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WEATHER-RELATED OBSERVATIONS OF AMERICAN WOODCOCK (*Scolopax minor*) IN KANSAS DURING LATE OCTOBER 2020

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ABSTRACT

An unseasonably early winter weather pattern in late October 2020 coincided with an exceptional number of sightings of American Woodcock (*Scolopax minor*) across most of Kansas. These sightings are believed to have been directly associated with the weather pattern over an eight-day period. We discuss these observations and the meteorological conditions which we believe contributed to them. For historical context and comparison, we also summarize and discuss abundance, temporal occurrence, and distributional occurrence of this species in Kansas, and the larger Southern Great Plains region during fall migration.

INTRODUCTION

Thompson et al. (2011) classify American Woodcock (*Scolopax minor*) as an uncommon spring and fall migrant in Kansas, breeding in eastern and central portions of the state. The western edge of the breeding range is shown as those counties along highway US-81 in Kansas and eastward. American Woodcock breeds in the eastern two-thirds of Oklahoma (Barclay and Smith 1977), and in eastern Nebraska and farther westward along river valleys (Silcock and Jorgensen 2020). Fall migrants are found primarily in the eastern and central portions of these states, with a scattering westward (Sutton 1967, Tyler 1979, Andrews and Righter 1992, Seyffert 2001, Thompson et al. 2011, and Silcock and Jorgensen 2020). In general, spring migrants are reported with greater frequency than fall migrants, at least in part because they are engaging in vocal breeding displays in spring.

OBSERVATIONS

From 24 October through 1 November 2020, we identified a total of 44 sightings of American Woodcock in Kansas (Table 1). Of these sightings, 23 (52%) were posted to a Facebook group of <10,000 members devoted to Kansas birds (www.facebook.com/groups/ksbirds). Ten additional records (23%) were gleaned from Kansas eBird reports from within this time-frame. Ten additional records (23%) were sent directly to PJ's in response to a request for reports of additional observations. One sighting (2%) was reported only to the KSBIRDS email listerv. Many of the reports were accompanied by photographs or video recordings of foraging birds (Figure 1). These reports came from widely distributed locations

Figure 1. One of many American Woodcock (*Scolopax minor*) observed in Kansas coinciding with a cold front movement in Kansas in late October 2020. This bird was observed in Newton, Harvey County, on 26 October 2020. Photograph courtesy of Alice Goering.

Timing

The major cold front arrived on 22 October, but the heavy winter precipitation did not begin until early morning on 26 October. Consequently, the sighting from 24 October (Table 1) may not have been directly associated with frontal movement. Some of the woodcock lingered for several days, and in at least one case for over a week. There were a few other Kansas reports of woodcock from later in November.

These reports from after 1 November were excluded from this compilation because they may not have been directly associated with the storm event. Thirty of the observations (71% of all sightings) were made between 26 and 28 October; 9 of them (21%) were recorded between 30 October and 1 November (Table 1). At least eight woodcocks were observed in yards in Nebraska during this same winter storm between 24-26 October 2020 (Silcock and Jorgensen 2020, Grzybowski and Silcock 2021).

Table 1. Number of American Woodcock (*Scolopax minor*) sightings in Kansas between 24 October and 1 November 2020. The dates given are of the first sighting only.

Date	Number	Percent
24 October	1	2
26 October	16	36
27 October	11	25
28 October	5	11
30 October	2	5
31 October	7	16
1 November	2	5

Distribution of Sightings

Although most reports came from the eastern half of the state, observations occured in 26 counties covering all but the western two tiers of counties in Kansas (Figure 2, shaded counties) between 24 October and 1 November. Counties with more than one reported individual were as follows: Sedgwick (8); Harvey (5); Johnson, Butler, Douglas, Ford, Reno, and Riley each with two (Figure 2). The eight records in Sedgwick County during this event exceed in number the total of all previously known historical fall records from the county (Janzen 2006).

