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WETLANDS THREAT BRANCHING OUT REGIONAL PROGRAM READIES HERBICIDE TO ERADICATE INTRUSIVE CORDGRASS

by PAUL ROGERS, Mercury News

The South has kudzu. The West has star thistle.

Now San Francisco Bay is under assault from a similar horticultural headache: an invasion by a fast-growing, non-native plant that is beginning to overrun the bay's wetlands, threatening birds, wildlife and the very character of the region's shoreline.

The intruder, an East Coast cordgrass known as *Spartina alterniflora*, grows in thick green meadows up to 7 feet tall and chokes out native plants that provide food and habitat for wildlife.

So far, it has spread to roughly 1,400 acres of Bay Area wetlands -- up from roughly 500 acres three years ago. Fearful it could overrun 3,000 acres by year end, state officials are launching a major counterattack this week.

On Thursday, the board of the state Coastal Conservancy, based in Oakland, is expected to approve spending \$814,725 for a two-year program designed to stop the invasive cordgrass in its tracks.

The money will fund a plan to spray herbicides from helicopters, trucks on levees, amphibious vehicles and backpack sprayers over 1,400 acres in six counties from August to October this fall and next fall.

Although the idea of chemical spraying may make people nervous, the chemical, imazapyr is safe for wildlife, fish and humans, said Erik Grijalva, field operations manager for the Coastal Conservancy's Invasive *Spartina* Project.

Most areas will require one application annually, he added, with none over homes or schools. Waterfront paths and parks will be closed for several days while work occurs.

"This invasive *Spartina* is a vigorous form of biological pollution," said Grijalva. "We've looked at all the ways you can control it. Doing nothing would do the most harm to the marshes."

As part of a pilot program last fall, the Coastal Conservancy worked to remove invasive cordgrass from 435 acres in places such as Bair Island, near Redwood City, and in the Alameda Flood Control Channel, off Fremont.

Then, crews mowed it with rototiller-like machines, covered it with huge tarps, dug it out by hand and sprayed it with aquatic herbicides.

Widening attack

The new push this year is a widening of the campaign, using the herbicide nearly exclusively. The money would go to government agencies to oversee the work, including the city of Palo Alto, the Alameda County Flood Control District and the U.S. Fish and Wildlife Service. If everything goes well, the horticultural blitzkrieg should eradicate at least 80 percent of the invasive cordgrass, said Grijalva.

Using herbicides is easier than mechanical methods in hard-to-reach places, he said. It also is less disruptive than mechanical methods, and is easier to supervise than using hundreds of volunteers with shovels in knee-deep mud.

"Having two dozen people in a marsh tromping around and digging it up is very damaging," he said.

So far, most environmental groups and bay biologists seem to be in general agreement with the plan.

"It is a new approach with a new chemical," said David Lewis, executive director of Save the Bay, in Oakland. "But this is not just like the ivy spreading in your back yard. It threatens thousands of acres of endangered species habitat around the bay."

The invasive cordgrass was brought to the Bay Area in the early 1970s by the Army Corps of Engineers to control erosion and to restore a marsh off Fremont. But the East Coast version grew faster and thicker than native *Spartina* grass.

Every year, thousands of birds, including avocets, terns, ducks, dowitchers and godwits, go to the bay's mud flats when the tide is out to forage for snails, shrimp, worms and other food. As the mud flats become thick meadows, the birds have less food.

For some species, like the endangered California clapper rail or the salt marsh harvest mouse, the thick grasses also overrun native plants where the animals live.

"The mud flats are heavily used by shorebirds and waterfowl," said Lynne Trulio, chair of environmental studies at San Jose State University. "It is very important that they remain mud flats."

Starting this fall, the spraying will take place in marshes and sloughs off Alviso, Hayward and Fremont. It also will occur around Alameda Island; at Bair and Greco islands off Redwood City; along the shore from Brisbane to Foster City; off Palo Alto Baylands park and around Colma Creek near San Francisco International Airport. Other spraying will happen in the Point Pinole marshes in Contra Costa County, and in several small areas off San Francisco and Marin counties.

New wetlands in peril

One goal is to stop invasive cordgrass from spreading into former industrial salt ponds as they are restored to wetlands, Grijalva said. It is also to avoid becoming the next Willapa Bay, he added.

Willapa Bay, on the southern coast of Washington state, is overrun with 20,000 acres of invasive *Spartina*. The plant is thought to have been transported there in the 1890s as packing material for eastern oysters. Today it has wiped out habitat for birds and other wildlife and threatens the region's oyster industry.

Some environmentalists are still uneasy.

"*Spartina* is a problem. But chemicals make us nervous," said Sejal Choksi, chapter director of Baykeeper in San Francisco.

In 1999, Baykeeper sued the state Department of Boating and Waterways to block spraying of herbicides in the delta to stop water hyacinth from overrunning channels. The group argued that the department hadn't studied the environmental impacts and needed a permit from the state water board. It won.

This time, the Coastal Conservancy did an environmental impact statement.

"They have looked at this thoughtfully and carefully," Choksi said. "We hope they are right that this will have the least harm to the bay."

What affect will it have?

Last year, scientists from the San Francisco Estuary Institute, an independent research group in Oakland, sampled waters off Bair Island and Fremont immediately after imazapyr was sprayed on the invasive cordgrass as part of the pilot project.

They found imazapyr in concentrations of 7 to 8 parts per million in the water. Those levels are 1,000 times less than the levels that published studies have shown can kill rainbow trout, water fleas and other aquatic life.

"These herbicides are less toxic to people and wildlife than aspirin or caffeine or salt," said Grijalva. "They target amino acids that only plants produce."

For a while, people will have to get used to brown patches on the marshes where the invasive grass once stood.

"There is no way to control a species like this without some impact," Grijalva said. "But we're using a herbicide that has the least effect. And all the other methods are more harmful."

ERADICATION LAST YEAR	THIS YEAR AND NEXT YEAR
Where: 435 acres How: Mowing, digging, covering with tarp, spraying with herbicide	Where: 1,400 acres in six counties -- nearly 1 1/2 times the size of Golden Gate Park How: Primarily herbicide, which is efficient and less disruptive

Illustration: Photos, Map

MAP: MERCURY NEWS
[Spartina infestation and treatment sites]

PHOTO: RICK E. MARTIN -- MERCURY NEWS
Erik Grijalva in a field of the East Coast Spartina that is overwhelming Bay Area wetlands.