

NOTES

HYBRIDIZATION OF A SANDWICH AND ELEGANT TERN IN CALIFORNIA

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The Sandwich Tern (*Sterna sandvicensis*) is a widespread breeding species on the Atlantic coasts of Europe and North America (AOU 1983, Cramp 1985) and the Caribbean (AOU 1983). On the Pacific coast it winters south to Colombia (Hilty and Brown 1986), Ecuador (Ridgely 1981), and Peru (Junge and Voous 1955, Harrison 1983). Although the Sandwich Tern is a "common transient and winter resident" in Panama (Ridgely 1981), it is decidedly less common farther south. Sandwich Terns also occur sparingly in winter northward on the Pacific coast of Central America as far as Oaxaca, Mexico (Peterson and Chalif 1973, AOU 1983). Since there are no recorded breeding colonies on the Pacific coast it is assumed that all Sandwich Terns on the Pacific coast of Central and South America represent wintering migrants from Atlantic or Caribbean colonies. The recovery in Buenaventura, Colombia, of a Sandwich Tern that had been banded in a breeding colony in North Carolina (Hilty and Brown 1986) supports this view.

In California, the Sandwich Tern is considered "accidental" (Unitt 1984) or "exceedingly rare" (Small 1994); as argued below, all records may pertain to only two individuals. The first Sandwich Tern in California was observed in May 1980 on the dikes around salt-evaporation ponds in south San Diego Bay near Imperial Beach (McCaskie 1980, Schaffner 1981, Luther et al. 1983). This bird was seen with a fish in its bill, approaching Elegant Terns (*Sterna elegans*) nesting there. It was in the typical stance of a male courting a female. In all cases observed, this presumed male was driven off by the Elegant Terns (Schaffner 1981). What was considered to be the same individual was seen in San Diego Bay 15 May–13 June 1982 (McCaskie 1982a,b, Morlan 1985), 12–14 June 1985 (Bevier 1990), and 18 April–16 May 1987 (Langham 1991). There was no suggestion of breeding by this Sandwich Tern in any year, and it was not seen again after 1987.

On 20 May 1991 an adult Sandwich Tern was observed at Malibu Lagoon, Los Angeles County, by Barbara Elliott (pers. comm.). A single Sandwich Tern also was observed on 29 June 1991 among nesting Elegant Terns at Bolsa Chica Ecological Reserve, Orange County, by Brian Daniels and Doug Willick (pers. comm.). The bird observed at Malibu Lagoon was reported to be in alternate plumage and the one at Bolsa Chica in basic plumage, suggesting to some that two individuals were present in 1991 (Patten et al. 1995). The Malibu bird was described as having a cap "black from bill to nape" (Elliott in litt.), typical of an alternate-plumaged adult. The Bolsa Chica bird "showed a considerable amount of white [on the head] especially anteriorly" (Willick in litt.), as was also true of many of the Elegant Terns on this date. This indicates the start of the prebasic molt; the bird was not in the full basic plumage. The interval between these separate observations (40 days) was more than sufficient for the prebasic molt to have begun and for many of the black forehead feathers to have been replaced by white ones, as observed in many Elegant Terns by this date (pers. obs., Figures 1–2). Thus, I agree with McCaskie (1991), who suggested that the Sandwich Terns seen at Malibu and Bolsa Chica in 1991 were the same individual.

At Bolsa Chica on 24 June 1995 my attention was drawn by Robert Schallmann and Tom Ryan to a tern with a yellow-tipped black bill among the Elegant Terns nesting there. Closer examination showed that not only was it an adult Sandwich Tern but it was attending a nest. While we watched at ranges of <20 feet, this bird was seen

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Figure 1. Adult Sandwich Tern in Elegant Tern nesting colony, Bolsa Chica Ecological Reserve, 24 June 1995.

Photo by Charles T. Collins



Figure 2. Adult Sandwich Tern attending its chick, Bolsa Chica Ecological Reserve, 24 June 1995.

Photo by Charles T. Collins



Figure 3. Adult Sandwich Tern aggressively defending nest at Bolsa Chica Ecological Reserve, 24 June 1995.

