

Quantifying Bird Habitat at the Salton Sea

Informing the State of California's Salton Sea Management Plan



Photo credit: Imperial Irrigation District

Report to Funders

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By

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Executive Summary

The State of California is planning for future management of the Salton Sea and is expected to produce a Salton Sea Management Plan by the end of 2016. Audubon California is informing this process by using habitat suitability modeling to quantify the types and extent of bird habitat needed to sustain historic and current populations of birds at the Sea. Here, we are submitting a portfolio of bird habitat suitability maps for six key types of avian habitat at the Salton Sea, based on habitat suitability models developed for 22 indicator bird species that represent these habitats: deep water habitat; mid-depth water habitat; mudflats, sandflats and beaches; playa nesting habitat; permanent wetlands with tall vegetation; and land-sea interface habitat. Included are maps for historic (pre-QSA) and current conditions to provide essential context to future decision-making. Attached is a Technical Report detailing the methodologies used to build the habitat models.

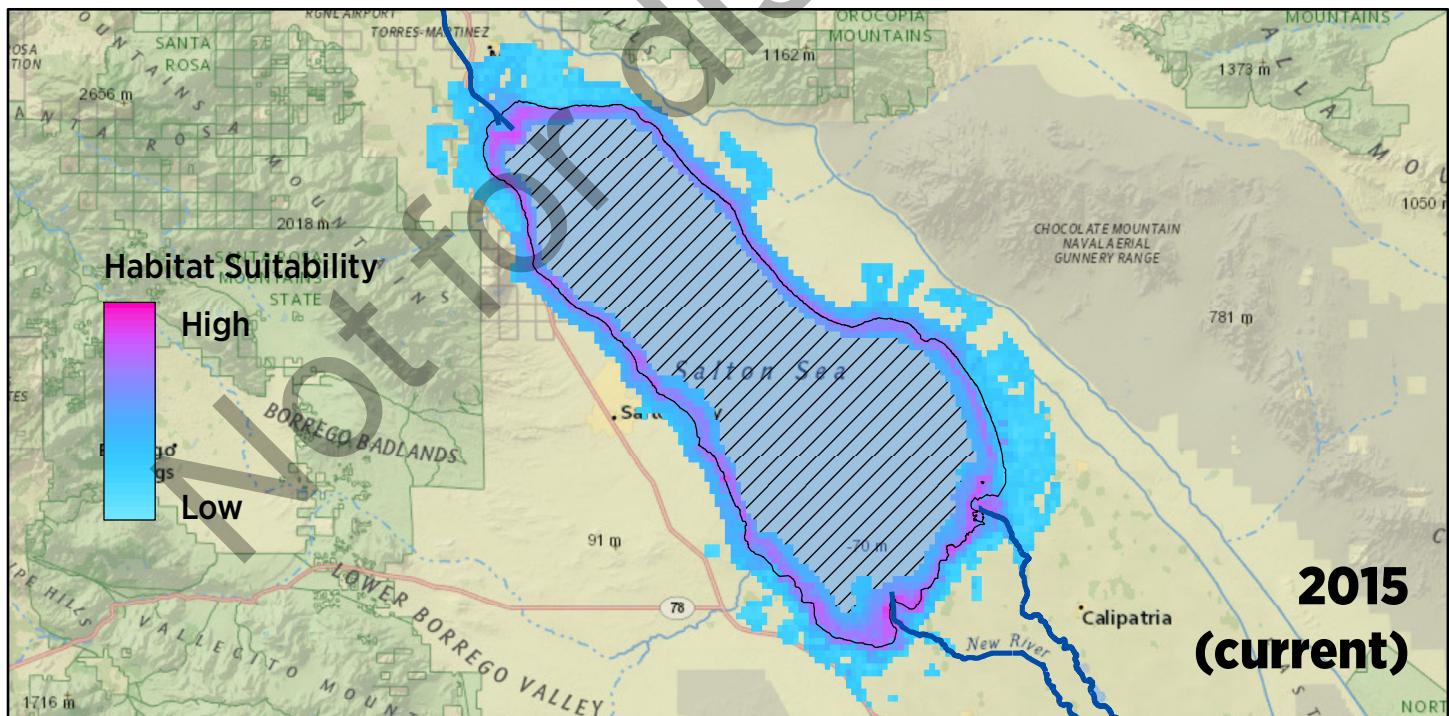
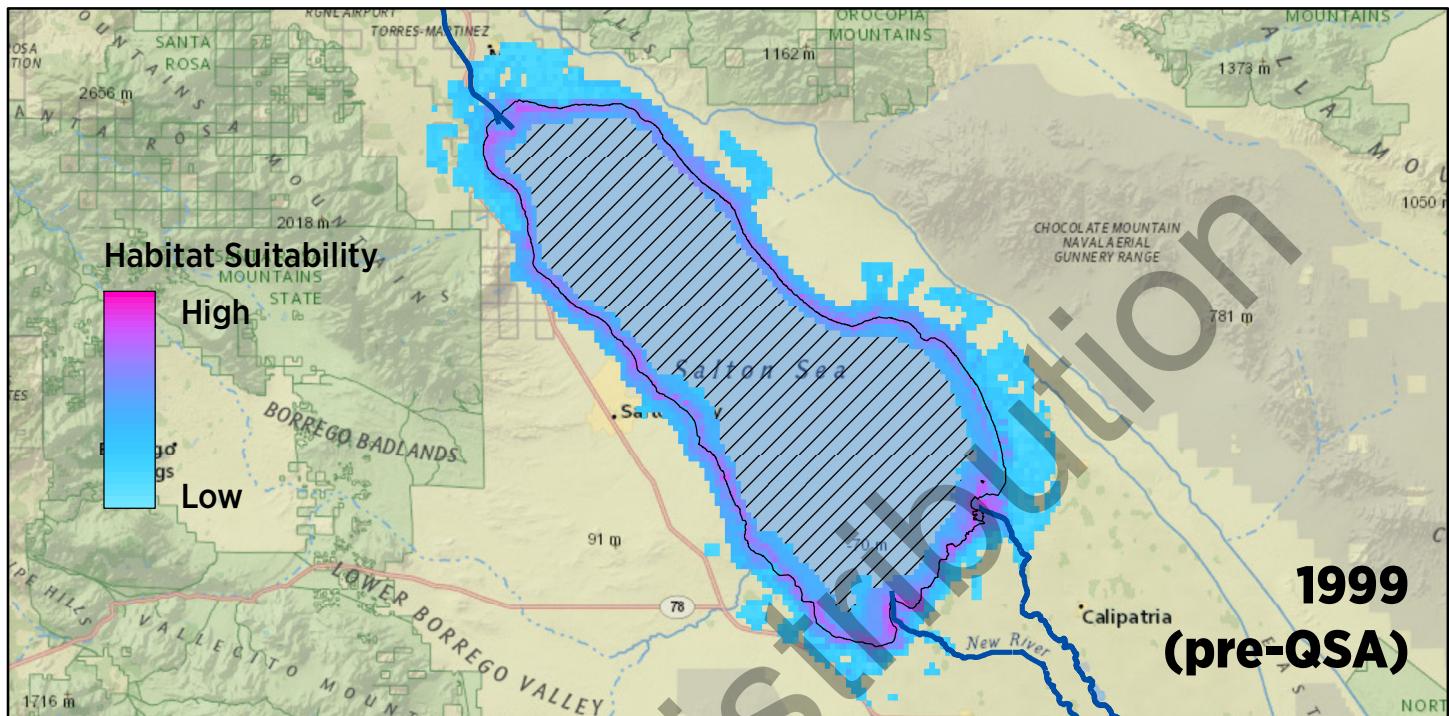
These maps are fundamental to understanding how many acres of each type of habitat are needed to sustain bird populations into the future, which in turn enables a hydrologist to calculate the future water budget to manage habitats at the Salton Sea. These maps are critical to the State as it plans future habitat and dust mitigation in the context of reduced water input.

