

## EARLY GATHERING OF NEST MATERIAL BY AMERICAN GOLDFINCH

JAN G. REESE<sup>1</sup>  
 DANIEL E. POET<sup>2</sup>  
 KAREN HARRIS<sup>3</sup>  
 WILLIAM HARRIS<sup>3</sup>

<sup>1</sup> P. O. Box 298, St. Michaels, Maryland 21663; reesejan@ymail.com

<sup>2</sup> P. O. Box 223, Queenstown, Maryland 21658

<sup>3</sup> 9069 May Apple Lane, Easton, Maryland 21601

### ABSTRACT

Numerous studies report American Goldfinches (*Spinus tristis*) in the mid-Atlantic Coastal Plain initiate nesting in June with maturation of regional Asteraceae thistles, and use spider and caterpillar web threads to bind various nest materials. We observed a female goldfinch gathering web from Eastern Tent Caterpillar Moth (*Malacosoma americanum*) larvae on 21 April 2012. Non-native, earlier-blooming thistle, warming climate, and availability of nyjer seed in popular backyard feeders may be factors contributing to earlier goldfinch nesting activity.

**Keywords:** climate warming, goldfinch, nyjer seed, thistles, web gathering

Authors generally attribute the annual start of nesting activity by the American Goldfinch (*Spinus tristis*) to coincide with maturation of Asteraceae thistles from which they use pappus (silky/feathery filaments of the modified calyx) as an important nest material and the seeds provide nestling food (Stokes 1950, Holcomb 1969, Lynch 1970, McGraw and Middleton 2009). Radford et al. (1968), and Brown and Brown (1984) indicate nearly all frequently occurring thistle species (*Cirsium* and *Centaurea* spp.) on the Coastal Plain do not bloom before late June, thus commencement of goldfinch nesting would be delayed until that time or when the first pappus appeared a few weeks later.

Mid-Atlantic Breeding Bird Atlases and regional bird books referencing Pennsylvania through North Carolina report a few American Goldfinches might initiate nest building earlier than mid-June, but nearly all first reported incidences occur in early July with maturity of thistles (Stewart and Robbins 1958, Potter et al. 1980, Santner 1992, Hess et al. 2000, Walsh et al. 1999, Rottenborn and Brinkley 2007, Ellison 2010).

Ellison (2010) noted an 8.7% shift toward June initiation of goldfinch nests during the 2002-2006 Maryland Breeding Bird Atlas. Possibly introduction and/or spread of non-native, earlier-blooming thistle species, recent years of warming and/or drier climate, and popularity of backyard feeders offering nyjer seed may all contribute to earlier nest activity.

In the Maryland Coastal Plain, on the unusually early date of 21 April 2012, K. Harris, W. Harris, and Poet observed and photographed an American Goldfinch collecting nest material at Adkins Arboretum near the town of Ridgely, Caroline County, Maryland. Presented here are our observations and comments related to this early occurrence.

### METHODS

These three recreational bird observers made the goldfinch sighting while walking along designated trails at the Adkins Arboretum at about 8:50 a.m. with clear sky, 22°C and no discernible wind. We first spotted a male and female American Goldfinch perched near the top of a small black cherry (*Prunus serotina*) infested in one of the uppermost forks with webbing from Eastern Tent Caterpillar Moth (*Malacosoma americanum*) larvae. The yellow and black-winged male was positioned about 0.5 m above the drab female perched directly adjacent to the widest portion of the tent webbing about 6 m high in the tree. Poet later photographed the goldfinch activity with a hand-held, Nikon D5100 Digital SLR Camera in an Auto mode, zoomed to 300 mm magnification.

### RESULTS

We first assumed the goldfinches were consuming the Eastern Tent Caterpillar Moth larvae whose webbing densely infested the tree; however upon closer inspection we ascertained the female goldfinch was collecting strands of tent webbing into and around her bill while the male watched. Figure 1 shows the female with the gathered strands of webbing within and on the bill. We watched this collecting behavior for 5-8 minutes before both birds took flight and departed our viewing area.

