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Activity of Red-tailed Hawks at a corn stubble fire.—On 21 March 1969 at 17:24, I noticed a concentration of at least 11 Red-tailed Hawks (*Buteo jamaicensis*) on and around a burning field of corn stubble one mile south of Lawrence, Douglas County, Kansas. Two of the hawks were dark phase. Because of poor light only two hawks could be identified as adults. The low intensity fire was burning slowly into the wind. The ground was blackened for several hundred yards west of the flames, but patches of unburned stubble remained within the burned area. Land south of the burn had recently been plowed. Fields of recently emerged winter wheat were north and west of the burn and corn stubble extended east. I observed red-tails at the fire until 18:15. During this time the sky was completely overcast with the temperature near 55° F and the wind East at under five mph. Mild weather conditions had prevailed in the area for the preceding several days. There appeared to be no environmental features or conditions, except the fire, that might have been unusually attractive to the large number of hawks.

The red-tails were apparently hunting, and frequently perched on fence posts and small trees within and bordering the burned area or ahead of the slowly advancing flames. Hawks also flew low over the burned area, often near the flames, and sometimes landed on the blackened ground. Occasionally a hawk was noted leaving the vicinity of the fire or flying far to the south near riparian woodland. The red-tails seemed undisturbed by each other, and often perched in groups of up to six in adjacent trees.

About 17:30 I saw an adult dark phase red-tail standing on a small rise within the burned area. After remaining motionless for five minutes, the hawk began walking slowly and looking at the ground to right and left. Then, after halting and slowly turning 180 degrees, it abruptly turned right and ran for about 10 feet. Later, another hawk launched from a fence post and pounced, as if attacking prey, 10 feet from the post in the burned area. Probably the first hawk and certainly the second, was pursuing prey on the burned area. Cotton Rats (*Sigmodon hispidus*), Prairie Voles (*Microtus ochrogaster*) and Deer Mice (*Peromyscus maniculatus*) were the rodent species known to be abundant in vegetation near the corn stubble fire, and hence the prey species most likely available to the hawks.

Many avian predators and scavengers are attracted to fires. This is undoubtedly a learned response, adaptive in increasing the probability of encountering prey disturbed by the fire. However, the behavior of raptors after their arrival at a fire has rarely been reported. Komarek (Proc. Ninth Ann. Tall Timbers Fire Ecology Conf., 161-207, 1969) summarized much of the pertinent literature and listed, in addition to the red-tail, Turkey Vulture (*Cathartes aura*), Black Vulture (*Coragyps atratus*), Marsh Hawk (*Circus cyaneus*), Red-shouldered Hawk (*Buteo lineatus*) and Sparrow Hawk (*Falco sparverius*) as North American raptors known to gather at fires. In addition, many individual White-tailed Hawks (*Buteo albicaudatus*) were twice observed by Stevenson and Meitzen (Auk, 58:198-205, 1946) congregating at prairie fires, flying low over the fire and burned ground, and diving at Cotton Rats, pocket mice and grasshoppers.

The Baker Wetlands Research Area, a mile-square plot of fallow, cultivated and undisturbed prairie land, is located one quarter mile east of the fire site. Its dense and varied plant cover supports large rodent populations and throughout the winter of 1968-69 was used as a roost by many Marsh Hawks and a very few Short-eared Owls (*Asio flammeus*). Red-tails, Great Horned Owls (*Bubo virginianus*) and Sparrow Hawks also hunted there. Some of the red-tails seen at the fire were probably those using the wetlands. However, I never saw more than four red-tails

(rarely that many) hunting the wetlands. Red-tails must have been attracted to the fire from a large nearby area if their winter daily hunting ranges were similar in size to the 1.22 square miles average determined by Craighead and Craighead (*Hawks, Owls and Wildlife*, Stackpole, p. 25, 1956). JAMES W. PARKER, *Museum of Natural History, University of Kansas, Lawrence, Kansas 66044*.

An instance of roost-nesting by a Killdeer.—On 24 May 1971 I observed a Killdeer (*Charadrius vociferus*) on the roof of the building where I work in Topeka, Shawnee County, Kansas. The Killdeer was close to the stairs, approximately in the center of the roof, and as I moved about and away from the bird it went into a "broken wing" display. I then noticed a second bird at the extreme southwest corner of the roof. On approach this second bird flew off the roof to a lower roof on the west side of the building. A quick search of the southwest corner showed no nest so I assumed the birds were attracted to the roof because of standing water resulting both from rain and from the roof-mounted cooling tower of the building's air conditioning system. This tower leaks water until the boards swell enough to restrict much of its flow. It never quite stops leaking and as a result there is considerable water on the roof well into summer.

