

GULL POPULATIONS AT CHARLESTON, S. C., JUNE 1971 TO JUNE 1972

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Although gulls are the most conspicuous birds found on the Carolina coast and Ring-billed (*Larus delawarensis*) and Herring (*L. argentatus*) Gulls were the major species contributing to the bird-aircraft strike hazard at Charleston Air Force Base (Wooten, 1971; Forsythe, 1972), little is known about population dynamics of gulls in the vicinity of Charleston, S.C. The purpose of this study was to determine the seasonal fluctuations in the species and numbers of gulls in the Charleston area.

STUDY AREA

Observations were made between 15 June 1971 and 31 May 1972 in a 500-square-mile section of coastal plain in Charleston and Dorchester Counties (Figure 1). Intensive field work was conducted in metropolitan Charleston (Figure 2). About 15% of the total area is coastal marsh and barrier island; another 40%, urban habitat; and 45% farmland, swamp, or forest. The topography is flat and almost entirely less than 30 feet above sea level.

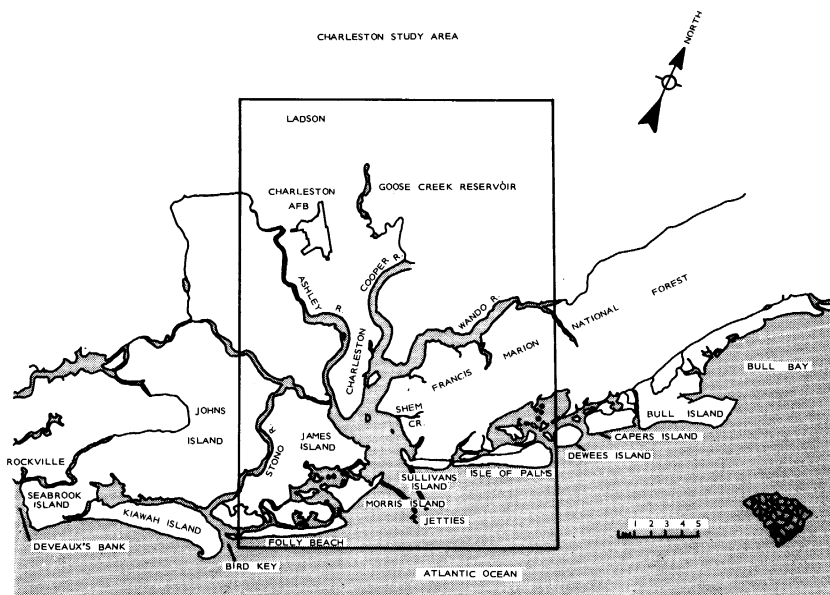


FIG. 1 CHARLESTON GULL ECOLOGY STUDY AREA
The rectangular area is shown in greater detail in fig. 2.

