

## THE BLACK SKIMMER IN CALIFORNIA: AN OVERVIEW

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Although many avian species in western North America have suffered recent population declines, a few have increased over the same period of time (Jehl and Johnson 1994). Many of the increases, such as parrots' (Psittacidae), can be attributed strictly to anthropogenic influences (Johnston and Garrett 1994). Among those species showing apparent natural population increases in California is the Black Skimmer (*Rynchops niger*), which first occurred in the state in 1962 (Small 1963, 1994) and is now a resident breeder with a population in 1995 of about 1200 pairs. Recent studies in this region have documented its nocturnal activity pattern in the breeding season (Wilson 1995) and winter (Gazzaniga 1995, de la Cueva and Fernández 1996), food habits (Wilson 1995), and pattern of chick growth (Schew and Collins 1990, 1991). In this paper we review the status of the Black Skimmer in California with emphasis on the size and location of breeding colonies and overwintering aggregations (Figure 1). We also include a list of museum specimens of Black Skimmers taken in California (Appendix).

The first Black Skimmer recorded in California was a single individual observed at the mouth of the Santa Ana River in coastal Orange County on 8 September 1962 (Small 1963). The real invasion began 6 years later with the sighting of five skimmers on the Salton Sea at the mouth of the Whitewater River, Riverside County, on 3 July 1968 (McCaskie and Suffel 1971) and the discovery of five nests at the south end of the Salton Sea in 1972 (McCaskie et al. 1974). Although the skimmer populations at the Salton Sea have fluctuated since then, approximately 487 pairs bred there in 1995 (Molina 1996; Table 1). Skimmers spread to the Pacific coast beginning in 1971 and bred in south San Diego Bay in 1976 (Unitt 1984). They spread northward in the ensuing years as regular summer visitors and occasional small overwintering groups (Unitt 1984, L. Hays pers. comm.) before establishing a breeding colony at the Bolsa Chica Ecological Reserve, Orange County, in 1985 (McCaskie 1985, Collins et al. 1991, L. Hays and D. Yparraguerre pers. comm.) and Upper Newport Bay Ecological Reserve, Orange County, in 1986 (McCaskie 1986). These two colonies now each support an annual breeding population of greater than 200 pairs (Table 1). The increase in the breeding range of the Black Skimmer has continued with the documentation of breeding on San Francisco Bay in 1994 and 1995 (Layne et al. 1996) and the formation of a new colony at Batiquitos Lagoon in northern San Diego County in 1995 (Whelchel et al. 1996) (Figure 1). A single pair nested at an inland site in the Tulare Lake basin, Kings County, in 1986 (Erickson et al. 1986, Small 1994); four birds appeared at this site again in 1993 but apparently did not nest (Yee et al. 1993). Six pairs bred at

## BLACK SKIMMER IN CALIFORNIA

the Seal Beach National Wildlife Refuge in Anaheim Bay, Orange County, in 1987 (McCaskie 1987, B. Massey pers. comm.).

Documentation of colony sizes has varied in detail from year to year. In California, Black Skimmers have a prolonged breeding season lasting well into August and September in some years (Grant and Hogg 1976, Schew and Collins 1991, Stadlander 1994, Konecny 1995, Molina 1996), and at least some but not all (Collins pers. obs.) of the late-season nests are the result of renesting. However, no detailed information on the rate of renesting is available. Thus, an exact count of the number of nesting pairs at each site

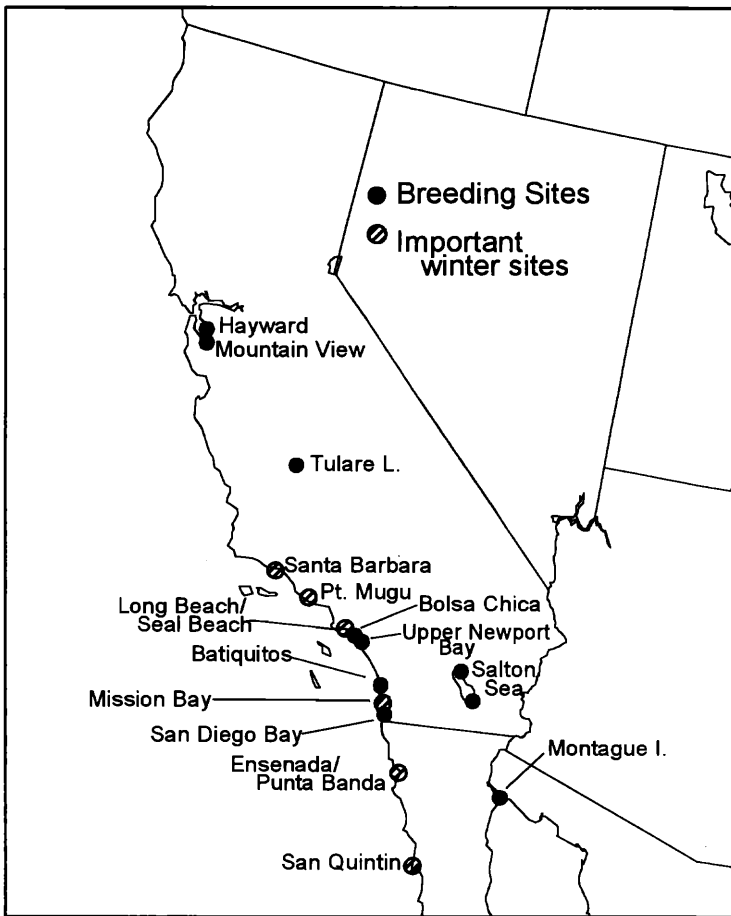


Figure 1. Breeding colony sites (filled circles) and important winter concentration sites (hatched circles) of the Black Skimmer in California and northern Baja California.

BLACK SKIMMER IN CALIFORNIA

is usually not possible, and only crude estimates have been reported. We regard the number of nests initiated as the most consistent year-to-year index of the size of the skimmers' breeding population, even though it will

**Table 1** Number of Pairs or Nest Initiations (\*) by Black Skimmers in California Breeding Colonies 1972–1995

Year	Salton Sea <sup>a</sup>	San Diego Bay <sup>b</sup>	Bolsa Chica <sup>c</sup>	Upper Newport Bay <sup>f</sup>	San Francisco Bay <sup>d</sup>	Batiquitos Lagoon <sup>e</sup>
1972	5					
1973	3					
1974	10					
1975	9					
1976	25	1				
1977	100	3				
1978	100	6				
1979	ND <sup>f</sup>	14				
1980	0	30				
1981	0	25				
1982	0	35				
1983	0	50				
1984	0	++ <sup>g</sup>				
1985	47	150	10*			
1986	300	130	60*	2		
1987	500	++	106*	ND		
1988	100	200	150*	15		
1989	0	++	112*	45		
1990	100	++	338*	14		
1991	80	>157 <sup>h</sup>	398*	40		
1992	100	++	278*	++		
1993	300	326 (473*)	284*	++		
1994	450	310 (420*)	353*	++	2*	
1995	487	>200 <sup>h</sup>	201*	451*	2*	14*

<sup>a</sup>Data from Molina (1996).

<sup>b</sup>Data from H. R. Carter et al. (unpubl. data), Stadtlander (1994), Konecny (1995), and F. Schaffner, E. Copper, and D. Stadtlander (pers. comm.).

<sup>c</sup>Data from E. Burkett, L. Hays, K. Gazzaniga, and M. Taylor (pers. comm.).

<sup>d</sup>Data from Layne et al. (1996).

<sup>e</sup>Data from Whelchel et al. (1996).

<sup>f</sup>ND, no data available.

<sup>g</sup>++, birds seen, possibly in large numbers, but no nest-census data available.

<sup>h</sup>Minimal count; entire colony not censused.

## BLACK SKIMMER IN CALIFORNIA

almost certainly exceed the actual number of breeding pairs by an amount yet to be determined. This is the value, when known, listed in Table 1.

The breeding population of skimmers at the Salton Sea has shown the most dramatic fluctuations, with more than 100 nests reported by 1977, few if any nests from 1980 to 1983, and a rebound to a high of over 500 nests in 1987 (Molina 1996, Table 1). Most of the coastal colonies have shown a nearly steady year-to-year increase in numbers of nests with occasional spurts such as that noted at Bolsa Chica, from 112 nests in 1989 to 338 in 1990 (Table 1).

The status of the Black Skimmer in adjacent Baja California, Mexico, has been summarized by Palacios and Alfaro (1992). Skimmers have been recorded regularly in Baja California since 1979 (Wilbur 1987) and are now "considered a locally common bird on the northwestern coast of Baja California, not only in winter but year round" (Palacios and Alfaro 1992). There have also been winter and breeding-season records of skimmers in Baja California Sur since 1985 (Palacios and Alfaro 1992, Carmona et al. 1995). The only known Baja California breeding colony is on Montague Island in the northernmost Gulf of California in the Colorado River delta; breeding was suspected in 1992 (Palacios and Mellink 1993) and confirmed (14 nests) in 1993 (Peresbarbosa and Mellink 1994); 21 nests were found in 1994 (Peresbarbosa 1995). Some of the skimmers wintering in northwestern Baja California and nesting on Montague Island were banded in southern California colonies as chicks (Palacios and Alfaro 1992, Peresbarbosa and Mellink 1994). Although no nesting has been noted, skimmers have been observed since 1994 in spring and summer in man-made ponds at Cerro Prieto, in the Mexicali Valley (K. Radamaker pers. comm.). The skimmers in Baja California Sur may have originated from mainland colonies in Sonora or Sinaloa, Mexico (Palacios and Alfaro 1992, Carmona et al. 1995).