All the counties with multiple records from this event have a higher human population density in comparison to most of Kansas. Therefore, the volume of reports from these counties may be partially attributed to the fact that there was a greater probability of woodcocks being detected because more potential observers were present. However, even with this presumed bias, it is apparent that there was a significant cluster of records in a small group of adjacent counties in south-central Kansas. These were Butler, Harvey, Reno, and Sedgwick Counties.

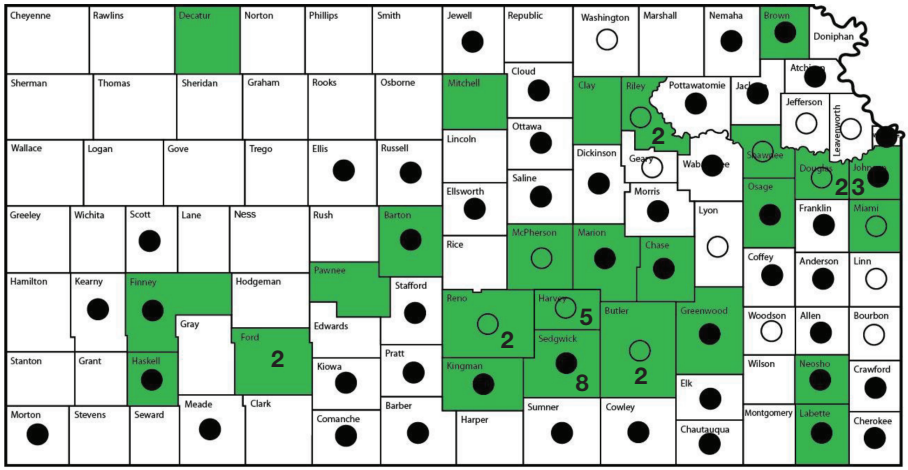

Figure 2. County records of American Woodcock (*S. minor*) in Kansas, shaded counties are records from this study. Numbers indicate number of sightings during this study, if greater than one. Open circles represent counties with confirmed breeding records and closed circles represent counties with confirmed specimen or sight records (Thompson et al. 2011, Otte 2021). Shaded counties with no circles are those that had no previous records prior to this study period.

Six of the observations were from five counties where the species had not been previously reported: Clay, Decatur, Ford (2), Mitchell, and Pawnee (Thompson et al. 2011, Otte 2021). Observations from Haskell and Finney Counties were also noteworthy because there are few historical records from western Kansas. The single records from Decatur and Neosho Counties were based on photographs of deceased individuals. The Decatur County record is the most significant outlier in terms of its distance from counties in Kansas where woodcocks have been previously reported.

DISCUSSION

In Kansas, most fall migrants have been recorded in late October and November in the eastern half of the state, although woodcocks have occasionally been recorded as migrants in several southwestern counties (Thompson et al. 2011). In Nebraska, there are "a few reports scattered throughout the (fall) period," with a few late dates in mid-November (Silcock and Jorgensen 2020). Extreme dates for fall migrants in Nebraska range from 23 October to 14 November (Silcock and Jorengsen 2020). In Oklahoma, Sutton (1967) classifies American Woodcock as having been recorded west to Harper, Blaine, and Greer Counties, but "decidedly rare along the west edge of range," with fall migration dates in Oklahoma from 15 October through 20 November. Tyler (1979) and Brown (1981) listed four fall records from southwest Oklahoma. The Date Guide to Oklahoma Birds (2019) denotes 18 October as the average arrival date for fall migrants. Andrews and Righter (1992) listed five known records for Colorado, mostly recorded in the fall.

The Colorado Bird Records Committee (CBRC) lists a total of 16 accepted records for this species in Colorado (CBRC 2021), about half of which are from October and November. Seyffert (2001) classifies American Woodcock as a casual migrant and winter visitor in the Texas Panhandle, listing records from October and November from three counties.

