

MIXED-SPECIES FORAGING AGGREGATION OF KITES IN THE NESTING SEASON

Bradley J. Bergstrom

Department of Biology, Valdosta State University, Valdosta, GA 31698
bergstrm@valdosta.edu

and

Marvin T. Smith

Department of Sociology, Anthropology and Criminal Justice, Valdosta State
University, Valdosta, GA 31698
mtsmith@valdosta.edu

Introduction

Mississippi Kite (*Ictinia mississippiensis*) is a common nesting species in forested areas of Georgia's Coastal Plain, including throughout the city limits of Valdosta (pers. observ., Schneider 2010); it typically nests in May through July (Parker 1999). Swallow-tailed Kite (*Elanoides forficatus*) is a fairly common, but localized nesting species along the major river systems primarily in the Lower Coastal Plain (Swan 2010), but sightings in extreme south-central and southwestern Georgia have been increasing in frequency in recent years, including number of birds per sighting. This area includes the Alapaha, Withlacoochee-Little, Aucilla, and Ochlockonee River systems in south-central Georgia and north-central Florida, all of which featured possible or probable nesting by Swallow-tailed Kites in the 1994-2001 Georgia Breeding Bird Atlas surveys (Swan 2010). Typical nesting season for the Swallow-tailed Kite is April through June (Meyer 1995). Swallow-tailed Kites construct loose "neighborhoods" of nests spaced from 75 to 700 m apart (Meyer 1995) in conspicuously tall trees along rivers or in river swamps (Swan 2010). Mississippi Kites nest in colonies or groups of between 2 and 15 nests (Parker 1999) located atop trees of species that are not specific to any particular habitat type, and quite often are in urban or suburban areas (Schneider 2010).

Mississippi Kites usually arrive in south-central Georgia in mid-April, whereas Swallow-tailed Kites arrive from mid-March to early April (Georgia Birders Online 1998-2011 [GABO; <http://www.listserv.uga.edu/archives/gabo-l.html>], Beaton et al. 2003, McShane 2011). The first Swallow-tailed Kites arrive in Florida up to a month earlier, whereas Mississippi Kites tend to arrive at

the same time in Florida and Georgia (Florida Fish and Wildlife Conservation Commission 2003). Single kites or small family groups are commonly seen in south-central Georgia during spring to summer, most of which are Mississippi Kites, but observations of Swallow-tailed Kites are increasingly common (pers. observ., GABO-L reports).

Large post-breeding aggregations of both species of kites in Georgia were first reported from Tattnall Co. near the Altamaha River in July and August 1997 (Chandler et al. 1997), where up to 70 kites (the majority usually being Swallow-tailed Kites) gathered at mid-day to forage on large insects over hayfields. Since then, similar post-breeding aggregations, with daily maximum counts ranging from 20 to 160 kites of both species, have been documented in August in Tattnall and Long Counties, especially near the town of Glennville (Tattnall Co.) in 2000-2003, 2006, and 2008-2011 (GABO-L reports; see also “From the Field” accounts in *The Oriole* for these years). On 1 August 2009, simultaneous observations by teams at 3 sites in Long Co. totaled 135 Swallow-tailed Kites and 31 Mississippi Kites (Gene Wilkinson and Sheila Willis, pers. comm.). Post-breeding aggregations of kites have also occurred in recent years at Savannah National Wildlife Refuge in South Carolina, where ca. 200 Mississippi Kites and 7 Swallow-tailed Kites were counted on 13 August 2011 (Nathan Dias, pers. comm.). Several large, single-species roosts of Swallow-tailed Kites along the Savannah River, on both the Georgia and South Carolina sides, totaled 214 birds as determined by aerial counts conducted in late July 2009 (Blankenship 2009a).

Recently, post-breeding aggregations of kites, mostly Mississippi Kites, have also been observed at several Piedmont sites in Georgia, which is north of the confirmed breeding range of the species as defined in Schneider (2010), and far to the north of the breeding range of the Swallow-tailed Kite (Swan 2010). In August 2003, daily counts of 51, 52, and 53 Mississippi Kites were reported from Upson, Taylor, and Washington Counties, respectively (Zaremba 2004). On 11 August 2006, 86 Mississippi Kites were seen throughout Oconee Co., with up to 30 at one site, plus a few Swallow-tailed Kites (Zaremba 2007). In 2007, 50 Mississippi Kites were seen on 10 August in Spalding Co. (Blankenship 2007). In 2008, 30 kites of both species were seen in Morgan Co. on 18 August (Nathan Farnau, pers. comm.), and on 17 August 75 Mississippi Kites were reported from Muscogee Co. (Blankenship 2008). In 2009, 43 Mississippi Kites were seen in Newton Co. on 21 August (Blankenship 2009b), and 60 Mississippi Kites were seen at one time in Oconee Co. on 12 August (Mark McShane, pers. comm.). On 12 August 2010, 45 Mississippi Kites were counted at one time in Walton Co. (Hall 2010).

