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CARNAGE AT THE WASHITA NATIONAL WILDLIFE REFUGE

The sad scene that greeted those who carried on the cleanup operation at Foss Reservoir on 19 October 1979. Photograph by Evan V. Klett.

A KILLER HAILSTORM AT THE WASHITA REFUGE

BY C. CRAIG HEFLEBOWER AND EVAN V. KLETT

The Washita National Wildlife Refuge, a comparatively flat grassland tract of 8,200 acres in Custer County, west-central Oklahoma, was established in 1961. Its principal feature is Foss Reservoir, a large impoundment of the Washita River. The reservoir's dam is about 12 miles west of Clinton, Oklahoma, but refuge headquarters are near Butler, a small town about 5 miles east of the impoundment's north end. Foss Reservoir has become an important stopping-off place for waterfowl, notably Canada Geese (*Branta canadensis*) and Sandhill Cranes (*Grus canadensis*), thousands of which migrate through the area regularly and often winter there in great numbers.

At 0320 on 17 October 1979, an intense hailstorm struck the refuge area. Hailstones up to 2 inches in diameter fell for about 30 minutes at the refuge headquarters. Next morning, the reservoir's windward shore at Cheyenne Point was littered with hundreds of dead waterfowl. Refuge personnel immediately began a cleanup operation that continued for three days. Here, in order of abundance, are the species that we found:



KILLED BY HAIL

Ducks and geese picked up along the shore of Foss Reservoir after the storm of 17 October 1979. The man in the truck is Evan V. Klett. Photograph by C. Craig Heflebower.

Green-winged Teal (<i>Anas crecca</i>)	1,143
American Wigeon or Baldpate (<i>Anas americana</i>)	861
Sandhill Crane (<i>Grus canadensis</i>)	600
American Coot (<i>Fulica americana</i>)	203
Pintail (<i>Anas acuta</i>)	198
Gadwall (<i>Anas strepera</i>)	93
Ring-necked Duck (<i>Aythya collaris</i>)	91
Mallard (<i>Anas platyrhynchos</i>)	76
White-fronted Goose (<i>Anser albifrons</i>)	68
Blue-winged Teal (<i>Anas discors</i>)	35
Canada Goose (<i>Branta canadensis</i>)	24
Redhead (<i>Aythya americana</i>)	12
Franklin's Gull (<i>Larus pipixcan</i>)	11
White Pelican (<i>Pelecanus erythrorhynchos</i>)	4
Great Blue Heron (<i>Ardea herodias</i>)	3
Northern Shoveler (<i>Anas clypeata</i>)	1
Wood Duck (<i>Aix sponsa</i>)	1
Semipalmated Sandpiper (<i>Calidris pusilla</i>)	1
Killdeer (<i>Charadrius vociferus</i>)	1
Total	3,426

We made no attempt to count the many injured ducks that, though unable to fly, were capable of swimming to safety. It appeared to us that fully as many ducks were crippled as had been killed outright. In our opinion, a very small



MUTE TESTIMONY TO NATURE'S SAVAGERY

A White-fronted Goose and several ducks – some of them identifiable to species even here – killed by the hailstorm. Photograph by Evan V. Klett.

percentage of the waterfowl present on the refuge on 17 October 1979 escaped death or injury.

Many birds of other species, as well as mammals, no doubt were killed or injured by the hail, but we made no attempt to find carcasses away from the reservoir's shore. We observed several injured Barn Owls (*Tyto alba*) while we were picking up the carcasses and found one dead cottontail rabbit (*Sylvilagus floridanus*) among the dead ducks.

Several Sandhill Crane and Mallard specimens were sent to the U. S. Fish and Wildlife Service's National Wildlife Health Laboratory in Madison, Wisconsin, for examination. The lethal injury most often found was a crushed skull. Some Mallards also had shattered livers. Many specimens showed evidence of internal hemorrhage or had bruised pectoral muscles or broken bones.

The Oklahoma Cooperative Wildlife Research Unit at Oklahoma State University in Stillwater took 473 Sandhill Cranes, 46 American Coots, 22 Mallards and one White Pelican for use in their studies. The Stovall Museum of Science and History at the University of Oklahoma in Norman took 20 cranes and two pelicans. The rest of the dead birds were buried.

