

CHAPTER 1

INTRODUCTION

This chapter includes the Salton Sea Ecosystem Restoration Program description, background, importance of the Salton Sea ecosystem, enabling legislation, related studies, purpose of the PEIR, study area, study period, Salton Sea Advisory Committee, participants and stakeholder coordination, public involvement process, and a description of the organization of this document.

SALTON SEA ECOSYSTEM RESTORATION PROGRAM DESCRIPTION

The Salton Sea ecosystem is an extremely valuable resource for resident and migratory birds, including a large number of threatened, endangered, and species of concern. Until recently, the Salton Sea also supported a robust marine sport fishery. Increasing salinity and declining water quality have eliminated the marine fish species, and, with inflows that will be diminishing in the future, threaten the continued ability of the Salton Sea ecosystem to support birds and other wildlife. In recognition of the importance of the Salton Sea ecosystem, the state Legislature established a state policy for restoring the sea and permanently protecting the fish and wildlife resources dependent upon it.

State law requires that the Secretary for Resources undertake a study to determine a preferred alternative for the restoration of the Salton Sea ecosystem and the permanent protection of wildlife dependent on that ecosystem.

This is a summary of the Salton Sea Ecosystem Restoration Study and the Draft Programmatic Environmental Impact Report (PEIR) that are requirements of the Salton Sea Restoration Act and related legislation to implement the Colorado River Quantification Settlement Agreement (QSA).¹

The PEIR evaluates and analyzes potential environmental impacts of alternatives developed for restoration of the Salton Sea. The alternatives were developed through the evaluation of biological, hydrologic, air quality management, geotechnical, and engineering issues at the Salton Sea in response to the project objectives summarized here and described in detail in Chapter 1 of the PEIR.

PURPOSE OF THE PROGRAM

Since the Salton Sea was created by a levee break along the Colorado River in 1905, it has supported a dynamic fishery and currently is an extremely important area for numerous avian species. However, the Salton Sea is continually changing due to the lack of a natural outlet, evaporation, and the quality of inflows. By 2003, these effects had eliminated the marine sport fishery that was established in the 1950s, leaving only a remnant population of the very salt tolerant tilapia as the primary fish species. These changes now threaten the ability of the Salton Sea to continue to support fish, avian, and other wildlife species.

The discussion of Salton Sea restoration cannot take place without recognizing the QSA. The QSA was signed in 2003. It addresses water allocation issues between the holders of water rights to Colorado River water and enables California to stay within its 4.4 million acre-foot annual apportionment of Colorado River water. It also establishes a water transfer from agricultural water users to urban water users. During the first 15 years of the transfer, the Imperial Irrigation District (IID) is providing water to the Salton Sea to meet the inflow trajectory that would have occurred without the transfer. The inflow trajectory includes

¹ The QSA is an agreement among Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), and Metropolitan Water District of Southern California (Metropolitan). It was signed in 2003 to settle a long-standing dispute among the agencies regarding the use of California's apportionment of Colorado River water. The QSA agreement itself and more than 30 related agreements are commonly referred to as the QSA, and that designation will be used throughout this document.

other activities in the watershed unrelated to the QSA that will result in declining water levels in the Salton Sea. After the first 15 years, this transfer will reduce agricultural return flows to the Salton Sea and accelerate progressive increases in salinity. This will decrease the time that the Salton Sea can continue to support fish, avian, and other wildlife species. The reduced agricultural return flows projected under the QSA will also reduce the physical size of the Salton Sea and expose lake bed sediments (playa) that, with the prevailing winds in this area, could exacerbate dust problems for an already degraded air basin.

One of the conflicts identified during negotiations of the QSA was the extent of ecosystem mitigation and associated need for restoration within the Salton Sea watershed, and specifically for the Salton Sea. Recognizing these conflicts, the Legislature passed Salton Sea restoration legislation to facilitate environmental mitigation and allocate responsibility among water agencies involved in the QSA and the state. Salton Sea restoration legislation not only allowed the QSA to be executed, but also limited environmental mitigation responsibilities for IID, Coachella Valley Water District, and San Diego County Water Authority. The legislation establishes a cost limit on environmental mitigation requirements for the water agencies involved in the QSA. Under the legislation, any future state actions to restore important functions of the Salton Sea will be the sole responsibility of the state.

The Salton Sea restoration legislation requires the Secretary for Resources to undertake a restoration study to determine a preferred alternative for the restoration of the Salton Sea ecosystem and the permanent protection of wildlife dependent on that ecosystem. The Salton Sea ecosystem is defined to include, but not be limited to, the Salton Sea, agricultural lands surrounding the Salton Sea, and the tributaries and drains within the Imperial and Coachella valleys that deliver water to the Salton Sea.

The preferred alternative, when determined, is to provide the maximum feasible attainment of the following objectives:

- Restoration of long term stable aquatic and shoreline habitat for the historic levels and diversity of fish and wildlife that depend on the Salton Sea;
- Elimination of air quality impacts from the restoration project; and
- Protection of water quality.

This program developed a Salton Sea ecosystem restoration study and PEIR as required by the legislation.

Purpose of the Draft Programmatic Environmental Impact Report

The purpose of the PEIR is to develop a preferred alternative by exploring alternative ways to restore important ecological functions of the Salton Sea that have existed for about 100 years. To start that discussion, the draft document contains no preferred alternative, allowing one to be selected only after an open public discussion on the document has taken place. The PEIR describes eight alternatives and compares these to existing conditions and two No Action Alternative scenarios. The PEIR compares for each alternative the functions that are protected, their environmental impacts, and costs. Through the public review and comments on the PEIR, and the assistance of the Salton Sea Advisory Committee, a preferred restoration alternative will be identified for inclusion into the Final PEIR. A funding plan will then be developed to explore the restoration of critical ecological functions of the Salton Sea.

