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Timing of migration of Short-billed Dowitchers and Long-billed Dowitchers in northeastern Oklahoma

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The status of the Short-billed Dowitcher (*Limnodromus griseus*) is poorly known in Oklahoma, with the bird usually listed as accidental in the state. Baumgartner and Baumgartner (1992) considered *L. griseus* a straggler in Oklahoma. Grzybowski et al. (1992) described it as a difficult-to-identify, rare fall migrant, and the Tulsa Audubon Society (1988) reported it as accidental in the Tulsa area. Wood and Schnell (1984) listed *L. griseus* as an accidental, although they suggested that it is probably a rare transient. Sutton (1967, 1974) rejected all sight reports, allowing only two records for the state based on specimens collected in Beaver and Johnston counties.

In Kansas, *L. griseus* is rare to occasional (Zimmerman and Patti 1988), with Thompson and Ely (1987) noting that most records are for the central portion of the state. In Arkansas, *L. griseus* is apparently an uncommon transient in fall (James and Neal 1986; Neal and Mlodinow 1988). In north central Texas, Pulich (1988) considered *L. griseus* a rare to casual transient, mainly in fall.

In contrast, the Long-billed Dowitcher (*Limnodromus scolopaceus*) is the expected dowitcher in Oklahoma and neighboring states. It is considered a rare to common transient throughout the southern Great Plains (Sutton 1967, 1974; Wood and Schnell 1984; James and Neal 1986; Pulich 1988; Zimmerman and Patti 1988; Thompson and Ely 1989; Baumgartner and Baumgartner 1992; Robbins and Easterla 1992).

Based on the work of Pitelka (1950), Nearctic dowitchers were split into two species. *Limnodromus scolopaceus* is recognized as monotypic and mainly western in distribution, and *L. griseus* is divided into three subspecies with distinct breeding ranges distributed across North America (American Ornithologists' Union 1957). Popular field guides to bird identification, however, were slow to differentiate clearly between the two species. Peterson (1961), for example, continued to illustrate one dowitcher, although he described both species in the text. Significantly, Peterson noted that voice—not plumage—is the best way to separate the Long-billed and Short-billed dowitchers. That sentiment has been reiterated by virtually every writer since. Prater et al. (1977) listed criteria for

separating the dowitchers by plumage alone, stressing the importance of recognizing age classes when identifying shorebirds. Several comprehensive discussions of field identification of the dowitchers have since appeared (Wilds and Newlon 1983; Hayman et al. 1986; Wilds 1990; Paulson 1993).

Of the three races of *L. griseus*, the one most likely to occur in Oklahoma is *L. g. hendersoni* (Wilds and Newlon 1983; Paulson 1993). In breeding plumage *L. g. hendersoni* may be completely reddish on the underparts, thus showing close resemblance to *L. scolopaceus*. Fortunately, *L. g. hendersoni* is both paler above (Wilds and Newlon 1983; Paulson 1993) and paler in the tail (Prater et al. 1977) than either of the other races of *L. griseus*, making it somewhat easier to separate from *L. scolopaceus*. The dark feathering on the upper parts of *L. g. hendersoni* is broadly edged with buffy orange and cream tones, giving it a highly patterned appearance. Those same dark feathers in *L. scolopaceus* are narrowly edged with dark orange and white, lending only a subtle degree of paleness to the mantle and producing an overall darker-backed look. *Limnodromus scolopaceus* has, on average, a darker tail overall than all the races of *L. griseus*; the dark bars in the tail of *L. scolopaceus* are, on average, broader than the pale bars. This difference is most noticeable when comparing *L. scolopaceus* with *L. g. hendersoni* because the white bands in the tail of *L. g. hendersoni* are broader than in the other two races of *L. griseus*, and, on average, are broader than the dark bars. Thus, the white patch on the back and rump of *L. g. hendersoni* blends smoothly with the broad white bands in the tail, resulting in little contrast between back and tail. *Limnodromus scolopaceus*, on the other hand, appears to have an overall gray tail, in sharp contrast with the white on its back. Taken together, the appearance of the tail and the upperparts are valid criteria for separating *L. scolopaceus* and *L. g. hendersoni* in breeding plumage.

Juveniles of the two species are usually separable by markings in the tertials (Prater et al. 1977). Dowitchers in basic (nonbreeding) plumage are best identified by voice, although they may also be separated by the appearance of the tail (as described above) and by subtle differences in the markings on the breast if seen well from close range (Wilds 1991; Paulson 1993).

