

## **Day 4 Ancillary Materials**

*Newspaper Articles on the Salton Sea*

*T-Chart Graphic Organizer*

*Letter Prompt*

## **An accidental sea, a bird sanctuary and an ocean of troubles in the California desert**

**SECTION:** INSIGHT; Pg. IN2

**LENGTH:** 1155 words

**DATELINE:** INDIO, CA

The Salton Sea springs out of the desert like a mirage. Hours of driving across the bone-dry Mojave leaves one unprepared for its sudden shimmer of silvery blue.

The scene is incongruous on the endless landscape of monochromatic brown, yet there it is - California's largest inland lake, 56 kilometres long and up to 24 kilometres wide, with 185 kilometres of shoreline alongside the Chocolate Mountains and the desert.

If the Salton Sea is a jolt to the senses in the desert environment, it has an equally disturbing effect on politics and the economic future of many in troubled California.

In essence, it's a microcosm of the state's woes.

Once a sparkling playground for Hollywood celebrities and moneyed land developers, the sea has been used and abused almost to the point of no return.

Up close, the mirage loses its magic: The water looks rusty - calm and unruffled in a low, desert wind - but slightly ominous.

Dessicated fish line its white beaches, and in rough-and-tumble shoreline communities, the bloated tilapia carcasses dot the waterfront.

What appeared to be white sand is actually the crunchy remains of millions of dead barnacles.

Old piers and other ruins at the water's edge are encrusted with so much salt they've been transformed into weird, other-worldly shapes.

Yet those wrecks are beloved by wildfowl. At Bombay Beach, on the sea's west side, white pelicans by the dozen preen in the early morning light, and thunder away on outsized wings when startled.

At a wildlife refuge at Calipatria, on the east side, thousands of birds, from brown pelicans to black-bellied plovers, cram the shore. Their din at sunset is so loud as to halt conversation.

The spectacle of so many birds, of so many species, is a wonder.

This is the last major rest stop on the Pacific Flyway, a migratory path from the eastern United States to Mexico.

Some wildlife experts estimate four million birds a year rest and forage at the Salton Sea before wintering in Mexico, then returning to Canada, the eastern U.S., or, for a hardy few, Europe.

More than 420 species have been logged here, more than any other spot in North America, according to biologists.

At the sea's south shore, staff at the Sonny Bono Salton Sea National Wildlife Refuge Complex give visitors an updated list of several dozen species spotted along its trails and marshes.

One of the most charming directions is for the tiny, burrowing owls nesting in the 11th telephone pole on Gentry Rd.

Mourning doves compete for shade with cottontail rabbits; sandpipers and avocets peck for food along the shore; and great clouds of snow geese - from Canada - reel and settle over emerald fields stretched along the sea's east side.

"California has lost 95 per cent of its wetlands in the past 100 years," says refuge manager Chris Schoneman. "The Salton Sea is very critical to birds using the Pacific Flyway - it's their last rest stop before crossing the desert."

But the sea is also a killer.

Mass bird kills and fish kills have been recorded in the past decade, as the sea has receded and its salinity spiked.

The Salton Sea has become more salty than the Pacific Ocean, the Great Salt Lake in Utah, and even the Red Sea.

Salinity has killed off the corvina and other big fish that once made this one of the most productive fisheries on the continent. The exotic tilapia is the only survivor, and it's threatened too by increasing salt levels, algae overgrowth, and depletion of oxygen in the sea.

The build-up of toxins in the water sickens the fish, then the birds dependent on them.

Avian botulism led to millions of bird deaths in mass outbreaks in recent years, although a rescue program - complete with a wildfowl hospital at the refuge - has saved many ailing birds.

Summer temperatures soar to 49C (120F), so the sea evaporates about two metres a year. The amount of water flowing into the sea has decreased too, as Colorado River water is diverted to urban users, and farms become more efficient at water use.

The Salton, once an ancient sea, then an "accidental" sea created by a levee breach in 1905, is actually a dump for neighbouring farms. Agricultural runoff carries salt from the fields through an intricate, underground drainage grid to the sea.

The Salton Sea has no outflow, it only evaporates, concentrating whatever salts and pollutants that come in from everyone who has used the Colorado River in six states beyond California.

Raw sewage, garbage and more agricultural waste flow into the Salton from Mexico's New River.

"We're at the end of the line," says Al Kalin, an Imperial Valley farmer at the sea's southwest tip for 44 years. "Everyone else along the Colorado River has used it and put it back before it gets to us."

But in the complicated politics of water rights along the Colorado, water diverted from farms to rapidly expanding San Diego means producers must become more efficient with irrigation, and many fields have gone fallow in an effort to curb rural water use.

Less water for farms means less for the Salton Sea, and its receding shores have created an environmental nightmare for California.

Thousands of hectares of playa, or dry sea bed, have been exposed. Their toxic sands blow into the air in arid dust storms.

The region has the highest rate of respiratory ailments in the state, and residents fear this will get worse. Solutions for saving the sea and the \$1.5 billion (U.S.) economy affected by it have been proposed by citizens, environmental groups, and every level of government. "Governments have spent millions and millions on consultants, and millions more on research - about \$80 million - with almost no action as a result," fumes Fred Cagle, a retired environmental and occupational scientist and Sierra Club member. "It's a massive health hazard," says Cagle, who holds a PhD in environmental medicine. "The state has a responsibility for water quality, so it (clean-up) has to be done. It's a question of how many people will die before that."

