wetlands**

Coastal Conservancy

Invasive Spartina Project
California Coastal Conservancy
1330 Broadway, 11th floor
Oakland, California 94612
Phone: 510-286-1015
Fax: 510-286-0470
www.spartina.org

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