

PROTECTING THE TREASURED ESTUARIES OF BAJA CALIFORNIA, MEXICO

by Barbara W. Massey



THE PENINSULA OF BAJA CALIFORNIA, Mexico, stretches south one thousand miles from Tijuana to Cabo San Lucas. It is a land of vast, waterless deserts, pine-capped mountains, fertile valleys, bays, and, on the west coast, magnificent salt-marshes. Much of the peninsula is still rugged, and its inaccessibility and lack of water have been strong deterrents to development. Now there are signs of major change. Many of Baja's ecosystems are unique, and worthy of protection, but it is the Pacific coastal wetlands and their value that I wish to discuss.

THE NORTHERN ESTUARIES

The west coast marshes range in size from a few hectares (La Mision, La Salina, El Rosario) to the giant 220-km-long Bahia Magdalena. In the north there are two estuaries of more than 1000 hectares that are of particular interest to ecologists. They are the southern extension of a group of coastal saltmarshes in California and Mexico that have very similar plant composition and avifauna. While there is a continuum in marsh vegetation with gradual changes from Alaska to the tip of the Baja peninsula, the drier climate of southern California and Baja California has created a distinct type of

ecosystem (Macdonald and Barbour 1974). Between Goleta Slough in the north and Bahia de San Quintin in the south, the dominant plants are pickleweeds (*Salicornia virginica* and *S. bigelovii*) in the upper marsh, and Cordgrass (*Spartina foliosa*) in the lower littoral zone. Plants of lesser abundance like Saltwort (*Batis maritima*) and Shoregrass (*Monanthochloe littoralis*) are restricted in range to these marshes, and they serve as refugia for such endangered plants as Saltmarsh Bird's Beak (*Cordylanthus maritimus* ssp. *maritimus*). The resident birds, too, give



Map of the peninsula of Baja California, Mexico. Map/Barbara Massey.

evidence of a continuous community in this region. The ranges of several subspecies of marsh birds are historically considered to be from Goleta to San Quintin, including the Light-footed Clapper Rail (*Rallus longirostris levipes*) (Bent 1926), which is listed as endangered in the United States. The range of Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*), an endangered species in California, extends from Goleta Slough to the small marsh at El Rosario, not far south of San Quintin (van Rossem 1947).

Unlike southern California's estuaries, which have been sorely damaged by dredging and filling (Zedler 1982), the two Baja marshes in this group are undeveloped and relatively undisturbed. They offer biologists a chance to observe and study estuarine flora and fauna in their natural state.

SOUTH OF THE 28th PARALLEL

South of El Rosario there is a 300 kilometer discontinuous stretch to the next wetland, Laguna Manuela. Here the Clapper Rail and Savannah Sparrow are different enough from their northern counterparts to be considered separate subspecies (Bent 1926). South of the 28th parallel Red Mangrove (*Rhizophora mangle*), first encountered at Laguna Abreojos, becomes the dominant plant (Roberts 1989). At Bahia Magdalena there are dense mangrove forests rimming the lagoon. Although Cordgrass is still found there, it is shaded out by mangroves and mangrove-like shrubs. Several plants characteristic of the northern Baja marshes are absent, e.g. Sea Lavender (*Limonium californicum*), Alkali Heath (*Frankenia* sp.) and Jaumea (*Jaumea carnosa*) (Macdonald and Barbour 1974).

BIRD USE

The Baja estuaries provide major wintering and stopover areas for migratory shorebirds and waterfowl on



Estero de Punta Banda, 15 miles south of Ensenada. There is a small agricultural settlement at the south end, and resort development on the barrier beach, but the marsh and its uplands are untouched. Photograph/Barbara Massey.

the Pacific flyway. Interest in, and concern about, shorebird habitat south of the United States has sparked two ornithological projects in Baja. In April 1990, the Western Hemisphere Shorebird Reserve Network held a week-long seminar on shorebird identification, banding, and conservation in Ensenada. The Point Reyes Bird Observatory has instituted a shorebird count program from British Columbia to Baja California that includes Estero de Punta Banda and San Quintin. Counts of 37 Pacific coast wetlands by Point Reyes Bird Observatory placed the two Baja wetlands among 18 with more than 1000 shorebirds (Page *et al.* 1990). The most recent counts, in the fall of 1990, yielded 6000 shorebirds at Estero de Punta Banda and 21,000 at the much larger Bahia de San Quintin. The Bay of La Paz at the southern end of the peninsula was added to the list

of Baja sites in 1990. The shorebird census enlists volunteers from both sides of the border; with birders from the Universidad de Baja California Sur in La Paz, Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California, *pro esteros* and Point Reyes Bird Observatory.

