TABLE 1

ESTIMATED 1970 KILLDEER BREEDING DENSITIES PRIOR TO 23 MAY

Habitat (area)	Estimated Number of Nests Prior to 23 May	Density Pairs/100 Ha
Open Field (24 ha)	8	33.3
Asphalt areas (32 ha)	10	31.3
Bare cultivated fields (43 ha)	13	30.2
Planted fields (14 ha)	2	14.3

and unmarked pairs. Based on this assumption, a calculation of the breeding population can be made by equating the ratios of marked pairs (14) to their chicks (13) and unmarked pairs (unknown) to their chicks (17). This yields an estimate of 18 unmarked pairs, and a total breeding population of 32 pairs of Killdeer.

This second determination (64 individuals) is remarkably close to the first (67 individuals). This agreement suggests that most of the population of the study area was breeding, and suggests the marked pairs are representative of the entire population. Thus it is reasonable to assume the habitat distribution of the marked pairs was indicative of the entire breeding population. Estimating a breeding population of 33 pairs and knowing the habitat distribution of the 13 marked pairs which had first nests prior to 23 May, it is possible to calculate approximate first nest breeding densities of the entire breeding population for the different habitat types (Table 1).

The literature on Killdeer breeding densities is scattered and difficult to interpret. On 16 ha of grazed, rolling grassland, 2 and 3 pairs of Killdeer occurred during 2 successive years (Holliday, Aud. Field Notes 1:219, 1947; Holliday, Aud. Field Notes 2: 243–244, 1948). One pair of Killdeer bred on 11 ha of uncultivated prairie grassland during each of 3 years (Fairfield, Aud. Field Notes 16:431, 1962; Fairfield, et al., Aud. Field Notes 17:503–504, 1963; Fairfield, Aud. Field Notes 18:564, 1964). Speirs and Orenstin (Can. Field-Nat. 81:175–183, 1965) found Killdeer in 7 of 10 areas censused in Ontario County, Canada. The average density was 6.7 adult birds per 40 ha (range, 6 to 16 adult birds per 40 ha); presumably they were breeding birds for the censuses were taken in June. In this study I found breeding densities 2 to 5 times those of Holliday (op. cit.), Fairfield (op. cit.), and Speirs and Orenstin (op. cit.).

No single census method guarantees accuracy. The application of several techniques to the same population and comparison of the results allows critical evaluation of the accuracy of the estimates and if the results agree, increased confidence in their validity. In this study the census techniques are not completely independent. However, they do confirm that most of the population was breeding, and provide confidence in the accuracy of the population estimate.

I wish to thank Richard E. Phillips for his help during the field work and Donald A. Jenni for his suggestions and helpful criticisms of the manuscript.—TERRENCE R. MACE, *Dept. of Zoology, Univ. of Montana, Missoula, 59812.* *Accepted 28 June 1977.*

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Brown Pelican restocking efforts in Louisiana.—The last natural nesting of the Brown Pelican (*Pelecanus occidentalis*) in Louisiana occurred in 1961 (Williams and Martin, Quart. J. Florida Acad. Sci. 31:130–140, 1969). Soon thereafter, it became evi-

TABLE 1

FLORIDA PELICANS SENT TO LOUISIANA AND THEIR SUBSEQUENT REPRODUCTIVE SUCCESS

Year	Collection Site (Fla)	No. of Nestlings Taken	Number Surviving		No. of Young Fledged in Louisiana
			Transport	2 Weeks After Release	
1968	Hall Island	50	49	46	no nesting
1969	Hall Island	55	53	50	no nesting
1970	Hall Island	100	100	94	no nesting
1971	Hall Island	65	65	63	8
1972	Hall Island	100	100	86	14
1973	Port Orange	100	100	97	26
1974	Port Orange	102	100	100	104
1975	Port Orange	103	101	97	13
1976	Crane Island and Port Orange	58 43	99	72	56
Total		778	767	705	221

dent that if the species were to survive in Louisiana, a broad-based, cooperative reestablishment effort was needed. In 1966, a meeting of interested persons and agencies was organized by the Louisiana Wildlife and Fisheries Commission and the National Audubon Society. This meeting led to the formulation of a restocking program to be undertaken by the Louisiana Wildlife and Fisheries Commission and the Florida Game and Fresh Water Fish Commission. Birds were to be taken from stable colonies in Florida and introduced at historic colony sites in Louisiana. Secondary objectives of this study were: (1) to monitor for any lingering evidence of the factors responsible for the original demise of the species in Louisiana during the late 1950's to early 1960's, and (2) to compare the pesticide residue levels of Florida pelicans with those transplanted to Louisiana, thus providing some insight into the relative health of both environments.

