

# Protecting critical bird habitat should be a priority at the Salton Sea

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The Salton Sea is one of the most critical inland habitats for birds along the Pacific Flyway, and it is also increasingly one of the most imperiled. However, a review of the pertinent data indicates a clear path toward successful bird and habitat conservation at the Salton Sea, even as water levels continue to decline in the coming years.

## Importance to flyway birds

For more than a century, the Salton Sea has served as a major nesting, wintering, and stopover site for millions of birds, many of which will be left without adequate habitat as the sea declines.

Today's Salton Sea sits in the basin that once held Lake Cahuilla, a much larger body of water that formed and dried for eons as part of the Colorado River delta system. The most recent incarnation originated in 1905 when canal levees breached and the entire flow of the Colorado River flowed into the basin over two years, resulting in the 35-mile-long, 350-square mile inland lake that exists today. Though the Salton Sea was originally created by the levee break, it has been replenished over the years by run-off from Imperial Valley agricultural fields. Ecologically, the Salton Sea provides replacement habitat for wetlands and inland lakes that have been lost in the Colorado River delta, California's coast, and the San Joaquin Valley.

More than 300 bird species rely on the deep water, shoreline, mudflats, and wetlands provided by the Salton Sea and the river channels and agricultural drains leading into it. Tilapia thrive in the deeper waters, providing essential food for many species, including California Brown Pelican, American White Pelican, Double-crested Cormorant, and Caspian Tern. Perhaps the sea's greatest value for birds is its ability to support very large numbers of waterbirds, including up to 90% of Eared Grebes and 50% of Ruddy Ducks, and 30% of the American White Pelicans that winter in North America. The mudflats and shorelines are also essential for hundreds of thousands of shorebirds, many of which have suffered significant declines due to habitat loss in recent decades. A 2004 assessment of the birds at the Salton Sea reaffirmed its designation as an Audubon Important Bird Area of Global Significance. Furthermore, many of the species that rely

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on the Salton Sea have been identified by Audubon as being particularly vulnerable to future impacts from climate change.

The recent decline of the sea has already had significant negative impacts on some species. Colonial seabirds – Double-crested Cormorants, in particular – began abandoning nesting sites en masse in 2013 when breeding sites that were once on an island became connected to the shoreline, allowing access to mammalian predators. Shallow, marshy habitat areas at the sea’s edge have also begun to rapidly vanish, particularly at the south end.

These changes will accelerate after 2018 when the Imperial Irrigation District (IID) ends the flow of Colorado River water that mitigated for transfers of water from IID to urban users in San Diego that are part of the 2003 Quantitative Settlement Agreement (QSA). Water flowing to the sea will decline by 40% and its total volume will shrink by 60% in coming years. As the sea continues to shrink, its salinity will triple rendering it inhospitable to birds, fish, and insects.

The shrinking sea will also expose at least 45,000 acres and up to 64,000 acres of the lakebed and result in massive dust storms that could create the worst air pollution crisis in North America. Included in this dust will be selenium and other contaminants that have settled into the lakebed over the years. More than 650,000 residents that live near the sea will be directly affected at immense expense to their health and the local economy.