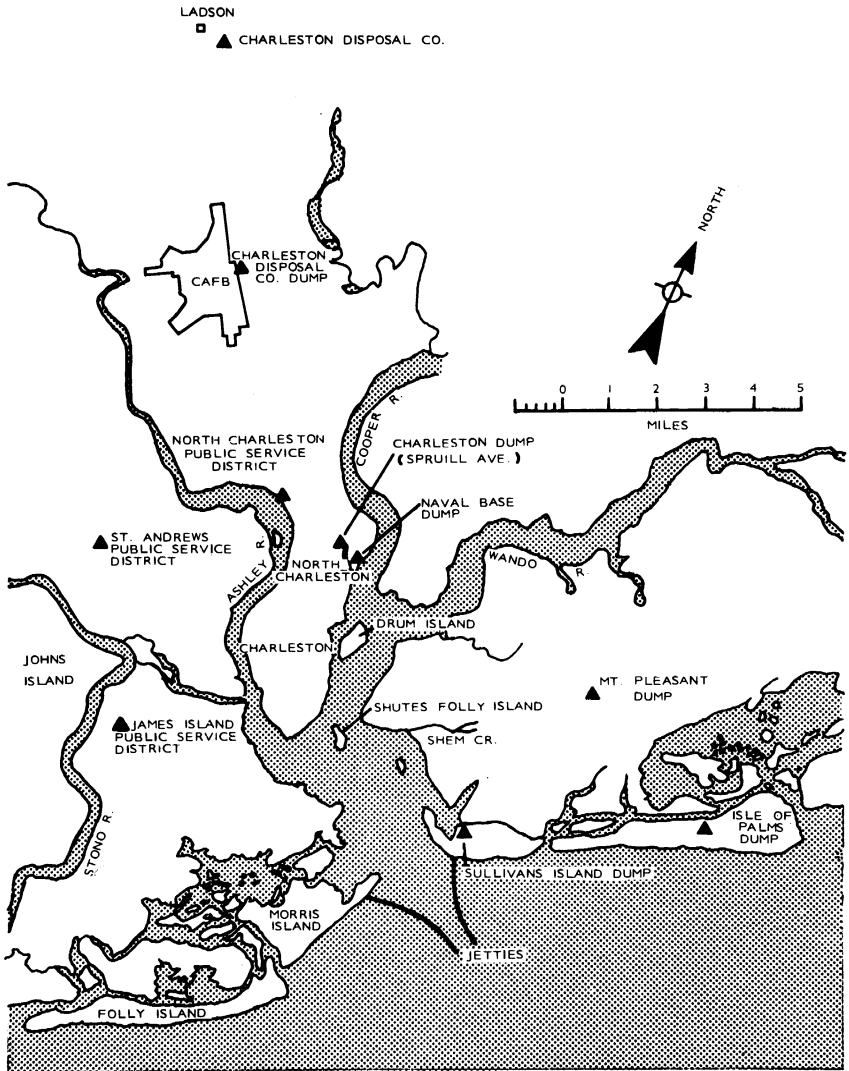


FIG. 2 METROPOLITAN CHARLESTON AREA WITHIN WHICH MOST INTENSIVE FIELD WORK WAS CONDUCTED

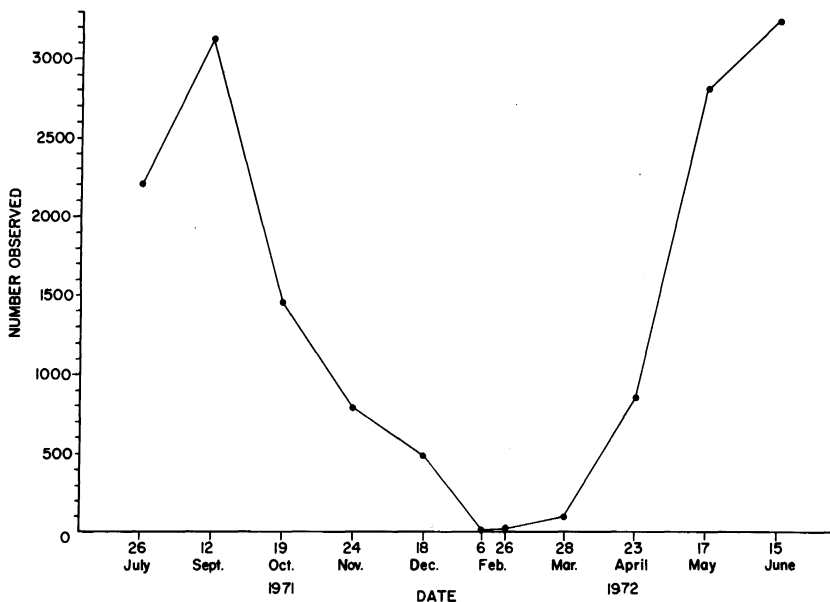


FIG. 3 NUMBER OF LAUGHING GULLS WITHIN THE CHARLESTON STUDY AREA, 1971-1972

METHODS

Ground censuses were made at least twice weekly at all gull feeding and loafing sites within metropolitan Charleston (Figure 2). Flying in a Cessna 150 Aerobat or a Cessna 172 Skyhawk, I made eight aerial censuses covering all known gull concentrations within the 500-square-mile plot between 26 July 1971 and 17 May 1972. Flights averaged four hours and were made from mid-morning through the afternoon over the same course at elevations of 500 to 800 feet. Clear weather with light winds and good visibility but variable tidal conditions occurred on all censuses. In conjunction with the aerial counts, ground observers censused all gull concentrations within the metropolitan Charleston sector. Comparisons between the two methods showed that aerial counts underestimated numbers by about 25%.

