CALIFORNIA NATURAL HISTORY GUIDES

INTRODUCTION TO CALIFORNIA BIRDLIFE

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PREFACE

What is a bird? This might seem a simple question, easily answered. "A warm-blooded, egg-laying, vertebrate animal with feathers" would be accurate, but would only begin to get at the truth. It could be added that the forelimbs are modified to form wings and these are used for flight; this would also be true. Birds are therefore bipedal, using their two hind limbs for walking, running, swimming, perching, foraging, and sometimes killing prey. Also, birds have bony protrusions covered in keratin that surround the mouth—called beaks, or bills. Oh yes, and they are toothless. But here the shared characteristics that define a bird end.

Evolution has found in the class Aves one of the most pliable and adaptable of its creations. Perhaps more than any of the other vertebrates—fish, amphibians, reptiles, or mammals—birds are highly responsive to the challenges, changes, and opportunities of the environments in which they live. As a result, the class has diverged from a common ancestor (probably a theropod dinosaur) into a marvelous multiplicity of species (currently about 10,000 known species living on Earth), each with its own unique attributes and abilities. Each species is an eloquent expression of the environment in which it lives, and most native species fit seamlessly into their own habitat niches. The Northern Spotted Owl is a manifestation of the moist, shady forests of the North Coast range. The California Black Rail is as much a part of the tidal marsh as pickleweed or marsh rosemary. The Greater Sage-Grouse is a creation of the sagebrush plains of the Great Basin.

To know California's birds, one must know the habitat in which they live. This affinity between birds and their habitats is the theme of this book. Only through an understanding of those places—of their weather patterns, of their plant communities, of

their essential natures—will one discover the nature of the most lively residents, the birds. This book is organized according to California's bioregions, each of which supports its own complement of bird species. We have attempted to provide insight into the ecological dynamics of each bioregion and into the distribution, occurrence, and behavioral adaptations of its representative birds.

This is not a field guide. There are a plethora of those available, and you may want to keep one handy to look up species that are not illustrated by a photograph. Nor is this an ornithology textbook. Those are also readily available; we suggest the National Audubon Society's *The Sibley Guide to Bird Life and Behavior* (2001) for encyclopedic access to general ornithological information.

This is a book about California's birds. California is such a diverse and vibrant environment, and supports such bountiful birdlife, that we have been able to paint only a partial picture of its ornithological richness. But it is our hope that this introduction will set you off on a lifelong journey of exploration and discovery in the company of California's birds.

AN OVERVIEW OF CALIFORNIA BIRDLIFE

California is a bonanza of birdlife. The more than 600 bird species on the California state list represent about three-quarters of the 800 or so species that have been recorded in continental United States and about two-thirds of the more than 900 species that occur in North America north of Mexico. Nearly half (47 percent) of California's bird species breed in the state; the rest come to spend the winter in the hospitable climate, or pass through migrating to other wintering or breeding grounds. A relatively large number, perhaps 25 percent of birds on the California list, are rare in the state, occurring only occasionally as *vagrants,* when anomalous weather patterns, ocean currents, or even pioneering tendencies lead them into the state.

California lies at an intersection of atmospheric and oceanic currents and, therefore, at the crossroads of migratory bird routes of the Western Hemisphere. Within a single day, an enthusiastic California birder, following a well-planned schedule and with attention to local knowledge and weather conditions, can encounter a wide variety of birds from far-flung regions of the globe—flocks of Sooty Shearwaters *(Puffinus griseus)* from the South Pacific, Elegant Terns *(Sterna elegans)* from Northwest Mexico, Mountain Plovers *(Charadrius montanus)* from the Colorado Plateau, Black-bellied Plovers *(Pluvialis squatarola)* from the Alaskan tundra, a Rough-legged Hawk *(Buteo lagopus)* visiting from the Canadian prairie, and even an out-of-range warbler, maybe an American Redstart *(Setophaga ruticilla)* or an Ovenbird *(Seiurus aurocapillus)* from New England's hardwood forests. On that same day, with some careful searching through a variety of habitats, the curious naturalist is sure to see dozens, or perhaps more than a hundred, species of birds common throughout much of the west, and several species that occur almost exclusively in California.