Despite the numerous accounts over the past 14 years of mixed-species, post-breeding foraging aggregations of kites at several localities in the Upper Coastal Plain and Piedmont of Georgia, we could only find prior evidence of one possible case of a large, mixed-species feeding aggregation of kites in Georgia during the active nesting season, i.e., April through June. On 9 May 2010, Linda Most (pers. comm.) observed 6-10 Mississippi Kites and 2 Swallow-tailed Kites foraging over a plowed field north of Valdosta, Lowndes Co. (ca. 30°53'45"N, 83°16'29"W). Twelve days earlier, on 28 April, Linda Most and Mark McShane observed 35 Mississippi Kites over this same field (pers. comm., McShane 2011). Previous reports of large daily counts of Mississippi Kites during the nesting season include 18 in Upson Co. on 18 May 1999 (Bell 1999; a possible feeding flock but no details provided) and 60 in Muscogee Co. on 10 June 2006 (Zaremba 2005-2006), which did constitute a single foraging aggregation (Walt Chambers, pers. comm.).

First Report of Sustained, Large, Mixed-species Foraging Aggregation of Kites during the Nesting Season in Georgia

On 30 April 2011 at 1130, one of us (BJB, with Chris Perry) discovered a foraging flock of 21 Mississippi Kites and 12 Swallow-tailed Kites in extreme southern Lowndes Co. near the boundary of the mature forest surrounding Grassy Pond Air Force Recreation Area and the Lowndes County Land Application Site (LCLAS) sprayfields. Location of the flock was 6.18 km southwest of Lake Park, Lowndes Co., Georgia (30°38'58.00"N, 83°13'54.67"W). From our initial vantage point at the southwestern edge of Grassy Pond, the kites seemed to be soaring on the upward deflection currents created by the thin strip of forest along a bluff at the eastern edge of the lake and either the lake itself or the fields to the east. Upon arriving at the field-forest edge nearly an hour later, we observed that the mixed flock was actively foraging on insects over one particular area of the hayfields that had not been mowed recently, as had nearby areas. Kites would join and leave the flock almost continuously, but most of those flying away from the site soared along the forest edge and did not necessarily leave the area. The numbers of kites stayed relatively constant for the nearly 2-hr period over which we observed them. We observed both June beetles and dragonflies in abundance. An examination of our photographs suggests that kites were preying on both of these types of insects as well as grasshoppers, but frequently on smaller insects as well (Fig. 1). Adults and larvae of Hymenoptera (bees, wasps, ants) are known to be an important part

of the diet of adult Swallow-tailed Kites (Meyer 1995). Leafhoppers and flying ants, along with beetles, dragonflies, cicadas, and grasshoppers are known to be taken aerially by Mississippi Kites (Parker 1999).

We periodically returned to the site over the next 3 months, most frequently throughout May, and we obtained access to the sprayfields themselves so as to get closer to the foraging site, beginning 5 May. We conducted counts of kites at the site of concentrated foraging for a 90-min period each time, between the hours of 1030 and 1500. We recorded the maximum number of kites of each species each day (Fig. 2). Except for one day with steady rain, a foraging flock of 15-36 kites of both species was recorded on all 8 observation days through 1 June (Fig. 2). On our way to and from the foraging site in May, we often saw multiple kites over a large pasture 2 km to the north, as well as over a small pond 1 km north of the sprayfields, but we did not include these observations in the totals in Fig. 2. Adding these we estimate would bring the total number of kites foraging within 2 km of the focal site to 40-50 birds during most of May. From 18 June through the end of August, the foraging flock had apparently disbanded, and only one to a small handful of kites appeared during mid-day counts after that. In other words, this site was not used as a post-breeding foraging site, at the time when other such sites have been used in Georgia. On several occasions in May we observed one first-summer Mississippi Kite, but never more than one young bird appeared with the flock.

The LCLAS includes 54 ha of treated wastewater sprayfield within a larger cleared area of high ground composed of very well-drained Valdosta Sand (U.S. Department of Agriculture 1979) planted in perennial grasses, mostly coastal Bermuda (*Cynodon dactylon*) and some bahia (*Paspalum notatum*), which produces 5 hay crops per year. From our observations, the site is also heavily used as foraging habitat during the summer by flocks of Cattle Egrets (*Bubulcus ibis*), Barn Swallows (*Hirundo rustica*), and White Ibis (*Eudocimus albus*). Boat-tailed Grackles (*Quiscalus major*) nest along the edges of the several settling ponds. To the east and west are low-lying swamps, limesink lakes, and bottomland hardwood forest, with nesting Anhingas (*Anhinga anhinga*), Osprey (*Pandion haliaetus*), and Bald Eagles (*Haliaeetus leucocephalus*).

