

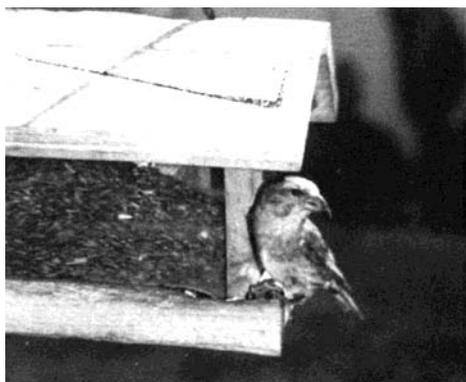
**THE RED CROSSBILL INVASION OF OKLAHOMA  
DURING THE SUMMER OF 1996**

BY BERLIN A. HECK

An invasion of Red Crossbills (*Loxia curvirostra*) into Oklahoma occurred during July and August, 1996. Five different sightings from Bartlesville to Broken Bow in eastern Oklahoma included a flock of approximately 25 birds in McCurtain County. This species has been observed in the state previously during fall and winter, but rarely in summer. Following is a summary of sightings.

<u>Dates</u>	<u>Number</u>	<u>Location</u>	<u>Observer(s)</u>
July 22	1	Okemah, Okfuskee Co.	Euelda Sharp (photo)
July 22-24	4 (1 imm. ♀, 2 unknown)	Warner, Muskogee Co.	Laura Hunnicutt
July 28-30	1 imm.	Sperry, Tulsa, Co.	Judy Kishner (photo)
Early August (2 days)	2 imm.	Bartlesville, Washington Co.	Ginny Roquemore
August 10-22	25 (mixed flock)	Broken Bow, McCurtain Co.	Berlin Heck, Jerry Sisler, Jim Norman

**FEMALE RED CROSSBILL**



*Two views of female bird observed 22 July 1996 near Okemah, Okfuskee County, Oklahoma. Note large head, gray throat, short notched tail and crossed bill. Photo by Euelda Sharp.*

All Red Crossbills seen in Oklahoma except one were standing on sunflowers (*Helianthus sp.*) while feeding on the seeds. The 25 crossbills at Broken Bow visited a cultivated stand of giant sunflowers each morning and afternoon until all the seed heads were empty, and were not reported thereafter. Photos from birds in Okfuskee and Tulsa counties are on file with the Oklahoma Bird Records Committee.

The first recorded invasion of Red Crossbills in Oklahoma began on 18 August 1950 when a small flock was seen in Frederick, Tillman County, southwestern Oklahoma (F.M. and A.M. Baumgartner, 1992, Oklahoma bird life, Univ. Oklahoma Press, Norman, P. 400). It was not until November of that year that the invasion began in earnest, when reports of sightings were received from many parts of the state. Since that time, Red Crossbills have been reported nearly every winter in Oklahoma.

Reports from neighboring states indicated that most had experienced a similar invasion of these birds in 1996, except for Arkansas, where none had been reported as of mid-September (fide, Helen Parker, Arkansas Subregional Editor, National Audubon Society Field Notes).

Ross Rasmussen, Texas Subregional Editor for National Audubon Society Field Notes received reports of a Red Crossbill seen 22 August in Gainesville, Cooke County, northcentral Texas, and six that were seen in Fort Davis, Jeff Davis County, southwest Texas, during August.

Eight reports of Red Crossbills from throughout the state of Kansas from 4 July to 9 August were received by Loyd Moore, Kansas Area Editor for National Audubon Society Field Notes. Most sightings comprised only one or two birds. He also received one report of a flock of 14 birds seen 17-22 July in Raytown, Missouri, a suburb of Kansas city on the Kansas line.

In New Mexico, there was an increased number of Red Crossbill sightings during the summer of 1996 within their breeding range according to Sartor Williams, New Mexico Regional Editor for National Audubon Society Field Notes. In addition, he reported extraordinary movement into the pinyon-pine association of the southern New Mexico mountains.

