Portland State
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Spartina Dispersal Study - Drift Card Release
****FREQUENTLY ASKED QUESTIONS****

1) What is *Spartina*?

Spartina is a type of grass commonly known as cordgrasses. Here on the west coast of the United States, there are four invasive, non-native cordgrasses, as well as one native cordgrass. Invasive cordgrasses grow in the mudflats and salt marshes of bays and estuaries where they can clog flood channels, displace native vegetation, significantly raise mudflat elevation, and reduce habitat of Dungeness crab, shorebirds and migratory waterfowl by trapping sediments with their dense stems and root-mats.

2) What is the study all about?

Basically, we are trying to understand where *Spartina* might crop up in the future. *Spartina* dies down the ground each fall/early winter. The stems break off and form large mats (called wrack) which float with the tides on the water surface. Wrack may carry *Spartina* seed – which can survive in wet, cold, salty conditions (like those found in ocean waters) for periods of one year. Our goal with the drift cards is to simulate the dispersal of *Spartina* wrack and seeds. If we can find the "hot spots" for where seed is drifting, we will be able to identify high risk areas.

3) Where were the cards released from?

- If your card started with the number 1, it was released from Willapa Bay, Washington.
- If your card started with the number 2, it was released from Humboldt Bay, California.
- If your card started with the number 3, it was released from San Francisco Bay, California.

4) When was my card released?

The last four digits of the card represent the year and month of the release date. For example, card # 20409 was released in September of 2004 from Humboldt Bay while card # 30502 was released in February of 2005 from San Francisco.

5) What have you learned so far?

Many interesting finds have occurred, revealing locations for potential future infestations. Winter currents travel northward at rapid velocities. Cards released from Humboldt Bay, California were found in southwest Washington in less than 30 days. Similarly, cards from Willapa Bay, Washington were found along the British Columbian and Alaskan coastline in one to three months. With regard to Oregon's early detection work, the results suggest:

- An elevated risk of colonization by *Spartina densiflora* – the cordgrass species that currently covers over 94% of Humboldt Bay's salt marsh habitat. Cards from this release location were found repeatedly distributed along the entire Oregon coast.
- Considerable risk of invasion by *Spartina alterniflora* from southwest Washington since many cards from the Willapa Bay release location were found along the

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northern half of the Oregon coast. That portion of the coastline coincides with the location of all of Oregon's susceptible estuaries. This southern-flow from Washington occurred despite the plume of the Columbia River and the lack of typical summer wind patterns during the summer of 2005.

- Few cards from San Francisco were recovered north of the California-Oregon border, indicating a lower risk of infestation from the hybrid cordgrass (*S. alterniflora x foliosa*).

6) What should I do with the card(s)?
Feel free to either throw the cards away or to keep them.

- Please do NOT throw them back into the ocean.
- Please do NOT place them back on the beach – where they could wash back into the ocean. (This would confound our findings!)

7) How long is this study?
Releases were conducted monthly between September 2004 and August 2005. People are still occasionally finding cards & we are still collecting information. So, please contact us with any additional cards you find.
Email: vhoward@pdx.edu or call (503)725-2937

8) Aren't you contributing trash to our oceans and beaches?
While these drift cards are man-made objects, they are fully biodegradable and constructed to degrade within a short period of time. They are made of sustainably-farmed mahogany plywood and coated with non-toxic, lead-free paint and ink. The cards are considered a very low-impact way to study surface currents in oceans around the world. This method of study has helped to model potential oil spill scenarios, collection points for garbage, and now, the potential spread of invasive species.

9) Where can I learn more about invasive Spartina or other invasive species issues?

- The San Francisco Estuary Invasive Spartina Project (http://www.spartina.org)
- The Humboldt Bay National Wildlife Refuge (http://www.fws.gov/humboldtbay)
- The Nature Conservancy - Cox Island Preserve (http://nature.org/wherewework/northamerica/states/oregon/preserves/art6798.html)
- The Willapa Bay National Wildlife Refuge (http://www.fws.gov/Refuges/profiles/index.cfm?id=13552)
- The Global Invasive Species Database (http://www.issg.org)
- USGS Non-indigenous Aquatic Species Database (http://nas.er.usgs.gov)
- National Invasive Species Information Center (http://www.invasivespeciesinfo.gov/)

Thank you for your help and interest in this study!