The California Resources Agency is the lead agency for preparation of the PEIR and Ecosystem Restoration Study in accordance with the Salton Sea Restoration Act and related legislation, and the California Environmental Quality Act (CEQA). The PEIR was prepared under the direction of the Department of Water Resources (DWR) and Department of Fish and Game (DFG) on behalf of the Resources Agency and the Secretary for Resources.

BACKGROUND

The Salton Sea is located in Imperial and Riverside counties, as shown in Figure 1-1, and is the largest lake in California. It is about 35 miles long and 15 miles wide. The Salton Sea surface water elevation is currently about -228 feet mean sea level (msl) and the greatest water depth is about 50 feet.

Though the current Salton Sea has existed only since 1905, a much larger lake known as Lake Cahuilla filled the Salton Sink on several occasions in past centuries. The Colorado River periodically changed course, and sometimes flowed into the Salton Sink. After flow in the river returned to the Gulf of Mexico, Lake Cahuilla would gradually disappear through evaporation until the next time the Colorado River changed course. Current water development and control projects in the Colorado River Basin prevent the river from returning to the Salton Sink.

The current Salton Sea is a hypersaline and eutrophic (nutrient-rich) water body with no outlet. Most of the water that flows into the Salton Sea is agricultural drain water that was originally diverted from the Colorado River for irrigation use in the Coachella Valley in Riverside County, Imperial Valley in Imperial County, and Mexicali Valley in Mexico. The California agricultural industry's ability to use the Salton Sea for a repository of agricultural drainage was protected when President Calvin Coolidge in 1924 and 1928 ordered specific sections of land under the Salton Sea to be withdrawn from settlement, location, sale, or entry, and reserved for the purposes of creating a drainage reservoir. Precipitation in the watershed is low and contributes little natural runoff to the Salton Sea.

Until recently, inflows to the Salton Sea contributed about 1,300,000 acre-feet/year and 4,000,000 tons of salts per year. These historic inflows were about equal to the water evaporated from the surface of the Salton Sea. Therefore, the Salton Sea elevation has remained relatively stable. Because the Salton Sea is a terminal body of water, the salinity continues to increase as salts are left behind when water evaporates from the surface. The current salinity averages about 48,000 milligrams/liter (mg/L). Over time, the Salton Sea would naturally become more saline, similar to other terminal water bodies, such as Mono Lake in California, Great Salt Lake in Utah, and Dead Sea in Israel.

The Salton Sea is a dynamic system and is constantly changing over time. Many of these changes, such as the gradual increase in salinity and fluctuations in the elevation, occur naturally. However, the speed at which these changes occur is expected to increase due to ongoing and anticipated future human activities. For example, the QSA, along with other projects in the Coachella, Imperial, and Mexicali valleys, will reduce inflows to the Salton Sea, increasing the salinity and decreasing the elevation, as described in the 2002 Programmatic Environmental Impact Report for Implementation of the Colorado River Quantification Settlement Agreement by Coachella Valley Water District (CVWD), IID, Metropolitan Water District of Southern California (Metropolitan), and San Diego County Water Authority (SDCWA).

IMPORTANCE OF THE SALTON SEA ECOSYSTEM

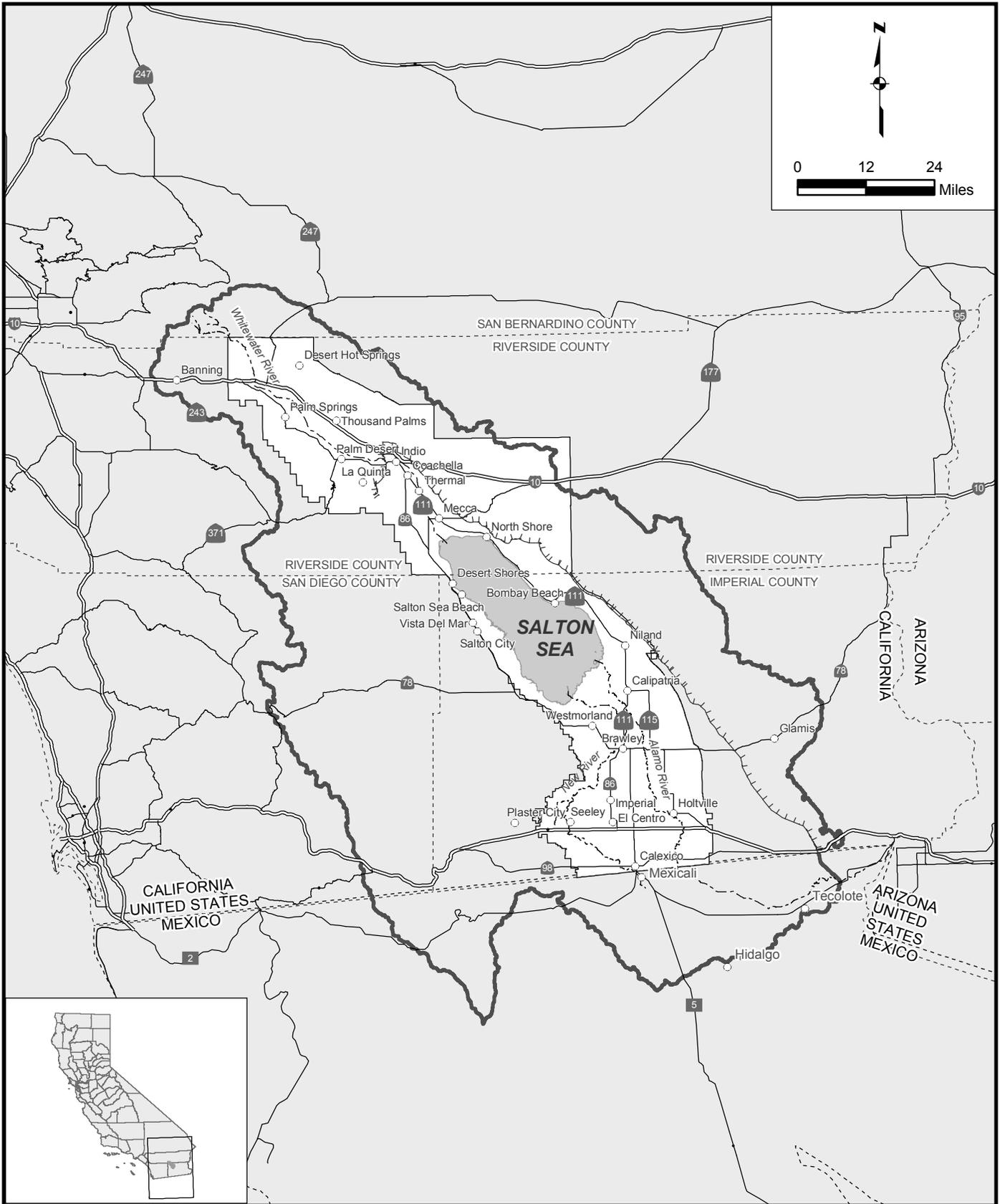
The Salton Sea is adjacent to the lower Colorado River delta and the northern portion of the Gulf of California. Due to the significant loss of wetlands in California and other areas, the Salton Sea ecosystem has become one of the most important wetlands for birds in North America and supports some of the highest levels of avian biodiversity in the southwestern United States. Recent studies have documented the great importance of the Salton Sea ecosystem in providing habitat for migrating and resident waterbirds, particularly Pacific Flyway waterbirds. More than 400 resident, migratory, and special status bird species have been recorded in the Salton Sea area since its formation, with about 270 of those species using the Salton Sea on a fairly regular basis. In addition to the diversity of birds, studies have indicated that the large number of individual birds using the Salton Sea is even more ecologically relevant than the number of species.