Dennis Lowery of the Arapaho National Forest, Fort Collins, Colorado, commented on the excellent crop of cones produced this year by lodgepole pine, Englemann spruce and Colorado blue spruce at high elevations in the Rocky Mountains. It is therefore unlikely that lack of food was a factor in movement during the summer of 1996.

The eastern mountain ranges of New Mexico and southeastern Arizona had unusually high numbers of Red Crossbills during the summer and into late September (fide, Bill Howe, United States Fish and Wildlife Service, Albuquerque, New Mexico).

Stephanie Jones, with the United States Fish and Wildlife Service in Lakewood, Colorado, reported that there was a huge eruption of Red Crossbills from June through September along the eastern front of the Rocky Mountains from Colorado Springs to Fort Collins, with birds moving into lower elevations in large numbers. The irruption also extended into northern Colorado, where there was a massive dieoff of Red Crossbills and a few Pine Siskins (*Carduelis pinus*) caused by a species of *Salmonella* bacteria. Mike Miller, of the Colorado Division of Wildlife in Fort Collins, said that several hundred dead Red Crossbills had been reported, but that the number could have been as high as several thousand.

The Red Crossbill is a specialized seed eater of conifers, which exhibit cyclic

production of cones in different regions of the county. Therefore, this bird has evolved into a nomadic species, moving in search of evergreen forests with suitable numbers of cones. An area supporting a large population of crossbills one year may contain few, if any, during subsequent years until the local cone production is again adequate to sustain another invasion.

Although most of the nomadic Red Crossbills reported in Oklahoma during the summer of 1996 were juveniles, there were a few adults, which raises the possibility of breeding birds. There is no record of the Red Crossbill nesting in Oklahoma, however. Due to the wide diversity of nesting dates from year to year for this species throughout its normal range, there is no reason to suspect that the birds seen in Oklahoma this summer were part of any nesting effort.

Throughout the range of Red Crossbills in the western and northern United States, seven "types" are identifiable, based on vocalizations and morphological differences. One additional type occurs in Newfoundland. Craig Benkman of New Mexico State University stated that the most reliable way to identify the types of Red Crossbill involved in an invasion is by analyzing a recording of the calls. Unfortunately, no recording was made during any Oklahoma sighting, but this information provides guidance for future encounters with nomadic Red Crossbills, when the use of a recorder should prove valuable in identification of type, and hence the probable geographic origin of these periodic wanderers.

LITTLE RIVER NATIONAL WILDLIFE REFUGE, P.O. BOX 340, BROKEN BOW, OKLAHOMA 73728, 28 OCTOBER 1996.

## STATUSES OF FOUR AVIAN SPECIES IN SOUTHWESTERN OKLAHOMA

BY JACK D. TYLER AND E. JANE BECHTOLD

A knowledge of the continent-wide distribution and abundance patterns of an avian species is of great value. They reveal not only range extent, but also locations of high density. Localized studies afford an opportunity to shed light on local population trends. Wardel (1981) suggested that within localized areas, biotic interactions such as competition and predation influence the details of species range boundaries, whereas on a larger scale, physiological tolerances for environmental characteristics such as climate and vegetation are the ultimate limiting factors (Wardel *in* Root, 1988). Two types of population surveys were used to extract abundance data and calendar dates for 13 counties within southwestern Oklahoma for the Scissor-tailed Flycatcher (*Tyrannus forficatus*), Mountain Bluebird (*Sialia currucoides*), Loggerhead Shrike (*Lanius ludovicianus*), and Cassin's Sparrow (*Aimophila cassinii*). The counties within the study area included all or part of Beckham, Caddo, Comanche, Cotton, Grady, Greer, Harmon, Jackson, Jefferson, Kiowa, Stephens, Tillman and Washita.

The first data set analyzed was the National Audubon Society Christmas Bird Count (CBC). The patterns of the CBC verify the presence of species and identify locations of populations. The counts are restricted to specific locations which require a minimum of eight hours during which all species with a 24 km (15 mile) radius are counted. The CBC data adequately represent the average abundance of most birds reported (Root, 1988). One must keep in mind, however, that the sites of

these counts are not uniformly distributed throughout North America. The abilities of the participants, miles traveled, hours spent counting, and size of the parties differ between count sites (Tramer, 1974). Weather may also cause variation in the data, as it affects species detectability (Verner, 1985). Another possible variant is that CBC counts occur in early winter when individual birds may not have completed their migration, particularly during warm years (Graber and Graber, 1983).