The Salton sea will continue to shrink so much that in less than a generation it will be "little more than a shallow algal/bacterial soup" able to support only miniscule brine shrimp and ever-present flies, warns a report from the Pacific Institute, a non-profit researching sustainable solutions to California's big environmental and public policy issues.

Lawsuits over water have clouded the future of the Salton Sea even more. California last year disbanded a governor's advisory committee on the Salton Sea - Cagle was a member - after it proposed a \$4 billion revitalization plan.

Estimates for restoring the sea keep climbing, involving complex plans for sharing water among all the users, preserving areas for birds and wildlife, curbing pollution, and reviving the region's battered resort economy.

The current price tag is estimated at \$9 billion.

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Final Edition

## **California worried about Canadian birds' pit stop: Lake's a mess; Below sea level, it's a pesticide sump**

**BYLINE:** CHARLES MANDEL, CanWest News Service

**SECTION:** NEWS; Pg. A14

**LENGTH:** 503 words

A critical stopping point for Canadian migratory birds is at risk, prompting California to consider spending up to \$12 billion U.S. to preserve its largest lake.

Located in a southern California desert, the Salton Sea is a major stopover for more than 400 bird species, of which half migrate between the Arctic and South America.

But agricultural run-off from surrounding farms, increased salt levels in the water carried in through the Colorado River and complex water agreements threaten the site.

"It is one of the two more important areas for birds in all of North America, the most important being the Gulf of Mexico," said Julia Levin, California state policy director for the National Audubon Society. "It is an internationally important resource, so Canadians should be interested as well."

The lake is part of the Pacific Flyway, a major migratory route. Most of the world's population of eared grebes winters at the lake. Other birds using the route include mountain plovers, a "vulnerable" species, as well as Western sandpipers, snow geese, and numerous types of ducks.

Mara Kerry, director of conservation for Nature Canada, called the Salton Sea "critical for Canadian migratory birds, especially given the state of conservation in California and in other areas along the west coast of the United States."

California has lost 95 per cent of its wetlands.

Charles Keene, an environmental program manager for the state who has been coordinating the Salton Sea restoration process, said the death of the lake would substantially change bird populations throughout the Western hemisphere.

Salton Sea - 56 kilometres long and 24 kilometres wide - was created in 1905 when irrigation canals from the Colorado River broke their levees, spilling millions of litres of water into the Salton Trough. But an ancient lake, Cahuilla, existed in the trough until it evaporated 500 years ago, historically providing a stopping point for birds that returned to their old migration route in the 1900s when Salton was created.

Today, 90 per cent of the lake's water comes from the neighbouring Imperial Valley, a lush agricultural area above the Salton Sea. But with the irrigation run-off comes a mix of toxins, including selenium and phosphates.

Because the shallow lake sits 69 metres below sea level and is subject to annual evaporation rates of about one metre, the water has become a sump for salts, pesticides and fertilizers that flow into it from fields.

Persistent algal blooms plague the lake as well as die-offs of millions of tilapia, which were introduced in an attempt to encourage a sport fishery. Deadly outbreaks of avian cholera and botulism have also occurred.

To preserve the Salton Sea, the state has come up with a series of six proposals, ranging in cost from roughly \$2 billion to \$12 billion, including a call for dividing the sea into different habitats and water levels through the use of barriers, and for the construction of water treatment plants.

"There are no simple solutions to the Salton Sea," Keene said.

**LOAD-DATE:** January 19, 2006

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Colour Photo: CANWEST NEWS SERVICE; Salton Sea is a "critical" stopping point for migratory birds.; Graphic/Diagram: (See hard copy for graphic)

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April 2, 2002 Tuesday

Late Edition - Final

## **Farms and Growth Threaten a Sea and Its Creatures**

**BYLINE:** By JIM ROBBINS

**SECTION:** Section F; Column 2; Science Desk; Pg. 3

**LENGTH:** 1086 words

**DATELINE:** BOMBAY BEACH, Calif.

In this harsh brown moonscape of a desert 80 miles east of San Diego, the vast shimmering waters that stretch out at the base of the Santa Rosa Mountains make the Salton Sea look like a mirage -- miles of water too good to be true.

And in a way it is a mirage. The Salton Sea, California's largest lake, is extremely salty, 25 percent saltier than the ocean and getting more so each day. It often smells bad. Outbreaks of botulism and very low oxygen levels have killed thousands of birds and fish.

The sea's increasing inhospitality, in fact, has turned Bombay Beach and other small resort communities on its shore into near ghost towns. By 2030, scientists say, the 360-square-mile sea -- America's second-largest saltwater lake, a third the size of Rhode Island -- will probably be dead, no longer able to support even the hardy species that inhabit it now.

Yet the sea, as strange as it is, plays a vital ecological role, and an intense, complicated fight over its future is under way.

