

BIRDS

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Scientists look seaward for return of killer toxin

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Worried that another outbreak of an unusual marine poison that killed more than 200 pelicans in Santa Cruz last year will appear this fall, scientists and animal-rescue workers are keeping a wary eye on the sea.

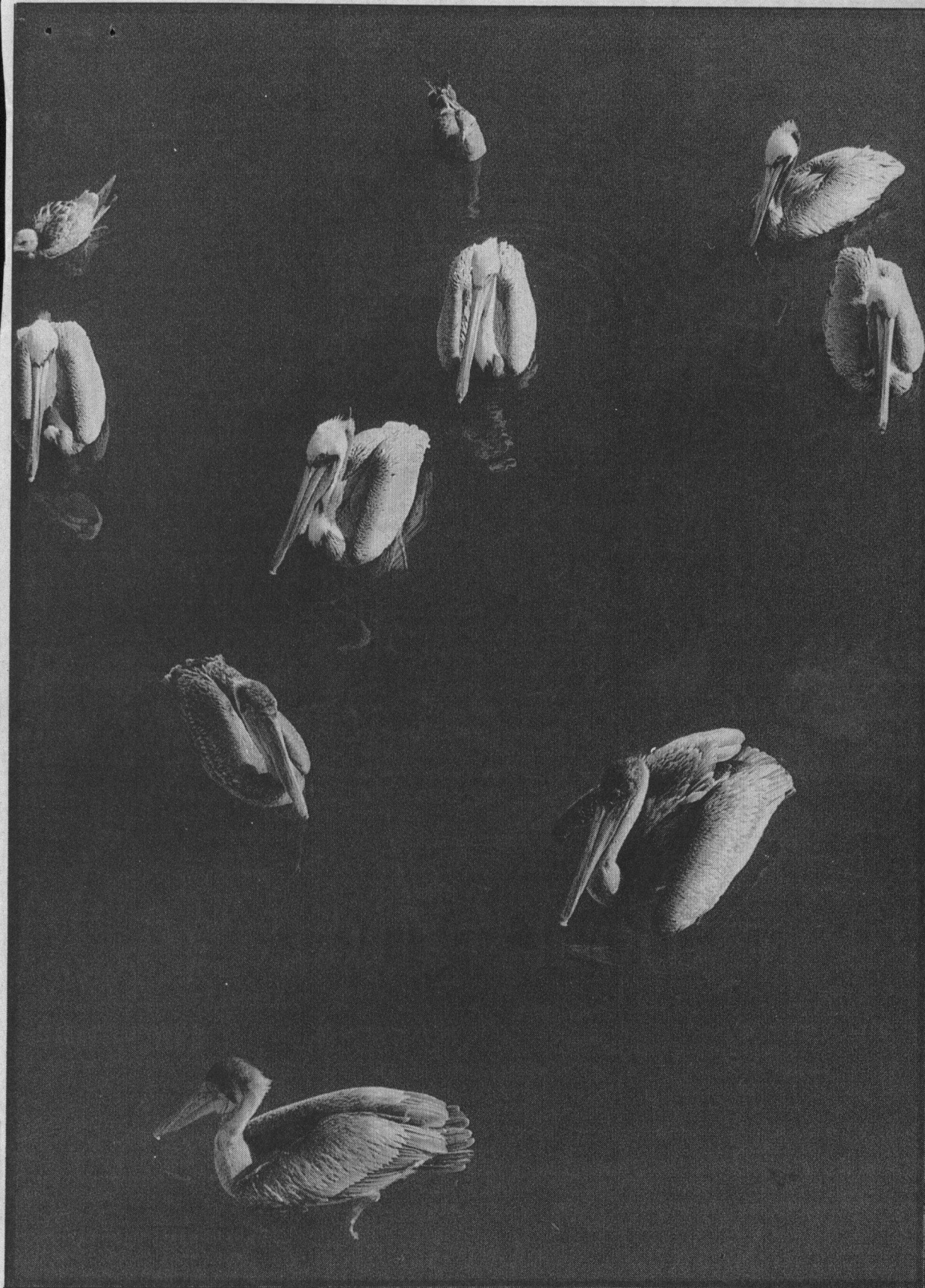
The birds died after dining on plentiful schools of anchovies that gathered near the Municipal Wharf last September. The fishes' digestive tracts, it turned out, were poisonous because the anchovies had ingested diatoms, a type of plankton that produces domoic acid — the toxin that killed the pelicans.

Until 1991 — and a milder "bloom" the previous year — the only known outbreak of the toxin in North America was in 1987, when four people died from eating contaminated mussels near Prince Edward Island in eastern Canada, said University of California, Santa Cruz researchers.

But last year, biologist David Garrison said, domoic acid was found not only in anchovies in Monterey Bay but also in razor clams and Dungeness crabs along the Oregon and Washington coasts.

"They're on top of things in Oregon and Washington, where

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MERCURY NEWS FILE PHOTOGRAPH

More than 200 pelicans died in the Santa Cruz area last year from eating anchovies containing domoic acid.

Scientists are keeping an eye out for deadly toxin in Monterey Bay

■ PELICANS

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the clams and the crabs are major parts of the fisheries," Garrison said. "If the toxin reappears up there, there's a very good probability they'll be able to monitor it.

"But California seems a little retarded about monitoring domoic acid. No one seems to care about sea birds. California has been very slow to put any monitoring in place."

That will change a bit, Garrison said, if any domoic acid toxic blooms occur in Monterey Bay this year. If conditions trigger another outbreak of the poison, he and UC-Santa Cruz colleagues plan to study the substance and try to determine why it appears.

Mary Silver, professor of marine sciences, said last year's bloom probably was triggered by sunlight and warm weather, which caused the explosive growth of plankton.

If domoic acid reappears this year, said a worker at Native Animal Rescue in Santa Cruz, the project will again provide "supportive care" such as rest, warmth, food and water to sick birds.

"But there is nothing we can do to plan for any outbreak," said

Garrison and other members of the UC-Santa Cruz

research team hope to detect domoic acid, if it

reappears this year, in the sea water as well as in

animal tissue. And they plan to study how the poison

accumulates in fish, crabs and mussels.

Carla Eilrich, volunteer coordinator for the animal rescue service.

Garrison and other members of the UC-Santa Cruz research team will try to determine what oceanographic conditions might cause diatoms to emit domoic acid. The researchers will try to keep a culture of the diatoms in their laboratory. They hope to detect domoic acid, if it reappears this year, in the sea water as well as in animal tissue. And they plan to study how the poison accumulates in fish, crabs and mussels.

He said researchers will study young Pismo clams dug from local beaches to determine whether they collect the poison during toxic blooms.

There seems to be no way to prevent a domoic acid outbreak, Garrison said, nor is there a way to predict one.

He said water samples from a decade ago indicate the presence

of diatoms in local sea water. Whether the creatures have always been present cannot be determined, nor do scientists know whether the toxic substance has occurred regularly or intermittently along the California coast.

Pelicans that ingest anchovies die, Garrison said, because they swallow the fishes' digestive tracts, where domoic acid accumulates. People who eat the fish gut them first, eliminating most or all of the toxin.

Garrison said it is not unusual for pelicans and other migratory sea birds to die in the fall and winter of natural causes.

Garrison, who is on a sabbatical at the National Science Foundation in Washington, D.C., said that if there is a domoic acid bloom this fall, he probably will do some of the biological studies at the federal Food and Drug Administration laboratories there.