The second information source reviewed was the annual United States Fish and Wildlife Service Breeding Bird Survey (BBS), which furnishes knowledge of the distribution of breeding birds in the United States (Root, 1986). The BBS has gained status as one of the preeminent sources of population trend data for the continent's avifauna. Randomly distributed roadside routes have been established within each one degree block of latitude and longitude in the United States and southern Canada. The density of routes varies geographically, and will be noted as it relates to southwestern Oklahoma.

Breeding Bird counts are made on the principle that during the breeding season, males of most species are in their territories where they sing or perform within a limited area. Each male is assumed to represent a breeding pair, although some singing males may not have a mate, and some established pairs may be silent at the time of the census (Terres, 1980). As with the CBC, attempts to monitor bird populations under field conditions are subject to a variety of interacting biases including weather conditions, experience of observers, and route densities. An important source of bias is the failure of the BBS to distinguish between breeding birds and unmated individuals. In many instances, a nonbreeding bird may sing more persistently than a mated bird, especially if the nesting season is well advanced. Thus, for some species the trend being detected may be largely of unmated birds rather than breeding populations. By standardizing procedures as much as possible, many of the potential sources of bias are reduced. Studies of random BBS roadside sampling indicate the variability of species counts. Often, as many as one-third of the species detected by one observer will be missed by the other. This variability in detection does not detract from the validity of the survey, it simply stresses that the survey is recording only a sampling of the species that are present (Root, 1988). By repeating the census year after year, indications of population changes are recognized. When such censuses, taken throughout the entire country in all types of bird habitats, are summarized, they yield information regarding the abundance of breeding pairs of each species (Aldrich and Robbins, 1970 in Root, 1988). BBS data serve many functions, one of which is an "early warning" system for groups of species experiencing declines. The data is utilized as a tool in the development of management strategies by resource agencies (Peterjohn, 1995).

Breeding Bird Surveys were conducted in all except four of the 13 counties in southwestern Oklahoma (Comanche, Jackson, Jefferson and Tillman) between 1967 and 1994. There were two BBS routes in Cotton County, two partial routes in Caddo County, a partial route in Washita and Grady counties, and one route each in the remaining seven counties. The number of surveys within the study area has been sporadic. For example, only two surveys were completed during two years; six runs in five years; and five Breeding Bird Surveys were conducted during 11 years of the 28-year history of the counts.

**Scissor-tailed Flycatcher** - A transient and summer resident in Oklahoma, the Scissor-tail is observed in southwestern counties from early April to late October, with spring migration extremes of 7 March and 21 April (Tyler, 1994). Its breeding range extends from southern Nebraska to southern Texas, and it has been recorded outside its normal range on many occasions (Bent, 1942). In summer, it ranges from Texas north to Kansas and is considered "common" (spring, summer, and fall) in the southwesternmost Oklahoma counties of Comanche, Cotton, Greer, Harmon, Jackson, Kiowa, and Tillman. The winter range extends from southern North America into central Costa Rica (AOU, 1983). Sightings of *T. forficatus* on Christmas counts in the United States are restricted to the Gulf Coast region and throughout Florida northward to the Georgia border (Root, 1988).

Preferred habitat includes scattered trees and shelterbelts in prairie country (Sutton, 1967). The diet consists almost entirely of insects, including virtually no useful species. Orthoptera (grasshoppers and crickets) are preferred, and may constitute up to 50 % of all food items (Terres, 1980), the highest percentage for any tyrannid. The small amount of vegetable food taken consists of small fruits or berries and a few seeds (Bent, 1942).

BBS counts document the means for Scissortail numbers in southwestern Oklahoma, ranging from a high of 45 in 1972 (5 BBS runs; 225 individuals), to a low of 3.25 in 1989 (8 BBS runs; 26 individuals). The mean by county includes Beckham-7.66; Caddo-25.33; Cotton (two runs) 13.33 and 17.73; Grady-8.28; Greer-14.07; Harmon-24.00; Kiowa-18.00; Stephens-33.57; and Washita-16.00 (Root, 1988; see Fig. 1).

