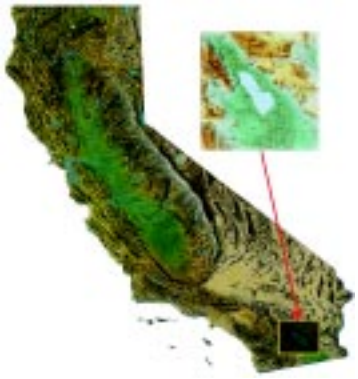


Program Overview

Perspective: Background of the Program

The Salton Sea is an excessively salty, nutrient-rich lake in a closed basin. The Sea exists primarily due to continued agricultural drainage from the Imperial, Coachella, and Mexicali valleys and smaller contributions from municipal effluent and stormwater runoff. The Sea has a productive sport fishery and provides important migratory and resident bird habitat within the Pacific Flyway. Seasonal bird use includes millions of birds, and approximately 400 bird species have been recorded within the Salton Sea ecosystem. Several endangered species, including the desert pupfish, brown pelican, and the Yuma clapper rail, inhabit the Salton Sea or adjacent habitats.

The Salton Sea is under stress and habitats associated with the Sea continue to deteriorate from increasing salinity, nutrient loading, oxygen depletion, and temperature fluctuations that may be threatening the reproductive ability of some species, particularly sport fish, and also causing additional ecosystem health problems. There are indications that the deteriorating environmental conditions may be contributing to the prominence of avian disease at the Sea. In addition to impacts on plants and animals, a long-term rise in the Sea level coupled with seasonal fluctuations have contributed to flooding of facilities for lake-dependent activities, including camping and boat launching.

Congress passed a law in 1992 that directs the Secretary of the Interior to "conduct a research project for the development of a method or combination of methods to reduce and control salinity, provide endangered species habitat, enhance fisheries, and protect human recreational values . . . in the area of the Salton Sea." The Salton Sea Reclamation Act of 1998 was passed to further the restoration process. This Act directs the Secretary of Interior to "complete all studies, including, but not limited to environmental and other reviews, of the feasibility and benefit-cost of various options that permit the continued use of the Salton Sea as a reservoir for irrigation drainage and: (i) reduce and stabilize the overall salinity of the Salton Sea; (ii) stabilize the surface elevation of the Salton Sea; (iii) reclaim, in the long term, healthy fish and wildlife resources and their habitats; and (iv) enhance the potential for recreational uses and economic developments of the Salton Sea."

> **"The Salton Sea is an important national and international resource for migrating and resident birds, and a significant fishery. It is, among other things, the site of a national wildlife refuge, and is of special concern because of the loss of wetlands we have experienced both in California and in Mexico. I am committed to assuring that the Sea's unique values do not slip away from us by inaction or inattention. In that respect, I am very pleased to report to you that we are moving forward on schedule with our Salton Sea strategy, which is also a collaborative effort with local and regional stakeholders, including the Salton Sea Authority. The Draft EIS looks out over the next three decades with a focus on assuring that the Sea and its primary values do not slip away from us as we work on long-term solutions."**
>
> ***Bruce Babbitt,***
> ***Secretary of the Interior***
> ***Comments during Colorado River Water Users Association Speech***
> ***Las Vegas, Nevada***
> ***December 17, 1999***

Salton Sea: An Important Resource

As our wetlands decline, the importance of the Sea as habitat for wetland species increases. Since around 1780, 91 percent of California's wetlands have disappeared—more than from any other state in the US. The Sea's habitats support 40 percent of the entire US population of the threatened Yuma clapper rail, 80 to 90 percent of the American white pelican, and 90 percent of the eared grebe.

The Salton Sea is the largest inland body of water in California providing extensive wetland habitat within the Pacific Flyway, the most important bird migration corridor in the west. It is in the southeastern corner of California and spans Riverside and Imperial counties. The closest cities include Palm Springs, Indio, Brawley and El Centro. The area is largely agricultural, although the Sea offers opportunities for recreation and a few residential communities dot the shoreline. Geothermal exploration was initiated in 1957, and several active plants operate in Imperial County near Niland. The Salton Sea State Recreational Area occupies the northeast shoreline, the state waterfowl area (Wister Unit) is in the southeast, and the Sonny Bono National Wildlife Refuge, operated by the US Fish and Wildlife Service (USFWS), spans the southern shoreline of the Sea.