In addition to the diversity of birds, studies have indicated that the large number of individual birds using the Salton Sea is even more ecologically relevant than the number of species. The Salton Sea for birds has become an internationally significant stopover site for hundreds of thousands of transients moving north and south along the ‘Pacific Flyway,’ and east into the Great Basin/Prairie Pothole region as well as the winter home for hundreds of thousands of individuals of numerous species from around North America (Cooper, 2004). For several species, the Salton Sea supports a significant portion of their regional or North American populations. For example, an estimated 75 percent of the New World population of eared grebes (Patten et al., 2003), 23 to 30 percent of the North American breeding population of American white pelicans (Shuford et al., 2000), and 50 percent of the Pacific flyway population of ruddy ducks (Jehl, 1994) has been recorded at the Salton Sea. In addition, 40 percent of the California population of black skimmers have been found to breed at the Salton Sea (Collins and Garrett, 1996). The nesting colony of gull-billed terns is the largest in the western United States (Molina, 2000). In terms of overall shorebirds, the Salton Sea is the most important area in the Intermountain and Desert region of the West in the spring and the second most important, after Great Salt Lake, in the fall. The Salton Sea is one of only three sites, along with the Central Valley of California and the Willamette Valley of Oregon, where tens of thousands of shorebirds winter (Shuford et al., 2004), and qualifies for designation as a site of international importance to shorebirds under criteria of the Western Hemisphere Shorebird Reserve Network (Harrington and Perry, 1995, cited in Shuford et al., 2002). The Salton Sea supports the largest population of wintering snowy plovers in the interior of western North America (Shuford et al. 1995), and is one of a handful of key breeding areas in the interior of California (Page et al. 1991, cited in Shuford et al., 2002).

The Salton Sea is one of the most important sites in western North America for migrating black terns (Shuford et al., 2002), with tens of thousands reported during the period of peak occurrence in mid-summer (Small 1994, cited in Shuford et al., 2002), representing about 10 percent of the global population (Cooper, 2004). Surveys indicate that the Salton Sea ecosystem supports about 40 percent of the endangered Yuma clapper rail’s entire U.S. population (Cooper, 2004).

The Imperial Valley is one of the most important areas for white-faced ibis in western North America, supporting at least 30 percent of the global population during the fall migration and 50 percent of the California wintering population (Cooper, 2004). It also supports 70 percent of the California population of burrowing owls. Surveys in 1999 indicate that the Imperial Valley is even more important than previously recognized for the mountain plover, supporting up to 40 percent of the species’ entire population (Shuford et al., 2002).

Since the Salton Sea’s formation in 1905, a series of aquatic communities have thrived. A single native fish, the desert pupfish (which is listed as endangered), had inhabited two streams and several inundated springs in the Salton Trough, and persists today in the two streams, agricultural drains, and shallow parts of the Salton Sea. The other original members of the Salton Sea fish community, including carp, striped mullet, humpback sucker, rainbow trout, and bonytail chub, were carried directly from the Colorado River into the Salton Sea as it was filling. In the late 1940s to the mid-1950s, DFG stocked more than 30 species of marine fishes as the salinity of the Salton Sea approached ocean levels. Populations of introduced orangemouth corvina, sargo, and gulf croaker established and thrived. Introduced marine invertebrates, including pileworms and barnacles, came to dominate the lower end of the aquatic food chain, and provided the forage base which supported large fish populations and high bird use. During the 1960s and 1970s, tilapia unexpectedly invaded the Salton Sea from irrigation drains, and ultimately came to dominate the fish community. The tilapia population provided a new abundant forage base for the marine sport fish and fish-eating birds.