On 3 June I saw one Killdeer running from the east along the south side of the roof and a quick look at the southeast corner revealed a nest of stone chips and four eggs. On 5 June I photographed the adult, the eggs, and the adult on the nest. The bird would move a short distance from the nest but returned readily after I moved away. It displayed about 15 feet from the nest. On 8 June, when Orville Rice arrived to take pictures, the bird was wary and moved far from the nest, refusing to return until we were far away. I retired from sight while Orville knelt beside a vent and after 10–15 minutes the bird returned and covered the eggs. On none of these dates was a second bird present. On 11 June the Killdeer was still covering the eggs but on the 14th both bird and eggs were gone. The nest appeared undisturbed and there was no sign of egg shells. The Killdeer was not seen again.

The building, in central Topeka, is about 200 feet square with a parking lot to the west, a loading dock with a small wooded area to the south, a lawn to the north and a busy street to the east. At the edge of the roof is a nine inch rise and a drop of 20–25 feet. If the birds had hatched successfully they would have had a considerable fall to the ground unless the parents helped in some way.

The nest was a mere depression with a whitish appearance brought about by the use of mostly light-colored gravel. The roof normally is a "salt and pepper" mixture of gravel chips. The six or eight inches immediately surrounding the nest gave a dark appearance indicating this was the area from which the light-colored gravel had been taken. The nest was readily visible because of its lightness against the darker ring of gravel. The dusky eggs, easily seen on the nest, would have blended in well anywhere else on the roof. Why would the Killdeer choose the light gravel for its nest? Is this normal procedure under other circumstances?

Use of gravel roofs as nest sites is apparently quite unusual. Bent (*Life histories of North American Shore Birds* (Part 2), U. S. Nat. Mus. Bull. 146, 206–207, 1929) reported nesting on the sloping, tarred and graveled roof of a race track grandstand (about 50 feet above ground) near Lincoln, Nebraska as described by Gayle Pickwell. At least three clutches were laid between early April and late June and possibly two broods were raised. Pickwell did not see the chicks hatch or reach the ground but did see them running about "while still but feeble walkers." I anticipate other instances of roost-nesting, especially where water is present as an attractant. EUGENE R. LEWIS, 1285 MacVicar Ave., Topeka, Kansas 66604.

Ruby-throated Hummingbird observations in southeastern Kansas.—Mr. Qualls and I have observed the nesting of Ruby-throated Hummingbirds (*Archilochus colubris*) during six summers of boating on Shoal Creek above the dam at Lowell, Cherokee County, Kansas. Observations were restricted to the lake and the main stream. Birds arrived between 14 and 24 April and departed by 9 October.

The two main factors affecting nesting were apparently extreme weather conditions (especially heavy rain) and nest sites. Nests were usually on slightly vertical, rarely horizontal, limbs from one-half to one inch in diameter. Most were less than five feet above the water but with extremes of four and 20 feet. No nests were found in trees having one or more branches touching the water and therefore

easily accessible to snakes. Most nests were in Sycamore (*Platanus occidentalis*) with fewer in elms (*Ulmus* sp.) and birch (*Betula* sp.). Within the two mile study area, nests were either on the lake area, where water level varies little, or on the main stream.

Nests under construction or completed were found between 6 June and 8 August; eggs from 14 June to 8 August; nestlings from 27 June to 27 August. Eggs are pure white, navy-bean size and the usual clutch was two, less often one. The eggs are very fragile but can be removed from an abandoned nest with a cup-shaped leaf.

When approached cautiously, the female appears unafraid and we have approached to within two feet of an incubating bird. Females do not remain to defend the nest. Nests were observed with binoculars from the far side of the river. We observed food being brought to the nest but never saw the young actually being fed.

On one occasion a female was observed nest building on a horizontal elm branch. The male sat on a limb nearby but did not assist. The female used spider webs as a base and added down from the underside of Sycamore leaves (which we watched her collect) and from willows (*Salix* sp.) and cottonwoods (*Populus* sp.). The completed nest is about 1½ inches in diameter with an inside depth of about three-fourth inch, very soft and fluffy and white in color. The outside of the nest is darker because of the camouflage covering of lichens gathered chiefly from the bark of elm trees. We have also collected nests covered with small seed pods which later burst open making the nest even more decorative.

Sometimes nests built in early June, when Sycamore leaves are small, are later covered by the enlarged leaves. This growth apparently restricts access to the nest and such nests are abandoned. Such nests often become hidden from the view of the observer.