The Sea is located primarily in the Colorado Desert ecosystem, an area with local average annual precipitation of less than 3 inches per year. Vegetation types include desert scrub, riparian cottonwood/willow, freshwater marsh, and agricultural lands as well as introduced exotics such as salt cedar. Mountains, including the Santa Rosa Range to the west, Orocopia Mountains to the north, and the Chocolate Mountains to the east, surround the closed basin on three sides.

SALTON SEA FACTS

- **Located south of Palm Springs in Imperial and Riverside counties**
- **Surface elevation is 227 feet below mean sea level (the Dead Sea, the lowest body of water on Earth is 1,312 ft. below sea level)**
- **Deepest area of the Sea's bed is only five feet higher than lowest point in Death Valley**
- **Surface area is 365 square miles**
- **Contains 7.5 million acre-feet (maf) of water**
- **Evaporates 1.36 maf each year**
- **Salinity is 44,000 milligrams per liter (mg/L), compared to 35,000 mg/L for sea water**

UNITS OF MEASURE

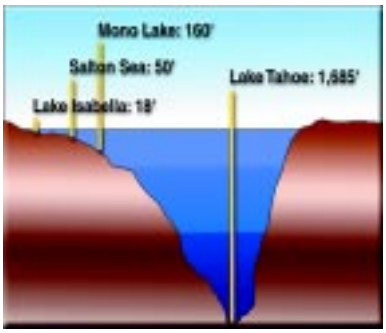
SALINITY is commonly measured in milligrams per liter (mg/L) or parts per million (ppm). One ppm approximately equals one mg/L. Measured at Imperial Dam near Yuma, AZ, the Colorado River contains about 2,000 pounds of salt per acre foot of water or about 725 mg/L of salts.

An **ACRE-FOOT** of water equals about 326,000 gallons or enough water to cover an acre of land (about one football field) one foot deep. A typical California household of 4 uses between 1/2 and 1 acre-foot per year for indoor and outdoor use.

The Salton Sea's surface area (376 square miles) as compared to other notable lakes: Mono Lake (60 square miles), Lake Tahoe (193 square miles), and the Great Salt Lake (1,700 square miles).

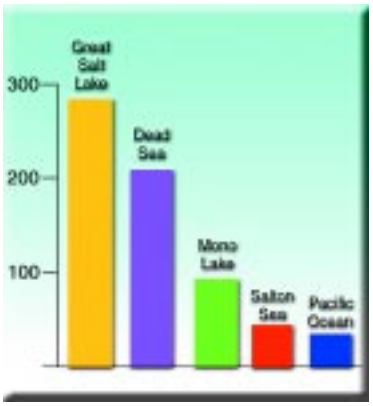
Historical Perspective: How was the Sea Formed?

The Salton Sea occupies a below sea level desert basin known as the Salton Sink, which has experienced multiple episodes of flooding and drying due to changes in the course of the Colorado River since prehistoric times. Intermittently, the Salton Sink has contained an ancient lake even more extensive than today's Salton Sea. The evidence for Lake Cahuilla, as it has been named, are its remnant shorelines, visible along the base of the Santa Rosa Mountains. The basin received floodwaters from the Colorado River on multiple occasions, including in 1849, 1862, 1891, and 1900. The frequency with which this basin has been flooded in recent history increases the likelihood of a long history of use by migratory birds. Cultural sites near the present and historic shorelines attest to the use of these temporary lakes by native people. Between episodic fillings evaporation reduced the lake level.



Photos courtesy of Imperial Irrigation District

When the Colorado river breached in 1905, the force of the water all but destroyed the railway trestle that ran across one of its banks (top left). Despite effort to stem it, the flow continued for 18 months creating the existing Salton Sea.