The above-reported killer storm is not the first to have struck southwestern Oklahoma. In the late afternoon on 5 October 1951, an "unusually severe hail storm accompanied by high winds and rain hit southwestern Oklahoma" (Jones, 1952, *Wilson Bull.*, 64: 166-167). The worst damage from that storm befell the area between the towns of Reed and Granite, in Greer County. At least 60 Swainson's Hawks (*Buteo swainsoni*), 41 Bobwhites (*Colinus virginianus*), 30 Common Crows (*Corvus brachyrhynchos*), one immature Red-tailed Hawk (*Buteo jamaicensis*), and one Cooper's Hawk (*Accipiter cooperii*) were killed, not to mention other wildlife than birds. On 15 October 1960, about 1,000 Sandhill Cranes were killed in southeastern New Mexico by a hailstorm that started about 0330 and "lasted for approximately 30 minutes" (Merrill, 1961, *Auk*, 78: 641-642). Of considerable interest is the fact that all three of these storms did their killing within the same 13-day period, the first in 1951, the second in 1960, the third in 1979, and all three storms were short.

WASHITA NATIONAL WILDLIFE REFUGE, ROUTE 1, BOX 68, BUTLER, OKLAHOMA 73625. 8 AUGUST 1980.

GENERAL NOTES

Ross's Goose in northeastern New Mexico.—From 29 December 1977 to 6 January 1978, an adult Ross's Goose (*Chen rossii*) was seen repeatedly at Clayton Lake, a fairly large impoundment about 12 miles northwest of Clayton, Union County, northeastern New Mexico. The duck-sized bird was first seen by W. W. Cook, who was by himself at the lake on 29 December. On 31 December, Cook and I found it again, this time fully 1000 feet out from shore with about 300 Canada Geese (*Branta canadensis*). We observed it that day for some time through our Balscopes. On 2 and 6 January, Cook and I saw it again, once more with the big flock of Canadas. On subsequent visits to the lake we failed to find it, this despite the fact that the Canadas were still there.

So far as I know, Ross's Goose has not heretofore been seen in this part of New Mexico. Clayton Lake is about 18 miles west of the Oklahoma state line.—Adolf J. Krehbiel, *P.O. Box 40, Clayton, New Mexico 88415, 23 January 1978.*

Saw-whet Owl in Osage County, Oklahoma.—Just after dark on the evening of 23 November 1978 (weather unseasonably mild; no wind; no snow on ground), as Donald Carter was driving southward from a hunting trip to his home in Sand Springs, Oklahoma, he captured a somewhat dazed Saw-whet Owl (*Aegolius acadicus*) that he chanced to see huddled at the side of the road about a mile northeast of the village of New Prue, Osage County, northeastern Oklahoma. The bird probably had been hit by a car, though it did not appear to have been injured. The spot was in rolling grassland just north of the Arkansas River Arm of Keystone Reservoir. No trees were close by, though fairly high clumps of deciduous shrubbery grew along a fence between the road and a small stock-pond a few rods away.

I received the little owl at the zoo on the morning of 25 November. I gave it two milliliters of water with vitamins and examined it for injuries. None of its bones had been broken, so far as I could tell, but its left eye remained partly closed. Before given anything to eat, it weighed 96 grams. I put it in a roomy cage with some pine branches and placed a freshly killed mouse near its water-dish.

That night the owl ate the mouse. In the morning I found a pellet of indigestible matter in the cage. As I could find no trace of blood anywhere, I assumed that the mouse had been swallowed whole. Wally Whaling photographed the owl in color at close range that day (two prints on file at the University of Oklahoma Bird Range).

The owl routinely ate a mouse each night and produced a pellet each day. It gradually regained the use of its left eye and appeared to be well adjusted to captivity. It did not survive, however; on the morning of 3 December I found it dead on the floor of its cage, with the uneaten mouse not far away.

