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SUMMARY OF BREEDING ROSEATE TERNS IN THE FLORIDA KEYS: 1974-1998

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The Roseate Tern (*Sterna dougallii*) is listed as endangered in its northeastern range (USFWS 1989) and threatened in its Caribbean range (USFWS 1993). The general ecology and status of both populations also have been reviewed in Clapp et al. (1983) and Spendelov and Patton (1988). The status and distribution of nesting Roseate Terns in Florida have been reviewed by Robertson (1978) and Smith (1996). Nesting reports for the Florida Keys for the period 1962 through 1973 were reviewed and summarized by Robertson (1978); Smith (1996) summarized reports for the period 1984 through 1992 in the region. This note summarizes nesting reports for the period 1974 through 1998, including previously unpublished data, as well as documentation of a new rooftop colony on Vaca Key (Fig. 1 and Table 1).

Robertson (1978) reported four breeding areas from 1962 to 1973 for Roseate Terns in the Keys, apart from the established colony at Dry Tortugas. These included islands off Seven-mile Bridge, Crawl Key, spoil islands in Key West harbor, and Molasses Reef Dry Rocks. From a review of literature and our own field surveys we identified 12 breeding areas in the mainland Florida Keys from 1974 to 1998 (Fig. 1). Peak counts at these

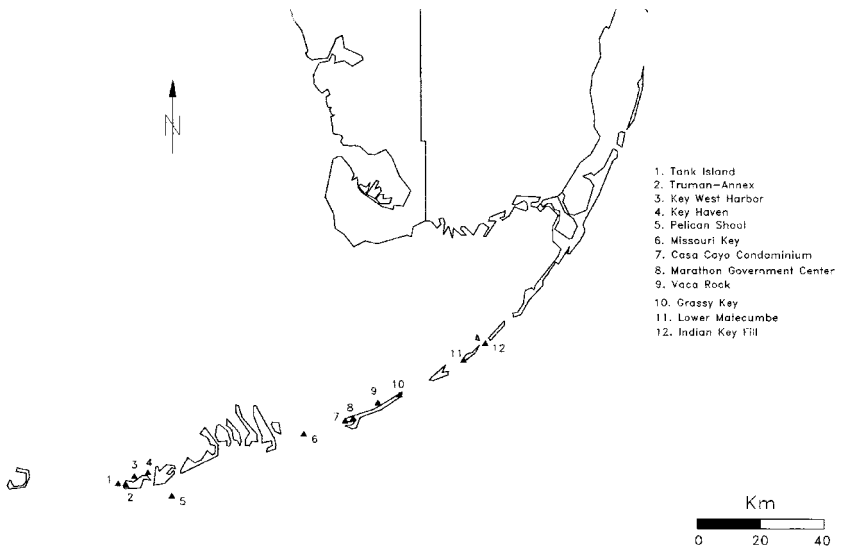


Figure 1. Caribbean Roseate Tern breeding colonies in the Florida Keys, 1974-1998.

Table 1. Summary of counts at breeding colonies for the Caribbean Roseate Tern in the Florida Keys, 1974-1998.

YEAR	ADULT COUNT	LOCATION	SOURCE
1974	4 pairs	Key Haven	Kale 1974
1975	10-12 pairs	Key Haven	Ogden 1975
1976	42 nests	Indian Key fill	Kushlan and White 1985
	65 nests	Grassy Key	Kushlan and White 1985
	263 nests	Key West tank farm island	Kushlan and White 1985
	25-30 pairs	Key West Harbor	Ogden 1976
1981	96 pairs	Near Lower Matecumbe Key	Paul 1981
1982	est. 75-100 pairs	Key West-Truman Annex roof	Kale 1982
	2 pairs	Missouri Key	Paul 1982
	est. 40 pairs	Key West-Truman Annex roof	Paul 1982
1984	100+ ^a	Key West-Truman Annex roof	Paul 1984
1985	est. 30 pairs	Key West-Truman Annex roofs	Paul 1984
1987	est. 300 pairs	Key West Naval Air Station roof	Kale 1985
1988	250-300 pairs	Pelican Shoal	Hoffman et al. 1993
1989	60 pairs	Key West-Tank Island	Paul 1988; Robson and Hovis, unpubl. data
	225 pairs	Marathon condominium roof	Kala and Robson, unpubl. data
1990	est. 242 pairs	Pelican Shoal	Kala and Robson, unpubl. data
	7 pairs	Pelican Shoal	Robson and Kalla, unpubl. data
	6 adults	Marathon-Vaca Rock	Robson and Kalla, unpubl. data
1991	est. 137 pairs	Marathon-Casa Cayo Condominium	Robson and Kalla, unpubl. data
	30 pairs	Pelican Shoal	Robson and Kalla, unpubl. data
1992	est. 278 pairs	Marathon-Casa Cayo Condominium	Robson and Kalla, unpubl. data
	5 pairs	Pelican Shoal	Robson, unpubl. data
	6 pairs	Key West-Truman Annex Bldg. #289 roof	Robson, unpubl. data
1993	10 adults	Marathon-Vaca Rock	Robson, unpubl. data
		Key West-Truman Annex Bldg. #289 roof	FNAI/The Nature Conservancy 1994

