

Several accounts of adult shorebirds diving when wounded and approached by humans, or when attacked by aerial predators have been reported in the literature. Sordahl (1982) suggests that diving is an effective escape response because predators concentrate their attention on the point of submergence. In contrast, diving by shorebird chicks has seldom been reported. Newly-hatched chicks are probably unable to dive due to their light weight, fluffy feathers, and small wing area, but as suggested by Sordahl (1982), the tendency to dive should increase with age and ability. Diving by North American shorebird chicks has previously been reported in the Black-necked Stilt (*Himantopus mexicanus*) (Sordahl 1982, Sumner 1931), American Avocet (*Recurvirostra americana*) (Gibson 1971, Sordahl 1982), and Spotted Sandpiper (*Actitis macularia*) (Pettingill 1976). Although Eurasian Oystercatcher (*H. ostralegus*) chicks are known to dive (Coomber 1975, Reva 1973, Simmons 1955), we believe this is the first report for American Oystercatcher chicks.

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Post-Fledging Distribution of White-crowned Pigeons Banded in St. Croix, Virgin Islands.—Wiley and Wiley (Wildl. Monogr. 64:54 pp. 1979) describe the breeding biology of the White-crowned Pigeon (*Columba leucocephala*) in Puerto Rico with the exception of migration. From 1950 to 1960 Seaman banded 1271 white-crowned chicks at Krause Lagoon, St. Croix, prior to its eventual dredging and development as an industrial complex. Banding recoveries of these chicks provide information on post-fledging and pre-breeding movements. From this effort there are 57 recoveries (4.5%) reported from 1950-1960 (Table 1).

Recoveries ranged as far afield as Puerto Rico to the northwest and Barbuda to the east. Fifty-one percent of the recoveries were reported from St. Croix, 28% from St. Martin, St. Kitts and Barbuda, and 21% from the Puerto Rico Bank (Fig. 1). This suggests a departure toward the east of most birds surviving the breeding season. However, a fairly large movement to the north is evident from recoveries from St. Thomas to Vieques. Fall recoveries away from the natal colony at Krause Lagoon indicate a strong movement to the northern Lesser Antilles (Table 1).

A recovery from St. Martin in May could indicate late migration to the natal colony through the Lesser Antilles or recruitment of Krause Lagoon birds breeding in other locations in the region. A June recovery from Vieques also suggests recruitment to other colonies. The median egg-laying date for initial nesting at Puerto Rico in 1974-1975 was

TABLE 1. Numbers of White-crowned Pigeons banded at Krause Lagoon, St. Croix, and recovered from the northeastern Caribbean from 1950-1960.

	Month of harvest									
	Jan	Mar	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
St. Croix	1	1			1	10	9	5	1	1
St. Martin			1				3	5	1	
Vieques				1	1	4	2			
St. Kitts						3	2			
St. Thomas						1	1	1		
Puerto Rico					1					
Barbuda							1			
Total	1	1	1	1	3	18	18	11	2	1

mid-March to mid-April (Wiley and Wiley 1979). Wiley and Wiley (1979) report a sexually-mature, known-aged female incubating a clutch only 10 months after fledging. Five of seven after-hatching-year pigeons collected during the breeding season were taken outside the natal colony. Perhaps as much as 9% of Krause Lagoon birds were recruited to other colonies during these years. Considering the hunting pressure at other West Indian breeding sites, the Krause Lagoon population must have been a major portal for immigration.

Analysis of band recoveries indicates that most white-crowns were taken outside the limits of the regulated hunting period prescribed by the Migratory Bird Treaty Act (1916). Ten- to 16-month-old white-crowns shot between May and August were harvested during their first or second breeding cycles. White-crowns may nest three times a season. Table 1 shows a significant amount of hunting was taking place during the nesting season