The specimen (UOMZ 14388, sex uncertain), well prepared by John S. Tomer, is now in the bird collection at the University of Oklahoma. The above is the first documented record for *Aegolius acadicus* in the Tulsa area. An early report of the species' nesting hereabouts is unacceptable (see Sutton, 1967, Oklahoma birds, Univ. Oklahoma Press, Norman, pp. 265-266). I am grateful to Donald Carter and his family and to Kenneth Hayes and his wife Elizabeth for information concerning the spot at which the owl was caught. All of these persons made a point of driving to the place hoping that they might find another Saw-whet there.—Pamela Osten, *Curator of Birds, Tulsa Zoological Park, 5701 E. 36th St. North, Tulsa, Oklahoma 74104, 20 January 1980.*

On winter food of Common Flicker in central Oklahoma.—Year after year the Common Flicker (*Colaptes auratus*) has visited our backyard in a residential part of Norman, Cleveland County, central Oklahoma. The species may nest in the neighborhood, but it is not common there. As a rule I have seen

only one bird at a time (there were two on 19 February 1980), and I have no way of knowing that it has been the same individual season after season. While in our yard it spent most of its time on the ground. In summer it may well be after ants, but in winter it must surely be finding something else to eat as a rule. On several occasions at that season I have seen it carrying a fair-sized object in its bill. Curious as to what this object might be, I have watched the bird closely.

On 29 January 1980 (weather mild for winter; no snow on ground), I saw a flicker pecking at something in the short grass. Thinking that it might have discovered a hole where ants were obtainable, I marked the spot carefully from the window, opened the door, and started across the lawn. The flicker flew up, carrying something in its bill to a bare area not far away. When it flew again, it left what it had carried — a paper-shell pecan from which most of the kernel had been removed. I decided that when the bird had been bending over as if probing an ant hole it had been digging up a pecan buried there by a squirrel during the preceding fall.

Our neighbors to the north have two pecan trees in their backyard, as well as three hunting dogs. The squirrels are so afraid of the dogs that they store the pecans in our backyard. They travel by telephone cable to our neighbor's yard, leap from it to an elm, then to a hickory, then to one of the pecan trees and so to the ground, where they grab a pecan and scurry, via the very same trees, back to the cable. Using this, they move to our yard, leap first to a cottonwood, then to a sweet gum, and thus to the ground where they bury the pecans in safety.

On 2 February (weather still mild; no snow), I again put to flight a flicker that carried a pecan to the same bare area. Again the edible part of the nut was largely missing, though a bit of it was still there.

On 3 February (still no snow) I examined all pecan fragments at the bare area and decided that one of the nuts that the flicker had pounded open had not contained a kernel. Would a flicker work hard opening a nut that held nothing edible? Might the empty shell have contained the larva of that hated pest, the pecan case-bearer (*Acrobasis caryae*)? The question deserved an answer.

On 6 February (still no snow), I watched the flicker for about 15 minutes as it pounded at something on the ground. This time, after frightening the bird off, I found a partly eaten pecan in a hole about 2 inches across and 3/4 of an inch deep. Most of the nut's kernel was gone, but about a sixth of it (in one piece) was still there.

That same day I visited a pecan grove not far from our house. Under the trees I found several pecans, each of them containing not a kernel, but a larva of the pecan case-bearer. At least three questions come to mind: Do many of the pecans that the squirrels bury contain eggs or larvae of the case-bearer? Does a flicker ever waste precious energy pounding open a pecan that has nothing edible in it? Are the case-bearer larvae just as nourishing as the pecan kernels? Further investigation is in order. My colleague, George Miksch Sutton,

was an authoritative and enthusiastic consultant in these observations.—J. Teague Self, 1621 Rosemont, Norman, Oklahoma 73069, 22 February 1980.

Overwintering of White-necked Raven in southwestern Kansas.

—On 1 November 1979 my family and I moved from eastern to southwestern Kansas, establishing residence in the city of Liberal, in Seward County, only 2 or 3 miles north of the line between Beaver and Texas counties in the Oklahoma Panhandle. Throughout November and December I was surprised to see thousands of White-necked Ravens (*Corvus cryptoleucus*) flying over the city — eastward each morning and westward each evening. I had no difficulty identifying them, for their callnote was not a *caw* like that of the Common Crow (*C. brachyrhynchos*), but a low-pitched *cronk* or *kwank*. I followed the flying birds westward on the evening of 16 December, finding a flock of between 5,000 and 10,000 of them roosting on the ground in the middle of a big wheatfield. So far as I could tell, there were no Common Crows with them. The Common Crow occurs regularly here but is far less common than the White-necked Raven.