Away from the breeding colonies and known coastal wintering sites, Black Skimmers are noted regularly along the coast from San Diego north to Monterey Bay. For example, there are 37 records of single skimmers or small groups (up to four) in coastal San Luis Obispo County since 1977, all but seven of which were between March and October (T. Edell pers. comm.). The first sighting in northern California was of a single bird at Bodega Bay, Sonoma County, 24 July 1971 (DeSante and LeValley 1971); more recently, birds have also reached coastal San Mateo County (Yee et al. 1995b,c), Marin County (Yee et al. 1993, 1994, 1995a), and coastal Sonoma County again (Bailey and Fix 1994), as well as a number of sites on San Francisco Bay. All records on the immediate coast of northern California are from 22 May to 14 August. The only Channel Islands record is of four individuals seen on Santa Catalina Island, 28 June 1995 (McCaskie 1995b).

Rosenberg et al. (1991) summarized five records (involving six individuals) for the lower Colorado River valley; the first record for that region was in 1977, and all records fall between 16 May and 3 September. Other inland sightings for southern California are of a juvenile near Lakeview and at Lake Elsinore, Riverside County, 27 August to 4 September 1978 (Garrett and Dunn 1981), two at Twentynine Palms, San Bernardino County, 25 August

## BLACK SKIMMER IN CALIFORNIA

1994 (McCaskie 1995a), and two at China Lake Naval Weapons Center, extreme northeastern Kern County, 28 July 1990 (McCaskie 1990). At least the first of these inland records suggests an occasional overland route from the Salton Sea to the coast. Additional records of Black Skimmers at inland sites, in Durango and Jalisco, Mexico, have been reported by Williams (1982).

Unlike Atlantic-coast populations nesting north of North Carolina (Burger and Gochfeld 1990, Gochfeld and Burger 1994), Black Skimmers breeding in California are not all long-distance migrants; many winter locally in southern California (Gazzaniga 1995, 1996). Wintering concentrations of skimmers have been noted at Santa Barbara, Santa Barbara County, Seal Beach and Upper Newport Bay, Orange County, and Mission Bay and San Diego Bay, San Diego County (Gazzaniga 1995, 1996) (Figure 1). More distant locations include Ensenada and San Quintín in Baja California, Mexico (Palacios and Alfaro 1992). Observations of banded birds have indicated that a few skimmers from the Salton Sea winter on the coast (Molina 1996). Individuals banded at Bolsa Chica have been observed in winter flocks from Santa Barbara south to San Quintín (Gazzaniga 1995, 1996), and birds from San Diego have been observed in both Long Beach and Santa Barbara (M. Taylor and C. Collins unpubl.) and Ensenada (K. Molina pers. comm.). Two of the chicks banded in San Francisco Bay in 1995 (Layne et al. 1996) have been observed in winter flocks in southern California: one was observed in Santa Barbara on 11 February 1996 (K. Molina and K. Garrett pers. obs.), another in Long Beach 4–21 April 1996 (Taylor and Collins pers. obs.). Observations of uniquely banded skimmers have demonstrated a degree of year-to-year overwintering site fidelity as well as some intraseasonal movements between sites (Gazzaniga 1995, 1996). Further observations of these uniquely color-banded birds will aid in quantifying the pattern of juvenile and adult survival during the winter (Gazzaniga 1995, Taylor and Collins unpubl.).

Skimmers banded as chicks at Bolsa Chica have been observed as breeders in colonies at San Diego (J. Konecny pers. comm.), Seal Beach (B. Massey pers. comm.), and Montague Island (Peresbarbosa and Mellink 1994). Although the colonies are occupied annually, these observations of banded birds suggest reduced philopatry, at least among prebreeders, and a noticeable amount of mixing of birds among the several breeding colonies. Breeding at two years of age was documented for a banded skimmer nesting at Seal Beach in 1987 (B. Massey pers. comm.).

The Black Skimmer is now a well-established resident breeding species in southern California and Baja California. Further population increases at both some of the well-established colonies and also at the three newly colonized sites (Layne et al. 1996, Whelchel 1996) over the next few years seem likely. The formation of additional breeding colonies, however, is more apt to depend on the availability of suitable sites sufficiently protected from human disturbance. Black Skimmers on both the Atlantic and Pacific coasts frequently nest in association with various species of terns (*Sterna* spp.) (Gochfeld and Burger 1994, Collins et al. 1991), and such an association may prove to be a pre- or co-requisite condition for the establishment of new skimmer colonies in California and Baja California.