SPECIES PRESENT AND POPULATION SIZE

Seven species of gulls, Laughing (*L. atricilla*), Herring, Ring-billed, Bonaparte's (*L. philadelphia*), Great Black-backed (*L. marinus*), Black-headed (*L. ridibundus*), and Iceland (*L. glaucoides*) were found during the study. Of these, only the Laughing, Herring, Ring-billed, and Bonaparte's were common.

A summer Laughing Gull population of over 2,200 birds increased to over 3,000 in September with the addition of migrants from the northern part of its range and declined to a winter low of 5 to 10 individuals. Numbers increased again in spring, resulting in a breeding population of over 3,200 birds in late May and June (Figure 3).

From a mid-summer low of under 100 birds, Ring-billed numbers increased during October reaching a peak of over 3,600 in late November. The Ring-billed population dropped during December and January but increased again in February and March, declining again to under 100 in May to June (Figure 4). Noticeable migrations associated

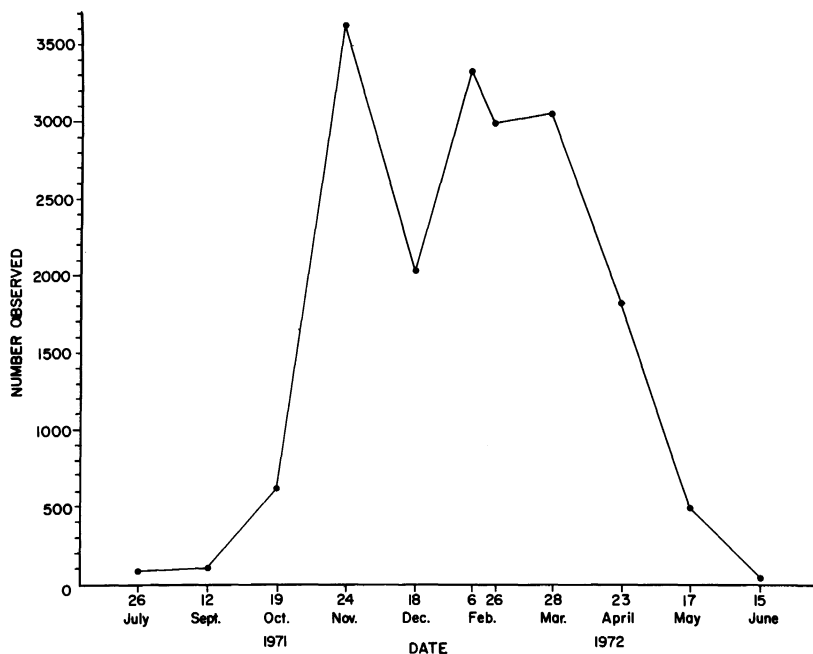


FIG. 4 NUMBER OF RING-BILLED GULLS WITHIN THE CHARLESTON STUDY AREA, 1971-1972

with high winds and rain occurred during 20 to 30 October, 22 to 29 November, and 24 to 30 March.

Ring-billed Gulls were found inland more often and in larger numbers than any other species under study. They occurred at such places as sanitary landfills, golf courses, shopping centers, and short grass fields up to 30 miles from the ocean or rivers.

Herring Gull populations (Figure 5) followed similar trends to those found for Ring-billed Gulls except that the winter population was lower and weather-induced movements were less evident. Herring Gulls were more restricted to the coast and large open dumps than were Ring-bills. Small numbers were summer residents and in the future may breed, especially in suitable locations such as the Cape Romain National Wildlife Refuge.

Bonaparte's Gulls were first seen on 24 November when 15 were found following a shrimp trawler. The peak number of about 400 occurred from late January through February, and the species was last recorded on 26 March. This highly aquatic gull was found on sewage lagoons, estuaries, fresh water ponds, and other bodies of water.

Since 1954, one to three Great Black-backed Gulls have been reported each winter in the Charleston area (Sprunt and Chamberlain, 1970) and the species appears to be increasing (Potter, 1972). Black-backs were seen from 3 January through 5 April with the peak population of 20 in February. Individuals were seen on barrier island beaches, Charleston Naval Base dump, and the Isle of Palms dump.