### SCISSOR-TAILED FLYCATCHER

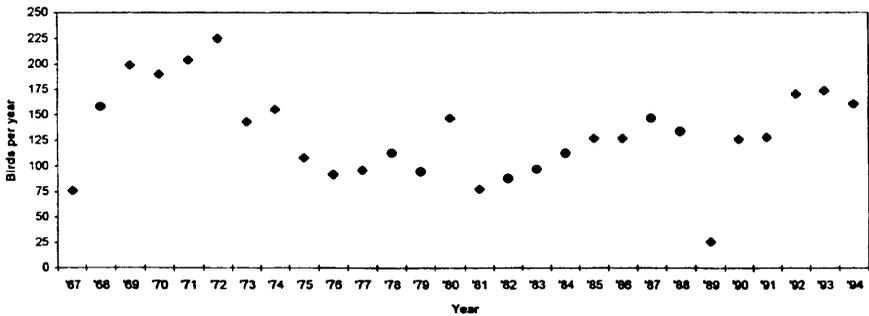


Figure 1. Total numbers of birds tallied on all southwestern Oklahoma Breeding Bird Surveys, 1967-94.

**Mountain Bluebird** -This species is a winter resident in western Oklahoma, recorded from 27 September to 22 April (Sutton, 1967), and generally winters where the humidity measures 80 to 130 inches (203-330 cm) of annual pan evaporation. It is a rare summer resident in the northwestern corner of Cimarron County, and a common fall and winter visitor in that region. The Mountain Bluebird is more strongly associated with mountains in summer than winter. Fall migration takes it south into the southern United states and Mexico (AOU in Root, 1988).

*S. currucoides* occupies a wide breeding range throughout the western half of

Canada and the United States west of the Great Plains. It competes for cavity nesting sites with Northern Flickers (*Colaptes auratus*), swallows, House Sparrows (*Passer domesticus*) and European Starlings (*Sturnus vulgaris*; Ehrlich et al., 1988). Breeding areas include open coniferous and deciduous forests, subalpine meadows, and other open country, usually above 7000 feet (Bent, 1949). Deciduous forests have slowly reached across the plains, creating suitable habitats for range expansion (Ehrlich et al., 1988). A freshly completed nest in an old woodpecker hole was found 28 February 1954 in Harmon County, Oklahoma (Sutton, 1967).

The preferred habitat is open forest, with the densest population in the foothills of the Sangre de Cristo Mountains of northern New Mexico, which are surrounded on three sides by grasslands (Root, 1988). The diet of *S. currucooides* is 92% insects and other animal matter, making it the most highly carnivorous thrush in the United States (Bent, 1949).

In southwestern Oklahoma, Christmas Bird Counts located the species only at the Wichita Mountains Wildlife Refuge in Comanche County. There was no record of *S. currucooides* during 14 of 27 count years between 1965 and 1994. No refuge count was held in 1989. A high of 411 birds was recorded in 1991, for a mean of 44.10 (Fig. 2).

### MOUNTAIN BLUEBIRD

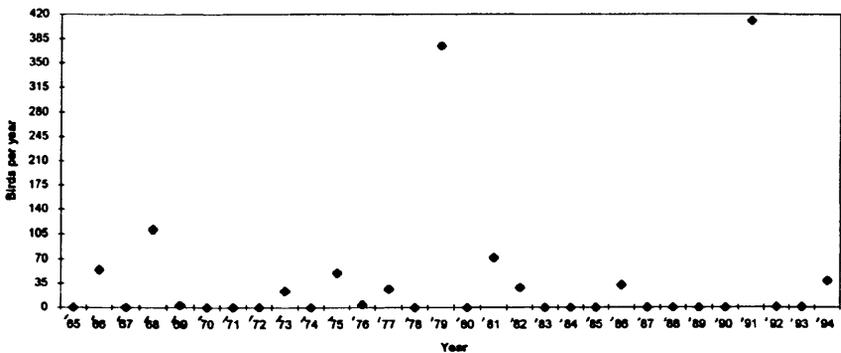


Figure 2. Total numbers of birds tallied on the Wichita Mountains Wildlife Refuge Christmas Bird Counts, 1965-94.

