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FOOD HABITS AND BREEDING RANGE OF HERRING GULLS IN THE CANADIAN PRAIRIE PROVINCES

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There appears to be little information on the food habits of Herring Gulls (*Larus argentatus*) in the inland environment of North America. Herring Gulls breeding along the Atlantic coast of North America subsist mainly on fish (Mendall 1935; Pimlott 1952). To learn more about their diet in the inland environment, food pellets regurgitated by Herring Gulls were collected at Kawinaw Lake (52°50′ N; 99°29′ W), Manitoba, during the egg-laying season in May and June 1971. Kawinaw Lake was chosen for this food study because of its large breeding colony (161 nests on two small islands) and its accessibility to the observer.

Although the A.O.U. Check-list (1957) and Godfrey (1966) indicate the breeding range of Herring Gulls in the Canadian prairie provinces of Alberta,

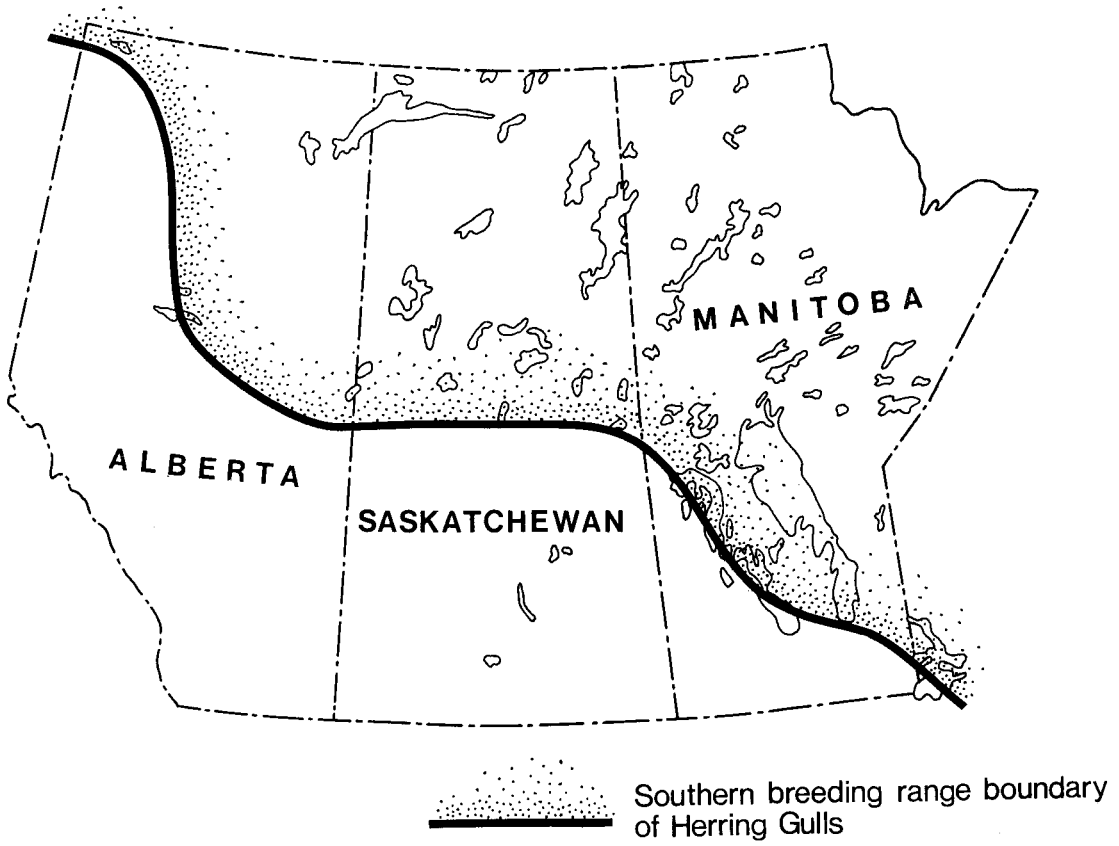

FIGURE 1. Southern breeding range boundary of Herring Gulls in the Canadian prairie provinces.

Saskatchewan, and Manitoba, those two sources do not show sufficient information on the southern breeding boundary of this species. Therefore further information was sought by the author in 1967, 1969, and 1970 (Vermeer 1970a,b, 1971) and in 1972 to determine the extent the breeding range of Herring Gulls coincided with the distribution of the larger lakes in those provinces.

FOOD HABITS

The Herring Gulls fed mostly on fish at Kawinaw Lake (table 1). Suckers (Catostomidae) and perches (Percidae) made up the large majority of those pellets containing fish remains (table 2). Herring Gulls were observed to scavenge extensively on dead and dying suckers (*Moxostoma macrolepidotum*) in creeks in the vicinity of Kawinaw Lake during May 1971. The suckers had migrated from lakes to spawn in creeks which were obstructed by silt and gravel near roads. Many suckers died trying to cross the obstructions or were trapped in temporary pools of roadside ditches.

Voles (*Microtus* sp.) occurred in 40% of 30 pellets from Herring Gulls collected before 20 May and in only 2% of 305 pellets collected after that date. Thus there appeared to be a shift from voles and fish early in the laying season to mostly fish later on. A similar shift in the food habits of Herring Gulls was observed by the writer at Clay Lake, western Ontario in May 1971. J. A. Keith (pers. comm.) observed a similar change in the food habits of Herring Gulls at Lake Michigan.

