RING-BILLED AND HERRING GULL RECOVERIES FROM SOUTH CAROLINA

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Most band recovery studies of Herring (*Larus argentatus*) and Ring-billed (*L. delawarensis*) gulls have delineated dispersion patterns from the breeding grounds. Yet, data on the origins of wintering birds are needed to determine migration routes and population trends. This is especially true for South Carolina where both species are a potential hazard to aircraft (Wooten, 1971). During a study on gull ecology in the Charleston, South Carolina area (Forsythe, 1972), I reviewed banding records of Ring-billed and Herring gulls recovered in South Carolina. In addition to those presented by Kadlec and Drury (1968) and Ludwig (1943), these data lend information on the origin, movements, and population trends for these species.

METHODS

Ring-billed Gull banding data from 1927-1970 and Herring Gull data from 1932-1969 for birds recovered in South Carolina were compiled by personnel of the Bird Banding Laboratory, Migratory Bird Populations Station, Laurel, Maryland. Christmas Count data from 1947-1972 for the Charleston count area were analyzed to assess population trends using the methods of Bystrak (1971). Effects of different numbers of count participants and short-term weather changes were reduced by dividing the number of birds seen by the number of party-hours to give birds per party-hour, and these figures were averaged for three-year periods.

HERRING GULL RECOVERIES

Of the 124 Herring Gull recoveries from South Carolina, 97 were reported during the November-April period, 18 during May- July, and 9 in August-October (Table 1). These data support field observations that Herring Gulls are mainly winter residents and that fall migration occurs in November (Forsythe, 1972). Most recovered birds were from northeastern North America, especially Maine, New Brunswick, Massachusetts, and Rhode Island (Table 1). Only 27 birds were from the Great Lakes region, predominantly the state of Michigan. Kadlec and Drury (1968) found similar trends for the South Atlantic Coast. Apparently, Great Lakes birds winter farther north along the Atlantic Coast (Poor, 1943; Smith, 1959).

About 77 per cent of the Herring Gulls were birds-of-the-year, 19 per cent, two or three years old, and 2 per cent over three years old (Fig. 1). All summer recoveries were one or two years old. The oldest individual was a 13-year-old Michigan bird. These age percentages are consistent with those reported by Paynter (1966), Kadlec and Drury (1968), Paulden (1951), and Schreiber (1968),

TABLE 1. Herring Gull band recoveries from South Carolina, 1932-1969.

Banding location	Recovery date			Area total
	Aug.-Oct.	Nov.-April	May-July	
NORTHEAST REGION				97
Maine	1	12	4	17
Massachusetts	4	19	3	26
New Hampshire		5	1	6
New York		9	2	11
Rhode Island	1	10	2	13
New Brunswick	2	15	1	18
Prince Edward Is.	1			1
Quebec		5		5
GREAT LAKES REGION				27
Ontario		3		3
Michigan		16	4	20
Wisconsin		3	1	4
Seasonal totals	9	97	18	124

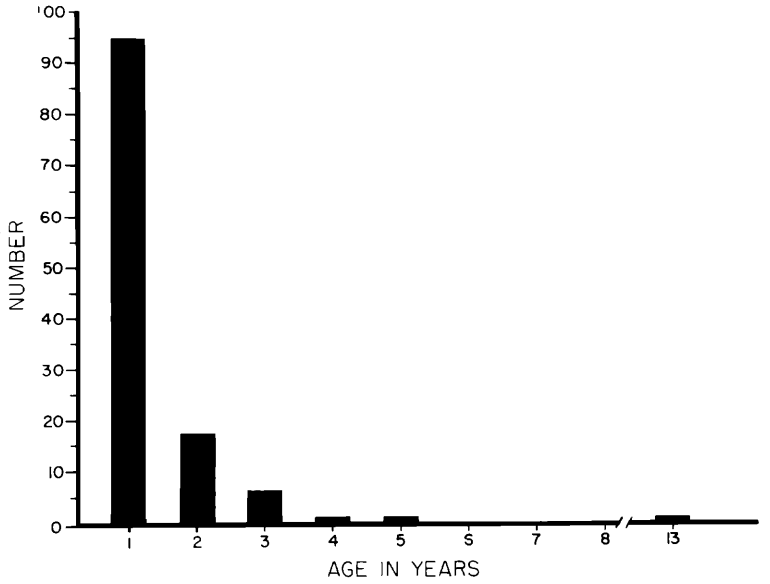

FIGURE 1. Age of Herring Gulls from band recovery data.

and suggest that mortality was highest in the first year, decreasing thereafter with a low, nearly constant mortality for birds four or more years old.

RING-BILLED GULL RECOVERIES

Ring-billed Gulls were mainly from the Great Lakes region with Michigan and Ontario predominating (Table 2). Ludwig (1943) found most Great Lakes birds of this species wintered on the South Atlantic and Gulf coasts. Southern (1967, 1968) showed that Michigan birds migrated in a southeasterly direction with most birds wintering on the Gulf Coast. Likewise Kadlec and Drury

TABLE 2. Ring-billed Gull band recoveries from South Carolina, 1927-1970.