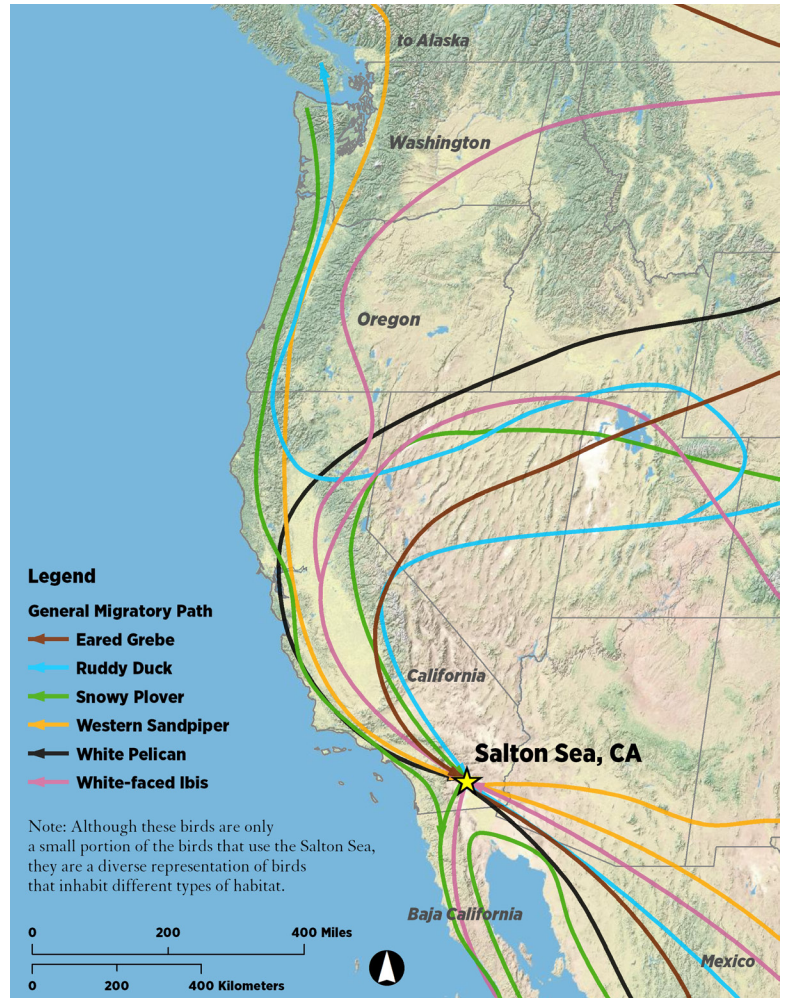
**Crisis response**

For more than two decades, the federal government and the State of California have understood that the shrinking sea threatens public health and the wellbeing of birds and other local wildlife. In the 2003 QSA, the State of California committed to developing a plan for the long range management of the Salton Sea, to protect people and the environment.

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**Maps: Salton Sea birds spread throughout the Western Hemisphere**

Above right, data shows migratory path of several key species through the Salton Sea. Right, each white dot indicates a bird that was banded at the Salton Sea and recovered elsewhere in the Western Hemisphere.



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Development of a long range management plan stalled during the 2000s and has only been renewed since early 2015 as the 2018 deadline approached.

A long-range management plan is now being developed through an effort lead by the California Natural Resources Agency with input from several stakeholders, including the Imperial Irrigation District, Imperial and Riverside Counties, and several local, state, and federal agencies. Audubon California is part of a coalition of nonprofit organizations that is working to develop the plan and ensure it is adequately ambitious and feasible to protect the public and the Salton Sea's ecological values.

Based on its experience at Owens Lake, Audubon California is confident that a solution at the Salton Sea can reduce the release of airborne pollutants from the exposed playa while also providing ample habitat for many species that now depend on the sea.

### Key findings

In 2015-2016, Audubon California reviewed current data regarding the Salton Sea's avifauna, and made the following determinations:

- 1. The sea is part of a larger ecosystem that should be considered as a whole.** The Salton Sea ecosystem should be thought of as part of the larger Colorado River Delta, as a complex mosaic of different habitat types, from deepwater aquatic habitats, to shallow or seasonally-flooded wetlands, to dense reedbeds, with microhabitats used by specific species during different times of the year (including nesting islands).
- 2. The sea hosts critical numbers of many species of birds.** It is home to the largest populations of several waterfowl and shorebird species in California south of the San Francisco Bay-Delta region. It is a major staging area for waterbirds during migration. In southern California, the sea is of particular importance to three species, Ruddy Duck, Black-necked Stilt, and American Avocet.
- 3. The sea is a key area for a number of sensitive species.** Several species protected as Threatened or Endangered (or other categories) maintain populations in and around the sea, including the Yuma Ridgway's Rail and the California Black Rail. The sea is a primary wintering area in the interior U.S. for American White Pelican, Brown Pelicans, Western Grebe, and Western Snowy Plover – and is a major nesting area for Caspian Tern and, until recently, Double-crested Cormorant. All of these species need to be monitored because of their declining populations and sensitivity to climate change.
- 4. The sea currently provides a variety of habitats used by birds.** These habitats include deepwater habitat (fresh and saltwater) with small fish and aquatic



According to Audubon California's analysis, the following bird species will require specific conservation attention at the Salton Sea.

- Brown Pelican
- White-faced Ibis (photo by Joseph Higbee)
- Black Rail
- Whimbrel
- Long-billed Curlew
- Marbled Godwit
- Western Sandpiper
- Large-billed Savannah Sparrow

invertebrates; deepwater habitat with medium-sized fish; shallow-water, freshwater wetland habitat; seasonally or temporally flooded saltpan, sandbar and/or flat shoreline; reedbeds; isolated islets and dead trees (snags); and flooded agricultural fields.