**Loggerhead Shrike** -Essentially a bird of open county, *Lanius ludovicianus* is an Oklahoma resident, with some winter birds probably being replaced by birds from the north (Sutton, 1967). It is suggested by Root (1988) that daylength influences its northern range boundary. This shrike occurs in high concentrations throughout areas with less than 12 inches (30 cm) of snow annually (Root, 1988). Winter range includes the southern half of its breeding range (Terres, 1980). Nesting occurs from the southern interior of British Columbia, central Saskatchewan, southern Ontario and Quebec, south into Mexico, the Gulf Coast and south Florida (Terres, 1980). The Loggerhead Shrike nests earlier than most passerines, with Oklahoma records from 13 March near Lawton (Tyler, 1992). Site tenacity is high, with a strong male fidelity to breeding territory (Ehrlich et al., 1988).

This species is widespread across southern Canada and the United States,

south into Mexico, and is the only shrike that lives wholly within the Western Hemisphere (Terres, 1980). It is raptorial like its congeners; however, unlike *L. excubitor* (Northern Shrike), it is reported to eat all that it kills (Bent, 1950). Where prey is very common, there are a limited number of attacks (Craig, 1978 in Root, 1988). Its annual diet includes 68% insects, 28% vertebrates (birds and mice), and 4% spiders; the winter diet "consists of more birds and particularly more mice" (Bent, 1950 in Root, 1988). Up to 76% mice are taken in winter (Elrlich et. al., 1988). The size of territory is dependent upon prey abundance (Bent, 1950). Attack rates in winter decline with colder temperatures, thus, a decrease in prey activity encourages afternoon hunting (Craig, 1978 in Root, 1988). The prey is impaled on a thorn, barb, or sharp twig while the shrike devours all or part of it; any remains are thought to be eaten later (Bent, 1950).

*L. ludovicianus* was Blue Listed from 1972 to 1986. Habitat loss and pesticides are implicated in its widespread decline, especially in the central United States. During this same period, the BBS documented a record high of 56 individuals in 1976 for southwestern Oklahoma. Nine of the 13 southwest Oklahoma counties contained entire or partial BBS runs (1967-94). The mean within each county for these 28 years included: Beckham-2.64; Caddo-3.39; Cotton (two routes) 6.96, 4.80; Grady (partial route included in Caddo); Greer-2.61; Harmon-5.00; Stephens-1.71; and Washita-3.00 (U.S. BBS, 1995). A Breeding Bird Survey low of seven individuals was reported in 1983 and 1985 (Fig. 3).

Only two of 28 Christmas Bird Counts within southwestern Oklahoma from 1965 to 1994 did not record this species (Fig. 4). A high of 14 birds was recorded in 1975, and the mean was 7. All CBS numbers were recorded at the Wichita Mountains Wildlife Refuge in Comanche County. No count was conducted in 1989. Nine Breeding Bird Surveys were run in other southwestern Oklahoma counties during the same period.

### LOGGERHEAD SHRIKE

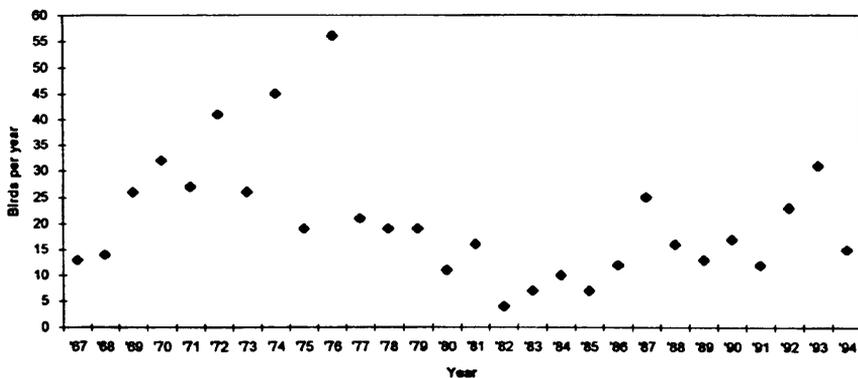


Figure 3. Total numbers of birds tallied on all southwestern Oklahoma Breeding Bird Surveys, 1967-94.

