

# Introduction to Part 1 of the Special Issue: Ecology and Regional Context of Tidal Wetlands in the San Francisco Bay National Estuarine Research Reserve

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## INTRODUCTION

This two-part special issue reviews the basic ecology of tidal wetlands in the San Francisco Estuary. Several articles highlight the well-preserved tracts of historic tidal marsh found at China Camp State Park and Rush Ranch Open Space Preserve. These two protected areas serve as important reference sites for wetland restoration and conservation and also comprise San Francisco Bay National Estuarine Research Reserve (SF Bay NERR). SF Bay NERR is part of the National Oceanic and Atmospheric Administration's nationwide network of 28 estuarine research reserves (<http://www.nerrs.noaa.gov>) that all share common goals: (1) conducting standardized long-term monitoring, (2) supporting applied environmental research, (3) providing stewardship of estuarine natural resources, and (4) linking science with decision making in pursuit of effective solutions to coastal management problems.

In the words of Dr. Jaime Kooser, manager of SF Bay NERR, the tidal marshes of China Camp and Rush Ranch are "locally loved and nationally significant," and it is in this spirit of environmental recognition that the current special issue was developed. The

articles were originally conceived as contributions to a technical report summarizing the state of knowledge about physical and biological aspects of SF Bay NERR, local management issues of concern, and the most pressing needs for future estuarine monitoring and research. The project expanded to include this two-part special issue of *San Francisco Estuary and Watershed Science* to provide a well-deserved broader readership for the contributing authors' research articles and reviews pertaining to tidal wetland ecology and management in the San Francisco Estuary.

In this first part of the special issue, articles present regional perspectives on tidal marsh restoration (Callaway and others), anticipated consequences of climate change (Parker and others), and functional ecology of tidal marsh birds (Takekawa and others). Two other articles provide more detailed, site-specific accounts of invertebrates at China Camp (Robinson and others) and vegetation at Rush Ranch (Whitcraft and others). Forthcoming articles to be included in the second part of the special issue provide additional information on regional tidal wetlands, in general, and the estuarine habitats and species found at China Camp and Rush Ranch, in particular. Taken together, contributions to both parts of the special issue should serve as a valuable resource for restoration practitioners, conservationists, and scientists interested in the broad context of regional tidal

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wetland ecology or the specific status of knowledge and needs for research at China Camp and Rush Ranch.

One recurring conclusion that emerges from these articles is that accelerating sea level rise poses immediate and severe threats to tidal wetlands around the San Francisco Estuary. It is clear that future research, monitoring, restoration, and management of tidal wetlands must consider this unavoidable context of change and the associated consequences for threatened wetland habitats and the sensitive species that live there. It is my personal hope that future science and stewardship of the estuary will build on this and other insights contained in this special issue.