METHODS

When I moved to Oklahoma from Ohio in 1979, I was familiar with the plumages and vocalizations of *L. griseus*, but knew little about *L. scolopaceus*. I soon learned that the diagnostic vocalizations of *L. scolopaceus* are harsher and higher pitched than the more mellow notes of *L. griseus*. I began studying the occurrence of *L. griseus* in northeastern Oklahoma after encountering a few in the Tulsa area in the fall of 1980 (Williams 1981). In the fall of 1983 I used a Sony TCM5000 portable tape recorder and a Senheiser ME80 directional microphone to record the

vocalizations of *L. griseus* in the Tulsa area. I also recorded the vocalizations of *L. scolopaceus*.

With these recordings, and with the criteria from Prater et al. (1977) for identifying dowitchers by plumage, I endeavored to learn to identify dowitchers by plumage alone. After guessing the identity of a dowitcher based on plumage characteristics, I played the vocalizations of that species. I learned that each species readily responds to recordings of its own kind. Since my initial guesses as to species identification usually were confirmed by the birds' calls, I convinced myself that the species are separable in the field by plumage characteristics alone. Beginning in the fall of 1983, I assigned *L. griseus* to adult or juvenile age classes and kept counts based on age class and plumage. For the purpose of comparison, I began classifying and counting *L. scolopaceus* by age and plumage in 1988.

Several shorebird habitats were routinely censused for this study, including mud flats around major lakes (e.g., Lakes Keystone and Oologah), flooded agricultural fields, sod farms, upland prairies and prairie ponds, and sewage lagoons.

RESULTS

From 1979–1996, I encountered *L. griseus* on 64 field trips in northeastern Oklahoma. Thirteen of those observations were during spring migration and 51 during fall migration; a total of 175 individuals were counted in spring and 131 in fall. By comparison, *L. scolopaceus* was found on 216 field trips. Forty-five of those occurrences were in the spring and 171 in the fall; a total of 307 individuals were counted in spring and 2356 in fall. Thus, *L. scolopaceus* was more common than *L. griseus*. However, *L. griseus* is of regular occurrence in northeastern Oklahoma, having been encountered at least once during 13 of 18 years. Both species have been encountered more frequently during the fall than during the spring. Interestingly, the ratio of *L. scolopaceus* observations to *L. griseus* observations is nearly identical in both spring and fall: 3.46:1 and 3.35:1, respectively.

My records show that *L. scolopaceus* migration builds gradually from mid March to a peak in mid to late April before tapering off in May (Fig. 1a). In contrast, *L. griseus* migration is quite abrupt in spring, with 11 out of 13 observations between 4–18 May (Fig. 1b). The highly synchronized spring migration of *L. griseus* probably accounts for a higher maximum one-day count (111 on 12 May 1988) compared to that for *L. scolopaceus* (45 on 7 May 1989). However, both species are infrequent in northeastern Oklahoma in the spring even during their periods of maximum occurrence (Fig. 1).

The primary migration period of *L. griseus* in fall is shorter and more compressed than that of *L. scolopaceus*, paralleling the pattern for spring. Unlike during spring migration, however, both species exhibit two distinct peaks in frequency in the fall. *Limnodromus griseus* shows peaks in

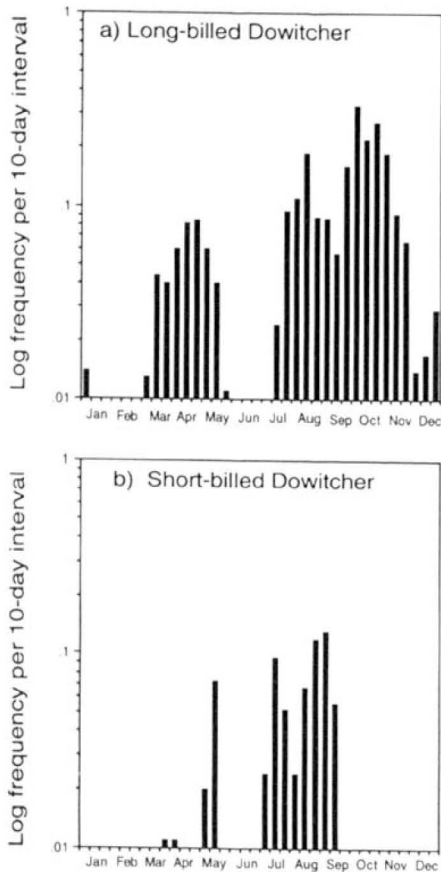


Fig. 1. Log frequency of occurrence for Long-billed Dowitchers (a) and Short-billed Dowitchers (b) in northeastern Oklahoma. Frequency is the ratio of the number of days the species was observed to the total number of days in the field during each 10-day interval (1979–1996).

mid July and in late August to early September (Fig. 1b). *Limnodromus scolopaceus* peaks first in mid August and broadly peaks a second time throughout the month of October (Fig. 1a).