^a Count includes 25-30% flying young^b FNAI (Florida Natural Areas Inventory)

Table 1. (Continued) Summary of counts at breeding colonies for the Caribbean Roseate Tern in the Florida Keys, 1974-1998.

YEAR	ADULT COUNT	LOCATION	SOURCE
1995	520 adults	Pelican Shoal	Robson and Zambrano, unpubl. data
1996	1 pair	Vaca Key-Marathon Government Center roof	Robson and Zambrano, unpubl. data
	38 pairs	Key West-Truman Annex roof	Robson and Zambrano, unpubl. data
	325 adults	Pelican Shoal	Robson and Zambrano, unpubl. data
	9 adults	Marathon-Vaca Rock	Robson and Zambrano, unpubl. data
1997	162 pairs	Pelican Shoal	Robson and Zambrano, unpubl. data
	est. 25 pairs	Vaca Key-Marathon Government Center roof	Frank, unpubl. data
1998	est. 32 adults	Vaca Key-Marathon Government Center roof	Zambrano, unpubl. data
	est. 317 pairs	Pelican Shoal	Zambrano, unpubl. data

^a Count includes 25-30% flying young

^b FNAI (Florida Natural Areas Inventory)

colonies are summarized in Table 1. The surveys from 1988 through 1998 by the Florida Game and Fresh Water Fish Commission were ground counts of breeding birds conducted May-July. With few exceptions, possibly caused by inconsistencies in survey frequency and technique between 1974 and 1985, the estimated breeding population for the Florida Keys and Dry Tortugas has remained in the range of 150-300 pairs for the above period (Table 1). While this suggests that the population is stable, the number of breeding individuals is probably still too low to sustain genetic viability (Frankel and Soulé 1981).

In the northeastern states, most Roseate Terns tend to breed in a few large colonies with smaller numbers in nearby satellite colonies (USFWS 1989). Likewise, in the Keys, over 75% of the known population typically nested at a single location (e.g., Pelican Shoal). Main breeding sites tend to persist if conditions remain suitable (USFWS 1989). Additional information regarding colony turnover dynamics may be reviewed in Spendlow et al. (1995). Until the early 1970s, the Dry Tortugas was the primary Roseate Tern breeding area in Florida (Robertson 1964, 1978). Predators and nesting failures due to storm tides probably led to the gradual shifting of this colony to the Keys (Robertson 1978), with much of the activity occurring on spoil or otherwise denuded islands in the Key West area. For example, Tank Island adjacent to Key West became the main colony in 1976 after being cleared of vegetation. However, the site was not used in subsequent years until 1988 when the island was again cleared (Hoffman et al., 1993).

Deterioration of nesting conditions at Tank Island and other historic colony sites likely influenced the shift of a majority of the birds to Pelican Shoal in the late 1980s, although anecdotal reports from local fishermen suggest Roseate Terns may have nested there undetected prior to this time.

By 1998, only two colonies remained in the Florida Keys: Pelican Shoal and the Marathon Government Center roof colony on Vaca Key. The paucity of suitable, undisturbed habitat, coupled with a low population estimate, make the Roseate Tern population of the Florida Keys vulnerable to hurricanes, disease, oil spills, and human disturbance. Rodgers and Smith (1995) recommended 180 m as a buffer zone distance to minimize human disturbance to mixed Least Tern (*Sterna antillarum*) and Black Skimmer (*Rynchops niger*) breeding colonies; this recommendation may also be appropriate for Roseate Terns. Providing additional Roseate Tern nesting habitat and increasing protection and monitoring of known historic colony sites should be high priorities for management of Roseate Terns in Florida. Preliminary data collected in southeast Florida for Least Terns suggests that decoys can be effective in attracting terns to artificial and enhanced sites (Adams 1998; Smith, unpubl. data). Public stewardship also should be encouraged.

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