- 5. The sea's habitat value depends on maintaining high water levels, which are expected to drop dramatically in the near term.** Based on waterbird census data from the late 1980s through 2013, when water levels remained relatively stable, few species were significantly declining, and many were significantly increasing. Recent water level drops have changed this trend, and more data from 2014 and sooner are expected to show a dramatic reversal of this trend.
- 6. As the sea's habitat value diminishes, many species of birds will face serious challenges.** Based on currently funded management plans, the following species and possibly others are expected to struggle to maintain current population levels at the Salton Sea: Brown Pelican, White-faced Ibis, California Black Rail, Black Tern, Large-billed Savannah Sparrow, and most shorebirds (including Long-billed Curlew). Most other species will require management to ensure their continued presence at the sea.
- 7. Several special-status species warrant particular attention.** At a minimum, the following special-status

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bird species should be considered in proposed restoration scenarios: Brown Pelican, White-faced Ibis, Black Rail, Whimbrel, Long-billed Curlew, Marbled Godwit, Western Sandpiper, and Large-billed Savannah Sparrow. These species depend on the unique types and large extent of habitat at the Salton Sea as it exists now.

**8. Habitat protection and dust control go hand-in-hand.** Controlling toxic dust from the exposed playa of the receding Salton Sea remains a primary concern, but this work can and should go hand-in-hand with habitat protection. Habitat will need to be protected due to the fact that so much of the land around the sea is managed by state and federal wildlife agencies, and because several protected species are present. But it should also be noted that most methods of protecting habitat have the added benefit of reducing dust. Moreover, funding mechanisms for habitat conservation will add to dust control funding, resulting in greater dust control overall.

**9. Continued water deliveries will provide many options for habitat conservation.** Although water deliveries will be significantly reduced in the coming years, more than 700,000 acre feet of water will still flow into the Salton Sea annually. While this will result in a reduction in the size of the sea, it will nonetheless create a number of options for habitat restoration.

**10. The sea provides valuable wildlife viewing opportunities.** The great number and variety of birds at the Salton Sea attracts upwards of 100,000 annual visits to wildlife refuges and other viewing sites, according to recent regional economic assessments. In addition, two Audubon Christmas Bird Counts have been held at the Salton Sea for decades, in addition to birding festivals and birding tours. These activities constitute a valuable recreational resource for the region, as well as a major contribution to the tourism economy.

**11. Recent conservation achievements at Owens Lake offer concrete lessons that can be directly applied to the planning process at the Salton Sea.** Stakeholder engagement was strong, an Air District State Implementation Plan was in place, major regulatory agencies were in full cooperation, a professional facilitator was hired to oversee the process, committees were engaged, common goals were established early, baseline habitat needs were identified, agencies were updated and invested, and Audubon California and Audubon chapters had a presence at the site.

To continue to support a bird community equivalent to that which exists today, the Salton Sea will need to provide a wide array of habitats, including:

- Deepwater habitat (either fresh or saltwater) with small fish and aquatic invertebrates for wintering Eared Grebe and Ruddy Duck, summering Aechmophorus grebes, and staging terns (including Black Tern);
- Extensive deepwater habitat with medium-sized fish for large, piscivorous seabirds such as pelicans and cormorants;
- Extensive shallow-water, freshwater wetland habitat for migrant/wintering waterfowl and shorebirds;
- Seasonally (or temporarily) flooded saltpan, sandbar and/or flat shoreline habitat for foraging and roosting Snowy Plover (which also nests), shorebirds, Large-billed Savannah Sparrow (foraging), and gulls;
- Extensive reedbeds for roosting White-faced Ibis and nesting rails and waterfowl;
- Isolated islets and dead trees (snags) for nesting waders, Double-crested Cormorant, gulls and terns; and
- Flooded agricultural fields for foraging White-faced Ibis, Long-billed Curlew, and several other waders/shorebirds/gulls.

**12. A strong coalition of partner organizations is important for securing successful conservation outcomes.** A diverse coalition of organizations with complementary areas of expertise can do more to help birds and other wildlife at the Salton Sea than organizations working alone. Audubon California is proud to be part of a coalition with Defenders of Wildlife, the Pacific Institute, and the Sierra Club working to secure protections for wildlife and habitat. Audubon California also partners closely with San Bernadino Valley Audubon Society and San Diego Audubon Society.

While managing natural landscapes is fraught with uncertainty, the Salton Sea is essentially an anthropogenic system that requires constant input from human activity. As such, humans exert a larger degree of control over the avian usage, abundance and diversity at the sea than we do at other landscapes. Audubon California and the other stakeholders at the Salton Sea have the opportunity to help ensure that bird species particularly threatened by habitat changes at the sea be considered in management decisions.

Given the importance of the Salton Sea to birds throughout the Pacific Flyway, Californians can and should take the steps necessary to protect this critical habitat. Not only is it well within the ability of land managers to protect the birds, but doing so will actually complement efforts to control dust that threatens public health in the region.

## Acknowledgments

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