This exceptional diversity of birds exists because of California's relatively equitable climate and a varied topography that supports a crazy quilt of habitats. The state's ecological heterogeneity—from dry desert washes, to vast valley grasslands and wetlands, to mossy coastal rainforests and fertile estuaries—provides refuge and sustenance for as rich a complement of bird species as can be found anywhere in North America. Like the geology, the weather, the flora, and the human population, the avifauna of California is constantly changing, adding another layer of natural vitality and vibrancy to this exuberant landscape.

The number of bird species recorded in California keeps increasing, gradually but inexorably—an example of the overall dynamism that is so characteristic of the Golden State. This expansive trend is gradually fulfilling the prophecy of the grandfather of California ornithology, Joseph Grinnell (1877–1939): "It is only a matter of time theoretically until the list of California birds will be identical with that for North America as a whole."

The state's vast size and its Pleistocene climatic history contribute to a high degree of *endemism.* Indeed, California is the only mainland portion of the United States recognized as an Endemic Bird Area, because of its several endemic species and many endemic subspecies. (See "Endemics and Near Endemics," below.)

Terms

Specific terms related to avian biology are discussed later in this overview (e.g., "Taxonomy," below) or are italicized with definitions provided in the glossary. Some of the general terms used to describe types of birds are not very precise, but rather refer to general behavioral characteristics. In broadest terms, the phrases "waterbirds" and "landbirds" divide the class Aves into those species whose primary habitat is aquatic and those whose primary habitat is terrestrial. Most field guides are organized taxonomically, with waterbirds (loons through alcids) in the first half and landbirds (doves through finches) occupying the second half of the guide. This order is based on our understanding of the evolutionary sequence of avian families, from the most primitive to the most recent. A few bird families do not fit neatly into these large groupings, however. Terrestrial groups such as the diurnal birds of prey *(raptors)* and upland game birds (quail and grouse) are inserted between true waterbirds such as ducks and sandpipers.

Within each of these major divisions are other distinctions that help to describe physical similarities or habitat preferences among groups of species. Waterbirds may be "seabirds" or "waterfowl," or "waders" or "shorebirds." Seabirds include a wide variety of families and species with diverse taxonomic relationships, from shearwaters and albatrosses to murrelets and puffins, all of which occur in offshore, oceanic waters. "Waterfowl" is a term more limited taxonomically, referring to members of the family

Anatidae—swans, geese, and ducks—most of which are associated with interior or coastal wetlands. Some cross-pollination occurs among terms, however. For example, the Brant (*Branta bernicla,* also called Sea Goose) or the Surf Scoter (*Melanitta perspicillata,* a diving duck) may also be considered seabirds, because each is often found in oceanic waters. Further subdivisions are used to described subsets within these broader catchall categories. Ducks, for example, are described as either "diving" ducks or "dabbling" ducks, depending on their feeding behavior. The use of the term "waders" varies among people and cultures, but in the United States, it is generally used to describe long-legged wading birds such as herons and egrets. (In Europe, "waders" refers to shorebirds.) Shorebirds, many of which are generically called "sandpipers," are included in the diverse order Charadriiformes, which also includes the jaegers, gulls, and terns.

"Landbirds" is also a catchall phrase. In broadest terms it includes doves through finches. Some groups of birds are unique, and thus they are readily recognizable as owls or woodpeckers or hummingbirds. Others, such as vireos (Vireonidae) and warblers (Parulidae), or sparrows (Emberizidae) and finches, are much more similar to one another, and distinctions emerge only through familiarity, the result of careful observation. You will find it helpful to keep one of the popular field guides handy while reading through this book, to look up those species mentioned but not illustrated in the text. Familiarity with the organization and contents of the field guide will help you develop identification skills and learn taxonomic relationships; but nothing is more instructive than experiencing birds in real life.

Bioregions

We have organized California into seven bioregions to discuss the avifauna: Marine Environment, Shoreline, Coast Ranges, Central Valley and Delta, Mountains and Foothills, Great Basin, and Deserts. Other books in this natural history series organize the state's bioregions differently, depending on their subjects (e.g., Schoenherr 1992, Manolis 2003). Because birds are so mobile, and because most species are quite widely distributed, we have lumped several regions that could have been treated separately,