The breeding range of American Woodcock extends from Manitoba southward to northeast Oklahoma and then eastward to the Atlantic coast. The highest concentrations of breeding season records are located in Manitoba, (especially around Lakes Manitoba and Winnipeg) northeast Minnesota, and northwest Wisconsin at the western end of Lake Superior (Thompson et al. 2011, McAuley et al. 2020, eBird 2021). Seasonal movements of American Woodcocks suggest that eastern and western populations tend to follow distinctly separate migration routes. Based on eBird data, western populations generally move south through Iowa, Missouri, and Arkansas in the fall, gradually expanding westward into Oklahoma and eastern Texas, continuing until they reach their wintering range. Kansas and Nebraska are shown to be on the periphery of the typical fall flyway of woodcocks although they are regularly occurring fall migrants. Myatt and Kremnitz (2007a) indicated that most of the breeding population from the western Great Lakes region follows a migratory route through the Ozark region in Missouri and Oklahoma, as well as the Mississippi Valley. The Plains states are largely on the periphery of this primary route. Myatt and Kremnitz (2007a), based on wing recoveries from hunters between 1963 and 2002, also concluded that Kansas and Nebraska are on the periphery of the typical migration route. However, these recoveries also showed that many individuals were harvested by hunters in Kansas over that 40-year period, most of which are not reflected in the published ornithological literature. Therefore, woodcocks may be a more common migrant in Kansas and Nebraska than is currently understood.

A study of migrating woodcocks was conducted in 1976 in Pennsylvania using radio transmitters and aircraft (Coon et al. 1976). Most of the study birds departed their breeding areas in the last two weeks of November and departed 2.5 hours, or more, after sunset. Myatt and Kremnitz (2007b) cited departure dates for Wisconsin beginning in October and concluding in November. Known departures from breeding areas all occurred in the 11 days preceding a full moon (Myatt and Kremnitz 2007b). The full moon of October, 2020, was on 31 October. Migrating woodcock are believed to travel about 48 km/hr for 8 hours each night until reaching their wintering areas (Coon et al. 1976).

Meteorological Factors

Coon et al. (1976) summarized meteorological factors associated with the fall migration of woodcocks. Conditions favored at departure from breeding areas are described as moderate N to NW winds, with approaching highs from the northwest, retreating lows to the northeast, or both. A wind shift from the north with an approaching cold front has been shown to “release” migrant woodcocks.

The 7-day period from 23-29 October 2020, marked an unusually cold and wet period across much of the Great Plains, including Kansas. The initial cold front that marked the beginning of the prolonged cold snap pushed south across Kansas late in the day on 22 October. Just prior to this, temperatures had soared to highs in the lower to mid-80's (°F) across the southeastern half of Kansas. The jet stream pattern then became favorable for a sustained cold air mass to settle across Kansas along with increased moisture from the Gulf of Mexico, setting the stage for multiple rounds of moderate to heavy precipitation in the days that followed.

The first of these precipitation events began just after midnight (CDT) on the morning of 26 October, extending from the Texas Panhandle northeast into northwestern Oklahoma. During the overnight hours, this precipitation expanded into south-central Kansas. At the same time, the sustained north-northeast surface winds continued to drive exceptionally cold air (by late October standards) into Kansas with temperatures falling into the 20's and lower 30's (°F) across much of the state. Thus, the expanding area of precipitation before sunrise on the 26th (October) was in the form of snow and/or sleet. By 4 AM CDT, a band of moderate to heavy snow, mixed with sleet, was focused on south-central Kansas (Figure 3). The area of snow and sleet continued to expand its coverage by daybreak, overtaking much of south central and southeast Kansas. Meanwhile, areas farther north across central into northeast Kansas remained either dry or had very light precipitation with this particular wave.