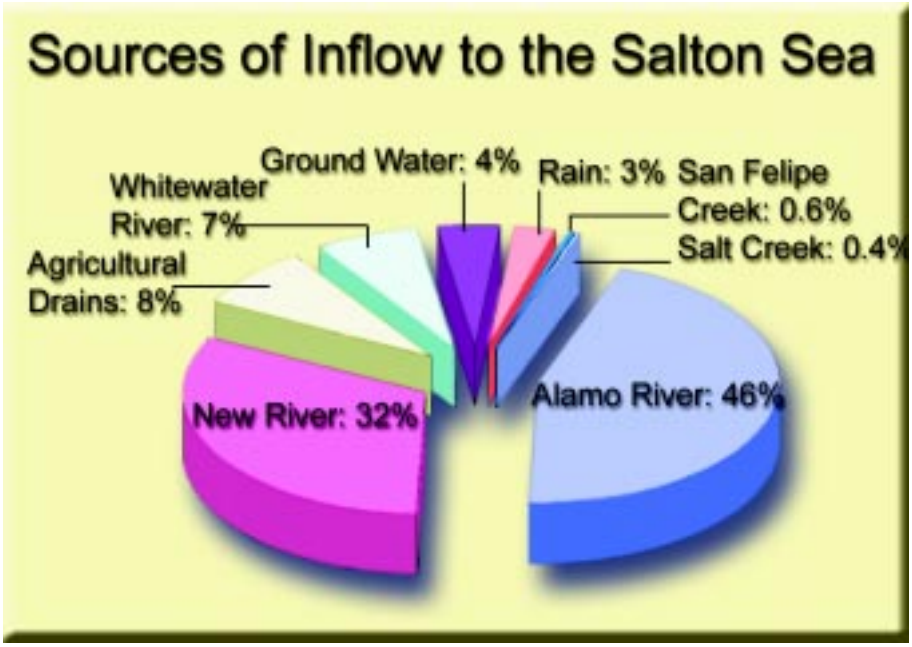
The salinity level of the Salton Sea is currently 44 parts per thousand (ppt), compared to 280 ppt for Utah's Great Salt Lake (at Gunnison Bay), about 210 ppt for Israel's Dead Sea, 87 ppt for Mono Lake, and 35 ppt for the Pacific Ocean.

During the early 1900s, water for irrigation was first brought into the area through a series of ditches from the Colorado River. In 1905, flood flows in the Colorado River breached an irrigation control structure allowing the river to flow into the Salton Sea basin. The flow was not contained for the next 18 months, and the current Salton Sea was formed. After the flooding, the level of the sea receded to about -250 ft msl by 1925. As agriculture and agricultural drainage increased, the water level has increased to its current elevation of about 227 feet below sea level. In addition to this long-term rise in the water surface, the level varies seasonally.

The Salton Sea Today

The Salton Sea's water level is maintained by agricultural runoff, and to a lesser extent by municipal effluent and stormwater that flows into the Sea through rivers and creeks in the Imperial, Coachella, and Mexicali valleys. The Whitewater River and its tributaries drain the northern portion of the basin. Salt Creek drains the northeast area of the basin, entering the Sea within the Salton Sea State Recreation Area boundary. San Felipe Creek, with headwaters about 50 miles west of the Salton Sea, drains into the southwestern shore while the New and Alamo rivers drain the Imperial and Mexicali valleys to the south. Annual Sea inflow is approximately 1.36 million-acre-feet per year (maf/yr).