I was out of town in January, 1980; but in February the daily raven flights were again observable, though they were certainly smaller than they had been the preceding fall. On 16 February I saw between 50 and 75 birds along Highway 54 in open country a few miles southwest of Liberal in the northeastern corner of Texas County, Oklahoma.

Why such large numbers of the ravens have elected to overwinter in this area I do not know. The winter was relatively mild; but a mild winter was the general rule over much of the Southern Great Plains. Judging from what I observed in the fall of 1979, I believe the birds were finding food east of Liberal at that season. A farmer living just a mile northeast of town told me that his maize and winter wheat received some damage from the ravens. During the following February some of them were foraging in Oklahoma's Panhandle. It is quite possible that the birds that flew over Liberal were only part of the overwintering population. Sutton (1974, Check-list of Oklahoma birds, Stovall Mus. Sci. & Hist., Univ. Oklahoma, Norman, p. 29) states that there is "no valid January record" for *Corvus cryptoleucus* in Oklahoma. Obviously someone will presently be seeing the species in Oklahoma's Panhandle during that month.—Lawrence Herbert, 519 N. Grant, Liberal, Kansas 67901, 27 April 1980.

Fall and winter sightings of Prairie Warbler in Oklahoma.—The Prairie Warbler (*Dendroica discolor*) breeds "westward locally to Payne, Oklahoma, Cleveland, and Caddo counties" in Oklahoma (Sutton, 1974, Check-list of Oklahoma birds, Stovall Mus. Sci. & Hist., Univ. Oklahoma, Norman, p. 37), but according to Sutton's summary of records there are very few fall records for any part of the state. A single bird observed by E. A. Preble from 12-17 August 1892 at Dougherty, Murray County, south-central Oklahoma (Nice, 1931, Birds of Oklahoma, p. 161) was probably on or near the area in which it had bred or been reared. Single birds seen by John G. Newell on 31

August 1969 in the "settling basin" just north of Lake Overholser in Oklahoma County, central Oklahoma, by Zella Moorman on 13 September 1975 in a bois d'arc shelter belt near Perkins, Payne County, north-central Oklahoma, and by R. G. Keck on 1 and 3 November 1953 in Drummond, Garfield County, north-central Oklahoma, probably were on migration southward. A single bird seen by R. Darrah *et al.* at Hulah Reservoir, Osage County, northeastern Oklahoma on 26 December 1964, and later that same day in the same place by R. Marquardt *et al.* (1965, Audubon Field Notes, 19: 273), probably had settled down for the winter. To be noted is the puzzling fact that no Prairie Warbler was netted in Noble, Cleveland County, central Oklahoma during an extended period in the fall of 1974 (Wood, 1975, Bull. Oklahoma Orn. Soc., 8:24), nor was a single Prairie Warbler found by James L. Norman under a TV tower near Coweta, Wagoner County, northeastern Oklahoma, despite careful checking during fall seasons from 1974 to 1979 (1975, Bull. Oklahoma Orn. Soc., 8: 26; 1976, *Ibid.*, 9:20; 1977, *Ibid.*, 10: 7).

From 31 August to 4 September 1978 (weather calm and dry; sky clear; temperature about 70°F. in the morning to 100° and more in the afternoon), one or two Prairie Warblers inhabited tall weeds and shrubby willows below and just east of the Lake Yahola dike in Mohawk Park, Tulsa, Tulsa County, northeastern Oklahoma. Jayne Christo and I saw one bird there at about 1745 on 31 August. We noted its wagging tail, its yellow underparts, the black streaks on its face and sides, and its white tail corners. This white was not a band, like that in a Magnolia Warbler (*D. magnolia*). A bit later that day we saw a second bird, a less colorful one, that we decided must be in first winter feather.

