

Sea conditions at a particular time of year, however, may have some bearing on the dispersal of these birds. In light of this it is noteworthy to mention that Monterey Bay had been experiencing an "anomalous oceanic period" for a week prior to the date of the sightings. The oceanic period is the result of open ocean waters moving into the bay causing high sea surface temperatures, a slight rise in salinity, and increased clarity of the water (Bolin and Abbott, California Coop. Ocean. Invest., Repts., 9: 28, 1960). This period, a regular phenomenon in Monterey Bay, usually occurs in September and October, with the latter month having the highest sea surface temperatures of the year. The average sea surface temperature recorded in late August, 1971 was 3°C higher than the average temperature for the previous month (W. W. Broenkow, pers. comm.). This abrupt rise in sea surface temperatures usually occurs in the month of October (ibid.). No correlation could be made between previous northern records and oceanic periods because adequate hydrographic data are lacking. Johnson (Trans. Amer. Fish. Soc., 91: 269, 1962) stated that if sea surface temperatures anomalies are large enough off the coast of Oregon and Washington, the availability of albacore (*Thunnus alalunga*) can be predicted and that in fact, sea surface temperature anomalies are correlated with large albacore fisheries in these areas. An unprecedented large run of albacore, fished by an estimated 2,000 boats, did occur in Monterey Bay concomitant with the sightings and the anomalous oceanic period.—DANIEL H. VAROUJEAN, *Moss Landing Marine Laboratories, Moss Landing, California, 95039*, and L. J. V. COMPAGNO, *Department of Biological Sciences, Stanford University, Stanford, California, 94305*. Accepted 27 Dec. 71.

Habitat preferences in Herring Gull chicks.—Tinbergen (1953) found that Herring Gulls, *Larus argentatus*, returned as adults to nest in the same habitat type in which they had been reared as chicks. Such a preference may be genotypic (Emlen, 1963), or it may be a response to familiar aspects of the habitat and have its beginnings during the first few weeks of life (Goethe, 1937; Beer, 1965, 1966; Evans, 1970). To study this, we performed a field experiment in a colony of Herring Gulls to determine the extent of chick preference for vegetation types in a nesting area and the variability of this behavior with age.

The study site was Little Bell Island, Conception Bay, Newfoundland, a small island measuring 1,500 m by 400 m. Vegetation on the island may be divided into rather distinct areas including grassland, marshland, shrub and herb areas, as well as areas of mixed vegetation. We found a total of 562 Herring Gull nests on the island, 60 percent of which occurred in grassland, 29 percent in shrubs, 5 percent in herb areas, and 6 percent in moss areas. A total of 31 chicks, 1–5 weeks old, were captured from grass, herb and shrub sites in the colony, carried between 30–50 m away to a different vegetation type, and released. In each case, we withdrew approximately 50 m and watched the chick with binoculars. All but three chicks moved from the release area within 8 minutes. Movements were followed until the chick remained in one location for at least 10 minutes. The vegetation type in the location where the chick stopped was then recorded.

Results indicate that a significant number of chicks returned to the same territory or to a vegetation area similar to the one in which they were captured ($\chi^2 = 8.53$, $P < 0.02$). Of the 13 chicks that were caught in grass and released in shrubs, 84 percent relocated in grass, 85 percent of the 14 chicks captured in shrubs and released in grass relocated in shrubs, and three of the four chicks (75 percent) captured in herbs and released in grass or shrubs relocated in herbs. This relocation in the original vegetation type was significant in all vegetation types and did not

TABLE 1
 PERCENTAGE OF CHICKS BY AGE RETURNING TO CAPTURE TERRITORY, SAME
 VEGETATION, OR DIFFERENT VEGETATION

Age	N	Capture territory	Same vegetation (not capture territory)	Total returning to same vegetation	Different vegetation
1-3 weeks	17	39.9	49.0	88.9	11.1
3-5 weeks	14	0.0	84.7	84.7	15.3

vary with the type of vegetation in the release area. Additionally, the choice of relocation vegetation was relatively unrelated to the amount of cover afforded by the vegetation. Chicks would relocate in less dense vegetation of the original capture site type in preference to very dense, different vegetation nearby that could reasonably provide greater cover.

Comparisons between young chicks from 1-3 weeks of age with older chicks, 3-5 weeks of age, showed that differences were not significant, as most birds in all ages returned to the original vegetation type. However a significant difference between younger and older chicks was found in the tendency to return to the capture territory ($\chi^2 = 7.00$, $P < 0.01$). The younger chicks most frequently returned to the original capture territory, usually the nest, while older birds returned to similar vegetation but did not relocate in the capture area (Table 1).

The difference between young and older chicks probably reflects the decreasing dependence of chicks on the nest site. The younger chicks may have been simply returning home, and the capture territory was the same as the home territory. The failure of the older chicks to return to the capture territory but rather select the familiar vegetation does, however, indicate a preference for a habitat based on vegetation type.

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