LEGEND

- Study Area
- Salton Sea
- Salton Sea Watershed
- Rivers and Washes
- Interstate Highway
- Regional Highway
- Coachella Canal
- Towns and Cities
- County Boundary

**FIGURE 1-1
STUDY AREA**

Supported by nutrients from agricultural drain water inflows, the Salton Sea fisheries from 1960 to 2000 were phenomenally productive. These popular fisheries were a fundamental driver of the burgeoning recreational use of the Salton Sea during those decades. However, as salinity and nutrients increased in the Salton Sea over time, wildlife health was negatively affected and chronic large scale die-offs of fish and birds fueled the public perception of a deteriorating ecosystem. Starting in 2000, all sport fish populations at the Salton Sea have undergone a dramatic decline due to a combination of increasing salinity and deteriorating water quality. Sargo, gulf croaker, and orangemouth corvina have been undetected in gill net sampling since mid-May 2003. Tilapia populations have rebounded since their lowest recorded levels in 2003, but currently persist in the Salton Sea at levels that are only 10 percent of those recorded in the 1990s.

THE FUTURE OF THE SALTON SEA WITHOUT RESTORATION

Under the QSA and California Fish and Game Code, IID must convey water into the Salton Sea until the year 2017 to mitigate some of the adverse impacts caused by the transfer of water from IID to SDCWA. Between now and 2018, surface water elevations in the Salton Sea would decline due to factors unrelated to the QSA from the existing elevation of about -228 feet msl to -235 feet msl, and salinity would increase from the current level of about 48,000 mg/L to 60,000 mg/L. After 2018, when mitigation water is no longer conveyed to the Salton Sea, inflows and the surface water elevation would decline rapidly and salinity would increase. By 2078, the elevation would be about -260 feet msl and salinity would exceed 300,000 mg/L. The surface water area would decline from the existing 230,000 acres to 213,000 acres in 2018 and 140,000 acres by 2078.

With increased salinity, the aquatic food web would become less complex. The pileworm, a primary component of the Salton Sea food chain, would have reduced reproduction when the salinity exceeds 50,000 mg/L (which could occur as early as 2008). Other invertebrates may already have ceased reproduction. As the salinity increases, more salt tolerant species, such as brine flies and brine shrimp, would increase (which could occur as early as 2020) but would disappear when salinity exceeds 200,000 mg/L (which could occur as early as 2038).

Tilapia serve as the primary forage species for piscivorous (fish-eating) birds at the Salton Sea. Tilapia may be present until salinity exceeds 60,000 mg/L (which could occur as early as 2021). Tilapia could likely continue to persist in lower salinity areas where the rivers, creeks, and drains enter the smaller Salton Sea. How long fish would persist in these areas would depend on the size of the areas and whether wind events would cause enough mixing to increase salinity to levels above fish tolerance.

Other fish would continue to inhabit the drains, as well as constructed pupfish channels and sedimentation and distribution basins that are components of the No Action Alternative. Sailfin mollies and desert pupfish can move easily between the drains via the Salton Sea. Under existing mitigation requirements for the QSA, pupfish channels would be constructed on the sea bed to allow this movement between drains when salinity in the Salton Sea would no longer support these fish.

The decline and ultimate loss of open water fish populations would reduce and possibly eliminate use of the Salton Sea by fish-eating birds, such as pelicans, double-crested cormorants, and black skimmers by the early 2020s. Some of these birds could use the areas where the rivers, creeks, and drains enter the Salton Sea if fish continue to persist in these locations. The relative abundance of bird species that forage on invertebrates likely would change over time with increases in salinity and resultant changes in the invertebrate community.

Snags used for roosting and nesting would disappear by 2020 as the Salton Sea recedes and the snags break and collapse due to degradation by wind, brine, and time. The loss of snags could limit nesting opportunities for several species of colonial nesting birds, including herons and egrets. Loss of nesting or communal roosting areas (snags and islands) for special status birds would be a significant impact.

As the Salton Sea recedes in future years, the distance between the open water shoreline and freshwater wetlands, agricultural lands, and human communities would increase. Though air quality management methods would be implemented, there could be dust from the exposed playa, affecting both wildlife and humans.

OTHER SALTON SEA RESTORATION STUDIES

Over the past 40 years, more than 20 studies and investigations with several hundreds of alternatives have been completed to address the environmental problems at the Salton Sea, as described in Chapter 4. Individual study objectives have differed, but the main focus has generally been on controlling salinity and elevation of the Salton Sea to support fish and wildlife and the associated recreation and community goals.

In 1992, Congress enacted the Reclamation Projects Authorization and Adjustment Act (Public Law 102-575) which established that restoration of the Salton Sea was of national interest. This law directed 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.

In 1993, IID, CVWD, and Riverside and Imperial counties formed a joint powers authority, the Salton Sea Authority, to manage and operate the Salton Sea for the improvement of water quality, stabilization of water elevation, and to enhance recreational and economic development potential.

Subsequently, the Salton Sea Reclamation Act of 1998 (Public Law 105-372) was enacted by Congress to further the restoration process. That law directed that the Secretary of the Interior shall 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 development of the Salton Sea.

The Water Supply, Reliability, and Environmental Improvement Act of 2004 (Public Law 108-361) directed the Secretary of the Interior to complete a feasibility study on a preferred alternative for Salton Sea restoration. The feasibility study is to be prepared in coordination with the State and the Salton Sea Authority.