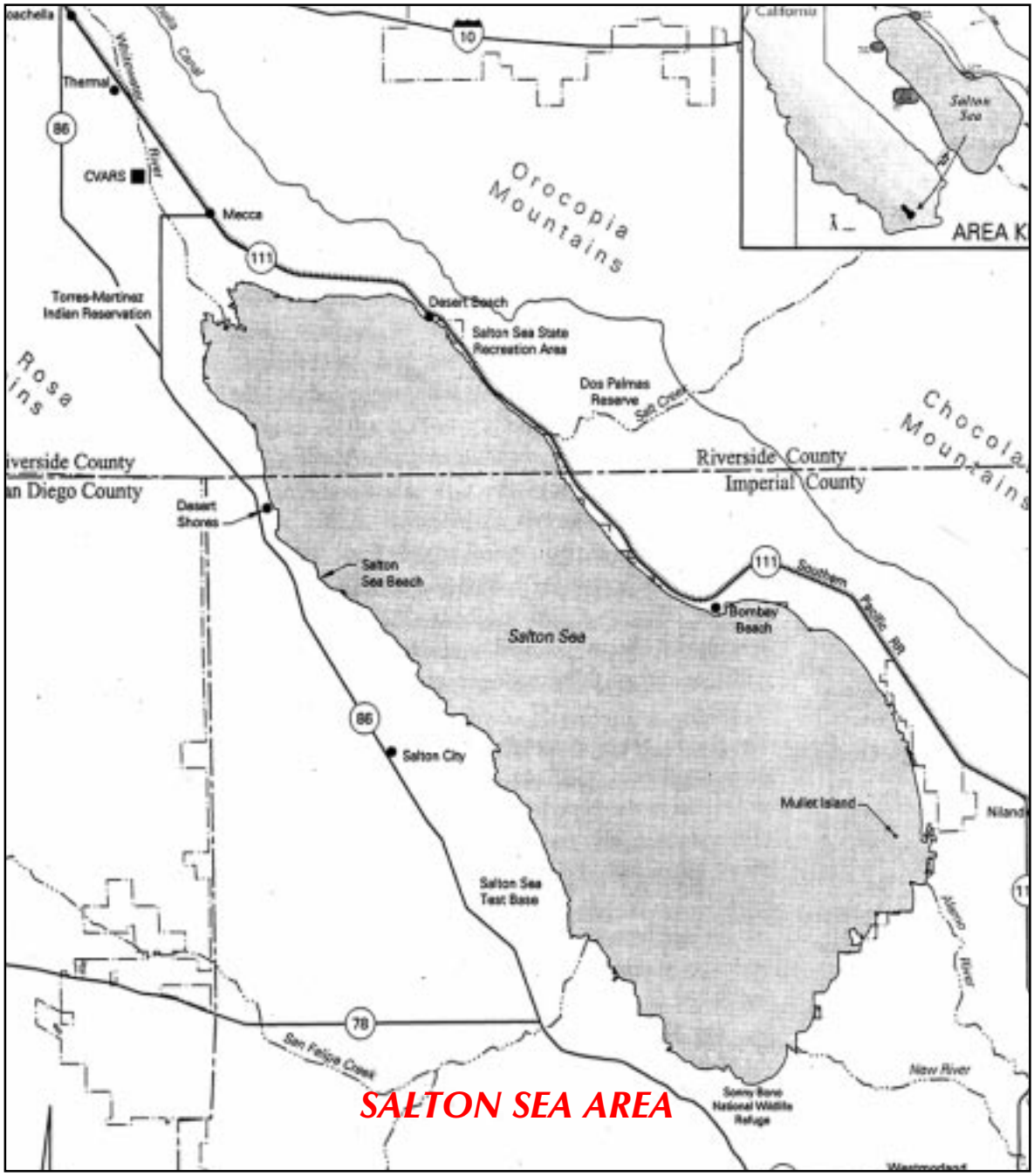
Because the Sea has no outlet except for evaporation, constituents in the inflow become concentrated in the Sea over time. High concentrations of salts, nutrients, and other constituents can be detrimental to the ecosystem and recreational use at the Sea.



Almost the entire inflow to the Sea (98 percent) is from agricultural runoff, which is transported to the Sea via rivers, creeks, and agricultural drains and by ground water infiltration.

Understanding the Science of the Sea

The prospect of an environmental crisis has focused national attention on the Salton Sea and supported the need for actions to improve the environmental quality of the Sea. The Secretary of Interior, with other agency stakeholders, established the Salton Sea Science Subcommittee. The role of the Science Subcommittee is to increase the scientific information available for the Salton Sea Restoration Environmental Impact Statement/Environmental Impact Report (EIS/EIR). The Science Subcommittee was established because of the importance of the natural resources at the Sea and the many uncertainties about the existing and future conditions.



Photos courtesy of Doyle Stevens/US Geological Survey and San Diego State University/Center for Inland Waters

What Is Being Done To Better Understand the Sea?