## LOGGERHEAD SHRIKE

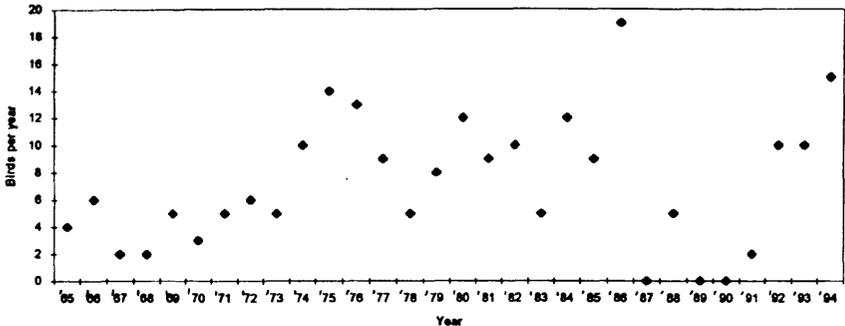


Figure 4. Total numbers of birds tallied on all Wichita Mountains Wildlife Refuge Christmas Bird Counts, 1965-94.

**Cassin's Sparrow** -This species is a transient and summer resident in western Oklahoma (Sutton, 1967). An inhabitant of the open prairie and shortgrass plains, it is most abundant in western Texas and Oklahoma, eastern New Mexico, and Colorado (Bent, 1968). *A. cassinii* prefers lightly grazed sandy areas with arid plants of prickly pear, mesquite and shinnery oaks (Sutton, 1967). This species is almost never found in chaparral thickets and does not usually inhabit areas that are entirely grassy, but prefers small shrubs, bushes and yuccas as singing perches (Bent, 1968).

A ground-dweller, Cassin's Sparrow nests from late May through late June. The male flight-song is initiated from an elevated perch rather than from the ground, and territorial defense is carried on by song duels between males (Bent, 1968). "Breeding is triggered by an ill-defined combination of unpredictable rainfall and high temperature" (Ehrlich, 1988). Details of breeding biology are largely unknown. It is a nondescript bird with secretive habits; Sutton (1967) commented that Cassin's Sparrow "is an exceedingly inconspicuous bird when not singing." At times other than courtship chases, it is difficult to find a Cassin's, even in an area where the species is plentiful, for they spend their lives on the ground running, skulking, and hiding like mice (Bent, 1968). The diet consists of insects during the nesting season and grass and forb seeds for the rest of the year. Apparently *A. cassinii* does not require drinking water, but utilizes cellular respiration (Bent, 1968).

Six southwestern Oklahoma counties recorded this sparrow during the BBS counts of 1967-94. The highest number recorded was 17 individuals (1993), in Harmon County. Kiowa County recorded only one, while Cotton and Stephens counties each had highs of two. The Harmon County route was run only during 1993-94, and the 1994 count tallied 12 individuals. The mean for Harmon County was 14.50, followed by 1.30 in Beckham County. Routes have been run for 24 years in Beckham County.

By comparison, the total number of BBS runs within the state between 1967 and 1994 was 599; total routes with this species, 205; and total birds, 1849. From 1986 to 1994, the total for state routes run was 337; total routes with species, 99; and total

birds, 1293. The mean for the 1986-94 BBS routes that recorded this species was 13.06, and for all BBS routes (1967-94) that recorded this species, 11.04 (U.S. BBS, 1995; Fig. 5)