Word about our find spread widely. On 1 September, at about 0730, Lois Rodgers, Elizabeth Hayes, and I had a brief look at a warbler that we felt sure was a Prairie close to the spot at which the two had been seen. That afternoon at about 1500 — the hottest part of the day — Lois Rodgers, Ruth Ewing, and I had a fine look at a Prairie along the road to the Yacht Club, in an area just north of the willow thicket below the lake. This bird flew up from the weeds and alighted in a dead tree not far from us. It probably was an adult male, for its colors were very bright. At 0725 on 4 September, while Eleanor Sieg and I were re-checking the area, Mrs. Sieg had a brief look at a Prairie Warbler.—Hazel Ekholm, 2733 East 67th Pl., Tulsa, Oklahoma 74136, 25 December 1978.

Late fall record for Kentucky Warbler.—From 14 to 22 October 1979 (weather pleasant), J. Brooks Parkhill and his wife Thula saw a Kentucky Warbler (*Oporornis formosus*) every day in their yard near Lake Hefner in Oklahoma City, Oklahoma County, central Oklahoma. The 40 x 75 foot garden and lawn west of the house and the patio, with its shrubby border, rock garden, and centrally located birdbath, form a habitat that is much like the woods. Here the warbler spent much of its time, often allowing observation at close range through the windows.

On 20 October, Henry Walter and I also saw it. The bright golden yellow of its underparts, the equally bright yellow of the superciliary line and partial eye-ring, the black of its crown, lores, and auricular patch, and the olive-green of its upperparts (no wing-bars or tail-spots) were unmistakable. According to Mrs. Parkhill, the bird "worked" the flowerbeds and shrubbery from just before sunrise to just after sunset—occasionally, though never later than 1900, venturing out onto the lawn. When searching for food on a flat surface, it walked with a hesitant little quickstep, but in the grass it hopped. Often it bathed in spray from the lawn sprinkler. At the birdbath it bathed by itself early in the morning, but toward mid-day it mingled there with House Sparrows (*Passer domesticus*), Cardinals (*Cardinalis cardinalis*), Mockingbirds (*Mimus polyglottos*), and an occasional Brown Thrasher (*Toxostoma rufum*). A favorite spot for drying off, sunning, and preening was a cherry laurel stump, a vantage point from which it could fly down after an insect when it spied one.

A cold front on 22 October apparently obliged it to leave. That day the Parkhills first saw it at 0700 Central Daylight Savings Time (sunrise at 0745). It was active all day. It was last seen about 1900 while it was bathing by itself at the birdbath. The sun had set officially at 1847.

To be noted is the interesting fact that (a) male and female Kentucky Warblers are much alike; that (b) young birds, once they have molted out of their drab juvenal (nestling) plumage, are much like their parents; and that (c) the species has no recognizable winter plumage. Robert Ridgway (1902, Bull. U.S. Natl. Mus. 50, Part 2, footnote on p. 594) has this to say: "I am unable to discover the slightest difference between midwinter (January) specimens and those taken in midsummer, except that the winter plumage, being more recently acquired, is softer, and the slate-gray tips of the feathers of crown and occiput are rather broader, these being sometimes quite worn away in midsummer specimens."—John G. Newell, 4129 N. Everest, Oklahoma City, Oklahoma 73111, 12 December 1979.

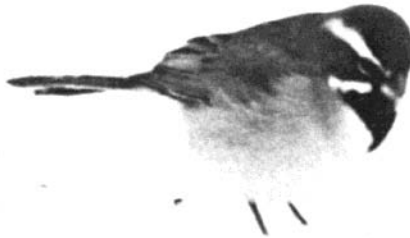
Pine Grosbeak in Cimarron County, Oklahoma.—At about 1330 on 9 December 1979 (a pleasant day), in rough, heavily grazed pastureland on the Skelly Ranch not far west of Black Mesa State Park in Cimarron County, extreme northwestern Oklahoma, Kenneth E. Saunders and I observed an adult male Pine Grosbeak (*Pinicola enucleator*) for fifteen minutes or so. The bird was in a one-seeded juniper (*Juniperus monosperma*), where it appeared to be feeding on the berries. It was very tame, allowing us to note its robin size, red and gray body plumage, two white wingbars, dark, longish tail, and heavy, conical beak. The vegetation of the area included several large cottonwoods, some pinyon pines, scattered mesquite trees, prickly pear cactus, arborescent cholla, yucca, buffalo grass (*Buchlœ dactyloides*), and blue grama (*Bouteloua gracilis*). The juniper in which the bird was feeding grew directly above a permanent spring around which was a lush growth of sedge.