Photo by Charles T. Collins

actively defending the nest and brooding a chick <6–7 days old. At one point during our observations it engaged in a series of non-aggressive interactions and nest exchange with a typically plumaged Elegant Tern, suggesting they were mated. I returned to the colony about one-half hour later and photographed this tern while it was standing (Figure 1), brooding the chick (Figure 2), and threatening adjacent nesting Elegant Terns (Figure 3).

As shown in Figure 1, this Sandwich Tern appeared to be in the definitive alternate plumage but with a partially white forehead indicating the early stages of the prebasic molt; many Elegant Terns were in the same stage of molt on this date (Figures 1–2) as was the Sandwich Tern seen here in 1991. Accompanied by M. San Miguel and S. L. Warter, I returned on 25 June to color-band the chick for future identification. However, by then the chicks in that part of the colony were leaving the nest scrapes to form a crèche, and the hybrid chick could not be separated from the others. Chicks of Elegant Terns are highly variable in color of both plumage and soft parts, making identification of the similarly colored hybrid chick impossible. The Sandwich Tern was observed a few meters away from where it was seen on the previous day but not associated with a particular nest or chick. A Sandwich Tern, presumably this single individual, was seen by many observers over the next several weeks and last seen 17 July by J. Sterling (Hamilton and Willick 1996). Never was more than one Sandwich Tern seen at the same time.

Terns are long lived (Cramp 1985), and a hybrid pair in England has survived for 11 seasons (Gillon and Stringer 1994). Thus there was ample reason to suspect the Sandwich Tern would return to Bolsa Chica in 1996. I attempted to locate it on a nest in May and early June but was unsuccessful despite careful observation on several occasions, including close scrutiny of nesting groups from a blind. Nonetheless, a Sandwich Tern was seen on the edge of the colony on 15 June 1996 (B. Broadbooks

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pers. comm.) and again on 20 June 1996. A Sandwich Tern has also been seen in the Bolsa Chica colony on several days in May 1997 (D. Willick pers. comm.) and located incubating an egg in this colony on 14 June 1997 (C. Collins, H. Clarke, L. Sansone pers. obs.).

The 1980 observations were of a presumed male Sandwich Tern on the basis of its unsuccessful courtship behavior. This suggests that the successful pairing at Bolsa Chica in 1995 may have been the reverse situation, a female Sandwich Tern mated to a male Elegant Tern. In a similarly successful hybrid pairing between a Sandwich and Lesser Crested Tern (*Sterna bengalensis*), the out-of-range individual was also a female (Gillon and Stringer 1994).

The number of Elegant Terns nesting at Bolsa Chica has increased dramatically from about 1100 pairs in 1991 (Collins et al. 1991) to approximately 4000 pairs in 1995 and 3400 pairs in 1996 (pers. obs.). Accordingly, it seems possible that this tern could have been present prior to 1995, when it was not even suspected to be present and thus not carefully looked for, among the many Elegant Terns nesting there. My failure to locate the Sandwich Tern on a nest in 1996, even when looking for it carefully, suggests that it could have been present, but overlooked, from 1992 to 1994. I think it is possible that the Sandwich Tern observed from 1995 to 1997 is the same individual first observed in 1991 and could have been breeding in the summers of 1992–1994. If so, this would account for several possible hybrid individuals observed on the California coast from 1995 to 1997 (B. Daniels, P. Cole pers. comm., pers. obs.), including one at the Pajaro River mouth, Santa Cruz/Monterey County line, 4–11 July 1995 (Yee et al. 1995, S. M. Bailey in litt.).

The apparent male observed in San Diego 1980–1987 and the presumed female at Bolsa Chica 1991–1996 may be the only two Sandwich Terns recorded thus far in California. The Bolsa Chica individual also represents the first record of a Sandwich Tern breeding in California or on the Pacific coast of the Americas. Hybridization between other closely related species of crested terns has been previously reported (Gillon and Stinger 1954). Both first-generation (F₁) hybrids and possibly also second-generation hybrids (back crosses) of the Bolsa Chica pair may occur and thus enliven summer tern watching on the coast of California in the years to come.

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