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## A "TERRITORY" NOTE ON THE BELTED KINGFISHER

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The importance of "territory" in the life of the individual bird and its probable influence on the successful existence of the different species has not received from American students the attention that is due.\* It is to be hoped that this condition will be remedied by systematic studies along this line, and the following note, while undoubtedly elementary, is offered as a possible contribution to our knowledge of the Belted Kingfisher, Streptoceryle a. aleyon.

A flock of kingfishers would most surely be considered as an avian anomaly and yet it so happens that I have never in print seen any reference to the close adherence to a definitely circumscribed area that appears to be a character of the individuals of this species. That such conditions exist during the reproductive season is no matter for surprise but it is not so easily explained at other seasons.

In the fall of 1922 (September 27 - December 15) I was engaged in field work in the marshes of the Illinois River, near the junction of the Sangamon River with the larger stream. These marshes are composed of an intricate network of sloughs or channels, most of which have little or no current but which are deep enough to permit the passage of power-boats of average draught. In the prosecution of my work it was necessary to make daily trips up and down these channels and I was early impressed with the large number of kingfishers that were present. That the birds were in migration I have no doubt for the point of greatest abundance was reached about October 5, after which there was a steady but gradual diminution in their numbers to the 21st, when only two or three were seen. After that date I did not see more than one on any day (probably the same bird that was seen with more or less regularity). The last observation was made on Novembr 22.

<sup>\*</sup> See "Territory in Bird Life," by H. Eliot Howard, London, 1920.

During the period of greatest abundance, practically every channel had its quota of birds, each of which appeared to patrol or to hold dominion over a certain well-defined section. To me it was decidedly remarkable to note the regularity with which a bird could be encountered at a certain point and after flying ahead of the boat for a specified distance—frequently stopping until I had again caught up with it-would fly over the trees and circle back to its own portion of the slough. At the point where the first bird turned back, I was almost certain to be greeted by the sight or the rattle of a second bird, which would take up the relay and continue it over another part of the course, the length of which would depend on how near it was to the end of its section when first flushed. I have observed this to continue until eight or ten birds had been encountered and their territory passed through. Occasionally two would be in sight at the same time but such occurances were of but short duration as neither bird would appear to take any notice of the other. No fights were noted, each individual appearing to recognize the domain of the other and to make no question regarding its possession.

In order to augment my own observation I called this curious state of affairs to the attention of one or two of the boatmen—employed at the shooting club that was my headquarters—particularly to the captain of the boats who made at least one round trip daily over the largest slough, known as the Little Sangamon River. His observations tallied perfectly with mine and he took much pleasure in informing club members and others who might be with him in the club launch, just how far the kingfisher then in sight would go and where the next one would be met.

I am unable to advance any theory to account for this habit other than a natural but curious desire for specific solitude. The dead snags, so liked by these birds, were plentiful and there was an abundance of food in the form of fishes, particularly a small species of shad, probably *Pomolobus chrysochloris*, known locally as "skip-jacks."

These birds were, of course, not banded or otherwise individually designated and my observations are therefore subject to later verification. It should also be borne in mind that these and other birds are likely to change their territory if they happen to locate one that is more favorable ecologically, and at the same time unoccupied by a representative of their own kind.

In this connection it occurs to me that cases of this kind might Le studied satisfactorily by means of colored celluloid bands. I feel confident that proper traps might be devised for these birds and, in order that the observations might not be in any way influenced by subsequent trappings, each bird could be banded with the usual aluminum band and on the opposite leg with a colored band, the colors—or combination of colors—varying with each individual handled. Spiral celluloid bands are readily obtainable and by softening in hot water they can be easily reduced to the desired size and I believe that with the aid of a good pair of field glasses they would be clearly discernible at ordinary distances of observation.

June 20, 1924. Biological Survey, Washington, D. C.

## ROOSTING HABITS OF GULLS

WM. I. LYON

The members of the Inland Bird Banding Association that live along the South-west end of Lake Michigan have been interested in the question of "where do the Gulls sleep at night." There seemed to be a possibility that the gulls could be captured at night in some way, with flashlights, especially when there are such quantities of them to be seen during the day.

Some of the members were assembled at Mr. Lyon's house one evening watching the Gulls very carefully, with the idea that they were going to make an attempt to capture some that night. Powerful glasses were used to watch the outer breakwater where the Gulls seemed to be assembled in large quantities, and at the last glimpses of daylight, the breakwater seemed to be entirely covered with Gulls. After dinner, the members of the party went to the Lake Shore where they had engaged a good staunch boat, with both oars and paddles, and started for the breakwaters. When they were about a thousand feet away, the oars were taken in and the paddles were used so as to approach the spot in absolute silence. There was not a sound made, yet when we arrived at the breakwater and circled entirely around it, there was not a sign of a single bird to be found. They seemed to have disappeared in some mysterious manner.

On another occasion Mr. Stoddard, of the Milwaukee Museum, visited me at Waukegan. We watched very carefully, and felt