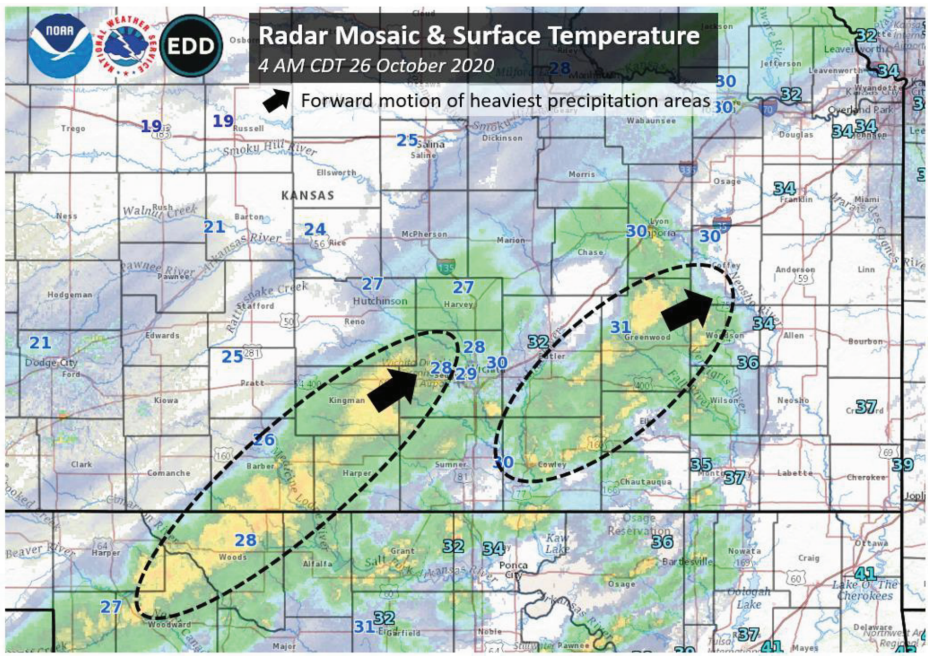

Figure 3. Surface temperature and composite radar mosaic image for most of Kansas, showing the heaviest precipitation areas and their directional motion at 4:00 AM on 26 October 2020.

From a meteorological perspective, this gradient in precipitation intensity (which remained quasi-stationary across south-central into east-central Kansas) in the roughly 3 AM to 8 AM time-frame on the morning of 26 October, may have played a critically important role in creating a barrier for southward movement of woodcocks seeking to take advantage of the brisk 24.1 to 48.3 km/h (15 to 30 mph) north winds during the night. These three combined meteorological components: (1) an anomalous cold airmass already in place across much of the region for this time of year; (2) continued north to northeast winds through the night; and perhaps most importantly (3) the southwest-to-northeast axis of moderate precipitation that gripped south-central into east-central and southeast Kansas (Figure 4), effectively creating a "fallout wall." This combination of factors likely led to the unprecedentedly high number of American Woodcock reports, particularly on landscaped lawns in urban settings during the 26-28 October period, especially across south-central Kansas. To varying degrees, the convergence of opposing wind patterns, especially when the convergence is of a long duration, has been consistently shown to be a major contributing factor in triggering fallouts of migratory birds (Guarente 2020).

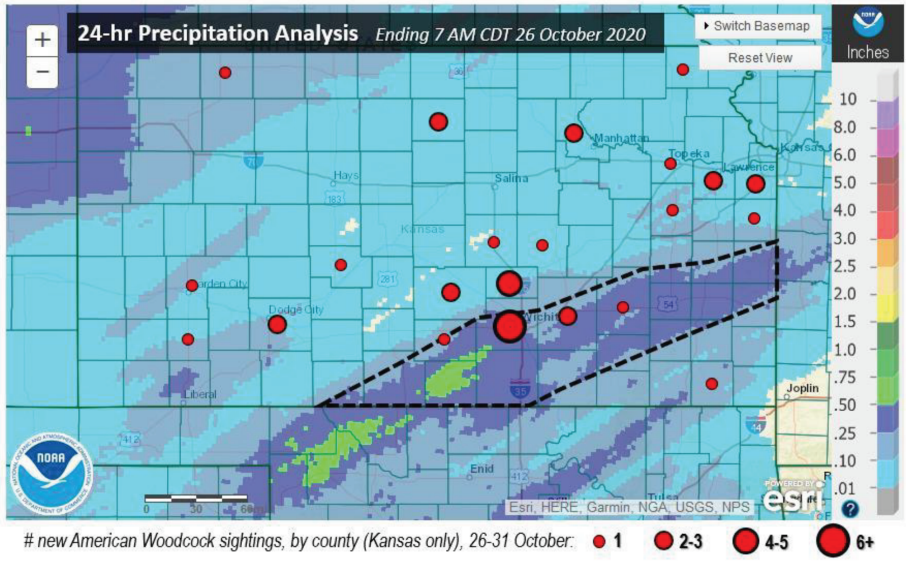

Figure 4. Precipitation map of Kansas for the 24 hours ending at 7 am on 26 October 2020. Red circles indicate the number of woodcock sightings by county during the study period.