Scientific investigations are providing new information to support the project. These investigations have included the following tasks:

Gathering, synthesizing, and evaluating existing scientific information relative to the Salton Sea ecosystem;

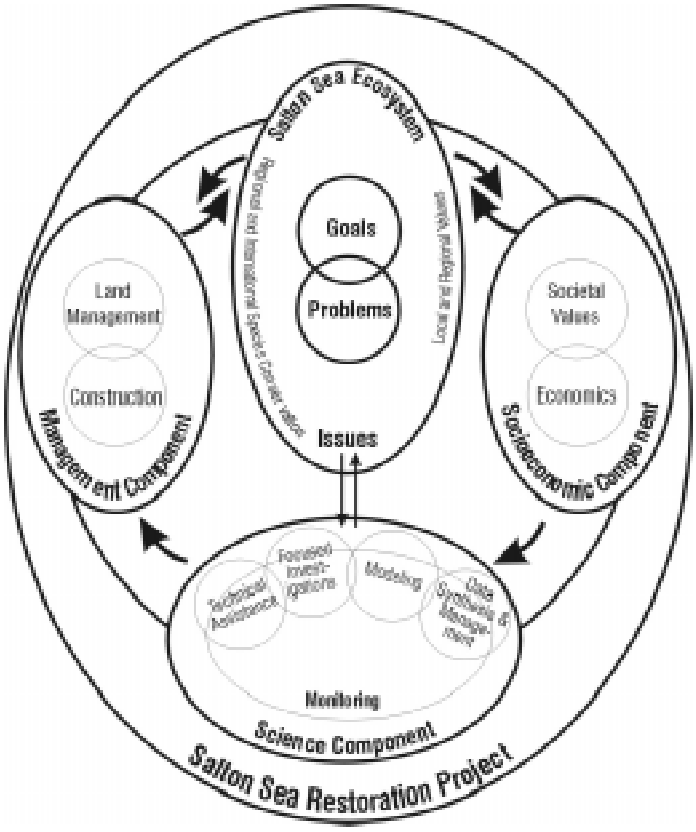
Identifying priority data gaps and facilitating investigations for obtaining that data;

Awarding contracts for focused scientific evaluations of potential environmental impacts from proposed project alternatives and management actions; and

Developing a strategic science plan to guide the long-term integration of science within the project.

The restoration of the Salton Sea is a long-term effort, and the immediate science needs differ somewhat from the long-term needs. Therefore, the science effort has been designed as a long-term approach. A Strategic Science Plan has been prepared to guide the long-term studies. The Plan builds on the efforts of the Science Subcommittee and provides a blueprint for the science process, functions, and administrative structure.

The Role of Science in the Salton Sea Restoration Project. *The Science Subcommittee serves as a focal point for the coordination of scientific efforts by developing and maintaining an inventory of current studies that are being undertaken within the Salton Sea ecosystem. The primary charge for the Subcommittee is to provide scientific evaluations and recommendations that are necessary to guide evaluations associated with the NEPA/CEQA process. The Subcommittee's recommendations serve as the scientific basis for decisions associated with choices among alternative actions for mitigating current degradation of the Salton Sea ecosystem and restoring recreational, wildlife, and economic values.*



Salton Sea Restoration Project Goals and Objectives

The Salton Sea Authority and the Bureau of Reclamation have worked with other agencies and members of the public to develop five project goals. The goals address the underlying purpose and need for the project, and provide guidance for developing project alternatives. The five goals of the Salton Sea Restoration Project are:

FIVE GOALS OF THE RESTORATION PROJECT

Maintain the Sea as a repository of agricultural drainage;

Provide a safe, productive environment at the Sea for resident and migratory birds and endangered species;

Restore recreational uses at the Sea;

Maintain a viable sport fishery at the Sea; and

Enhance the Sea to provide economic development opportunities.

In order to measure how well any actions may meet the five project goals, specific objectives were developed to further define each goal. The objectives often overlap and result in mutual benefits. The goals and objectives have been used to guide the development of restoration alternatives. These same objectives would be used to guide monitoring programs that will evaluate the effectiveness of restoration actions.

The Environmental Review Process

The environmental review process provides information about the environmental consequences of programs such the Salton Sea Restoration Project. The process is designed to ensure that decision-makers have the information they need to make informed decisions and to inform and involve the public.

What is an EIS/EIR?

Developing the Salton Sea Restoration Project requires compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Two primary documents provide information in compliance with these Acts: (1) an environmental impact statement (EIS) complies with the Federal requirements of NEPA, and (2) an environmental impact report (EIR) complies with California State requirements of CEQA. Because the Salton Sea Restoration Project has Federal, State, and local agency involvement, a com-