During the period in July through September when both species occur in northeastern Oklahoma, *L. griseus* is more numerous than *L. scolopaceus* from 1–20 July and from 21 August to 20 September. *Limnodromus scolopaceus* is more frequent from 21 July to 20 August, and it is the only dowitcher observed after 20 September.

Data for southbound dowitchers show that each age class has a distinct peak migration period (Fig. 2). Peak occurrence for adult *Limnodromus griseus* is 1–20 July, adult *L. scolopaceus* 21 July to 20

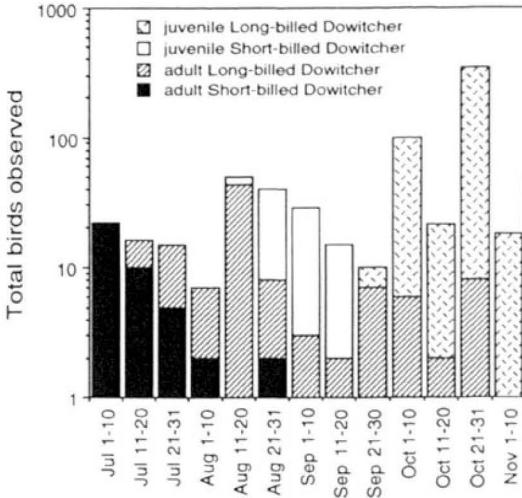


Fig. 2. Total numbers of dowitchers of different age classes observed during 10-day intervals in northeastern Oklahoma (1979–1996). Note log scale.

August, juvenile *L. griseus* 21 August to 20 September, and juvenile *L. scolopaceus* after 1 October.

The distribution of my dowitcher observations in northeastern Oklahoma are shown in Figure 3. *Limnodromus griseus* has been found in 10 counties and 14 townships, and *L. scolopaceus* has been found in 11 counties and 22 townships. The overall distributions of the two species appear to be similar, probably reflecting broadly overlapping habitat use during migration.

DISCUSSION

My finding that both species of dowitchers are more frequent transients in the fall than in the spring is consistent with reports from elsewhere within the southern Great Plains (Neal and Mlodinow 1988; Pulich 1988; Righter and Andrews 1993). That *L. griseus* has shorter periods of migration in both spring and fall than *L. scolopaceus* has also been reported elsewhere (Robbins and Easterla 1992; Jorgensen 1996). The sharp mid-May peak in *L. griseus* migration seen in Oklahoma has also been described in Ohio, Missouri, and Nebraska (Peterjohn 1989; Robbins and Easterla 1992; Jorgensen 1996).

However, my observations of *L. griseus* in Oklahoma in late March and early April are markedly earlier than has been reported elsewhere within the region. For example, Jorgensen (1996) recorded an early date of 20 April for Nebraska, and Robbins and Easterla (1992) reported the earli-

est in Missouri to be 27 April. The earliest I have recorded *L. griseus* was 24 March 1996 in Wagoner County.

In this study southbound *L. griseus* was found from 8 July to 17 September, in agreement with Pulich's (1988) dates for north central Texas (4 July to 23 September) and Robbins and Easterla's (1992) dates for Missouri (mid July to 14 September). For Arkansas, James and Neal (1986) noted migration of *L. griseus* from the second week in July to the third

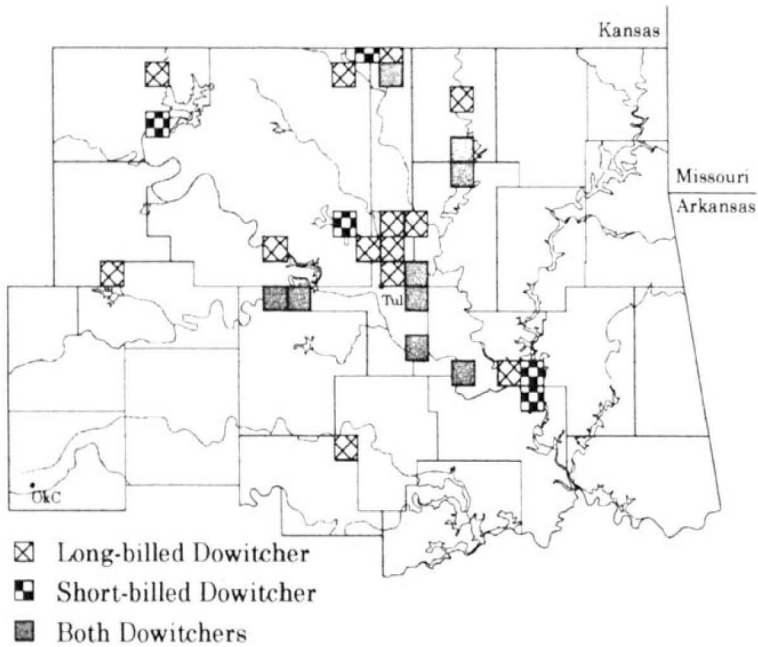


Fig. 3. Distribution of dowitcher sightings in northeastern Oklahoma, 1979–1996, by county.

week in October, and Neal and Mlodinow (1988) reported it from 12 July to 22 October. Fall dates for *L. griseus* in Kansas are 9 July to 10 October (Thompson and Ely 1989).

