

Birds UCSC researchers say poison deadly to birds could return

By DAN WHITE
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SANTA CRUZ — The same naturally occurring poison that killed hundreds of local sea birds four years ago is surprisingly common in Monterey Bay, can spread through the food chain, and is potentially harmful to people, UC Santa Cruz researchers said this week.

In 1991, seabirds turned up dead on Monterey Bay shores. Dying brown pelicans and cormorants showed signs of dementia, floundering, swimming in crazy circles. Native Animal Rescue workers were horrified at what they saw and hoped it would never happen again.

But it might.

UC Santa Cruz researchers now say the algae that produces domoic acid, the neurotoxin that killed the seabirds, frequents Monterey Bay. Domoic acid, produced by a phytoplankton species, can cause brain damage and death in people, too.

The toxin was found in the bodies of Monterey Bay brown pelicans — an endangered species — and cormorants in 1991.

There are no documented cases of local people being harmed by the toxin, but that doesn't mean it couldn't happen, said David Garrison, a research biologist at UCSC's Institute of Marine Sciences.

Unknowns remain, including how the toxin spreads through the food chain, Garrison said.

He also cited a 1987 case where over 100 Canadians on Prince Edward Island in 1987 became ill after they ate mussels tainted with the acid. Some had brain damage. Four died.

"What's not clear is if (the neurotoxin) can have long-term low-level effects," said Robert Irion, UCSC's science writer.

A 1992 Oregon Institute of Marine Biology study notes that some Oregon and Washington residents had "mild cases of neurological disorder" after they ate razor clams containing domoic acid.

Four years ago, scientists were baffled by the number of birds dying in Monterey Bay.

"It was absolutely horrendous," said Lori Moak-Kean, executive director of Native Animal Rescue. "We lost about 246 pelicans to this, and this is an endangered species. Let's all pray it doesn't happen again."

Then researchers connected the Canada incident and the local bird deaths. It was the first known case of domoic acid "intoxication" on the west coast.

Scientists now know the 1991 bird poisoning was no freak occurrence. "It was simply the first documented case here," Garrison said. He also said another poisoning case would more likely affect birds than people.

Domoic acid is an amino acid, which can bind to receptor sites on nerve cells, and excite these cells until they are damaged or they die.

The California Department of Health

Services monitors mussels for domoic acid. Garrison said the science institute's methods are more sensitive, detecting toxin in the algae when the health department can't detect it in the mussels.

He said commercial West Coast sea food is adequately monitored for the toxin. His concern, he said, is clams, anchovies, sea scallops and rock crabs that sports fishermen catch.

If area residents had been eating rock crabs and anchovies around the time of the 1991 bird incident, "they could have been poisoned ... very much like the incident in Canada," Garrison said.

Garrison advises anyone who catches local anchovies to be aware these fish can have high domoic acid levels.

Garrison said UCSC's research center no longer has funding from the California Sea Grant program to study domoic acid.

"We do apply for grants where we can get them," Garrison said. "But realistically if agencies aren't funding the research, you don't waste your time on proposals."

Until recently the research center worked closely with a graduate student, Peter Walz, studying the domoic acid problem, but he just finished his dissertation.

The center's lack of domoic acid research funding may turn out to be a short-term setback, because a proposed national program would step up research on a wide variety of harmful algae blooms, Garrison said.