Beginning in 1968, nestling Brown Pelicans, 8 to 11 weeks old, were captured from nesting colonies on Florida's Atlantic Coast (Brevard and Volusia counties) and trucked to Louisiana for release. The number of pelicans sent each year, the collection site, and number which survived are given in Table 1. Pelicans were released at 2 sites in 1968 and 1969, Rockefeller Refuge and Grand Terre Island (Fig. 1). The birds released at the Rockefeller Refuge site apparently died and all subsequent releases were made at Grand Terre. Direct release with 2 daily feedings was found to be the most effective method for establishing the birds in Louisiana.

Reproduction in transplanted birds first occurred in 1971 when the initial transplants became 3 years old (Williams and Joanen, Wilson Bull. 86:279–280). A total of 221 Louisiana-produced young were fledged between 1971 and 1976 (Table 1).

A well publicized die-off of both White (*Pelecanus erythrorhynchos*) and Brown Pelicans began late in the winter of 1975 and continued into summer. An estimated 35 to 40% of the standing population of 400 to 450 Brown Pelicans was lost. Earlier newspaper reports listed the loss as much higher, some accounts as high as 80%. Tissue

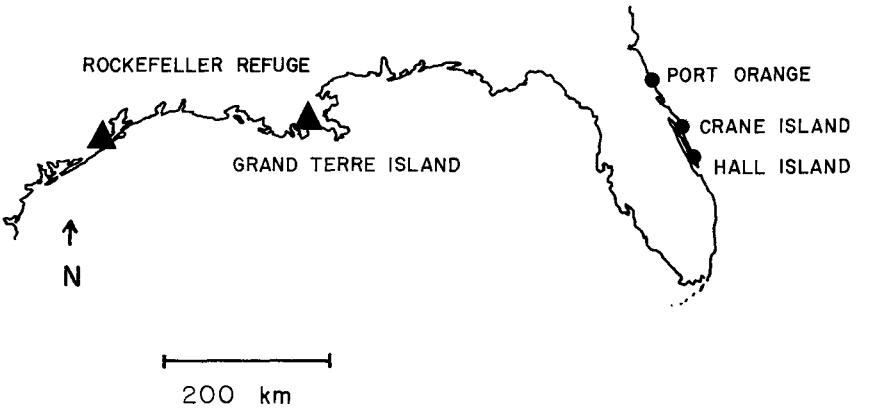

FIG. 1. Brown Pelican capture sites and release location for Louisiana restocking.

analysis indicated the presence of endrin (Florida Game & Fresh Water Fish Commission, unpublished data) which was probably the causative agent. The source of the endrin has not been identified.

The 1975 die-off points up the value of and need for a continuing monitoring effort. Had there been no pelicans present, the endrin contamination might have gone unnoticed until its effects would have been much more apparent. In the case of endrin, as with DDT (Anderson et al., Can. Field-Nat. 83:91–112, 1969), pelicans appear to be a highly sensitive organism responding quickly to environmental contamination.—STEPHEN A. NESBITT AND LOVETT E. WILLIAMS, JR., *Wildlife Research Laboratory, Florida Game and Fresh Water Fish Commission, 4005 S Main Street, Gainesville, FL 32601, and* LARRY MCNEASE AND TED JOANEN, *Louisiana Wildlife and Fisheries Commission, Grand Chenier, LA 70643.* *Accepted 18 July 1977.*

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Notes on 2 species of birds previously unreported from Peru.—While studying birds during June 1974 in the Departamento de Arequipa, Perú, 3 of us (Tallman, Parker, and Lester) found 2 species previously unreported in the republic.

Fulica rufifrons.—On the west coast of South America, the Red-fronted Coot was previously known to range north only to Atacama, Chile (Johnson, The Birds of Chile, Platt Establecimientos Gráficos, Buenos Aires, 1965). On 5 June 1974, Tallman and Parker obtained a specimen 3 km southeast of Mejia (9 km southeast of Mollendo) and thus extended the known range of the species about 1200 km. The bird, a female (LSUMZ 77955; skull ossified, largest ovum 2 × 2 mm; moderately fat with light molt), was one of a pair found in *Scirpus* sedge in a freshwater coastal marsh.

Hughes confirmed local breeding on 28 November 1974 by finding a pair with 2 small chicks in a marsh 2 km southeast of Mollendo. During 1975, he found *F. rufifrons* in small numbers in the marshes between Mollendo and Mejia and saw an adult feeding a chick on 16 December, 4 km northwest of Mejia. Since 1974, the population of this coot appears to have increased and it is occurring in sympatry with the larger-sized *F. americana* (American Coot) and *F. ardesiaca* (Slate-colored Coot). Gill (Condor 66: