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## A TURKEY VULTURE ROOST ON A SANDBAR

BY GARY W. SALLEE

During the latter half of July 1975 I repeatedly observed Turkey Vultures (Cathartes aura) roosting on a sandbar close to the low-lying, densely wooded Pawnee County side of the Arkansas River not far from the town of Blackburn, northeastern Oklahoma. On 17 July, when I first observed the roost, the river was low and the bar was an island about an acre in extent and perhaps a foot above water-level at its highest point. It was quite devoid of vegetation. Opposite from it the river's bank was high and clifflike.

Toward evening on 17 July, about 115 vultures gathered on the bar. Using my  $7 \times 50$  binocular, I noted the red heads of the adults and the gray, down-



TURKEY VULTURES AT THEIR ROOST ON A SANDBAR Photographed on 22 July 1975 along the Arkansas River near Blackburn, Oklahoma by Gary W. Sallee.

covered heads of the young birds. There were no Black Vultures (Coragyps atratus) in the lot: every bird had the comparatively long wings, long tail, and short legs of the Turkey Vulture. I continued my watch until dark. Not a bird left the bar as I watched, though from time to time new birds arrived.

When I returned on the afternoon of 19 July, the river had dropped a foot or so, exposing so much of the bar that it had become a peninsula jutting out from the bank. At 1625, four vultures were standing in a shaded part of the peninsular bar. An approaching storm obliged me to leave before dark.

On the evening of 22 July, vultures continued to alight on the bar for some time. At 1900 I counted 91 of them as well as nine Great Blue Herons (Ardea herodias) and 15 Mourning Doves (Zenaida macroura) there. Using a telephoto lens, I photographed the vultures. I remained until dark. No vultures left the bar while I was there.

Much rain fell between 25 and 27 July, causing the swollen river to inundate the sandbar. By the time of my visit on 29 July, however, the water-level had dropped and the bar had once more become an island. On that date more than half of the bar was covered with a thin layer of mud, and I noted with interest that the 42 vultures counted at 2010 were all standing on the part that was without mud. At 2030 one bird left the bar, flying off toward the west. Soon it was followed by another bird, then a third. I was not at all close to the bar, so could hardly have frightened the vultures off, though my arrival might have triggered their departure. After waiting about ten minutes, I followed the three departing vultures, leaving 39 of them on the sandbar. When I reached the place at which the three had disappeared among the trees, I came upon about 50 vultures perched in two large cottonwoods (Populus deltoides) along the fringe of a Great Blue heronry that I had not known about. In each cottonwood were — in addition to the vultures — four unoccupied heron nests. I stayed near this tree-roost until dark. No more vultures came to it while I was there, so a considerable number of vultures may have spent the night on the bar.

During three of my four visits to the sandbar roost, I noted that more and more vultures arrived as daylight waned. So far as I know, no birds flew in after dark. After arriving, the birds spent much of their time preening. Often they walked to the edge of the bar and drank. Although I witnessed little of what I would call social behavior, it occurs to me that sandbars may be important in the Turkey Vulture's ecology not only for roosting, but also for temperature regulation through drinking and bathing, and also as a means of acquainting unpaired birds with each other. Further observations will determine at what season such roosts become established. If they start early enough in spring, courtship activity should be observable at them.

So far as I know, the roosting of Cathartes aura on a sandbar has not heretofore been reported. Brown and Amadon (1968, Eagles, hawks and fal-

cons of the world, 1: 176) mention a single bird that was "observed to come to a river to drink at the same time each afternoon" and "groups" that "may assemble at sandbars," but in their considerable discussion of roosts they say nothing about roosts on the ground. George M. Sutton informs me that he has observed "many Turkey Vulture roosts, . . . most of them in trees, some in cliff country, none on a sandbar" (letter of 14 August 1975).

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## A LATE NESTING OF THE CARDINAL

BY MYRTLE KELLEY

Oklahoma bird students continue to believe that the Cardinal (Cardinalis Cardinalis) sometimes rears three broods a season in this part of its range. Proof of three-broodedness will require marking individual birds, of course, not to mention careful observation. The species certainly starts nesting early and continues late in Oklahoma. Sutton (1967, Oklahoma birds, Univ. Oklahoma Press, Norman, p. 572) mentions a "partly built nest" observed in Cleveland County on 27 March 1964, and "young out of nest receiving food" in Tulsa County on 26 September 1948 and 26 September 1952.

At my home in a "wild" part of southern Tulsa County (on 101st Street between Mingo and Memorial avenues, within corporate Tulsa), on 27 August 1973, I observed a female Cardinal inspecting, then remodeling, a nest that Cardinals had used more than a year before (spring of 1972). The nest was 4 feet up in a holly bush almost under the awning for a bedroom window. From this window, which was only about 3 feet from the nest, my sister Frances and I made observations daily from 27 August to 24 September.

As far as we know, the female started her remodeling at about 0730 on 27 August. The nest had a flattened, shoddy appearance at first, but presently the fresh lining gave it a cuplike appearance. We did not see the male bird anywhere near the nest that day. The following day (28 August) the female again started work about 0730 and she stopped at about 1030. During this period the male looked on and sang from time to time, though he carried no material and did no work on the nest. On 29 August the female started work at about 0730 and stopped about 1030. The remodeling was completed that day.

The first egg was laid on 30 August, the second on 31 August, the third between 0720 and 0800 on 1 September. At 0800 on 1 September the female left the nest. She returned for a brief visit at 0845 but was away from the nest the rest of the day. She did not spend that night on the nest. On 2 September she came to the nest at 0655 and was on it all day except for three or four feeding periods. We did not observe her continuously, of course, nor did we keep a record of her off-the-nest periods.

During the incubation period, which continued through part of 15 September, the female spent the night on the nest and she was on the eggs throughout the day, too, except for what seemed to us to be brief feeding