Quantification Settlement Agreement

In 2003, the QSA was signed by IID, CVWD, and Metropolitan to settle long-standing disputes among the agencies regarding use of California's apportionment of Colorado River water. The QSA and more than 30 related agreements cover intrastate management of Colorado River water, allow California to have access to special surplus water for a 15-year period, and provide for specified water transfers. The QSA and related agreements are the mechanism by which these water agencies are reducing their use of Colorado River water to California's basic apportionment of 4.4 million acre-feet annually from a larger historic quantity. The QSA components provide a framework for conservation measures and water transfers for a period of up to 75 years. QSA water transfers from IID to SDCWA and CVWD will reduce the inflows of agricultural runoff that constitute the Salton Sea's primary source of water.

Legislation Related to Salton Sea Ecosystem Restoration

In the period of 2002 through 2004, the California Legislature enacted a series of bills collectively known as QSA legislation. The QSA legislation, Senate Bill 482 (Kuehl, 2002), Senate Bill 277 (Ducheny, 2003), Senate Bill 317 (Kuehl, 2003), Senate Bill 654 (Machado, 2003), and Senate Bill 1214 (Kuehl, 2004), amended various provisions of the Fish and Game Code and the Water Code. One of these bills,

Senate Bill 277 (Ducheny, 2003), established the Salton Sea Restoration Act (Fish and Game Code Section 2930 *et seq.*). The Salton Sea Restoration Act provides that it is the Legislature's intent that the State of California undertake the restoration of the Salton Sea ecosystem, and the permanent protection of the wildlife dependent on that ecosystem. The Act also establishes a Salton Sea Restoration Fund to be administered by the Department of Fish and Game. A companion bill, Senate Bill 317 (Kuehl, 2003), directs the Secretary for Resources to prepare an ecosystem restoration study and programmatic environmental documents, as specified, to establish a Salton Sea Advisory Committee, and includes specific consultation requirements. (Fish and Game Code Section 2081.7; Water Code Section 1013).

Water Transfers

Under the QSA and Fish and Game Code, a total of up to 800,000 acre-feet of water conserved by IID will be conveyed into the Salton Sea until the year 2017 to mitigate a portion of the adverse impacts caused by the transfer of water from IID to SDCWA (Fish and Game Code Section 2081.7(c)(2)). The Fish and Game Code also allows for the transfer of a separate 800,000 acre-feet of conserved water from IID to DWR at \$175/acre-foot in 2003 dollars and adjusted for inflation (Fish and Game Code Section 2081.7(c)(1)). These two allocations of water are referred to as (c)(2) water and (c)(1) water, respectively. No (c)(1) or (c)(2) water may be transferred unless the Secretary for Resources determines that the transfer is consistent with the preferred alternative. DWR will be responsible for mitigating any environmental impacts related to the transfer of (c)(1) water and for environmental impacts due to changes in Salton Sea salinity related to the transfer of (c)(2) water. DWR will be able to sell the (c)(1) water and any available (c)(2) water to Metropolitan at a price of not less than \$250/acre-foot in 2003 dollars and adjusted for inflation. Monies from these sales, after deducting costs and reasonable administrative expenses, will be deposited into the Salton Sea Restoration Fund (described below).

The PEIR analyzes the impact of the transfer of water that is currently being used to mitigate impacts of the QSA on the Salton Sea ((c)(2) water) and describes a plan for the use of this water.

Preparation of a Restoration Study

The Salton Sea Restoration Act states the intent of the Legislature that the State of California undertake the restoration of the Salton Sea ecosystem and permanent protection of wildlife dependent on that ecosystem based upon the preferred alternative developed in a restoration study and the alternative selection process (Fish and Game Code Section 2930 *et seq.*). The restoration study must evaluate the alternatives for the restoration of the Salton Sea that include consideration of strategies for salinity control, habitat creation and restoration, different water surface elevations along the shoreline, water surface area configurations, and range of inflow conditions (Fish and Game Code Section 2081.7(e)(2)(A)).

Fish and Game Code Section 2931 requires the restoration study to identify a preferred alternative that will provide the maximum feasible attainment of the following objectives:

- Restoration of long term stable aquatic and shoreline habitat for the historic levels and diversity of fish and wildlife that depend on the Salton Sea;
- Elimination of air quality impacts from the restoration projects; and
- Protection of water quality.

The restoration study also must include at least one most cost-effective, technically feasible alternative and present an evaluation of the magnitude and practicability of costs of construction, operation, and maintenance for each alternative. The study is required to be submitted to the Legislature (Fish and Game Code Section 2081.7).

For the purposes of the PEIR, the Salton Sea ecosystem includes, but is not limited to, the Salton Sea, agricultural lands surrounding the Salton Sea, and tributaries and drains within the Imperial and Coachella valleys that deliver water to the Salton Sea (Fish and Game Code Section 2931(d)).

The Resources Agency must also undertake the necessary activities to assess the protection of recreational opportunities, including, but not limited to, hunting, fishing, boating, and birdwatching, and the creation of opportunities for improved local economic conditions, surrounding the Salton Sea, unless the Resources Agency determines that those activities would constitute a project purpose for the PEIR (Fish and Game Code Section 2081.8). The Resources Agency evaluated the alternatives to assess recreational opportunities and potential for improved local economic conditions. However, specific recreational facilities were not defined in the PEIR alternatives.

Consultation with Other Agencies and Interest Groups

The Secretary for Resources is required to undertake the restoration study in consultation with the DFG, DWR, the Salton Sea Authority, appropriate air quality districts, and the Salton Sea Advisory Committee, as described in Fish and Game Code Section 2081.7. The Secretary also must extend an invitation to the U.S. Department of the Interior, Geological Survey Salton Sea Science Office to participate in the restoration study. The Secretary for Resources also must pursue a memorandum of understanding with the Secretary of the Interior to obtain federal participation in the restoration of the Salton Sea.

The Secretary for Resources is required to establish an Advisory Committee to provide balanced representation of the following interests in the process:

- Agriculture;
- Local governments;
- Conservation groups;
- Tribal governments;
- Recreational users;
- Water Agencies;
- Air Pollution Control Districts;
- Geothermal Energy Development; and
- Appropriate federal agency representatives.

