



Spartina densiflora

Dense-flowered cordgrass, Chilean cordgrass

Threat scores

1. Ecological impact

- Competition with native flora such as *Salicornia virginica* (pickleweed) and *S. foliosa*, may lead to a loss of native plant diversity.
- Invasion of high marsh *Salicornia* zone may negatively effect the habitat of the endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), as well as the federally and state endangered California clapper rail (*Rallus longirostris obso-letus*) (Molnar 2008).
- Competition with the native *S. foliosa* and invasion of the mudflat and channel edges of the low marsh may eliminate foraging habitat for numerous shorebirds and water-fowl, including the California clapper rail (Molnar 2008).
- “Invasion by the *S. densiflora* may increase marsh elevation due to the presence of dense clusters of clones at channel and mudflat edge. These dense clones may slow the flow of water, and thus increase rate of sedimentation” (Molnar 2008).
- Hybridizes with local species.
- Dense-flowered cordgrass grows at a slightly higher elevation than native cordgrass and thus competes and replaces native plants such as *Frankenia salina*, *Limonium californicum*, and *Jaumea carnosa* in the middle to high tidal zone.



2. Invasive potential

- Has spread beyond the original marsh plantings (in San Francisco Bay) to the entire two mile length of Corte Madera Creek and is spreading beyond the creek into San Francisco Bay. Potential for additional spread or unintentional translocation from invaded sites (Molnar 2008).
- Over a period of several years a single clump can expand to a meter or more in diameter (Molnar 2008).
- Has become the most abundant plant in many estuaries of the SW Iberian Peninsula.

3. Geographic extent

- Regionally pervasive

4. Management difficulty

- No successful controls found yet. Populations thought to have been eradicated were detected in same sites years later.

Geography and Habitat

1. Origin: Native to South America (Chile)
2. First introduction: 1880's
3. Thought to have been introduced in the solid ballast of lumber ships from Chile to Humboldt Bay, CA in the 19th Century (Molnar 2008). Introduced to San Francisco Bay as part of marsh restoration project in 1976.
4. Introduced: California, Oregon, Washington
5. Intertidal zones, wetlands, brackish water
6. Grows in the upper intertidal zone near the mean high water, among the pickleweed or just below it on open mud (Molnar 2008).

Invasion Pathways

1. Ballast Water and Sediments
 - Accidental probable
 - Cause- Solid ballast of lumber ships (1800s)
 - Thought to have been introduced in the solid ballast of lumber ships from Chile to Humboldt Bay, CA in the 19th Century (Molnar 2008).
2. Short-term disturbances that facilitate introduction
 - Intentional known
 - Cause- Marsh restoration project
 - Introduced to San Francisco Bay as part of marsh restoration project in 1976.

Non native locations

1. 56- Puget Trough/Georgia Basin
2. 57- OR, WA, Vancouver Coast and Shelf

Sources

1. Molnar, Jennifer, et al. 2008. "Assessing the global threat of invasive species to marine biodiversity." *Frontiers in Ecology and the Environment*. 6 (9), pp. 485-492.
2. <http://conserveonline.org/workspaces/global.invasive.assessment>
3. <http://nas.er.usgs.gov/queries/factsheet.aspx?SpeciesID=1127>
4. <http://www.issg.org/database/species/ecology.asp?si=1372&fr=1&sts=sss&lang=EN>
5. <http://plants.usda.gov/java/nameSearch?keywordquery=spartina+densiflora&mode=sciname>