

Kansas Ornithological Society

BULLETIN

PUBLISHED QUARTERLY

Vol. 58

September, 2007

No. 3

BUFF-BREASTED SANDPIPER (*Trygnites subruficollis*) FALL MIGRATION AT SOD FARMS IN KANSAS

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The Buff-breasted Sandpiper (*Trygnites subruficollis*) is suspected of continuing population declines during the past few decades (Lanctot and Laredo 1994); however, because of the remoteness of its breeding grounds, and migration and winter habitat preferences, monitoring the species' status has proved difficult. In the past, concerted efforts in prime habitat at the peak of migration often resulted in finding only small numbers for very brief periods, and this still mostly remains the case for spring migration. However, with the advent of sod farming this species now is routinely encountered across its broad fall migration route in the United States, from the central Great Plains to the east coast, during late July through early October. Here results are presented from intensively monitored sod farms at Lawrence, Douglas County during the fall 2006, and I provide an overview of Buff-breasted use of Kansas sod farms and comments on estimates on this species' total population.

Study Area & Methods. I monitored 142 ha (350 acres) of sod farms at the northern edge of Lawrence, Douglas County, Kansas, from 23 July through 2 October 2006. The acreage consisted of three separate parcels that was owned and managed by the same family. The sod farms were visited twice daily, usually at ca. 0600 and 1530 (CDT). There was no coverage for four days of the above period: 19-20 August and 29-30 September. During late August and much of September only a single visit was made in the evening; this protocol followed when no birds were found during the previous evening visit. On a few occasions the area was checked more than twice per day.

Results. A total of 460 Buff-breasts were counted at the Lawrence sod farms between 23 July and 2 October 2006 (Fig. 1); however, 46 of these were believed to be present for more than one day. Thus, a minimum of 414 Buff-breasts were encountered during the above period. The first individual was detected on 27 July. The peak number occurred on 2 August when a minimum of 130 were present. On this date 25 individuals sampled at the Lawrence and Colwich, Sedgwick County, sod farms for toxicology studies by Khara Strum and Brett Sandercock, were adults that were extremely fat (vouchers deposited at University of Kansas Natural History Museum). Suspected juveniles were not observed until mid-August. This is consistent with the known fall migration pattern of the species where adults precede juveniles (Lanctot and Laredo 1994). Typically no or very few birds were found at

the sod farms during morning visits, however, by early afternoon birds began to appear, especially when there were southerly winds. Birds actively fed on insects while on the farms, typically up to sunset, when they reinitiated migration. The maximum length of stay was three days, 23-25 August, by three individuals. Thus, there was much daily turnover at the farms (Fig. 1).

Discussion. During the past few decades the number and acreage of sod farms throughout the United States has increased dramatically. In Kansas, sod farms began appearing in the Sedgwick County area as early as 1953 (<http://www.cranmer-grass.com>). Sod farming was initiated in Miami and Johnson counties by at least the mid-1970s (fide M. Higgins, C. Hobbs). Although Buff-breasts likely were using sod farms from the outset, birdwatchers did not routinely check Kansas sod farms until the 1990s. Sod production, 14 ha (35 acres), began at the aforementioned Lawrence site in 1997. Acreage increased annually at that site, and the following year 7-8 Buff-breasts were seen on 18 September 1998 by Galen Pittman (Janzen 1999). The largest number of Buff-breasts recorded at the Lawrence farms was 200 on 27 August 2000 (m. ob.; Janzen 2001). A few days earlier, 22 August, an impressive 350 were observed on the Colwich sod farms, Sedgwick County (m. ob.; Janzen 2001). Coverage at the Colwich sod farms began in the fall of 1999 (P. Janzen, pers. comm.).

Although sod farms have become a magnet for southbound Buff-breasts, making detection much easier, the exposure to large amounts of fungicides, herbicides, and insecticides (containing organophosphates and carbamates) that are applied to these fields is of serious concern. Khara Strum and Brett Sandercock of Kansas State University have initiated a study that will address this issue.

Recently, Morrison et al. (2006) proposed that the total number of Buff-breasts was only ca. 30,000. This estimate was based primarily on recent estimates of migrants passing through the Rainwater Basin of Nebraska (Jorgensen et al. 2006) and estimates in the Gulf Coastal Plain of Louisiana and Texas (Morrison et al. 2006). However, the Nebraska data did not take into account turnover rates and the Gulf coast estimates actually ranged between 28,000 and 84,000, depending on the turnover rate used. I strongly suspect the total Buff-breasted population is much closer to the latter estimate than 30,000. Based on the Lawrence data and > 35 years of experience with this species, turnover rates are very high in both spring and fall. When the species is encountered during spring in its core eastern Great Plains migration corridor, birds often remain for only a few minutes in an area. The vast majority of my observations for the first three weeks of May in western Missouri and eastern Kansas are of small flocks that are flying low against strong north winds. On days with no or light winds, birds typically are not encountered. However, relatively large numbers can be encountered in recently plowed and burned fields in spring. This has been noted in the Eastern Rainwater Basin of Nebraska (Jorgensen et al. 2006) and the Flint Hills, eastern Cowley County, Kansas, where Gene Young observed a minimum of 429 on 5 May 2007. The latter is an all time high count for Kansas.

