Saving the Salton Sea

Researchers work to understand its problems and provide possible solutions

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Steve Horvitz stands on a desert hilltop overlooking the Salton Sea in southern California. He shakes his head and points to a large, greenish mat of algae that covers the inland lake's northern end. Strong winds over the past few days have stirred up the sea and brought nutrient-rich water from the bottom to the surface, producing the bloom. The algae will die within a few hours, he says, robbing the sea's warm summer waters of dissolved oxygen as they decompose. That, in turn, will kill tons of fish.

"We'll have dead and dying fish everywhere by tomorrow," says Horvitz, superintendent of the Salton Sea State Recreation Area, a 16,000-acre preserve along the lake's northeastern shore. Indeed, even as he spoke, a crew was already out picking up dead fish. Six weeks earlier, in August 1999, an even more massive algal bloom had killed 8 million fish in 1 week.

Dead and dying fish—and often birds as well—symbolize both the problems and opportunities of the Salton Sea. Various newspaper and magazine articles have called the Salton Sea a "sinkhole consumed by a downright Biblical plague," an "environmental invalid," the "weirdest body of water in America," "a sewer," and a "dying ecosystem." Maybe so, but the sea is also one of the most productive ecosystems in North America. It hosts an incredibly large and diverse population of birds that live, nest, or winter there or spend time there during fall and spring migrations.

In all, 3.5 million birds may use the Salton Sea and its surrounding lands on any given day, especially in winter. Biologists have counted more than 380 bird species on or around the sea—nearly half of all North American bird species. Ninety percent of the North American population of eared grebes winters there. The number of white pelicans in some years totals 33,000, representing more than 80 percent of the entire western US population. Nearly half of the US population of Yuma clapper rails, an endangered subspecies, is found there. The sea is also one of only two nesting areas in the western United States for gull-billed terns, a bird proposed for listing as threatened.

For many birds, especially migratory waterfowl, shorebirds, and fish eaters, there are few, if any, alternatives to the Salton Sea. More than 90 percent of California's wetlands have disappeared in the last century due to human development, according to a 1990 US Fish and Wildlife Service report. As a result, the sea has become "a critical link in the Pacific flyway," says Thomas Kirk, executive director of California's Salton Sea Authority, a state agency created in 1993 to help restore the sea and surrounding area. "The Salton Sea serves millions of birds, not because it is the best habitat but because it is the only one left," Kirk says.

Birds are not the only animals to thrive in the Salton Sea. An estimated 100 million fish, mostly tilapia, live in its waters. The tilapia are an exotic species introduced from Africa in the 1960s to control mosquitoes and weeds in agricultural drains that flow into the sea. Other fish in the Salton Sea include sargo, orange mouth corvina, and croaker—all imported from the Gulf of California after native fish died out because of rising salt levels—as well as the endangered desert pupfish. "It is the most productive body of water of its size in the world," states Barry Costa-Pierce, director of the Mississippi-Alabama Sea Grant Consortium. "You can catch more than 100 kilograms of fish in an hour, where the normal catch elsewhere would be less than 1. It is absolutely phenomenal. Nothing else comes close."

To address the sea's problems and to make the most of its opportunities, the federal government and the state of California have proposed a joint, multi-agency program to stabilize and restore the Salton Sea ecosystem. Although Congress has not yet decided whether or at what level to proceed, the Clinton administration has proposed both immediate and long-term restoration efforts that could rival those underway in the Everglades. But any plan will have to overcome criticism from some scientists, who argue that a less costly remediation program could yield a valuable, if different, ecosystem.

Meanwhile, federal and state agencies are sponsoring the first systematic studies of the Salton Sea ecosystem. Earlier studies had addressed mostly