

Strong (1922) reported a Burrowing Owl that boarded a naval vessel at night just off Cape Henry, Virginia, on 22 October 1918. He was unable to determine the subspecies but supposed the owl to be of the Florida form in view of the proximity to its range. Murray (1952) commented on remarks in a letter from H. C. Oberholser who stated it was much more likely to be the western race because of the migratory habits of that bird. Johnny Johnson (pers. comm.) of Merritt Island, Florida, saw a Burrowing Owl, presumed to be of the Florida race, on a sport fishing boat off the Florida east coast on 27 July 1972. The bird flew aboard about 10:00 EDT while 40 km east of Cocoa Beach, Brevard County. It remained on board until 17:00, when the boat docked at Port Canaveral and the bird flew ashore and disappeared. The recent observation by Johnson and earlier sighting by Strong off the Virginia Capes suggest a possible mechanism by which *S. c. floridana* could readily reach places along the eastern seaboard of the United States far from its normal range. On the southeast coast of Florida the busy coastal shipping lane is within 1-2 km of shore.

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Individual distance in the Herring Gull.—Hediger (1942, *Wildtiere in Gefangenschaft*, English ed. 1950, *Wild animals in captivity*, London, Butterworth) divided animals into "contact" species that seek and tolerate bodily contact with conspecifics outside sexual or parental contexts, and "distance" species that do not. He further proposed that each member of a distance species maintains an "individual distance," a rather precisely defined zone of intolerance to approach by conspecifics. Estimates by field workers watching large aggregations of resting birds have

supported the concept that individual distance is constant and species-specific (e.g. Emlen 1952, *Condor* 54: 177; Swinebroad 1964, *Wilson Bull.* 76:155). More precise measurement of spacing tolerances in one distance species has yielded contrary results, for within small groups of captive Chaffinches (*Fringilla coelebs*) at feeding sites, individual distance proved labile, "there is no sharp threshold beyond which aggression occurs, but rather a gradient, along which the probability of aggression gradually increases." (Marler 1956, *Brit. J. Anim. Behav.* 4: 23). By applying measurement techniques, previously used only indoors, to a large flock of Herring Gulls (*Larus argentatus*), I hoped to evaluate earlier concepts of constant individual distance in wild birds.

In early March 1973 I watched a flock of about 2,000 wintering Herring Gulls congregated about a fish-packing plant at Seal Cove, Grand Manan Island, New Brunswick, Canada. I affixed a 10 m tape, marked at 10-cm intervals, along the side of a horizontal board used heavily by loafing gulls. The marked board was about 50 m from the outfall of fish scraps from the factory, and 50 m from where I watched through binoculars.

To describe distance relations between adjacent gulls on the board I have followed Sparks (1964, *Anim. Behav.* 12: 125) in measuring distances from the midpoint between each gull's legs. The distance between two adjacent gulls just after one had landed I recorded as the arrival distance, and the distance between two adjacent gulls 60 seconds after a landing I recorded as the settled distance. From preliminary watching, I knew that distances stable after 60 seconds continued so for much longer; attacks (bill thrusts) were sometimes directed at the landing bird within the 60 seconds before settled distance was attained. These attacks are expressed as a percentage of the total number of arrivals for each 10-cm distance interval. All measurements were made on gulls in adult plumage, but of unknown sex.

Arrival distances (Figure 1A) clearly reflect a tendency for gulls to avoid landing too near other gulls; only 7% landed 30 cm distant or closer. The zone of intolerance or individual distance about each gull was sharply bounded (Figure 1B). Gulls attacked every individual landing 30 cm or nearer and none landing over 40 cm away.

