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Vanishing Sea Birds

By Robert Gillette
Science Writer

Wildlife specialists have found new evidence that pollutants in marine food chains are disrupting reproduction among entire colonies of California sea and shore birds, and may be killing some birds directly.

At a few lonely offshore rookeries, where birds traditionally breed by the thousands, at least three species suffered total or nearly total reproductive failure during last spring and summer's nesting season.

Breeding colonies of several other coastal birds show a declining ability to hatch new young. But the full magnitude of their plight remains unmeasured.

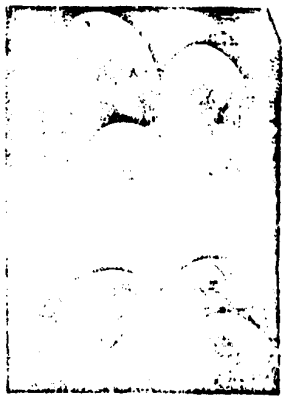
In the famed heron rookeries of Bolinas Lagoon in Marin County, a half-dozen tall and majestic American egrets, which observers saw convulse and die last spring, are now thought to have succumbed to toxic chemicals they ingested in fish and stored in their fat.

And the egrets that survived at Bolinas produced

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--Photo by C. W. Zumwalt

THREATENED by chemical pollution are these egrets, photographed at Audubon Canyon Ranch. At right, pelican eggs show effects of DDT.

Vanishing Sea Birds

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unusually few young this year.

From the craggy nesting grounds of Anacapa Island in the Santa Barbara Channel to Bolinas Lagoon, the symptoms of the chemical blight are all the same:

More and more species of coastal birds are laying abnormally thin and fragile eggs that collapse under the weight of incubating adults.

Laboratory studies of captive birds, and tests on wild birds and their afflicted eggs, point to two concurrent causes of thin shells.

DDT and PCB

One is the pesticide DDT and its toxic breakdown product, DDE. The other is an industrial pollutant chemically very similar to DDT and nick-named PCB—short for polychlorinated biphenyl.

Both of these chlorinated chemicals are found in the affected birds, in the eggs they lay and in the fish on which the birds feed. The chemicals are believed to act by speeding up the destruction of hormones in female birds. These regulate the deposit of calcium in eggshells.

Thin Eggs

The first hint of catastrophic breeding failures in California seabirds came early last year when Dr. Robert Risebrough, a biobrighter: Fifty pairs of birds, nesting among the pelicans, produced three young.

And on the Farallon Islands off San Francisco, zoologist Gress has found eggs of murres and petrels — two more fish-eating seabirds — that are abnormally thin and delicate. The yolks contain high levels of DDT residues.

Unlike pelicans and cormorants, American egrets at the Audubon Canyon Ranch near Bolinas suffered a double calamity this year.

For one, records show that the average number of [illegible] egrets slump to the ground and tremble from time to time with muscular spasms. Too weak to run or fly, the white-plumed birds simply sat on the forest floor for several hours until they died.

Fish Diet

Tests on frozen tissue samples from five of the birds just completed in Risebrough's laboratory revealed traces of the supertoxic pesticide endrin in several birds; mercury in their livers up to 9.4 parts per million; high levels of PCB (400 to 2500 ppm); huge quantities of DDT and its residues (9000 ppm in the fat of one bird), and lethal or nearly lethal levels of the pesticide dieldrin in the egret's brains.

Risebrough and Gress say they're at a loss to explain where such large amounts of so many pollutants could have come from — except that all the signs point to the egrets' exclusive diet of fish.

But fish in Bolinas Lagoon contain little or none of these chemicals. And puzzled state fish and game officials say they have observed none of the Bolinas egrets' problems in inland rookeries. Nor are herons, which live alongside egrets, apparently suffering any reproductive damage.

Unknowns

"There are just a lot of unknowns here," Dr. Risebrough says.

Howard Leach, a state fish [illegible]

Priestly Garb OK for Women

ROME — (AP) — A Rome court ruled today that a woman can legally wear a chasuble, the outer vest worn by priests during Mass, as long as she doesn't look like a man.

Police had picked up Luana Calisse, a 21 year old model, for wearing an ornate chasuble in public.

The judge said she had committed no crime because it was obvious that she was a woman and was therefore not trying to pose as a priest.

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California seabirds came early last year when Dr. Robert Risebrough, a bioscientist at the University of California at Berkeley, reported that hundreds of brown pelicans on Anacapa Island were laying thin, leathery eggs that frequently crumpled like paper bags under an adult bird's weight.

Late last summer, Franklin Gress, a zoology graduate student working with Risebrough, found that Anacapa's 350 breeding pairs of pelicans, the only ones in California, had managed to hatch and rear only one fledgling this year.

Confirmed

The U.S. Interior Department confirmed the two researchers' discovery and reported in November that "test findings in two interior laboratories suggest pesticides are wiping out the species."

More recent observations reported to the State Department of Fish and Game on Oct. 13 indicate that cormorants — a large, swift variety of fishing bird — are faring even worse then pelicans at some rookeries.

The new report comes from Leonard Penhale, a naturalist employed by the State Department of Parks and Recreation, who has monitored seabird populations at Morro Bay, in San Luis Obispo County, since 1962.

Scattered

On jagged offshore rocks, where colonies of 200 to 300 Brandt's cormorants and pelagic cormorants once swarmed, Penhale found only 30 thinly scattered breeding pairs this year.

Between mid-March and early August he watched those few remaining pelagic cormorants run through a tragic cycle of laying eggs, inadvertently crushing them, discarding the pieces, laying more eggs and crushing those.

Three, Young

Two birds hatched amid a litter of broken shells. Both died within a week. Three nests revealed "definite evidence" of eggs too thin to support an incubating bird, Penhale said.

The thinshell affliction struck double-crested cormorants on Anacapa Island with an outcome only slightly

For one, records show that the average number of fledgling birds leaving their nests high in redwood trees has dropped by one-third since 1967.

Adult egrets have been seen tossing fragments of unhatched eggs from nests. And shells collected from the rookery show typical signs of *thinning.*

May Vanish

"The egrets' situation is not nearly as critical as the pelicans'," Dr. Risebrough says. "But it's becoming serious, and they may gradually disappear."

The birds' second problem became apparent at the height of the breeding season last April and May, when observers watched six adult

brough says.

Howard Leach, a state fish and game official who is coordinating a study of inland egret and heron nesting success, suggests that pesti*cides and industrial pollu*tants may be affecting coastal birds predominantly, if not exclusively.

"We are beginning to wonder — all these pollutants may be coming to rest in the marine eco-system. This is what really seems to be suffering."

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