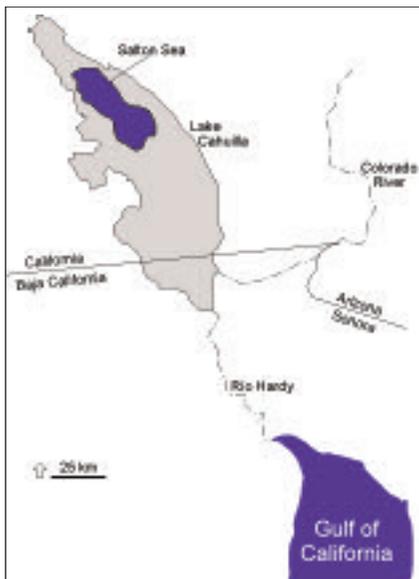


The Salton Sea

Imperiled Avian Hotspot of the California Desert

by Michael A. Patten

(Dr. Patten has just co-authored with Guy McCaskie and Philip Unitt the book "Birds of the Salton Sea: Status Biogeography and Ecology," University of California Press, Berkeley, 363 pp.)



The Salton Sea—a large (72 × 27 km, covering an area of ±1,150 km²), shallow (25 m at its deepest), saline lake—lies in arid southeastern California. Before the Colorado River was dammed extensively, its periodic floods gushed into the Salton Sink, creating a vastly larger body called Lake Cahuilla, which formed naturally as recently as the mid-1600s, with lesser floods continuing to carry water to the sink as recently as 1891, when a small lake formed. Although the birth of the Salton Sea was aided by the river's flooding of irrigation channels under construction in 1905, during the campaign to bring agriculture to the Imperial Valley, the sea is just the latest in a long series of lakes that have occupied the region over the past forty millennia.

Situated in the heart of the western Sonoran Desert, the Salton Sink—a basin lying below sea level, with the Salton Sea at its heart—is characterized by extreme heat. Despite occasional thunderstorms, summers are particularly hot: daytime temperatures exceed 100°F on 110 days per year in the Imperial Valley and often exceed

120°F in July and August. Rainfall is scant, averaging a mere 7.6 cm per year at the wettest locale, with no measurable rainfall in June since 1914. But it is not a dry heat, as high rates of evaporation from the Salton Sea and surrounding irrigated lands keep humidity elevated.

These conditions may sound bleak, yet the Salton Sea is home to some of the largest numbers of waterbirds to be found anywhere in North America. The sea is not only a desert oasis, but the low-lying basin cradling it lies on a key juncture of the Pacific flyway, a major thruway for North America's migratory birds. Collectively, millions of grebes, pelicans, cormorants, herons, geese, ducks, shorebirds, gulls, and terns occur at the sea annually. The region has hosted over 400 native bird species, a total exceeding that found in many American states. Local breeders exceed 100 species, including the Brown Pelican, Gull-billed Tern, and Black Skimmer, all oddities in the landlocked desert Southwest.

Yet the Salton Sea is in trouble. Water quality has deteriorated and scads of native habitat have been lost, particularly mesquite thickets and riparian woodlands. Salinity is on the rise, as are concentrations of harmful metals (e.g., selenium) and chemical pesticides (e.g., DDE, a metabolite of DDT). Anoxic conditions each summer kill thousands of fish, whose corpses dot the shore, only adding to the specter of death, to say nothing of the odor. Massive dieoffs of birds have become commonplace, initially sparking quiet concern, later sparking urgent pushes to preserve this important ecosystem before it is lost. Conservation requires understanding. Perhaps information in two forthcoming publications, *The Birds of Salton Sea: Status, Biogeography, and Ecology* (2003, University of California Press) and an issue of *Studies in Avian Biology* (2003 or 2004, Cooper Ornithological Society) devoted to the Salton Sea and northern Gulf of California, along with that in a special issue of *Hydrobiologia* in 2002, will provide enough baseline data to formulate an adequate and rapid management plan.

California has already lost over 95% of its wetlands. Demand for water to sate urban southern California's increasing thirst may foreshadow the ultimate demise of the Salton Sea. When the sea goes, with it will go millions of birds.



Michael Patten



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Eared Grebes sometimes number in the millions at the Salton Sea, though disease and toxins take their toll on the population. These beached birds are likely succumbing to one or both.



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Snowy Plovers, a federally threatened species, at the Whitewater River mouth, Salton Sea.



Deb Davidson

The Cattle Egret is the most numerous heron to nest around the Salton Sea.