While few people come here anymore, the sea is an avian metropolis, with some 400 species of birds. Among regions of the United States, its total bird population is second only to the Gulf Coast of Texas. The reason for this abundance is agricultural runoff rich in nitrogen and phosphorus that has turned the Salton Sea into a briny soup oozing with algae and other life. As more than 90 percent of California's coastal wetlands have disappeared beneath bulldozers and asphalt, migrating birds have found the Salton Sea an alternative. The brown pelican and Yuma clapper rail (both endangered) and large numbers of white pelicans, cormorants, great blue herons, snowy egrets and other birds thrive on the fish here.

The paradox is not lost on Tom Kirk, director of the Salton Sea Authority in La Quinta, Calif., a regional agency established to save the sea from extinction. "This artificial place that relies on agricultural drain water," he said, "is the crown jewel of avian biodiversity."

But the Salton Sea is caught in the cross-fire of a water war.

The sea was originally created by accident, in 1905, when the Colorado River burst through a levee and flowed into a vast depression then called the Salton Sink. The river has long since been diverted, and now it provides water to the sea only indirectly -- through irrigation runoff from the farms of the huge Imperial Valley.

For many years, California has used far more water from the Colorado River than its share under a compact with the other states along the river, and it is under a federal mandate to reduce the amount it draws by the end of 2002 -- to 4.4 million acre-feet a year from 5.2 million acre-feet. San Diego will have to find an alternative source for 200,000 acre-feet. (An acre-foot, enough water to cover an acre one foot deep, is about 326,000 gallons.) But proposals to make up the deficit -- largely by conserving water and transferring water rights from the Imperial Valley to San Diego -- would sharply decrease runoff from the valley, virtually drying up the Salton Sea's major source of water.

The sea would become "smaller, shallower and denser with salt very quickly," Mr. Kirk said. In as little

as five years, he said, it could become too salty to sustain life.

Mr. Kirk's agency has proposed that 50,000 acres of farmland -- about 10 percent of the total in the Imperial Valley -- be allowed to lie fallow. That would make more water available to the sea and still provide San Diego with the water it wants.

But fallow fields reduce jobs and income in the poverty-stricken valley. Officials estimate that the measure would cost the region \$171 million a year.

And that, says Mayor Larry Grogan of El Centro, would be a deal breaker. "Everybody in the world wants to save the sea," he said. "But I don't think it's possible. You're saving a dead-end system."

If no agreement on the Imperial Valley water is reached, California may be forced to yield 700,000 acre-feet of Colorado River water by 2003. That could sharply limit economic activity and curtail plans for development in and around San Diego.

Alarmed by this prospect, some Republican lawmakers, state and federal, have sought to change the Endangered Species Act so the threat to several species that depend on the Salton Sea, including the brown pelican, would not jeopardize a water-transfer plan.

"California is going to have to make some hard choices," said Larry Purcell, a water resources manager for the San Diego County Water Authority. Even if the Salton Sea loses irrigation runoff, he said, "There will always be areas of the sea amenable to these species; it's not like it will be totally useless."

In addition to destroying critical bird habitat, drying up most of the sea would expose vast salt flats to wind erosion and would create a serious air pollution problem, similar to one in the Owens Valley, where the need for water for Los Angeles dried up Owens Lake in the early 20th century. Officials say a significant water loss could also increase the levels of selenium, a toxic metal.

No matter what happens, if the Salton Sea wants to keep attracting birds it also needs to attract federal money. Because of evaporation the salt load in the lake increases each year by more than four million tons -- the equivalent of a mile-long freight train filled with salt.

Officials say that if no water is diverted from the Salton Sea, it can last 30 to 40 years before becoming too salty to support life. If water is diverted, the process would take just five years. Various options to reduce salinity, perhaps by pumping out water and allowing salt to settle out, are estimated to cost \$300 million, which officials hope the federal government will provide. With the water diversion, the cost would rise to \$1.4 billion.

While some lawmakers think the sea is the problem, Dr. Stuart Hurlbert, a biology professor at San Diego State and director of the Center for Inland Waters, a group of Salton Sea researchers, says the real problem is trying to maintain San Diego's high growth rate.

"Ecologically, the best idea is to shut down the idea of transferring water," he said. "As a San Diegan, the worst thing that could happen is to have the water come here to add a million more people."

Andy Horne, an El Centro real estate agent and a board member of the irrigation district that serves the Imperial Valley, says the matter is very much unresolved, with the prospect that California's water supply will be thrown into doubt.

"If you like train wrecks," he said, "stay tuned."

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**LOAD-DATE:** April 2, 2002

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**GRAPHIC:** Photo: As the Salton Sea drops, dead fish beach up on its margins, along with debris like rusted mufflers. (Associated Press) Chart: "Growth By the Sea" shows the population of San Diego County. (Source: Census Bureau) Map of California highlights the Salton Sea.

**PUBLICATION-TYPE:** Newspaper



March 24, 1998, Tuesday, Late Edition - Final

## **In Spring, Birds Return to the Salton Sea and Die in Droves**

**BYLINE:** By VERNE G. KOPYTOFF

**SECTION:** Section E; Page 4; Column 1; Science Desk

**LENGTH:** 1446 words

**DATELINE:** CALIPATRIA, Calif.

FROM its shore, the Salton Sea appears disorientingly vast as it bends over the horizon and vanishes into a barrier of mountains that jut through the Colorado Desert. Gulls, herons, and pelicans skim the briny water against a majestic backdrop of sagebrush, sandstone and glorious blue sky.