The earliest southbound *L. scolopaceus* in my study was found on 19 July. In Missouri, Robbins and Easterla (1992) doubted that *L. scolopaceus* occurs prior to August. For Kansas, Thompson and Ely (1989) stated that the main fall migration begins around 24 July, although they also listed a

few earlier records. In Arkansas, James and Neal (1986) reported *L. scolopaceus* migration beginning in the third week in July. In contrast, Pulich (1988) reported *L. scolopaceus* for north central Texas as early as 1 July.

For the central Atlantic Coast, Wilds and Newlon (1983) gave July and the first half of August as the migration period for adult *L. griseus*, and they note that *L. g. hendersoni* (the race most likely to occur in the southern Great Plains) migrates as much as two weeks earlier than the eastern nominate race. My results are consistent with this migratory pattern: 37 of 42 southbound *L. griseus* identified as adults in northeastern Oklahoma occurred from 8 July to 31 July (Fig. 2).

Information on the occurrence of adult *L. griseus* elsewhere in the region in fall is limited. In contrast to my results, Jorgensen (1996) reported no *L. griseus* in Nebraska in July; he also reported two occurrences of 40–50 adults during early August. Specimens of southbound adult *L. griseus* collected in the southern Great Plains include one from Cleveland County, Oklahoma, on 10 July 1962 (Sutton 1967) and two from northern Texas on 26 July (McLennan County) and 28 July (Grayson County; Pulich 1988).

In my study, the earliest juvenile *L. griseus* was found on 19 August, and the peak of the juvenile migration occurred during late August and early September (Fig. 2). For Nebraska, Jorgensen (1996) listed several records of juvenile *L. griseus* from 19 August to 10 September, in agreement with the results reported here. Pulich (1988) reported two juvenile *L. griseus* collected in Denton County, Texas, on 20 August.

On the Gulf coast of Texas, *L. griseus* increases from very rare to uncommon during the last quarter of July, and from uncommon to common during the third quarter of August (Dauphin et al. 1989). The timing of these increases parallels the timing of the bimodal fall migration of adults and juveniles reported for northeastern Oklahoma (Fig. 2).

I have found *L. scolopaceus* adults in (or molting from) breeding plumage from 19 July to 21 August, and I have seen adults in nonbreeding (basic) plumage as early as 6 September. I have not identified any *L. griseus* in nonbreeding plumage in the fall in Oklahoma, and I have observed only one in the spring. Of 21 fall specimens of *L. scolopaceus* at the Oklahoma Museum of Natural History in Norman, the earliest adult in breeding plumage was collected on 13 July in Marshall County in south central Oklahoma, in agreement with my dates for northeastern Oklahoma. The earliest juvenile *L. scolopaceus* was collected on 26 September in Murray County in south central Oklahoma, and that date is consistent with my early date of 22 September for juvenile *L. scolopaceus* in northeastern Oklahoma. Overall, my results are consistent with the observation of Newlon and Wilds (1983) that (away from the West Coast) adult *L. scolopaceus* migrate from late July through September, and that juveniles of that species are scarce before 20 September and appear in numbers throughout October. The overwhelming majority of *L. scolopaceus*

that I have observed in northeastern Oklahoma have been October juveniles (Fig. 2).

In conclusion, my study indicates that *L. griseus* regularly migrates through northeastern Oklahoma, being more frequent in fall. The most likely time to observe it in spring is 4–18 May and in fall from 21 August to 20 September. Both dowitcher species show bimodal frequency distributions in fall migration corresponding to separate passage of adults and juveniles. Fall migration of *L. griseus* through northeastern Oklahoma is essentially completed by 20 September, at which time the migration of *L. scolopaceus* juveniles is just beginning.

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NOTES

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Common Nighthawk nesting on an exposed alkaline flat.—Documented nesting habitat for Common Nighthawks (*Chordeiles minor*) consists of coastal habitat, forest clearings, sagebrush (*Artemisia* spp.), grasslands, agricultural fields, rocky outcrops, and gravel roofs (Poulin et al., Common Nighthawk (*Chordeiles minor*), in *The Birds of North America* (A. Poole and F. Gill, eds.), no. 213, Acad. Nat. Sci., Philadelphia, and Am. Ornithol. Union, Washington, DC., 1996). In Oklahoma, Common Nighthawks typically nest in well-drained, treeless, barren areas (Sutton, Oklahoma birds, Univ. Oklahoma Press, Norman, 1967).