uncommon species include American Avocet, Willet, Hudsonian Godwit, Marbled Godwit, Red Knot, Western Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Buff-breasted Sandpiper, Wilson's Phalarope, and Red-necked Phalarope. In addition, uncommon species, such as Snowy Egret, Yellow-crowned Night-Heron, Peregrine Falcon, King Rail, Virginia Rail, Sora, Laughing Gull, Black Tern, and Nelson's Sharp-tailed Sparrow have also been observed.

A number of individuals have been recaptured over the last two seasons but all during the year of their original banding. Of the 540 birds banded, 41 individuals were recaptured at least once. Two individuals were recaptured twice during the 2007 season. This was a recapture rate of 7.5%. The minimum length of stay has varied from one day to 25 days. For the 2006 season, 19 individuals were recaptured for a recapture rate of 8%. Six Semipalmated Sandpipers and 11 Short-billed Dowitcher were recaptured. The longest stay for Semipalmated Sandpiper was seven days and for Short-billed Dowitcher, it was nine days. For the 2007 season, 22 individuals were recaptured for a recapture rate of 7%. Eleven Least Sandpipers, six Semipalmated Sandpipers, and five Short-billed Dowitchers were recaptured. One Least Sandpiper stayed at least 25 days but we believed that this bird was injured. Another individual was documented for 23 days. With Semipalmated Sandpipers, three individuals were documented staying a minimum of 11 days. For Short-billed Dowitchers, one individual was documented for a minimum stay of 11 days. We believe these data are showing that the wetlands of the Horseshoe Island Unit are extremely important to migrant shorebirds. One piece of data which does not show up in the banding results is what the shorebirds are feeding on. More research in this area needs to be done. We have noticed that the freshwater amphipods (scud), which are known to be an important food source for shorebirds, were more abundant during the fall of 2006 than the fall of 2007. Their population appeared way down this past fall, which may explain the lower numbers and diversity of shorebirds in 2007.

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Survival and Band Wear in Black Skimmers

The Black Skimmer (*Rynchops niger*) is a relatively new species in California. It was first recorded in the state in 1962 (Small 1963) and in 1973 documented as a breeder at the Salton Sea (McCaskie et al. 1974). Since then its statewide population has continued to grow (Collins and Garrett 1996) with breeding populations documented at the Salton Sea (Molina 1996) and five sites on the coast from San Diego northward to San Francisco Bay (Collins and Garrett 1996).

Black Skimmers have bred in coastal Orange County at the Bolsa Chica State Ecological Reserve since 1985 and Upper Newport Bay State Ecological Reserve since 1986. A program of banding hatching-year/local (HY/L) Black Skimmer chicks at these two locations has provided information on age and sex determination (Schew and Collins 1990), chick growth (Schew and Collins 1991), over-wintering site fidelity and movements (Gazzaniga 1996) and early survival (Taylor 1997). Recent observations of banded birds in both of these breeding colonies as well as wintering flocks have added to the data on adult survival and movements and, in 2007, information on three 18-19 year old individuals.

The three older Black Skimmers reported here were among 70 individuals whose bands were read successfully between 21 Jun and 18 Sep 2007 in the breeding colonies at Bolsa Chica and Upper Newport Bay. All bands were read with telescopes; no skimmers were trapped or handled.

Skimmer No. 1 (634-54814) was banded at Bolsa Chica on 18 Jul 1989 and seen by Collins and Garrett at Bolsa Chica on 14 Aug 2007 when it was four days shy of 18 yr 1 mo of age. Surprisingly, there were no previous encounters with this individual.

Skimmer No. 2 (564-46133) was banded at Bolsa Chica on 4 Aug 1988 and seen by Collins and Garrett in the colony at Upper Newport Bay on 21 Jun 2007 at an age of 18 yr 10.6 mo. This individual had been seen previously in a wintering flock in Long Beach, Los Angeles County, on 16 Jan 2004 and 5 Jan 2005 and in the colony at Bolsa Chica on 7 Aug 2004.

Skimmer No. 3 (574-26703) was banded as a chick at Bolsa Chica on 22 Aug 1988 and seen by Peter Knapp at Bolsa Chica on 19 Aug 2007, three days shy of 19 yr. This individual had been seen previously on 15 Jul and 21 Jul 2004 in the colony at Bolsa Chica.

Encounters of these older birds, although certainly interesting, are just part of the overall picture of survival in this species. They approach in age the oldest Black Skimmer, 20 yr in the Bird Banding Laboratory's files (Klimkiewicz 2006). Survival of younger skimmers (< 4 years old) has been analyzed (Taylor 1997) and a similar analysis of the survival and movements of older breeding age adults in the southern California populations is still in progress.

Many of the skimmers, particularly older individuals, observed in the wintering flocks in southern California have been identified by band reading on more than a single occasion and sometimes at more than one location even with a single winter season (Gazzaniga 1996). The fact that skimmer No. 1 had not been encountered previously even once in the nearly 18 yr since it was banded suggests that it might have been wintering at a site that is not being checked regularly, if at all, as some sites on the Pacific coast of Baja California, Mexico.

One of the necessary assumptions of an analysis of mark and recapture data (Krebs 1989) is that there is no loss of bands. The bands on all three of the older Black Skimmers reported here were extremely worn on the top and bottom margins and showed substantial thinning through abrasion of the inner surface (Figure 1). Bands on some other skimmers in the wintering flocks have shown similar wear and, in some cases, a partial opening of the band (Figure 2 & 3). This kind of band wear has also been reported for bands on Elegant Terns (*Sterna elegans*) nesting at Bolsa Chica (Collins 2007). There have not been enough bands recovered for a similar analysis of the rate of band wear in Black Skimmers. However, from our observations, band wear is substantial and band loss will probably be a confounding factor in the upcoming survival analysis, particularly for skimmers over approximately 12-14 yr. The use of more wear resistant stainless steel bands on the Black Skimmers would have been a better choice had they been available, as also true for other seabirds (Collins 2007).

Fig. 1. Worn band on skimmer no. 2. It was banded on 4 Aug 1988 and read on 21 Jun 2007 when 18 yr 10.6 mo of age.

Photo by K. Garrett

Fig. 2 and 3. Worn bands on Black Skimmers in wintering flock in Long Beach, Califorina. The age of these bands when the photographs were taken is not known.

Photos by Mike Bowles

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Survival After Banding: Some Further Thoughts

As noted by R. Poole and C. Brown (2007) banders who ply their craft in view of the general public, or who give talks about banding, are liable to run into the question "Does that harm the bird?" We generally have a litany of stock answers. Some involve telling them about the lengthy lifespan of banded birds. Others recount the speed and willingness of banded birds to re-enter traps and in the process get handled, weighed and measured all over again. These 'trap-happy' birds seemingly act as if this was simply the minor price of getting a free meal of the bait in the trap.

In my case I talk about Black Skimmers (*Rynchops niger*) and Royal Terns (*Thalasseus maxima*) I have banded living to 17-18 years. I also tell about Island Scrub-Jays (*Aphelocoma insularis*) re-entering a trap to cart away and cache yet another peanut less than five minutes after being captured and banded. Such accounts, that I suspect we all use, are meant to imply that the capture and