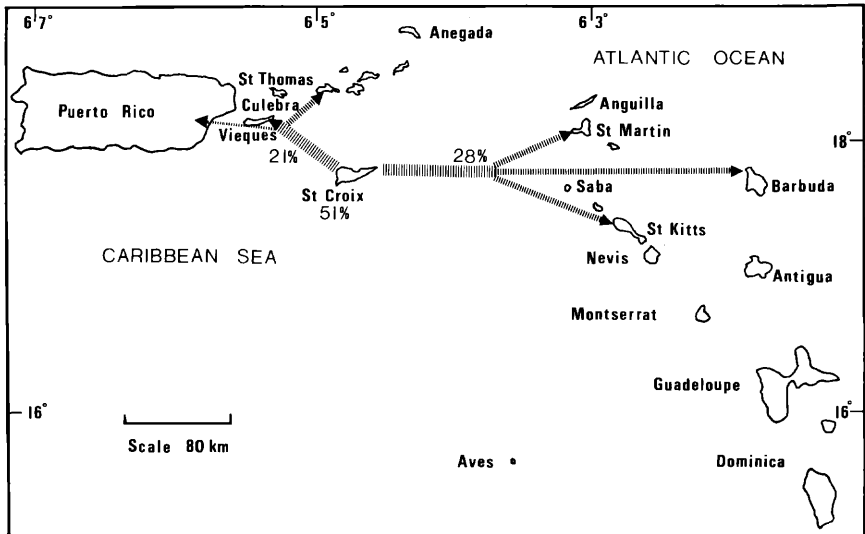


FIGURE 1. Distribution of White-crowned Pigeon recoveries (57) of chicks banded at St. Croix, U.S. Virgin Islands, from 1950-1960.

in St. Croix. Seaman banded 436 squabs in July during this 10-year period. Harvest in July accounted for 5% of recoveries, while harvest in August accounted for 32%. Hunting in the U.S. Territories of Puerto Rico and St. Croix accounted for about 22% of the breeding-season harvest based on these returns.

In sum, these data suggest that the substantial decline in the White-crowned Pigeon population in the northeastern Caribbean, particularly at St. Croix, post 1960, may be a result of out-of-season harvest and the destruction of the lagoon habitat for industrialization. The loss of this extensive salt marsh-mangrove complex is one of immeasurable magnitude and no doubt affected white-crowned recruitment to other West Indian colonies. Band recoveries from hunters in the region show that nearly half of all pigeons taken were harvested out-of-season, 14% of which were hatching-year birds. Although white-crowned longevity is 12+ years (Beatty unpubl. data) or older (20+ in captivity, Jules Petit, pers. comm.), little hope is expected even for this fecund species in areas where poaching continues and enforcement of wildlife laws is not taken seriously.

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Probable Predation by a Tufted Titmouse on a Salamander.—On 27 December 1984, in Ha Ha Tonka State Park, Camden Co., Missouri, we encountered a mixed-species flock composed of 3–4 Carolina Chickadees (*Parus carolinensis*), 2 Tufted Titmice (*P. bicolor*), 2 Golden-crowned Kinglets (*Regulus satrapa*), and 6–8 Yellow-rumped Warblers (*Dendroica coronata*). One of the Tufted Titmice was carrying a salamander, about 7 cm in length, in its beak as it moved from tree to tree. Inspection from about 15 m with binoculars revealed that the salamander was alive, but mostly it hung limp in the bird's grasp. The salamander was dark on the dorsum and yellow or pale on the ventral surface of the body, leading us to believe it was a *Plethodon* or *Eurycea*, most likely *E. multiplicata* (see Johnson, Univ. Kans. Mus. Nat. Hist. Publ. Ed. Ser. No. 6, 1977).

We watched the titmouse with the salamander for about 5 min, during which time it held the salamander in its feet, jabbed at its head 3–4 times, then appeared to try to wedge the amphibian under pieces of loose bark or in the crotches of small branches. The titmouse moved among 4–5 trees, remaining 4–10 m up in the canopy, before flying off out of view with the salamander in its beak. Though we did not see the titmouse capture or consume any portion of the salamander, the behavior of the bird, coupled with the fact that the salamander was still alive, suggests that the titmouse captured and intended to eat the salamander.

To our knowledge, Tufted Titmice have not been reported feeding on amphibians of any kind, though there are reports of titmice feeding on portions of small vertebrates (Fleming, Wilson Bull. 71:94, 1959; Southern, Auk 83:309–311, 1966; Stewart, Auk 72: 83–84, 1955). Bent (U.S. Natl. Mus. Bull. 191, 1946) reported that the diet of Black-capped Chickadees (*P. atricapillus*) included small amphibians of an unspecified kind.

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