Timing of Mixed-species Flock Suggests Incubation Period

Personnel at LCLAS told us they started seeing Swallow-tailed Kites foraging over the field around 1 April 2011 and they had seen Mississippi Kites for only 1-2 weeks before we spoke to them in early May; they also said the kite

foraging flock had been active the year before (2010). The period of maximum sustained activity for this mixed-species foraging flock coincides with the period of incubation — which lasts roughly 30 days for both species (Meyer 1995, Parker 1999) — but primarily for Mississippi Kites, which begin egg-laying about 3 weeks later than Swallow-tailed Kites (mid April for the former; late March for the latter). We may have missed the peak numbers of Swallow-tailed Kites, and their numbers steadily fell from 12 on 30 April to 2 on 1 June. Numbers of Mississippi Kites remained relatively stable over that period, and then declined shortly thereafter (Fig. 2).

Both species of kites are somewhat colonial in their nesting habits, and they both display cooperative breeding, with one or 2 non-breeding adults present at most nests. A typical clutch of eggs has 3-4 adults tending it, which means that 2-3 adults would be able to fly off to forage while one adult incubates. Both kite species are known to form hunting flocks during the nesting season (though no previously published reports exist for Georgia), with Swallow-tailed Kites in Florida and South Carolina undertaking foraging flights of 1.2-3.7 hours duration during mid-day, traveling 16-24 km each way from the nest site (Meyer 1995). The LCLAS foraging site is 4.5 km from the Withlacoochee River, and is less than 20 km from several possible to probable nesting sites of Swallow-tailed Kites in the Withlacoochee-Little River system found during the 1994-2000 surveys for the Georgia Breeding Bird Atlas (Swan 2010).

The decline in activity of this foraging flock during May corresponds to the time of hatching of young, after which adults are known to change their foraging habits and prey selection and be more likely to forage closer to the nest site. For example, Swallow-tailed Kites feed their young small vertebrates gleaned from treetops and carry them to the nest in their talons (Meyer 1995). Mississippi Kites will deliver regurgitated macerated insects to hatchlings in the first 5 days, but after that, they carry large insect and small vertebrate prey to the nest by bill or feet (Parker 1999).

While these same kites did not return to forage at this site after independence of the young, there were other observations of foraging flocks in August that may account for some of these individuals. On 6 August 2011, we saw 9 Mississippi Kites and 27 Swallow-tailed Kites between 0915 and 1015 in 4 flocks foraging over fields or pastures between southern Brooks Co., Georgia, and northern Jefferson Co., Florida. That evening at 1830 we saw a large kettle containing 40 Swallow-tailed Kites and one Mississippi Kite over the Wacissa River head spring area, apparently preparing to roost for the night. The morning flocks were within 48 km of the Lowndes sprayfield site, whereas the evening flock

was 74 km southwest of the sprayfield. On 14 August 2011, one of us (MTS) and Karen Seward discovered 45 Swallow-tailed Kites foraging in one flock over a small field of newly planted corn; this field is off US-221 in Jefferson Co., Florida, ca. 5 km south of the Georgia line. This single-species flock remained active for more than a month afterward, slowly dwindling in size, with the final 4 birds seen on 19 September, which had all departed by 24 September (*vide* Karen Seward). Several other sites along CR-146 between US-221 and Monticello, Florida, were visited by kites, most of them Swallow-tailed Kites, as observed by us and others throughout August 2011 and into September. Interestingly, Swallow-tailed Kites were reported from some of these same sites in mid-August 1999, but with a total of only 5 birds at 2 sites between Quitman and Monticello (BJB, pers. observ.). Compared to our sightings of 27 on 6 August and 45 on 14 August 2011 (and along a route that is frequently traveled by birders from Valdosta going to Tallahassee and St. Marks National Wildlife Refuge), this is an indication that Swallow-tailed Kites may have become much more common in the area in the past 12 years.