But a closer inspection of this landlocked sea with Clark Bloom, manager of the Salton Sea National Wildlife Refuge, presents a more morbid image. Walking just a few steps along a beach, he came across the plump, feathered carcass of an eared grebe, the black, sun-dried body of a double-crested cormorant and thousands of fish bones lying just beyond the tiny waves lapping at the shore.

"I spend most of my time here dealing with death," Mr. Bloom said, gazing at the expanse of glassy water and dusty slopes where summer temperatures reach 120 degrees.

The Salton Sea, situated 150 miles southeast of Los Angeles in one of the hottest and most forbidding places in the nation, has for the last few years been the scene of successive epidemics and unknown ailments that have killed thousands of birds and fish. The lake is getting increasingly salty, and some experts fear it is on its way to becoming sterile.

Over the last few weeks, several members of Congress have introduced legislation intended to restore the lake's health and reputation as a recreation destination. But nearly everyone involved concedes that salvaging this 380-square-mile body of water -- if even possible -- would cost hundreds of millions of dollars and could require building a canal to Mexico or a huge evaporation pond.

"There are literally millions of shore birds that come through the spring and fall and hundreds of thousands of water fowl," Mr. Bloom said. "Without the Salton Sea, they will have to find another place, and there probably isn't one."

The lake formed in 1905 and 1906 after the Colorado River burst through a levee and drained into what had been an ancient dry lake bed, 270 feet below sea level. A major stop on the Pacific flyway, the Salton Sea is second only to the Texas coastline in the number of bird species sighted, 380 at last count. But in recent years, the annual avian migrations in spring have elicited all of the anticipation of an oil spill. Shortly after the migrations begin, birds typically start washing ashore to die, first just a few, then in droves that cover beaches with rotting carcasses.

The pattern began in the summers of 1992 and 1994, when 170,000 grebes died from an unidentified ailment that periodically recurs. Some scientists hypothesize that the grebes are being poisoned by toxic algae.

Then the sea was hit by an epidemic of avian botulism that has killed nearly 25,000 birds in the last two years. Among the dead were 2,000 endangered brown pelicans.

To compound the problem, an outbreak of Newcastle disease last year killed 1,600 double-crested cormorants. Scientists determined that the virus could harm the poultry industry and put the lake under a limited quarantine.

Then in December, an outbreak of avian cholera ended the usual seasonal lull in the bird body count and killed at least 3,600 ducks and geese. The epidemic, which has yet to abate, is the largest outbreak of

avian cholera recorded at the lake.

"These events taken together demonstrate that the sea is in jeopardy of dying in the next 10 years if remedies are not found to fix the situation," said Dan Taylor, executive director of the California chapter of the National Audubon Society.

For now, Kenneth K. Sturm, a United States Fish and Wildlife Service biologist, can only gather plastic bags full of white pelicans, cormorants and herons and toss them into an incinerator, in an effort to limit the spread of contagion. That only 31 bird carcasses had been recovered on a recent morning during a air boat patrol, instead of as many as several hundred per day during the summer, was a relief, he said.

"This incinerator ran 24 hours a day, seven days a week during the summer," said Mr. Sturm, standing near half a dozen trash cans filled with ashes and bones. "It was no fun working the midnight to 6 A.M. shift. But it must be done because if you leave the bodies laying around, other birds will eat the maggots and perpetuate the disease cycle."

Scientists have yet to find a definitive link between water quality and the recent bird deaths. But they suspect several contaminants, both natural and man-made, are involved.

A primary concern is the sea's increasing salinity. Evaporation, agricultural runoff and leeching of the local alkaline soil over the years have made the Salton Sea's formerly fresh water 25 percent saltier than the Pacific Ocean.

Experts say too much salt makes fish more susceptible to diseases that in some cases can be passed on through the food chain. And if the salt level continues to increase for another 15 to 30 years, some fear that the lake will be unable to support fish or the birds that prey on them.

Another potential problem is the tons of pesticides and fertilizers that drain from the Imperial Valley, one of the most productive farmlands in the country. The rich runoff, in concert with water temperatures of up to 90 degrees, helps fuel algae blooms that can look from the air like enormous streaks of pink paint in the water.

These microscopic plants periodically leave thousands of fish flopping on the shore for lack of oxygen or floating dead on the water. Dr. Stuart Hurlbert, professor of biology and director of the Center for Inland Waters at California State University at San Diego, said some of the decomposing algae may give off toxins deadly to birds and fish.

Dr. Hurlbert said the government actually considers the sea a waste-water pond, not a lake. "So there has been little incentive in the past to do anything about reducing agricultural nutrients," he said. "That may be changing now, but removing the nutrients from the flow is difficult."

The sea's image as a waste-water drain is compounded by the pollution in two major tributaries, the New and Alamo Rivers. They carry millions of gallons of sewage, pesticides and industrial waste from across the border in Mexico, 50 miles to the south. However, testing shows that the sewage mostly degrades before reaching the sea.

So far, the only one of the sea's contaminants to prompt a government health warning is selenium, a naturally occurring mineral that can be deadly if ingested in high concentrations. As a result, officials advise people against eating more than eight ounces of fish caught in a two week period. The risk to swimmers and wildlife is considered minimal at present levels.