This work represents an expansion on our initial scope, based on our discussion of needs with the State. We elected to solicit several levels of independent expert review to vet the models, to ensure we were using the best science, and to secure buy-in. Four independent modelers reviewed the methods and provided comments. We also presented our work to Salton Sea experts at U.S. Geological Survey, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife, and to the State-led Salton Sea science advisory committee. In seeking this feedback, we made several model improvements and developed a sense of shared ownership with key stakeholders.

By the end of October 2016, we will synthesize this work in a technical report for the State and in a policy brief for other stakeholders. As part of that effort, we will define thresholds for preferred habitat and calculate the acreage of preferred habitat in each habitat, under historic and current conditions.

Ultimately, this project helps enable the State's effort to successfully develop a Salton Sea Management Plan by the end of 2016. It allows for that plan to include provisions to suppress dust, while sustaining desired habitat functionality for avian species as the sea recedes over time.

Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: Deep Water Habitat (30 cm - 2 m)



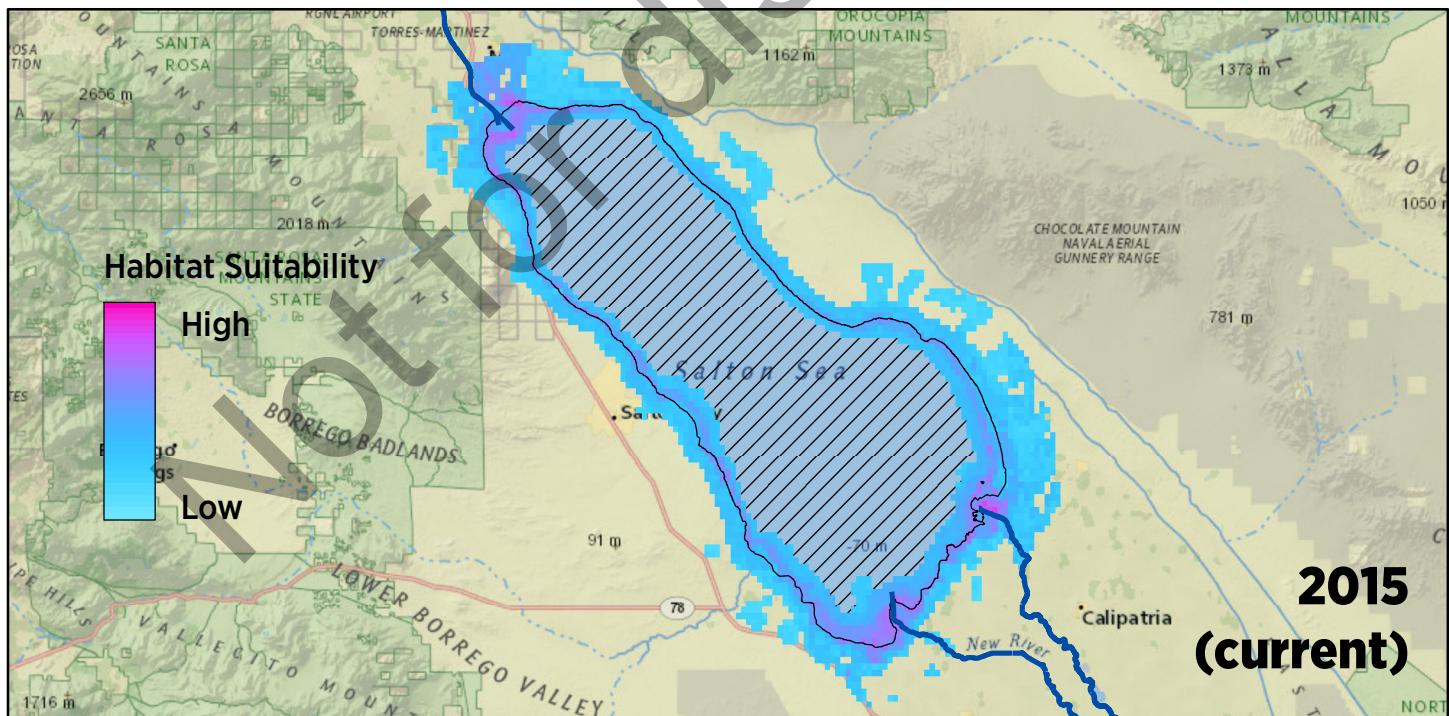
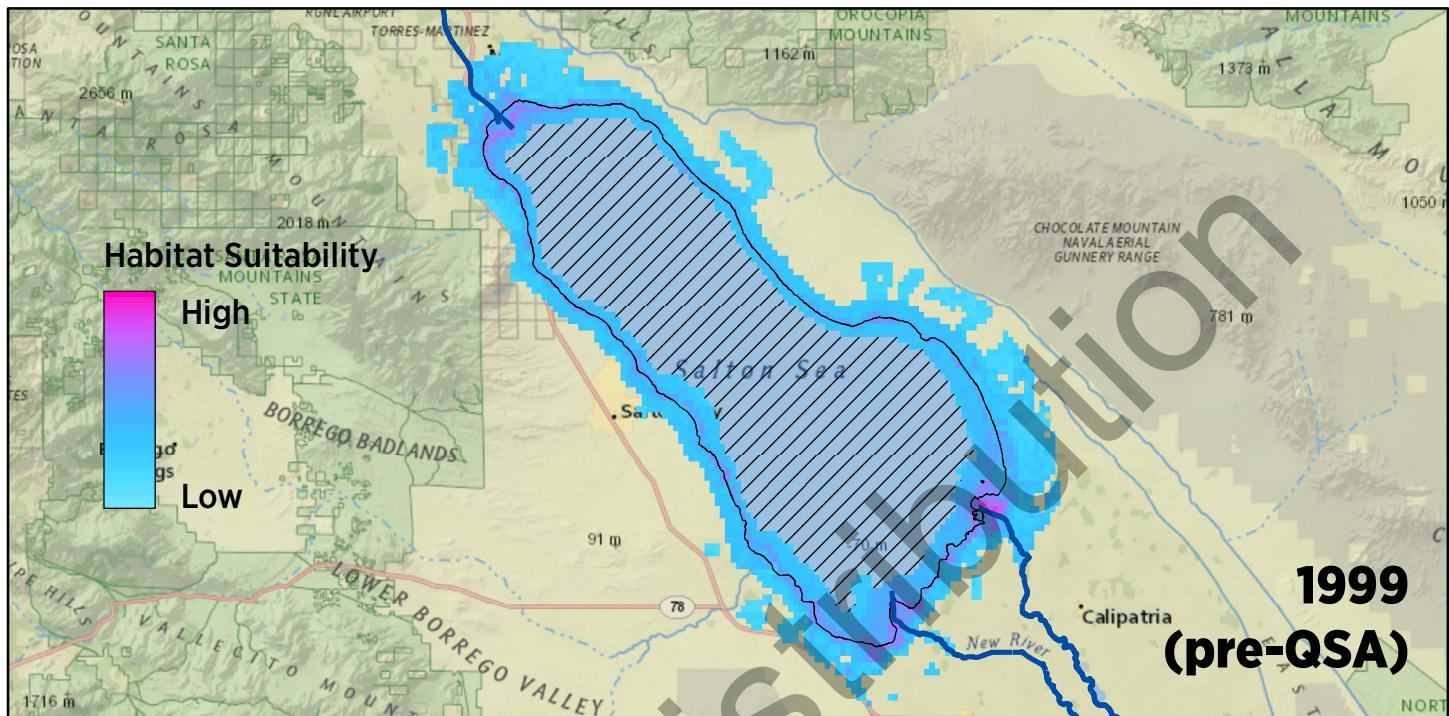
0 5 10 Miles
0 5 10 Kilometers

Legend

Salton Sea Shoreline c. 2000

Note: Shown is the sum of the predicted habitat preferences for the indicator species in this habitat group. Hatched areas not modeled. See Methods.

Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: *Mid-Depth Water Habitats (15-30 cm)*



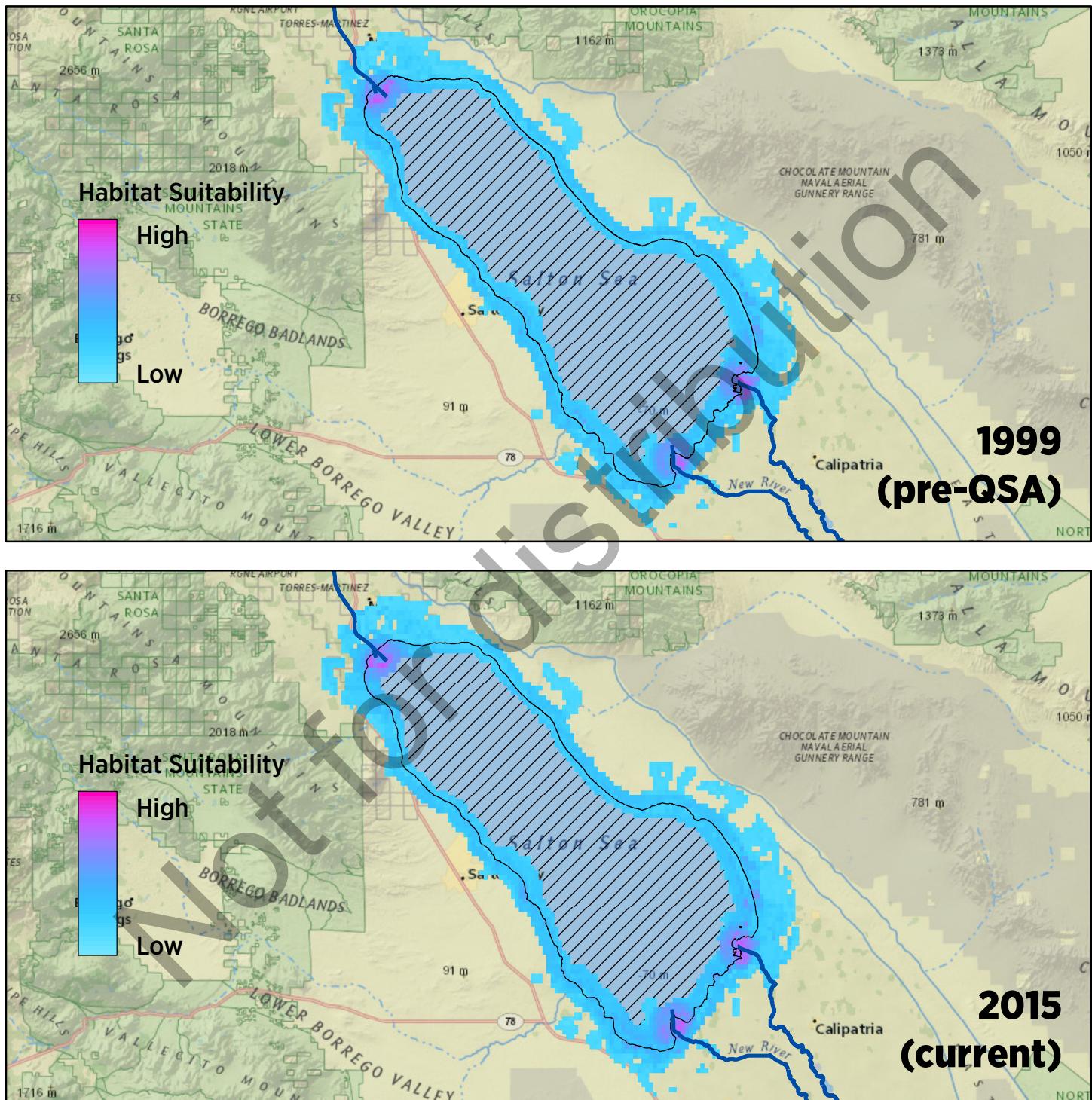
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Salton Sea Shoreline c. 2000