1966

Ten nests were located and several broods were raised. One nest had the female incubating on 14 June, one young on the 26th and two young on the 27th. They were still present on 13 July (black bills ½ inch long) but departed shortly thereafter. Other responsibilities prevented our keeping a complete record of the nest but we estimate the nestling period as 18 to 21 days.

1967

This was a poor year for hummers with cold weather and much rain. Eight nests were found and checked intermittently but some were never completed and others were abandoned. Only two nests are known to have fledged young. A female incubating in an inaccessible nest on 17 June was still incubating (?) on 30 July. Was she incubating a replacement clutch? This occurrence is unique in our experience. Another nest found on 8 August had two young on the 14th which fledged between the 28th and 30th.

1968

This was another poor year for hummers. For some reason they were very scarce and we found no nests. Acadian Flycatchers (*Empidonax vireescens*) and Prothonotary Warblers (*Protonotaria citrea*) were also scarce and we failed to find any of their nests.

1969

We found at least 12 nests and observed eight of them regularly. Two had single egg clutches, one had two eggs and others were unfinished or abandoned due to unusual cool temperatures.

1970

Although we found only four nests, we had many birds at the five feeders in our yard. Nests were found from 30 June through 10 August, the latter having two young.

1971

Only four nests were found. Probably responsible was an early spring storm with rain, wind and heavy hail which destroyed early gardens and flowers and defoliated trees. The reduction in number of hummers was very obvious as the summer progressed. Courtship was observed on 19 April. One nest was 100 feet from the river bank and over a large dried-up water hole.

Our limited observations show that the species varies in numbers from year to

year. We think that much could be learned by a more extensive study of their nesting habits and behavior. MRS. W. H. QUALLS, RFD 1, Box 304, Baxter Springs, Kansas 66713.

Louisiana Heron at Cheyenne Bottoms.—Early on the morning of 12 July 1971, my wife, Jan, and I observed a single Louisiana Heron (*Hydranassa tricolor*) in juvenile plumage in Pool One, five miles east of the headquarters building of the Cheyenne Bottoms Waterfowl Management Area. We observed and photographed the bird for about 15 minutes. It was later observed by Marvin Kraft as it flew northward and out of sight.

On 14 July it was observed by Marvin Schwilling in Pool Three with one Cattle Egret (*Bubulcus ibis*), three Snowy Egrets (*Leucophoyx thula*) and four Great Blue Herons (*Ardea herodias*). The following morning I photographed the bird in Pool Two at a distance of 40 to 50 feet. It was observed for the next ten days in Pool Three usually with Little Blue Herons (*Florida caerulea*), Snowy Egrets, Common Egrets (*Casmerodius alba*), White-faced Ibis (*Plegadis chihi*) and a single White Ibis (*Eudocimus albus*). Mr. and Mrs. E. F. Schullenberg and Margaret observed two or three Louisiana Herons in Pool Three on 25 July. On 29 July I again photographed a single bird and later observed four other birds nearby. The following day a total of six Louisiana Herons were in Pool Three feeding with 29 Snowy Egrets, 11 White-faced Ibis, 5 Little Blue Herons and the single White Ibis. The number of Louisiana Herons observed fluctuated until 6 August when the number dwindled to two birds. The water level in Pool Three had been rising for the previous several days and on 8 August no Louisiana Herons were observed. On 20 August, Marvin Schwilling, Jan and I drove the east side of Pool Three to the beginning of the peripheral dike and flushed two Louisiana Herons, 30 Snowy Egrets and 14 Common Egrets. The Louisiana Herons were last observed there on 23 August.

The two birds observed on 20 August had lost the reddish shoulder patch indicating that they were acquiring their second winter plumage (Palmer, Handbook of North American Birds, Vol. 1, New Haven, p. 465, 1962).

They usually fed in water from four to 10 inches deep while holding their wings out from the body, but not extended. This sometimes provided balance for their erratic movements and lunges, but seemed more to provide a shadow over the water enabling them to observe food in the water more readily. They fed with their backs to the sun and lunged sideways into the provided shadow for food which was mostly small fish.

The Louisiana Heron is considered a postbreeding summer visitant in Kansas (Johnston, A directory to the birds of Kansas, Univ. Kans. Mus. Nat. Hist., Misc. Publ., 41:9, 1965). Tordoff (Check-list of the birds of Kansas, Univ. Kans. Publ. Mus. Nat. Hist., 8:312, 1956) reported a specimen taken in McPherson County on 9 August 1934 (now at Hesston College) and one sight record in Atchison County on 12 September 1948. ROGER L. BOYD, 1219 Merchant #4C, Emporia, Kansas 66801.

Kansas Ornithological Society

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