San Quintin, with its extensive eel grass beds, has long been recognized as a key habitat for Brant (*Branta bernicla*). Aerial counts of the wintering population conducted by American and Mexican wildlife biologists in January 1990 ranked it third in Mexico in numbers of Brant (Conant *et al.* 1990). Perhaps even more important is the role of San Quintin as a final staging area on the Brants' northbound migration; the entire population is thought to mass there before undertaking a non-stop flight to northern California (Gary Kramer, pers. comm.). Southern

California's bays are now devoid of the eel grass that is Brant's essential food, so the birds must fly more than one thousand miles to reach Humboldt Bay, just south of the Oregon border, where they can feed again. If San Quintin were developed and the eel grass beds destroyed, the future of this species would be in jeopardy.

The bays and estuaries in the southern half of Baja have a rich avifauna. Additionally the Gray Whale (*Eschrichtius glaucus*) calves and breeds in the bays of Baja California. Bahia Magdalena hosts the northernmost breeding colony of Magnificent Frigatebirds (*Fregata magnificens*) on the Pacific coast, as well as large numbers of breeding Ospreys (*Pandion haliaetus*) and Bald Eagles (*Haliaeetus leucocephalus*).

ENDANGERED SPECIES

Several species of endangered birds



Light-footed Clapper Rail, an endangered species in the U.S., is abundant in the marshes of Estero de Punta Banda and Bahia de San Quintin. ("This photograph was taken in California. The trash is a giveaway, the Baja marshes are not yet trashed...but I have no shots of the rails in Baja.") Photograph/Dana Echols.

are present in significant numbers in Estero de Punta Banda and Bahia de San Quintin. The Light-footed Clapper Rail population in San Quintin alone is larger than the entire United States population estimate of fewer than 300 pairs (Zembal and Massey 1981, 1985). This reclusive bird is a marsh resident, and nests preferentially in Cordgrass. Habitat destruction is considered a major reason for its decline. The migratory California Least Tern nests on ocean beaches and salt flats in estuaries from San Francisco to Cabo San Lucas, and was first documented nesting in Baja in 1975 (Massey 1977). At Estero de Punta Banda and San Quintin there are colonies on both the barrier beaches and the salt flats. This gives

ornithologists a chance to study the bird nesting under natural conditions as it once did in California (Eduardo Palacios, pers. comm.). Belding's Savannah Sparrow, a resident saltmarsh species that nests in the upper littoral zone, is found in large numbers at both marshes (Bradley 1973).

THE FUTURE

Until 1974 there was no paved road between Ensenada and the tip of the peninsula, and Baja's magical wilderness was known only to a small population of settlers and the "Baja buffs" who explored its remotest areas in 4-wheel drive vehicles. The single paved road that now runs the length of the peninsula has brought

inevitable changes, particularly at the north and south ends of what was once the "forgotten peninsula." Baja is now attracting the attention of international entrepreneurs who see commercial potential in its glorious natural wonders. Bahia Magdalena is a vast coastal estuarine system that is as remote and undeveloped as any such ecosystem in the world. Here a huge development is planned by Japanese entrepreneur Narutoshi Iwasaki, whose grandson became a naturalized Mexican citizen in order to acquire 80,000 hectares of coastal property. The proposed resort would cost one billion dollars and include roads, an airport, marinas, and golf courses, along with hotels and condominiums (del Rio 1989).

The barrier beaches that protect the west coast estuaries are particular targets for development. In 1987 construction of a hotel and condominiums on the barrier beach of Estero de Punta Banda in Ensenada was the first such onslaught on an important Baja estuary. To create flat land for building sites, protective dunes along the length of the sandspit were lowered and leveled, leaving only 4 kilometers of natural habitat at the tip. Dune systems protect Baja's estuaries against the huge waves and storm-driven high tides of tropical storms from the South Pacific. Such a storm in 1982 changed the position of the ocean entrance in Estero de Punta Banda and deposited new sandbars all around the mouth. Without the high dunes, the estuary itself is subject to heavy sand deposit from the next big storm. Additionally, hotel developers wished to convert the estuary into a marina, and applied for a dredging permit from the Secretaria de Desarrollo Urbano y Ecologia, Mexico's federal agency in charge of environmental concerns.