Banding location	Recovery date			Area total
	Aug.-Oct.	Nov.-April	May-July	
NORTHEAST REGION				32
New York	1	15	1	17
Vermont		3		3
Newfoundland		2		2
Quebec	1	9		10
GREAT LAKES REGION				255
Michigan	8	120	13	141
Wisconsin			1	1
Ontario	6	94	13	113
PRAIRIE REGION				1
Saskatchewan			1	1
Seasonal totals	16	243	29	288

(1968) found that the majority of Ring-billed Gulls wintering on the Atlantic Coast and the Gulf Coast were found in Florida. Apparently South Carolina is on the northern edge of the winter range for the Great Lakes population. The fact that only one of the 12 color-marked gulls from three Michigan colonies seen in the Charleston area during the winter of 1971-72 (W. E. Southern, W. C. Scharf, pers. comm.) was a bird-of-the-year and all others were two or more years old supports this conclusion, because adult birds usually stay in the northern part of the winter range. Only 11 per cent of the gulls came from the northeast region, mainly New York and Quebec. Also only one recovery (Table 2) occurred from the Prairie population. Birds of this population winter mainly along the Pacific Coast (Vermeer, 1970).

First-year birds made up 53 per cent of the Ring-billed Gull recoveries; second-year, 17 per cent; third-year, 7 per cent; and fourth-year, ca. 2 per cent (Fig. 2). The oldest bird was 13 years old.

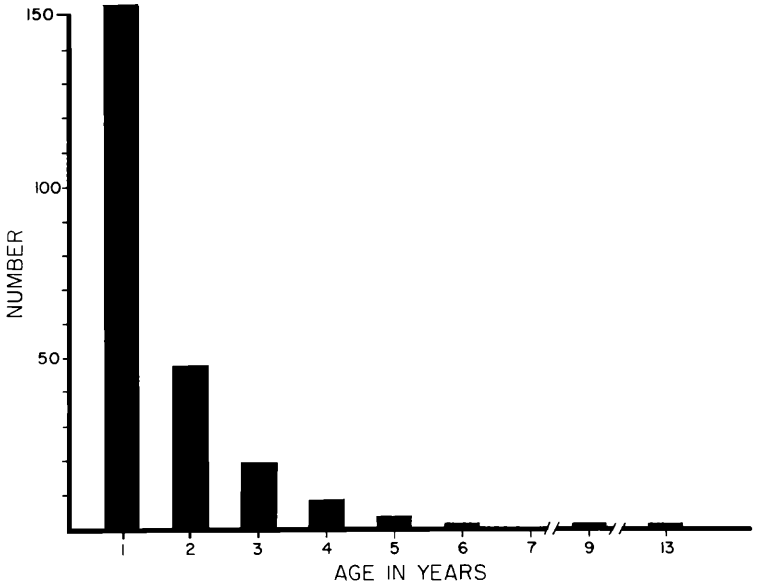

FIGURE 2. Age of Ring-billed Gulls from band recovery data.

As is the case for Herring Gulls, these recoveries suggest high mortality in the first-year Ring-billed Gulls. Ludwig (1968) found an annual mortality from fledging to one year of 49 per cent, and 13 per cent for breeding birds three years or more old. The difference between these reports may be due to band loss (Ludwig, 1967).

WINTER POPULATION TRENDS

Both species have increased in numbers in recent years. The northeast Herring Gull population has doubled in the past 12 to 15 years and similar trends have been observed in the Great Lakes region and western Europe (Drury and Nisbet, 1969; Ludwig, 1968). Numbers of Ring-billed Gulls also have increased at least in the Great Lakes area (Ludwig, 1968). Since most gulls wintering in South Carolina came from the northeast and Great Lakes regions, an increase in the winter population would be expected. During the winter of 1971-72, about 3,600 Ring-billed and 2,800 Herring gulls were found in a 500-square mile section of Charleston County centered at the City of Charleston (Forsythe, 1972), but no population studies over a number of years have been made for the entire state. However, Audubon Christmas Counts have been conducted in a 15-mile diameter area just north of Charleston and including the Cape Romain National Wildlife Refuge since the

1930's. Analysis of these counts from 1947 to 1972 shows a regression coefficient of +.529 for Herring Gulls and +.526 for Ring-billed Gulls. Neither of these is statistically significant and indicate that no increase in gull populations has occurred over these years. However, analysis of data from 1957 on show a strong correlation of +.81 for Herring Gulls and +.82 for Ring-billed Gulls. Both figures are statistically significant at the .05 level, and suggest that both species have increased in the Charleston area since 1957. The magnitude of the increase is unknown but Ring-billed Gulls seem to outnumber Herring Gulls by about 1.5 to 1.

SUMMARY

Between 1932 and 1969, 124 Herring Gulls from 11 states in the northeastern and Great Lakes regions were recovered in South Carolina with most birds from the northeast. Most birds were found from November through April. During 1927-1970, 288 Ring-billed Gulls from eight states were recovered in South Carolina. Most came from the Great Lakes region, mainly Michigan. The rest, with the exception of one bird from Saskatchewan, were from the northeast. Most birds of both species were one or two years old, but one 13-year-old of each species was found. Analysis of Charleston Christmas Count data from 1947-72 showed an increase in both species since 1957.

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