An immature Iceland Gull associated with Ring-billed Gulls and Herring Gulls was seen near the Carolina Yacht Club in late December or early January by E. Milby

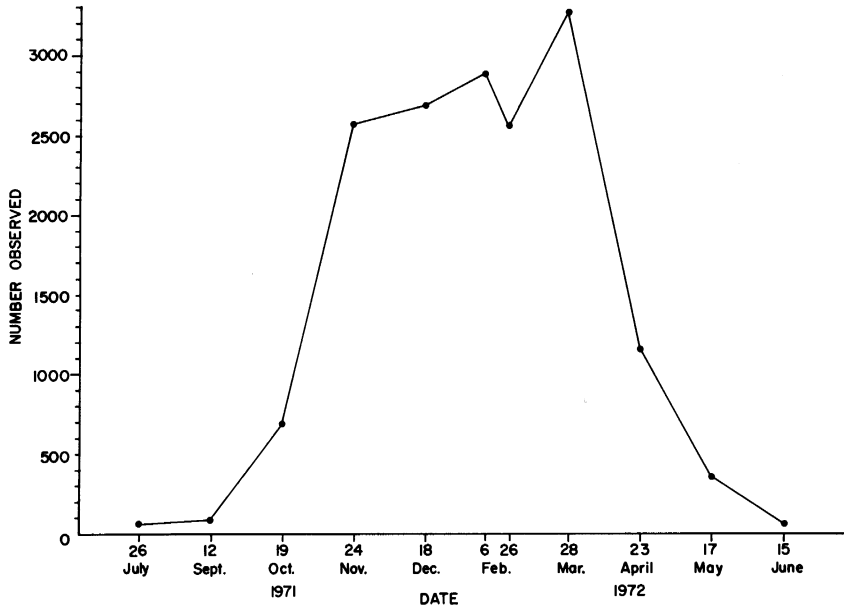


FIG. 5 NUMBER OF HERRING GULLS WITHIN THE CHARLESTON STUDY AREA, 1971-1972

Burton. This was only the second South Carolina record (Sprunt and Chamberlain, 1970).

Dick Viet and Peter Polslek observed two adult Black-headed Gulls, one in breeding plumage and one in winter plumage, feeding with a flock of Bonaparte's Gulls on the Charleston waterfront on 25 March (Teulings, 1972; LeGrand, 1972). This was the second South Carolina record (Probst, 1971).

SUMMARY

Gull populations were measured in the Charleston area by aerial and ground counts from 15 June 1971 to 31 May 1972. Seven species were found but only four were common. About 2,200 Laughing Gulls were summer residents, but over 3,000 were present during fall migration. About 3,600 Ring-billed Gulls wintered in the area, and slightly lower numbers of Herring Gulls were found during the same period. Bonaparte's Gulls were present during November through March with about 400 during February. Great Black-backed Gulls were present from early January to early April with a peak of 20 in February.

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SPRING BIRD COUNT OBSERVERS

(Continued from Page 77)

CALDWELL COUNTY, N.C.: Mrs. Glen Barnes, Mrs. Clarence Beach, Isabel Bernhardt, Mrs. Murray Bruner, Barbara Craig, Mrs. Jack Davis, Margaret Harper, Mr. and Mrs. Garvin Hughes, Mr. and Mrs. E.M. Manchester, Mr. and Mrs. Fred May, Helen Myers, Mrs. C.S. Warren, Joyce Whitman.

AVERY COUNTY, N.C.: Cecilia Burleson, Charlie Burleson, Winston Church, Judy Clement, Nat Clement, Brett Day, Hugh Fields, Evelyn Gordon, Dot Griffin, Mary Alice Hardin, Dixie Proctor, Betsy Randall, Frank Randall, Sally Southerland, Neil Stewart, Kay Webb, Stewart Webb.

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BREVARD, N.C.: Glenna Ball, Herbert Ball, Bill Cook, Ellen Cook, Bill Cunningham, Janet Cunningham, Louise Davidson, Eloise Fenneberg, Connie Foster, Ercel Francis, George Francis, Dick Garren, Helen Hardin, Curt Holland, Gail Holland, Susan Holland, Walter Holland, Bernice Hollifield, Hugh Hollifield, Grace Jackson, Sue Marcum, Walter McKelvey, Dewitt Parsons, Helen Parsons, Mr. and Mrs. Donald Reese, Hazel Roberts, Hervey Roberts, Kenneth Roberts, Mary Roberts, Becky Swanson, Phyllis Tish, Claude Viens, Eleanor Viens, Doug Wauchope, Harold Zimmerman, Helen Zimmerman.