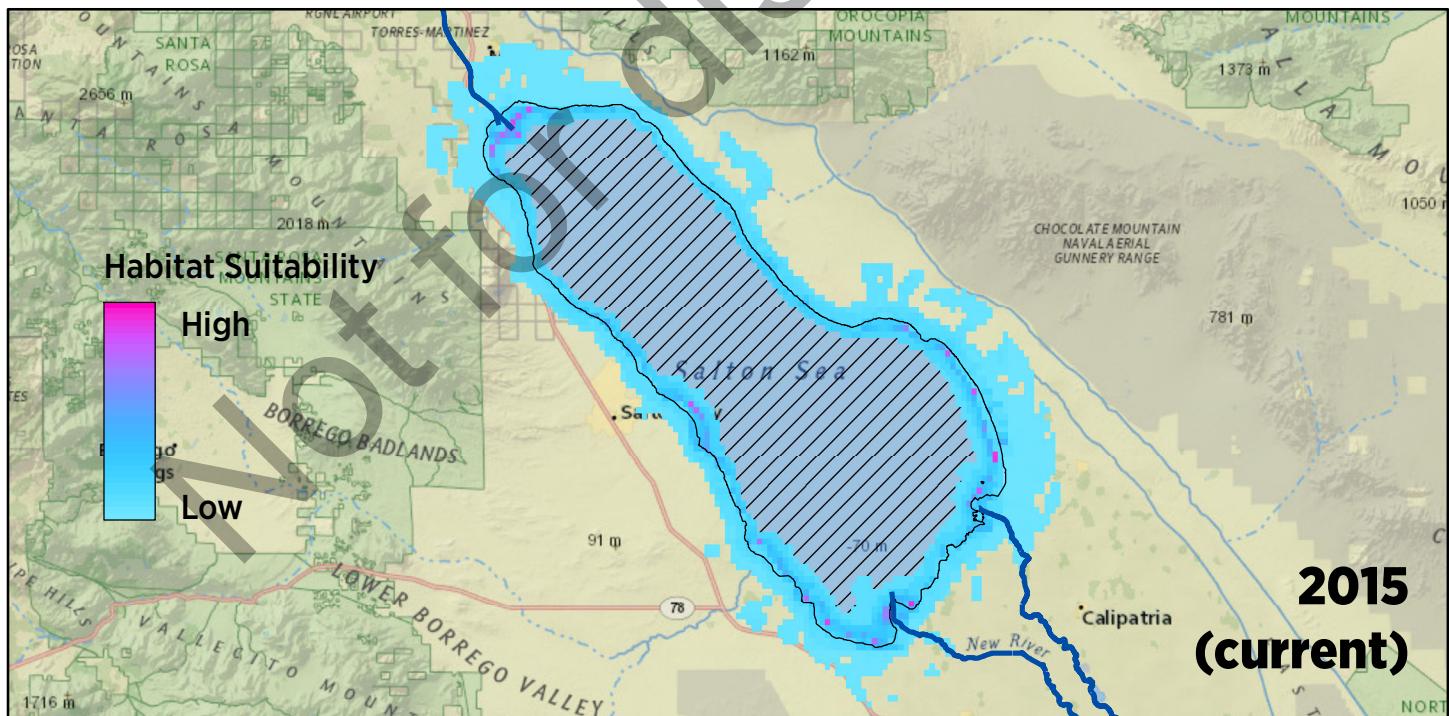
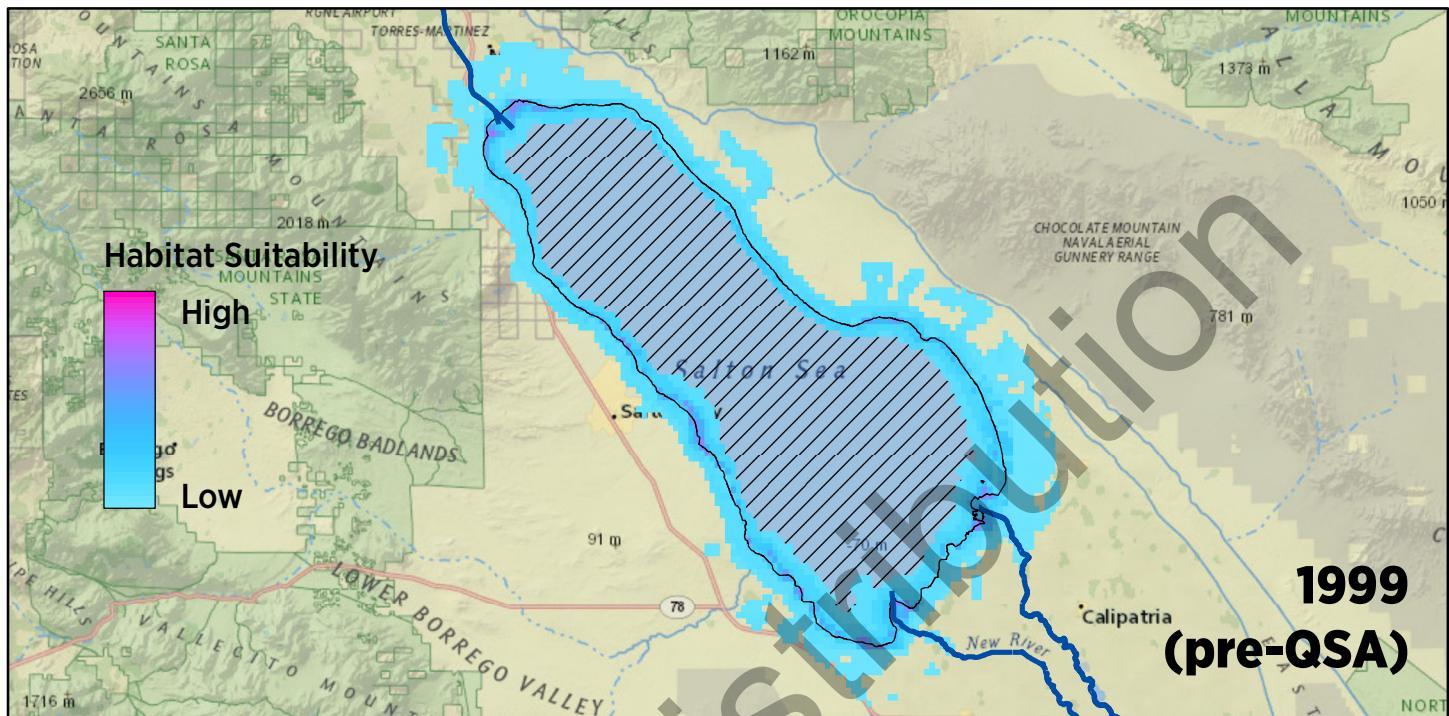
Note: Shown is the sum of the predicted habitat preferences for the indicator species in this habitat group. Hatched areas not modeled. See Methods.

Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: *Mudflats, Sandflats and Beaches (<15 cm water depth)*



Note: Shown is the sum of the predicted habitat preferences for the indicator species in this habitat group. Hatched areas not modeled. See Methods.

Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: *Playa Nesting Habitat for Snowy Plover*



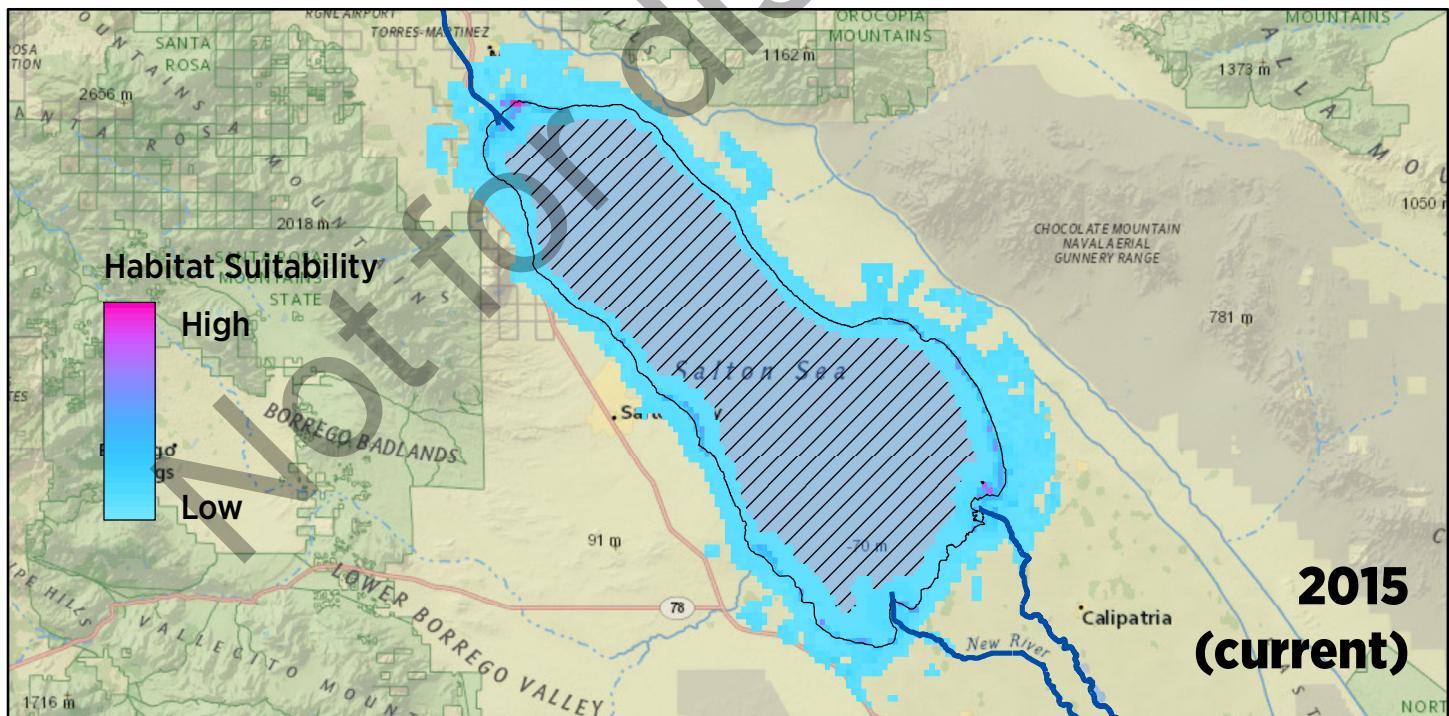
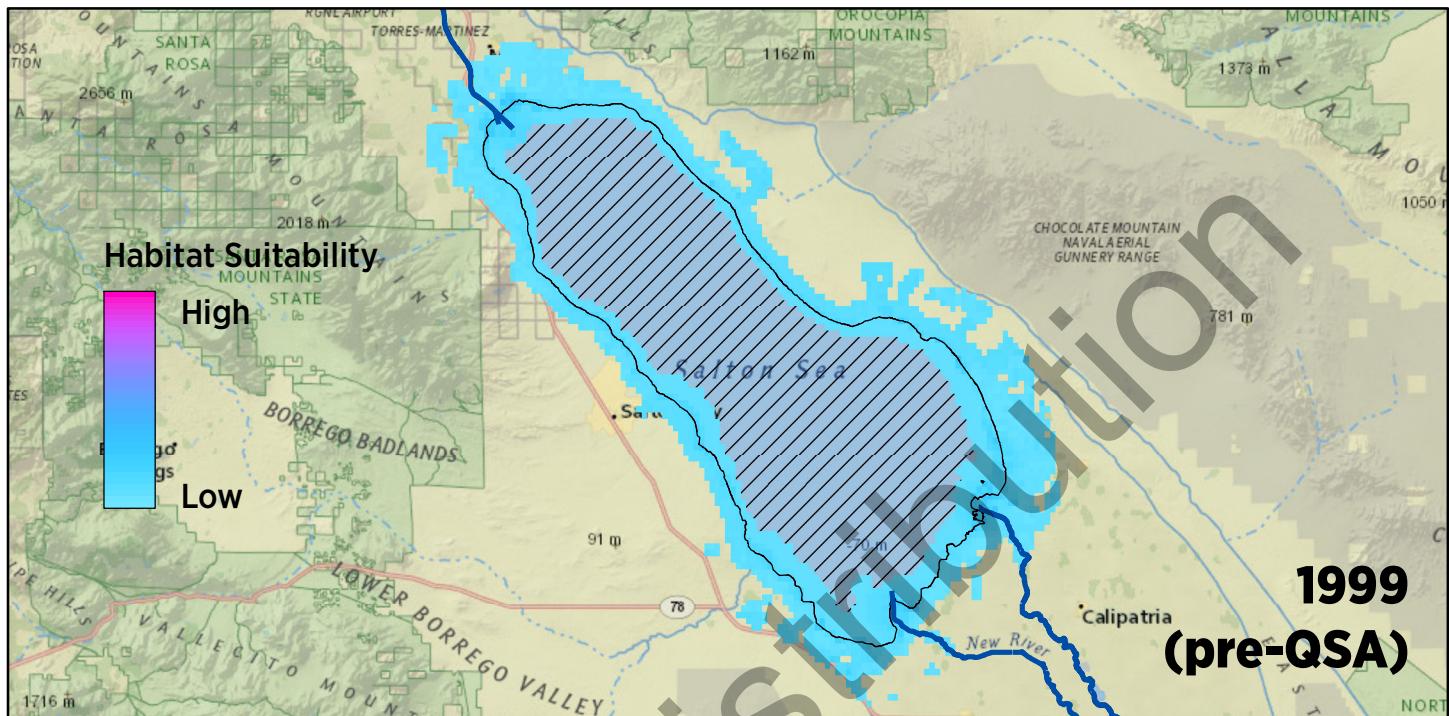
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Legend

Salton Sea Shoreline c. 2000

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Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: *Permanent Wetlands with Tall Vegetation*



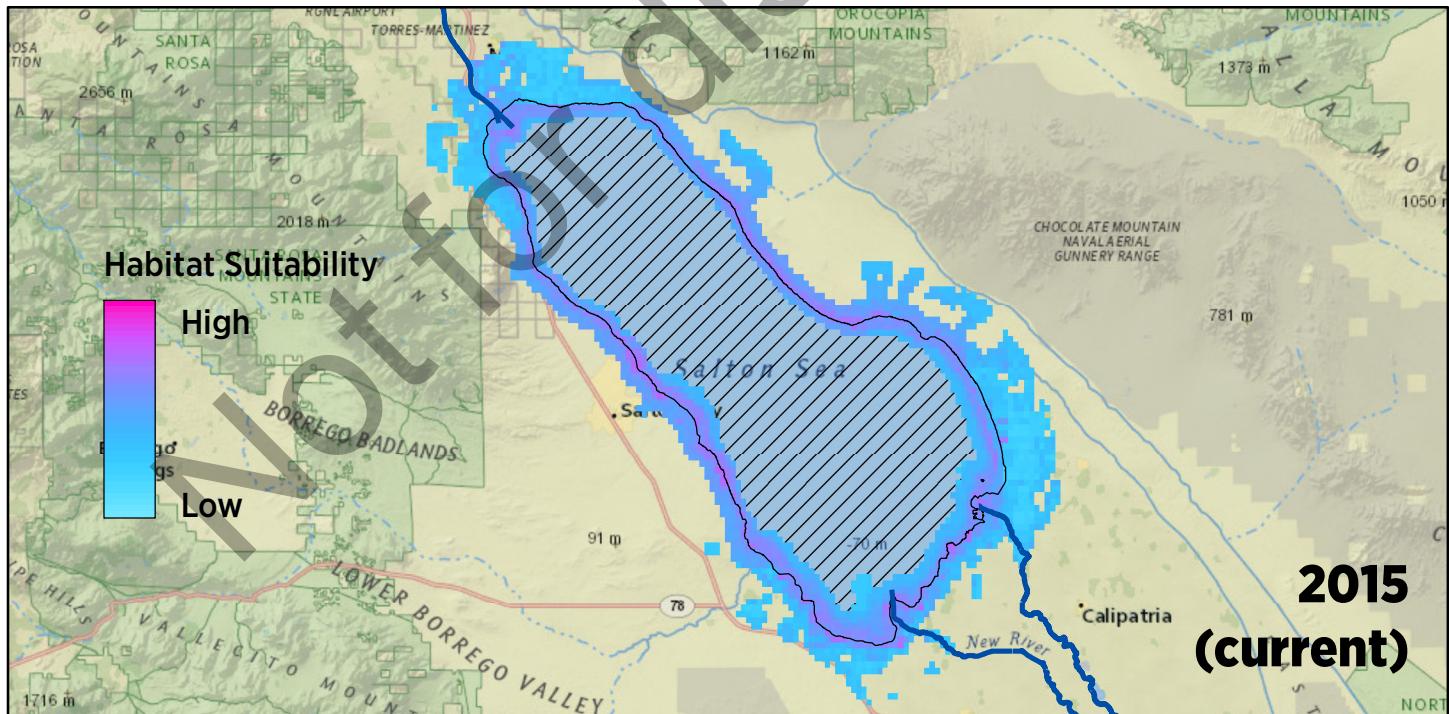
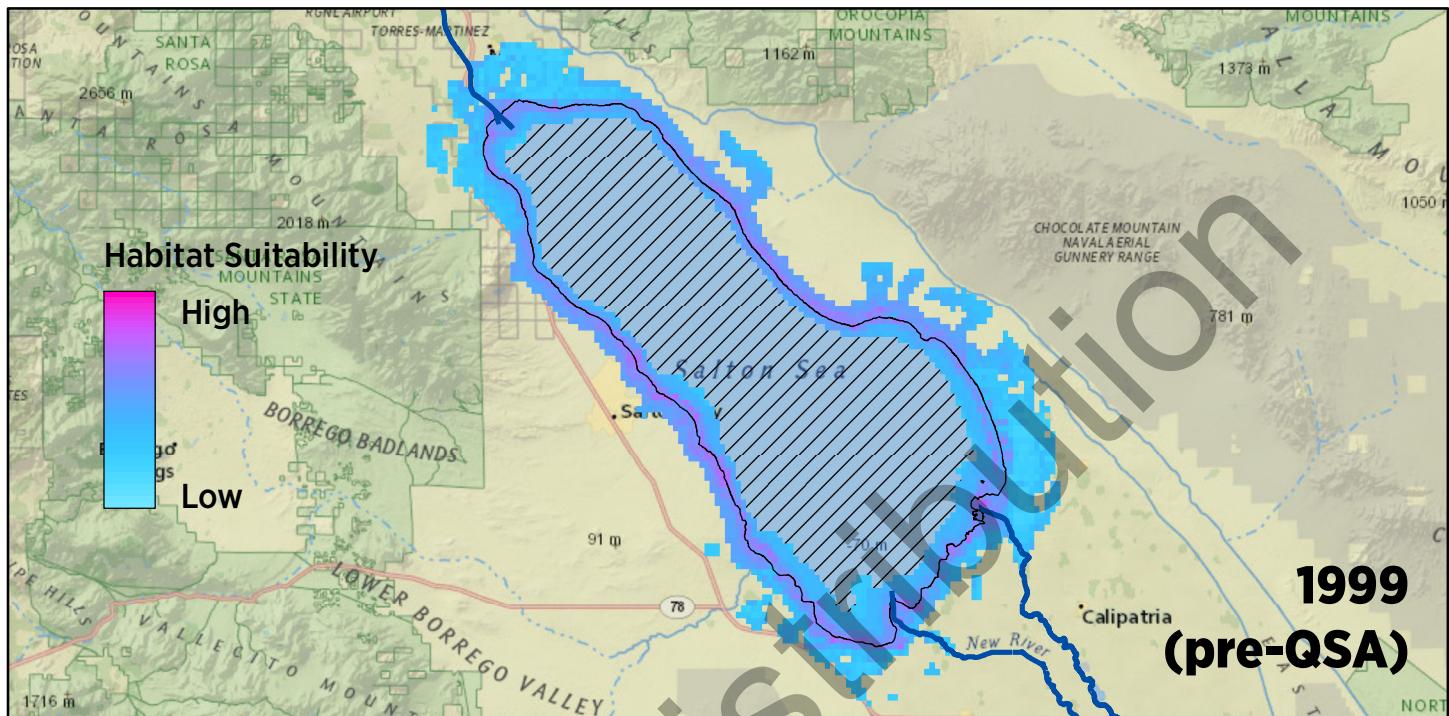
0 5 10 Miles
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Legend

Salton Sea Shoreline c. 2000

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Historical and Current Habitat Suitability to Inform Future Salton Sea Management Planning: *Land-Sea Interface Habitats*



0 5 10 Miles
0 5 10 Kilometers

Legend

Salton Sea Shoreline c. 2000

Note: Shown is the sum of the predicted habitat preferences for the indicator species in this habitat group. Hatched areas not modeled. See Methods.

Areas of Particular Importance to Birds Salton Sea, California

