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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 Bascopes. 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.