

The USGS Salton Sea Science Office –

The U.S. Geological Survey’s (USGS) Salton Sea Science Office (SSSO) provides scientific information and evaluations to decisionmakers who are engaged in restoration planning and actions associated with the Salton Sea. The primary focus is the natural resources of the Salton Sea, including the sea’s ability to sustain biological resources and associated social and economic values.

▶ SSSO History and Activities

The SSSO was established in 2000 in response to a request from the Deputy Secretary for the Department of the Interior to provide “continuity of the science effort, effectiveness of the science undertaken in support of the restoration project, and efficiency of operations in serving management needs ...” (from the 2000 Strategic Science Plan Salton Sea Restoration Project). Working closely with federal, state, local, nongovernmental, and tribal partners, the SSSO has provided information for management actions under the Salton Sea Ecosystem Restoration Program. For additional information regarding the program, please visit <http://www.saltonsea.water.ca.gov/>.

Map showing location of Salton Sea



Scientist sampling aquatic invertebrates

The SSSO collaborates with the State of California to link state and federal managers with the scientific community. The results of numerous peer-reviewed, integrated scientific studies coordinated or conducted by the SSSO have been considered in the selection of a preferred alternative for restoration. In addition, the SSSO is working with the Bureau of Reclamation to assess models that predict risks of contaminants to birds. USGS scientists also are exploring the potential for large-scale uses of artificial saline habitat based on a constructed wetland complex. The SSSO is helping to design an integrated monitoring and assessment plan and other plans for Early Start Habitat—an effort to create shallow, saline habitat for birds and fish to use as the lake’s salinity increases beyond most biological tolerances.



California
Brown
Pelican

The Salton Sea Science Office

- Science leadership and coordination
- Science oversight and responsibility for restoration project science activities
- Administration of science funding
- Science contract awards and negotiations
- Science outreach activities
- Development and delivery of peer-reviewed science products
- Collaboration and coordination with the restoration project management agencies
- Networking with external agencies and organizations for data sharing and other restoration project science needs
- Accountability and reporting for the science program

▶ General Characteristics of the Salton Sea

The Salton Sea, California’s largest lake, was created by a Colorado River levee break in 1905. The lake is about 35 miles long, 15 miles wide, and 30 feet deep. The surface elevation is about 228 feet below mean sea level. The sea has high salinity averaging 48,000 milligrams per liter, which is about 30 percent greater than the salinity of the Pacific Ocean. Most inflow now comes from agricultural drainage from the Whitewater, New, and Alamo Rivers. Water leaves the Salton Sea by evaporation: it has no outflowing rivers or streams.



Black-necked Stilt



Black Skimmer



USGS scientist radio marking stilt chick

A Sea in Transition

Proposed water transfers from agricultural uses in the Imperial Valley to municipal uses in southern California will decrease agricultural return flow to the Salton Sea. Unless mitigation actions are taken, the reduced flow will result in loss of aquatic and wetland habitat, increased salinity, a lower lake level, and degraded air quality. The California Secretary for Resources recently recommended a preferred alternative and funding plan to the California State Legislature. The alternative calls for creation of a 45,000 acre horseshoe-shaped marine lake in the northern sea and the development of 62,000 acres of saline habitat in the southern and northern parts of the basin. The estimated capital cost of implementing the preferred alternative is about \$9 billion, and annual operation and maintenance needs are about \$142 million.



Killdeer on nest



Caspian Tern

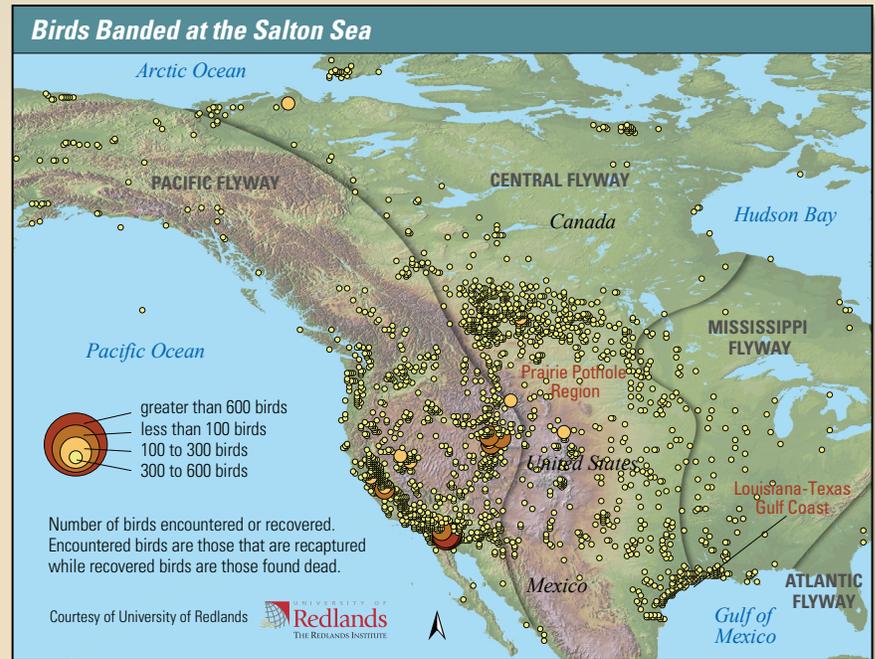
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Burrowing Owl

Why care?

The Salton Sea is a critical stop for migratory birds on the Pacific and Central Flyways. More than 400 species of birds, including 80 percent of the western population of white pelicans (*Pelecanus erythrorhynchos*) and 20 species of concern, use the system. Birds banded at the Salton Sea by the USGS bird banding laboratory have been recovered throughout North America. The combination of avian biodiversity and importance as a breeding habitat is unsurpassed by any limited geographic area within the contiguous 48 states and Latin America.



Without mitigation, human health in Mexico and in the Coachella and Imperial Valleys of California could be affected by increased amounts of windborne dust as the lake's level declines and sediments currently underwater are exposed. Department of the Interior-owned and managed lands under parts of the current sea may be exposed and contribute to air quality concerns as shorelines recede with lowering lake levels. These lands include Native American trust lands and parts of the Sonny Bono Salton Sea National Wildlife Refuge. In addition, the discovery in July 2007 of significant numbers (estimated to exceed 1,000) of desert pupfish (*Cyprinodon macularius*) in the wetland complex presents a unique opportunity to assess the factors influencing the survivability of this federal- and state-listed endangered fish.



American Avocet



Great Egret

For additional information regarding the Salton Sea Science Office, visit the website <http://www.usgs.gov/saltonsea/>.

Authors:

Harvey Lee Case III (760-777-1574) email: hlcas@usgs.gov

Douglas A. Barnum (760-777-1564) email: doug_barnum@usgs.gov

Graphic Design: Bill Gibbs

Photo Credits: All photographs taken by U.S. Geological Survey employee Douglas A. Barnum

Mailing Address: Suite R, 78-401 Hwy 111, La Quinta, CA 92253