The Resources Agency is required to consult with the Advisory Committee throughout all stages of the alternative selection process. The Advisory Committee must meet at least six times per year. The Secretary for Resources was required to appoint and work with a vice chair of the Advisory Committee to develop Advisory Committee agendas and schedule meetings of the Advisory Committee. The Secretary for Resources and vice chair must appoint and work with an agenda subcommittee to assist in preparation of the Advisory Committee agendas.

The Advisory Committee is to provide recommendations to the Resources Agency to assist in preparation of the restoration plan in accordance with a schedule established by the Resources Agency to ensure that the recommendations could be considered in a timely and meaningful manner as the restoration plan is developed. The recommendations may include, but are not limited to:

- Specific goals and objectives of the restoration plan;
- Range of alternative restoration actions that must be developed and analyzed;
- Description of the No Action Alternative;
- Criteria for determining economic and technical feasibility;
- Range of options for funding of the restoration plan; and
- Selection of the preferred alternative for the restoration plan.

The Resources Agency is required to periodically update the Advisory Committee on the work plan and schedule for development of the restoration plan.

Funding of Restoration Plan

Fish and Game Code Section 2081.7(e)(2)(D) requires preparation of a proposed funding plan to implement the preferred alternative. The proposed funding plan must include a determination of money that is, or may be, available to construct and operate the preferred alternative, including, but not limited to:

- Salton Sea Restoration Fund (described below);
- State water and environmental bond funds;
- Federal authorizations and appropriations;
- Money available through a Salton Sea Infrastructure Financing District (as described in Government Code Section 53395.9) and local assessments by the Salton Sea Authority or its member agencies; and
- Money derived from user or other fees.

The Salton Sea Restoration Fund includes money from the following actions:

- Total of \$30,000,000 paid by CVWD, IID, and SDCWA, as required by Fish and Game Code Section 2081.7;
- Not less than \$20/acre-foot of water received by Metropolitan as special surplus water under the reinstatement of access to water under the U.S. Department of the Interior Interim Surplus Guidelines for operations of the Lower Colorado River in accordance with Fish and Game Code Section 2081.7;
- Up to 10 percent of the monies received by IID for additional water transfers. The fee does not apply to transfers addressed in the QSA or water transfers pursuant to a Defensive Transfer Agreement as defined in the Agreement for Acquisition of Conserved Water between IID and Metropolitan, in accordance with Water Code Section 1013; and
- Money from sale of (c)(1) water and (c)(2) water, as described above.

Money deposited in the Salton Sea Restoration Fund will be administered by the Director of DFG and expended, upon appropriation by the Legislature, for the following purposes in accordance with Fish and Game Code Section 2932:

- Environmental and engineering studies related to the restoration of the Salton Sea and protection of fish and wildlife dependent on the Salton Sea;
- Implementation of conservation measures necessary to protect the fish and wildlife species dependent upon the Salton Sea, including adaptive management measures, and limited to the Salton Sea and lower Colorado River ecosystems, including the Colorado River Delta;
- Implementation of the preferred Salton Sea restoration alternative; and
- Administrative, technical, and public outreach costs related to the development and selection of the preferred Salton Sea restoration alternative.

OBJECTIVES OF THE SALTON SEA ECOSYSTEM RESTORATION PEIR

CEQA requires preparation of an Environmental Impact Report (EIR) when an agency action, such as approval and implementation of Salton Sea ecosystem restoration program, may have a significant impact on the environment. An EIR is a document used by a governmental agency to analyze the significant environmental effects, to identify alternatives, and to disclose possible ways to reduce or avoid the possible environmental damage.

A programmatic EIR is used to document a series of inter-related actions that can be assessed as an integrated whole for the purpose of CEQA analysis. The actions may be related in one or more of the following ways:

- By geographical proximity;
- As logical parts in a chain of contemplated actions;
- In connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or
- As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

This PEIR relates to the first and second bullets above (i.e., it consists of a series of actions related by geographic proximity and are logical parts in a chain of contemplated actions), and is being prepared to ensure that the combined effects of the contemplated actions are evaluated.

As described above, the legislation directs the Secretary for Resources to complete the PEIR and Ecosystem Restoration Study. The PEIR and Ecosystem Restoration Study are to be prepared in consultation with the Salton Sea Advisory Committee. The PEIR and Ecosystem Restoration Study are to contain an evaluation of alternatives for restoring the Salton Sea ecosystem and the permanent protection of the fish and wildlife dependent on that ecosystem, including at least one most cost-effective, technically feasible alternative. These alternatives are to consider strategies for salinity control, habitat creation and restoration, and different shoreline elevations and surface area configurations. In addition, these alternatives must consider a range of possible inflow conditions.

Selection of the Preferred Alternative

CEQAs directives are written with the premise that the lead agency is reacting to a proposal or request or a discretionary action and conducting an environmental review of a “proposed project” (see CEQA Guidelines Sections 15124(a), (b); 15126(a); 15126.2(a); and 15126.6). Therefore, compliance with CEQA, in preparing an Environmental Impact Report (EIR), typically relates to analysis of the proposed project and alternatives (based on the proposed project’s objectives). However, CEQA provides discretion for the lead agency to propose several alternatives for achieving certain objectives, without identifying one of the alternatives as the “proposed project” in the draft EIR, as long the draft EIR contains sufficient level of detail of all the alternatives, as if any of them were the proposed project. The lead agency has the discretion to determine the alternative to be selected as the “proposed project” in the final EIR, after all environmental analysis has been completed, provided that the alternatives with the potential for being selected have been adequately analyzed in the EIR.