With such a steady stream of negative reports, tourism has declined to a dribble in recent years. Beach towns that developers once expected to become popular retirement destinations are still sparsely populated.

Lately, government officials have started seeking remedies for the environmental decline. Interior Secretary Bruce Babbitt visited the sea in December and told reporters, "I'm here because the Administration is serious about the Salton Sea, and environmental issues are a priority."

In recent weeks, lawmakers in Washington introduced legislation that would provide up to \$328 million to clean the sea. The effort was launched partly in response to the death in January of Representative Sonny Bono, a Republican whose district included part of the Salton Sea, and who worked on the Salton Sea issue for several years.

If the legislation is approved, it would probably finance one or more of 54 projects proposed in a draft report by the Interior Department's Bureau of Reclamation in September. In the report, engineers

evaluated the cost-effectiveness of the proposals.

The highest-ranked project would build a dike around at least 50 square miles of the sea to create a huge evaporation pond. The area inside the \$200 million earthen berm would become super salty so that the rest of the sea could become more fresh.

The Federal Fish and Wildlife Service advises against undertaking any large-scale restoration efforts until it can complete a study of the sea to determine what, if anything, needs correcting.

On the shore of the Salton Sea, there is little optimism for the coming spring. Within the next few months, the wildlife refuge staff expects that the chain-link pens in the animal hospital will fill to capacity and that their days will be spent patrolling the shore for carcasses and listless birds.

"We expect the die-offs to start another cycle when it starts getting hot again," Mr. Bloom said. "I don't think that the problems of the Salton Sea will go away by themselves."

**LOAD-DATE:** March 24, 1998

**LANGUAGE:** ENGLISH

**GRAPHIC:** Photos: Epidemics and contaminants could leave the Salton Sea and the land around it worthless to some 380 species of birds like the snow geese, right. Meanwhile, fish continue to wash shore. Kenneth K. Sturm, a Federal biologist, above, examined tissues from a tilapia to learn the cause of a recent rash of fish deaths in the landlocked sea. (Photographs by Edward Carreon for The New York Times)

Map of Southern California shows the location of the Salton Sea.

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December 23, 1997, Tuesday, FINAL EDITION

## **Wildlife crisis ravages Calif. desert sea's promise**

**BYLINE:** Carol Morello

**SECTION:** NEWS; Pg. 3A

**LENGTH:** 1261 words

**DATELINE:** SALTON CITY, Calif.

SALTON CITY, Calif. -- Birds -- and the dreams of developers -- die hard and ugly on the shores of the Salton Sea.

Unbearably hot and otherworldly, with salt-encrusted rocks and cracked mud at the shoreline, the huge inland sea in the middle of the desert no longer draws many vacationers from Los Angeles, 150 miles to the northwest.

Decades ago, before the sea became synonymous with botulism-infected fish and drowning pelicans, movie stars vacationed and invested here.

But now the half-finished towns around the sea are home to only a handful of retirees and winter-only residents, who live in double-wide trailers and sidestep rattlesnakes on sandy desert golf courses. Boarded-up motels and for-sale signs on empty, arid lots are a stage set for what has been called a *mer noir*, a maritime version of *film noir*.

Millions of fish have died here in recent years, the accumulation of their corpses at times floating so thick and wide that it seemed possible to walk on the water. Thousands of migrating birds have met a dreadful demise at the Salton Sea, picking up mysterious diseases.

Although residents stubbornly insist the Salton Sea is safe for swimming and fishing, scientists say the sea is dying from a lethal cocktail of rising salinity, chemicals and bacteria.

Now, local, state and federal officials are preparing what could become a complex, costly plan to save the Salton Sea. As many as 50 alternatives have been floated. The most ambitious is a plan to pump in fresh sea water from the Gulf of California, about 100 miles to the south, and pump out a salty soup to a dry lake bed in Mexico.

As a first step, Interior Secretary Bruce Babbitt visited the Salton Sea last week and announced that a federal environmental impact statement will be prepared to analyze the costs and benefits of the various proposals. He also appointed a team of scientists

to determine exactly what has been killing so much wildlife.

One of the reasons the Salton Sea has been allowed to deteriorate so dramatically is that few Americans outside the Southwest have ever heard about it.

But to southern Californians and birdwatchers, its name carries a magical resonance. Covering 380 square miles south of Palm Springs, the sea is renowned for the nearly 400 species of birds that winter here, turning the sky into a perpetual confetti parade of flocks coming and going.

But it is too remote -- and hot -- to develop many passionate defenders. Even environmental groups have devoted almost no attention to it.

"The Salton Sea is one of the best-kept secrets in all the United States," Babbitt says after alighting from an airboat ride launched from a beach that is bleached white from salt crystals and littered with fish bones and bird carcasses. "It took a wildlife crisis to change views of the place."

From its inception, the sea has been a product of man's error. In 1905, the Colorado River broke through dikes where engineers were trying to divert water to Imperial Valley farmers and flooded an ancient dry lake bed. A freshwater lake was born.

But over the years, salt from the soil leached into the water, for which there is no outlet. Today, the sea is 25% saltier than the Pacific Ocean.