### DISCUSSION

Many authors (Bent and Collaborators 1968, Baicich and Harrison 1997, McGraw and Middleton 2009) have cited goldfinch use of spider and caterpillar web threads for binding lichens, bark, grasses and other nest materials together, thus this behavior is not unusual. However, the date of nest material gathering is unusual since it comes nearly 60 days earlier than documented historical goldfinch nest building on the Mid-Atlantic Coastal Plain and 19 days before single May occurrences in New York City (Künstler 1994) and Maryland (Ellison 2010). Non-native, earlier-blooming thistle, warming climate, and nyjer seed available at backyard feeders (Ellison 2010) may be factors contributing to unusually early goldfinch nesting activity.



Figure 1. Female American Goldfinch (*Spinus tristis*) collecting webbing from an Eastern Tent Caterpillar Moth (*Malacosoma americanum*) tent. Adkins Arboretum, near Ridgely, Caroline County, Maryland, 21 April 2012. Photographed by Daniel E. Poet.

The most frequently occurring species of common and star thistles in the region of our observation are Canada, bull, and field thistle (*Cirsium arvense*, *C. vulgare*, *C. discolor*), and garden cornflower

(continued)

and spotted knapweed (*Centaurea cyanus*, *C. stoebe*) (Phillips 1978, Brown and Brown 1984, Kaufman and Kaufman 2007, pers. observations). These sources indicate initial flowering in July or August for native field thistle, June or August for naturalized bull thistle, June for introduced Canada thistle and spotted knapweed, and May for introduced garden cornflower. This suggests that over the past several decades, as the earlier blooming naturalized and introduced thistles have increased their numbers and range, the availability of pappus and thistle seeds may have also enabled earlier initiation of goldfinch nesting activities than during historical periods. Earlier blooming may be further enhanced by annually warming climate (Wolkovich et al. 2012) such as experienced in 2012. During the 81 days prior (1 February) to our observation the ambient temperatures ranged above the USDA-NRCS (2002) historical monthly highs on 53% of the days; there was 11.9 cm of precipitation compared with the 22.6 cm average in 1961–1985; there was no measurable precipitation 36 days prior to the event; and numerous species of local plants appeared to bloom weeks earlier than usual. The tiny, linear shape of nyjer has the appearance of thistle seed while being of greater nutritional content, thus is a strong attractant for goldfinches. Advent and marketing of the vertical, clear plastic, tube-feeder designed specifically to attract goldfinches to its nyjer content has made the seed a multi-million dollar commodity in recent years (Wild Bird Feeding Industry 2012) while tube-feeder marketing has targeted the summer-season when the finches have a bright yellow plumage. Abundant availability of nyjer all months of the year, particularly during the warm months, may also contribute to earlier goldfinch nesting activity.

Unusually early nesting activity by the American Goldfinch warrants future attention to timing of nest material gathering, nest building, egg-laying, and reproductive success in view of abundant introduced thistles, warming climate, and availability of nyjer seed.

#### ACKNOWLEDGMENTS

Walter G. Ellison graciously provided comments and helpful suggestions on earlier drafts.

#### LITERATURE CITED

Baichich, P. J., and C. J. O. Harrison. 1997. A Guide to the Nests, Eggs, and Nestlings of North American Birds (Second Edition). Academic Press, San Diego, CA. 347 pp.

Bent, A. C., and Collaborators. 1968. Life Histories of North American Cardinals, Grosbeaks, Buntings, Towhees, Finches, Sparrows, and Allies (part I). United States National Museum Bulletin 237. Smithsonian Institution Press, Washington DC. 602 pp.

Brown, M. L., and R. G. Brown. 1984. Herbaceous Plants of Maryland. Port City Press, Baltimore, MD. 1127 pp.

