

Spartina: An Invasion In Progress

By: Timon Berry, Casey Clark,
Martina Kartman, Kelsey Clinton,
and Courtney Harmer

What is Spartina?

Spartina is an invasive marsh grass that can grow up to four feet tall, characterized mainly by its rhizomes which form an extensive root system roughly five times the plant's mass above ground. Not surprisingly, it is extremely difficult to eradicate. There are two different variations of spartina in Washington, *Spartina alterniflora* and *Spartina anglica*.

Spartina is native to the east coast of the United States, where it does not cause a problem because a natural predator exists there, the prokelisia leaf hopper. On the west coast, however, there is no such predator.



History of Spartina

There is much debate over the first appearance of spartina in Washington. It is believed that it first arrived in Willapa Bay in the 1890's as packing material in oyster shipments from the East coast. The next documented intentional introduction was *Spartina alterniflora* in Padilla Bay, where it was planted to stop the erosion of an island's coastline. *Spartina anglica* was



introduced to Port Susan Bay in Puget Sound in 1961 by a farmer to stabilize dikes and provide forage for his cattle. Since then, it has spread both North and South and covered 15,000 acres in 2002 compared to 400 acres in 1981.

Economic Impacts

Spartina also has a large economic impact upon the areas it invades. Because it spreads so rapidly and is so difficult to destroy, Willapa Bay's eradication processes alone receive a budget of around \$500,000 each year which is a large sum considering it's size in comparison to the rest of Washington's coastline. Even with this funding, Spartina continues to spread.

Much of spartina's impact is upon commercially important species. Invasion of spartina into young salmonid habitat threatens to reduce an already dwindling population, and encroachment into tidelands threatens Washington's commercial shellfish industry.



Negative Effects of Spartina



Spartina is responsible for the loss of thousands of acres of native habitat. In Willapa Bay alone, the area of habitat destroyed by spartina has increased from 400 acres in 1982 to 15,000 acres in 2002. Usually invading mud and sand flats in the inter-tidal zone, spartina completely takes over and destroys these native habitats. Spartina takes up such a large amount of space and grows so densely that it crowds out native species such as wading birds, fish, shellfish, and native plants.

How is the Spartina problem being dealt with?

A number of federal, state, private, local and non-profit agencies are working together to eradicate Spartina in Washington State. Such groups include People for Puget Sound, Washington Department of Agriculture, Washington Department of Fish and Wildlife, US Fish and Wildlife Services, County Noxious Weed Control Boards, The Nature Conservancy, and Restore America's Estuaries. In order to effectively remove Washington's Spartina infestations, both greater community interest and continued funding will be necessary.



Spartina Control Methods

The best way to eradicate spartina is to catch it early, before infestations become established. Spartina control methods include mechanical, chemical, manual and biological methods.



Mechanical Control

- Crushing-stops spartina from seeding
- Discing-cuts roots, but risks spreading spartina to other areas
- Mowing- marsh masters must repeat often. Rototilling is extremely effective in the winter, but it is slow. To rototill one acre requires 4 – 5 hours of equipment time.



Chemical Control

“Rodeo” herbicide is like roundup. One needs a permit and training to use it. It must be used in moderation because it requires a surfactant that kills fish and wildlife.



Rodeo being sprayed on spartina meadows



Airboat crews using Rodeo

Manual Control

- Simply, people need to dig it up, however it would take more people than have showed an interest to actually make much of a difference.
- Individual seedlings or small clumps can be controlled by hand pulling or digging during the summer. The plants must be disposed of away from the intertidal zone, to prevent the spread of seeds or rhizomes.



Biological Control



Prokelisia marginata, a leafhopper that is native to the east coast and preys on spartina, can be brought to places where spartina have invaded. Their larva eat the spartina leaves. When used on the west coast, however, they may eat other native plants or succumb to disease.

Outlook for the Future

Even with the current budget and control methods, spartina is expected to continue its massive invasion. With their current resources, the people and organizations working to stop the spread of spartina can only slow down the process. With added attention, funding, and support from affected communities, however, the goal of eradication of spartina in Puget Sound could be reached.