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Literature Cited

- Beaton, G., P.W. Sykes, Jr., and J.W. Parrish, Jr. 2003. Annotated checklist of Georgia birds. Georgia Ornithological Society, Occasional Publ. No. 14, 156 pp.
- Bell, M.K. 1999. From the field, March-May 1999. *Oriole* 64:58-67.
- Blankenship, K. 2007. From the field, August-November 2007. *Oriole* 72:61-76.
- _____. 2008. From the field, August-November 2008. *Oriole* 73:76-90.
- _____. 2009a. From the field, June-July 2009. *Oriole* 74:64-71.
- _____. 2009b. From the field, August-November 2009. *Oriole* 74:72-82.
- Chandler, C.R., S.A. Lindenmann, A.A. Kinsey, and R. Shuford. 1997. Late-summer congregation of Swallow-tailed Kites in southeastern Georgia. *Oriole* 62:29-34.
- Florida Fish and Wildlife Conservation Commission. 2003. Florida's breeding bird

- atlas: A collaborative study of Florida's birdlife. [<http://www.myfwc.com/bba/>]
- Hall, R. 2010. From the field, August-November 2010. Oriole 75:52-68.
- McShane, M. 2011. Georgia Swallow-tailed Kite watch. [<http://www.neargareport.com/p/page-2.html>] (Date accessed 9 October 2011).
- Meyer, K.D. 1995. Swallow-tailed Kite (*Elanoides forficatus*). In: A. Poole and F. Gill, editors. The birds of North America, No. 138. Philadelphia, PA: The Academy of Natural Sciences, and Washington, DC: The American Ornithologists' Union.
- Parker, J.W. 1999. Mississippi Kite (*Ictinia mississippiensis*). In: A. Poole and F. Gill, editors. The birds of North America, No. 402. Philadelphia, PA: The Academy of Natural Sciences, and Washington, DC: The American Ornithologists' Union.
- Schneider, T.M. 2010. Mississippi Kite (*Ictinia mississippiensis*). In: T.M. Schneider, G. Beaton, T.S. Keyes, and N.A. Klaus, editors. The breeding bird atlas of Georgia. University of Georgia Press, Athens, GA. p. 124-125.
- Swan, D. 2010. Swallow-tailed Kite (*Elanoides forficatus*). In: T.M. Schneider, G. Beaton, T.S. Keyes, and N.A. Klaus, editors. The breeding bird atlas of Georgia. University of Georgia Press, Athens, GA. p. 122-123.
- U.S. Department of Agriculture. 1979. Soil survey of Lowndes County, Georgia. USDA Soil Conservation Service. 77 p., plus maps.
- Zaremba, B. 2004. From the field, August-November 2003. Oriole 69:27-41.
- _____. 2005-2006. From the field, June-July 2006. Oriole 70-71:94-98.
- _____. 2007. From the field, August-November 2006. Oriole 72:25-35.



Figure 1. One of 5 Swallow-tailed Kites flying over the mixed-species foraging site (Lowndes County Land Application Site) near Lake Park, Georgia, with 25 Mississippi Kites on 22 May 2011; photo by Marvin Smith shows it feeding on unknown small insect.

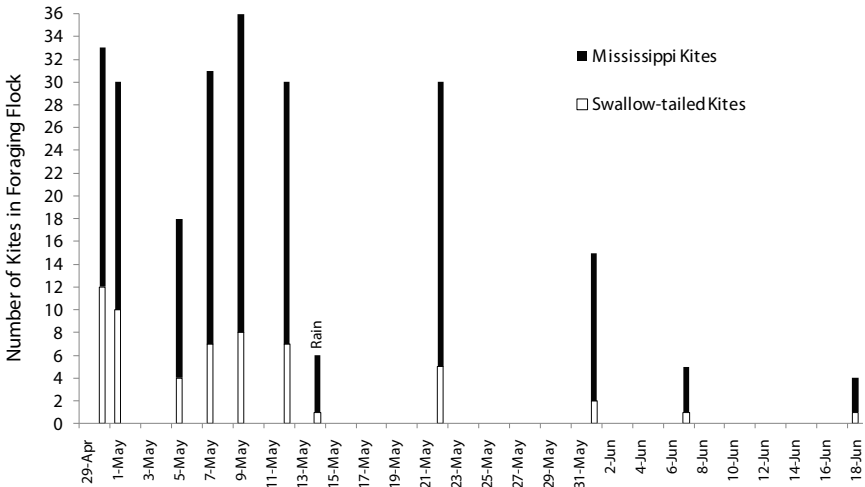


Figure 2. Counts of 2 species of kites foraging for insects over the grassy sprayfields of the Lowndes County Land Application Site in spring 2011. Counts represent the maximum number of individuals of each species visible simultaneously during a 90-min observation period around mid-day. Seven observation days from 19 June to 28 August yielded only one Swallow-tailed Kite on 4 July and one Mississippi Kite each on 4 July, 11 July, and 21 August. No observations were made on the dates with no data.