The Pine Grosbeak has heretofore been recorded only four times in Ok-

lahoma — a single bird in Grant County, north-central Oklahoma, on 11 May 1958; a flock of four in Tulsa County, northeastern Oklahoma, on 7 and 8 May 1961; a small flock in Texas County, in the Panhandle, on 2 and 3 December 1961; and a single adult male in Cleveland County, central Oklahoma, on 15, 21, and 29 January 1971 (Sutton, 1974, Check-list of Oklahoma birds, Stovall Mus. Sci. & Hist., Univ. Oklahoma, Norman, p. 43).—Thomas L. Flowers, *Ranger Conservationist, Soil Conservation Service, Boise City, Oklahoma 73933, 20 March 1980.*

Second Black-throated Sparrow record for central Oklahoma.—From 28 January to 16 April 1980, a Black-throated Sparrow (*Amphispiza bilineata*) visited a feeder daily at 1127 Southwest 42nd Street in Oklahoma City, Oklahoma County, central Oklahoma. Several other birds, including Cardinals (*Cardinalis cardinalis*), American Goldfinches (*Carduelis tristis*), Carolina Chickadees (*Parus carolinensis*), Harris's Sparrows (*Zonotrichia querula*), and Dark-eyed Juncos (*Junco hyemalis*), also visited the feeder regularly. I photographed the Black-throated Sparrow on 6 and 8 February. Throughout the entire period the weather was mild, though on 8 February the air temperature was in the thirties and snow covered the ground.

Amphispiza bilineata is fairly common, though locally distributed, in the Black Mesa country at the northwestern corner of the Oklahoma Panhandle. It is believed to be resident there, though there are only a few winter records for the area. It has heretofore been recorded only twice in the vast part of Oklahoma that stretches eastward from the Black Mesa country: on 27 October 1956, at Lake Dahlgren near Lexington, Cleveland County, central Oklahoma, a molting immature male specimen (UOMZ 2768) was collected; on 5 March 1962, one was netted and banded 3 miles south of Lugert, Kiowa County,



BLACK-THROATED SPARROW

Photographed in a residential part of Oklahoma City, central Oklahoma on 6 February 1980 by Wesley S. Isaacs.

southwestern Oklahoma (Van Velzen, 1968, Bull. Oklahoma Orn. Soc., 1: 26).
 —Wesley S. Isaacs, 1304 Lafayette Dr., Oklahoma City, Oklahoma 73119, 15
 March 1980.

FROM THE EDITOR: Over much of its range, populations of the Interior Least Tern (*Sterna albifrons athalassos*) appear to be declining. In an attempt to ascertain the status of nesting populations, Robert L. Downing of the U.S. Fish and Wildlife Service surveyed by car and air the major river systems of the United States interior during the summers of 1974 and 1975. On the twelve major watersheds, 616 terns were actually sighted, from which Downing estimated a total nesting population of 1,250 birds. In Oklahoma, the following numbers were observed (estimates in parentheses): Red River 15 (25), Canadian River 2 (25), Cimarron River 40 (100), and Arkansas River, including the Quivara National Wildlife Refuge in Kansas and the Salt Plains National Wildlife Refuge in Oklahoma 32 (50). Thus, about 15% of all nesting Interior Least Tern populations that were located were in Oklahoma. But the many ponds and lakes constructed on these watersheds during the last half century have reduced the frequency and severity of flooding that formerly provided the bare mid-stream sandbars that are so critical as nesting habitat. Populations may be completely lost if flood and chloride control projects are completed on the Edith Salt Plains and the Great Salt Plains. The species may have to be listed as endangered before the mistake of destroying nesting habitat through dredging is fully appreciated by the managing agencies (see Downing, R. L., 1980, Amer. Birds, 34: 209-211).—Jack D. Tyler.

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