### CASSIN'S SPARROW

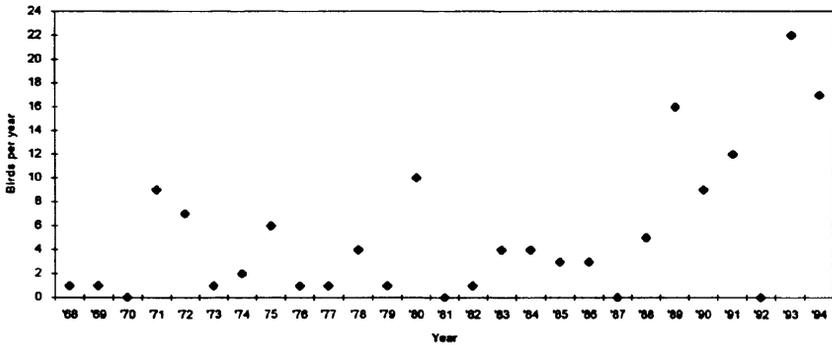


Figure 5. Total numbers of birds tallied on all southwestern Oklahoma Breeding Bird Surveys, 1968-94.

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## GENERAL NOTES

**Fregata minor, Great Frigatebird, in Oklahoma.**—Victor J. Heller and John S. Barclay (Bull. Oklahoma Ornithol. Soc. 10:9-10, 1977) provisionally identified a wild bird specimen captured 3 November 1975 in Perry, Noble County, Oklahoma, in these words: "We suspect that our bird is a Great Frigatebird (*Fregata minor*), a species that has never been taken in North America, but final identification must await further investigation. Although Heller and Barclay were apparently unsure of their identification of this frigatebird, it was included in the American Ornithologists' Union's Check-List of North American birds (1983, 6th ed., pp. 41-42) as the only North American record of *F. minor*. There is a subsequent sight record with photograph of a Great Frigatebird from California (Howell, Steve N.G., 1994, *Birding* 28 (6):402).

In January 1990, Hoffman saw the specimen at the Oklahoma State University Museum, and asked if any further study of this specimen had been made in the 15 years since it was found. To our knowledge, no additional information on the

frigatebird had come to light during this time. Therefore, on 19 January 1990, Hoffman, Stephen H. Metz and Tomer measured and photographed the mounted specimen in an attempt to resolve the ambiguity associated with this record. The measurements and photographs of the frigatebird, (Oklahoma State University Museum specimen no. 1770), were sent to Clapp on 28 February 1990 and he compared them with specimens of Great and Magnificent frigatebirds in the United States National Museum of Natural History collection.

Three points of identification were found that indicated that the specimen was *F. minor*. First, the feathers of the back and those of its flank patches were a green iridescent color typical of *F. minor*, not purple as those of *F. magnificens*. Second, this apparent male specimen had conspicuously lighter alar bars, also characteristic of male *F. minor*. Finally, wing chord lengths of 14 *F. minor* males at the National Museum of Natural History ranged from 550-599 mm (mean: 578.9 mm), and 15 male *F. magnificens* measured from 591-633 mm (mean: 608.7 mm). The wing chord of the Oklahoma specimen was 546 mm as reported by Heller and Barclay and 570 mm as measured by Hoffman and Tomer after the bird was mounted. Thus, the specimen falls within the range expected for *F. minor* and its other characteristics are consistent with a later identification analysis of *Fregata* by Howell (*loc. cit.*). We conclude that the Heller and Barclay specimen is indeed *Fregata minor* and not *F. magnificens*.

These findings were presented at the 9 December 1990 meeting of the Oklahoma Bird Records Committee, which unanimously approved it as the first record of *F. minor* for the state. It remains the only known specimen for the continental United States.—John S. Tomer, 5911 East 46th Street, Tulsa, Oklahoma, 74135; Roger B. Clapp, Biological Resources Division, United States Geological Survey, National Museum of Natural History, Washington, D.C. 20560; and James C. Hoffman, 4859 South Braden Avenue, Apt. 4-K, Tulsa, Oklahoma 74135, 13 November 1996.