## BLACK SKIMMER IN CALIFORNIA

### ACKNOWLEDGMENTS

We are grateful for the permission granted us to monitor skimmer populations in the several breeding colonies. We are also indebted to the numerous individuals mentioned above, and particularly Guy McCaskie, who have so freely shared their field observations of skimmers with us and thereby made this a much more complete overview. Kathy Molina and Philip Unitt made helpful comments on earlier drafts of this paper, and Mark C. Wimer prepared Figure 1.

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*Accepted 27 April 1996*

Appendix. Specimens of the Black Skimmer from California. CSULB, California State University, Long Beach; CSUN, California State University, Northridge; LACM, Natural History Museum of Los Angeles County; SBCM, San Bernardino County Museum; SDNHM, San Diego Natural History Museum. Inquiries to Louisiana State University, the Museum of Vertebrate Zoology, University of California, Berkeley, and the University of California, Los Angeles, revealed no Black Skimmer specimens.

### South end Salton Sea, Imperial County

- 28 Apr 1979, adult, mount, SBCM M50894  
19 Jul 1991, juv., study skin, LACM 106066  
19 Jul 1991, chick, in alcohol, LACM 106446  
31 Jul 1991, chick, in alcohol, LACM 106447  
31 Jul 1991, chick, in alcohol, LACM 106448  
31 Jul 1991, chick, in alcohol, LACM 106449  
31 Jul 1991, chick, in alcohol, LACM 106450  
31 Jul 1991, chick, in alcohol, LACM 106451  
31 Jul 1991, chick, in alcohol, LACM 106452  
31 Jul 1991, chick, in alcohol, LACM 106453  
4 Jun 1993, adult, skeleton, LACM 107571  
17 Jul 1993, chick, study skin, SDNHM 48801  
19 Sep 1993, juv., flat skin/skeleton, LACM 107762  
13 Aug 1994, juv., study skin, LACM 108428  
3 Sep 1994, juv., study skin, LACM 108429  
3 Sep 1994, juv., study skin, LACM 108430  
12 Aug 1994, adult, skeleton, LACM 108447  
12 Aug 1994, adult, skeleton, LACM 108448  
3 Sep 1995, juv., study skin, LACM 108946

### North end Salton Sea, Riverside County

- 3 Jul 1968, adult, study skin, LACM 76788  
17 May 1970, adult, mount, SBCM S33298  
24 Jul 1993, juv., study skin, LACM 107763  
7 Aug 1993, juv., study skin, LACM 108431  
7 Jul 1994, adult, skeleton, LACM 108446



BLACK SKIMMER IN CALIFORNIA

San Diego Bay, San Diego County

31 Jul 1977, adult, study skin/partial skeleton, SDNHM 40388

6 Jul 1978, imm., skeleton, SDNHM 42107

22 Jul 1990, postjuv., study skin/partial skeleton, SDNHM 47409

5 Jul 1994, adult, skeleton, SDNHM 49011

Mission Bay, San Diego County

22 Mar 1989, adult, study skin/partial skeleton, SDNHM 45694

Jan 1994 (exact date unknown), age?, skeleton, SDNHM 48839

Bolsa Chica, Orange County

Date unknown, chick, in alcohol, CSULB 6465

Date unknown, chick, in alcohol, CSULB 6466

28 Jun 1986, chick, study skin, CSULB 6482

10 Sep 1987, juv., study skin, CSULB 6783

16 Jun 1989, adult, skeleton, CSULB 7617

15 Aug 1989, adult, skeleton, CSULB 7166

20 Aug 1989, adult, skeleton, CSULB 7188

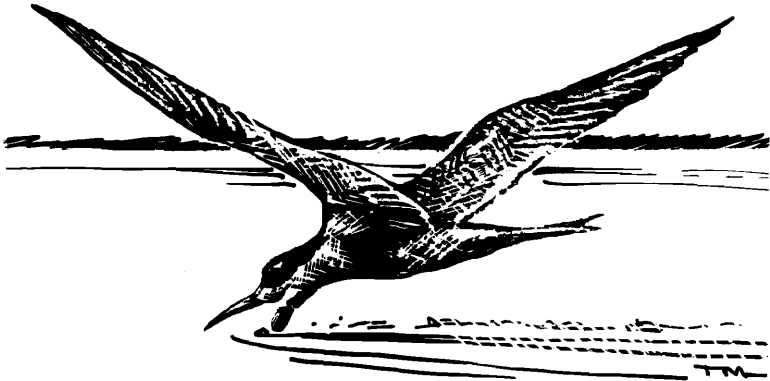
20 Jul 1990, adult, skeleton, CSULB 7398

31 Aug 1991, chick, study skin, CSULB 7555

5 Jun 1994, adult, skeleton, CSULB 7600

Terminal Island, Los Angeles County

10 Mar 1993, adult, study skin, CSUN 1282



Black Skimmer

Sketch by Tim Manolis