Ellison, W. G. 2010. American Goldfinch (*Spinus tristis*). In: 2nd Atlas of the Breeding Birds of Maryland and the District of Columbia (W. G. Ellison, Ed.), pp. 434–435. The Johns Hopkins University Press, Baltimore, MD. 494 pp.

Hess, G. K., R. L. West, M. V. Barnhill III, and L. M. Fleming. 2000. Birds of Delaware. University of Pittsburgh Press, Pittsburgh, PA. 635 pp.

Holcomb, L. C. 1969. Breeding biology of the American Goldfinch in Ohio. Bird-Banding 40(1):26–44.

Kaufman, S. R., and W. Kaufman. 2007. Invasive Plants: Guide to identification and the impacts and control of common North American species. Stackpole Books, Mechanicsburg, PA. 464 pp.

Künstler, D. S. 1994. American Goldfinch with nesting material on early date. The Kingbird 44(3):187.

Lynch, C. B. 1970. The reproductive strategy of the American Goldfinch, *Spinus tristis tristis*, in Iowa. Proceedings of the Iowa Academy of Science 77:164–168.

McGraw, K. J., and A. L. Middleton. 2009. American Goldfinch (*Spinus tristis*). The Birds of North America Online (A. Poole, Ed.) Ithaca: Cornell Lab of Ornithology. Available at <http://bna.birds.cornell.edu/bna/species/080>. Accessed 13 September 2012.

Phillips, C. E. 1978. Wildflowers of Delaware and the Eastern Shore. Delaware Nature Education Society, Inc., Hockessin, DE. 305 pp.

Potter, E. F., J. F. Parnell, and R. P. Teulings. 1980. Birds of the Carolinas. The University of North Carolina Press, Chapel Hill, NC. 408 pp.

Radford, A. E., H. E. Ahles, and C. R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. The University of North Carolina Press, Chapel Hill, NC. 1245 pp.

Rottenborn, S. C. and E. S. Brinkley. 2007. Virginia's Birdlife: An annotated checklist. Virginia Avifauna, No. 7 (Fourth Edition), Virginia Society of Ornithology. 330 pp.

Santner, S. 1992. American Goldfinch (*Carduelis tristis*). In: Atlas of Breeding Birds in Pennsylvania, (D. W. Brauning, Ed.), pp. 418–419. University of Pittsburgh Press, Pittsburgh, PA.

Stewart, R. E., and C. S. Robbins. 1958. Birds of Maryland and the District of Columbia. North American Fauna, No. 62, United States Government Printing Office, Washington DC. 401 pp.

Stokes, A. W. 1950. Breeding behavior of the goldfinch. Wilson Bulletin 62(3):107-127.

USDA-NRCS (United States Department of Agriculture, Natural Resources Conservation Service). 2002. Soil Survey of Queen Anne's County, Maryland. U. S. Government Printing Office, Washington, DC. 107 pp.

Walsh, J., V. Elia, R. Kane, and T. Halliwell. 1999. Birds of New Jersey. New Jersey Audubon Society. 704 pp.

Wild Bird Feeding Industry. 2012. Wild Bird Feeding Industry. Information previously available at <http://www.wbfi.org/>. Accessed 17 October 2012.

Wolkovich, E. M., B. I. Cook, J. M. Allen, T. M. Crimmins, J. L. Betancourt, S. E. Travers, S. Pau, J. Regetz, T. J. Davies, N. J. B. Kraft, T. R. Ault, K. Bolmgren, S. J. Mazer, G. J. McCabe, B. J. McGill, C. Parmesan, N. Salamin, M. D. Schwartz, and E. E. Cleland. 2012. Warming experiments underpredict plant phenological responses to climate change. Nature. Published online 2 May 2012. Available at <http://www.nature.com/nature/journal/v485/n7399/full/nature11014.html>. Accessed 2 May 2012.