Nest Box Observations as of March 2017

Our HPAS nest box initiative, first suggested by Russ Regnery and led for three years by Michelle Styring, has now produced two years of data on avian nesting behavior in strategically placed nest boxes, one of which is pictured below with Russ and Michelle.

In the first year, beginning in 2014, 100 nest boxes were placed on the Highlands Plateau and arrangements made for more than 30 volunteers to monitor these boxes during the spring and summer of 2015. Of the 100 nest boxes, 50 "A" boxes contained small, 1 1/8 in. diameter, entrance holes and 50 "B" boxes offered larger 1 ½ in. diameter entrances.

What was observed in the spring and summer of **2015** both informed and encouraged us all. Overall, 85% of all nest boxes contained nesting materials, evenly distributed across A (small entrance) and B boxes (55 versus 63). Carolina Chickadees nested earliest and most frequently, accounting for 36 nests in A boxes and 32 nests in B boxes. House Wrens built 29 nests, 25% of all nests, 18 of their nests appearing in A boxes and 11 in B boxes. We had 19 Eastern Bluebird nests, all in B boxes. For a more complete report of first year results, see *"Some First Year (2015) Nest Box Results"* by Michelle Styring which appears as a PDF on the HPAS website.

For **2016** HPAS added 52 new nest boxes—26 A and 26 B—bringing the total amount of avian "real estate" to 152 nest boxes. In addition, two academic ornithologists joined our research effort: Prof. Olga (Olya) Milenkaya of Young Harris College in Georgia; and Prof. Barbara Ballentine of Western Carolina University in Cullowhee. The observational results produced three data sets. First, HPAS continued to monitor its 152 nest boxes with over 30 monitors, including many homeowners "hosting" two or more nest boxes. Second, Dr. Ballentine and her student, Traci Ballance, monitored 128 of the 152 HPAS nest boxes and conducted intense research with nesting Carolina Chickadees. Third, Dr. Milenkaya, with HPAS support, monitored 106 Young Harris nest boxes, including 99 newly installed nest boxes, on or near the campus of Young Harris College. Statistics on these three data sets will be reported separately.

Concerning only the **HPAS data on 152 nest boxes**, we observed a 75% occupancy rate, evenly distributed across A and B nest boxes. Carolina Chickadees were the most frequent nesters, appearing in 42% of all boxes and showing a clear preference for A over B boxes (64% versus 34%). House Wrens occupied 26% of all boxes, 54% of their nests appearing in A boxes and 44% in B. Eastern Bluebirds nested in 16% of the 152 boxes, virtually all of which appeared in B nest boxes. Tree Swallows were found in 9% of all boxes, those almost exclusively in B nest boxes. Varying across species, 30-50% of nests produced offspring that fledged. These and other statistics appear in *"Tabular Nest Box Stats for 2016"* which appears as a PDF on the HPAS website.

The 128 nest boxes monitored by Dr. Ballentine and Traci Ballance showed a 72% occupancy rate overall. Species frequencies in the nest boxes were similar to those observed by HPAS monitors in the 152 boxes that the 128 boxes were a subset of. Carolina Chickadees were the most frequent and the earliest nesters. The intense monitoring of 61 Carolina Chickadee nests showed the following:

- The first Carolina Chickadee egg date was on April 4, the last egg appeared on May 12, the peak dates for eggs laid being April 19-21.
- Regarding reproductive success, the offspring in 30 Carolina Chickadee nests fledged and 31 failed to produce fledglings.
- Using iButton temperature data, fledge dates were observed to occur from May 13 to June 15 with a peak between May 25-28.
- Data will be forthcoming on the growth rate of chicks according to body weight.

For these and other finding see *"WCU 2016 Results: HPAS Preliminary Report"* appearing as a PDF file on the HPAS website.

From the 106 of her Young Harris boxes that she monitored from Mid-March to late June, Dr. Milenkaya observed a 72% and 81% occupancy rate in A and B nest boxes respectively. Around 38% of nests were Carolina Chickadee nests and there was some evidence of a preference for the A boxes in this species (for both nest starts and for nests that subsequently included eggs). Approximately 25% of all nests were Eastern

Bluebird nests, and they showed a clear preference for the B nest boxes. Around 19% of the nest box nests were House Wrens, evenly divided between A and B nest boxes. From these observations, the following timeline emerged:

- March 28 – First Carolina Wren eggs appeared
- March 29 – First Carolina Chickadee eggs
- April 3 – First Eastern Bluebird eggs
- April 25 – First House Wren eggs
- June 11 – Last Carolina Chickadee chicks fledged

For a more complete report, see *"Young Harris Summary of 2016 for HPAS"* appearing as a PDF on the HPAS website.

These three data sets for 2016 are both overlapping and independent and produce findings that converge in important ways and diverge in other informative ways. These convergences and divergences will be studied by our Nest Box Committee and two academic ornithologists. In the meantime, our nest box initiative enters its third year of observing and reporting upon avian nesting behavior on the Highlands Plateau.

An Eastern Bluebird nest and eggs appearing in one of our nest boxes is pictured below.

SOME RESULTS FROM THE 2015-2016 NEST BOX INITIATIVE

Michele Styring

With over 150 nest boxes placed on the Plateau and in our surrounding communities by the HPAS Nest Box Committee, we can now report on some of the results from this year's nesting season.

Carolina Chickadees had 40 successful broods and might have been successful in another 10 nest boxes.

Eastern Bluebirds had 19 successful broods and 4 other possible successes.

House Wrens had 23 successful broods and 3 additional possible successes.

Tree Swallows were successful 8 times with 4 other possible successes.

Tufted Titmice had 2 successful broods.

In total, then, we are confident that our nest boxes housed 92 avian families, with less conclusive evidence of another 21 families. These are impressive numbers. This year, the Tree Swallows and Tufted Titmice were new to our boxes as compared with last year's cavity dwellers.

These observations are independent of what Traci Ballence, the Western Carolina University graduate student, found during her study of Carolina Chickadees. We hope to learn more about her findings in 2017. She is busy analyzing data from the I-buttons that she installed in many of the boxes housing Carolina Chickadees.

The Nest Box Committee will meet in November to decide how to proceed with this project for the next nesting season. Stayed tuned. Please send any comments or suggestions to MSty30005@aol.com.

In the meantime, we hope that those who participated in the study know just how important they were to the results, and that all are pleased with the outcome of this year's efforts. Many thanks!

Michelle Styring, Project Coordinator