There were two more precipitation events during this 7-day cold/wet period across Kansas, with the most significant one occurring 28-29 October. As the airmass slowly warmed by the 28th, more than an inch of cold rain occurred across the southern one-third of Kansas. There was also a tight gradient in precipitation amounts with this subsequent precipitation wave as well. Interestingly, there were increased reports of American Woodcocks on lawns in southwest Kansas at the end of October. These observations from the far west may have been associated with the

last big precipitation wave on 28-29 October, when temperatures were still well below normal.

CONCLUSION

The number of woodcock observations across Kansas from 24 October to 1 November 2020 was significant. These are presumed by the authors to be migrants from farther north. While there are woodcock breeding records from 19 eastern counties in Kansas, these breeding populations are scarce and local. It is possible, but unlikely, that these woodcocks were local breeding individuals that were simply forced into the open. This fallout event occurred during the expected fall migration period for American Woodcocks in Kansas. The geographical distribution and the number of individuals observed in this narrow time frame was exceptional in comparison with published historical records of fall migrant woodcocks from Kansas. This exceptionality is also true for the larger central and southern Great Plains region. Most reports came from suburban lawns, gardens and parks located in towns and cities. These are open habitats that made them conspicuous. These birds probably landed and lingered where the weather had grounded them. It is unknown if there was anything specific about urban lawns and gardens that attracted them. Because of the harsh inclement weather, few or no birders were in the field during this time, and most reports were of birds seen from homes or vehicles. Consequently, it is reasonable to hypothesize that additional individuals were present in less-populated and rural areas which went unobserved or at least unreported.

The strong cold front during late October 2020 probably accelerated the fall migration of American Woodcocks that was already in progress. Published work and long-term eBird data both suggest that while woodcocks are regular migrants in Kansas, the density of individuals is significantly lower compared to the primary fall migration path of this species through the Ozarks and the Mississippi Valley. The strong cold front approaching from the northeast, combined with the counterclockwise winds from the strong low pressure likely contributed to this event. These conditions may have pushed more southbound woodcocks into Kansas than is typical in most years. The noteworthy number of sightings from western Kansas during the early winter storm supports this hypothesis. However, it cannot be ruled out that the numbers observed were not atypical and that the unusual weather conditions simply forced them to "ground-out" in an exceptional, and conspicuous way. An analysis of the unique weather pattern associated with this event provides valuable insights into why and where this event occurred and contributes to our understanding of the impact that weather patterns have on bird migration.

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Update on Status of the KOS Bulletin and Requests for Manuscripts

Members, libraries, museums, and friends of the Kansas Ornithological Society, with this mailing of the combined September/December issues (#3 and #4) of the *Bulletin*, Volume 73 should be complete. If you are missing issues, please contact the Membership Development Coordinator, Jeff Calhoun (jeffcalhoun11@gmail.com).

Manuscripts are Needed. The *Bulletin* is the official peer-reviewed journal of the Society, which is published quarterly. The *Bulletin* is devoted to the field study of birds in Kansas, although other suitable materials can be published. Featured articles, and short notes of scientific or general interest are solicited; potential authors are encouraged to submit any materials that contribute to the understanding of birds in Kansas, including details for documentation of unusual or rare species.

Those in academia, the KOS *Bulletin* would be ideal for undergraduate and graduate students to get involved with the publication process, or publishing shorter papers of your own not suitable for the premier journals. Novice bird watchers, as well as those more seasoned, are encouraged to publish new county records, especially if pertaining to several species. New state records are also worthy of publication, a mechanism to go beyond a KBRC review…in fact, the manuscript can become your KBRC submission.

Respectfully,

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