

# Chapter 1

## INTRODUCTION

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The Salton Sea (Sea) was formed in 1905, when Colorado River flood flows were accidentally diverted into the Salton Sea Basin. Since that time, agricultural drainage flows from nearby Imperial, Coachella, and Mexicali Valleys and smaller contributions from municipal effluent and stormwater runoff have sustained the Sea at its current level. Over the years, the Sea has developed into a recreation area, wildlife refuge, and sport fishery.

The Salton Sea is in the Salton Sea Basin, which extends from Palm Springs, California, on the north to near the Gulf of California on the south. The Sea is about 35 miles long and 15 miles wide. At its current (1999) elevation of about -227 feet mean sea level (m.s.l.) (227 feet below sea level), the Sea has a maximum depth of 51 feet, with an estimated surface area of 234,000 acres (366 square miles). The lowest elevation recorded has been about -278 feet m.s.l. The Salton Sea has a storage volume of approximately 7.6 million acre-feet at -227 feet.

The Sea's current salinity concentration is 43,500 milligrams per liter (mg/L) (25 percent saltier than ocean water). Annual inflows of approximately 1.363 million acre-feet contribute about 5 million tons of additional salt.

### I. PURPOSE

This study seeks to provide ways to improve biological and water quality conditions in and around Salton Sea, maintain the water surface elevation target of -230 feet with operational fluctuations between -235 and -230 m.s.l., and lower the salinity to no more than 40,000 mg/L with an ideal objective between 35,000 and 40,000 mg/L.

The Salton Sea and its wetlands are a critical part of the Pacific flyway, providing habitat and seasonal refuge to millions of birds and hundreds of species.

The Sea's ecosystem is under stress. Deteriorating water quality and other factors are threatening the reproductive ability of some of the animals, particularly sportfish species and the birds who depend on them as a source of food.

In addition, the uncontrolled fluctuations of the Sea may be limiting the potential for any economic development that depends on the Sea's shoreline.

Historically, the highly variable water levels have alternately flooded and ebbed, affecting camping and boat launching.

Because of the Salton Sea's present physical, chemical, and biological characteristics, the Sea falls short of its potential contribution toward national, regional, and local needs for wildlife conservation, recreational opportunities, and community enhancement.

The goals of the Salton Sea Restoration Project are to:

- Maintain the Sea as a reservoir for 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
- Identify opportunities for economic development around the Sea

## II. SCOPE OF REPORT

This report presents appraisal level alternatives designed to improve the Salton Sea's physical, biological, and water quality conditions.

This report presents the alternative development process and the alternatives considered in detail (including no action). It also examines some geologic constraints and analyzes the effectiveness of the alternatives.

## III. AUTHORITY

In 1993, the Imperial Irrigation District, Coachella Valley Water District, and Imperial and Riverside Counties formed the Salton Sea Authority (Authority) as a way to promote plans to improve water quality, stabilize water levels, and enhance recreational and economic development potential. In 1994, the Bureau of Reclamation (Reclamation) signed a cooperative agreement with the Authority to evaluate the complex issues at the Sea.

In 1997, the Secretary of the Interior designated Reclamation as the lead Federal agency to work with the Authority to conduct environmental reviews of the various alternatives being developed to address the aforementioned issues.

The recently enacted Salton Sea Reclamation Act of 1998—Public Law 105-372—authorizes a Salton Sea feasibility study to be completed by January 1, 2000.

#### **IV. RELATIONSHIP TO OTHER PROJECTS**

The need to address the problem of salinity of the Salton Sea was recognized first in the mid-1960s. Many different studies were undertaken over the years. Study results were reported in 1969 and 1974. In April 1986, the Resources Agency of California created the Salton Sea Task Force at the prompting of the California Department of Fish and Game (CDFG). This group was formed to investigate practical solutions and associated funding mechanisms to address the problems of high water surface elevations and salinity concentrations of the Salton Sea.

In September 1997, a *Salton Sea Area Study Alternative Evaluation Appraisal Report, Final Draft* was published in cooperation with the Salton Sea Authority, the California Department of Water Resources, and the Bureau of Reclamation. The report identified and evaluated 54 alternatives. Then in November 1998, the *Salton Sea Alternatives, Final Preappraisal Report* was published. This report displayed the final engineering alternatives that appeared feasible to lower salinity concentrations and maintain the Sea level.

##### **A. Draft Salton Sea Restoration Project Environmental Impact Statement/Environmental Impact Report**

This *Salton Sea Restoration Project Alternatives Appraisal Report* is a companion to the *Draft Salton Sea Restoration Project Environmental Impact Statement/Environmental Impact Report* (EIS/EIR). The affected environment, environmental consequences, and other parts of an environmental impact statement/environmental impact report will be part of this EIS/EIR.

The engineering options developed for this appraisal study were incorporated as alternatives in the EIS/EIR. Other common actions to improve the biological and chemical conditions in and around the Sea are also included in each report. The EIS/EIR includes the environmental analysis required before any construction takes place. The appraisal report displays complete alternatives and analyzes their effectiveness.

**B. California 4.4 Plan**

Text currently under revision.

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