The preferred alternative is to provide the maximum feasible attainment of the following objectives in accordance with Fish and Game Code, as described above:

- Restoration of long term stable aquatic and shoreline habitat for historic levels and diversity of fish and wildlife that depend on the Salton Sea;
- Elimination of air quality impacts from the restoration project; and
- Protection of water quality.

The PEIR includes an assessment of the magnitude and practicability of costs of construction and operations and maintenance of each alternative evaluated (see Appendix H).

This PEIR does not include a preferred alternative. A preferred alternative will be identified in the Final PEIR. The Secretary for Resources will present the preferred alternative to the California Legislature after receiving a recommendation from the Salton Sea Advisory Committee and following additional public participation, including input from stakeholders and interested agencies, as well as comments received during the public review period following distribution of the PEIR.

STUDY AREA

The study area includes the entire Salton Sea watershed that covers most of Imperial County, much of Coachella Valley in Riverside County, small portions of San Bernardino and San Diego counties, and the northern portion of the Mexicali Valley, as shown in Figure 1-1. Although the study area includes the entire Salton Sea watershed, less emphasis is being placed on areas that are both distant from the Salton Sea and/or not likely to be impacted by the alternatives, such as the ridgelines and other mountainous areas within the watershed and areas in Mexico. In addition, the study area is also defined for each resource area, and not all of the technical evaluations include analyses in the full study area. Rather, the study area for the technical analyses sections focuses on the areas that may be impacted by implementation of the restoration activities.

The Colorado River downstream from Parker Dam (located in San Bernardino County) was originally considered for inclusion in the study area because this area is connected to the Salton Sea via diversion and use of Colorado River water in the Salton Sea watershed. In addition the Gulf of California was also originally included in the study area because some migratory birds use habitat in both the Gulf of California and the Salton Sea watershed. However, based upon input received from stakeholders and the Advisory Committee, the reasonable range of alternatives considered in this PEIR are focused on changes within the Salton Sea. Therefore, the study area has been limited to the Salton Sea watershed.

STUDY PERIOD

The study period for this PEIR extends from 2003 to 2078. This 75-year study period is the same period for which the QSA could be in effect.

SALTON SEA ADVISORY COMMITTEE

The Advisory Committee is composed of 32 members, and includes representatives from a variety of federal, State, and local public agencies, Tribal governments, and non-governmental organizations, as presented in Table 1-1. They were selected to provide balanced representation of a variety of interests in the Salton Sea in accordance with the Salton Sea Restoration Act and related legislation. The Secretary consulted with the Advisory Committee throughout the preparation of the PEIR.

STUDY PARTICIPANTS AND STAKEHOLDER COORDINATION

This PEIR was prepared in coordination with a variety of federal, State, and local agencies and organizations that have an interest in the Salton Sea. Stakeholder participation was facilitated by the

Salton Sea Advisory Committee, as listed in Table 1-1, and the various technical sub-groups of the Committee. In addition, DWR and DFG held numerous meetings with other stakeholders throughout the preparation of this PEIR.

A Technical Committee and several issue specific Working Groups were established to facilitate technical analysis and stakeholder participation. The Technical Committee was formed early in the PEIR process to address a broad range of data needs and analyses. Based on the Technical Committee's efforts and interest by the meeting attendees, Working Groups were formed to address more focused technical issues—alternatives and infrastructure, air quality, habitat, inflows/modeling, and development of a process to select the preferred alternative.

PUBLIC INVOLVEMENT PROCESS

A Notice of Preparation (NOP) was filed with the California State Clearinghouse and distributed to over 300 agencies, organizations, and individuals on February 27, 2004. An erratum to the NOP was filed with the California State Clearinghouse on March 15, 2005.

Five public scoping meetings were held during mid- to late-March 2004. In addition to public scoping meetings, the U.S. Department of the Interior, Bureau of Indian Affairs arranged a scoping meeting for several Indian tribes with DWR on March 16, 2004 at the Torres Martinez Tribal Headquarters. DWR and DFG, on behalf of the Resources Agency, received over 70 written responses to the NOP from federal agencies, tribes, State agencies, regional authorities, local government agencies, non-governmental organizations, and individuals. In addition, the five scoping meetings were attended by over 150 people, many of whom provided oral comments on the environmental compliance process, scope and content of the PEIR, and the legislative authority and mandate for conducting the restoration study. The NOP and the scoping summary report are provided in Appendix B.

An extensive public outreach effort was conducted to facilitate public participation in the development of this PEIR. This effort is described in detail in Chapter 26. Twenty-eight public outreach meetings were held in communities throughout the Salton Sea watershed prior to the issuance of the PEIR. All of the meetings were held in a townhall format to facilitate continued and open interaction with the public. The meetings were noticed using a variety of methods, including direct mailings to a mailing list of over 500 individuals, posters placed in various locations throughout the watershed, radio and television public service announcements, notices in six local newspapers, and press releases. To keep the public informed on the status of the PEIR process, brochures and Updates were distributed via direct mailing. DWR also launched and continues to maintain an extensive website at www.saltonsea.water.ca.gov, which provided up-to-date information.

This PEIR is being circulated for a 90-day public review period. Comments received during the public review period will be considered by the lead agency, and responses to comments will be included in the Final PEIR. Additional public outreach meetings will be held prior to the completion of the Final PEIR. Please see www.saltonsea.water.ca.gov for information on these meetings and to obtain the PEIR.