Although almost a fifth of the volume evaporates in temperatures that routinely top 125 degrees in the summer, the sea is replenished by drainwater from fertilized fields and two major tributaries, the Alamo and the New rivers. The New River is particularly polluted; as it flows north through Mexicali, Mexico, it picks up raw sewage, industrial waste and assorted debris, ranging from bottles to dead dogs.

None of which stopped the Salton from acquiring a patina of glamour. In the '40s and '50s, Frank Sinatra, Dean Martin and the "Rat Pack" dined at the yacht club. President Eisenhower flew in on a seaplane.

So many weekenders from Los Angeles came to play at the Salton that it was impossible to find camping or motel space after Thursday night.

In the late '50s, developers subdivided a vast tract along the sea, spending millions on utility lines and 250 miles of paved streets named in a kitschy marine theme, like Sea Nymph and Shore Hawk avenues. Many of the era's stars bought lots, thinking they were getting in on the next Las Vegas.

But with flooding and growing concerns about water quality, the promise of developments like Salton City went unfulfilled.

"In the '70s, I offered \$ 200,000 for that motel and the guy turned me down," Ray Jennings says as he drove past a decrepit, fading building built on a Kon-Tiki theme. Like most of the 1,400 residents along the Salton's more developed west shore, Jennings dismisses an Imperial County health warning to limit consumption of fish. Children and women of childbearing age are advised to abstain.

"Red Bishop down the road is 97 years old, and he has a freezer full of fish," says Jennings, a retired upholsterer who runs a four-room motel in Salton City. "The last swim I was on was 8 miles, and I must have drank a gallon of water. You come out of the saltwater and all your cuts are healed."

Federal rangers in the National Wildlife Refuge at the southern end of the lake compare folks like Jennings to elderly smokers. So treacherous is the sea that they carry typhoid pills and are inoculated for hepatitis and tetanus.

"The things I've seen at the Salton Sea on a daily basis do not make me want to go swimming in it," says Ken Sturm, a biologist with the U.S. Fish and Wildlife Service.

The last two summers have been downright heartbreaking. In a 1996 avian botulism outbreak, scientists theorize that botulism spores, triggered by the high heat and salinity, were gobbled up by algae-eating Tilapia fish. Bobbing bloated on the surface, the fish in turn were eaten by pelicans.

Within two or three days, the pelicans lost their ability to fly, paddle or hold up their necks. Many drowned. Others struggled to land, only to be torn apart by ravenous shore birds. The remains became covered with maggots, which were devoured by ducks.

"There weren't enough hours in the day to pick up all the birds that died," says Clark Bloom, manager of the refuge. "We were overwhelmed."

This summer saw another botulism outbreak. A slick of dead fish stretched 3 miles long and half a mile across. Scores of cormorant chicks died of Newcastle disease, a viral infection that gives birds pneumonia.

Among the many proposals to improve the Salton Sea, two are drawing the most attention.

One calls for building walls around a huge pond within the sea and sucking in all the water to concentrate the salt. Less salty inflows would replenish the sea. But it's not clear how birds and fish could be kept away from the salt pond.

Another plan would divert ocean water into the Salton Sea to replace saltier water that would be pumped to the Laguna Salada salt flats across the Mexican border in the Baja California peninsula. But it would require the cooperation of Mexico and cost as much as \$ 2 billion.

Rep. Sonny Bono, R-Calif., who water-skied on the Salton Sea as

a youth and now has the north end of the lake in his district, is leading an effort by the California congressional delegation to secure funding to clean up the sea. "Now it's close to a dead sea, and it has maybe 15 years left," Bono says. "This is our last chance. If we don't move within a year or two, it will be too late."

**LOAD-DATE:** December 24, 1997

**LANGUAGE:** ENGLISH

**GRAPHIC:** GRAPHIC, B/W, Genevieve Lynn, USA TODAY(Map); PHOTOS, B/W, Bob Riha Jr., USA TODAY (2)

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Name:  
Date:

### Changes to the Salton Sea

Using information from the news articles you and your group has read, make a list of changes humans have made to the Salton Sea, and the impact of those changes.

<b>Changes humans have made to the Salton Sea</b>	<b>Impact of those changes</b>



Name:  
Date:

American History  
Salton Sea Letter

### **Salton Sea Letter**

Write a letter to the Salton Sea Authority suggesting what you believe needs to be done with the Salton Sea. Give reasons why, and explain how your actions will affect human-environment interactions in the region.