**Sabine's Gull in the Oklahoma Panhandle opportunistically feeds on grasshoppers.**—Early on the evening of 22 September 1996, as I traveled across the Oklahoma Panhandle on U.S. Hwy 64 in Cimarron and Texas counties, I encountered several temporary rain pools or playas. At one such spot in western Texas County, 12.8 km (8 mi) east of the Cimarron County line, a small gull was present, as well as various shorebirds and a few ducks. After a few minutes of observation, I was able to identify it as a Sabine's Gull (*Xema sabini*) by the distinctive black-white-gray wing pattern when it took flight, and as a juvenile by the dark tip of the slightly forked tail and the dark gray of the back, hind-neck, crown, and face. Two features differed from those shown in guides for an immature bird in winter (e.g., P.J. Grant, 1986, Gulls: A guide to identification, 2nd ed., Buteo Books, Vermillion, SD, pp. 129-133). There was more white on the head and face of this bird, and its lower mandible was not dark, but straw-colored. This species is almost wholly pelagic when away from its breeding grounds (Grant, 1986, *loc. cit.*), and is a rare fall migrant through Oklahoma. (Baumgartner, F.M., and A.M. Baumgartner, 1992, Oklahoma bird life, Univ. Oklahoma Press, Norman).

After determining the gull's identify, I studied its feeding behavior. On several occasions, it repeatedly stretched its wings and then rested on the ground near the pond for five to ten minutes. Then the gull began swimming rapidly about the pond, which was about 3.1 ha in size. Initially, it jabbed its bill sporadically at some food item on the water, then quickly swallowed it, but soon began to pick food

items off the scattered plant stalks protruding 15-20 cm above the water's surface. Moving closer, I saw that the bird was capturing insects resting on the plant stems. In a few cases they looked small, but they appeared to be mostly grasshoppers.

Using a 20-60X telescope, I was able to note the distinctive body shape of grasshoppers perched on stems before they were captured, or their long jointed legs as they were briefly held in the gull's bill. One jab of the beak was usually sufficient to knock a grasshopper into the water. With insect in bill, a vigorous side-to-side head shaking ensued, with the prey submerged until it was subdued. Only a quick swallowing movement or two was required to devour the grasshopper.

Although a juvenile, this bird seemed quite accomplished at feeding on insects that probably had taken refuge on the plant stalks from a recent deluge. It swam rapidly about the pond in search of further prey, walking quickly across areas where the water was too shallow to swim. I observed an estimated 20 to 30 such capture-feeding episodes from 1832 to 1948 CDT.

The next morning, I returned to find the gull still present, and observed it swimming actively about the pond from 0717 to 0835 CDT; sunrise was at 0735. Although it was using the same feeding technique, the gull was finding many fewer food items than on the day before. This was perhaps because of its own previous thoroughness, or possibly because the grasshoppers were not as active.

These observations are of interest because of the extreme contrast between the habitat involved and that which is typical for the species in fall migration, i.e., the offshore waters between the breeding grounds on the Arctic tundra and the oceanic wintering areas on the South Pacific and Atlantic oceans (Grant, 1986, *loc. cit.*) Its breeding habitat is described as "swampy areas of low-lying tundra..with grassy or tundra vegetation" (C. Harrison, 1982, *An atlas of the birds of the Western Palearctic*, Princeton Univ. Press, Princeton, NJ). Its food there consists of "small fishes, aquatic worms, insects, and larvae, and small crustaceans..." which are obtained "in the small ponds and pools on the tundra" (Bent, A.C., 1921, *Life histories of North American gulls and terns*, U.S. Natl. Mus. Bull. No. 113, Wash. D.C., pp. 191-196).

Contrary to my initial assumption, grasshoppers are not lacking from the natal range of this species in Arctic habitats. At least 19 species of grasshoppers occur in the far north, a number of which reach the Arctic Ocean in Alaska and northwestern Canada (V.R. Vickery and D.K.M. Kevan, 1987, *The grasshoppers, crickets, and related insects of Canada and adjacent regions*, Can. Agric. Res. Branch, Ottawa, Ontario). Thus, grasshoppers may be present in the vicinity of the gull's nesting grounds, and the feeding behavior described here might have had precedent in the bird's prior experiences in the Arctic. - W. Marvin Davis, 308 Lewis Lane, Oxford, Mississippi 38655, 17 October 1996.

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