**Table 1-1
Salton Sea Advisory Committee Members**

Federal Agencies
U.S. Department of the Interior, Bureau of Indian Affairs U.S. Department of the Interior, Bureau of Reclamation U.S. Department of the Interior, Fish and Wildlife Service U.S. Department of the Interior, Geological Survey U.S. Environmental Protection Agency
Tribal Governments
Cabazon Band of Mission Indians Torres Martinez Desert Cahuilla Indians
State Agencies
California Air Resources Board Colorado River Basin Regional Water Quality Control Board State Water Resources Control Board
Regional and Local Agencies
Coachella Valley Association of Governments Coachella Valley Water District County of Imperial County of Riverside Imperial County Air Pollution Control District Imperial Irrigation District Imperial Valley Association of Governments San Diego County Water Authority South Coast Air Quality Management District The Metropolitan Water District of Southern California
Non-governmental Organizations
Audubon California CalEnergy Operating Corporation California Farm Bureau Federation California Waterfowl Association Citizens Congressional Task Force on the New River Defenders of Wildlife Imperial County Farm Bureau Pacific Institute Planning and Conservation League Riverside County Farm Bureau Sierra Club United Anglers of Southern California

Note: Agencies/organization are listed in alphabetical order

PEIR ORGANIZATION

This PEIR is organized in the following sections:

- **Chapter 1, Introduction**—This chapter introduces the Resources Agency as the lead agency under CEQA, describes the objectives of the PEIR, presents information needed to understand the objectives of the PEIR, provides an overview of the study area and study period, and provides an overview of the Salton Sea Advisory Committee, the study participants, and the public involvement process.
- **Chapter 2, Development of Alternatives**—This chapter describes the approach used to develop the range of alternatives analyzed in the Draft PEIR.
- **Chapter 3, Description of Program Alternatives**—This chapter presents a description of the alternatives analyzed in the Draft PEIR including the assumptions, limitations of the assumptions, potential implementation concepts and schedules, and estimated costs.
- **Chapter 4, Summary of Previous Studies and Related Projects**—This chapter presents a summary of previous studies addressing Salton Sea ecosystem restoration and related water and natural resources management projects that affect the Salton Sea and the biological resources that depend on the Salton Sea.
- **Chapters 5 through 22**—These chapters contain a description of the study area, regulatory requirements, historical perspective, data sources and limitation, and existing conditions for each of the environmental resource areas considered in detail. These chapters also contain a description of the environmental impacts and next steps, if there are any, for each of the alternatives considered in the PEIR. The environmental resource areas considered in detail include the following: surface water resources; surface water quality; groundwater; biological resources; geology, soils, faults, seismicity, and mineral resources; climate and air quality; land use; population and housing; recreation; hazards, hazardous waste, and public health; cultural resources; paleontological resources; noise; aesthetics and visual resources; public services and utilities; transportation and traffic; power production and energy; and economic and social effects.
- **Chapter 23, Cumulative Impacts**—This chapter discusses potential and existing projects, that, together with the Salton Sea Ecosystem Restoration Program, may have a compounding impact on similar resources.
- **Chapter 24, Growth Inducing Impacts**—This chapter describes the potential for the alternatives to promote growth in the Salton Sea region.
- **Chapter 25, Permits and Approvals**—This chapters provides a listing and summary of some of the permits and approvals that may be needed for implementation of the alternatives.
- **Chapter 26, Public Involvement, Consultation, and Coordination**—This chapters provides an overview of the public involvement, consultation, and coordination efforts during the preparation of this PEIR.
- **Chapter 27, List of Preparers**—This chapter lists the contributors to this document, including those who wrote and reviews sections.
- **Chapter 28, Bibliography**—This chapter contains the references for the information presented in this PEIR.

- **Chapter 29, List of Abbreviations and Glossary**—This chapter contains a list of abbreviations and a glossary of terms used in this PEIR.

The PEIR also includes the following appendices:

- **Appendix A, Salton Sea Ecosystem Restoration Legislation and Excerpts from the Fish and Game Code and Water Code**—This appendix includes the state legislation and excerpts from the Fish and Game Code and Water Code described in Chapter 1.
- **Appendix B, Notice Of Preparation, Erratum to the Notice Of Preparation, Summary of Scoping Meeting Comments, and Responses to Notice of Preparation**—The Notice of Preparation, erratum to the Notice of Preparation, scoping report and scoping comments are provided in Appendix B.
- **Appendix C, Description of the Habitat-Based Bird Model**—This appendix provides a detailed description of the Habitat-based Bird Model discussed in Chapter 8.
- **Appendix D, Water Quality Modeling Methodology and Results**—This appendix includes a detailed description of the water quality modeling methodology and results that are described in Chapter 6.
- **Appendix E, Climate and Air Quality Impact Assessment**—This appendix provides a detailed description of the assumptions and analyses conducted to determine the potential air quality impacts of the final range of alternatives, as summarized in Chapter 10.
- **Appendix F, Ecological Risk Assessment**—This appendix describes the analyses of ecological risks in the water bodies in the final range of alternatives, as summarized in Chapter 8.
- **Appendix G, Screening-Level Human Health Risk Assessment of Selenium Exposures from Consumption of Fish and Waterfowl from the Salton Sea**—This appendix describes the analyses of human health risks associated with consuming fish or waterfowl that spend portions of their life-stages at the Salton Sea under the final range of alternatives, as summarized in Chapter 14.
- **Appendix H, Ecosystem Restoration Study**—This appendix provides the Ecosystem Restoration Study including detailed engineering information and cost estimates for the final range of alternatives. A description of the following is also provided in Appendix H: habitat components of the alternatives; hydrology and hydrologic models used to analyze the alternatives; measures considered to control playa emissions; conceptual designs for in-sea rock barriers; potential rock sources; infrastructure components; and design and construction considerations for the final alternatives.
- **Appendix I, Alternative-Specific Materials Provided by the Imperial Group and the Salton Sea Authority**—This appendix provides copies of the materials submitted by the Imperial Group and the Salton Sea Authority on Alternative 4 and 7, respectively.