# References

- “An Accidental Sea, a Bird Sanctuary and an Ocean of Troubles in the California Desert.” *The Toronto Star*, August 22, 2010.
- California State Parks. “Salton Sea State Recreation Area,” 2008. [www.parks.ca.gov](http://www.parks.ca.gov). Accessed July 2011.
- DeBuys, William & Joan Meyers. *Salt Dreams: Land & Water in Low-down California*. Albuquerque: University of New Mexico Press, 1999.
- James, Henry C. *The Cahuilla Indians*. Riverside, CA: Westernlore Press, 1960.
- Kopytoff, Verne G. “In Spring, Birds Return to the Salton Sea and Die in Droves.” *The New York Times*, March 24, 1998.
- Kroeber, A.L. “Ethnography of the Cahuilla Indians.” *American Archaeology and Ethnology* 8 (1908):29-68.
- Mandel, Charles. “California Worried About Canadian Birds’ Pit Stop: Lake’s a Mess; Below Sea Level, it’s a Pesticide Sump.” *The Gazette (Montreal)*, January 19, 2006.
- Morello, Carol. “Wildlife Crisis Ravages Calif. Desert Sea’s Promise.” *USA Today*, December 23, 1997.
- Northwestern University Library, Edward S. Curtis’s *The North American Indian: The Photographic Images*, 2001. <http://memory.loc.gov>. Accessed July 2011.
- Riggs, Ransom. (2011). *The Accidental Sea* [Video] Retrieved July 12, 2011, from [http://www.youtube.com/watch?v=otIU6Py4K\\_A](http://www.youtube.com/watch?v=otIU6Py4K_A).
- Robbins, Jim. “Farms and Growth Threaten a Sea and Its Creatures.” *The New York Time*, April 2, 2002.
- Salton Sea Authority, “History Chronology,” 2011. [www.saltonsea.ca.gov](http://www.saltonsea.ca.gov). Accessed July 2011.
- Torres Martinez Desert Cahuilla Indians, 2009. [www.torresmartinez.org](http://www.torresmartinez.org). Accessed July 2011.