If the fall turnover rate at the Lawrence sod farms is a good estimator for other areas, then many more birds are passing through than appreciated. Moreover, the < 4 km wide swath (east-west axis) of Lawrence sod farms presumably is attracting only a percentage of Buff-breasts that pass over this patch of suitable habitat. At the opposite end of its North American fall migration corridor, the species is considered uncommon at sod farms in New Jersey (Boyle 1986). Daily monitoring of sod farms is needed across the species' broad fall migration route from late July through early October.

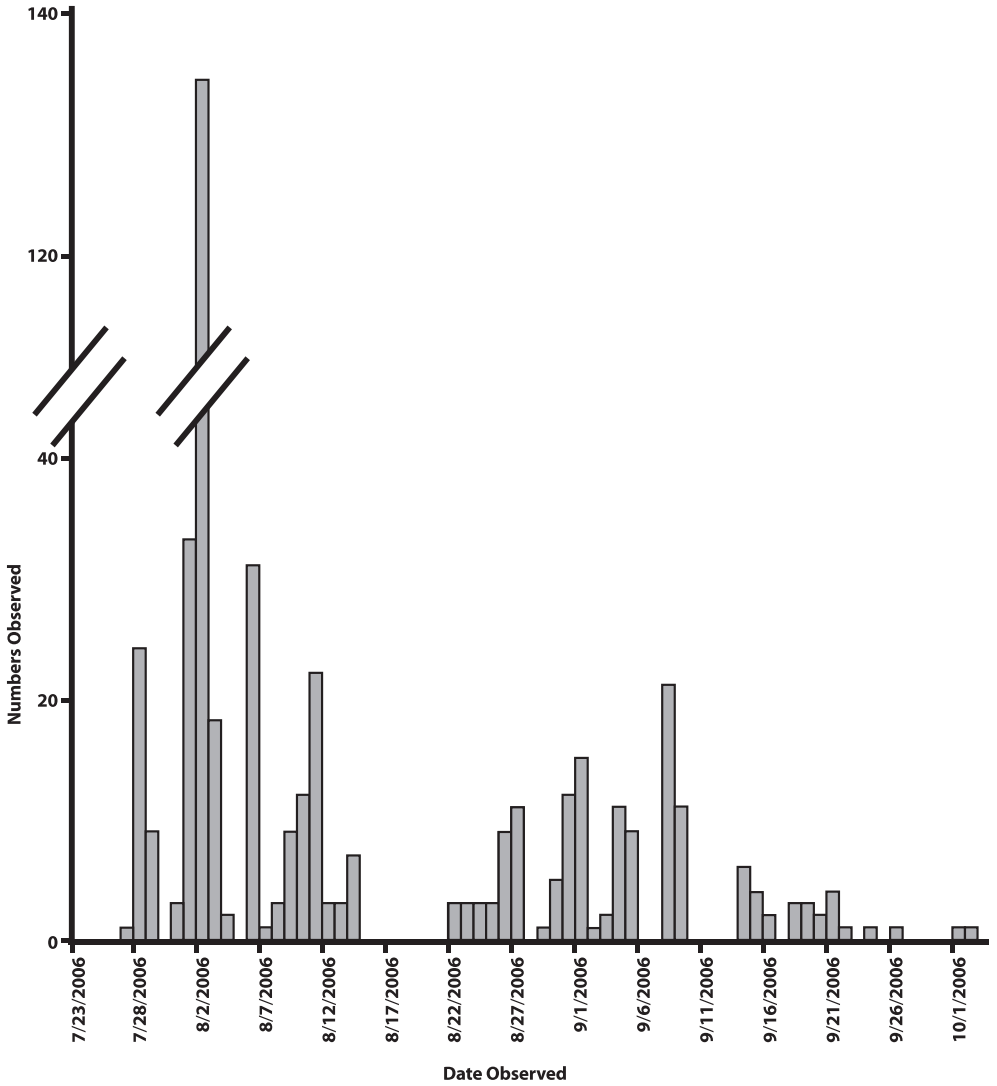


Fig. 1 Occurrence of Buff-breasted Sandpipers on Lawrence sod farms between 23 July and 2 October 2006.

ACKNOWLEDGMENTS

I thank Roger and Brian Pine for access to and information on their Lawrence sod farms. Khara Strum and Brett Sandercock kindly shared information from their toxicology study. Monica Higgins, Chris Hobbs, Pete Janzen, Chuck Otte, Galen Pittman, Max Thompson, and Gene Young helped track down Buff-breasted Sandpiper observations and coverage at sod farms.

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