

have elected to stop banding because they have problems dealing with computers. The tricks I have described allow you to enter data quickly and, if you hear that lament, "I can not deal with those computers," just offer to do the data entry for that person. I have done it for a few friends and it does not really take up much time. Plus, you will be rewarded with thanks and maybe even learn more from those older banders.

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### **Vagrancy in Royal Terns: a Mexican Connection.**

The Royal Tern (*Thalasseus maximus*) is a familiar summer resident on both the Atlantic and Gulf coasts of North America. It is resident in coastal west Mexico, the Gulf of California, and the California Current System of the west coast of the Baja California peninsula and southern California (Buckley and Buckley 2002, Mellink et al. 2007, Collins and Palacios 2008). The largest Royal Tern nesting colony in this area, with over 8500 breeding pairs, is on Rasa Island in the Gulf of California (Velarde et al. 2005, Mellink et al. 2007). As indicated by sightings of banded birds, there has been substantial year-to-year movement of Royal Terns among the three southern California breeding colonies (Collins and Doherty 2006). However, the degree of genetic interchange between the nesting colonies in the Gulf of California and those in coastal Mexico, Baja California and southern California has yet to be determined (Collins and Palacios 2008). To date, no Royal Tern chicks banded in southern California have been recovered in any of the breeding colonies in western Mexico or the Gulf of California (Collins and Palacios 2008). However, a single non-breeding Royal Tern banded in Sinaloa, Mexico, was observed (and the band read) in southern California in 2005 (Collins and Palacios 2008). We report here further

observations of this individual in southern California, suggesting that it has become part of the resident breeding population.

The Royal Tern in question (Tern A herein) was banded with numbered USGS aluminum band (0894-32557) as a pre-flying chick in a nesting colony on Isla El Rancho in Bahia Santa Maria, Sinaloa (25°9' N, 108°22' W) on 15 May 2003. This colony, one of seven on the west coast of Mexico, had about 1,000 breeding pairs in 2003 (Mellink et al. 2007). Tern A was first observed in southern California on 13 Mar 2005 (by CTC), along with a group of 50 newly arrived migrant Elegant Terns (*T. elegans*), at Seal Beach, Orange County. The straight line flight distance between these two sites is about 1,440 km. Tern A was not subsequently observed among the Royal Terns nesting in the three local colonies in 2005 (Collins and Palacios 2008). Thus, it was unclear if Tern A should be considered a non-breeding vagrant or a colonizing individual.

On 17 Nov 2009, Tern A was located and the band read (by PLK), among a flock of 75 Royal Terns on the beach in Long Beach, Los Angeles County. Tern A was again located on 16 Sep 2011 (by PLK) among a flock of 26 Royal Terns at Bolsa Chica State Beach, Orange County. Both of these sites are frequented by locally breeding Royal and Caspian terns (*Hydroprogne caspia*) and are <7 km from two breeding colony sites (Collins 2006: Figure 2). On both of these dates the roosting flock also contained two to three Royal Terns banded at local southern California colonies. There is no northward post-breeding movement of Royal Terns from Mexican breeding colonies into southern California as is true for Elegant Terns. Thus, these additional sightings of Tern A, even in the post-breeding season, its continued residence over six years, and its association with locally raised Royal Terns all strongly support its having become part of the resident southern California breeding population. Unfortunately, there have been no searches for banded Royal Terns in the local breeding colonies since 2005 to confirm this. The single yellow plastic band present on the same leg as the aluminum band in 2005 was not present when Tern A was resighted in 2009.

Vagrancy, or long-distance dispersal, has been studied widely in birds. However, in very few cases has the origin of the vagrants been known (Bloom et al. 2011). Vagrancy may be the result of many different factors (Newton 2008) and have a number of possible outcomes (Bloom et al. 2011). Long-distance dispersal and recruitment to a distant breeding population, even of a single individual as documented here, may be an important component in estimating gene flow and the resultant genetic composition of disparate populations (Mills and Allendorf 1996). Such movements may also be largely unrecognized when they involve unmarked or unbanded individuals of a phenotypically monomorphic species as the Royal Tern. In this case it provides support for the suggestion that Royal Tern populations in western Mexico, the Gulf of California, Baja California, and southern California comprise a single geographical unit of the Royal Tern's world-wide range (Buckley and Buckley 2002). Future studies of the genetic structure of these populations would also be informative.

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Royal Tern  
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