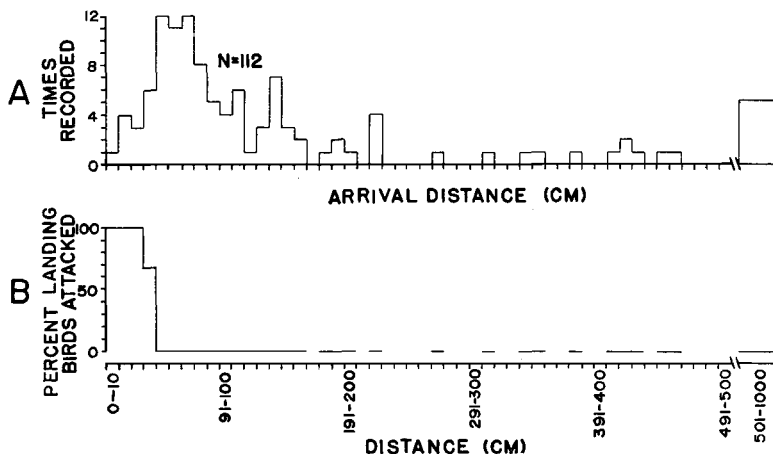


Figure 1. A, arrival distances and B, distance-dependent responses to landing conspecifics of Herring Gulls. Sample sizes in IB are taken from IA.

Attackers did so rapidly ($\bar{x} = 3.3 \pm 1.7$ seconds; $n = 7$). The distribution of settled distances was identical to that of arrival distances after deleting the gulls driven off at very short range. Thus no spatial adjustments (e.g. retreat along the board) occurred after arrival other than those precipitated by attack.

Arrival and attack distances were closely complimentary. Apparently gulls were as reluctant to land within 30 cm of standing birds as the latter were to have them do so.

These results lend quantitative support to Hediger's (op. cit.) narrow-tolerance-threshold individual distance. For these large gulls, not only was the threshold less than 10 cm wide, the decision to attack was rather clear-cut. The contrary results found by Marler (op. cit.) may be due in part to the complicating factors of social dominance and food competition present in his laboratory flocks.—THOMAS C. GRUBB, JR., *Department of Biology, Livingston College, Rutgers University, New Brunswick, New Jersey 08903. Present address: Department of Zoology, Ohio State University, Columbus, Ohio 43210. Accepted 1 Sept. 73.*

Cannibalism in Red-tailed Hawk.—Cannibalism in adult birds of prey is apparently rare, although it has been reported among nestling raptors by Heintzelman (1966, *Auk* 83: 307) and discussed by Ingram (1959, *Auk* 76: 218). The following is therefore noteworthy.

On 7 January 1973, approximately 16 miles east of Santa Maria, California, while driving along a creek bottom in oak-chaparral woodland, a large adult Red-tailed Hawk (*Buteo jamaicensis*) flew slowly in front of the vehicle for 40–50 yards, holding a bird slightly smaller than itself. It finally dropped its prey and flew into a nearby oak. Clevenger examined the prey immediately and found it to be a freshly killed adult Red-tailed Hawk. The head was missing and most of the tissue from the body had been removed; only the wings, sternum, backbone, legs, and tail remained. Sex could not be determined on subsequent examination; the wing measured about 395 mm.

Although the predator bird was not actually seen killing the prey, the fact that the incident occurred on private land at least 6 miles from the nearest public road minimizes the possibility that the prey was road killed, or had been shot, and then picked up by the predator. The date is nearly a month earlier than territorial behavior starts in this area, so it is not likely that territorial conflict was involved.—G. A. CLEVINGER and ARYAN I. ROEST, *Biological Sciences Department, California Polytechnic State University, San Luis Obispo, California 93401. Accepted 10 Aug. 73.*

Great Kiskadee nesting in an old woodpecker hole.—The nest of the Great Kiskadee (*Pitangus sulphuratus*) is a large, untidy, globular structure with a side entrance of grass and fine roots. In Surinam it is usually made between leaved twigs in trees and often at a great height well beyond reach (Haverschmidt 1968, *Birds of Surinam*, Edinburgh, Oliver and Boyd, p. 311). Therefore I was much surprised to observe on 26 November 1972 a couple of these birds disappearing repeatedly with food in their bills into an old woodpecker hole at a height of about 15 m in a large tree at the edge of a forest clearing near Phedra, Surinam. It was obvious that they were feeding nestlings. Nest material protruded from the roof of the hole, so apparently a nest had been made in the hole. To be quite sure about the identity I collected one of the feeding birds, which proved to be the female.—F. HAVERSCHMIDT, *16 Wolfskuilstraat, Ommen, Holland. Accepted 30 Oct. 73.*