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Destructive crab arrive in Willapa Bay

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NAHCOTTA—A bombshell dropped last week on Leadbetter Point.

In a moment that has come sooner than expected, the first evidence of the invasive species of European green crab was found on the beach at Leadbetter Point on June 1.

European green crab—*Carcinus Maenus*—is a European native that has already devastated shellfish beds on the U.S. Atlantic Coast and is now working its way up the Pacific Coast.

Commercial and recreational shellfish—including Dungeness crab—could be severely impacted by its arrival.

"The first thing I thought was 'Hey, I found a green crab.' The second thing I thought was 'Nobody's going to believe this,'" said environmental scientist Andy Cohen as he leaned over a microscope in the lab at the Washington Department of Fish and Wildlife Nahcotta Field Station.

Cohen, an invasive species expert and scientist at the San Francisco Estuary Institute in Richmond, Calif., is one of the West Coast's foremost experts on exotic species and the

green crab in particular.

He was in Washington state for a gathering of international aquatic invasive species experts and just happened to be invited down to Willapa by the Department of Natural Resources spartina expert Janie Civile to look at another invasive species in Willapa Bay—spartina.

What Cohen and Civile actually found was a molt. As crabs grow larger they shed their hard shell in one piece. This one was so well preserved it could have only come off a live crab two or three days prior to being discovered, said local ecologist Kathleen Sayce.

"For the one person most likely to

recognize this crab most easily to pick up a fresh molt is pretty amazing," Sayce said.

That was Monday. By Friday, Cohen was "back at work" in front of cameras from two Seattle TV stations. This was news—the first evidence of a European green crab in Willapa Bay.

Yet the message to shellfish growers and crab fishermen who work the Willapa remains uncertain.

Green crab are the "white lab rats" of the marine world, Cohen explains, so they are probably one of the most studied marine species out there. On

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the other hand, little is known about their behavior outside the lab and that leaves their potential impact to the Washington coast a mystery.

European green crabs are voracious eaters that will feed on just about anything. In their native Europe, they don't pose much of a problem; however, once they were introduced into the waters of Maine, they ended up destroying the soft-shell crab fishery.

Too small to be of commercial value on their own, they are adaptive devourers of shellfish that choose their favorite meals in a way that scientists still do not understand. They eat other crabs, clams, mussels, juvenile oysters, but they prefer certain shellfish in certain environments.

"They eat different things in different places," Cohen said. "So it's hard to tell whether their impact will be felt on commercial shellfish stocks in Willapa Bay."

The crab might leave commercial stocks alone, but could still disrupt the food chain causing damage to the Willapa ecosystem in other ways, Cohen said. It could reduce food for other species if it establishes in the bay.

Shellfish growers in Washington are worried.

Robin Downey, executive director of the Pacific Coast Oyster Grower's Association, said her organization is going to do everything it can to help prevent the spread of green crab. PCOGA members are also working with the state work group to develop ideas to control the spread of invasive species as well as calling for controls on ballast water dumping, which is a large problem for species introduction.

"We don't want to shoot ourselves in the foot," Downey said. "I can assure you we are following all the guidelines set forth by Fish and Wildlife and we're working with them to develop new ones. We definitely want to do all we can."

said. Once a state completes a plan, it is eligible for up to 75 percent of the funding it needs from the federal government to implement the strategies it develops.

Figuring out how it got here, and how many there are, will be the priorities set for researchers. Brett Dumbauld, a research scientist at WDFW in Nahcotta, Sayce and Cohen are working to move a volunteer monitoring program into high gear.

Dumbauld said the oyster growers will help by being "our eyes on the bay."

Plans for a monitoring program and for a statewide strategy for dealing with the threat to Washington waters was spurred last year

when a number of green crabs were discovered in Coos Bay. The most northerly established and breeding population is in Humboldt Bay in Northern California, Cohen said.

For the crab to reach Washington waters from either Humboldt or Coos Bay on its own is likely too far a stretch. Crab larvae can be carried north on currents or in the ballast water of ocean going cargo ships.

These ships dump their ballast water when they load up in ports such as Astoria. Since most of the fresh water in the Willapa Bay comes from the Columbia River, green crabs could have been carried into the bay if discharged into the river.

Another source of introduction could be the aquaculture industry. Oysters are transferred from one bay to another for processing and seed. Recreational fishing may also have transported the crab to our waters, Cohen said.

Dumbauld said so far there is no way to tell how the crab got into Willapa Bay. There is a permit system for transferring shellfish from bay to bay and steps are taken to try to prevent green crabs in particular from being transported from one estuary to another.

Currently there are two permits

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Scott Smith
Aquatic nuisance species coordinator for WDFW

They have the most to lose. added Scott Smith, aquatic nuisance species coordinator for WDFW.

Smith said that he hopes this find will serve as a "wake up call" for the Legislature. Smith is working on a plan to prevent, control and eradicate green crab and zebra mussels in Washington waters. The plan, which he must present to the Legislature by December, will include proposals for legislation to prevent new species introductions. Control of ballast water dumping—which can introduce hundreds of new organisms every day—is likely to be included.

Smith said WDFW is acting quickly to gather a coalition of interested parties to assess these issues. He's also hoping the Legislature will give the funding and regulatory authority necessary to prevent and control exotic species introductions.

"The good thing about this is it brings people together," Smith said. "Environmentalists, industry, tribes and the state will be working together to try and find solutions."

The effort in Washington is part of a national task force set up to prevent the further spread of invasive species.

The overall goal, Smith said, is to prevent new introductions and if something is introduced, to prevent it from spreading within Washington's waters. The third goal is to eradicate or control species to acceptable levels, Smith

to import shellfish to Willapa from Humboldt Bay, Dumbauld said. One was issued to bring in Manila clam seed and the other was to bring in oyster shell stock for shucking. For all involved, green crabs have reached Washington's waters much sooner than expected.

"I expected it eventually, but I was very surprised when Andy walked in with it this week," Dumbauld said. "This is definitely a bombshell."