In 1988, the realization that Baja's estuaries are no longer safe from development led to the formation of *pro esteros*. With chapters in Mexico and in the United States, this grass-roots organization is dedicated to the conservation of Baja's estuaries. The Secretaria de Desarrollo Urbano y Ecologia has encouraged the efforts of *pro esteros*. The two northern estuaries were of most immediate concern and the first major task was to request reserve status for Estero de Punta Banda. The application forms were complex and required aerial photography to determine marsh acreages, land ownership, and biological inventories. Within 18 months, however, *pro esteros* completed the application forms and submitted the request to the Secretaria de Desarrollo Urbano y Ecologia.

Concern about San Quintin was

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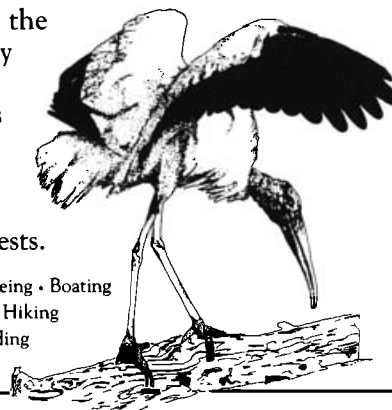
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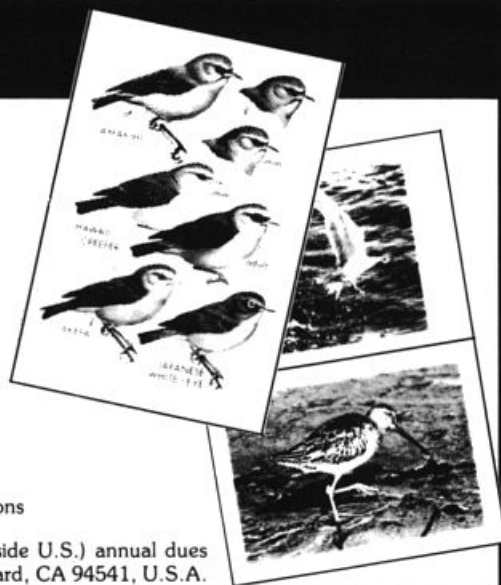
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heightened in the spring of 1990 when it was learned that the western barrier beach was for sale. This dune system is about 12 km long and 0.5 km wide. There is no water or electricity on the barrier beach, and only a 4-wheel drive track along the first few kilometers. A few years ago, knowledgeable Baja aficionados would have scoffed at the idea of a large resort development there, but the possibility is now being taken seriously. The current task is to follow the same course with regard to Bahía de San Quintín as *pro esteros* has done for Estero de Punta Banda in order to have it designated as a reserve as soon as possible. The ICBP-US has contributed significantly to this effort by providing funds for aerial photography of San Quintín.

In addition to working toward a reserve system, *pro esteros* hopes to compile a database of biological information on the other Baja estuaries, and educate the public on the value of coastal wetlands. The organization is already promoting ecological and hydrological research, and providing scientific expertise to Mexican government agencies in planning for development around the estuaries.

The economy of Baja is sorely depressed. People need jobs as well as the basic amenities of civilized life.

But damaging or destroying estuarine resources through unplanned development would cause irreversible changes while bringing only short-term economic gains. The goal of *pro esteros* is to work with local inhabitants to ensure the future of both the people and the land.

Both chapters of *pro esteros* are incorporated as non-profit organizations; the United States chapter has a tax-exempt status. For more information please write Co-chairs Barbara Massey (1825 Knoxville Ave., Long Beach, CA 90815) or Dra. Silvia Ibarra (P. O. Box 4844, San Ysidro, CA 92073), or Executive Director Antonio Gómez-Pedroso Cedillo, (Calle 9a 1268 Altos Loc. A, Ensenada, B.C., C.P. 22800).

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