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# First Evidence That Paired Roseate Terns Travel Together During Spring Migration

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## ABSTRACT

A mated pair of color-banded Roseate Terns (*Sterna dougallii*) from the Northwest Atlantic Ocean breeding population was photographed on 12 May 2010 while staging near Mayagüez, Puerto Rico. This represents the first evidence that mated pairs of this species may travel together during their northward spring migration.

## INTRODUCTION

Roseate Terns (*Sterna dougallii*) breeding in the northeastern United States and Canada migrate south in the late summer and fall to wintering areas off the coast of northeastern South America (Nisbet 1984; Hays et al. 1997, 1999), with some individuals staging in Puerto Rico in fall or spring migration (Hays et al. 2010) or both. The degree to which mated pairs travel together during fall migration or winter together is not known. Here we present the first evidence that a mated pair of color-banded Roseate Terns from the northwest Atlantic population was staging (and therefore likely traveling) together in Puerto Rico during spring migration.

## METHODS

From 2004–2010 about 3550 adult Roseate Terns were given unique six-band combinations of two metal bands and four plastic color bands (see Spendelow et al. 2008 for details on capture methods and band placement) at three colony sites in

Buzzards Bay, Massachusetts (MA), as part of a cooperative project on the metapopulation dynamics, ecology, and behavior of this species.

## RESULTS

On 12 May 2010 at about 12 noon Lugo (GL) was photographing Roseate Terns on the sand flats at the mouth of the Grande de Añasco River (18° 16' N, 67° 11' W) near Mayagüez on the west coast of Puerto Rico and saw as many as ten black-billed birds from the Northwest Atlantic breeding population among the more numerous birds from the Caribbean breeding population, the latter with varying degrees of pink at the base of their bills. Two of the terns photographed had six-band combinations and could be positively identified from the photographs. These two individuals, the only color-banded terns GL observed, had been trapped by Spendelow (JAS) as a pair in June 2009 at a nest on Bird Island (41° 40' N, 70° 43' W) in Buzzards Bay. Although JAS looked for these two adults at Bird Island and the nearby (10 km) Ram Island colony site throughout the 2010 breeding season, and he and others also looked for them at post-breeding staging sites throughout southeastern Massachusetts (Trull et al. 1999) from mid-Jul to mid-Aug, they were not identified anywhere within their breeding range in 2010.

Observations of adult Roseate Terns were not made at the Buzzards Bay colony sites after 2010, so we were unable to determine if these birds remained together as a pair. Neither was identified during observations made at the staging sites from 15 Jul to 20 Sep 2011. However, on 1 Sep 2012 at the Nauset Estuary (41° 49' N, 69° 56' W) in Eastham, MA, JAS read the metal field-readable band (MFR) of the female tern who, by this time, had lost the middle colorband on her left leg. On 3 Aug 2013 at the same staging site he saw an adult with the same 5-band combination, but was unable to get close enough to read the MFR band and so could not make a positive identification of that individual.

## DISCUSSION

After these two terns were trapped they were not observed again either at the breeding colony site or any of the seven staging sites around Cape Cod, MA, that were visited in 2009, so we do not know if they were successful at raising any chicks or if they departed the colony site together or separately as is often the case for Roseate Terns that raise chicks to fledging (Teets 1998; Watson et al. 2012). Because there is prolonged parental care in many species of terns (Burger 1980), an adult tern and its young of the year may maintain a social bond well into migration, but relatively little is known about how long a mated pair of adults maintains a bond after nesting is over and they have left their colony site.

Some Roseate Terns have been seen performing aerial courtship displays at staging sites in Jul and early Aug (JAS, unpublished data), so it is possible that this pair continued to remain together throughout the summer and into migration. Even if they left the colony site separately, it also is possible that they joined each other again at a staging site before beginning migration. There is, however, recent evidence to suggest that there may be sexual differences in the timing of fall migration of adult Common (*S. hirundo*; Nisbet et al. 2010, 2011a, 2011b) and Roseate terns (JAS, unpublished data), so even if Roseate Tern pairs stay together for a short period of time at summer/fall staging sites, they still may start migration at different times and end up in different wintering areas.

We do not know if this pair wintered together in 2009, but it seems likely that even if they did not spend most of the winter together that they probably left northern South America at roughly the same time on the leg of their northward migration in spring 2010 that took them to Puerto Rico. Given that these two were the only color-banded Roseate Terns (of thousands that had been given six-band combinations by 2009) that GL saw that day, and assuming that the speed of northward migrating Roseate Terns is similar to that of northward migrating Common Terns (Nisbet et al. 2011a), it seems less likely that these two birds were travel-

ing independently and just happened to arrive at this staging site at the same time, and more likely that they were migrating north together.

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## Rapid 3-week Transition from Migration to Incubation in a Female Roseate Tern (*Sterna dougallii*)

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### ABSTRACT

A female Roseate Tern (*Sterna dougallii*) photographed on 10 May 2008 as it staged in Puerto Rico on its migration north was first observed in the nesting area at Bird Island, Buzzards Bay, Massachusetts, on 21 May. It was incubating a complete clutch of two eggs by 1 June and likely had initiated laying within 20 days of having been in Puerto Rico.

### INTRODUCTION

Roseate Terns (*Sterna dougallii*) from the NW Atlantic breeding population that nest in the northeastern United States and Nova Scotia, Canada, migrate south in the fall to wintering areas off the coast of northeastern South America (Nisbet 1984; Hays et al. 1997, 1999). When returning north, some individuals stage in Puerto Rico (PR) and other Caribbean islands (Gochfeld et al. 1998,

Hays et al. 2010). The earliest Roseate Terns seen in Massachusetts (MA) arrive in late April and may spend up to a week in the Nantucket Sound area before moving to their colony sites, while younger breeding birds tend to arrive and begin nesting later than do older birds (Gochfeld et al. 1998). Relatively little is known, however, about how long it takes individual females to transition from migration to laying. I report here on a color-banded female photographed on 10 May 2008 in PR that after flying more than 2600 km was observed 11 days later on 21 May in the nesting area at its colony site in Massachusetts, and then finished laying its clutch of two eggs by 1 Jun 2008.

### METHODS

From 2004-2010 adult Roseate Terns trapped at three colony sites in Buzzards Bay, MA, as part of a cooperative project on the metapopulation dynamics, ecology, and behavior of this species were given six-band combinations of two metal bands (a U.S. Bird Banding Laboratory [BBL] band and a four-character field-readable [MFR]