Fourteen of 18 regurgitated fish collected from nest sites containing Herring Gull chicks at Kawinaw Lake in mid-June were yellow perch (*Perca flaves-*

TABLE 1. Percentage frequency of food items in 335 pellets of Herring Gulls collected at Kawinaw Lake, 10 May–7 June 1971.

Food items	% pellets with food items
Plants	2
Insects	Tr
Crayfish	Tr
Rodents	6
Fish	94

TABLE 2. Frequency of fish species and families which could be identified in Herring Gull pellets.

Families and species	No. of pellets
Catostomidae (*Catostomus* and/or *Moxostoma* sp.)	73
Unidentified Percidae	38
Perca flavescens	30
Esox lucius	9
Stizostedion vitreum	4
Cyprinus carpio	4
Ictalurus nebulosus	1

cens). The shift from suckers during the laying period to perch when the chicks were being raised probably reflects the diminishing availability of suckers to the Herring Gull. The migration and spawning of suckers in creeks took place mostly in May and early June 1971.

BREEDING RANGE

The author (1970a) reported Herring Gulls breeding in Alberta at Bistcho Lake (59°43′ N; 118°40′ W) and at Lower Therien Lake (53°54′ N; 111°23′ W) in 1967 and 1969, respectively. In 1972, I observed one pair of Herring Gulls nesting on Dog Island (55°19′ N; 114°49′ W) in Lesser Slave Lake; six pairs on two reefs (54°51′ N; 112°00′ W) in Lac La Biche; and one pair, as in 1969, at Lower Therien Lake in Alberta. In Saskatchewan, Herring Gulls were observed nesting at Primrose Lake (54°58′ N; 109°42′ W) in 1967 and at Cumberland Lake (54° 07′ N; 102°18′ W) in 1970 (Vermeer 1970b, 1971). In Manitoba, Herring Gulls were observed nesting at Pelican Lake (52°25′ N; 100°20′ W) and at the southern half (50°49′ N; 98°37′ W) of Lake Manitoba (Vermeer 1970a). Figure 1 shows the southern boundary of the breeding range of Herring Gulls in the Canadian prairie provinces, as observed by the author; this is considerably south of the breeding range of Herring Gulls as shown by Godfrey (1966). It can be seen from figure 1 that the breeding range of the Herring Gulls coincides with the distribution of the larger lakes in the Canadian prairie provinces. Many lakes in this region are commercially fished and many streams associated with those lakes are used by fish to spawn. Commercial fishing and the spawning of fish in shallow streams may assist the Herring Gulls to scavenge on dead, diseased, and incapacitated fish. The restriction of Herring Gulls to this large lake region may therefore be related to their scavenging habits.

The author thanks J. S. Nelson for his assistance with the identification of fish.

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CATTLE EGRETS IN NORTHERN MÉXICO

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In sparsely vegetated desert country 9 miles W of Bermejillo, Durango, México, Marian Zimmerman, Allan Zimmerman, and I observed from our automobile two Cattle Egrets (*Bubulcus ibis*) on 24 November 1971. The birds foraged within 10–30 m of the roadway, evidently for grasshoppers, in a plant association dominated by creosote-bush (*Larrea*), scattered yuccas, various cacti, and other xerophytes. We saw no domestic animals in the vicinity. Later in the day, we encountered five Cattle Egrets foraging together among low mesquites, acacias, agaves, and ocotillos on the desert 2 miles W of Paila (ca. 17 miles N of Parras), Coahuila. These birds actively pursued grasshoppers; one fed in a shallow ditch about 4 m from the road, providing excellent views. Shortly after dawn on 25 November, 3 miles farther W, we found what appeared to be the same five Cattle Egrets roosting together in the top of a low, thorny leguminous shrub, asleep in the heavy fog. We saw no others during the remainder of the day as we worked in the desert between this point and Torreon, and we did not locate the birds the following day.

Although we found no herons at the above localities during our visits a month later, we saw scattered groups and a flock of approximately 80 Cattle Egrets on 31 December 1971, in dry fields and semi-desert grassland W of Torreon, Coahuila. During December 1972 we again recorded Cattle Egrets in Coahuila as follows: 50 with cattle near Torreon, 16 December; 1 feeding on grasshoppers in a vacant lot in Viesca (ca. 40 mi. W of Parras), 18 December; and 4 in a field at Arteaga, 21 December.

On 16 December 1972, in the state of Chihuahua, we saw groups of 6 and 8 birds 42 mi. S of Chihuahua City, plus a single individual at a pond 8 mi. N of the Durango state line along Highway 49. In Nuevo Leon we recorded a flock of 15 near Rayones, 22 December, and 1 bird 18 mi. N of Dr. Arroyo on 31 December. In San Luis Potosí we noted the species daily in late December 1972, including 2 in dry fields 5 mi. S of El Salto Falls, 25 December; another 20 mi. S of Antiguo Morelos; and 3 near Valles, 26 December.

There was no opportunity to secure specimens at the time of the above citings. However, during the past two decades we have seen thousands of Cattle Egrets on three continents, and we have studied and photographed them on numerous occasions. In our cited Mexican observations the characteristic posture, head shape, soft-part colors, and buffy feathers on the crowns and chests of certain individual birds all were seen clearly.

Bubulcus ibis continues to spread in southern Middle America (Leck and Hilty 1970; Orians and Paulson 1969) and in western South America (Post 1970). A decade ago, Wolfe (1961) recorded Cattle Egrets in