# **Appendix**

## *Additional Curtis Photographs*



*From Copyright Photograph 1924 by E. S. Curtis*

A DESERT CAHUILLA FEMALE TYPE

Plate 522



*From the original photograph of the artist's studio*

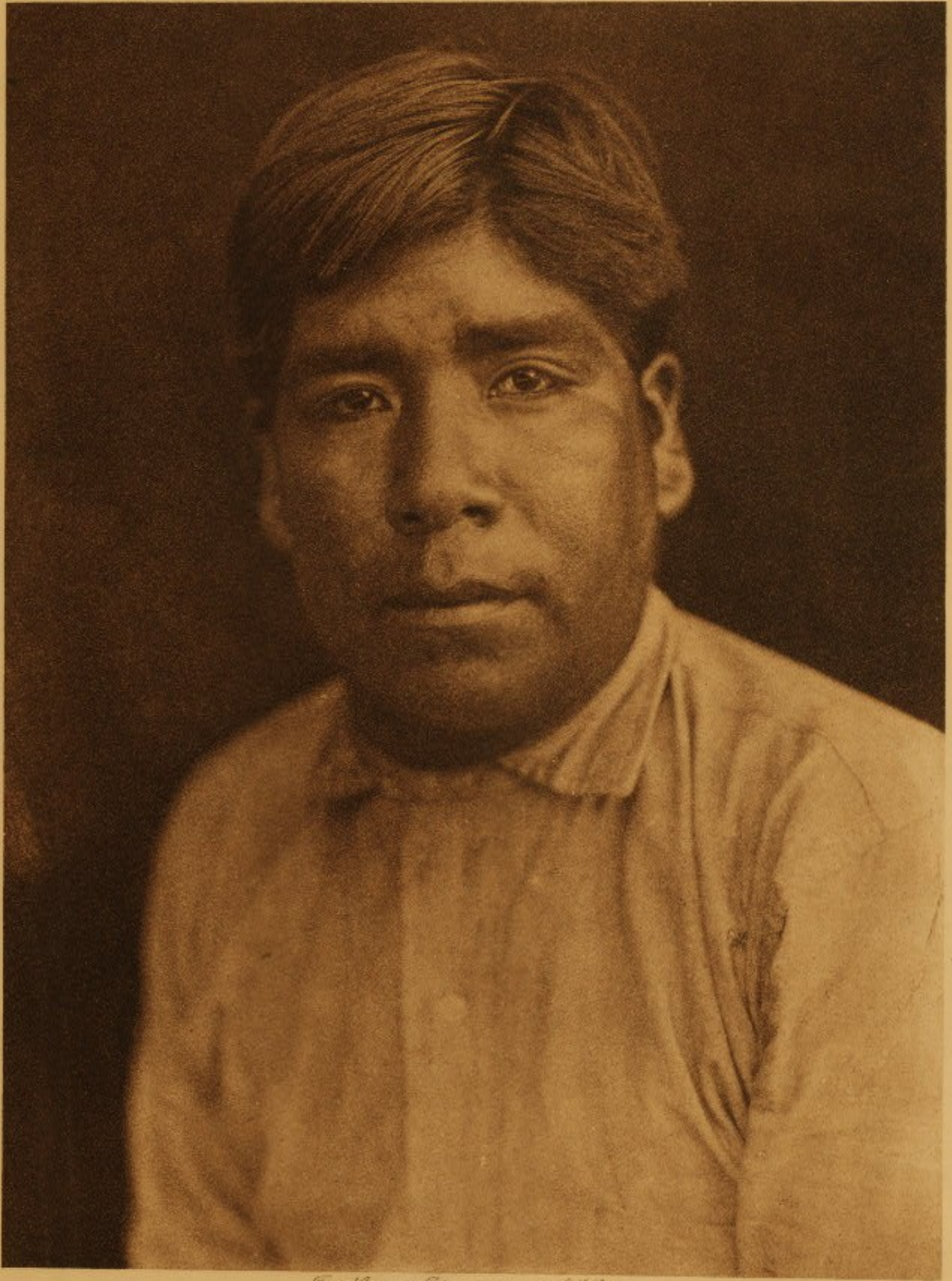
*Photographed by the artist's studio*

A DESERT GARUILLA WOMAN



*Historical Photographs 1924 by E. S. Gantt*

A DESERT CAHILLA WOMAN



*From Copyright Photograph 1914 by E. J. Curtis*

A MAN OF PALM SPRINGS — CAHUILLA



*From Copyright Photograph 1924 by E. J. Hunt*

A WOMAN OF PALM SPRINGS — CAHILLA





*From Copyright Photograph 1921 by E. J. Goetz*

DESERT CAHUILLA HOME

Plate 577



*Howe & Sons, San Francisco, Cal.*

*Photographed by H. H. Stryker, San Francisco, Cal.*

MARCOS—PALM CAÑON CHITILLA



*From Copyright Photograph 1914 by E. J. Harbo*

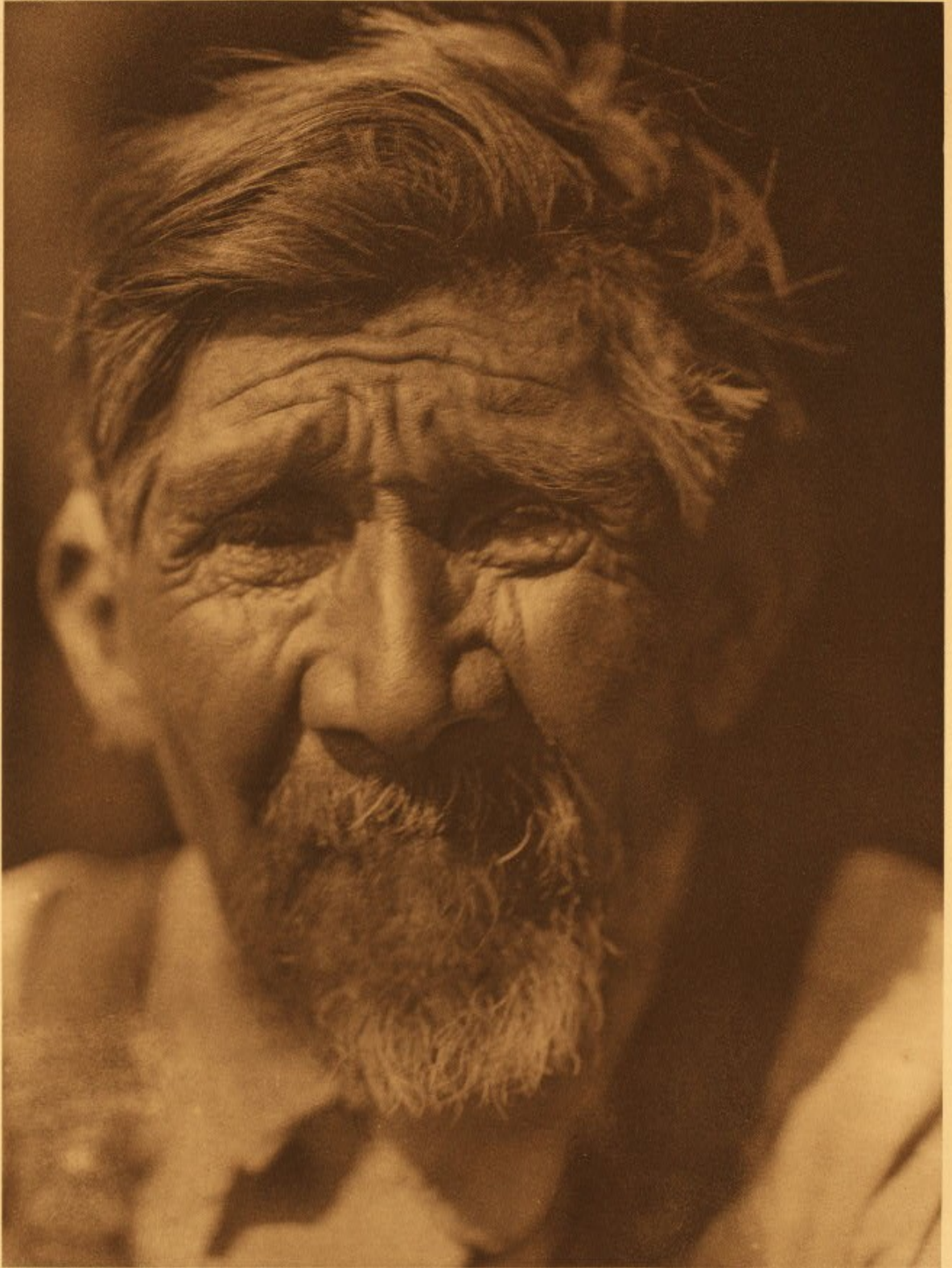
MARCOS — PALM CAÑON CAHUILLA



*From Copyright Photograph 1924 by C. H. Curtis*

MODERN HOUSES AT PALM SPRINGS — CAHULLA

Plate 639



From *Original Photographs of the West*

Photographed by *John S. Burleigh*, 1871

NUMERO — DESERT CAHULLA